

# REGION 7 REGIONAL INTEGRATED CONTINGENCY PLAN

## REGION 7 REGIONAL RESPONSE TEAM



**THIS DOCUMENT COMBINES REQUIREMENTS NEEDED FOR REGION 7'S  
REGIONAL CONTINGENCY PLAN &  
AREA CONTINGENCY PLAN**

**March 2018**



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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 7 INTEGRATED CONTINGENCY PLAN

***TO REPORT A SPILL OR RELEASE***

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**National Response Center**

**Emergency Response 24-Hour Number: (800) 424-8802**

National Response Center  
United States Coast Guard Headquarters  
Washington, DC

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**EPA Region 7 Regional Emergency Operations Center**

**Emergency Response 24-Hour Number: (913) 281-0991**

United States Environmental Protection Agency  
Emergency Response Branch  
11201 Renner Blvd.  
Lenexa, Kansas 66219

---

**United States Coast Guard**

**24-Hour Emergency Number: (504) 589-6225**

District Commander  
U.S. Coast Guard, Eighth District  
Hale Boggs Federal Building, Room 1328  
500 Poydras Street  
New Orleans, LA 70130

**Sector Upper Mississippi River**

**24-Hour Emergency Number: (314) 269-2332**

Sector Commander  
1222 Spruce Street, Suite 7.103  
Saint Louis, MO 63103

**Sector Lower Mississippi River**

**24-Hour Emergency Number: (901) 521-4804**

Sector Commander  
2 AW Willis Avenue  
Memphis, TN 38105-1502

**Sector Ohio Valley**

**24-Hour Emergency Number: (502) 779-5411**

Sector Commander  
600 Martin Luther King Place  
Louisville, KY 40202

**Marine Safety Unit Paducah**

**24-Hour Emergency Number: (270) 217-0959**

Commanding Officer  
225 Tully Street  
Paducah, KY 42003

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**Iowa Department of Natural Resources  
Emergency Response 24-Hour Emergency Number  
(515) 725-8694**

502 E. 9th Street  
Des Moines, Iowa 50319-0034

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**Kansas Department of Health and Environment  
Emergency Response 24-Hour Emergency Number  
(785) 296-1679  
(also call Kansas Division of Emergency Management 800-905-7521)**

Curtis State Office Building  
1000 SW Jackson Street  
Topeka, Kansas 66612

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**Missouri Department of Natural Resources  
Emergency Response 24-Hour Emergency Number  
(573) 634-2436**

2710 West Main  
Jefferson City, Missouri 65102

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**Nebraska Department of Environmental Quality  
Emergency Response 24-Hour Emergency Number  
(877) 253-2603 (8am-5pm)  
(402) 471-4545 (5pm-8am)**

1200 "N" Street, Suite 400  
Lincoln, Nebraska 68509

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**Tribal Government Emergency Response Contacts are in Appendix D.5**



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 7**

11201 Renner Boulevard  
Lenexa, Kansas 66219

**MAY 18 2015**

**LETTER OF PROMULGATION**

In accordance with Section 311(j)(4)(C) of the Federal Water Pollution Control Act (commonly referred to as the "Clean Water Act" and cited herein as "CWA"), 33 U.S.C. § 1321(j)(4)(C), this Regional Integrated Contingency Plan (RICP) — a combined Regional Contingency Plan (RCP) and Area Contingency Plan (ACP) — fulfills the statutory requirements for an ACP.

The functions of designating areas, appointing Area Committee members, requiring information to be included in the ACP, and reviewing and approving the ACP, was delegated by Executive Order 12777, October 18, 1991, as amended, to the Administrator of the U.S. Environmental Protection Agency (EPA). Pursuant to a notice published in the Federal Register (57 FR 15198, April 24, 1992) the Administrator designated 13 geographic areas as the initial areas to be covered by ACPs. The area designated as EPA Region 7 (Iowa, Kansas, Missouri and Nebraska) was designated and the Region 7 Regional Response Team (RRT) was designated as the initial Area Committee. The Administrator's authority was re-delegated by EPA Delegation 2-91 to EPA's Regional Administrators. For Region 7, this authority has been re-delegated to the Director of Region 7's Superfund Division by Regional Delegation R7-2-091.

This RICP has been developed in consultation with all designated Federal Agencies and State governments. This RICP is updated annually by the Area Committee/RRT, under the direction of EPA's designated Area Committee On-Scene Coordinator, Eric Nold. This RICP is effective immediately and supersedes any prior RICPs.

Comments and recommendations regarding this RICP are invited and should be addressed to Eric Nold, at U.S. Environmental Protection Agency, Region 7, 11201 Renner Blvd., Lenexa, Kansas 66219 or [nold.eric@epa.gov](mailto:nold.eric@epa.gov).

5/18/15

Date

Eric Nold

Eric Nold  
On-Scene Coordinator

5-18-15

Date

Robert W. Jackson

Robert W. Jackson  
Acting Director, Superfund Division

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## CLEAN WATER ACT DELEGATION

Regional Delegations Manual  
R7-2-091

TN 119  
06/06/2013

### CHAPTER 02 CLEAN WATER ACT (CWA)

#### Area Committee Designation and Preparation and Review of Area Contingency Plans

1. **AUTHORITY.** Pursuant to section 311(j)(4) of the Clean Water Act (CWA) and section 4202(b)(1) of the Oil Pollution Act of 1990 (OPA) to:
  - a. Designate Areas;
  - b. Appoint Area Committee members;
  - c. Require information to be included in Area Contingency Plans; and
  - d. Review and approve such plans as defined in the National Contingency Plan (NCP).
2. **TO WHOM DELEGATED.** The authorities listed in 1a, b, c, and d, above, are re-delegated to the Director, Superfund Division.
3. **RE-DELEGATION AUTHORITY.** The authority listed above may not be delegated further.
4. **LIMITATIONS.** Pursuant to a notice published in the Federal Register, (57 FR 15198, April 24, 1992), the Administrator has designated 13 initial geographic areas not covered by the Regional Response Teams, and the Regional Response Teams, as the initial Area Committees. Regional Administrators may designate different areas within their Regions and appoint different Area Committee members.
5. **ADDITIONAL REFERENCES.** “Designation of Areas and Area Committees Under the Oil Pollution Act of 1990,” (57 FR 15198, April 24, 1992).

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## **LETTER OF PROMULGATION – ORIGINAL**

In accordance with the provisions of Section 311(j)(4)(c) of the Federal Water Pollution Control Act (Commonly referred to as the “Clean Water Act” and cited herein as “CWA”), 33 U.S.C. Section 1321(j)(4)(c), this plan fulfills the statutory requirements for the Region 7 Area Contingency Plan (ACP). The functions of designating areas, appointing Area Committee members, and reviewing and approving the ACP as part of this Regional Integrated Contingency Plan (RICP) has been delegated by Executive Order 12777, October 22, 1991, to the Administrator of the Environmental Protection Agency (EPA) for the inland zone. This area has been designated as EPA Region 7 (Iowa, Kansas, Missouri, and Nebraska) and the Area Committee has been designated as Region 7 Regional Response Team (RRT), responsible for reviewing and developing the RICP under the guidance of Janice Kroone, EPA Region 7 Federal On-scene Coordinator (FOSC).

Comments and recommendations regarding this plan are invited and should be addressed to Janice Kroone, FOSC, U.S. Environmental Protection Agency, Region 7, 11201 Renner Blvd., Lenexa, Kansas 66219. This plan will be kept under review, changes, additional information, or corrections will be promulgated as necessary and will be consecutively numbered.

Original Signed by Dennis Grams

Regional Administrator  
U.S. Environmental Protection Agency  
Region 7

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## **DISTRIBUTION**

Copies of this plan and all amendments and changes will be distributed to the following: EPA Chairman of the National Response Team (NRT) in Washington, D.C. for NRT distribution; each of the member agencies of the Region 7 Regional Response Team listed in Appendix D of this plan; the U.S. Environmental Protection Agency (EPA/Headquarters [HQ]) Emergency Planning Branch; the National Response Center (NRC); and the State, Indian Tribal, and Federal Natural Resources Trustees.

## **REVISIONS/UPDATES**

EPA Region 7 Integrated Contingency Plan (RICP) shall be reviewed and updated annually, by the 31st of January. The Plan shall be reviewed to ensure all information is current by the Area Committee and Regional Response Team (RRT), and submitted to all interested parties.

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## CORRECTIONS AND UPDATES FORM

Corrections, updates, or suggested additions to the Region 7 Regional Integrated Contingency Plan (RICP) should be provided to Eric Nold, FOSC (913-551-7488), [nold.eric@epa.gov](mailto:nold.eric@epa.gov).

Please complete the following information to effect a change in the sub-area plan:

Page # of the plan. \_\_\_\_\_

Section and subsection numbers of the paragraph to be changed: \_\_\_\_\_

Other description: (e.g., third sentence, in second full paragraph on page) \_\_\_\_\_

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Corrections or suggested changes: \_\_\_\_\_

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**Address:**

Eric Nold, Federal On-Scene Coordinator  
Region 7 Regional Integrated Contingency Plan Coordinator  
Emergency Response Program  
U.S. Environmental Protection Agency  
11201 Renner Blvd.  
Lenexa, Kansas 66219

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## RECORD OF CHANGE

The most current copy of this document, including any changed pages, is available through EPA Region 7's website at [response.epa.gov/R7RRT](https://response.epa.gov/R7RRT). All changes will be made in conjunction with the United States Guard, Eighth District, Hale Boggs Federal Building, 500 Poydras Street, Room 1330, New Orleans, LA 70130-3319.

The following lists revisions contained in the most recent publication of this plan. Plan revisions made since 2012 are listed in Appendix I.

| Change Number | Change Description   | Section Number Found   | Change Date   |
|---------------|--|------------------------|---------------|
| 208           | Updated state and federal natural resource trustee contacts  | Appendix A1            | December 2017 |
| 209           | Updated state/county lists of T&E species  | Appendix A4            | December 2017 |
| 210           | Updated EPA's GIS contact for Sensitivity Atlas access   | Appendix A7            | December 2017 |
| 211           | Updated FRP and RMP lists of regulated facilities  | Appendix B1            | December 2017 |
| 212           | Updated OSRO contact information and changed "Response" to "Removal" in reference to OSROs                 | Appendix C1            | December 2017 |
| 213           | Updated SERC and LEPC information  | Appendices D1 and D2   | December 2017 |
| 214           | Updated RRT representative contacts list   | Appendix D3            | December 2017 |
| 215           | Updated Tribal emergency contacts list   | Appendix D5            | December 2017 |
| 216           | Updated MTR list of regulated facilities   | Appendix B1            | January 2018  |
| 217           | Moved comprehensive Record of Change to new Appendix I and retained current year's changes in this section | Appendix I and Preface | March 2018    |

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## REGION 7 INTEGRATED CONTINGENCY PLAN

### PREFACE

TO REPORT A SPILL OR RELEASE  
CLEAN WATER ACT DELEGATION  
LETTER OF PROMULGATION – ORIGINAL  
DISTRIBUTION  
REVISIONS/UPDATES  
CORRECTIONS AND UPDATES FORM  
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## **SUBPART A INTRODUCTION**

### **300.1 Purpose and Objectives**

This plan provides for a pattern of coordinated and integrated response by departments and agencies of the Federal Government and State and local governments to protect public health and the environment from damaging effects of pollution. It provides for timely and effective coordination and direction of Federal, State, and local response systems, and supports development of capability by the private sector to handle such incidents. This plan provides the organizational structure and objectives necessary to prepare for and respond to a discharge of oil or release of hazardous substances, pollutants, and contaminants.

This Region 7 Integrated Contingency Plan (RICP) fulfills the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) for both Regional Contingency Plans (RCP) and Area Contingency Plans (ACP), and includes references to relevant portions of the National Response Framework (NRF), particularly Emergency Support Function (ESF) #10 Oil and Hazardous Materials Response. The RICP implements the NCP and the ESF #10 component of the NRF at the regional level, and is the chief working document of the Regional Response Team (RRT), the Area Committee (AC), and ESF #10. The RRT also has been appointed by the EPA Regional Administrator (RA) to serve as the AC for development of the Region 7 RICP.

### **300.2 Authority and Applicability**

The NCP is required by Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 *United States Code* [U.S.C.] 9605), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) (Public Law [P.L.] 99-499), and by Section 311 of the Clean Water Act (CWA) (33 U.S.C. 1321(d)), as amended by the Oil Pollution Act of 1990 (OPA) (P.L. 101-380). The President delegated to the Environmental Protection Agency (EPA) responsibility for the amendments to the NCP (40 *Code of Federal Regulations* [CFR] part 300). The ESF #10 components of this plan are required by the Robert T. Stafford Disaster Relief and Emergency Act (P.L. 93-288), as amended.

The NCP (Section 300.210 (b)) calls for establishment of a nationwide system of RCPs based on Federal standards. This plan is applicable to response operations by all Federal, State, and local agencies within Region 7, pursuant to the authorities under CERCLA and Section 311 of the CWA, as amended.

This plan follows, to the greatest extent possible, the format of the NCP, and was developed to be implemented in conjunction with applicable sub-area plans, State emergency response plans, and SARA

Title III local emergency plans. Local plans include data regarding vulnerable resources, potential pollution sources, cleanup equipment, environmental features, and other information that will allow Local Incident Commanders, State On-Scene Coordinators (SOSC), and/or Federal On-Scene Coordinators (FOSC) to quickly plan and organize a response to a pollution incident.

### ***Plan Integration***

The RICP and sub-area plans, discussed later in this document, further detail requirements set forth in the NCP, augment Federal coordination with State and local authorities, and facilitate integration of existing State, local, and private-sector plans for the four-State area. Coordination between EPA and USCG is ensured because representatives of both EPA and USCG serve as co-chairs of the RRT, and the RRT aids in Area planning and coordination for Region 7. This integration is further strengthened through State involvement in both RICP and sub-area planning. All Federal contingency plans should be coordinated and integrated with local emergency response plans developed by Local Emergency Planning Committees (LEPC). Region 5 and Region 7 RRTs have designated the Upper Mississippi River Hazardous Spills Coordination Group as the organization to coordinate joint planning and response among the regions along the Mississippi River.

Facility Response Plans (FRP), as defined by Section 311(j)(5)(A) of the CWA, 33 U.S.C. § 1321(j)(5)(A), shall be reviewed for approval and consistency with this RICP. During a response, the FOSC, SOSC, Local Incident Commander, and responsible party shall meet to coordinate and integrate this RICP with all other relevant plans including, but not limited to, Federal, State, local, Tribal, and private plans. The RRT/AC will continuously review effectiveness and integration of all plans based on actual response experiences, exercises, and all other relevant information that will lead to enhancement of these plans.

### **300.3 Scope**

#### ***Applicability***

This RICP applies to and is in effect for the following cases:

- Discharges of oil into or on the navigable waters, on the adjoining shorelines to the navigable waters, or into waters that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States.
- Discharges of oil or releases of hazardous substances into the environment, and pollutants or contaminants which may present an imminent and substantial danger to public health or welfare.

### ***Geographic Description and Jurisdictional Guidance***

The geographic scope of this RICP is EPA Region 7, which encompasses the States of Iowa, Kansas, Missouri, and Nebraska. Detailed descriptions of areas of special environmental and economic concern are in Appendices A.2 and A.3, Environmentally and Economically Sensitive Areas. Generally, the responsibility to provide FOSCs for incidents or potential incidents is placed upon the EPA and the United States Coast Guard (USCG). Other agency (e.g., Department of Defense [DOD], Department of Energy [DOE]) responsibilities are outlined in 40 CFR § 300.175. Appendix C.3 shows the EPA regional boundaries for Region 7. The NCP applies to and is in effect when the NRF and some or all of its ESFs are activated. EPA is the primary agency for ESF #10, Hazardous Materials under the NRF, per P.L. 93-288, as amended.

USCG, Eighth District (USCG D8) will assist the predesignated EPA FOSC where a discharge or release of oil or hazardous substances has occurred, or a threat of such a discharge or release into or on navigable waters is evident. Upon request by the EPA FOSC, USCG may act on behalf of EPA, assuming the functional role and responsibilities of the FOSC. If USCG is the first Federal official on-scene, USCG will notify the EPA FOSC and act as the FOSC until such time as the EPA FOSC arrives.

The EPA Region 7 office may request that USCG D8 provide the FOSC for a release/discharge in the inland zone, regardless of source, because of the particular circumstances of the incident.

### **300.5 Abbreviations**

#### ***Federal Department and Agency Title Abbreviations***

DHS – Department of Homeland Security  
FEMA – Federal Emergency Management Agency  
USCG – United States Coast Guard  
COTP – Captain of the Port  
MSU – Marine Safety Unit  
DOC – Department of Commerce  
NOAA – National Oceanic and Atmospheric Administration  
DOD – Department of Defense  
DOE – Department of Energy  
DOI – Department of the Interior  
USFWS – United States Fish and Wildlife Service  
OLE – Office of Law Enforcement  
NPS – National Park Service

BIA – Bureau of Indian Affairs  
USGS – United States Geological Survey  
BLM – Bureau of Land Management  
BuRec – Bureau of Reclamation  
DOJ – Department of Justice  
DOL – Department of Labor  
OSHA – Occupational Safety and Health Administration  
DOS – Department of State  
DOT – Department of Transportation  
EPA – Environmental Protection Agency  
EERU – Environmental Emergency Response Unit  
ERRS – Emergency Response & Removal Services  
GSA – General Services Administration  
HHS – Department of Health and Human Services  
ATSDR – Agency for Toxic Substances and Disease Registry  
SHPO – State Historic Preservation Officer  
USDA – United States Department of Agriculture  
APHIS – Animal and Plant Health Inspection Service

(Note: To avoid confusion, the NCP and this RICP spell out Nuclear Regulatory Commission and use the abbreviation “NRC” only with respect to the National Response Center.)

***State Abbreviations***

IDNR – Iowa Department of Natural Resources  
KDHE – Kansas Department of Health and Environment  
MDNR – Missouri Department of Natural Resources  
NDEQ – Nebraska Department of Environmental Quality

***Other Abbreviations***

AC – Area Committee  
ACP – Area Contingency Plan  
API – American Petroleum Institute  
BOA – Basic Ordering Agreement  
CAER – Community Awareness and Emergency Response  
CANAPS – Ceiling and Number Assignment Processing System  
CBC – Chemical and Bioremediation Countermeasures  
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act  
CFR – *Code of Federal Regulations*  
CHEMTREC – Chemical Transportation Emergency Center



CMA – Chemical Manufacturers’ Association  
CWA – Clean Water Act (Federal Water Pollution Control Act)  
EE/CA – Engineering Evaluation/Cost Analysis  
EPCRA – Emergency Planning and Community Right-To-Know Act (SARA Title III)  
ERT – Environmental Response Team  
ESA – Endangered Species Act  
ESF – Emergency Support Function  
FCO – Federal Coordinating Officer  
FLAT – Federal Lead Administrative Trustee  
FOSC – Federal On-Scene Coordinator  
FPN – Federal Project Number  
FRERP – Federal Radiological Emergency Response Plan  
FRP – Facility Response Plan  
FWPCA – Federal Water Pollution Control Act  
FWSEP – Fish and Wildlife Sensitive Environments Plan  
gal – Gallons  
GIS – Geographic Information System  
GUIE – Government Initiated Unannounced Exercise  
HAZMAT – Hazardous Materials  
HSPD – Homeland Security Presidential Directive  
IAG – Interagency Agreement  
ICS – Incident Command System  
IMAT – Incident Management Assistance Team  
KSU – Kansas State University  
LEPC – Local Emergency Planning Committee  
MOA – Memorandum of Agreement  
MOU – Memorandum of Understanding  
MSA – Metropolitan Statistical Area  
NDT – National Decontamination Team  
NIMS – National Incident Management System  
NCP – National Oil and Hazardous Substances Pollution Contingency Plan  
NFPA – National Fire Protection Association  
No. – Number  
NPFC – National Pollution Funds Center (USCG)  
NRC – National Response Center (USCG)  
NRDA – Natural resource damage assessment  
NRF – National Response Framework  
NRT – National Response Team  
NSF – National Strike Force (USCG)

NSFCC – National Strike Force Coordination Center (USCG)  
OPA – Oil Pollution Act  
OSLTF – Oil Spill Liability Trust Fund  
PIAT – Public Information Assist Team (USCG)  
P.L. – Public Law  
POLREP – Pollution Report in Message Format  
PREP – National Preparedness for Response Exercise Program  
PRFA – Pollution Removal Funding Authorization  
PRP – Potentially Responsible Party  
RA – Regional Administrator  
RAT – Radiological Assistance Team  
RCP – Regional Contingency Plan  
RCRA – Resource Conservation and Recovery Act  
REOC – Regional Emergency Operations Center  
RERT – Radiological Emergency Response Team (EPA)  
RICP – Regional Integrated Contingency Plan  
RMP – Risk Management Plan  
RP – Responsible Party  
RPM – Remedial Project Manager  
RRI – Response Resource Inventory (USCG)  
RRT – Regional Response Team  
RSE – Removal Site Evaluation  
RTOC – Regional Tribal Operations Committee  
SACP – Sub-area Contingency Plan  
SARA – Superfund Amendments and Reauthorization Act of 1986  
SERC – State Emergency Response Commission  
SMOA – Superfund MOA  
SONS –Spill of National Significance  
SOSC – State On-Scene Coordinator  
SOW – Statement of Work  
SPCC – Spill Prevention, Control, and Countermeasures  
SSC – Scientific Support Coordinator  
START –Superfund Technical Assessment and Response Team  
SUPSALV – Supervisor of Salvage (U.S. Navy)  
UC – Unified Command  
USACE – U.S. Army Corps of Engineers  
U.S.C. – *United States Code*  
WCD – Worst-Case Discharge

### **300.6 Definitions**

Terms used herein are defined in Section 300.5 of the NCP, 40 C.F.R. § 300.5, (“Definitions”), Section 311 (a) of the CWA 33 U.S.C. § 1321(a) and OPA 90 (“Definitions”), 33 U.S.C. § 2701, P.L. 93-288, the Robert T. Stafford Disaster Relief and Emergency Assistance Act, and the regulations promulgated thereunder.

### **300.7 Plan Maintenance**

Section 311(j)(4)(C)(viii) of CWA requires periodic updates to the RICP. The RICP and related Subparts were developed with input from the Region 7 RRT. This section establishes procedures for interim changes and full updates to the RICP.

The RRT is responsible for maintenance of the RICP as needed to incorporate Federal, State, regional, and local policy and procedural changes based on lessons learned from exercises and actual incidents. Changes include additions of new or supplementary material and deletions. Proposed changes should occur in consultation with RRT stakeholders to ensure no conflicts with plans or authorities that may affect the RICP.

The RRT is responsible for coordinating review and acceptance of proposed changes. Completion of annual plan maintenance is intended to occur by January 31st of each year with major plan updates occurring every five years. The plan shall be reviewed to ensure all information is current by the Area Committee and RRT, and submitted to all interested parties. Each of the RRT stakeholders will have an opportunity to review the RICP and recommend changes to the RRT. Comments and recommendations regarding this plan are invited and should be addressed to Eric Nold, FOOSC, U.S. Environmental Protection Agency, Region 7, 11201 Renner Blvd., Lenexa, Kansas 66219. Major plan updates will be approved and signed by the RRT Co-Chairs before posting to the RRT’s website.

This plan will be kept under review, and changes, additional information, or corrections will be promulgated as necessary and will be consecutively numbered. Once published, changes will be considered part of the RICP for operational purposes pending a formal revision and re-issuance of the entire document. Any changes that result from reviews will be circulated to all affected jurisdictions and agencies.

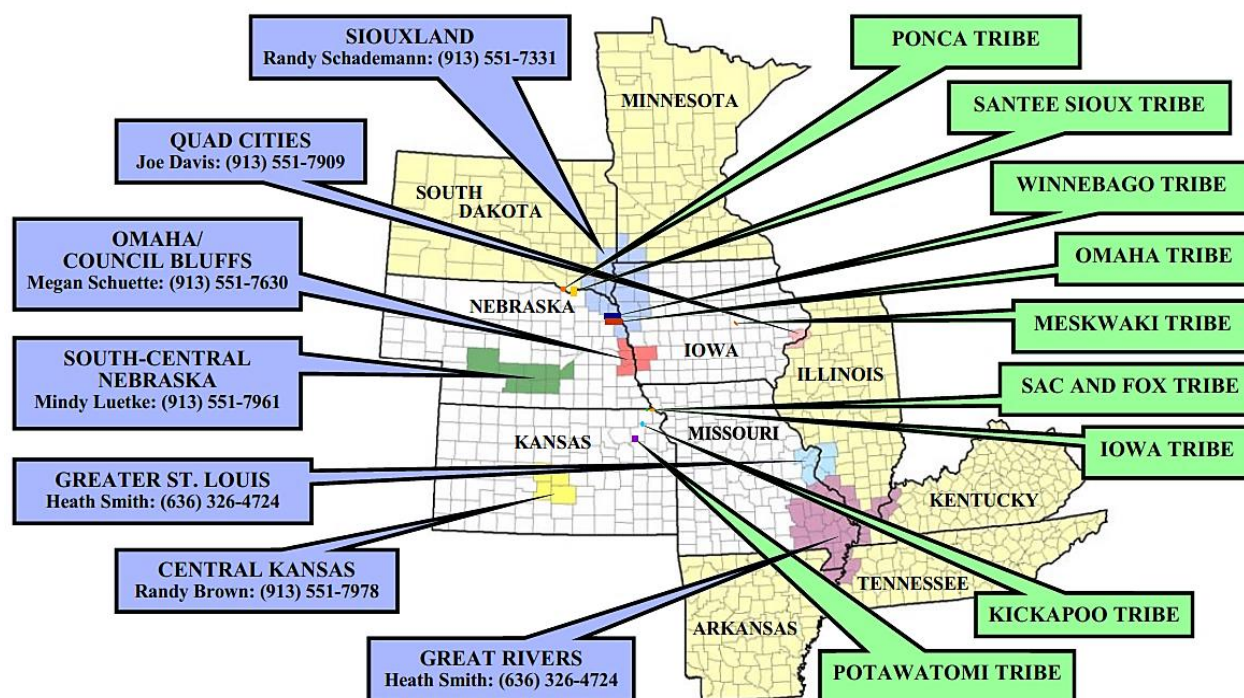
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## SUBPART B RESPONSIBILITY AND ORGANIZATION FOR RESPONSE

### 300.100 Duties of President Delegated to Federal Agencies

In [Executive Orders 12580](#) and [12777](#), the President delegated certain functions and responsibilities vested in him by the CWA, CERCLA, and OPA to the Administrator of the EPA for the inland zone and the commandant of the USCG through the secretary of the department in which the USCG is operating for the coastal zone. These functions and responsibilities include designating Areas, appointing AC members, determining information to be included in ACPs, and reviewing and approving ACPs. EPA shall assign an FOSC to each inland zone sub-area to carry out these functions and responsibilities. Figure 1 below lists EPA FOSCs assigned to Region 7 sub-areas.

**FIGURE 1 - EPA FOSC SUB-AREA ASSIGNMENTS**



### 300.105 General Organization Concepts

A listing of Federal agencies, responsibilities, functions, and resources appears in 300.170 and 300.175. Federal agencies should plan for emergencies and develop procedures for dealing with oil discharges and releases of hazardous substances, pollutants, or contaminants. Agencies should coordinate their planning, preparedness, and response activities with one another, and with affected States, Tribes, local governments, and private entities.

Three fundamental activities pursuant to the NCP are as follows:

1. Preparedness, planning, and coordination for response to a discharge of oil or release of hazardous substance, pollutant, or contaminant.
2. Notification and communications.
3. Response operations at the scene of a discharge or release.

### ***National Incident Management System***

The National Incident Management System (NIMS) is a system mandated by Homeland Security Presidential Directive (HSPD) 5, which provides a consistent, nationwide approach for the Federal Government and State, local, and Tribal governments; the private sector; and nongovernmental organizations to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size, or complexity. To provide for interoperability and compatibility among Federal, State, local, and Tribal capabilities, the NIMS includes a core set of concepts, principles, and terms. HSPD-5 identifies these as the Incident Command System (ICS); multiagency coordination systems; training; identification and management of resources (including systems for classifying types of resources); qualification and certification; and collection, tracking, and reporting of incident information and incident resources.

### ***Incident Command System and Unified Command***

Implementation of an ICS is required under 29 CFR 1910.120 and 40 CFR 311, as well as NIMS. ICS shall be established at all incidents involving hazardous substances and oil by the senior on-scene official of the first response organization to arrive at an incident. When the incident involves or affects multiple jurisdictions or agencies, Unified Command (UC) should be implemented. Procedures for implementation of an ICS and UC are in Annex III.

To document the incident planning process, jurisdictions should develop an Incident Action Plan based on ICS forms. Incident management can use locally developed ICS forms or those made available by other agencies such as USCG. A list of EPA's modified ICS forms can be downloaded from [response.epa.gov/ics\\_forms](https://response.epa.gov/ics_forms).

### **300.110 National Response Team**

National planning and coordination are accomplished through the NRT. The NRT consists of representatives from USCG, EPA, Federal Emergency Management Agency (FEMA), DOD, DOE,

U.S. Department of Agriculture (USDA), Department of Commerce (DOC), Department of Health and Human Services (HHS), Department of the Interior (DOI), Department of Justice (DOJ), Department of Labor (DOL), Department of Transportation (DOT), Department of State (DOS), General Services Administration (GSA), and Nuclear Regulatory Commission.

### **300.115 Regional Response Team**

The RRT is responsible for regional planning and preparedness activities before response actions, and for providing advice and support to the FOSC or Remedial Project Manager (RPM) when activated during a response. Region 7 RRT membership consists of a designated representative from each Federal agency participating in the NRT, and representatives from each of the four States: Iowa, Kansas, Missouri, and Nebraska.

The two principal components of the RRT mechanism are (1) a standing team, which consists of designated representatives from each participating Federal agency and State government; and (2) incident-specific teams formed from the standing team when the RRT is activated for a response.

#### ***Standing Regional Response Team***

The standing RRT serves as the regional body for planning and preparedness actions before a response action is taken. Except for periods of activation for an incident-specific response action, EPA and USCG representatives shall act as co-chairs. The chair for periods of response action will be provided by the agency providing the FOSC for the response operation. A list of RRT representatives is in Appendix D.3.

The standing RRT should:

- Continuously review regional and local responses to discharges or releases, consider available legal remedies, ensure equipment readiness, and coordinate among responsible public agencies and private organizations.
- Recommend to the NRT revisions to the NCP based on observations of response operations.
- Consider and recommend necessary changes to the RCP and ACP based on continuing review of response actions in the region.
- Be prepared to provide response resources to major discharges or releases outside the region.
- Meet at least semiannually to review response actions carried out during the preceding period, and consider changes in Federal regional, area, and local contingency plans.
- Provide reports on RRT activities to the NRT annually as prescribed by the NRT. Reports will summarize recent activities, organizational changes, operational concerns, and efforts to improve State and local preparedness.

- Review local emergency response plans at the request of LEPCs.
- Encourage States, Tribes, and local response communities to improve their preparedness for response. Conduct or participate in training and exercises to encourage preparedness activities of the response community in the region.
- Conduct advance planning for use of dispersant, surface washing agents, surface collection agents, burning agents, bioremediation agents, or other chemical agents in accordance with Subpart J of the NCP and in its capacity as the AC.
- Work to maximize participation in the national program for announced and unannounced exercises.

Area planning and coordination of preparedness and response actions are accomplished through the AC. The RA has appointed the RRT as the AC for Region 7. In Region 7, there are seven designated sub-areas with assigned EPA FOSCs (see Figure 1).

### ***Incident-Specific Regional Response Team***

Incident-specific RRTs will be activated as necessary for response operations tailored to the geographic location and nature of the incident. The RRT will be activated during any discharge or release upon a request from the FOSC or RPM, or any RRT representative to the RRT Co-Chairs. EPA or USCG will activate incident-specific RRTs for releases/discharges from DOD vessels or DOD/DOE facilities only at the specific request of the DOD or DOE agency involved. Local requests for RRT activation must be made through the affected State's RRT member. Verbal requests for RRT activation will later be confirmed in writing.

The role of the incident-specific team is determined by the operational requirements of the response to a specific discharge or release. Participation is relative to the technical nature and geographic location of the discharge or release. The RRT Chair coordinates with the RRT membership and the FOSC for the incident to determine the appropriate level of RRT member activation. Member agencies and States participating with the RRT should take care to ensure that designated representatives or alternates can function as resource personnel for the FOSC during incident-specific events.

When activated, RRT members may be requested to:

- Provide advice and recommend courses of action for consideration by the FOSC.
- Advise the FOSC on the duration and extent of Federal response, and recommend to the FOSC specific actions to respond to a discharge or release.
- Request other Federal, State, or local government, or private agencies to provide resources under their existing authorities to respond to a discharge or release or to monitor response operations.



- Monitor and evaluate reports from the FOSC.
- Recommend, if circumstances warrant, to the RRT Chair that a different FOSC should be designated.
- Ensure continual communications, as indicated in 300.125 – Notification and Communications.

The incident-specific RRT may be activated by the Chair when a discharge or release:

- Exceeds the response capabilities available to the FOSC at the incident location.
- Transects State or regional boundaries.
- Poses a substantial threat to public health, welfare, or to the environment, or to significant amounts of property.

Activation for assembly may be either by telephone or physical co-location. Partial activation may also occur where the RRT Chair deems it appropriate.

- Partial. Notice to selected RRT members that their services are required in response to a pollution incident. The activation notice will specify services requested and required. Although services of only selected members are requested, partial activation will be documented in a pollution report (POLREP) that will be distributed to all RRT members. The initial activation notice may be provided by telephone, but will be confirmed in writing.
- Full. Notice to all RRT members (except non-affected State representatives) that their services are requested in response to a pollution incident. The activation notice will specify services requested from each RRT member. The initial activation notice may be provided by telephone, but will be confirmed in writing.

When the RRT is assembled, it will meet at a time and location specified by the Chair. The Chair can deactivate the RRT when the Chair determines that the FOSC no longer requires RRT assistance. Time of deactivation will be included in a POLREP.

### **300.120 Federal On-Scene Coordinators – General Responsibilities**

The FOSC directs response efforts and coordinates all other efforts at the scene of a discharge or release in accordance with the NRF, NCP, RICP, State plans, and local plans. As part of planning and preparedness for response, FOSCs shall be predesignated by the EPA Region 7 RA (see EPA FOSC listing in Appendix D.3, Section 18.0) or USCG D8, per EPA/USCG Memorandum of Agreement (MOA) for predetermined FOSC designation. DOD and DOE shall designate an FOSC as stated in NCP part 300.120 paragraphs (c) and (d). Other Federal agencies are responsible for non-emergency removals, as stated in NCP part 300.120 (c)(2).

The FOSC is responsible for overseeing development of the ACP in the area of the FOSC's responsibility. ACPs shall, as appropriate, be implemented in cooperation with the RRT and designated State, Tribal, and local representatives. In contingency planning and response incidents, the FOSC coordinates, directs, and reviews work of other agencies, AC, States, responsible parties, and contractors to assure compliance with the NCP and RICP, decision document, consent decree, administrative order, and lead agency-approved plans applicable to the response.

The FOSC should ensure that any person designated to act as an on-scene representative is adequately trained and prepared to carry out actions under the NCP, RICP, and applicable Sub-Area Contingency Plan (SACP) to the extent practicable. FOSC responsibilities are further described in Section 300.135 of this RICP.

### **300.125 Notification and Communications**

The NRC is the national communications center for handling activities related to response actions. The NRC acts as the single point of contact for all pollution incident reporting. Notice of an oil discharge or release of a hazardous substance in an amount equal to or greater than the reportable quantity must be made immediately in accordance with the CWA and CERCLA under 33 CFR part 153, Subpart B, and 40 CFR part 302, respectively. Notification shall be made to the NRC Duty Officer, HQ USCG, Washington, D.C.—telephone (800) 424-8802 or (202) 267-2675. All notices of discharges or releases received at the NRC will be relayed immediately by telephone to the appropriate predesignated FOSC. In addition, facilities may be required to report releases/discharges of specified hazardous substances to the State Emergency Response Commission (SERC) and the LEPC under Section 304 of the Emergency Planning and Community Right-To-Know Act (EPCRA), 42 U.S.C. § 11004.

The appropriate State and Federal natural resource trustees will be notified in the event of any discharge or release affecting or threatening to affect environmentally sensitive areas, migratory waterfowl, or State- or Federally-listed threatened or endangered species. Responsibility for notification will rest with the respective OSCs. SOSC will notify affected and potentially affected trustees during state-led responses and FOSC will notify affected and potentially affected trustees during Federally-led responses. SOSC and FOSC should coordinate notifications during joint response efforts affecting State and Federal resources.

EPA maintains responsibility to notify Tribal Governments of any discharge or release affecting or threatening to affect Tribal land. Appendix D.5 to this RICP describes Region 7 protocols for maintaining emergency response contacts for Federally-recognized Tribes headquartered in or owning significant

property within the region. Processes have been established by EPA Region 7 to review emergency contacts lists at quarterly meetings of the Regional Tribal Operations Committee (RTOC) and forward changes to appropriate EPA personnel.

The Regional Emergency Operations Center (REOC) is the regional site for notification, communication, and interagency coordination during a pollution incident. The REOC or Command Center will be located at USCG D8 when an incident occurs within its jurisdiction, or at the EPA Regional Office when an incident occurs in any other area of Region 7, in accordance with the MOA in Annex I to this RICP.

Cooperating with the predesignated FOSC, the EPA REOC will coordinate communication, information, limited supplies and equipment, and other personnel and facilities necessary to allow proper function and administration of this plan during a response to an oil discharge or a hazardous substance release. The affected State and Tribe, if appropriate, as well as trustees for natural resources, will be notified of all reported spills. The FOSC will coordinate with affected State, Tribes, and water programs to verify that water intake managers are appropriately notified.

### **300.130 Determinations to Initiate Response and Special Conditions**

The President shall, in accordance with the NCP and any appropriate ACP (in Region 7, this RICP), ensure effective and immediate removal of a discharge, and mitigation or prevention of a substantial threat of a discharge of oil or release of hazardous substance [33 U.S.C. § 1321(c)]. In carrying out this mandate, the President may direct or monitor all Federal, State, and private actions to remove a discharge. The NCP authorizes EPA or USCG to act for the United States to take response measures deemed necessary to protect public health or welfare or the environment from discharges of oil or releases of hazardous substances, pollutants, or contaminants, except with respect to such releases on or from vessels or facilities under the jurisdiction, custody, or control of other Federal agencies (40 CFR § 300.130). The assigned FOSC may initiate a response. Upon approval by the FOSC, State or local governments may initiate a government response.

By law and by Presidential directive, the Secretary of Homeland Security is the Federal Coordinating Officer (FCO) responsible for coordination of all domestic incidents requiring multiagency Federal response. The Secretary may elect to designate a single individual to serve as his or her primary representative to ensure consistency of Federal support, as well as overall effectiveness of Federal incident management. When appointed, such an individual serves in the field as the FCO for the incident. The FCO deploys with a small, highly trained, mobile support staff.

The same individual will not serve as the FCO and the Federal Coordinating Officer (FCO) at the same time for the same incident. When both positions are assigned, the FCO will have responsibility for administering Stafford Act authorities. The Secretary is not restricted to Department of Homeland Security (DHS) officials when selecting a FCO.

The FCO does not direct or replace the incident command structure established at the incident. Nor does the FCO have directive authority over a FCO, a Senior Federal Law Enforcement Official, a DOD Joint Task Force Commander, or any other Federal or State official. Other Federal incident management officials retain their authorities as defined in existing statutes and directives.

For Stafford Act incidents (i.e., emergencies or major disasters), upon recommendation of the FEMA Administrator and the Secretary of Homeland Security, the President appoints an FCO. The FCO executes Stafford Act authorities, including commitment of FEMA resources and mission assignments of other Federal departments or agencies. If a major disaster or emergency declaration covers a geographic area that spans all or parts of more than one State, the President may decide to appoint a single FCO for the entire incident, with other individuals as needed serving as Deputy FCOs. In all cases, the FCO represents the FEMA Administrator in the field to discharge all FEMA responsibilities for the response and recovery efforts underway. For Stafford Act events, the FCO is the primary Federal representative with whom the SCO and other State, Tribal, and local response officials interface to determine the most urgent needs and set objectives for an effective response in collaboration with the Unified Coordination Group.

### **300.135 Response Operations**

To the extent practicable, response operations shall be consistent with Federal, State, and local plans, including this RICP, SACP, and FRPs. The NRC is the national communications center for activities related to pollution response actions. It is at USCG Headquarters in Washington, D.C. The NRC receives and disseminates FOSC and RRT reports to the NRT when appropriate, and when required, provides facilities for the National Response Team (NRT) to use for coordination of a national response action. The NRC also maintains tele-conferencing capability, as well as a technical library on oil and hazardous substances, and can evaluate chemical discharge hazards.

The REOC is the regional site for notification, communication, and interagency coordination during a pollution incident. The REOC will be in the EPA Regional Office when an incident occurs at any other area of Region 7.

As stated in Section 300.125, the EPA Region 7 REOC, at 11201 Renner Blvd., Lenexa, Kansas, will provide a predesignated FOSC, and will coordinate communication, information, limited supplies and equipment, and other personnel and facilities necessary to allow proper functioning and administration of this plan. The State, as well as trustees for natural resources, will be promptly notified of reported discharges or releases.

EPA Region 7 and USCG D8 Captains of the Port (COTP) are responsible for responding to incidents, and EPA will provide predesignated FOSCs to all pollution response activities in the inland zone. However, DOD and DOE shall designate FOSCs for releases of hazardous substances, pollutants, or contaminants from DOE and DOD facilities and vessels. EPA will provide FOSCs for all CWA discharges and non-DOD CERCLA releases unless otherwise agreed. In certain instances, USCG will act as the lead agency for actual or threatened pollution incidents involving commercial vessels or marine transportation-related facilities, in accordance with the EPA/USCG MOA in Annex I.

#### ***Federal On-Scene Coordinators – Specific Responsibilities***

The FOSC, consistent with NCP parts 300.120 and 300.125, shall direct response efforts and coordinate all other efforts at the scene of a discharge or release. As part of planning and preparations for response, FOSCs are predesignated by the regional or district head of the lead agency.

The FOSC shall, to the extent practicable, collect pertinent facts about the discharge or release, such as its source and cause; identification of potentially responsible parties; nature, amount, and location of discharged or released materials; probable direction and time of travel of the discharged or released materials; pathways to human and environmental exposure; potential impact on human health, welfare, and safety and the environment; potential impact on natural resources and property that may be affected; priorities for protecting human health and welfare and the environment; and appropriate cost documentation.

Efforts of the FOSC shall be coordinated with other appropriate Federal, State, local, and private response entities. FOSCs may designate capable persons from Federal, State, or local agencies to act as their on-scene representatives. State and local governments, however, are not authorized to take actions under Subparts D and E of the NCP that involve expenditures of CWA section 311(k) or CERCLA funds unless an appropriate contract or cooperative agreement has been established.

Coordination activities include notification to other EPA Regions and USCG D8 via their respective 24-hour emergency operations centers when an incident is expected to affect other regions defined in

Section 300.140. The downstream region should make whatever additional notifications it deems necessary. This includes contacting regional management and/or elected officials.

The FOSC should consult regularly with the RRT in carrying out the NCP and this RICP, and keep the RRT informed of activities under the NCP and this RICP. The FOSC shall advise the support agency as promptly as possible of reported releases/discharges.

During a response under the NRF, the FOSC should evaluate incoming information and immediately inform the FCO or the appropriate representative of potentially significant developments involving hazardous materials (HAZMAT).

The FOSC is responsible for addressing worker health and safety concerns at a response scene in accordance with the NCP. In instances of possible public health emergency, the FOSC should notify the HHS representative to the RRT. Throughout response actions, the FOSC may call upon the HHS representative for assistance in determining public health threats, and call upon the Occupational Safety and Health Administration (OSHA) and HHS for advice on worker health and safety concerns.

The FOSC/SOSC shall promptly notify the appropriate trustees for natural resources of discharges or releases that are injuring or may injure natural resources under their jurisdiction. The FOSC shall consult with and coordinate all response activities with the natural resource trustees and natural resource managers.

When the FOSC becomes aware that a discharge or release may affect any endangered or threatened species, or result in destruction or adverse modification of the habitat of such species, the FOSC must consult with the U.S. Fish and Wildlife Service (USFWS) (see Section 300.305(3)), review the Fish and Wildlife Sensitive Environments Plan (FWSEP) (Appendix A.1), and the Endangered Species Act (ESA) MOA (Annex V).

When the FOSC becomes aware that a discharge or release may affect any historic properties, the FOSC should consult with the State Historic Preservation Office (SHPO), Tribal Historic Preservation Office (THPO), or other State and Federal historic management agencies, as set forth in the Programmatic Agreement on Protection of Historic Properties During Emergency Response under the NCP (Programmatic Agreement, Annex VI).

If the FOSC is not the first to arrive at the scene, the first qualified Federal official associated with an RRT member agency to arrive at the scene of a discharge or release should coordinate activities under this

RICP, and is authorized to initiate, in consultation with the FOSC, any necessary actions normally carried out by the FOSC until arrival of the predesignated FOSC. This official may initiate Federal fund-financed actions only as authorized by the FOSC or, if the FOSC is unavailable, the authorized representative of the lead agency.

### ***Incident Response – Federal Facilities***

All Federal agencies should plan for emergencies and develop procedures for dealing with oil discharges and releases of hazardous substances, pollutants, or contaminants from vessels and facilities under their jurisdiction. All Federal agencies, therefore, are responsible for designating the office that coordinates response to such incidents in accordance with the NCP and other applicable Federal regulations and guidelines.

For releases of hazardous substances, pollutants, or contaminants that are on, or the sole source of the release is from, any facility or vessel under the jurisdiction, custody, or control of DOD or DOE, DOD or DOE shall provide FOSCs/RPMs for taking all response actions. In cases of jurisdiction, custody, or control by Federal agencies other than EPA, DOD, or DOE, such agencies shall provide FOSCs for all removal actions that are not emergencies. If DOD (including the Department of the Army) or DOE provides the FOSC for removal operations in response to an off-post/off-site or potential off-post/off-site release, the FOSC may request the EPA Co-chair to provide support by facilitating FOSC/RRT coordination and communication. Decisions regarding support by RRT agencies would, however, be made as usual by the FOSC. DOD will be the removal response authority with respect to incidents involving DOD military weapons and munitions, or weapons and munitions under the jurisdiction, custody, or control of DOD.

EPA FOSCs may be requested to provide technical assistance to the lead agency FOSC responding to a release or threatened release. In the event of a “classic emergency” on Federal agency property other than a DOD or DOE property, EPA retains response authority, and EPA FOSCs may respond and later initiate cost recovery actions against the potentially responsible party (PRP).

“Lead agency” means the agency that provides the FOSC/RPM to plan and implement response action under the NCP. EPA, USCG, another Federal agency, or a State (or political subdivision of a State) operating pursuant to a contract or cooperative agreement executed pursuant to Section 104(d)(1) of CERCLA, or designated pursuant to a Superfund Memorandum of Agreement (SMOA) entered into pursuant to Subpart F of the NCP or other agreements, may be the lead agency for a response action.

Under the Nuclear/Radiological Incident Annex to the NRF, regarding off-site radiological releases from Federal facilities, DOE coordinates Federal radiation monitoring activities during the emergency phase (first few days). Then EPA assumes this responsibility from DOE during the intermediate and long-term phase of assessment and monitoring (week to months). This hand-off will be negotiated between the two agencies. If the incident is severe, the long-term phase could extend beyond 1 year. EPA response will involve emergency-response-trained individuals from the two national laboratories in Las Vegas, Nevada, and Montgomery, Alabama. The lead Federal agency handles on-site radiological releases under the Federal Radiological Emergency Response Plan (FRERP).

If CERCLA authority is invoked, the response action will proceed in accordance with the NCP, and will be limited to cleanup of certain releases of radionuclides, including at sites of man-made radiation.

### ***Responsible Party Policy***

Obligations of the Responsible Party (RP) to notify the NRC when a spill exceeds the reportable quantity for a hazardous substance is established by statute. The NRC's responsibility to notify EPA and other agencies of spills is similarly delineated in Federal statutes. Beyond these initial notifications, however, it is recognized that notifications evolve independently for each incident. Decisions on notification will depend on volume of material released, perceived threat to human health or the environment posed by the release, capability of an agency to handle the situation, and personal preferences and historical working relationships. Initial notifications might originate with an RP, but these also come from the public or via the news media.

The RP has primary responsibility for cleanup of a discharge or release. The response shall be conducted in accordance with the RP's applicable response plan. Section 311(c)(3)(B) of CWA, 33 U.S.C. § 1321(c)(3)(B), requires an owner or operator of a facility participating in removal efforts to act in accordance with the NCP and the applicable response plan. Section 311(j)(5)(C) of CWA requires that these response plans shall:

- (i) be consistent with the requirements of the NCP and this RICP;
- (ii) identify the qualified individual having full authority to implement removal actions, and require immediate communication between that individual and the appropriate Federal official and the persons providing personnel and equipment pursuant to clause (iii);
- (iii) identify, and ensure by contract or other means approved by the President, availability of private personnel and equipment necessary to remove to the maximum extent practicable a worst-case discharge (including a discharge resulting from fire or explosion), and to mitigate or prevent a substantial threat of such a discharge;



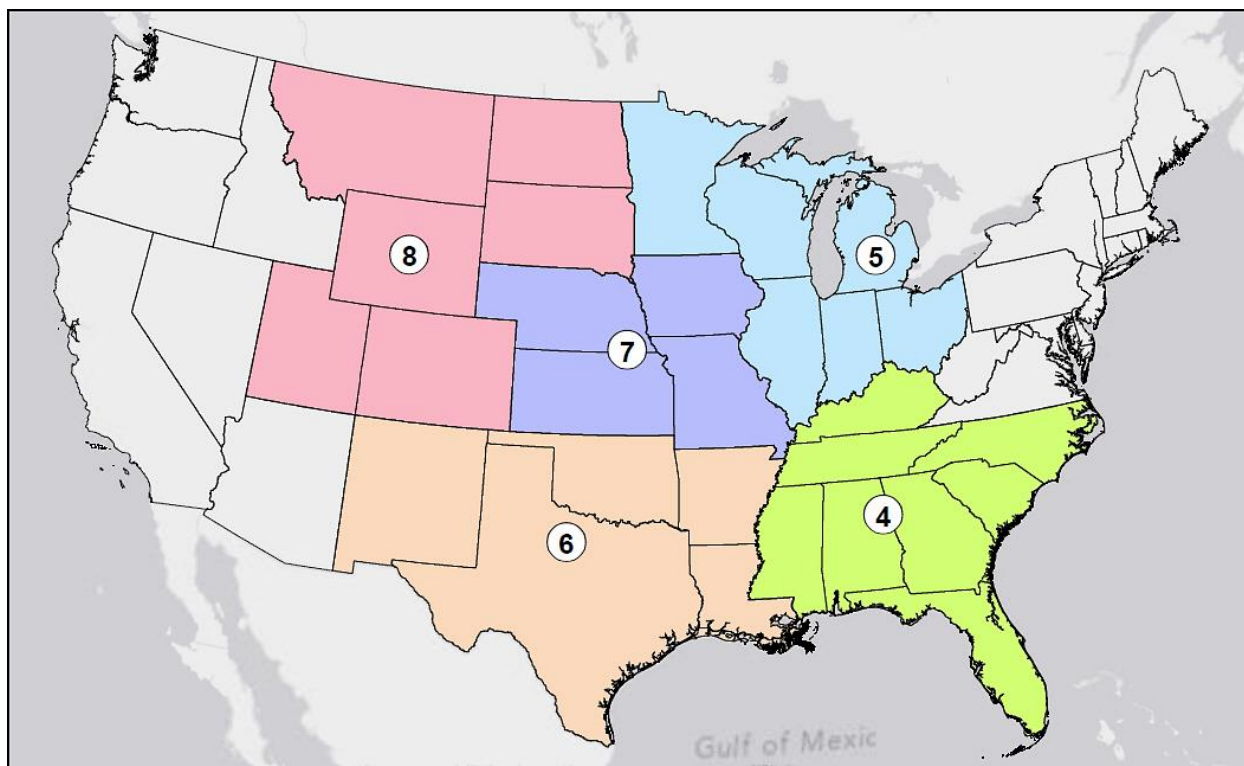
- (iv) describe the training, equipment testing, periodic unannounced drills, and response actions of persons on the vessel or at the facility, to be carried out under the plan to ensure the safety of the vessel or the facility and to mitigate or prevent the discharge, or substantial threat of a discharge;
- (v) be updated periodically;
- (vi) be resubmitted for approval of each significant change. All owners or operators of a tank vessel or facility that are required by OPA 90 to submit a response plan shall do so in accordance with applicable regulations. Facility and tank vessel response plan regulations, including plan requirements, are in 33 CFR § 154 and 40 CFR § 112, respectively. Before approval, facility and vessel response plans shall be reviewed for consistency with this RICP.

As defined in OPA 90, each RP for a vessel or a facility from which oil is discharged, or which poses a substantial threat of a discharge, into or upon the navigable waters or adjoining shorelines or the Exclusive Economic Zone, is liable for removal costs and damages specified in Section 311(f) of CWA, 33 U.S.C. § 311(f). Any removal activity undertaken by the RP must be consistent with provisions of the NCP, RICP, and the applicable response plan required by OPA 90. If directed by the FOSC at any time during removal activities, the RP must act accordingly.

### **300.140 Multi-Area Responses**

During a multi-regional response, oil discharges or releases of hazardous substances that occur within Region 7 may originate in or affect EPA Region 4 (Kentucky, Tennessee), EPA Region 5 (Minnesota, Wisconsin, Illinois), EPA Region 6 (Arkansas, Oklahoma), EPA Region 8 (Colorado, Wyoming, South Dakota), or USCG D8. The lead region or district responsibility will normally depend on the location of the origin of the discharge or release. Region 7 will implement this RICP to coordinate response efforts when response to oil discharges or releases of hazardous substances is led by stakeholders listed in this plan. If a response originates outside Region 7 but impacts the Region 7 area, Region 7 will defer to the response lead. Localized response plans are covered in Subpart C. Figure 2 on the following page depicts EPA Regions bordering Region 7.

**FIGURE 2 – ENVIRONMENTAL PROTECTION AGENCY REGIONS**



If a discharge or release affects areas covered by two or more RCPs, the response mechanism of both may be affected. In this case, response actions of all regions concerned shall be fully coordinated as detailed in the RCPs.

If a discharge or release affects two or more areas, EPA, USCG, DOD, DOE, or other lead agency, as appropriate, shall primarily consider the area most vulnerable to the threat in determining which agency should provide the FOSC or RPM. The RRT shall designate the FOSC or RPM if the RRT member agencies with response authority within the affected area are unable to agree on the designation. The NRT shall designate the FOSC or RPM if members of one RRT or two adjacent RRTs are unable to agree on the designation.

### **300.145 Special Teams and Other Assistance Available to FOSCs**

The National Strike Force (NSF) is a special team established by USCG, including the three USCG Strike Teams (Atlantic, Gulf, and Pacific), the Public Information Assist Team (PIAT), and the National Strike Force Coordination Center. The NSF is available to assist FOSCs/RPMs in their preparedness and response duties.

The NSF provides trained personnel and specialized equipment to assist the FOSC in training for spill response, stabilizing and containing the discharge or release, and monitoring or directing response actions of RPs and/or contractors. The FOSC has a specific team designated for initial contact, and may contact that team directly for any assistance. The Atlantic Strike Team has been predesignated to support EPA Region 7.

The USCG Incident Management Assistance Team (CG-IMAT) provides qualified, ICS/NIMS-trained, experienced personnel for deployment and assistance to Coast Guard Incident Commanders to protect against, respond to, recover from, and mitigate effects of all-hazard incidents and events to reduce loss of life and property, and impacts on the environment.

USCG PIAT is an element of the CG-IMAT, available to help FOSCs meet communication needs during an incident. The PIAT is a four-person team that provides crisis communications expertise during oil spills, HAZMAT releases, marine accidents, natural disasters, and terrorism incidents.

Additional support is available to FOSCs, including the Environmental Response Team (ERT), Scientific Support Coordinators (SSC), Radiological Assistance Teams (RAT), National Pollution Funds Center (NPFC), National Decontamination Team (NDT), and Environmental Emergency Response Unit (EERU). (See the NCP, Section 300.145, and the NRF). Support is also available from the EPA Radiological Emergency Response Team (RERT) based in Las Vegas, Nevada and Montgomery, Alabama.

The Superfund Technical Assessment and Response Team (START) is contracted to provide technical expertise for the response and to investigate oil and hazardous substances incidents. The team has personnel trained in health and safety, multimedia field monitoring and sampling, incident documentation, cost monitoring, cleanup restoration, and disposal techniques during oil and hazardous substances incidents.

The Emergency Rapid Response Services (ERRS) Contract is a contracting network that may be used by the FOSC to provide support for all Federally-funded emergency cleanup operations on oil and hazardous substances releases. The ERRS contractor operates a 24-hour, 7-day-a-week call center to maintain response capability and accept and implement delivery orders. Delivery orders may be initiated within a predetermined response time to support the FOSC with trained personnel and equipment to control, stabilize, clean up, and subcontract transportation and disposal during oil and hazardous substances release.

NOTE: Response equipment available from the special teams listed above is listed in Appendix C.1.

### **300.150 Worker Health and Safety**

EPA and OSHA protection standards for workers (1910.120) implement Section 126 of Title I of the SARA of 1986. Title I directs OSHA and EPA to publish regulations to ensure health and safety of all workers potentially exposed to risks present during hazardous waste operations and emergency response. The Worker Protection Standards apply to employers whose employees are engaged in hazardous waste operations and emergency response.

OSHA regulations apply directly to all Federal and private employees in States without OSHA-approved plans. In States (in Region 7, the State of Iowa) having an OSHA-approved plan, those State (Iowa) regulations apply to State, local, and private employees. EPA's workers-protection regulations cover State and local government employees without OSHA-approved plans.

Additionally:

- Response actions under the NCP will comply with provisions for response action worker safety and health in 29 CFR 1910.120.
- In a response action by an RP, the RP must assure that an occupational safety and health program consistent with 29 CFR 1910.120 is in place for protection of workers at a response site.
- When a State or political subdivision of a State without an OSHA-approved State plan is the lead agency for a response, the State or political subdivision must comply with standards in 40 CFR part 311, promulgated by EPA pursuant to Section 126(f) of SARA. In Region 7, Iowa is the only State with an OSHA-approved State plan.

### **300.155 Public Information and Community Relations**

The FOSC may request a public information specialist to handle media and community relations. The NCP (300.415) requires preparation of a community relations plan under certain circumstances. Public information coordination through the Joint Information Center is described in Appendix H of the NRF ESF #10 Supplement. At a minimum is need to disseminate emergency public information and warning to the primary impacted areas and contiguous areas. Depending on incident size, it may be necessary to respond to local, State, regional, national, and international media regarding political, governmental, and individual inquiries about situational awareness, information sharing, and information gathering. Region 7 will implement an Information Collection Plan for a major oil spill or HAZMAT incident.

Information dissemination relating to natural resource damage assessment (NRDA) activities shall be coordinated through the lead administrative trustee. The lead administrative trustee may assist the FOSC by disseminating information regarding issues relating to damage assessment activities.

### **300.160 Documentation and Cost Recovery**

Section 300.335 outlines the types of funds that may be available to remove certain oil and hazardous substance discharges. For discharges/releases of oil or hazardous substances, pollutants, or contaminants, the following provisions apply:

During all phases of response, the lead agency shall complete and maintain documentation to support all actions under the RICP and to form the basis for cost recovery. Overall, documentation shall be sufficient to convey the source and circumstances of the discharge/release; identity of responsible parties; response action taken; accurate accounting of Federal, State, or private party costs incurred for response actions; and impacts and potential impacts on public health and welfare and the environment. Where applicable, documentation shall State when the NRC received notification of a release of oil or discharge of a reportable quantity.

Information and reports obtained by the lead agency for fund-financed response actions shall, as appropriate, be transmitted to the NPFC. Copies can then be forwarded to the NRT, members of the RRT, and others, as appropriate.

The lead agency shall make available to the trustees of affected natural resources information and documentation that can assist the trustees in determination of actual or potential natural resource damages. Response actions undertaken by the participating agencies shall proceed under existing programs and authorities when available. Federal agencies are to make resources available, expend funds, or participate in response to discharges and releases under their existing authority. Further funding provisions for discharges of oil are described in 300.335.

Documentation and financial management under ESF #10 shall be consistent with the Financial Management Annex to the NRF, and other provisions of this RICP.

### **300.165 FOSC Reports**

FOSC reports will be submitted when requested by the RRT or NRT.

### **300.170 Federal Agency Participation**

Federal agencies listed in Section 300.175 have duties established by statute, executive order, or Presidential directive that may apply to Federal response actions that follow or prevent discharge of oil or release of a hazardous substance, pollutant, or contaminant. Federal agencies may be called upon by an FOSC during response planning and implementation to provide assistance in their respective areas of expertise. Some of these agencies also have duties relating to restoration, rehabilitation, replacement, or acquisition of natural resources equivalent to those damaged or lost as a result of such discharge or release.

Specifically, Federal member agency responsibilities include:

- Assisting the RRT and FOSCs in formulating Region 7's RICP
- Informing the RRT of changes in availability of their respective response resources
- Reporting discharges and releases from facilities or vessels under their jurisdiction or control.

Additional Federal agency responsibilities are described in Section 300.170 of the NCP and in the NRF and ESF #10 Support Annex.

### **300.175 Assistance by Federal Agencies**

During preparedness planning or an actual response, various Federal agencies may be called upon to provide assistance in their respective areas of expertise, as in section 300.175 of the NCP. Those Federal agencies are:

EPA

DHS

USCG

FEMA

DOD

U.S. Army Corps of Engineers (USACE)

U.S. Navy Supervisor of Salvage (SUPSALV)

DOA

USDA

Forest Service

Agriculture Research Service

Natural Resource Conservation Service

Animal and Plant Health Inspection Service

Food Safety and Inspection Service

DOC

National Oceanic and Atmospheric Administration (NOAA)

Department of Health and Human Services

Public Health Service

Agency for Toxic Substances and Disease Registry (ATSDR)

Centers for Disease Control and Prevention

Indian Health Service

National Institutes of Health

National Institute for Environmental Health Sciences

DOI

Bureau of Land Management (BLM)

USFWS

United States Geological Survey (USGS)

Office of Surface Mining

National Park Service (NPS)

Bureau of Reclamation (BuRec)

Bureau of Indian Affairs (BIA)

DOJ

DOL

OSHA

DOS

Nuclear Regulatory Commission

GSA

### **300.180 State and Local Participation in Response**

Each governor is requested to designate a lead State agency that will coordinate State-lead response operations. That agency is responsible for designating the State's representative to the RRT and the State's FOSCs. The State's representative may participate fully in all activities of the RRT.

State and local government agencies are expected to develop contingency plans consistent with the NCP and this RICP. State and local representatives will be encouraged, along with Federal representatives, to actively participate in development of appropriate sub-area plans that are consistent with contingency plans developed by LEPCs, as required under EPCRA. Federal, State, and local officials will continually work together to improve coordination of efforts during responses to discharges of oil or releases of hazardous substances.

The lead State agency is responsible for communicating and coordinating with other State agencies as appropriate. The lead State agency will also act as liaison with lead agencies of local government. Local governments are invited to participate in activities on the RRT as may be arranged by the State's representative.

In the event of an incident, the State RRT member/representative will be notified via the NRC. NRC notifications are sent to the appropriate State response agency per protocols developed by the State, and are defined in the following paragraphs. The State response agency will ensure completion of the following actions, as appropriate:

- Notify downstream water users (municipal, industrial, and agricultural) of all discharges and releases that may threaten them.
- Notify and coordinate with other State and local agencies, as appropriate, including State trustees for natural resources (see Appendix D.3).
- Be responsible, in conjunction with the EPA representative, for:
  - Assisting EPA in determining and providing advice on the degree of hazard of the discharge or release to public health and safety
  - Assisting EPA in assessment of environmental damage caused by the discharge or release
  - Assuming responsibility for operation and maintenance of a site, if necessary and when no RP has been identified.

### ***The State of Iowa***

The Iowa State Department of Natural Resources (IDNR) is the State agency that provides a representative to the RRT, enforces environmental laws, and coordinates response to spills. If a threat to public safety or the environment exists, IDNR coordinates requested assistance from State agencies, and acts as the liaison with Federal officials. Agency personnel are available 24 hours a day for technical assistance to abate exposure of citizens to HAZMAT, and for investigation of pollution incidents and assessment of environmental damages. Requests for disposal sites and incinerators for waste oil should be coordinated through IDNR. Regarding radiological incidents, the State Radiation Program is the lead in coordination of response.

### ***The State of Kansas***

The Kansas Department of Health and Environment (KDHE) is the lead agency in the State for enforcement of environmental laws and response to oil and hazardous substances release incidents. A member of this department is the RRT representative. Regarding radiological incidents, the State Radiation Program is the lead in coordinating a response.



### ***The State of Missouri***

The Missouri Department of Natural Resources (MDNR), Division of Environmental Quality assists response to HAZMAT incidents and oil discharges in accordance with MDNR's Hazardous Substance Emergency Response Plan. A member of this department is the RRT representative. Regarding radiological incidents, several State agencies have responsibilities and authority to respond. Responses to radiation issues at facilities are led by the Missouri Department of Health and Senior Services. Transportation and environmental responses to radiation incidents are led by MDNR. Both of these agencies typically coordinate and communicate with each other on radiation responses.

### ***The State of Nebraska***

The Nebraska Department of Environmental Quality (NDEQ) coordinates the State's responses to a discharge of oil or a release of a hazardous substance. A member of this department is the RRT representative. Regarding radiological incidents, the State Radiation Program is the lead in coordinating a response.

### ***Natural Resources***

State conservation departments, through their respective State representatives on the RRT, shall coordinate fish and wildlife preservation measures. When necessary, the appropriate State agency will close areas to commercial and recreational fishing due to health hazards.

### ***Local Emergency Planning Committees***

LEPCs are responsible for development and maintenance of local emergency response plans in accordance with EPCRA, Sections 301 to 303. LEPC members include various representatives from local governmental agencies, emergency responders, environmental groups, and local industry. Emergency plans developed by these groups must include identity and location of HAZMAT, procedures for immediate response to a chemical accident, ways to notify members of the public of actions they must take in the event of a discharge or release, names of coordinators at plants, and schedules for testing the plan.

The local emergency response plan must be reviewed by the SERC. RRTs may review these plans and provide assistance if the SERC or LEPC so requests. Federal contingency plans provide for coordination with local governments.

### **300.185 Non-governmental Participation**

The NRT's Use of Volunteers Guidelines For Oil Spills guides use of volunteers during a discharge/release. While 31 U.S.C. 1342 prohibits EPA and USCG personnel from accepting an offer of volunteer services, a large oil spill that threatens inland waters of the United States probably qualifies as an emergency, and thus allows Federal government personnel to accept voluntary services. The NCP requires the FOSC to identify uses of volunteers during response actions in ways that should generally not involve physical removal or remedial activities. Suggested alternative duties are as follows:

- Wildlife Cleanup (see Appendix A.1, Section 6.3 for additional information and requirements)
- Construction
- Crowd Control
- Administrative / Logistical Work
- Community Liaison
- Public Relations.

OSHA regulations require specific initial training of workers prior to their engagement in hazardous waste operations or emergency response that could cause exposure to safety and health hazards. In 2010, the Corporation for National and Community Service entered into a Memorandum of Understanding (MOU) with USCG and EPA. Refer to the attached MOU in Annex VIII.

Industry groups, academic organizations, and others are encouraged to commit resources for response operations. This plan anticipates and encourages representation from industry, landowners, volunteer groups, and other stakeholders. Non-governmental participants will have an ex-officio role on the AC.

Several non-governmental entities can provide assistance during a pollution response action within EPA Region 7. A partial listing of this information is provided below, and further information appears in Section 300.210 of the NCP:

- Chemical Transportation Emergency Center (CHEMTREC) – Provides technical expertise, coordination of chemical manufacturers, and emergency response information on chemical spills. Can be accessed by calling 1-800-424-9300 (24-hour emergency number); or for planning purposes, call (202) 887-1255 during business hours.
- Chemical Manufacturers' Association (CMA) is an association of chemical manufacturers located in Washington, D.C. CMA's Community Awareness and Emergency Response (CAER) program has provided guidance to chemical plant manufacturers regarding interactions with the local community in development of local HAZMAT response plans. Contact through CHEMTREC, 1-800-424-9300.

- Bureau of Explosives – Association of American Railroads, Washington, D.C., can provide technical advice during railroad incidents. The Bureau of Explosives may provide assistance in the areas of accident assessment, classification of materials, environmental impacts, methods of cleanup, and mechanical evaluations of trains. Contact through CHEMTREC, 1-800-424-9300.
- Kansas State University (KSU) Hazardous Waste Research Center – KSU leads a seven-institution consortium consisting of itself, Montana State University, and the Universities of Iowa, Missouri, Montana, Nebraska, and Utah. The Center was established in February 1989 to conduct research concerning identification, treatment, and reduction of hazardous substances resulting from various agricultural and industrial activities. The Center's Technology Transfer Director can be contacted at Ward Hall, KSU, Manhattan KS 66506-5102; telephone: (785) 532-6519.
- American Petroleum Institute (API), 2100 L Street, NW, Washington, D.C. 20037; telephone: (202) 682-8000. This organization represents major producers and refiners of the petroleum industry, and can provide technical and operational expertise.
- National Pesticides Telecommunications Network; 24-hour number: (800) 858-7378.
- Chlorine Institute; telephone: (202) 775-2790.
- Tri-State Bird Rescue and Research, Inc. has extensive experience in bird rescue and rehabilitation; telephone: (302) 737-7241; 24-hour pager: 1-800-710-0695 or 0696.
- International Bird Rescue Research Center also has extensive experience in bird rescue and rehabilitation; telephone: (707) 207-0380.

Any wildlife rescue and rehabilitation will be directed by the affected State's natural resource trustee and USFWS.

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## **SUBPART C PLANNING AND PREPAREDNESS**

### **300.200 General**

The RRT and Area Committee serve as a planning and preparedness bodies to support the FOSC and are encouraged to include membership from Federal, State, and local governments and private entities (as ex-officio members). The AC is not a response-support body and is not required to participate in response efforts, but its members should have knowledge of response procedures.

### **300.205 Planning and Coordination Structure**

National: The NRT is responsible for national planning and coordination.

Regional: RRTs are responsible for regional planning and coordination. In addition, the EPA RRT Co-chair is responsible for the ESF #10 components of this plan. This RICP consolidates the RCP, the ACP, and the ESF #10 (NRF) into a single plan.

Area: This RICP covers the Standard Federal EPA Region 7: Iowa, Kansas, Missouri, and Nebraska. Planning for sub-areas includes the four Metropolitan Statistical Areas (MSA) of Omaha/Council Bluffs, Kansas City, St. Louis, and the Quad Cities, as well as the Missouri River Basin.

State: The SERC of each State, appointed by the Governor, is to designate emergency planning districts, appoint LEPCs, supervise and coordinate their activities, and review local HAZMAT response plans.

Local: Emergency planning districts are designated by the SERC to facilitate preparation and implementation of emergency plans. Each LEPC is to prepare a local HAZMAT response plan for the emergency planning district, and receive and process requests from the public for information generated by Title III reporting requirements.

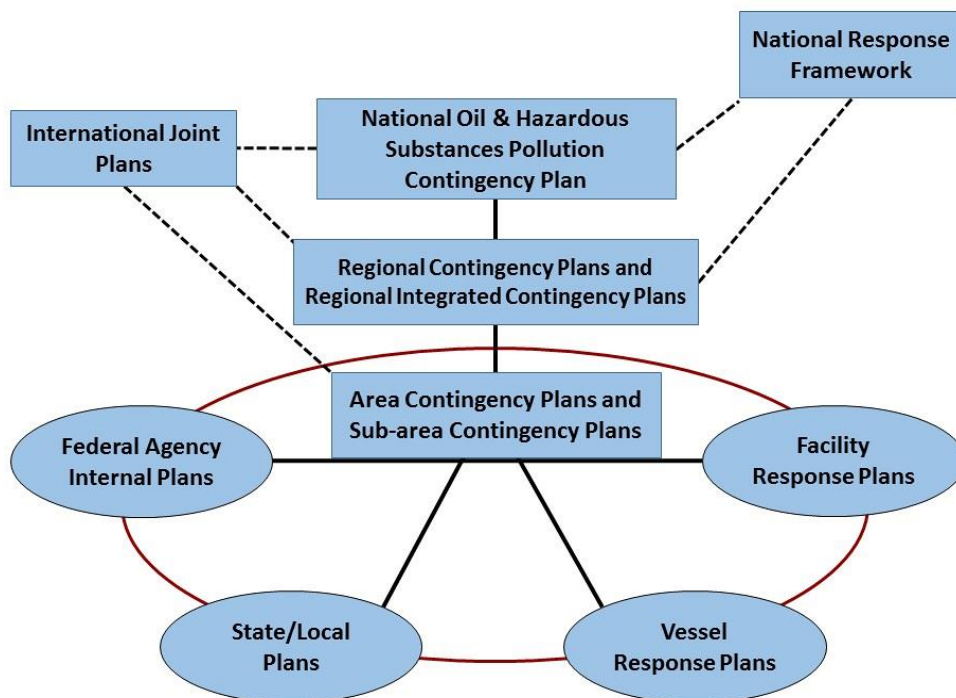
On-Shore Facilities: Those that could be expected to cause substantial harm to the environment, because of their location, are required to plan for a worse-case discharge.

### **300.210 Federal Contingency and Response Plans**

The NCP's Section 300.210 identifies three levels of Federal contingency plans for oil discharges and hazardous substance releases: National, Regional, and Area. In Region 7, the RRT also serves as the AC, and this RICP fulfills all NCP requirements for both an RCP and an ACP.

As noted in Section 130.130, in the event of an incident requiring a coordinated Federal response, the NRF may be activated. Figure 3 shows the relationship among various levels of oil and HAZMAT response plans under and related to the NCP.

**FIGURE 3 – RELATIONSHIP OF PLANS**



Section 311(j)(4)(C)(i), of the CWA requires that this RICP, when implemented in conjunction with the NCP, be adequate to remove a worst-case discharge (WCD). Region 7 determines a WCD to involve *ANY* discharge or threat of a discharge in sufficient quantities to impact public health, welfare, or the environment, where the parties responsible for the threat or discharge are unwilling or unable to perform the required response actions. This RICP regards a WCD in an identical manner.

An oil spill scenario applicable to Region 7 is described in the following section. The formulation provides parameters for what may be a WCD. The information will be updated as more FRPs are received and as additional regulations are developed.

### ***Oil Spill Scenario (Worst-Case)***

Assumptions: In all cases, assume parties contributing to the spill are not or cannot take appropriate response action.

Hazard Assessment: Each State within Region 7 is unique, but the Region 7 States also share common concerns. By examining the history of incidents (i.e., natural or technological accidents), inevitable future occurrences can be better met. Understanding the community or surrounding area is crucial for proper planning. An industry that produces, uses, or stores oil may pose a high risk of a technological hazard to the community. Although the community may not be at risk, the facility may be close to or within a highly vulnerable area. For example, a facility may be near a fault line or along a river, or may pose risk due to nearby industrial or transportation activities. The hazard assessment should include facilities' potential impact on economically or environmentally sensitive areas.

Vulnerability Analysis: Particular points of environmental and economic sensitivity include, but are not limited to, the Environmentally and Economically Sensitive Areas within Iowa, Kansas, Missouri, and Nebraska, which are listed in Appendices A.2 and A.3.

Seasonal/Geographic Considerations: Each State could undergo widespread or localized flooding due to heavy rains, flooding caused by ice jams on major rivers, and tornados. Potential for disastrous earthquakes exists along the New Madrid Fault in southeast Missouri and along the Nemaha Uplift, a buried feature extending from the Kansas-Nebraska border in northeast Kansas to south-central Kansas.

### ***Response Priorities***

EPA Region 7, to further development of WCD scenarios, created a list of suggestions and checklists to provide quick access to critical information to assist facilities in formulating a strategy to prepare for and address a WCD. This compilation is neither a textbook nor a substitute for training, qualified technical advice, or common sense. It addresses response only to oil spills that could reach water. The following should be considered when attempting to minimize effects of an oil spill:

Health and safety are the first priorities. Responders should be alert to:

- Fire and explosion potential from vapors at or near the spill site
- Potential toxic effects of the spill and chemical countermeasures
- Proper use of safety equipment
- Hyperthermia, hypothermia, frostbite, or sunburn

- Small boat safety
- Helicopter and aircraft safety.

**Speed is essential in recovery efforts.** Responders should keep in mind that:

- Oil spreads and drifts rapidly; delays will rapidly increase the area needing cleanup.
- If in situ burning is a desirable alternative and a viable option, best results will come from earliest ignition possible because of potential for evaporation and emulsification.
- Sustained combustion requires at least 0.1 inch (2-3 mm) of slick thickness.
- Oil is usually easier to deal with on water than after it has contacted the shore.
- Any proposal for in situ burning requires consultation among the FOSC, the State member of the RRT, Federal and State natural resource trustees, and the State air permitting agency; thus development of a comprehensive proposal early in the spill response phase is desirable.

### ***Cleanup Priorities***

The nine oil spill remediation steps are:

1. Stop the discharge.
2. Contain and remove spilled oil at the source to the extent possible.
3. Assess the amount and type of spilled oil via surveillance and tracking.
4. Follow procedures defined in contingency plans; modify them as needed; document all actions.
5. Protect threatened resources and monitor shore-bound oil.
6. Contain and remove offshore oil that has escaped the primary control operation at the source.
7. Skim oil that has pooled in natural collection areas such as sloughs and coves.
8. Clean up shorelines where oil has stranded, to the extent possible and advisable.
9. Dispose of collected materials in accordance with applicable regulations.

### ***Shortfalls***

Potential shortfalls expected in responses to any contemplated type of oil spill may include the following:

- Equipment:
  - Logistics of staging and maintaining operable equipment
  - Limited availability and shelf-life of specialized cleanup and/or monitoring equipment
  - Inaccessibility of the discharge or release by the equipment available.
- Personnel:
  - Immediate unavailability of skilled personnel



- Unfamiliarity of personnel from outside the area with the terrain or available equipment
- Need to integrate personnel from various agencies and areas, and with various experiences into an effective response.
- Funds:
  - Exceedance of funds available to the RP by cleanup costs
  - Dependence of availability of funds through the NPFC on knowledge of the FOSC and the SOSC.
- Possible delayed response by some or all parties because of remoteness of spill location
- Possible substantial delays in identifying and obtaining additional resources.

### ***Procedures and Criteria for Terminating the Cleanup***

EPA Region 7 cleanup procedures will continue until joint determination to cease cleanup operations by the FOSC and SOSC, natural resource trustees, RP, and local incident commander.

Region 7 hosts very diverse industries and ecological zones. A spill of one substance and size might minimally affect one area but devastate another. Procedures and response guidelines will be written for Region 7 and incorporated into this plan.

### ***Spill History***

To prepare for the inevitable oil spill incident, a responder must know the possible parameters of potential occurrences. Examining the spill history of an area is a good way to anticipate what is likely to happen in the future. All oil spills of reportable quantity are to be reported to the NRC: 1-800-424-8802.

When spills are reported, notice is disseminated to the predesignated USCG/EPA FOSC in the jurisdiction where the spill occurred for possible response actions. Research conducted by States from 2000, separating out oil-specific information, resulted in a listing of the larger petroleum spills within Region 7.

### ***Categories***

Specific spill categories were researched from the State's spill databases in each Region 7 State. These categories are pipelines, fixed facilities, highways, underground tanks, aboveground tanks, and railways. The largest discharge and/or release from each type of source since 2000 is listed in Table I. Spill data on potential discharges involving vessels were obtained from USCG.

Table I lists historical worst-case oil spills in the States of Region 7. The data come from natural, human, and technological events (see Appendix F).

**TABLE I**  
**WORST-CASE OIL SPILLS IN IOWA, KANSAS, MISSOURI, AND NEBRASKA SINCE 2000**

| SOURCE            | IOWA                          | KANSAS                                    | MISSOURI                     | NEBRASKA                                     |
|-------------------|-------------------------------|---|------------------------------|--|
| Pipeline          | 46,380 gal. Diesel            | 231,000 gal. Crude Oil                    | 200,298 gal. Crude Oil       | 119,000 gal. Gasoline, Diesel, JP-8 Jet Fuel |
| Fixed Facility    | 10,000 gal. Asphalt Oil       | 63,000 gal. Natural Gasoline              | 5,000 gal. 10-weight Oil     | 70,000 gal. Diesel                           |
| Highway           | 8,500 gal. Gasoline           | 9,493 gal. Natural Gasoline               | 9,000 gal. Gasoline          | 7,800 gal. Denatured Alcohol                 |
| Underground Tank  | 10,000 gal. Gasoline          | 51,408 gal. Diesel, Fuel Oil, Heating Oil | 100,000 gal. Gasoline        | 11,000 gal. Petroleum                        |
| Above Ground Tank | 31,500 gal. Diesel            | 1,108,800 gal. Gasoline                   | 20,000 gal. Gasoline, Diesel | 46,200 gal. Gasoline                         |
| Railway           | 49,000 gal. Denatured Ethanol | 12,000 gal. Diesel, Fuel Oil, Heating Oil | 170,000 gal. Waste Oil       | 20,660 Asphalt Cement                        |

Source: State-provided petroleum spill history data (April and May 2017).

Table II lists WCD possibilities for a vessel on the Mississippi or Missouri River.

**TABLE II**  
**WORST-CASE DISCHARGE — VESSEL**

| BARGE DIMENSIONS   | CAPACITY   | PRODUCT  |
|--|--|--|
| <b>200' x 35' x 12.5'</b><br>More commonly used on the Upper Mississippi and Missouri River. Barges are normally chartered-out as "unit tows" consisting of two to three barges and a towboat. | 10,000 Barrels/<br>420,000 Gallons   | <ul style="list-style-type: none"> <li>– Crude Oil</li> <li>– Unfinished Oils</li> <li>– Gasoline Blending Components</li> <li>– Reformulated Blendstock for Oxygenate Blending with Alcohol/Gasoline Components</li> <li>– Conventional Gasoline Blending Components</li> <li>– Finished Motor Gasoline</li> <li>– Kerosene-Type Jet Fuel Distillate</li> <li>– Fuel Oil</li> <li>– Residual Fuel Oil</li> <li>– Petrochemical Feedstocks</li> <li>– Special Naphtha Compounds</li> <li>– Lubricants</li> <li>– Asphalt and Road Oil</li> </ul> |
| <b>297.5' x 54' x 12'</b><br>Barges are normally chartered-out as "unit tows" consisting of two barges and a towboat.  | 30,000 Barrels/<br>1.2 million Gallons<br><i>Two barges transport as much product as a 100-car unit train.</i> |  |

Source: USCG (April 2017)

### ***Adequacy to Remove a Worst-Case Discharge***

This RICP, when implemented in conjunction with the NCP, is adequate to mitigate and/or prevent a substantial threat of a WCD. Private industry and local emergency responders provide the front-line defense in response to all spills, including a WCD.

Adequacy to remove a WCD is currently addressed through existing contingency plans and guidance manuals. This RICP outlines Federal resources available to the FOSC from RRT agencies, and conveys regional response policies. Local emergency contingency plans outline resources available from outside RRT agencies. This RICP also lists resources not included in any of the referenced plans.

In assessing adequacy of removal of the different categories of WCDs listed in Tables I and II, the equipment section of this plan (Appendix C.1) includes contractors from outside a State who may be accessed for additional equipment.

Regarding prevention of oil spills, including a WCD, the Spill Prevention, Control, and Countermeasures (SPCC) Program, administered through EPA, requires all non-transportation-related facilities within EPA's jurisdiction to develop plans necessary to contain a discharge of oil and prevent it from reaching waters of the United States. This program is much broader than contingency planning. It requires facilities to develop and design plans that include installation of equipment—most notably secondary containment systems such as dikes, barriers, and diversionary flow paths—so as to prevent spills into waters of the United States.

If such design and engineering controls are not practicable for a facility, the owner must provide a detailed contingency plan following the criteria outlined in 40 CFR part 109. Some of these criteria include establishment of notification procedures, identification of resources, and provisions for specific actions. For transportation-related onshore and offshore facilities, such as vessels, DOT issues regulations concerning safe handling of HAZMAT. DOI's Minerals Management Service is also responsible for certain offshore fixed facilities.

### **300.215 Sub-area Contingency Plans**

EPA Region 7 has adopted the concept of sub-area plans. The sub-area plan is specific to a smaller geographic area within Region 7. Within Region 7, the following sub-area plans have been developed:

- Central Kansas Wetlands Sub-area Contingency Plan
- Great Rivers Sub-area Contingency Plan

- Greater St. Louis Sub-area Contingency Plan
- Omaha/Council Bluffs Sub-area Contingency Plan
- Quad Cities Sub-area Contingency Plan
- Siouxland Sub-area Contingency Plan
- South Central Nebraska Sub-area Contingency Plan.

These plans are accessible at [response.epa.gov/R7RRT](https://response.epa.gov/R7RRT).

### **300.220 State-level Response Plans**

The States of Iowa, Kansas, Missouri, and Nebraska each maintains State-level operations plans to coordinate roles and responsibilities for State agencies, departments, and offices. The following State plans have been developed:

- *Iowa Emergency Response Plan*, accessible at:  
[http://www.iowahomelandsecurity.org/documents/misc/HSEMD\\_IAEmergencyResponsePlan\\_OCT2010.pdf](http://www.iowahomelandsecurity.org/documents/misc/HSEMD_IAEmergencyResponsePlan_OCT2010.pdf)
- *Kansas Response Plan*, accessible at:  
[http://www.kansastag.gov/AdvHTML\\_doc\\_upload/2014%20KRP%20FINAL.pdf](http://www.kansastag.gov/AdvHTML_doc_upload/2014%20KRP%20FINAL.pdf)
- *Missouri State Emergency Operations Plan* (not publicly available online)
- *Nebraska Emergency Operations Plan*, accessible at:  
<https://nema.nebraska.gov/sites/nema.nebraska.gov/files/doc/nebraska-seop.pdf>

### **300.225 Fish and Wildlife Response Plan**

OPA 90 amended Section 311(d) of the CWA, 33 U.S.C. § 1321(d), to include a fish and wildlife response plan, developed in consultation with USFWS, NOAA, and other interested parties (including natural resource managers and State fish and wildlife conservation officials), for immediate and effective protection, rescue, and rehabilitation of, and minimization of risk of damage to, fish and wildlife resources and their habitat harmed or that may be jeopardized by a discharge.

Additionally, the Federal agencies have signed an MOA regarding coordination of listed species consultation during planning and response activities. A summary of FOSC and USFWS responsibilities under the ESA, implementing regulations, and the Interagency MOA Regarding Oil Spill Planning and Response Activities under the Federal Water Pollution Control Act's (FWPCA) National Oil and Hazardous Substances Pollution Contingency Plan and the ESA (ESA MOA), as well as guidance for implementation of the ESA MOA, is in Section 6.4 of the FWSEP.

See Appendix A.3 of this RICP for the Fish and Wildlife and Sensitive Environments listing.

### **300.230 Facility Response Plans**

An FRP demonstrates a facility's preparedness to respond to a worst-case oil discharge. Under the CWA, as amended by the OPA, certain facilities that store and use oil are required to prepare and submit these plans. FRPs are submitted to EPA Region 7 for review, and the appropriate COTP reviews and approves FRPs under USCG jurisdiction. Vessel Response Plans are submitted to local USCG HQ for review and approval. Both Federal agencies maintain current copies of all plans submitted from within their jurisdiction. Certain facilities—those posing a significant and substantial threat to the environment but granted approval to operate with an approved FRP—have provided certification that they have, by contracts or other approved means, the resources capable of removing a WCD from their facility. In Region 7, all facilities determined to pose such a risk have provided an adequate certification. All FRPs are reviewed to verify adequacy of resources to remove a facility WCD. Among the additional requirements, FRPs must be integrated with local emergency plans prepared under EPCRA. A complete list of FRPs is in Appendix B.

### **300.235 Risk Management Plan**

Under authority of section 112(r) of the Clean Air Act, the Chemical Accident Prevention Provisions require facilities that produce, handle, process, distribute, or store certain chemicals to develop a Risk Management Program, prepare a Risk Management Plan (RMP), and submit the RMP to EPA. Within Region 7, about 3,100 RMPs have been identified. A complete list of RMPs is in Appendix B.

### **300.240 Area Response Drills**

To check adequacy of a facility to remove a WCD, the Federal lead agency, EPA or USCG, shall periodically conduct Government Initiated Unannounced Exercises (GUIE) and drills of removal capability, without prior notice, in areas for which ACPs are required and under relevant Vessel Response Plans and FRPs. The drills are to occur under the National Preparedness for Response Exercise Program (PREP), and may include participation by Federal, State, and local agencies, owners and operators of vessels and facilities in the area, and other elements of private industry.

This RICP shall integrate approved vessel, offshore facility, onshore facility, pipeline, and bulk transportation response plans. Regional response policies and preparedness activities, concerning inland issues, are currently addressed through the RRT, and outlined in this RICP, which is approved by *BOTH* EPA and USCG co-chairs.

### **300.245 EPCRA Local Emergency Response Plans**

Regulations that implement EPCRA are codified at 40 CFR part 355. The plans are developed by LEPCs with stakeholder participation. Each LEPC is to prepare an emergency response plan in accordance with Section 303 of EPCRA, and to review the plan once a year, or more frequently as changed circumstances in the community or at any subject facility may require. Every community in the United States must be part of a comprehensive plan. These local emergency response plans should be closely coordinated with applicable ACPs and State emergency response plans.

Appendices D.1 and D.2 list SERCs and LEPCs, respectively.

### **300.250 Cultural Sites**

Culturally sensitive sites in the vicinity of a spill can be identified by contacting the appropriate State Historic Preservation Officer (SHPO). This individual is generally associated with the State Historical Preservation Office or Society, which may or may not be within a department of State government. Contacts for individual States are as follows:

- Iowa State Historic Preservation Officer (Historical Society of Iowa) – (515) 281-5111
- Kansas State Historic Preservation Officer (Kansas Historical Society – (785) 272-8681
- Missouri State Historic Preservation Officer (MDNR) – (800) 361-4827/ (573) 751-7858
- Nebraska State Historic Preservation Officer (Nebraska State Historical Society) – (402) 471-4787/ (800) 833-6747.

Specific procedures and FOSC responsibilities regarding these sites are set forth in Section 7 of the Fish and Wildlife and Sensitive Environments Plan (Appendix A.1) and the Programmatic Agreement on Protection of Historic Properties During Emergency Response (Annex VI).

## **SUBPART D      OPERATIONAL RESPONSE PHASES FOR OIL REMOVAL**

### **300.300      Discovery and Notification**

Notice of an oil discharge or release of a hazardous substance in an amount equal to or greater than the reportable quantity must be made immediately in accordance with 33 CFR part 153, Subpart B and 40 CFR part 302, respectively. It is the spiller's responsibility to report all spills. The spiller or responsible party is required to immediately report to the NRC all discharges/releases of oil and hazardous substances into or on navigable water, adjoining shorelines, or the contiguous zone. Notification will be made to the NRC Duty Officer, HQ USCG, Washington, D.C., telephone (800) 424-8802. All notices of discharges or releases received at the NRC will be relayed immediately by telephone to the Region 7 REOC (913) 281-0991 or USCG D8 (504) 589-6225 or lead agencies. The FOSC receiving this call will ensure notification to the appropriate State agency, Tribes listed in Appendix D.5, and drinking water intakes which are, or reasonably be expected to be, affected by the discharge or release. The FOSC will then proceed with the following phases:

### **300.305      Preliminary Assessment and Initiation of Action**

The FOSC is responsible for determining whether or not proper response actions have been initiated. If the RP for the discharge, release, or spill does not act promptly or does not take appropriate actions, or if the RP is unknown, the FOSC shall respond in accordance with provisions of the NCP and agency guidance, and coordinate activities as outlined in this RICP.

- In carrying out a response under this section, the FOSC may:
  - Remove or arrange for removal of a discharge, and mitigate or prevent a substantial threat of a discharge, at any time.
  - Direct or monitor all Federal, State, and private actions to remove a discharge.
  - Remove and, if necessary, destroy a vessel discharging or threatening to discharge, by whatever means are available.
- If the discharge results in a substantial threat to the public health or welfare of the United States (including but not limited to fish, shellfish, wildlife, other natural resources, and public and private beaches and shorelines of the United States), the FOSC must direct all response efforts, as provided in part 300.322 of the NCP. The FOSC may act without regard to any other provision of the law governing contracting procedures of employment of personnel by the Federal Government in removing or arranging for removal of such a discharge.
- The FOSC shall ensure that the natural resource trustees and natural/historic resource managers are promptly notified in the event of any discharge of oil, to the maximum extent practicable as provided in the Fish and Wildlife and Sensitive Environments Plan (Appendix A.1), the ESA MOA (Annex V), and the Programmatic Agreement on Protection of Historic Properties During Emergency Response under the NCP (Annex VI).

The FOSC, trustees, and natural/historic resource managers shall coordinate assessments, evaluations, investigations, and planning with respect to appropriate removal actions. The FOSC shall consult with the affected trustees on the appropriate removal action to be taken. The trustees will provide timely advice concerning recommended actions regarding trustee resources potentially affected. The trustees also will assure that the FOSC is informed of their activities in natural resource damage assessment that may affect response operations. The trustees will assure that all data from the natural resource damage assessment activities that may support more effective operational decisions are provided in a timely manner to the FOSC. Where circumstances permit, the FOSC will share use of non-monetary response resources (i.e., personnel and equipment) with the trustees, provided trustees' activities do not interfere with response actions. The Federal Lead Administrative Trustee (FLAT) facilitates effective and efficient communications between the FOSC and the other trustees during response operations, and is responsible for applying to the FOSC for non-monetary Federal response resources on behalf of all trustees. The FLAT is also responsible for applying to the NPFC for funding for initiation of damage assessment for injuries to natural resources.

### **300.310 Containment, Countermeasures, Control and Disposal**

Defensive actions shall begin as soon as possible to prevent, minimize, or mitigate threat(s) to the public health or welfare of the United States or the environment. Actions may include sampling and analysis, control of the source of a discharge, source and spread control or salvage operations, placement of physical barriers to deter spread of oil and protect natural resources and sensitive ecosystems, control of water from upstream impoundment, and use of chemicals as described in Subpart J of this RICP.

As appropriate, actions shall be taken to recover the oil or mitigate its effects. Of the numerous chemicals or physical methods that may be used, the chosen methods shall be the most consistent with protecting public health and welfare and the environment. Sinking agents shall not be used.

Oil and contaminated materials recovered in cleanup operations shall be disposed of in accordance with applicable laws, regulations, or requirements.

Additional authorities are available to the FOSC during response actions under the NCP, specific to CWA regulations. In accordance with 40 CFR, Section 122.3(d), an FOSC may direct a discharge to water without a National Pollutant Discharge Elimination System permit. Notably, actions subject to CWA 404 permit requirements are authorized under Nationwide Permit 20.



### **300.315 Documentation and Cost Recovery**

All Oil Spill Liability Trust Fund (OSLTF) users must collect and maintain documentation to support all actions taken under the CWA. Overall, documentation shall suffice to support full cost recovery for resources utilized, and shall identify the source and circumstances of the incident, the RP or RPs, and impacts and potential impacts on public health and welfare and the environment. Documentation procedures are specified in 33 CFR part 136.

When appropriate, documentation shall also be collected for scientific understanding of the environment and for research and development of improved response methods and technology. Funding for these actions is restricted by section 6002 of the OPA.

FOSCs shall ensure necessary collection and safeguarding of information, samples, and reports. Samples and information shall be gathered expeditiously during the response to ensure an accurate record of impacts. Documentation materials shall be made available to the trustees of affected natural resources. The FOSC shall make available to trustees of the affected natural resources, information and documentation in the FOSC's possession that can help the trustees determine actual or potential injuries to natural resource.

Information and reports obtained by EPA shall be transmitted to the appropriate offices responsible for follow-up actions.

### **300.317 National Response Priorities**

Refer to the NCP.

### **300.320 General Pattern of Response**

When the FOSC receives a report of a discharge, actions should normally be taken in the following sequence:

1. Investigate the report to identify pertinent information such as the threat posed to public health or welfare or the environment, type and quantity of polluting material, and source of the discharge.
2. Officially classify the size of the discharge and determine the course of action to be followed.
3. When the reported discharge is an actual or potential major discharge, exceeding 10,000 gallons (gal), immediately notify the RRT, the affected State, and the NRC.
4. Determine whether a discharger or other person is properly carrying out removal. Removal is occurring properly when:

- The cleanup is fully sufficient to minimize or mitigate threat(s) to public health and welfare and the environment.
  - Removal efforts accord with applicable regulations, including the NCP, RICP, and any FRP.
5. Determine whether a State or political subdivision thereof has the capability to carry out response actions, and whether a contract or cooperative agreement has been established with the appropriate fund administrator for this purpose.

In addition, the FOSC shall:

- Request the State RRT Representative to notify any downstream water users of any release or discharge entering water courses from which they take water.
- Notify the RP of Federal interest and potential action in the discharge or release. If the RP is unknown or does not respond, the FOSC shall initiate response actions.
- Attempt to have the RP voluntarily and promptly perform response actions.
- Ensure adequate surveillance over whatever actions are initiated by the RP.
- Make prompt notification to the trustees and other managers of affected natural/historic resources so they may initiate appropriate action when facilities or natural/historic resources have been or are likely to be affected.
- Ensure that the notifications and actions required in 300.135, the FWSEP (Appendix A.1), and the Programmatic Agreement (Annex VI) have occurred. If these have not occurred, the FOSC will perform those notifications and subsequent actions.
- When appropriate, activate Federal response using the OSLTF for oil discharges of the CERCLA Hazardous Substances Response Trust Fund for hazardous substances releases.
- Advise appropriate State/local officials on scene of the timing and nature of subsequent response actions by the predesignated FOSC or other agencies or organizations.
- Prepare and distribute POLREPS.
- Call upon RRT resources, as appropriate, to assist in determining the necessary facts about a particular discharge or release, such as its magnitude or potential impact on human health and welfare.
- Fully inform and coordinate closely with the RRT during a response to a significant discharge or release to ensure maximum effectiveness of the Federal effort in protecting natural/historic resources and the environment from pollutant damage.
- Obtain advice from natural resource trustees and/or facility/historic resource managers regarding response operations affecting resources or facilities under their jurisdiction. If threatened or endangered species or their habitats could be affected by response operations, the FOSC or RPM must consult with USFWS in accordance with the ESA MOA (Annex V), the FWSEP (Appendix A.1) and, if applicable, the relevant sub-area contingency plan. Advice from USFWS on response actions that may affect Federally-listed endangered or threatened species shall be obtained at all times, and shall be binding on the FOSC, unless in his or her judgment, actions contrary to this advice must be taken to protect human life.
- Ensure the safety of Federal response personnel.

- Conduct the following actions, as appropriate:
  - Contain spread of the discharge/release, e.g., by trenching and diking, siphon dams (floating substances), filter fences, booms (floating substances), water sprays, stream diversion or impoundment, and gelling agents.
  - Implement countermeasures, e.g., control water discharge from upstream impoundments, mitigate contamination of water supplies.
  - Collect and remove oil from water courses and adjoining shorelines, e.g., by use of skimmers, sorbents, dredging, high-pressure water, physical/chemical treatment (see Subpart J).
  - In consultation with natural resource trustees and natural/historic resource managers, mitigate damage to waterfowl and other wildlife, and historic properties.
  - Ensure adequate disposal of removed materials in accordance with State and Federal regulations.
  - Recommend evacuation of threatened individuals to appropriate authorities.
  - Limit access to the release area, e.g., via barricades, security fences, etc.
  - Collect and analyze samples to determine source and dispersion of the discharge/release.
  - Implement countermeasures, e.g., treatment of water supplies (e.g., activated carbons), provision of alternate water supplies, control of water discharge from upstream impoundments, on-site physical/chemical treatment (see Annex IV).
  - Collect and remove released hazardous substances, e.g., via use of skimmers (floating substances), sorbents, dredging, on-site physical/chemical treatment (see Annex IV and Subpart J).
  - Ensure adequate disposal of discharged/released substances. Transportation of hazardous substances off site must comply with regulations promulgated under the Resource Conservation and Recovery Act (RCRA). Under certain circumstances, some procedural requirements of RCRA can be waived. The circumstances are described in the regulations.
- Keep the public informed of response actions.
- Arrange for scientific support coordination as needed.

### **300.322 Response to Substantial Threats to Public Health or Welfare of the United States**

See 300.305.

### **300.323 Spills of National Significance**

A discharge may be classified as a Spill of National Significance (SONS) by the Administrator of EPA.

### **300.324 Response to Worst-Case Discharge**

If the FOSC's investigation determines that a WCD, as defined in the RICP, has occurred or there is a substantial threat of such a discharge, the FOSC shall:

- Notify the National Strike Force Coordination Center (NSFCC).
- Require, where applicable, implementation of the worst-case portion of an approved tank vessel or facility response plan required by section 311(j)(5) of the CWA.
- Implement the worst-case portion of this RICP required by section 311(j)(4) of the CWA.
- Take whatever additional response actions are deemed appropriate.

Under direction of the FOSC, the NSFCC shall coordinate use of private and public personnel and equipment, including Strike Teams, to remove a WCD and mitigate or prevent a substantial threat of such a discharge.

### **300.335 Funding**

#### ***Accessing the “Oil Fund”***

EPA FOSCs access the Ceiling and Number Assignment Processing System (CANAPS) for Federal project numbers (FPN) and authorized ceiling limits for funding certain removal actions associated with oil and hazardous waste spills. CANAPS is accessible at: <https://npfc.uscg.mil/canaps/>.

EPA and USCG FOSCs use the Web-based system to generate, amend, cancel, and check the status of FPNs for oil spills. USCG FOSCs can also use the system for CPNs for HAZMAT incidents.

From the CANAPS webpage, one can:

- Access [CANAPS](#) (authorized users only).
- Use a demonstration version of the CANAPS application.
- Download a user manual and other documentation.

#### ***Contracting***

EPA-warranted FOSCs have authority to issue a verbal authorization-to-proceed involving expenditure of \$200,000 where site conditions constitute an emergency, and \$50,000 where site conditions do not warrant an emergency (provided funds are available). All verbal authorizations-to-proceed will be followed up with the required hard-copy documentation.

EPA FOSCs utilize the START and ERRS contracts for oil removals. Procedures, which are the same for Superfund removals, include notifying the Project Officers and Contracting Officers, as well as providing the necessary paperwork (Independent Government Cost Estimate and Statement of Work [SOW]). EPA Region 7 does not currently utilize any of the USCG Basic Ordering Agreements (BOA). Any decision to

utilize a BOA must include EPA Contracting Officers because USCG's Contracting Officers no longer support EPA FOSCs.

### ***Eligibility for State Access***

OPA 90 allows State governors to request payments of up to \$250,000 from the OSLTF for removal costs required for immediate removal of a discharge, or mitigation or prevention of a substantial threat of a discharge, of oil. Requests are made directly to the FOSC who will determine eligibility.

Local, State, Tribal, or other Federal agencies may obtain funding for removal costs in two different ways: (1) initiation by EPA of a Pollution Removal Funding Authorization (PRFA), or (2) submittal of a claim to NPFC.

A PRFA is handled much like a contract. EPA issues a SOW for the work to be performed and requires regular updates of site conditions. Once these costs are invoiced, the EPA FOSC must certify the package prior to request to the NPFC for payment.

The FOSC will determine whether the State is able to respond based on the criteria specified by the NPFC. If the State is capable, the FOSC will contact the USCG case officer to authorize access to the fund. If the FOSC denies State access to the fund, he or she will detail the reason for denying access (i.e., indicate criteria not met by the State).

### ***Required Record Keeping***

The State shall maintain records of expenditures of fund monies, including, but not limited to:

- Daily expenditures for each individual worker—indicating the individual's name, title, or position; activity performed; time on task; salary or hourly rate; travel costs; per diem; out-of-pocket or extraordinary expenses; and whether the individual is normally available for oil spill removal
- Equipment purchased or rented each day, with the daily or hourly rate
- Miscellaneous materials and expendables purchased each day
- Daily contractor or consultant fees, including costs for their personnel and contractor-owned or rented equipment, as well as that of any subcontractor.

The State shall submit a copy of these records and a summary document, stating the total of all expenditures made, to the NPFC within 30 days after completion of removal actions. A copy of these documents shall also be submitted to the FOSC.

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## **SUBPART E      HAZARDOUS SUBSTANCE RESPONSE**

### **300.400      General**

### **300.405      Discovery and Notification**

A release may be discovered through a report submitted in accordance with section 103(a) of CERCLA, i.e., reportable quantities codified in 40 CFR part 302 and various reports and investigations. Provisions of section 300.305 of this plan, including notification to Federal and State natural resource trustees, are also applicable to reports involving hazardous substances, pollutants, or contaminants.

### **300.410      Training and Qualifications**

HAZMAT response training involves instruction in the areas of first responder operations, on-scene incident commanding, and specialist training managing hazardous substances. A minimum qualification for all individuals entering contaminated areas is operations and/or technical levels in accordance with 29 CFR 1910.120 Subpart Q and National Fire Protection Association (NFPA) 472, Standard for Professional Competence of Responders to Hazardous Materials Incidents. In addition, incident commanders shall be competent in incident command including ICS 300 (Intermediate Incident Command System for Expanding Incidents) and 400 (Advanced ICS Command and General Staff – Complex Incidents).

### **300.415      Removal Site Evaluation**

The FOSC's removal site evaluation (RSE) may include, but is not limited to:

- Identification of the source and nature of the release or threat of release
- Evaluation by ATSDR or other public health agencies of the threat to public health
- Evaluation of magnitude of the potential threat
- Evaluation of factors necessary to determine whether a removal action is necessary
- Determination if a non-Federal party is undertaking proper response
- Determination of Federal jurisdiction.

The FOSC shall determine whether a release governed by CWA section 311(c)(1), as amended by OPA, has occurred.

An RSE may be terminated when the FOSC or lead agency determines:

- There is no release or threat of release.
- The source is neither a vessel nor a facility.
- The release does not involve a hazardous substance.
- The release does not involve a pollutant or contaminant that may pose an imminent and substantial danger to public health or welfare.
- The amount, quantity, and concentration released does not warrant Federal response.
- The RP for the release or other person is providing appropriate response, and on-scene monitoring by the government is not required.
- The RSE is complete.
- The release is a situation specified in Section 300.400 (b) (1) through (3) of the NCP subject to limitations on response.

If natural resources are or may be injured by the release, the FOSC will notify and consult with the appropriate natural resources trustees.

In addition, the FOSC will determine whether remedial action is necessary.

### **300.420 Removal Actions**

The following factors shall be considered in determining the appropriateness of a removal action:

- Actual or potential exposure to human populations, fish, and wildlife or food chain
- Exposure to drinking water supplies or sensitive ecosystems
- Hazardous substance or pollutant in containers, drums, barrels, tanks, or other storage that may pose a threat of release
- Hazardous substance or pollutants in soils at or near the surface that may migrate
- Weather conditions that may cause hazardous substance or pollutants to migrate or be released
- Threat of fire or explosion
- Availability of other Federal, State, or local response mechanisms to respond to the release
- Any other situation or factors that pose a threat to public health, welfare, or the environment.

If a planning period extends at least 6 months before initiation of on-site activities, an Engineering Evaluation/Cost Analysis (EE/CA) must occur. If environmental samples are to be collected, preplanning shall consist of the field sampling plan and quality assurance project plan. See also 300.320 for additional guidance.



## **SUBPART F      STATE AND LOCAL INVOLVEMENT IN HAZARDOUS SUBSTANCE RESPONSE**

### **300.500      General**

Subpart F of the NCP addresses State involvement in hazardous substance response, and is incorporated herein by reference. ESF #10 requires close coordination between EPA and State counterparts in development and implementation of mission assignments for response activities.

### **300.505      EPA/State/Local MOA/MOU**

The Federal, State, and local MOA/MOU may establish the nature and extent of EPA and State and local interaction during EPA-lead and State-lead or local-lead responses (including Indian Tribes). EPA shall enter into MOA/MOU discussions if requested by a State or local government.

Refer to the NCP, 40 CFR § 300.505 for a discussion of State MOUs.

### ***Regional MOUs/MOAs***

Various MOUs and Interagency Agreements (IAG) between RRT member agencies are listed in the RICP under Annex 7, “Interagency Support Agreements.” A copy of the USCG/EPA MOA is in Annex I to this Plan.

### **300.515      Requirements for State Involvement in Remedial and Enforcement Responses**

[Reserved]

### **300.520      State Involvement in EPA/USCG-lead Enforcement Negotiations**

EPA/USCG shall notify States of response action negotiations to be conducted by EPA/USCG with PRPs during each fiscal year.

The State shall notify EPA/USCG of any such negotiations in which it intends to participate.

The State is not foreclosed from signing a consent decree if it does not participate substantially in the negotiations.

### ***State Involvement in Removal Actions***

For fund reimbursement, the State must fulfill requirements established by the NPFC, including PRP determination and documentation requirements.

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## **SUBPART G TRUSTEES FOR NATURAL RESOURCES**

### ***Designation of Natural Resource Trustees***

CERCLA and OPA require the designation of certain Federal, State, and Indian Tribal officials to act on behalf of the public as trustees for natural resources that they manage or protect. As trustees, these officials are authorized to assess monetary damages for resources injured, lost, or destroyed as a result of a discharge of oil or release of hazardous substances. In addition, agencies are authorized to seek damages from the RP, and to devise and carry out restoration, rehabilitation, and replacement. Where more than one trustee has jurisdiction over a resource, these agencies are encouraged to coordinate and cooperate in carrying out the activities described herein.

RRT representatives from trustee agencies may also serve as contact points regarding agency policy on trustee resources.

### ***Definition of Natural Resources (CERCLA Sec. 101(16))***

Land, fish, wildlife, biota, air, water, groundwater, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States, any State or local government, or Indian Tribe.

### ***Notification and Consultation by FOSCs***

To minimize impacts on natural resources and assist trustees in carrying out their responsibilities, FOSCs are required to:

- Promptly notify Tribal Governments, as well as Federal and State agencies designated as natural resource trustees, of actual or potential discharges or releases.
- Consult with trustees and other natural resource managers in determining such effects.
- Coordinate all response activities with the trustees and other natural resource managers in determining such effects.
- Make available to trustees documentation and information that can help the trustees identify actual or potential natural resource injuries.
- Consult with USFWS on all incidents and response activities that may affect Federally-listed threatened or endangered species, or their habitats. Conduct appropriate Section 7 Consultation as indicated in Section 6.4 of the FWSEP and the ESA MOA (Annex V).

The trustees, consistent with procedures specified in the FWSEP and the ESA MOA, shall provide timely advice on recommended actions concerning trustee resources potentially affected by a discharge of oil or release of hazardous substances. This may include providing assistance to the FOSC in

identifying/recommending preapproved response techniques and in predesignating shoreline types and areas.

### **300.600 Designation of Federal Trustees**

The following Federal officials have been designated by the President as trustees for natural resources within Region 7. (Note: Refer to Appendix D.3 for RRT representatives.)

#### ***Secretary of the Interior***

The Secretary of the Interior's responsibilities include:

- NPS: National Parks, National Monuments, National Historic Sites, National Recreation Areas, Wild and Scenic Rivers, etc.
- USFWS: National Wildlife Refuges, National Fish Hatcheries, Waterfowl Production Areas, migratory birds, threatened and endangered species, and anadromous fish
- BuRec: Lands and waters managed or protected in association with Reclamation dams, reservoirs, and water conveyance systems
- BLM: Public lands, Federally-owned minerals (underlying private, as well as public lands)
- BIA: Indian reservations and other lands or natural resources held in trust for an Indian Tribe (including off-reservation natural resources).

In cases of the United States acting on behalf of an Indian Tribe, the Secretary of the Interior also acts as trustee for natural resources for which an Indian Tribe would otherwise act as trustee.

Contact: DOI RRT Representative.

#### ***Secretary of Agriculture***

The Secretary of Agriculture's responsibilities include:

- U.S. Forest Service: National Forests, National Grasslands.

Contact: USDA/Forest Service RRT representative.

### ***Secretary of Defense***

The Secretary of Defense's responsibilities include:

- Military Lands

Contact: DOD U.S. Army RRT representative.

- Corps of Engineers Project Lands

Contact: USACE RRT representative.

### ***Secretary of Energy***

The Secretary of Energy's responsibilities include:

- DOE lands and facilities

Contact: DOE RRT representative

### **300.605 State Trustees**

Pursuant to 33 U.S.C. § 2706(b), the governor of each State shall designate State and local officials who may act on behalf of the public as trustee for natural resources and shall notify the President of the designation.

Natural resources under State jurisdiction include all fish, wildlife, and biota (including a shared trusteeship with the Federal Government for certain plants and animals), air, surface water, groundwater, and land. State trustees for natural resources within Region 7 are:

#### ***Iowa***

Director of IDNR.

#### ***Kansas***

Secretary of KDHE.

Note: The Director of the Kansas Division of Environment is the designated contact for trustee natural injury determinations pursuant to OPA, and for emergency trustee notifications under the NCP and the RICP.

***Missouri***

Director of MDNR.

***Nebraska***

Director of NDEQ.

**300.610 Indian Tribes**

The Tribal Chair or head of the Tribal governing body, or person designated by Tribal officials, acts as the trustee. Natural resources under Indian Tribal trusteeship include lands and other natural resources belonging to, managed by, controlled by, or otherwise appertaining to the Tribe; or held in trust for the Tribe; or belonging to a member of the Tribe (if subject to a trust restriction on alienation).

Appendix D.5 describes Region 7 protocols for maintaining emergency response contacts for Federally-recognized Tribes that are headquartered or own significant property within the region. Processes have been established by EPA Region 7 to review emergency contacts lists at quarterly meetings of the RTOC and forward changes to the appropriate EPA personnel. This RICP will be revised annually to include the most up-to-date emergency contacts list available for Tribal Governments.

**300.615 Function of Trustees**

This section remains as presented in the NCP, 300.615.

## **SUBPART H PARTICIPATION BY OTHER PERSONS**

### **300.700 Activities by Other Persons**

Participation by private parties in both planning and response is encouraged. PRPs are encouraged to undertake response actions in an adequate and timely manner, based on judgment of the FOSC.

Landowners are also encouraged to participate in planning and response. The landowner is a valuable resource due to his or her local knowledge. The landowner, to the extent practical and based on the FOSC's judgment, may be included in planning and response activities, under direction of the FOSC. Landowners who provide access to or are affected by a spill have jurisdiction over their lands, and warrant special consideration by the responding agency or UC. If an incident poses or could pose an imminent threat to human health and/or the environment, it is in the best interest of the landowner to provide access to an FOSC.

In addition, OPA 90 authorizes filing of claims against the OSLTF by other persons. To file a claim, contact the Director, NPFC, 4200 Wilson Boulevard, Suite 1000, Arlington, VA 22203-1804, telephone (703) 235-4756.

#### ***Responsible Party Policy***

The RP has primary responsibility for cleanup of an oil discharge or release of hazardous substances. Section 311(c)(3)(b) of CWA, 33 U.S.C. § 1321(C)(3)(B), requires a facility owner or operator participating in removal efforts to act in accordance with the NCP and all other applicable response plans. Section 311(j)(5)(c) of the CWA requires that these response plans shall:

- (i) be consistent with the requirements of the NCP and this RICP;
- (ii) identify the qualified individual having full authority to implement removal actions, and require immediate communications between that individual and the appropriate Federal official and the persons providing personnel and equipment pursuant to clause (iii);
- (iii) identify, and ensure by contract or other means approved by the President, the availability of private personnel and equipment necessary to remove to the maximum extent practicable a WCD (including a discharge resulting from fire or explosion), and to mitigate or prevent a substantial threat of such a discharge;
- (iv) describe the training, equipment testing, periodic unannounced drills, and response actions of persons on the vessel or at the facility to be carried out under the plan to ensure the safety of the vessel of the facility and to mitigate or prevent the discharge, or substantial threat of a discharge;
- (v) be updated periodically; and
- (vi) be resubmitted for approval of each significant change [33 U.S.C. § 1321(j)(5)(c)].

All owners or operators of a tank vessel or facility who are required by OPA to submit a response plan shall do so in accordance with applicable regulations. Facility and tank vessel response plan regulations, including plan requirements, are in 33 CFR § 154 and 40 CFR ‘112, respectively. Prior to approval, facility and vessel response plans shall be reviewed for consistency with this RICP and appropriate sub-area contingency plans.

As defined in OPA, each RP for a vessel or a facility from which oil is discharged, or which poses a substantial threat of a discharge, into or upon the navigable waters or adjoining shorelines or the Exclusive Economic Zone is liable for removal costs and damages specified in Section 311(f) of CWA, 33 U.S.C. § 311(F). Any removal activity undertaken by the RP must be consistent with provisions of the NCP and this RICP and the applicable response plan required by OPA. If directed by the FOOSC at any time during the removal activities, the RP must act accordingly.



**SUBPART I        ADMINISTRATIVE RECORD FOR SELECTION OF RESPONSE ACTION**

Subpart I of the NCP, 40 CFR § 300.800, addresses administrative record keeping for selection of response actions, and is incorporated herein by reference to the extent that it applies to emergency response.

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## **SUBPART J        CHEMICAL COUNTERMEASURES**

Subpart J of the NCP, 40 CFR § 300.900, addresses use of dispersant and other chemical countermeasures, and is incorporated herein by reference. In addition, Section 311(j) of the CWA requires that each AC work with State and local officials to expedite decisions regarding use of dispersant and other mitigating substances and devices.

The trustees, consistent with procedures specified in the FWSEP and the ESA MOA, shall provide timely advice on recommended actions concerning trustee resources potentially affected by a discharge of oil. This may include providing assistance to the FOSC in identifying/recommending preapproved response techniques and in predesignating shoreline types and areas.

In general, RRT policy does not allow use of Chemical and Bioremediation Countermeasures (CBC) on inland waterways. This includes use of CBCs, burning agents, or miscellaneous oil spill control agents on surface water, particularly near sensitive wetlands or water supplies (freshwater systems). Such use only adds to potential for serious impact of already discharged/released petroleum products. This stance is necessary to protect fragile aquifers, sensitive ecosystems, and many potential and existing surface and subsurface water intakes (potable and non-potable) in Region 7. See Annex IV for exceptions to this policy.

The Region recognizes, however, such agents may have some limited applicability. The FOSC and/or RP shall obtain approval—on a case-by-case basis before such materials are applied—from the EPA representative to the RRT and the RRT representative from the State with jurisdiction over the surface waters threatened by the release or discharge, and shall consult with the appropriate Federal and State natural resource trustees and land management agencies.

Dispersant use may also be applicable under circumstances involving contaminated surface or subsurface soil systems where no immediate threat to surface water or groundwater quality is evident, particularly in an emergency situation when, in the judgment of the FOSC, use of the product is necessary to prevent or substantially reduce a hazard to human life or sensitive ecosystems. An example would be a highway spill where immediate removal of the spilled material through use of a dispersant may cause soil contamination. Under these circumstances, the FOSC is to inform the EPA RRT representative, the State RRT representative, and the appropriate Federal natural resource trustees and land management agencies of use of a product as soon as possible. Furthermore, the FOSC will obtain concurrence or comments regarding continued use of this once the threat to human life or sensitive ecosystems has subsided. The

FOSC shall make maximum use of absorbents and other physical means to remove as much surface contamination as possible while restricting use of chemical agents to site-by-site, case-by-case usage.

### ***NCP Product Schedule***

In accordance with Subpart J, EPA is to develop and maintain a schedule of dispersants and other chemical or biological products that may be authorized for use on oil discharges. This schedule is called the NCP Product Schedule, and more information is available in Annex IV to this RICP. Difficulties or delays in obtaining the schedule or receiving specific information/guidance regarding products on the schedule should be communicated to the EPA's Emergency Response Division and the NRT Chair. The NCP Product Schedule and NCP Product Schedule Technical Notebook describing recommended application procedures for chemical and bioremediation products are available as follows:

- NCP Product Schedule: <https://www.epa.gov/emergency-response/ncp-product-schedule-products-available-use-oil-spills>
- NCP Product Schedule Technical Notebook: <https://www.epa.gov/emergency-response/ncp-product-schedule-technical-notebook>
- EPA Region 7 hotline: 913-281-0991

The predesignated FOSC, after consultation with the RRT, may authorize use of dispersants, surface collecting agents, biological additives, or miscellaneous oil spill control agents on the discharged oil, if the material to be used is listed on the NCP Product Schedule.

Products not included on the NCP Product Schedule, as well as those products included on the schedule, may be authorized for use by the predesignated FOSC without first obtaining concurrence of the EPA RRT representative or the State RRT representative, when, in the judgment of the FOSC, use of the product is necessary to prevent or substantially reduce a hazard to human life. As soon as possible once the threat to human life has subsided, the FOSC shall inform the following of use of such dispersant or other chemicals: EPA RRT representative and, as appropriate, RRT representatives from affected States, and when practicable, the natural resource trustees.

This section will be expanded when the Region 7 RRT is made aware of use of dispersant technology that (1) may be applicable within Region 7, (2) has been tested by case studies, and (3) has been documented during incidents at remote, controlled sites.

## **APPENDIX A.1**

# **FISH AND WILDLIFE AND SENSITIVE ENVIRONMENTS PLAN**

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## FISH AND WILDLIFE AND SENSITIVE ENVIRONMENTS PLAN

### APPENDIX A.1 TO REGION 7 INTEGRATED CONTINGENCY PLAN

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## 1.0 PURPOSE

Oil or hazardous substances spilled into the environment may have a wide range of ecological consequences. The severity of the consequences varies depending on the material spilled and the ability of the ecosystem to degrade or resist the spilled product. Reducing the overall ecological impact of a spill event and the impacts associated with response activities is the goal of this Fish and Wildlife and Sensitive Environments Plan (FWSEP, also referred to as “annex”).

The purpose of this annex is to provide the Federal On-Scene Coordinators (FOSC) in U.S. EPA Region 7 (Region 7) with the information he/she needs to identify sensitive environments and provide appropriate response strategies for limiting the overall negative environmental effects of a spill. The annex will also aid in the development of Facility Response Plans required by 40 CFR 112.20. The FWSEP also assists FOSCs and Incident Commanders in protecting threatened and endangered species and their supporting habitats from the effects of response measures, and fulfilling their consultation responsibilities under the Endangered Species Act, implementing regulations, and the *Interagency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities under the Federal Water Pollution Control Act's National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act* (ESA MOA, Annex V).

## 2.0 SCOPE

The Region 7 FWSEP develops a general overview of the sensitive areas and provides the State On-Scene Coordinators (SOSC) and FOSCs with information to assist in the sensitive environment identification process. Deciding on response techniques before a spill occurs is imperative to provide for a coordinated, immediate and effective response. The FWSEP aids in the selection of the appropriate spill protection, recovery and cleanup techniques that will help to minimize the ecological impacts of a spill.

The task of identifying all the environmentally sensitive areas in Region 7 and prioritizing them is an enormous undertaking, and will be done gradually. While the FWSEP helps to identify sensitive environments that could be impacted by spills into water bodies, sensitive environments identified in the FWSEP and RICP should not be considered comprehensive or definitive.

The FWSEP also establishes procedures and policy for meeting the objectives set forth in the National Contingency Plan (NCP); and should be used to aid responders and planners in prioritizing and evaluating response techniques for spills in various freshwater environments and shoreline habitats. This annex aids the Area Committee in identifying special areas of concern. Those special areas of concern will be

examined in detail in the Sub-Area planning phase of the Regional Integrated Contingency Plan (RICP) development. The FWSEP also assists FOSCs and Incident Commanders in protecting threatened and endangered species and their supporting habitats from the effects of response measures, and fulfilling their consultation responsibilities under the Endangered Species Act, implementing regulations, and the Interagency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities under the Federal Water Pollution Control Act's National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act (ESA MOA, Annex V).

### **3.0 OBJECTIVES**

The National Contingency Plan (40 CFR 300.210(c)(4)(I)) delineates the objectives of this annex. The objectives have been organized into four general sections:

#### **3.1 IDENTIFY AND ESTABLISH PRIORITIES FOR RESOURCES AT RISK**

Natural resources, other sensitive resources, and appropriate resource trustees are identified. Agencies to be notified and consulted in establishing incident-specific priorities for the protection of these resources are provided. Sensitive resources identified include environmentally sensitive lands, freshwater environments, and areas of economic significance (Section 4.0).

#### **3.2 DETERMINE ENVIRONMENTAL EFFECTS OF RESPONSE AND COUNTERMEASURES**

The probable impacts of various response methods on general environments and habitats are provided. Methods for determining and approving the appropriate response techniques for specific environments and habitats, and monitoring the effectiveness of response activities are outlined (Section 5.0).

#### **3.3 IDENTIFY FISH AND WILDLIFE RESPONSE CAPABILITIES**

State and Federal response capabilities and the contacts for permitting wildlife rescue and rehabilitation are outlined. Prearranging and acquiring the appropriate response equipment, personnel and mutual aid agreements and defining the OSHA training requirements for volunteers assigned to fish and wildlife rescue are also discussed (Section 6.0).

#### **3.4 EVALUATE THE INTERFACE OF THE RICP WITH NON-FEDERAL PLANS**

The compatibility of this annex with non-Federal response plans on issues affecting fish, wildlife, their habitats and sensitive environments is evaluated (Section 7.0).

#### **4.0 PRIORITIZATION OF RESOURCES AT RISK**

To ensure that proper measures are taken to minimize the impacts of a spill on ecological and economic resources, the FOSC/SOSC or Responsible Party must be aware of sensitive environments and/or important resource areas. Identifying sensitive areas should be accomplished before a spill event occurs. Environmentally sensitive areas were identified by the various Natural Resource Trustees and other natural resource management agencies. Response strategies vary depending on the material spilled and the spill location. It is critical that responders realize that an immediate, but improper response, may be more damaging than waiting for the mobilization of a proper response. Critical to choosing an appropriate response is understanding the aquatic environments and habitats, and their sensitivities. It is also important to recognize the value and importance of any historic properties/sites that may be affected by response activities.

##### **4.1 NOTIFICATION OF AND CONSULTATION WITH NATURAL RESOURCE TRUSTEES**

Prompt notification of and consultation with the natural resource trustees and other natural resource management agencies is imperative so that their expertise can be utilized in identifying and protecting sensitive environments. Figure 1 assist with the protection priorities.

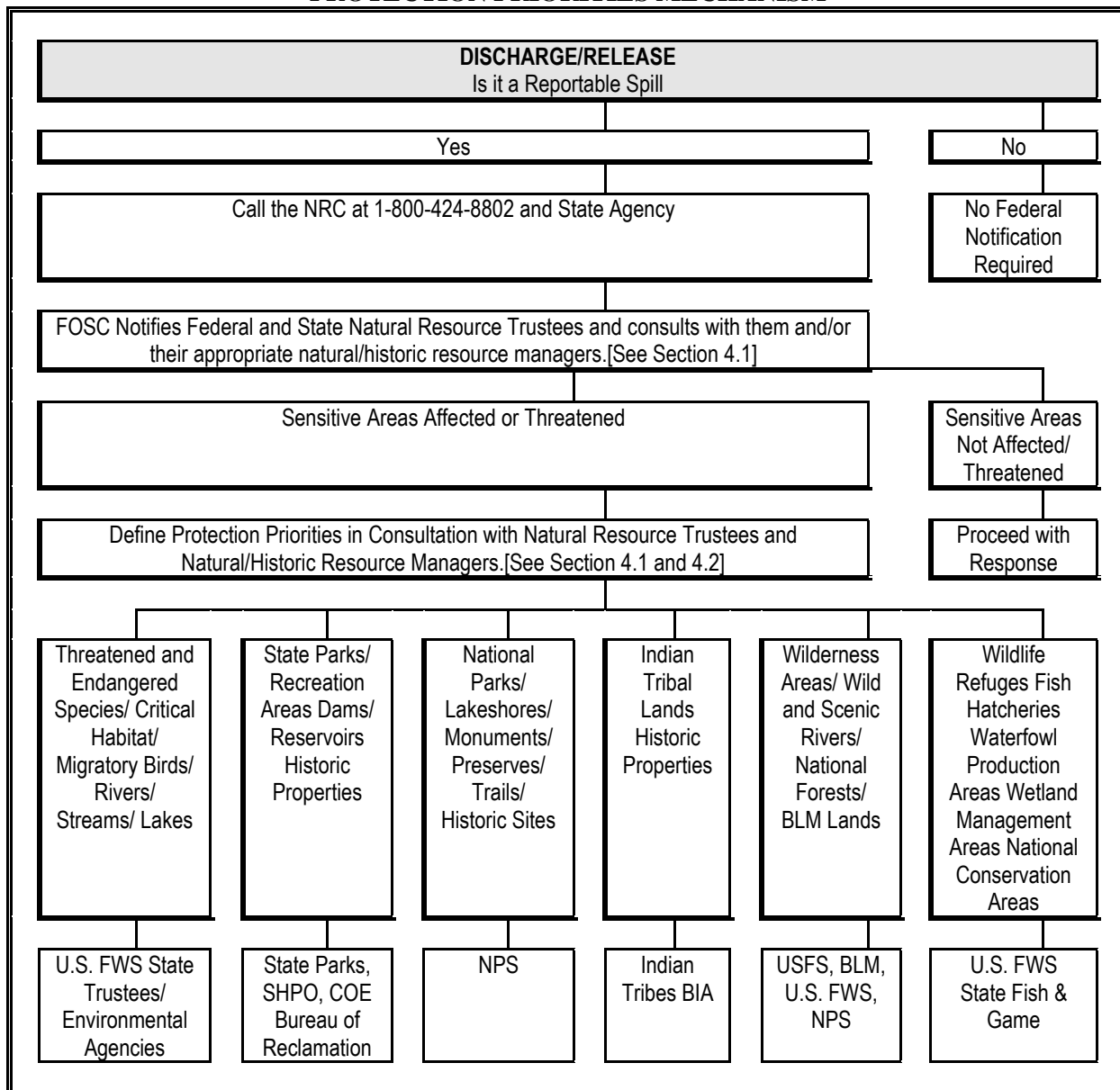
Pursuant to Subpart G of the National Contingency Plan, the following agencies have been designated as trustees for natural resources:

- Department of the Interior
- Department of Agriculture, Forest Service
- Department of Defense
- Department of Energy
- Kansas Department of Health and Environment
- Nebraska Department of Environmental Quality
- Iowa Department of Natural Resources
- Missouri Department of Natural Resources

Appropriate contacts within these agencies are included in Appendix D.

FIGURE A.1.1

PROTECTION PRIORITIES MECHANISM



## **4.2 CONSULTATION WITH NATURAL RESOURCE MANAGERS**

In addition to the designated natural resource trustees, there are numerous Federal and State agencies with land and resource management responsibilities and/or expertise which need to be consulted regarding removal actions:

- Department of the Interior
  - U.S. Fish and Wildlife Service (USFWS)
  - National Park Service
  - Bureau of Reclamation
  - Bureau of Land Management
  - Bureau of Indian Affairs
- Department of Agriculture
  - Forest Service
- State of Iowa
  - Department of Natural Resources
- State of Kansas
  - Department of Health and Environment
  - Kansas Department of Wildlife Parks and Tourism
- State of Nebraska
  - Game and Parks Commission
  - Department of Natural Resources
- State of Missouri
  - Department of Natural Resources
  - Department of Conservation

Appropriate contacts within these agencies are included in Appendix D.

## **4.3 REGIONAL DESCRIPTION AND SENSITIVE AREAS**

There are many wildlife refuges, hatcheries, wild and scenic river reaches, waterfowl production areas, wetland management areas, national and State parks, monuments, preserves, recreational areas, primitive archaeological and historical sites, heritage program areas and other important resources located on or near the rivers and lakes of Region 7.

Appendix A divides the Region by State and lists threatened and endangered species, critical habitats, environmentally sensitive areas, recreation areas, public and private water intakes. The Natural Resource

Trustee or other contact is listed in Appendix D, and the phone numbers for contacts who should be notified and consulted. The appendix can be used by responders to quickly identify the location of sensitive areas.

#### **4.3.1 Threatened and Endangered Species**

Threatened and endangered (T&E) species inhabit or are located near, almost every major body of water in Region 7. The U.S. Fish and Wildlife Service (USFWS) provides an updated list of T&E species by county for the Region annually.

Additional information on compliance with the Endangered Species Act, implementing regulations, and the ESA MOA is provided in Section 6.4.

#### **4.3.2 Freshwater Environments**

Freshwater environments can be divided into three broad categories: standing water, such as lakes and ponds; and flowing water, which includes streams and rivers; and wetlands.

##### ***Lakes and Ponds***

The near shore areas of standing freshwater environments usually support large quantities of various animals and plants. Due to the water's relative stillness, spilled oil would tend to collect and not be dispersed by wind, waves or currents. Lakes, ponds and their dependent populations are, therefore, more vulnerable to an oil spill than freshwater environments that are constantly moving, such as streams and rivers.

##### ***Streams and Rivers***

Oil entering a stream or river will typically move downstream. Oil entering slower flowing streams tends to remain on the surface while oil discharged to a high velocity turbulent stream disperses throughout the entire stream water column. As a result of the turbulent agitation, oil may become trapped in sediment along the stream bed, resulting in increased fatalities of benthic organisms.

Stream reaches can be subdivided into three categories: low gradient; moderate gradient; and high gradient.

- Low gradient portions of a stream are characterized by: meandering channels; moderate currents; wide zones of associated riparian vegetation; sand bars; intermediate oil residence time; numerous collection sites; and restricted mixing into the water column.

- Moderate gradient portions of a stream are characterized by: intermittent rapids; moderately wide channels; associated riparian vegetation; brisk currents; sand and gravel bars; short oil residence time; few collection sites; and significant mixing into the water column.
- High gradient portions of a stream are characterized by: numerous rapids; narrow associated riparian vegetation; strong currents; coarse gravel sediments; short oil residence time; no collection sites; and intense mixing into the water column.

### ***Wetlands***

Wetlands are highly sensitive to oil spills. Wetlands such as freshwater swamps, marshes and prairie potholes act as natural hatcheries, nesting areas, food sources, and watering areas for terrestrial and aquatic wildlife. Therefore, they are crucial areas for wildlife support.

The Region's seasonality is a major consideration in preparing and planning for a response. Ice and snow in the winter, fluctuations of river and stream water levels, and the migratory patterns of wildlife all need to be addressed.

### ***Classification***

The classification of environmentally sensitive areas, their administering agencies and the statutory authority include, but are not limited to:

- **Critical Areas under the Clean Lakes Program** [EPA, States, section 314 Clean Water Act, (33 USC '1324)];
- **Critical Habitats for Federal Designated Endangered or Threatened Species** [USFWS, Endangered Species ACT, (16 USC '1531, et seq.; 50 CFR 424.02)];
- **Designated Federal Wilderness Areas** [BLM, USFS, NPS, USFWS, National Wilderness Preservation Act (16 USC '1131, et seq.)];
- **Federal Designated or Proposed Endangered or Threatened Species** [USFWS, Endangered Species Act (16 USC '1531, et seq.; 50 CFR 424.02)];
- **Federal and State Designated Wild and Scenic Rivers** [BLM, USFS, NPS, USFWS, States, National Wild and Scenic Rivers Act, (16 USC "1271-1287)];
- **National Conservation Areas** [USFWS, Refuge Recreation Act, (16 USC ' 460k, et seq.)];
- **National Wildlife Refuges** [USFWS, National Wildlife Refuge Administration Act of 1966 (16 USC " 668dd-668ee) or comparable State law];
- **National Parks, National Monuments, National Lakeshore Recreational Areas** [NPS, Act of August 25, 1916 (16 USC '1, et seq.)];
- **Waterfowl Management Areas** are designated for the protection of habitat important to waterfowl and are designated within the States' **Wildlife Management Areas**;

- Other areas of concern are wetlands which generally include swamps, marshes, bogs and similar areas. Wetlands are defined in 40 CFR 230.3 and by USFWS. **Waterfowl Production Areas** administered by the USFWS are crucial habitats for waterfowl production.

**[Relevant State statutes to be added.]**

#### **4.4 AREAS OF ECONOMIC SIGNIFICANCE**

Responders need to identify and protect areas of economic importance. Public drinking water intakes, industrial water users, aquaculture sites and agricultural water users could be adversely impacted by a discharge of oil or other hazardous materials. Water intakes in shallow lakes and rivers are at greatest risk to an oil spill. Timely response procedures which identify water users and notify them of an on-coming spill is imperative. With prompt notification, water intakes/diversions can be shut down or boomed off. Water users other than municipal drinking water intakes are still being identified.

Tourism is also of importance with numerous important fishing streams, boating and canoeing areas, and other recreational activities associated with the Region's rivers and lakes. Identifying and protecting these economic resources is critical to response considerations.

#### **4.5 AREAS OF HISTORIC/ARCHEOLOGICAL SIGNIFICANCE**

As required under the *Programmatic Agreement on Protection of Historic Properties During Emergency Response under the National Oil and Hazardous Substances Contingency Plan (Programmatic Agreement)*, plans shall ensure the inclusion of information on consideration of historic properties. This should be developed in consultation with the appropriate parties for the immediate and effective protection of, and the minimization of risk of damage to historic properties, that may be jeopardized by a discharge. Specific requirements are outlined in Annex VI.

### **5.0 DETERMINING THE ENVIRONMENTAL EFFECTS OF RESPONSE AND COUNTERMEASURES**

Decisions on appropriate response and countermeasures should take into account the relative impact of response methods on sensitive areas. Using the information collected on downstream sensitive areas and spill response guidelines, informed decisions on appropriate protective measures can be made. When deciding on a method of response, the most important consideration should be the effectiveness of protecting habitats and removing spills of oil or other hazardous materials.



## **5.1 IMPACTS OF RESPONSE METHODS ON SENSITIVE ENVIRONMENTS AND HABITATS**

The American Petroleum Institute and the National Oceanic and Atmospheric Administration (API/NOAA) collaborated on a study for Inland Oil Spills and finalized their findings in May of 1994. This is the first comprehensive guidance on responding to freshwater inland spills. API/NOAA classified specific oil response methods and their relative impacts on given environments and habitats. Physical, chemical and biological response methods are discussed and response impacts on the environment are classified as low impact, moderate impact, high impact and ineffective or inapplicable.

Table A.1.1, taken from the API/NOAA document, includes the findings for response method impacts on water environments and shoreline habitats.

## **5.2 APPROPRIATE RESPONSE FOR SPECIFIC SENSITIVE ENVIRONMENTS AND HABITATS**

Many of the issues dealing with appropriate response methods will be addressed in detail during the Sub-Area Planning. Response sections of Sub-Area plans will include:

- Identifying specific areas of concern throughout the region and pre-planning for the products most commonly spilled and the locations where spills most commonly occur;
- Response methods for habitats and sensitive areas using the API/NOAA guidance, Options for Minimizing the Environmental Impacts of Freshwater Spill Response;
- Pre-approving appropriate removal actions including the use of chemicals and dispersants per 40 CFR Subpart J - Use of Dispersant and Other Chemicals, 300.910;
- Locating access points, staging areas and boom anchor locations.

**[Note - Additional guidance on response techniques is under development.]**

TABLE A.1.1

RELATIVE IMPACT OF RESPONSE METHODS IN THE ABSENCE OF OIL

| RESPONSE METHOD                    | WATER ENVIRONMENT |                   |              |                      | SHORELINE HABITAT |          |      |                  |                 |        |     |          |
|------------------------------------|-------------------|-------------------|--------------|----------------------|-------------------|----------|------|------------------|-----------------|--------|-----|----------|
|                                    | OPEN WATER        | SMALL LAKES/PONDS | LARGE RIVERS | SMALL RIVERS/STREAMS | BEDROCK           | MAN-MADE | SAND | VEGETATED SHORES | SAND AND GRAVEL | GRAVEL | MUD | WETLANDS |
| <b>PHYSICAL RESPONSE METHODS</b>   |                   |                   |              |                      |                   |          |      |                  |                 |        |     |          |
| Natural Recovery                   | –                 | –                 | –            | –                    | –                 | –        | –    | –                | –               | –      | –   | –        |
| Booming                            | L                 | L                 | L            | L                    | –                 | –        | –    | –                | –               | –      | –   | –        |
| Skimming                           | L                 | L                 | L            | L                    | –                 | –        | –    | –                | –               | –      | –   | –        |
| Barriers/Berms                     | –                 | –                 | –            | H                    | –                 | –        | –    | –                | –               | –      | –   | –        |
| Physical Herding                   | L                 | L                 | L            | L                    | –                 | –        | –    | –                | –               | –      | –   | –        |
| Manual Oil Removal/Cleaning        | L                 | H                 | L            | M                    | L                 | L        | L    | H                | M               | M      | H   | H        |
| Mechanical Removal                 | L                 | H                 | H            | H                    | –                 | M        | M    | H                | M               | M      | H   | H        |
| Sorbents                           | L                 | L                 | L            | L                    | L                 | L        | L    | L                | L               | L      | M   | M        |
| Vacuum                             | L                 | L                 | L            | L                    | L                 | L        | L    | M                | L               | L      | H   | M        |
| Debris Removal                     | –                 | L                 | L            | L                    | L                 | L        | L    | L                | L               | L      | M   | M        |
| Sediment Reworking                 | –                 | H                 | –            | H                    | –                 | –        | M    | H                | M               | M      | H   | H        |
| Vegetation Removal                 | L                 | H                 | M            | H                    | –                 | –        | –    | H                | –               | –      | –   | H        |
| In-situ Burning                    | L                 | M                 | L            | M                    | L                 | L        | M    | M                | M               | M      | H   | M        |
| Flooding                           | –                 | –                 | –            | –                    | L                 | L        | L    | L                | M               | L      | L   | L        |
| Low-Pressure, Cold-Water Flushing  | –                 | –                 | –            | –                    | L                 | L        | M    | L                | L               | M      | H   | L        |
| High-Pressure, Cold-Water Flushing | –                 | –                 | –            | –                    | L                 | L        | H    | H                | H               | H      | H   | H        |
| Low-Pressure Hot-Water Flushing    | –                 | –                 | –            | –                    | M                 | L        | H    | H                | M               | M      | H   | H        |
| High Pressure, Hot-Water Flushing  | –                 | –                 | –            | –                    | M                 | L        | H    | H                | H               | H      | H   | H        |
| Steam Cleaning                     | –                 | –                 | –            | –                    | M                 | L        | H    | H                | M               | M      | H   | H        |
| Sand Blasting                      | –                 | –                 | –            | –                    | H                 | M        | –    | –                | –               | –      | –   | –        |
| <b>CHEMICAL RESPONSE METHODS</b>   |                   |                   |              |                      |                   |          |      |                  |                 |        |     |          |
| Dispersants                        | L                 | H                 | L            | H                    | –                 | –        | –    | –                | –               | –      | –   | –        |
| Demulsifiers                       | L                 | L                 | L            | M                    | –                 | –        | –    | –                | –               | –      | –   | –        |
| Visco-Elastic Agents               | L                 | M                 | L            | L                    | –                 | –        | –    | –                | –               | –      | –   | –        |
| Herding Agents                     | L                 | M                 | L            | H                    | –                 | –        | –    | –                | –               | –      | –   | –        |
| Solidifiers                        | L                 | L                 | L            | L                    | L                 | L        | M    | M                | M               | L      | M   | M        |
| Chemical Shoreline Pretreatment    | –                 | –                 | –            | –                    | I                 | I        | I    | I                | I               | I      | I   | I        |
| Shoreline Cleaners                 | –                 | –                 | –            | –                    | M                 | L        | M    | I                | M               | M      | M   | I        |
| <b>BIOLOGICAL RESPONSE METHODS</b> |                   |                   |              |                      |                   |          |      |                  |                 |        |     |          |
| Nutrient Enrichment                | L                 | M                 | L            | L                    | L                 | L        | L    | L                | L               | L      | L   | L        |
| Natural Microbe Seeding            | I                 | I                 | I            | I                    | I                 | I        | I    | I                | I               | I      | I   | I        |

Notes:

Impacts address generic characteristics of response techniques and do not consider the impact of oil

- Ineffective or inapplicable to the environment/habitat
- L Low impact
- M Medium impact
- H High impact
- I Insufficient information available to evaluate impact.

### **5.3 MONITORING RESPONSE EFFECTIVENESS - MONITORING PLANS**

An oil spill is dynamic and cleanup efforts must change as conditions change. Over time, the oil will spread, move downstream, and oil can chemically change due to weathering. Climatic and geographic conditions may also change. A continual monitoring program to ensure the maximum removal of oil and protection of the environment throughout the duration of the cleanup is essential.

The FOSC/SOSC, in consultation with the natural resource trustees and the responsible party, will monitor the effectiveness of response activities in protecting sensitive habitats and removing discharges of oil or releases of hazardous substances. The FOSC/SOSC will consult with natural resource trustees and natural resource agency managers regarding the need for and methods of an incident-specific long-term monitoring plan. Efforts to control, contain and clean up the oil typically involve a number of containment and recovery methods. These methods may include booms, barriers, skimmers, sorbents, chemical agents, and manual recovery. As each of these methods has limitations associated with them, continued monitoring is necessary to ensure a successful cleanup. Monitoring will also be necessary to ensure that ecological impacts associated with the response actions do not cause more harm than good. Monitoring activities may include visual observation, sampling, data collection and evaluation, and replacement of saturated or defective material. Consultation with the natural resource agencies is essential to minimize injury to fish and wildlife and their habitats or other sensitive environments.

#### **5.3.1 Monitoring Plan Outline**

Section 300.210(E) of the NCP requires that the FWSEA provide monitoring plan(s) to evaluate the effectiveness of different countermeasures or removal actions in protecting the environment. This is an outline for such plans. Specific plans for each response need to be developed in consultation with natural resource trustees and natural resource agency managers.

##### **5.3.1.1 Objectives and Scope**

Determine the effectiveness of the selected countermeasures or removal actions in counteracting the effects of the discharge or release. Evaluate the environmental impact of these activities.

### **5.3.1.2 Monitoring Plan Design**

#### **5.3.1.2.1 Monitoring Intensity Levels**

The intensity of monitoring efforts may be adjusted to the intensity of the response. Field activities consisting of reconnaissance, environmental parameters assessment, sampling and documentation efforts, and laboratory activities should be conducted on a scale appropriate to the response.

#### **5.3.1.2.2 Selection of Treated and Untreated Sites**

Treated and untreated (or control) sites should exhibit similar chemical and physical characteristics to support their comparability. The following criteria should be considered: (1) environmental parameters, (2) physical habitat and geological morphology, and (3) degree of contamination with the released substance and probability of further contamination.

#### **5.3.1.3 Monitoring Parameters and Collection Frequency**

Sampling at each site, water depth (as appropriate), and time should be performed in triplicate. The size of samples collected should be based on the requirements of the analytical methods to be used for their analysis.

#### **5.3.1.4 Data Quality Requirements and Assessments**

All data collection activities must be planned and conducted to produce data of known and acceptable quality. To help ensure that these objectives are met, all contractors performing work as part of the monitoring effort must submit a quality assurance plan. Parameters for defining data quality include appropriateness of analytes, detection limits, precision, accuracy, representativeness, comparability, and completeness. Representativeness and comparability should be designed into the monitoring plan through provisions for replicate sampling from remediated and control areas and the use of standard, approved methods for sampling and laboratory analyses.

#### **5.3.1.5 Sample Custody Procedures**

Accurate identification and proper control of samples is important to help ensure the acceptability and usability of the resulting analytical data. Having standard sample custody procedures is particularly important where the individuals performing sample collection may vary and where individuals collecting samples will not be the ones analyzing the samples. Where the monitoring program is conducted by a contractor, the contractor should designate a sample custodian who will ensure tracking of samples and that custody procedures are properly followed.

#### **5.3.1.6 Sampling and Analytical Methods**

All sampling and laboratory analyses should be developed in consultation with natural resource trustees and natural resource managers and should follow EPA or other approved methods unless otherwise stipulated or requested by the FOSC.

#### **5.3.1.7 Response Organization and Resource Requirements**

The decision to implement a monitoring plan is made in accordance with the NCP and the Region 7 RICP. A project manager, under the direction of the FOSC, is responsible for implementing the plan.

##### **5.3.1.7.1 Project Manager**

Specific responsibilities of the project manager include: obtaining approval from the FOSC for the monitoring plan, assembling teams to perform observations and sampling as appropriate, coordinating activities with the FOSC to ensure operations do not interfere with response operations, naming a sample custodian to handle sample transfers and chain of custody concerns, ensuring representation from each RRT member agency that wishes to participate, ensuring consultation with the natural resource trustees and natural resource managers, ensuring and documenting data quality, and ensuring the preparation and submission of all required reports. Other personnel required will be dependent on the size of the spill and of the monitoring effort.

##### **5.3.1.7.2 Equipment Requirements**

Equipment requirements will be determined by the scope of the monitoring effort. However, sufficient equipment to complete required sampling and photo documentation must be available.

#### **5.3.1.8 Data Validation**

All data will be subject to a thorough check by the FOSC and the monitoring Project Manager, or their designated representative, for errors in transcription, calculation, or computer input. In addition, the Project Manager will review all incident logs, sample logs, and data forms to ensure that requirements for documentation and data quality assessment have been met.

#### **5.3.1.9 Performance and System Audits**

To help ensure that work is being performed - whether by contractor, EPA, or State personnel - is progressing in accordance with the monitoring plan and specified objectives and procedures, the FOSC,

through the monitoring project manager, maintains the right to conduct performance or system audits of field and laboratory collection activities. The categories of audits are described below:

**Management System Reviews** -- Evaluate the Quality Assurance Program of an organization, such as a firm contracted to conduct a monitoring project or a laboratory sample analyses. The purpose of this review is to verify whether the quality assurance management procedures stated by the contractor are in place prior to a contract award.

**Data Quality Audits** -- Evaluate a data set, or all data sets, of a particular project, by comparing the data set against specified data quality requirements for that data set.

**Technical System Audits** -- Evaluate the actual environmental measurement data-collection systems and their associated quality control systems. These audits involve on-site auditing of field sampling activities, field measurement activities, and laboratory analytical procedures.

**Performance Audits** -- Evaluate analytical methods and procedures of a laboratory. These audits are conducted by submitting performance evaluation samples to a laboratory for analysis. The samples should contain specific pollutants in known matrices whose concentration and identity are unknown to the testing laboratory.

#### **5.3.1.10 Documentation and Reporting**

During the course of response activities and accompanying monitoring efforts, the following reports should be prepared and submitted to the FOSC:

**Activity reports** - Provide descriptions of the response activity area, weather, unique observations, and activities undertaken, as well as the names, affiliations and signatures of persons on site. Activity reports should be prepared whenever activities on a site are undertaken.

**Analytical reports** -- Provide laboratory analysis results of environmental and control samples. Analytical reports should be prepared and submitted by the analytical lab within 10 days after receipt of environmental samples for analysis.

**After action report** -- Provides a description of the overall bioremediation activity and accompanying monitoring effort, including results of both field and laboratory activities.

#### **5.3.1.11 Revising Plans and Procedures**

Monitoring plans should include provisions for modifications, including additional consultation with natural resource trustees and natural resource managers.

### **6.0 FISH AND WILDLIFE RESPONSE CAPABILITIES**

In addition to consultation and coordination with natural resource trustees and other natural resource management agencies during the pre-spill planning phase to identify and understand potential natural resource concerns, consultation and coordination with these agencies during the response is also essential. Fish and wildlife response capabilities include:

#### **6.1 TECHNICAL EXPERTISE AND ASSISTANCE**

During a response, natural resource trustees and managers will provide technical assistance and expertise on potential effects of oil on fish and wildlife and their habitats or other sensitive environments that can be found in the impacted area. They are familiar with the area or habitats affected and are able to provide recommendations on the best locations for staging areas, access points, or anchor locations. They will recommend specific habitats where protective measures should be taken and provide advice on response actions to be taken. They can assist in the development of a monitoring plan and subsequent collection of data. In addition, U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) Wildlife Services has extensive operational and technical capabilities to assist with proper humane capture, handling, hazing, transport, and other issues that typically arise in spill situations. Finally, the U.S. Fish and Wildlife Service and the State wildlife agency will direct or provide oversight for the protection, rescue, and rehabilitation of fisheries and wildlife.

#### **6.2 WILDLIFE PROTECTION**

When an oil spill occurs, natural resource trustees or managers will provide timely advice on the necessary measures to protect wildlife from exposure to oil and the priority and timing of such measures. Protective measures may include all or a combination of the following:

- Prevent the oil from reaching areas where migratory birds and other wildlife are located by either containing or recovering the oil, or
- Deter birds or other wildlife from entering areas already affected by oil by using wildlife hazing devices or methods.

Wildlife hazing devices or methods are generally grouped into visual or auditory, or a combination of both. In an emergency, the USFWS, APHIS Wildlife Services, the State wildlife agency, or a local animal damage control agent may be able to locate and provide these devices.

### 6.3 WILDLIFE RESCUE AND REHABILITATION

If exposure of birds and other wildlife to oil cannot be prevented, an immediate decision will need to be made whether to capture and rehabilitate oiled birds and other wildlife. The Department of the Interior (DOI) has statutory responsibilities for the protection of migratory birds and Federally-listed threatened and endangered species, which are carried out by the USFWS. If animals other than migratory birds or Federally-listed threatened or endangered species are found injured, the responsible agency would typically be the State wildlife agency. The decision to rescue and rehabilitate oiled wildlife must be made in consultation with the applicable State and Federal natural resource agencies as State and Federal permits are required by law.

State and Federal permits are required to collect, possess, treat and band migratory birds and threatened and endangered species. Federal laws and regulations that require such permits are as follows:

- **Migratory Bird Treaty Act of 1918, as amended, 16 U.S.C. 703 et seq.** No person shall take, possess, import, export, transport, sell, purchase or barter, any migratory bird, or the parts, nests, or eggs of such bird except as permitted under the terms of a valid permit issued by U.S. Fish and Wildlife Service pursuant to the provisions of 50 CFR 21 and 50 CFR 13. Enforcement authority and penalties for violations are provided.
- **Bald and Golden Eagle Protection Act of 1940, as amended, 16 U.S.C. 668 et seq.** No person shall take, possess, or transport any bald eagle or any golden eagle, or the parts, nests, or eggs of such birds except as permitted under the terms of a valid permit issued by USFWS pursuant to 50 CFR 22 and 50 CFR 13. Enforcement authority and penalties for violations are provided.
- **Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq.** It is unlawful for any person to commit, attempt to commit, solicit another to commit, or cause to be committed the import or export, take, possession, sale or offer for sale any endangered species except as permitted under the terms of a valid permit issued by the U.S. Fish and Wildlife Service pursuant to 50 CFR 17. Enforcement authority and penalties for violations are provided.

Missouri laws and regulations that require permits are as follows:

- **3 CSR 10-4.110(1) General Prohibition; Applications.** No bird, fish, crayfish, mussel, amphibian, reptile, mammal, or other form of wildlife, including their homes, dens, nests, eggs, and larvae in Missouri shall be molested, pursued, taken, hunted, trapped, tagged, marked, enticed, poisoned, killed, transported, stored, served, bought, sold, given away, accepted, possessed, propagated, imported, exported, or liberated to the wild in any manner, number, part, parcel, or quantity, at any time, except as specifically permitted by these rules and any laws



consistent with Article IV, sections 40–46 of the *Constitution of Missouri*; however, this Code shall not apply to other invertebrates except as specifically provided.

- **3 CSR 10-9.415 Wildlife Rehabilitation Permit.** (1) A permit to take, possess, transport and hold in captivity for rehabilitation, sick or injured wildlife of Missouri origin. Wildlife may not be propagated, sold, exhibited, given away, held more than one hundred twenty (120) days, released or otherwise disposed of except as authorized by an agent of the department. This permit may be issued only to individuals or organizations qualified to rehabilitate wildlife through graduation from a school of veterinary medicine or other substantive training and experience in wildlife rehabilitation.  
  
(2) Species authorized to be held are limited to those specified on the permit. Any traps, nets or other devices used to take sick or injured wildlife under this permit shall be attended daily, or be constantly attended if so stated on the permit, and labeled with the permit holder's full name and address. The names and addresses of persons assisting under the direct supervision of the holder of the permit shall be submitted to the local conservation agent in writing before assistance can be rendered. This permit does not relieve the holder of full compliance with other provisions of the Code or other State and Federal requirements. The wildlife rehabilitation permit is not valid until signed.  
  
(3) Animals held for rehabilitation must remain at the location specified on the permit or a veterinarian's premises except as otherwise authorized in writing by the director. The permit holder will confine the wildlife for public safety in a humane and sanitary condition acceptable to the Department of Conservation.  
  
(4) Each permit holder shall maintain a current record, on forms furnished by the department, of each animal received, rehabilitated, destroyed, or released. Printed copies of these forms can be obtained from the Missouri Department of Conservation, PO Box 180, Jefferson City, MO 65102-0180 and online at [www.missouriconservation.org](http://www.missouriconservation.org). These records shall be available for inspection by an authorized agent of the department at any reasonable time.

***[Relevant laws governing other States are to be added as received.]***

If rescue and rehabilitation efforts are deemed worthwhile, one Federal permit is required for oiled migratory birds and one Federal permit is required for oiled threatened and endangered species. Each of these permits may encompass more than one species. If a bird is considered a migratory bird, but is also a threatened or endangered species, it should be listed under the threatened and endangered species permit.

**USFWS personnel will handle all Federal permit activities through the field office responsible for the area where the spill occurs. State permits must be handled through the applicable State agency office. The offices that should be contacted to initiate the permitting process are:**

|          |  |  |
|----------|--|--|
| Iowa     | U.S. Fish and Wildlife Service<br>1511 47 <sup>th</sup> Avenue<br>Moline, Illinois 61265   | 309-757-5800<br>Fax: 757-5807          |
|          | Iowa Department of Natural Resources<br>Licensing Bureau<br>Wallace State Building<br>East 9th and Grand Street<br>Des Moines, Iowa 50319-0035 | 515-281-8688<br>Fax 281-6794           |
| Kansas   | U.S. Fish and Wildlife Service<br>2609 Anderson Ave<br>Manhattan, Kansas 66502   | 785-539-3474<br>Fax 539-8567           |
|          | U.S. Fish and Wildlife Service<br>Law Enforcement Division   | 316-214-9066                           |
|          | Division of Fisheries and Wildlife<br>Kansas Dept. of Wildlife, Parks and Tourism<br>512 Southeast 25th Avenue<br>Pratt, Kansas 67124-8174     | 620-672-5911<br>Fax 672-6020           |
| Missouri | U.S. Fish and Wildlife Service<br>101 Park Drive, Suite A<br>Columbia, Missouri 65203  | 573-234-2132<br>Fax 234-2181           |
|          | Wildlife Division<br>Missouri Department of Conservation<br>P.O. Box 180<br>Jefferson City, Missouri 65102                                     | 573-751-4115 Ext. 3553<br>Fax 526-4663 |
| Nebraska | U.S. Fish and Wildlife Service<br>9325 S. Alda Road<br>Wood River, Nebraska 68883  | 308-382-6468<br>Fax 384-8835           |
|          | Nebraska Game and Parks Commission<br>2200 North 33rd Street<br>Lincoln, Nebraska 68503  | 402-471-0641<br>Fax 471-5528           |

**The appropriate USDA/APHIS office should be contacted to obtain operational and technical capabilities regarding the safe and humane capture, handling, hazing, and transport of wildlife:**

|          |   |   |
|----------|---|---|
| Iowa     | Iowa Wildlife Services, State Director<br>1714 Commerce Court, Suite C<br>Columbia, Missouri 65202    | Phone: 573-449-3033<br>Toll Free: 1-866-4USDAWS<br>Fax: 573-449-4382  |
| Kansas   | Kansas Wildlife Service, State Director<br>4070 Ft. Riley Blvd<br>Manhattan, Kansas 66502             | Phone: 785-537-6855<br>Toll Free: 1-866-4USDAWS<br>Fax: 785- 537-6862 |
| Missouri | Missouri Wildlife Service, State Director<br>1714 Commerce Court, Suite C<br>Columbia, Missouri 65202 | Phone: 573-449-3033<br>Toll Free: 1-866-4USDAWS<br>Fax: 573-449-4382  |
| Nebraska | Nebraska Wildlife Service, State Director<br>5940 S. 58th Street<br>Lincoln, Nebraska 68516           | Phone: 402-434-2340<br>Toll Free: 1-866-4USDAWS<br>Fax: 402-434-2330  |

All rescue and rehabilitation efforts will be directed by the USFWS and the State wildlife agency, including the notification of a qualified wildlife rehabilitation organization and obtaining the necessary permits. The following criteria will be used by the USFWS and State wildlife agencies in selecting a rehabilitator.

***Guidelines for Selection of Wildlife Rehabilitator***

- Wildlife rehabilitator must have, or be able to obtain, the appropriate Federal and State permits and licenses to collect, possess, treat, and band migratory birds or threatened and endangered species.
- Wildlife rehabilitator must demonstrate high standards of practice, treatment, conduct, and ethics as reflected by organization such as the National Wildlife Rehabilitator Association, the American Veterinarian Association and the American Society for Prevention of Cruelty to Animals.
- Wildlife rehabilitator must have adequate liability insurance to protect both staff and volunteers.
- Wildlife rehabilitator should have a proven record and experience in rescue and rehabilitation of oiled wildlife.
- Wildlife rehabilitator must comply with all applicable Federal (Occupational Safety and Health Administration, etc.) and State safety regulations to protect staff and volunteers. Two organizations, International Bird Rescue in Berkeley, California, and Tri-State Bird Rescue and Research, Inc. in Newark, Delaware, have become recognized experts in oiled bird rehabilitation:

Tri-State Bird Rescue and Research, Inc.  
170 Possum Hollow Road  
Newark, Delaware 19711

Phone: 302-737-9543  
Fax: 302-737-9562

International Bird Rescue Research Centers

San Francisco Bay Center  
4369 Cordelia Rd.  
Fairfield, California 94534

Phone: 707-207-0380  
Fax 707-207-0395

Los Angeles Center  
3601 S. Gaffey Street, Box 3  
San Pedro, California 90731  
Emergency Oiled Wildlife Response

Phone: 310-514-2573  
Fax 310-514-8219  
Phone: 1-888-447-1743

These organizations have extensive experience in bird rescue and rehabilitation and have worked both with government and industry. In addition, other more local, less well known bird rehabilitation organizations may also have such expertise in this area. Veterinarians and researchers from USFWS, other Federal agencies, and State wildlife agencies and universities may also provide assistance and expertise during rehabilitation efforts.

***All rescue and rehabilitation efforts will be directed by the USFWS and the State wildlife agency, including the notification of a qualified wildlife rehabilitation organization and obtaining the necessary permits.***

***Health and Safety Concerns in Wildlife Rescue and Rehabilitation***

Additional information can be found in the USFWS “Best Practices for Migratory Bird Care During Oil Spill Response”, which discusses techniques for preventing oiling of birds as well as good practices for cleaning, caring for, and releasing recovered birds. This document is available at:

<https://digitalmedia.fws.gov/cdm/ref/collection/document/id/1264> .

Two Occupational Safety and Health Administration (OSHA) regulations cover the majority of occupational health and safety issues encountered during wildlife rescue and rehabilitation:

The Hazardous Wastes Operations and Emergency Response (29 CFR 1910.120) regulates organizations or individuals directly involved in on-site (hot-zone) retrieval or clean-up efforts. In addition, each State may have its own worker safety requirements; coordination with the appropriate State agency should be conducted to ensure these requirements are also met. The Hazard Communication Standard (29 CFR 1910.1200), also known as “Right to Know Law” or “HazCom” requires that all chemicals in the work

place be fully evaluated for possible physical or health hazards and that all information relating to these hazards be made available to all workers. HazCom applies to rehabilitation organizations because petroleum is considered a human health hazard.

Rehabilitation organizations are legally required to educate and protect all employees, including volunteers. Individuals working with oiled animals need information of all potential hazards associated with the handling of these animals. The following minimum requirements should be applied to wildlife rescue and rehabilitation personnel, including volunteers:

- **Wildlife rescue and rehabilitation management personnel** are the core team of certified rehabilitators who will direct operations. These people must have 24 hours of classroom training in hazardous waste operations and emergency response.
- **Rehabilitation facility volunteers** work under the direction of the facility management team and are not allowed on-scene, nor in the hot-zone, unless additional training is provided (see Retrieval volunteers). Volunteers working in this category must receive four hours of training in the Hazard Communication Program before they can begin work.
- **Retrieval volunteers** work under the direction of the search and rescue management team and are allowed on-scene, but not in the hot zone. Volunteers working in this category must receive between 4-8 hours of training in the Hazard Communication Program before they can begin work.
- **Any hot-zone retrieval of animals** would need to be performed by someone with 40 hours of classroom safety training for hazardous waste workers that meets OSHA guidelines, including eight hour annual refresher training.

**The FOSC, in consultation with OSHA's representative to the Regional Response Team, has responsibility for making assessments when training requirements are in question.**

(The NCP 300.210 (c) II (H) states that the annex will identify and secure the means of providing, if needed, the minimum required OSHA and EPA training for volunteers, including those who assist with injured wildlife).

**A Hazard Communication Program** should contain all of the following elements:

- the nature of the oil and how its composition may change with the effect of weathering,
- the nature of other hazardous chemicals that may be contacted during rehabilitation efforts,
- routes of entry of these chemicals,
- signs and symptoms of chemical exposure,
- protective measures, including work practices and personal protective equipment (PPE, with training on how to properly use),

- environmental monitoring equipment,
- importance of personal hygiene,
- how to read a Safety Data Sheet and know what it means,
- first aid protocols and identification of medically trained personnel and first aid stations,
- storage and disposal of hazardous waste, including medical waste and PPE,
- training records of written curriculum, date and hours of instruction, instructor and student names.

Besides chemical hazards, other hazards such as mechanical, physical and biological hazards are also present during rescue and rehabilitation activities. Workers must also be trained on these hazards as well.

In addition to the above, training elements may include the following:

Facility concerns:

- behavior of oiled birds
- proper animal restraint
- personal protective equipment and clothing to protect from bloodborne pathogens and zoonoses
- proper heavy lifting techniques
- safe working practices, e.g. no slippery or messy floors
- electrical safety

Field concerns (in addition to the above):

- climatic conditions (e.g. cold, heat)
- terrain
- proper retrieval methods
- vehicle safety (4-WD vehicle, boat)
- water hazards
- response operations hazards

Other safety concerns may occur at either the spill site or the rehabilitation facility. These concerns should be addressed on a site-specific basis.

## **6.4 ENDANGERED SPECIES ACT CONSULTATION**

The following is a summary of FOSC and USFWS responsibilities under the Endangered Species Act, implementing regulations, and the ESA MOA. For detailed information of ESA consultation requirements and procedures, see Annex V (ESA MOA).

### **PRE-SPILL PLANNING**

#### Area/Sub-Area Committee Chair Responsibilities

- Request (in writing) endangered species expertise, a species list, and a description of their habitats from USFWS.
- Engage in informal and, as necessary, formal consultation on the Area Contingency Plan (ACP) and Sub-Area Plans.
- Upon receipt, distribute updated species information to all holders of the RICP and Sub-Area Plans. Distribute updated Threatened and Endangered Species sections of the Fish and Wildlife and Sensitive Environments Plan and all Sub-Area plans at least semiannually.

#### USFWS Responsibilities

- In response to request, provide species list and a description of their habitats, and identify a listed species expert to assist the Area/Sub-Area Committee.
- Engage in informal and, as necessary, formal consultation on the ACP and Sub-Area Plans.
- As changes occur, but no less than semiannually, provide updated species information to the Area/Sub-Area Committee Chairs, through the DOI RRT/Area Committee Representative.

### **DURING SPILL RESPONSE**

#### FOSC Responsibilities

- If fish and wildlife resources may be affected by a discharge or release, notify Federal and State natural resource trustees and managers, and consult with them on removal actions to be taken.
- If listed species and/or critical habitat are or could be present, immediately contact USFWS to initiate emergency consultation pursuant to the Endangered Species Act, implementing regulations, and the ESA MOA.
- Keep USFWS and the DOI RRT/Area Committee Representative apprised of ongoing response actions.
- Document any adverse effects (including incidental take) to listed species or their habitat.
- Maintain a record of all oral and written communications with the USFWS during the response.

### USFWS Responsibilities

- Provide the FOSC with timely recommendations on actions to avoid or minimize impacts to listed species and/or their habitats throughout the duration of the response.
- Respond to requests for emergency consultation pursuant to the Endangered Species Act, implementing regulations, and the ESA MOA.
- If Aincidental take@ is anticipated, so advise the FOSC.
- Upon request, participate in the ICS/UC.
- Maintain a record of all oral and written communications with the FOSC during the response.

## **POST RESPONSE**

### FOSC Responsibilities

- If listed species or critical habitat have been adversely affected by response activities, initiate formal consultation of the effect of these activities pursuant to the Endangered Species Act, implementing regulations, and the ESA MOA. See Annex V to the RICP (ESA MOA) for specific requirements and procedures.

### USFWS Responsibilities

- Respond to requests for formal consultation in accordance with the Endangered Species Act, implementing regulations, and the ESA MOA.

## **6.5 LAW ENFORCEMENT**

The U.S. Fish and Wildlife Service's Office of Law Enforcement (OLE) is responsible for investigating suspected and alleged violations of Federal wildlife laws including the Migratory Bird Treaty Act, 16 USC 703 *et seq.*, the Endangered Species Act, 16 USC 1538 *et seq.*, the Eagle Protection Act, 16 USC 668a *et seq.*, the National Wildlife Refuge Act, 16 USC 668dd *et seq.*, and several others.

Wildlife injuries, mortalities, and habitat impacts resulting from spills can constitute violations of OLE-enforced laws. Special Agents of the OLE or Refuge Officers of the Division of Refuges (when USFWS lands are involved) may be required to initiate investigations during the spill response phase in order to document violations and collect evidence in a timely manner. These law enforcement officers will coordinate their activities with the FOSC or other on- scene law enforcement personnel. Additionally, the Special Agents/Refuge Officers will insure that responders possess the necessary Federal permits (Section 6.3) and that wildlife-related response activities are accomplished in accordance with applicable law and permit provisions.



Special Agents and Refuge Officers often have detailed knowledge of the local terrain and can provide timely, site specific information to response personnel. In many cases, the OLE and other USFWS responders have shared and similar interests and will work cooperatively on collecting or sampling, recording, storage, transportation, and laboratory analysis of injured or dead wildlife. When necessary, additional personnel operating under the guidance and direction of the OLE may be brought on scene to assist with wildlife handling or collection.

## **6.6 OTHER ROLES AND RESPONSIBILITIES OF NATURAL RESOURCE TRUSTEES**

In the event of a spill, it may be necessary for natural resource trustees and managers to initiate a Natural Resource Damage Assessment (NRDA). NRDA is the process by which trustees collect, compile and evaluate data, information and statistics to determine the extent of injury to natural resources. This information is used to assess damages, the dollar amount necessary to restore injured natural resources and compensate for lost use as a result of the injury, and then to seek recovery of those damages from the responsible party.

At the same time removal actions undertaken to contain and remove oil and wildlife rescue and rehabilitation activities are occurring, the natural resource trustees may initiate NRDA activities. These activities are usually initiated to acquire data and materials that are likely to be lost if not collected during or immediately after a spill has occurred. Such field sampling and data collection is typically limited to:

- Samples necessary to preserve perishable materials likely to have been affected or contain evidence of the oil. These samples will generally be biological material that is either dead or has been visibly injured by the oil.
- Samples of other ephemeral conditions or materials, such as surface water, sediments, soil, or the oil itself, which are necessary for identification and measurement of concentrations. These samples would otherwise be lost because of such factors as dilution, movement, decomposition, or leaching if not taken immediately.
- Counts of dead or visibly injured organisms, which if delayed may not be possible because of factors such as decomposition, scavengers, sinking, or water movement.

In certain circumstances, a natural resource trustee may undertake emergency restoration efforts consistent with its existing authority to prevent or reduce the immediate migration of oil onto or into a trust resource. Emergency restoration would be undertaken by the trustee only if the responsible party does not do it or the EPA is precluded under statutory authority from conducting response and removal actions rapidly enough to protect natural resources.

Because initiation of natural resource damage assessment activities may occur concurrently with removal actions as part of the response, all sampling and field work conducted by the natural resource trustees must be coordinated with the lead response agency so as to minimize any interference with response operations or duplication of sampling and data collection efforts. Prior FOSC approval is required for any work conducted in support of removal activities and before any associated costs will be reimbursed by the Oil Spill Liability Trust Fund. Other activities performed as part of initiation of damage assessments are reimbursable by the Oil Spill Liability Trust Fund as long as these activities are approved in advance by the Fund Center.

## **7.0 HISTORIC/ARCHEOLOGICAL RESOURCE RESPONSE**

Although the NCP does not include language specific to protection of historic properties, there are several laws that require consultation to prevent impact to these resources. Additionally, various Federal agencies including the EPA, DOI, U.S. Coast Guard (USCG), NOAA, Department of Energy (DOE), Department of Defense (DOD) and Department of Agriculture (USDA) signed the *Programmatic Agreement on Protection of Historic Properties during Emergency Response under the National Oil and Hazardous Substances Contingency Plan*. This Agreement ensures that historic properties are taken into account in the planning for and conduct of emergency response. Many states also have laws defining and protecting historic properties. Consultation with the State Historic Preservation Officer (SHPO), Indian Tribes, or other State and Federal land management agencies during pre-emergency response planning and/or in the course of an emergency response will enable the FOSC to avoid or minimize impacts on these important resources. (See Annex VI for a copy of the *Programmatic Agreement*).

### **7.1 TECHNICAL EXPERTISE AND ASSISTANCE**

During a response, historic resource managers/specialists can provide technical assistance and expertise on potential effects of oil on sensitive archeological and/or historic environments that can be found in the impacted area. They are familiar with the area and are able to provide recommendations on the best locations for staging areas and access points. They will recommend specific protective measures and provide advice on response actions to be taken. They can assist in the development of a monitoring plan and subsequent collection of data.

### **7.2 HISTORIC SITE PROTECTION**

When an oil spill occurs, historic resource managers can provide timely advice on the necessary measures to protect protected sites from exposure to oil and the priority and timing of such measures. Protective measures are often site specific.

Applicable laws and regulations governing historic property protection include, but are not limited to:

- **The Historic Sites Act (HSA) of 1935**, which established the National Park Service as the Federal governments' paramount historic preservation advocate.
- **The Archeological Resources Protection Act (ARPA)**, which prohibits the unauthorized excavation, removal, or defacement of archeological resources on Federal and Indian lands. "Archeological resources" are comprehensively defined to include archeological sites, structural remains, artifacts, bones, debris, etc. The Act provides stiff penalties for violators, and spell out permit requirements (uniform regulations jointly issued by the DOI, DOA and DOD).
- **The American Indian Religious Freedom Act (AIRFA)** is a joint Congressional resolution declaring that the U.S. government will protect the inherent rights of Indian tribes to the free exercise of their traditional religions. Generally, this requires agencies to consult with tribes when any action is contemplated that might affect the practice of traditional religion.
- **Executive Order 13007** requires agencies to avoid, to the best of their abilities, physical damage to Indian sacred sites on Federal and Indian land.

## **8.0 EVALUATING THE INTERFACE OF THE RICP WITH NON-FEDERAL PLANS**

The final rule on Oil Pollution Prevention for Non-Transportation-Related Onshore Facilities, 40 CFR Part 112, requires facilities with a total oil storage capacity greater than or equal to one million gallons to submit response plans if located at a distance such that a discharge of oil could cause injury (as defined at 40 CFR 112.2) to fish, wildlife, sensitive environments and public water intakes.

Facility owners or operators must determine the distance at which an oil spill could cause injury to fish and wildlife and sensitive environments and have a plan for mitigating a discharge's adverse effect. The plan must be consistent with the requirements of the NCP and this RICP Annex.

EPA will review and approve Facility Response Plans for compatibility with this Annex; pipeline plans in Region 7 will be reviewed and approved by PHMSA. Participation by facilities in the Area and Subarea Committees is encouraged. Joint exercises will be conducted to test facility plans and their interface with this Annex.

## **FEDERAL TRUSTEE CONTACTS**

Department of the Interior  
Courtney Hoover  
U.S. Department of the Interior  
Building 67, Room 118  
Box 25007 (D-108)  
Denver, CO 80225-0007  
Telephone 303 445-2503, Fax 303 445-6320

Department of Agriculture – Region VII RRT Representative

Department of Defense – Region VII RRT Representative

## **STATE TRUSTEE CONTACTS**

### **State of Iowa**

Chuck Gipp, Director  
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Wallace Building  
502 E. 9th Street  
Des Moines, IA 50319  
515-281-3388, Fax 515-281-8895

### **State of Kansas**

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Kansas Department of Health and Environment  
Staff Contact: Bob Jurgens Deputy Director, Bureau of Environmental Remediation  
Kansas Department of Health and Environment  
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Topeka, KS 66612-1367  
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### **State of Missouri**

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## **APPENDIX A.2**

# **ENVIRONMENTALLY SENSITIVE AREAS**

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## ENVIRONMENTALLY SENSITIVE AREAS

### APPENDIX A.2 TO REGION 7 INTEGRATED CONTINGENCY PLAN

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## 1.0 INTRODUCTION

Appendix A.2 contains a listing of Environmentally Sensitive Areas (ESA) in Region 7. The list has been accumulated by requesting information from Federal, State and local agencies regarding their areas of responsibility as recommended by the Oil Pollution Prevention; Non-Transportation-Related Onshore Facilities; Final Rule, 40 CFR Part 112. While this list helps to identify sensitive environments that could be impacted by spills into water bodies, sensitive environments identified in the RICP should not be considered comprehensive or definitive. (See Table A.2.1)

**TABLE A.2.1**

**RECOMMENDED ENVIRONMENTALLY SENSITIVE AREAS AND  
CURRENT STATUS IN REGION 7 RICP**

| ENVIRONMENTALLY SENSITIVE AREAS  | RESPONSIBLE<br>FEDERAL AGENCY | STATUS IN<br>REGION 7 RICP       |
|--|-------------------------------|----------------------------------|
| Wetlands, as defined in 40 CFR 230.3   | EPA                           | Available. See #1 Wetlands       |
| Critical habitat for designated or proposed endangered/threatened species                                  | FWS                           | Listed                           |
| Habitat used by designated or proposed endangered/threatened species or marine mammals defined as depleted | FWS                           | Underdevelopment                 |
| National parks   | DOI/NPS                       | Listed                           |
| Federal wilderness areas   | USDA                          | Listed                           |
| Clean lakes program critical areas   | EPA                           | Underdevelopment                 |
| National monuments   | DOI/NPS                       | Listed                           |
| National lakeshore recreational areas  | DOI/NPS                       | Listed                           |
| National preserves   | DOI/NPS                       | Listed                           |
| National wildlife refuges  | FWS                           | Listed                           |
| National river reach designated as Recreational  | EPA                           | Listed                           |
| Federal or State designated scenic or wild river   | DOI/NPS                       | Listed                           |
| Hatcheries   | DOI/FWS                       | Listed                           |
| Waterfowl production areas   | DOI/FWS                       | Listed                           |
| Wildlife Management Areas and Conservation Areas   | State Wildlife Agencies       | Listed for Nebraska and Missouri |

**Notes:**

“Listed” is currently listed in this Appendix A.2

“See #” is referenced and available through EPA Region 7

DOI - Department of Interior

EPA - Environmental Protection Agency

FWS - Fish and Wildlife Service

NA = Not applicable in Region 7

NPS - National Park Service

USDA - United State Department of Agriculture

To aid responders operating within ESA, EPA in conjunction with the Upper Mississippi River Basin Association has developed Habitat Fact Sheets to guide oil response activities. Each fact sheet contains tips for operations within each habitat and their sensitivity to oil spills. The fact sheets address unique habitat considerations and scientific references. Final drafts of the habitat fact sheets are available at <http://umrba.org/spillplans.htm>. An example fact sheet for Deep Marsh Annual is included at the end of this section. A list of example fact sheets includes the following:

- Deep Marsh Annual
- Deep Marsh Perennial
- Open Water
- Populus Community
- Rooted-Floating Aquatics
- Sedge Meadow
- Shallow Marsh Annual
- Shallow Marsh Perennial
- Submersed Vegetation
- Wet Meadow

## 2.0 ENVIRONMENTALLY SENSITIVE AREAS

The following list identifies Environmentally Sensitive Areas in EPA Region 7 by State, county, agency, type and name. The database is a growing bank of information to be utilized with the understanding that is limited in its data. Updates will be made periodically to acknowledge new Environmentally Sensitive Areas or to add information that may have been missed.

**TABLE A.2.2**

### ENVIRONMENTALLY SENSITIVE AREAS – IOWA

| COUNTY     | AGENCY                          | TYPE       | NAME                 | NOTES                         |
|------------|---------------------------------|------------|----------------------|-------------------------------|
| Hardin     | Iowa Dept. of Natural Resources | State Park | Pine Lake            | 0.5 Mi. N.E. Eldora - IA 118  |
| Dickinson  | IDNR                            | State Park | Gull Point           | 3.5 Mi. W. Milford - IA 32    |
| Davis      | IDNR                            | State Park | Lake Wapello         | 6 Mi. W. Drakesville - IA 273 |
| Buna Vista | IDNR                            | State Park | Wanata               | 0.5 Mi. S. Peterson - IA 10   |
| Taylor     | IDNR                            | State Park | Lake of Three Fires  | 3 Mi. N.E. Bedford - IA 49    |
| Washington | IDNR                            | State Park | Lake Darling         | 3 Mi. W. Brighton IA 78 & 1   |
| Boone      | IDNR                            | State Park | Ledges               | 6 Mi. S. Boone - IA 164       |
| Warren     | IDNR                            | State Park | Lake Ahquabi         | 5.5 Mi. SW Indianola - IA 349 |
| Jasper     | IDNR                            | State Park | Rock Creek           | 6 Mi. N.E. Kellogg - Co. Rd.  |
| Black Hawk | IDNR                            | State Park | George Wyth Memorial | Adjoining Cedar Falls - US 57 |

**TABLE A.2.2**

**ENVIRONMENTALLY SENSITIVE AREAS – IOWA**

| COUNTY        | AGENCY | TYPE       | NAME                        | NOTES                                 |
|---------------|--------|------------|-----------------------------|---------------------------------------|
| Lucas         | IDNR   | State Park | Shimek Forest Camping       | 1 Mi. E Farmington - IA 2             |
| Kossuth       | IDNR   | State Park | Ambrose A. Call             | 1.5 Mi. W. Algona                     |
| Guthrie       | IDNR   | State Park | Springbrook                 | 8 Mi. NE Guthrie Center - IA 25 & 384 |
| Calhoun       | IDNR   | State Park | Twin Lakes                  | 7.5 MI N. Rockwell City - I 4 & 124   |
| Monona        | IDNR   | State Park | Preparation Canyon          | 5 Mi. S.W. Moorhead - IA 372          |
| Fremont       | IDNR   | State Park | Waubonsie                   | 7 Mi. SW Sidney - IA 239 - 2          |
| Muscatine     | IDNR   | State Park | Wildcat Den                 | 10 Mi. E. Muscatine - IA 22           |
| Pottawattamie | IDNR   | State Park | Wilson Island Rec. Area     | 5 Mi. W. Loveland IA 362              |
| Allamakee     | IDNR   | State Park | Yellow River Forest Camping | 14 MI. SE Waudon - IA 76              |
| Monona        | IDNR   | State Park | Lewis & Clark               | 3 MI NW Onawa - IA 342                |
| Clayton       | IDNR   | State Park | Pikes Peak                  | 2.5 Mi. SW Spirt Lake - IA 9          |
| Dickinson     | IDNR   | State Park | Marble Beach                | 2 Mi. NW Orleans - IA 276             |
| Cerro Gordo   | IDNR   | State Park | McIntosh Woods              | 0.75 Mi. E. Ventura - US 18           |
| Dubuque       | IDNR   | State Park | Mines of Spain              | S. edge of Dubuque - US 52            |
| Dickinson     | IDNR   | State Park | Mini-Wakan                  | N. shore Spirt Lake                   |
| Decatur       | IDNR   | State Park | Nine Eagles                 | 6 Mi. SE Davis City - Co. RD.         |
| Emmet         | IDNR   | State Park | Okamanpedan                 | 3 Mi. N.E. Dolliver-Co. Rd.           |
| Linn          | IDNR   | State Park | Palisades-Kepier            | 3.5 Mi. W. Mt Vernon - US 30          |
| Dickinson     | IDNR   | State Park | Lower Gar Access            | 0.5 Mi S.E. Arnolds Park US - 71      |
| Jackson       | IDNR   | State Park | Maquoketa Caves             | 7 Mi. N.W. Maquoketa - IA 428         |
| Hancock       | IDNR   | State Park | Pilot Knob                  | 4 Mi E. Forest City - IA 9            |
| Winneshiek    | IDNR   | State Park | Fort Atkins                 | Adjoins Ft. Atkinson - IA 24          |
| Linn          | IDNR   | State Park | Pleasant Creek              | 4 Mi. N. & .5 Mi. W. Palo             |
| Shelby        | IDNR   | State Park | Prairie Rose                | 6 Mi. S. E. Harlan                    |
| Jones         | IDNR   | State Park | Wapsipinicon                | Adjoins Anomosa - E 34                |
| Lucas         | IDNR   | State Park | Red Haw                     | 1 Mi. E Chariton - US 34              |
| Montgomery    | IDNR   | State Park | Viking Lake                 | 4 Mi. S.E. Stanton - Co. Rd.          |
| Polk          | IDNR   | State Park | Walnut Woods                | 4 Mi. SW Des Moines - IA 5            |
| Van Buren     | IDNR   | State Park | Lacey-Kesauqua              | Adjoins Keosauqua - IA 1              |
| Appanose      | IDNR   | State Park | Honey Creek                 | 0.5 MI. W/ 3.5 S.E. Moravia Hwy. 142  |
| Winnebago     | IDNR   | State Park | Rice Lake                   | 2.5 Mi. SE Lake Mills - Co. Rd. IA    |
| Dickinson     | IDNR   | State Park | Tempiar Park Rec. Area      | 3 Mi. N.W. Spirtlake-IA 276           |
| Buchanan      | IDNR   | State Park | Cedar Rock                  | 3 Mi. N.W. Quasqueton                 |
| Plymoth       | IDNR   | State Park | Stone                       | 8 Mi. NW Sioux City - IA 12           |
| Van Buren     | IDNR   | State Park | Stephens Forest Camping     | W. Lucas, E. Chariton - US 65 - 34    |
| Pottawattamie | IDNR   | State Park | Lake Manawa                 | 1 Mi. S. Council Bluffs - IA 92       |
| Lee           | IDNR   | State Park | Stephens Forest Camping     | W. Lucas, E. Chariton - US 65 - 34    |
| Henry         | IDNR   | State Park | Geode                       | 4 Mi. SW Danville - Co. Rd.           |
| Mahaska       | IDNR   | State Park | Lake Keomah                 | 5 MI E. Oskaloosa - IA 371            |

**TABLE A.2.2**

**ENVIRONMENTALLY SENSITIVE AREAS – IOWA**

| COUNTY           | AGENCY                       | TYPE                    | NAME                                   | NOTES  |
|------------------|------------------------------|-------------------------|--|--|
| Johnson          | IDNR                         | State Park              | Lake MacBride                          | 4 Mi. W. Solon - IA 382                                    |
| Cass             | IDNR                         | State Park              | Lake Anita                             | 5 Mi. S. Anita Interchange - I 80                          |
| Tama             | IDNR                         | State Park              | Union Grove                            | 4 Mi. S.W. Gladbrooke - Co. Rd.                            |
| Dickinson        | IDNR                         | State Park              | Trappers Bay                           | Adjoins Lake Park - IA 219                                 |
| Fayette          | IDNR                         | State Park              | Volga River Rec. Area                  | 4 Mi. n Fayette - IA 150                                   |
| Various counties | National Parks Service (NPS) | National Historic Trail | Lewis & Clark National Historic Trail  | Generally following the Missouri River                     |
| Various counties | NPS                          | National Historic Trail | Mormon Pioneer National Historic Trail | From Nauvoo, IL, westward across southern IA toward Omaha. |
| Cherokee         | The Nature Conservancy (TNC) | Project Area            | Steele Prairie                         |  |
| Winneshiek       | TNC                          | Project Area            | Finch Memorial Forest                  | Upper Iowa River   |
| Howard           | TNC                          | Project Area            | Crossman Prairie                       |  |
| Johnson          | TNC                          | Project Area            | Williams Prairie                       |  |
| Warren           | TNC                          | Project Area            | Berry Woods                            |  |
| Allamakee        | TNC                          | Project Area            | Moutain Maple Hollow                   | NE Iowa  |
| Story            | TNC                          | Project area            | Ames High Prairie                      |  |
| Scott            | TNC                          | Project Area            | Lock & Dam #14 Eagle Area              |  |
| Woodbury         | TNC                          | Project Area            | Sioux City Prairie                     |  |
| Clayton          | TNC                          | Project Area            | Retz Menorial Forest                   |  |
| Black Hawk       | TNC                          | Project area            | Cedar Hill Sand Prairie                |  |
| Clayton          | TNC                          | Project Area            | Bluebell Hollow                        |  |
| Dickinson        | TNC                          | Project Area            | Freda Haffner Reserve                  |  |
| Linn             | TNC                          | Project Area            | Behrens Ponnd & Woodland               |  |
| Muscatine        | TNC                          | Projects Area           | Red Cedar Woodland                     |  |
| Muscatine        | TNC                          | Projects Area           | Greiner Family Nature Preserve         | N. of Muscatine  |
| Henry            | TNC                          | Projects areas          | Savage Memorial Woods                  |  |
| Clayton          | TNC                          | Projects Area           | Roggman Boreal Slopes                  |  |
| Dubuque          | TNC                          | Projects Area           | Kaufmann Avenue Prairie                | Dubuque  |
| Linn             | TNC                          | Project Area            | Hanging Bog                            |  |
| Cerro Gordo      | TNC                          | Project Area            | Hoffman Prairie                        |  |

**TABLE A.2.2**

**ENVIRONMENTALLY SENSITIVE AREAS – IOWA**

| COUNTY      | AGENCY                               | TYPE  | NAME  | NOTES                                      |
|-------------|--------------------------------------|---|---|--|
| Allamakee   | U.S. Fish and Wildlife Service (FWS) | National Wildlife Refuge                      | Upper Mississippi River Natl. Wildlife Refuge (NWR) |  |
| Allamakee   | NPS                                  | National Monument                             | Effigy Mounds Nat. Monument                         | 3 MI. N. of Marquette                      |
| Allamakee   | FWS                                  | National Wildlife Refuge                      | Driftless Area NWR                                  |  |
| Allamakee   | NPS                                  | Identified in NPS Nationwide Rivers Inventory | Upper Iowa River                                    | Kendallville to Highway 76 crossing        |
| Allamakee   | NPS                                  | Identified in NPS Nationwide Rivers Inventory | Yellow River  | Mississippi river to Hwy W 60 near Myron   |
| Appanoose   | U.S. Army Corps of Engineers (COE)   | Large Reservoir                               | Rathbun Lake  |  |
| Black Hawk  | NPS                                  | Identified in NPS Nationwide Rivers Inventory | Wapsipinicon River                                  | Mississippi River to Hwy. 334 at Frederika |
| Bremer      | NPS                                  | Identified in NPS Nationwide Rivers Inventory | Wapsipinicon River                                  | Mississippi River to Hwy. 334 at Frederika |
| Bremer      | TNC                                  | Project Area                                  | Brayton-Horsley Prairie                             |  |
| Buchanan    | NPS                                  | Identified in NPS Nationwide Rivers Inventory | Wapsipinicon River                                  | Mississippi River to Hwy. 334 at Frederika |
| Buena Vista | FWS                                  | National Wildlife Refuge                      | Iowa Wetland Management District                    |  |
| Butler      | TNC                                  | Project Area                                  | Big Marsh   | near Allison                               |
| Calhoun     | FWS                                  | Topeka shiner Critical Habitat                | West Cedar Creek                                    |  |
| Calhoun     | FWS                                  | Topeka shiner Critical Habitat                | East Cedar Creek                                    |  |
| Calhoun     | FWS                                  | Topeka shiner Critical Habitat                | Purgatory Creek                                     |  |

**TABLE A.2.2**

**ENVIRONMENTALLY SENSITIVE AREAS – IOWA**

| COUNTY      | AGENCY | TYPE  | NAME                                   | NOTES   |
|-------------|--------|---|--|---|
| Calhoun     | FWS    | Topeka shiner<br>Critical Habitat                         | Cedar Creek                            |   |
| Calhoun     | FWS    | Topeka shiner<br>Critical Habitat                         | Prairie Creek                          |   |
| Calhoun     | FWS    | Topeka shiner<br>Critical Habitat                         | Lake Creek                             |   |
| Calhoun     | FWS    | Topeka shiner<br>Critical Habitat                         | Camp Creek West<br>Fork                |   |
| Calhoun     | FWS    | Topeka shiner<br>Critical Habitat                         | Hardin Creek                           |   |
| Calhoun     | FWS    | Topeka shiner<br>Critical Habitat                         | Camp Creek                             |   |
| Carroll     | FWS    | Topeka shiner<br>Critical Habitat                         | North Racoon<br>River                  |   |
| Cedar       | NPS    | National<br>Historic Site                                 | Herbert Hoover<br>Historic Site        | 8 Mi. E of Iowa City                          |
| Cedar       | NPS    | Identified in<br>NPS<br>Nationwide<br>Rivers<br>Inventory | Wapsipinicon<br>River                  | Mississippi River to Hwy. 334 at<br>Frederika |
| Cerro Gordo | FWS    | National<br>Wildlife Refuge                               | Iowa Wetland<br>Management<br>District |   |
| Cerro Gordo | IDNR   | State Park  | Clear Lake                             | 2 Mi S. Clear Lake - IA 106                   |
| Chickasaw   | TNC    | Project Area  | Schrieder Prairie &<br>Fen             |   |
| Clark       | FWS    | National<br>Wildlife Refuge                               | Mark Twain NWR                         |   |
| Clay        | FWS    | National<br>Wildlife Refuge                               | Iowa Wetland<br>Management<br>District |   |
| Clay        | NPS    | Nat NPS Rural<br>Landmark                                 | Dewey Pasture &<br>Smith's Slough      | 4 Mi. NW of Ruthven                           |
| Clay        | TNC    | Project Area  | Lindstron-Simons<br>Fen                |   |
| Clayton     | FWS    | National<br>Wildlife Refuge                               | Upper Mississippi<br>River NWR         |   |
| Clayton     | FWS    | National<br>Wildlife Refuge                               | Driftless Area<br>NWR                  |   |
| Clayton     | IDNR   | State Park  | Bixby                                  | 2 Mi. N Edgewood                              |
| Clayton     | NPS    | Identified in<br>NPS<br>Nationwide<br>Rivers<br>Inventory | Turkey River                           | Mississippi River to Vernon<br>Springs        |
| Clinton     | FWS    | National<br>Wildlife Refuge                               | Upper Mississippi<br>River NWFR        |   |

**TABLE A.2.2**

**ENVIRONMENTALLY SENSITIVE AREAS – IOWA**

| COUNTY      | AGENCY | TYPE  | NAME                             | NOTES                                      |
|-------------|--------|---|----------------------------------|--|
| Clinton NPS | NPS    | Identified in NPS Nationwide Rivers Inventory | Wapsipinicon River               | Mississippi River to Hwy. 334 at Frederika |
| Dallas      | COE    | Large Reservoir                               | Saylorville Lake                 |  |
| Dallas      | FWS    | Topeka shiner Critical Habitat                | Elm Branch                       |  |
| Dallas      | FWS    | Topeka shiner Critical Habitat                | Swan Lake Branch                 |  |
| Dallas      |        | Identified in NPS Nationwide Rivers Inventory | Middle Raccoon River             | Panora to city of Redfield dam             |
| Dallas      | TNC    | Project Area                                  | Dilvers-Smith Woods              | access to Raccoon River                    |
| Delaware    | IDNR   | State Park                                    | Backbone                         | 4 Mi SW Strawberry Point - IA 410          |
| Dickenson   | FWS    | National Wildlife Refuge                      | Iowa Wetland Management District |  |
| Dickinson   | IDNR   | State Park                                    | Emerson Bay                      | 2.5 Mi. N. Milford - IA 32                 |
| Dickinson   | NPS    | Natural Landmark                              | Caylar Prairie                   | 5 Mi. NW of West Okaboji                   |
| Dickinson   | TNC    | Project Area                                  | Silver Lake Fen                  |  |
| Dickinson   | TNC    | Project Area                                  | Halbur Fen                       |  |
| Dubuque     | FWS    | National Wildlife Refuge                      | Upper Mississippi River NWR      |  |
| Dubuque     | FWS    | National Wildlife Refuge                      | Driftless Area NWR               |  |
| Dubuque     | NPS    | Natural Landmark                              | White Pine Hollow Preserve       | 20 Mi/ NW of Dubuque                       |
| Emmet       | FWS    | National Wildlife Refuge                      | Iowa Wetland Management District |  |
| Emmet       | IDNR   | State Park                                    | Fort Defiance                    | 1 MI. W. Esterville - IA 9                 |
| Fayette     | NPS    | Identified in NPS Nationwide Rivers Inventory | Turkey River                     | Mississippi River to Vernon Springs        |
| Franklin    | IDNR   | State Park                                    | Beeds Lake                       | 3 MI. N.W. Hampton-Co. Rd.                 |
| Greene      | FWS    | National Wildlife Refuge                      | Iowa Wetland Management District |  |
| Greene      | FWS    | Topeka shiner Critical Habitat                | North Raccoon River              |  |
| Greene      | FWS    | Topeka shiner Critical Habitat                | East Buttrick Creek              |  |

**TABLE A.2.2**

**ENVIRONMENTALLY SENSITIVE AREAS – IOWA**

| COUNTY   | AGENCY | TYPE  | NAME                                   | NOTES  |
|----------|--------|---|--|--|
| Greene   | FWS    | Topeka shiner<br>Critical Habitat                         | Short Creek                            |  |
| Greene   | FWS    | Topeka shiner<br>Critical Habitat                         | Hardin Creek                           |  |
| Greene   | FWS    | Topeka shiner<br>Critical Habitat                         | Buttrick Creek                         |  |
| Greene   | FWS    | Topeka shiner<br>Critical Habitat                         | Cedar Creek                            |  |
| Greene   | FWS    | Topeka shiner<br>Critical Habitat                         | West Buttrick<br>Creek                 |  |
| Guthrie  | NPS    | Identified in<br>NPS<br>Nationwide<br>Rivers<br>Inventory | Middle Raccoon<br>River                | Panora to city of Redfield dam                           |
| Guthrie  | FWS    | National<br>Wildlife Refuge                               | Iowa Wetland<br>Management<br>District |  |
| Hamilton | FWS    | Topeka shiner<br>Critical Habitat                         | Eagle Creek                            |  |
| Hamilton | NPS    | Identified in<br>NPS<br>Nationwide<br>Rivers<br>Inventory | Boone River                            | From Webster City to confluence<br>with Des Moines River |
| Hamilton | NPS    | Natural<br>Landmark                                       | Anderson Goose<br>Lake                 | 1 Mi. E. of Jewell                                       |
| Hancock  | FWS    | National<br>Wildlife Refuge                               | Iowa Wetland<br>Management<br>District |  |
| Harrison | FWS    | National<br>Wildlife Refuge                               | DeSoto NWR                             |  |
| Harrison | NPS    | Natural<br>Landmark                                       | Loess Hill                             | Turin & Little Sioux/Smith Lake                          |
| Howard   | NPS    | Identified in<br>NPS<br>Nationwide<br>Rivers<br>Inventory | Turkey River                           | Mississippi River to Vernon<br>Springs                   |
| Howard   | NPS    | Natural<br>Landmark                                       | Hayden Prairie                         | 12 Mi. NW of Cresco                                      |
| Iowa     | FWS    | National<br>Wildlife Refuge                               | Mark Twain NWR                         |  |
| Jackson  | FWS    | National<br>Wildlife Refuge                               | Upper Mississippi<br>River NWR         |  |
| Jackson  | FWS    | National<br>Wildlife Refuge                               | Driftless Area<br>NWR                  |  |
| Jackson  | IDNR   | State Park  | Bellevue                               | 2.5 Mi. S. Bellevue - US 52                              |



**TABLE A.2.2**

**ENVIRONMENTALLY SENSITIVE AREAS – IOWA**

| COUNTY  | AGENCY | TYPE  | NAME                             | NOTES  |
|---------|--------|---|----------------------------------|--|
| Jackson | NPS    | Identified in NPS Nationwide Rivers Inventory | Maquoketa River                  | Mississippi River to US 151 Bridge   |
| Jasper  | FWS    | National Wildlife Refuge                      | Neal Smith NWR                   |  |
| Johnson | COE    | Large Reservoir                               | Coralville Lake                  |  |
| Jones   | NPS    | Identified in NPS Nationwide Rivers Inventory | Wapsipinicon River               | Mississippi River to Hwy. 334 at Frederika   |
| Jones   | NPS    | Identified in NPS Nationwide Rivers Inventory | Maquoketa River                  | Mississippi River to US 151  |
| Kossuth | FWS    | National Wildlife Refuge                      | Iowa Wetland Management District |  |
| Kossuth | FWS    | National Wildlife Refuge                      | Union Slough NWR                 |  |
| Linn    | NPS    | Identified in NPS Nationwide Rivers Inventory | Wapsipinicon River               | Mississippi River to Hwy. 334 at Frederika   |
| Louisa  | FWS    | National Wildlife Refuge                      | Mark Twain NWR                   |  |
| Louisa  | NPS    | Identified in NPS Nationwide Rivers Inventory | Cedar River                      | Iowa River to Highway 6  |
| Lyon    | FWS    | Topeka shiner Critical Habitat                | Kanaranzi Creek                  | From its confluence with the Rock River (T100N, R45W, Sec. 28), upstream to the Iowa/Minnesota State border (T100N, R45W, Sec. 11) |
| Lyon    | FWS    | Topeka shiner Critical Habitat                | Rock River                       | From its confluence with Kanaranzi Creek (T100N, R45W, Sec. 28), upstream to the Iowa/Minnesota State border (T100N, R45W, Sec. 8) |
| Madison | IDNR   | State Park                                    | Badger Creek Rec. Area           | 6 Mi. SE Van Meter   |
| Marion  | COE    | Large Reservoir                               | Lake Red Rock                    |  |
| Marion  | IDNR   | State Park                                    | Elk Rock (Red Rock)              | 7 MI. N Knoxville - IA 14  |

**TABLE A.2.2**

**ENVIRONMENTALLY SENSITIVE AREAS – IOWA**

| COUNTY        | AGENCY | TYPE  | NAME                             | NOTES  |
|---------------|--------|---|----------------------------------|--|
| Monona        | NPS    | Natural Landmark                              | Loess Hills                      | Turin * Little Souix/Smith Lake  |
| Muscatine     | IDNR   | State Park                                    | Fairport                         | 5 Mi. E. Muscatine - IA 22   |
| Muscatine     | IDNR   | State Fish Hatchery                           | Fairport SFH                     |  |
| Louisa        | NPS    | Identified in NPS Nationwide Rivers Inventory | Cedar River                      | Iowa River to Highway 6  |
| Osceola       | FWS    | National Wildlife Refuge                      | Iowa Wetland Management District |  |
| Osceola       | FWS    | Topeka shiner Critical Habitat                | Little Rock River                | From State Highway 9 (T100N, R43W, Sec. 34), upstream to the Iowa/Minnesota State border (T100N, R42W, Sec. 7)   |
| Palo Alto     | FWS    | National Wildlife Refuge                      | Iowa Wetland Management District |  |
| Palo Alto     | NPS    | Natural Landmark                              | Dewey Pasture & Smith's Slough   | 4 Mi. NW of Ruthven  |
| Pike          | FWS    | National Wildlife Refuge                      | Mark Twain NWR                   |  |
| Plymouth      | TNC    | Project Area                                  | Broken Kettle Grasslands         | Loess Hills  |
| Plymouth      | TNC    | Project Areas                                 | Five Ridge Preserve              |  |
| Polk          | COE    | Large Reservoir                               | Saylorville Lake                 |  |
| Polk          | FWS    | National Wildlife Refuge                      | Iowa Wetland Management District |  |
| Polk          | IDNR   | State Park                                    | Big Creek                        | 2 Mi. N. Polk City - IA 415  |
| Pottawattamie | FWS    | National Wildlife Refuge                      | DeSoto NWR                       |  |
| Sac           | FWS    | National Wildlife Refuge                      | Iowa Wetland Management District |  |
| Sac           | FWS    | Topeka shiner Critical Habitat                | Outlet Creek                     | From Black Hawk Lake from its confluence with Ditch 57 (T86N, R36W, Sec. 1), upstream to lake outlet (T87N, R35W, Sec. 35)   |
| Sac           | FWS    | Topeka shiner Critical Habitat                | Ditch 57                         | Tributary to Indian Creek, from their confluence (T87N, R35W, Sec. 23), upstream to the confluence with the outlet creek from Black Hawk Lake (T86N, R36W, Sec. 1) |

**TABLE A.2.2**  
**ENVIRONMENTALLY SENSITIVE AREAS – IOWA**

| COUNTY       | AGENCY | TYPE  | NAME                                   | NOTES   |
|--------------|--------|---|--|---|
| Sac          | FWS    | Topeka shiner<br>Critical Habitat                         | Indian Creek                           | From its confluence with the North<br>Raccoon River (T87N, R35W, Sec.<br>24), upstream through T87N,<br>R35W, Sec. 29 |
| Sac          | FWS    | Topeka shiner<br>Critical Habitat                         | North Raccoon<br>River                 |   |
| Sac          | IDNR   | State Park  | Black Hawk                             | Lake View - IA 175 & 71   |
| Scott        | FWS    | National<br>Wildlife Refuge                               | Upper Mississippi<br>River NWFR        |   |
| Scott        | FWS    | National<br>Wildlife Refuge                               | Upper Mississippi<br>River NWFR        |   |
| Scott        | NPS    | Identified in<br>NPS<br>Nationwide<br>Rivers<br>Inventory | Wapsipinicon<br>River                  | Mississippi River to Hwy. 334 at<br>Frederika   |
| Scotts Bluff | TNC    | Project Area  | Scotts Bluff<br>Monument               |   |
| Tama         | BIA    | Federal Indian<br>Reservation                             | Sac & Fox                              |   |
| Tama         | FWS    | National<br>Wildlife Refuge                               | Mark Twain NWR                         |   |
| Thomas       | USFS   | Research Area   | Signal Hill                            |   |
| VanBuren     | TNC    | Project Area  | Reno Timber                            |   |
| Wayne        | IDNR   | State Park  | Bobwhite                               | 1 Mi. W. Allerton - IA 40   |
| Webster      | FWS    | Topeka shiner<br>Critical Habitat                         | Buttrick Creek                         |   |
| Webster      | FWS    | Topeka shiner<br>Critical Habitat                         | Ditch 57                               |   |
| Webster      | IDNR   | State Park  | Brushy Creek Rec.<br>Area              | 4 Mi. E Lehigh - Co. Rd.  |
| Webster      | IDNR   | State Park  | Dolliver Memorial                      | 3 Mi. NW Lehigh - IA 50   |
| Webster      | NPS    | Identified in<br>NPS<br>Nationwide<br>Rivers<br>Inventory | Boone River                            | From Webster City to confluence<br>with Des Moines River  |
| Winnebago    | FWS    | National<br>Wildlife Refuge                               | Iowa Wetland<br>Management<br>District |   |
| Winneshiek   | NPS    | Natural<br>Landmark                                       | Cold Water Cave                        |   |
| Winneshiek   | NPS    | Identified in<br>NPS<br>Nationwide<br>Rivers<br>Inventory | Turkey River                           | Mississippi River to Vernon<br>Springs  |

**TABLE A.2.2**

**ENVIRONMENTALLY SENSITIVE AREAS – IOWA**

| COUNTY     | AGENCY | TYPE  | NAME                             | NOTES  |
|------------|--------|---|----------------------------------|--|
| Winneshiek | NPS    | Identified in NPS Nationwide Rivers Inventory | Upper Iowa River                 | Kendallville to Highway 76 crossing  |
| Worth      | FWS    | National Wildlife Refuge                      | Iowa Wetland Management District |  |
| Wright     | FWS    | National Wildlife Refuge                      | Iowa Wetland Management District |  |
| Wright     | FWS    | Topeka shiner Critical Habitat                | Eagle Creek                      |  |
| Wright     | FWS    | Topeka shiner Critical Habitat                | Ditch 19                         | From its confluence with Ditch 3 (T91N, R26W, Sec. 31), upstream through T91N, R26W, Sec. 31         |
| Wright     | FWS    | Topeka shiner Critical Habitat                | Ditch 3                          | From its confluence with the Boone River (T91N, R26W, Sec. 32), upstream through T91N, R26W, Sec. 30 |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY           | AGENCY                                    | TYPE                    | NAME                                  | NOTES  |
|------------------|---|-------------------------|---------------------------------------|--|
| Sedgwick         | Kansas Dept. of Wildlife and Parks (KDWP) | State Park              | Cheney                                | RR 1, Box 167A, Cheney 67025   |
| Douglas          | KDWP                                      | State Park              | Clinton                               | 798 N. 1415 RD, Lawrence, 66049  |
| Crawford         | KDWP                                      | State Park              | Crawford                              | Farlington, 66734  |
| Trego            | KDWP                                      | State Park              | Cedar Bluff                           | P.O. 76A, Ellis, 67637   |
| Osage            | KDWP                                      | State Park              | Eisenhower                            | RR 2, Box 306, Osage City, 66523   |
| Butler           | KDWP                                      | State Park              | El Dorado                             | RR3, Box 29A, El Dorado, 67402   |
| Montgomery       | KDWP                                      | State Park              | Elk City                              | Box 845, Independence, 67301   |
| Greenwood        | KDWP                                      | State Park              | Fall River                            | RR 1, Box 44, Toronto, 66777   |
| Mitchell         | KDWP                                      | State Park              | Glen Elder                            | Box 162A, Glen Elder, 67446  |
| Miami            | KDWP                                      | State Park              | Hillsdale                             | 26001 W. 255th St., Paola, 66071   |
| Ellsworth        | KDWP                                      | State Park              | Kanopolis                             | RR 1 Box 26d, Marquette, 67464   |
| Jewell           | KDWP                                      | State Park              | Lovewell                              | RR1, Box 66A, Webber, 66970  |
| Meade            | KDWP                                      | State Park              | Meade                                 | Box K, Meade, 67864  |
| Riley            | KDWP                                      | State Park              | Milford                               | 8881 State Park, Milford, 66514  |
| Ellsworth        | KDWP                                      | State Park              | Mushroom Rock                         | RR 1, Box 26D, Marquette, 67464  |
| Jefferson        | KDWP                                      | State Park              | Perry                                 | RR 1, Box 464A Ozawkie, 66070  |
| Osage            | KDWP                                      | State Park              | Pomona                                | RR 1, Box 118, Vassar, 66543   |
| Norton           | KDWP                                      | State Park              | Prairie Dog                           | Box 431, Norton, 67654   |
| Harvey           | KDWP                                      | State Park              | Sand Hills                            | 4207 E. 56th, Rt 5, Hutchinson, 67502  |
| Scott            | KDWP                                      | State Park              | Scott                                 | RR1, Box 50, Scott City, 67871   |
| Riley            | KDWP                                      | State Park              | Tuttle Creek                          | 5020-B, Tuttle Cr. Blvd., Manhattan 66502  |
| Rooks            | KDWP                                      | State Park              | Webster                               | RR 2, Box 153, Stockton, 67669   |
| Russell          | KDWP                                      | State Park              | Wilson                                | RR 1, Box 181, Sylvan Grove, 67481   |
| Various counties | National Parks Service (NPS)              | National Historic Trail | California National Historic Trail    | Developed over a period of years, and contains numerous cutoffs and alternate routes. General route began at Various jumping off points in MO, including Independence and St. Joseph, and headed westward following the routes of the Oregon and Santa Fe Trails through KS and the Platte River through NE. |
| Various counties | NPS                                       | National Historic Trail | Lewis & Clark National Historic Trail | Generally following the Missouri River   |
| Various counties | NPS                                       | National Historic Trail | Oregon National Historic Trail        | From Independence, MO to Topeka. The trail then headed generally northwestward, parallel to the Little Blue River, toward NE.  |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY           | AGENCY  | TYPE                                  | NAME                                 | NOTES   |
|------------------|---|---------------------------------------|--------------------------------------|---|
| Various counties | NPS   | National Historic Trail               | Pony Express National Historic Trail | Most of original trail has been obliterated through time. Some Pony Express Stations still exist. Trail started in Independence, MO, following the route of the Oregon Trail through KS toward the Platte River and the West. |
| Various counties | NPS   | National Historic Trail               | Santa Fe National Historic Trail     | From Independence, MO, generally southwestward, across the State to Ft. Larned NHS. The trail then split, either following the Arkansas River or on a direct overland route toward the SW corner of the State.                |
| Allen            | Kansas Dept. of Health and Environment (KDHE) | Stream                                | Bloody Run                           | Special Aquatic Life Use Waters   |
| Allen            | KDHE  | Stream                                | Marmaton River                       | Special Aquatic Life Use Waters   |
| Allen            | KDHE  | Stream                                | Neosho River                         | Special Aquatic Life Use Waters   |
| Allen            | KDHE  | Stream                                | Little Osage River                   | Special Aquatic Life Use Waters   |
| Allen            | KDHE  | Stream                                | Onion Creek                          | Special Aquatic Life Use Waters   |
| Allen            | KDHE  | Stream                                | Little Osage River, Middle Fork      | Special Aquatic Life Use Waters   |
| Allen            | U.S. Fish and Wildlife Service (FWS)          | Neosho madtom Critical Habitat        |                                      | Parts of Cottonwood, Neosho, and Spring Rivers  |
| Allen            | FWS   | Rabbitsfoot mussel Critical Habitat   |                                      | Found in several waterways in Southeast KS  |
| Allen            | FWS   | Neosho mucket mussel Critical Habitat |                                      | Found in several waterways in Southeast KS  |
| Anderson         | KDHE  | Stream                                | Pottawatomie Creek                   | Special Aquatic Life Use Waters   |
| Anderson         | KDHE  | Stream                                | Little Osage River, Middle Fork      | Special Aquatic Life Use Waters   |
| Anderson         | KDHE  | Stream                                | Middle Creek                         | Special Aquatic Life Use Waters   |
| Anderson         | KDHE  | Stream                                | Pottawatomie Creek, S Fork           | Special Aquatic Life Use Waters   |
| Anderson         | KDHE  | Stream                                | Little Indian Creek                  | Special Aquatic Life Use Waters   |
| Atchison         | KDHE  | Stream                                | Whiskey Creek                        | Special Aquatic Life Use Waters   |
| Atchison         | KDHE  | Stream                                | White Clay Creek                     | Special Aquatic Life Use Waters   |
| Atchison         | KDHE  | Stream                                | Missouri River                       | Special Aquatic Life Use Waters   |
| Atchison         | KDHE  | Wetland                               | Muscotah Marsh                       |   |
| Barber           | KDHE  | Stream                                | Elm Creek                            | Special Aquatic Life Use Waters   |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY  | AGENCY                             | TYPE  | NAME                           | NOTES   |
|---------|------------------------------------|---|--------------------------------|---|
| Barber  | KDHE                               | Stream  | Elm Creek, North               | Special Aquatic Life Use Waters                             |
| Barber  | KDHE                               | Stream  | Elm Creek, South               | Special Aquatic Life Use Waters                             |
| Barber  | KDHE                               | Stream  | Elm Creek, South E Branch      | Special Aquatic Life Use Waters                             |
| Barber  | KDHE                               | Stream  | Bear Creek                     | Special Aquatic Life Use Waters                             |
| Barber  | KDHE                               | Stream  | Elm Creek, South W Branch      | Special Aquatic Life Use Waters                             |
| Barber  | KDHE                               | Stream  | Medicine Lodge River           | Special Aquatic Life Use Waters                             |
| Barber  | KDHE                               | Stream  | Mulberry Creek                 | Special Aquatic Life Use Waters                             |
| Barber  | KDHE                               | Stream  | Mule Creek                     | Special Aquatic Life Use Waters                             |
| Barber  | KDHE                               | Stream  | Amber Creek                    | Special Aquatic Life Use Waters                             |
| Barber  | KDHE                               | Stream  | Turkey Creek                   | Special Aquatic Life Use Waters                             |
| Barber  | KDHE                               | Stream  | Sand Creek                     | Special Aquatic Life Use Waters                             |
| Barber  |                                    | Identified in NPS Nationwide Rivers Inventory | Medicine (Lodge) River         | KS/OK line to Gerlane                                       |
| Barber  |                                    | Identified in NPS Nationwide Rivers Inventory | Medicine (Lodge) River         | Gerlane to Belvidere  |
| Barton  | FWS                                | Whooping Crane Critical Habitat               | Cheyenne Bottoms               |   |
| Barton  | KDHE                               | Stream  | Deception Creek                | Special Aquatic Life Use Waters                             |
| Barton  | KDHE                               | Stream  | Little Cheyenne Creek          | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Barton  | KDHE                               | Stream  | Arkansas River                 | Special Aquatic Life Use Waters                             |
| Barton  | KDHE                               | Stream  | Blood Creek                    | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Barton  | KDHE                               | Wetland                                       | Cheyenne Bottoms               |   |
| Barton  | The Nature Conservancy (TNC)       | Project Area                                  | Cheyenne Bottoms Wildlife Area | near Great Bend   |
| Bourbon | KDHE                               | Stream  | Marmaton River                 | Special Aquatic Life Use Waters                             |
| Bourbon | KDHE                               | Stream  | Little Osage River             | Special Aquatic Life Use Waters                             |
| Bourbon | NPS                                | National Historic Site                        | Fort Scott Nat. Historic Site  | Adjacent to Fort Scott bus. district                        |
| Brown   | Bureau of Indian Affairs (BIA)     | Federal Indian Reservation                    | Iowa                           |   |
| Brown   | BIA                                | Federal Indian Reservation                    | Kickapoo                       |   |
| Brown   | BIA                                | Federal Indian Reservation                    | Sac & Fox                      |   |
| Butler  | U.S. Army Corps of Engineers (COE) | Large Reservoir                               | El Dorado Lake                 |   |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY     | AGENCY | TYPE  | NAME                                | NOTES   |
|------------|--------|---|-------------------------------------|---|
| Butler     | KDHE   | Stream  | Walnut River                        | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Butler     | KDHE   | Stream  | Cottonwood River, S Fork            | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Butler     | KDHE   | Stream  | Grouse Creek                        | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Butler     | FWS    | Topeka shiner Critical Habitat                | Cottonwood River and tributaries    |   |
| Chase      | FWS    | Topeka shiner Critical Habitat                | Cottonwood River and tributaries    |   |
| Chase      | FWS    | Topeka shiner Habitat                         | Fox Creek, and tributaries          |   |
| Chase      | FWS    | Topeka shiner Habitat                         | Diamond Creek and tributaries       |   |
| Chase      | FWS    | Topeka shiner Habitat                         | Middle Creek and tributaries        |   |
| Chase      | KDHE   | Stream  | Jacob Creek                         | Special Aquatic Life Use Waters                             |
| Chase      | KDHE   | Stream  | Collett Creek                       | Special Aquatic Life Use Waters                             |
| Chase      | KDHE   | Stream  | Cottonwood River                    | Special Aquatic Life Use Waters                             |
| Chase      | KDHE   | Stream  | Cottonwood River, S Fork            | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Chase      | KDHE   | Stream  | Bloody Creek                        | Special Aquatic Life Use Waters                             |
| Chase      | KDHE   | Stream  | Little Cedar Creek                  | Special Aquatic Life Use Waters                             |
| Chase      | KDHE   | Stream  | Middle Creek                        | Special Aquatic Life Use Waters                             |
| Chase      | KDHE   | Stream  | Cedar Creek                         | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Chase      | NPS    | National Preserve                             | Tallgrass Prairie National Preserve |   |
| Chase      |        | Identified in NPS Nationwide Rivers Inventory | Cedar Creek                         | Cottonwood River to Chase county line                       |
| Chase      |        | Identified in NPS Nationwide Rivers Inventory | South Fork Cottonwood River         | Cottonwood River to Little Cedar Creek                      |
| Chase      | FWS    | Neosho madtom Critical Habitat                |                                     | Parts of Cottonwood, Neosho, and Spring Rivers              |
| Chase      | FWS    | Rabbittsfoot mussel Critical Habitat          |                                     | Found in several waterways in Southeast KS                  |
| Chase      | FWS    | Neosho mucket mussel Critical Habitat         |                                     | Found in several waterways in Southeast KS                  |
| Chautauqua | FWS    | Burying Beetle Habitat                        |                                     | upland prairie  |



**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY     | AGENCY | TYPE  | NAME                             | NOTES   |
|------------|--------|---|----------------------------------|---|
| Chautauqua | KDHE   | Stream  | Caney River                      | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Chautauqua | KDHE   | Stream  | Otter Creek                      | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Chautauqua |        | Identified in NPS<br>Nationwide<br>Rivers Inventory | Caney River                      | KS/OK line to source  |
| Chautauqua | FWS    | Neosho mucket<br>mussel Critical<br>Habitat         |                                  | Found in several waterways in<br>Southeast KS               |
| Cherokee   | KDHE   | Stream  | Brush Creek                      | Special Aquatic Life Use Waters                             |
| Cherokee   | KDHE   | Stream  | Shoal Creek                      | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Cherokee   | KDHE   | Stream  | Spring River                     | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Cherokee   | KDHE   | Stream  | Taylor Branch                    | Special Aquatic Life Use Waters                             |
| Cherokee   | KDHE   | Stream  | Turkey Creek                     | Special Aquatic Life Use Waters                             |
| Cherokee   | KDHE   | Stream  | Cow Creek                        | Special Aquatic Life Use Waters                             |
| Cherokee   | KDHE   | Stream  | Neosho River                     | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Cherokee   |        | Identified in NPS<br>Nationwide<br>Rivers Inventory | Shoal Creek                      | Spring River to source                                      |
| Cherokee   |        | Identified in NPS<br>Nationwide<br>Rivers Inventory | Spring River                     | Hwy. 96 to Hwy. 44  |
| Cherokee   | FWS    | Neosho madtom<br>Critical Habitat                   |                                  | Parts of Cottonwood, Neosho, and<br>Spring Rivers           |
| Cherokee   | FWS    | Rabbitsfoot<br>mussel Critical<br>Habitat           |                                  | Found in several waterway in<br>Southeast KS                |
| Cherokee   | FWS    | Neosho mucket<br>mussel Critical<br>Habitat         |                                  | Found in several waterways in<br>Southeast KS               |
| Cheyenne   | KDHE   | Stream  | Republican<br>River, S Fork      | Special Aquatic Life Use Waters                             |
| Cheyenne   | KDHE   | Stream  | Arikaree River                   | Special Aquatic Life Use Waters                             |
| Cheyenne   |        | Identified in NPS<br>Nationwide<br>Rivers Inventory | Arikaree River                   | KS/NE line to Alder Creek                                   |
| Clark      | KDHE   | Lake  | Clark Co. SFL                    |   |
| Clark      | KDHE   | Lake  | St. Jacobs Well<br>(Big Basin W. |   |
| Clark      | KDHE   | Stream  | Kiowa Creek,<br>West             | Special Aquatic Life Use Waters                             |
| Clark      | KDHE   | Stream  | Rattlesnake<br>Creek             | Special Aquatic Life Use Waters                             |
| Clark      | KDHE   | Stream  | Cimarron River                   | Special Aquatic Life Use Waters<br>Exceptional State Waters |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY   | AGENCY | TYPE  | NAME                | NOTES  |
|----------|--------|---|---------------------|--|
| Clark    | KDHE   | Stream  | Bluff Creek         | Special Aquatic Life Use Waters                |
| Clark    |        | Identified in NPS Nationwide Rivers Inventory | Cimarron River      | Hwy 23 E. of Liberal to CO/KS Line             |
| Clark    | NPS    | Natural Landmark                              | Big Basin Preserve  | 13 Mi. WNW of Ashland                          |
| Clay     | COE    | Large Reservoir                               | Milford Lake        |  |
| Clay     | KDHE   | Stream  | Republican River    | Special Aquatic Life Use Waters                |
| Cloud    | KDHE   | Stream  | Republican River    | Special Aquatic Life Use Waters                |
| Cloud    | KDHE   | Wetland                                       | Jamestown W.A.      |  |
| Coffey   | COE    | Large Reservoir                               | John Redmond Res.   |  |
| Coffey   | FWS    | National Wildlife Refuge                      | Flint Hills NWR     | Neosho River Valley                            |
| Coffey   | KDHE   | Stream  | Little Indian Creek | Special Aquatic Life Use Waters                |
| Coffey   | KDHE   | Stream  | Neosho River        | Special Aquatic Life Use Waters                |
| Coffey   | KDHE   | Stream  | Frog Creek          | Special Aquatic Life Use Waters                |
| Coffey   | KDHE   | Stream  | Long Creek          | Special Aquatic Life Use Waters                |
| Coffey   | FWS    | Neosho madtom Critical Habitat                |                     | Parts of Cottonwood, Neosho, and Spring Rivers |
| Coffey   | FWS    | Rabbitsfoot mussel Critical Habitat           |                     | Found in several waterway in Southeast KS      |
| Coffey   | FWS    | Neosho mucket mussel Critical Habitat         |                     | Found in several waterways in Southeast KS     |
| Comanche | KDHE   | Stream  | Cimarron River      | Special Aquatic Life Use Waters                |
| Comanche | KDHE   | Stream  | Bluff Creek         | Exceptional State Waters                       |
| Comanche | KDHE   | Stream  | Kiowa Creek, Middle | Special Aquatic Life Use Waters                |
| Comanche | KDHE   | Stream  | Kiowa Creek, West   | Special Aquatic Life Use Waters                |
| Comanche | KDHE   | Stream  | Mule Creek          | Special Aquatic Life Use Waters                |
| Comanche | KDHE   | Stream  | Cavalry Creek       | Special Aquatic Life Use Waters                |
| Comanche | KDHE   | Stream  | Kiowa Creek         | Special Aquatic Life Use Waters                |
| Comanche | KDHE   | Stream  | Nescatunga Creek    | Special Aquatic Life Use Waters                |
| Comanche | KDHE   | Stream  | Wiggins Creek       | Special Aquatic Life Use Waters                |
| Comanche |        | Identified in NPS Nationwide Rivers Inventory | Cimarron River      | Hwy. 23 E. of Liberal to CO/KS line            |
| Cowley   | KDHE   | Stream  | Beaver Creek        | Special Aquatic Life Use Waters                |
| Cowley   | KDHE   | Stream  | Grouse Creek        | Exceptional State Waters                       |
| Cowley   | KDHE   | Stream  | Little Beaver Creek | Special Aquatic Life Use Waters                |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY    | AGENCY | TYPE  | NAME                          | NOTES   |
|-----------|--------|---|-------------------------------|---|
| Cowley    | KDHE   | Stream  | Otter Creek                   | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Cowley    | KDHE   | Stream  | Spring Creek                  | Special Aquatic Life Use Waters                             |
| Cowley    | KDHE   | Stream  | Walnut River                  | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Cowley    | KDHE   | Stream  | Arkansas River                | Special Aquatic Life Use Waters                             |
| Crawford  | KDHE   | Stream  | Taylor Branch                 | Special Aquatic Life Use Waters                             |
| Crawford  | KDHE   | Stream  | Cow Creek                     | Special Aquatic Life Use Waters                             |
| Crawford  | KDHE   | Stream  | First Cow Creek               | Special Aquatic Life Use Waters                             |
| Crawford  | KDHE   | Stream  | Cow Creek, East               | Special Aquatic Life Use Waters                             |
| Crawford  | KDHE   | Stream  | Brush Creek                   | Special Aquatic Life Use Waters                             |
| Crowley   | NPS    | Identified in NPS<br>Nationwide<br>Rivers Inventory | Grouse Creek                  | Arkansas River to Cowley county<br>line                     |
| Dickinson | KDHE   | Lake  | Herington<br>Reservoir        |   |
| Dickinson | KDHE   | Stream  | Lime Creek                    | Special Aquatic Life Use Waters                             |
| Dickinson | KDHE   | Stream  | Lyon Creek                    | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Dickinson | KDHE   | Stream  | Lyon Creek, W<br>Branch       | Special Aquatic Life Use Waters                             |
| Dickinson | KDHE   | Stream  | Carry Creek                   | Special Aquatic Life Use Waters                             |
| Dickinson | NPS    | Identified in NPS<br>Nationwide<br>Rivers Inventory | Lyon Creek                    | Smoky Hill River to RR bridge S. of<br>Woodbine             |
| Dickinson | FWS    | Topeka shiner<br>Habitat                            | Lyon Creek and<br>tributaries |   |
| Doniphan  | KDHE   | Stream  | Missouri River                | Special Aquatic Life Use Waters                             |
| Douglas   | COE    | Large Reservoir                                     | Clinton Lake                  |   |
| Douglas   | KDHE   | Lake  | Clinton Lake                  |   |
| Douglas   | KDHE   | Stream  | Kansas River                  | Special Aquatic Life Use Waters                             |
| Douglas   | KDHE   | Stream  | Tauy Creek                    | Special Aquatic Life Use Waters                             |
| Douglas   | KDHE   | Stream  | Appanoose<br>Creek            | Special Aquatic Life Use Waters                             |
| Douglas   | NPS    | Identified in NPS<br>Nationwide<br>Rivers Inventory | Kansas River                  | I-635 to Delaware River                                     |
| Douglas   | NPS    | Natural Landmark                                    | Baldwin woods                 | 11 Mi. S. of Lawrence                                       |
| Douglas   | NPS    | Natural Landmark                                    | Baker University<br>Wetlands  | 3 Mi. S of Lawrence   |
| Edwards   | KDHE   | Stream  | Rattlesnake<br>Creek          | Special Aquatic Life Use Waters                             |
| Elk       | FWS    | Burying Beetle<br>Habitat                           |                               | Upland prairie  |
| Elk       | KDHE   | Stream  | Fall River                    | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Elk       | KDHE   | Stream  | Grouse Creek                  | Exceptional State Waters                                    |
| Elk       | KDHE   | Stream  | Caney River                   | Special Aquatic Life Use Waters<br>Exceptional State Waters |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY    | AGENCY | TYPE  | NAME   | NOTES  |
|-----------|--------|---|--|--|
| Elk       | NPS    | Identified in NPS Nationwide Rivers Inventory | Fall River                                   | Verdigris River to Fall River Lake           |
| Elk       | FWS    | Neosho mucket mussel Critical Habitat         |  | Found in several waterways in Southeast KS   |
| Ellis     | KDHE   | Stream  | Saline River                                 | Exceptional State Waters                     |
| Ellsworth | KDHE   | Stream  | Smoky Hill River                             | Exceptional State Waters                     |
| Finney    | KDHE   | Stream  | Arkansas River                               | Special Aquatic Life Use Waters              |
| Ford      | KDHE   | Stream  | Kiowa Creek, West                            | Special Aquatic Life Use Waters              |
| Ford      | KDHE   | Stream  | Rattlesnake Creek                            | Special Aquatic Life Use Waters              |
| Ford      | KDHE   | Stream  | Bluff Creek                                  | Special Aquatic Life Use Waters              |
| Franklin  | KDHE   | Stream  | Marais des Cygnes River                      | Special Aquatic Life Use Waters              |
| Franklin  | KDHE   | Stream  | Ottawa Creek                                 | Special Aquatic Life Use Waters              |
| Franklin  | KDHE   | Stream  | Pottawatomie Creek                           | Special Aquatic Life Use Waters              |
| Franklin  | KDHE   | Stream  | Appanoose Creek                              | Special Aquatic Life Use Waters              |
| Franklin  | KDHE   | Stream  | Pottawatomie Creek                           | Special Aquatic Life Use Waters              |
| Franklin  | KDHE   | Stream  | Tauy Creek                                   | Special Aquatic Life Use Waters              |
| Geary     | COE    | Large Reservoir                               | Milford Lake                                 |  |
| Geary     | FWS    | Topeka shiner Habitat                         | Clarks Creek and tributaries                 |  |
| Geary     | FWS    | Topeka shiner Habitat                         | Lyon Creek and tributaries                   |  |
| Geary     | KDHE   | Stream  | Kansas River                                 | Special Aquatic Life Use Waters              |
| Geary     | KDHE   | Stream  | Lyon Creek                                   | Special Aquatic Life Use Waters              |
| Geary     | KDHE   | Stream  | Lyon Creek, W Branch                         | Exceptional State Waters                     |
| Geary     | KDHE   | Stream  | Mill Creek, W Branch                         | Special Aquatic Life Use Waters              |
| Geary     | KDHE   | Stream  | Republican River                             | Special Aquatic Life Use Waters              |
| Geary     | KDHE   | Stream  | Carry Creek                                  | Special Aquatic Life Use Waters              |
| Geary     | NPS    | Identified in NPS Nationwide Rivers Inventory | Lyon Creek                                   | Smoky Hill River to RR bridge S. of Woodbine |
| Gove      | NPS    | Natural Landmark                              | Monument Rocks Natural Area                  | 23 Mi. S of Oakley                           |
| Graham    | NPS    | National Historic Site                        | Brown v. Board of Ed. National Historic Site |  |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY    | AGENCY | TYPE  | NAME                                   | NOTES   |
|-----------|--------|---|--|---|
| Grant     | KDHE   | Stream  | Cimarron River                         | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Grant     | NPS    | Identified in<br>Nationwide<br>Rivers Inventory     | Cimarron River                         | Hwy. 23 E. of Liberal to Co/KS line                         |
| Greeley   | KDHE   | Stream  | Ladder Creek                           | Special Aquatic Life Use Waters                             |
| Greeley   | KDHE   | Stream  | Ladder Creek                           | Special Aquatic Life Use Waters                             |
| Greenwood | FWS    | Topeka shiner<br>Critical Habitat                   | Cottonwood<br>River and<br>tributaries |   |
| Greenwood | KDHE   | Stream  | Fall River , E<br>Branch               | Special Aquatic Life Use Waters                             |
| Greenwood | KDHE   | Stream  | Fall River, W<br>Branch                | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Greenwood | KDHE   | Stream  | Otter Creek                            | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Greenwood | KDHE   | Stream  | Otter Creek, S<br>Branch               | Special Aquatic Life Use Waters                             |
| Greenwood | KDHE   | Stream  | Verdigris River                        | Special Aquatic Life Use Waters                             |
| Greenwood | KDHE   | Stream  | Fall River                             | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Greenwood | NPS    | Identified in NPS<br>Nationwide<br>Rivers Inventory | Otter Creek and<br>N. Branch           | Fall River Reservoir to Hwy 96/NW<br>of Blodgett            |
| Greenwood | FWS    | Neosho mucket<br>mussel Critical<br>Habitat         |  | Found in several waterways in<br>Southeast KS               |
| Hamilton  | KDHE   | Stream  | Arkansas River                         | Special Aquatic Life Use Waters                             |
| Harper    | KDHE   | Stream  | Chikaskia River                        | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Harper    | KDHE   | Stream  | Sand Cr                                | Special Aquatic Life Use Waters                             |
| Harper    | NPS    | Identified in NPS<br>Nationwide<br>Rivers Inventory | Chikaskia River                        | KS/OK line to Hwy 2, NE of<br>Runnymede                     |
| Haskell   | KDHE   | Stream  | Cimarron River                         | Special Aquatic Life Use Waters                             |
| Haskell   | NPS    | Identified in NPS<br>Nationwide<br>Rivers Inventory | Cimarron River                         | Hwy 23 E. Of Liberal, KS to CO/KS<br>line                   |
| Jackson   | BIA    | Federal Indian<br>Reservation                       | Potawatomi                             |   |
| Jefferson | COE    | Large Reservoir                                     | Perry Lake                             |   |
| Jefferson | KDHE   | Lake  | Perry Lake                             |   |
| Jefferson | KDHE   | Stream  | Kansas River                           | Special Aquatic Life Use Waters                             |
| Jefferson | KDHE   | Stream  | Buck Creek                             | Special Aquatic Life Use Waters                             |
| Jefferson | NPS    | Identified in NPS<br>Nationwide<br>Rivers Inventory | Kansas River                           | I-635 to Delaware River                                     |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY  | AGENCY  | TYPE  | NAME                    | NOTES   |
|---------|---|---|-------------------------|---|
| Jewell  | U.S. Department of Interior (DOI)/Bureau of Reclamation (BuRec) | Lake  | Lovewell Reservoir      |   |
| Jewell  | KDHE  | Stream  | Republican River        | Special Aquatic Life Use Waters                             |
| Johnson | KDHE  | Stream  | Kansas River            | Special Aquatic Life Use Waters                             |
| Johnson | KDHE  | Stream  | Kansas River            | Special Aquatic Life Use Waters                             |
| Johnson | NPS   | Identified in NPS Nationwide Rivers Inventory | Kansas River            | I-635 to Delaware River                                     |
| Kearney | KDHE  | Stream  | Arkansas River          | Special Aquatic Life Use Waters                             |
| Kingman | KDHE  | Stream  | Allen Creek             | Special Aquatic Life Use Waters                             |
| Kingman | KDHE  | Stream  | Chikaskia River         | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Kingman | KDHE  | Stream  | Chikaskia River, N Fork | Special Aquatic Life Use Waters                             |
| Kingman | KDHE  | Stream  | Duck Creek              | Special Aquatic Life Use Waters                             |
| Kingman | KDHE  | Stream  | Nester Creek            | Special Aquatic Life Use Waters                             |
| Kingman | KDHE  | Stream  | Ninnescah River, S Fork | Special Aquatic Life Use Waters                             |
| Kingman | KDHE  | Stream  | Painter Creek           | Special Aquatic Life Use Waters                             |
| Kingman | KDHE  | Stream  | Pat Creek               | Special Aquatic Life Use Waters                             |
| Kingman | KDHE  | Stream  | Sand Creek              | Special Aquatic Life Use Waters                             |
| Kingman | KDHE  | Stream  | Silver Creek            | Special Aquatic Life Use Waters                             |
| Kingman | KDHE  | Stream  | Smoots Creek            | Special Aquatic Life Use Waters                             |
| Kiowa   | KDHE  | Stream  | Kiowa Creek             | Special Aquatic Life Use Waters                             |
| Kiowa   | KDHE  | Stream  | Kiowa Creek, Middle     | Special Aquatic Life Use Waters                             |
| Kiowa   | KDHE  | Stream  | Kiowa Creek, West       | Special Aquatic Life Use Waters                             |
| Kiowa   | KDHE  | Stream  | Medicine Lodge River    | Special Aquatic Life Use Waters                             |
| Kiowa   | KDHE  | Stream  | Mule Creek              | Special Aquatic Life Use Waters                             |
| Kiowa   | KDHE  | Stream  | Rattlesnake Creek       | Special Aquatic Life Use Waters                             |
| Kiowa   | KDHE  | Stream  | Cavalry Creek           | Special Aquatic Life Use Waters                             |
| Kiowa   | KDHE  | Stream  | Soldier Creek           | Special Aquatic Life Use Waters                             |
| Kiowa   | KDHE  | Stream  | Thompson Creek          | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Kiowa   | KDHE  | Stream  | Wiggins Creek           | Special Aquatic Life Use Waters                             |
| Kiowa   | NPS   | Identified in NPS Nationwide Rivers Inventory | Medicine (Lodge) River  | Gerlane to Belvidere  |
| Labette | KDHE  | Stream  | Labette Creek           | Special Aquatic Life Use Waters                             |
| Labette | KDHE  | Stream  | Neosho River            | Special Aquatic Life Use Waters<br>Exceptional State Waters |
| Labette | FWS   | Neosho madtom Critical Habitat                |                         | Parts of Cottonwood, Neosho, and Spring Rivers              |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY      | AGENCY | TYPE  | NAME   | NOTES  |
|-------------|--------|---|--|--|
| Labette     | FWS    | Rabbitsfoot mussel Critical Habitat           |  | Found in several waterway in Southeast KS      |
| Labette     | FWS    | Neosho mucket mussel Critical Habitat         |  | Found in several waterways in Southeast KS     |
| Leavenworth | KDHE   | Stream  | Missouri River                                   | Special Aquatic Life Use Waters                |
| Leavenworth | KDHE   | Stream  | Kansas River                                     | Special Aquatic Life Use Waters                |
| Leavenworth | KDHE   | Stream  | Salt Creek                                       | Special Aquatic Life Use Waters                |
| Leavenworth | KDHE   | Stream  | Missouri River                                   | Special Aquatic Life Use Waters                |
| Leavenworth | NPS    | Identified in NPS Nationwide Rivers Inventory | Kansas River                                     | I-635 to Delaware River                        |
| Linn        | KDHE   | Stream  | Richland Creek                                   | Special Aquatic Life Use Waters                |
| Linn        | KDHE   | Stream  | Muddy Creek                                      | Special Aquatic Life Use Waters                |
| Linn        | KDHE   | Stream  | Middle Creek                                     | Special Aquatic Life Use Waters                |
| Linn        | KDHE   | Stream  | Marais des Cygnes River                          | Special Aquatic Life Use Waters                |
| Linn        | KDHE   | Stream  | Big Sugar Creek                                  | Special Aquatic Life Use Waters                |
| Linn        | KDHE   | Stream  | Sugar Creek, North                               | Special Aquatic Life Use Waters                |
| Linn        | KDHE   | Stream  | Elm Creek  | Special Aquatic Life Use Waters                |
| Linn        | KDHE   | Wetland                                       | Marais des Cygnes Wildlife Area (WA)             |  |
| Linn        | FWS    | National Wildlife Refuge                      | Marais des Cygnes National Wildlife Refuge (NWR) |  |
| Logan       | KDHE   | Stream  | Ladder Creek                                     | Special Aquatic Life Use Waters                |
| Logan       | KDHE   | Stream  | Depperschmidt Draw                               | Special Aquatic Life Use Waters                |
| Logan       | KDHE   | Stream  | Chalk Creek                                      | Special Aquatic Life Use Waters                |
| Logan       | KDHE   | Stream  | Twin Butte Creek                                 | Special Aquatic Life Use Waters                |
| Logan       | KDHE   | Stream  | Smoky Hill River                                 | Special Aquatic Life Use Waters                |
| Lyon        | KDHE   | Stream  | Cottonwood River                                 | Special Aquatic Life Use Waters                |
| Lyon        | KDHE   | Stream  | Elm Creek  | Special Aquatic Life Use Waters                |
| Lyon        | KDHE   | Stream  | Jacob Creek                                      | Special Aquatic Life Use Waters                |
| Lyon        | KDHE   | Stream  | Neosho River                                     | Special Aquatic Life Use Waters                |
| Lyon        | FWS    | Neosho madtom Critical Habitat                |  | Parts of Cottonwood, Neosho, and Spring Rivers |
| Lyon        | FWS    | Rabbitsfoot mussel Critical Habitat           |  | Found in several waterway in Southeast KS      |



**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY     | AGENCY    | TYPE  | NAME                         | NOTES   |
|------------|-----------|---|------------------------------|---|
| Lyon       | FWS       | Neosho mucket mussel Critical Habitat         |                              | Found in several waterways in Southeast KS  |
| Marion     | COE       | Large Reservoir                               | Marion Lake                  |   |
| Marion     | FWS       | Topeka shiner Habitat                         | Mud Creek                    | From the south section line of T19S, R3E, Sec. 13, upstream through T18S, R3E, Sec. 28              |
| Marion     | KDHE      | Stream  | Spring Creek                 | Special Aquatic Life Use Waters   |
| Marion     | KDHE      | Stream  | Lyon Creek                   | Special Aquatic Life Use Waters   |
| Marion     | KDHE      | Stream  | Mud Creek                    | Special Aquatic Life Use Waters   |
| Marion     | KDHE      | Stream  | Catlin Creek                 | Special Aquatic Life Use Waters   |
| Marion     | KDHE      | Stream  | Middle Creek                 | Special Aquatic Life Use Waters   |
| Marshall   | FWS       | Topeka shiner Habitat                         | North Elm Creek              | From its confluence with the Big Blue River (T1S, R7E, Sec. 11), upstream through T1S, R8E, Sec. 21 |
| Marshall   | FWS       | Topeka shiner Habitat                         | Clear Fork Creek             | From its confluence with Jim Creek (T5S, R9E, Sec. 17), upstream through T6S, R10E, Sec. 18         |
| Marshall   | KDHE      | Stream  | Black Vermillion R, Clear Fk | Special Aquatic Life Use Waters   |
| Marshall   | KDHE      | Stream  | Manley Creek                 | Special Aquatic Life Use Waters   |
| Marshall   | COE       | Large Reservoir                               | Tuttle Creek                 |   |
| Meade      | KDHE      | Lake  | Lake Meade State Park        |   |
| Meade      | KDHE      | Stream  | Cimarron River               | Special Aquatic Life Use Waters   |
| Meade      | KDHE      | Stream  | Crooked Creek                | Special Aquatic Life Use Waters   |
| Meade      | KDHE      | Stream  | Spring Creek                 | Special Aquatic Life Use Waters   |
| Meade      | KDHE      | Stream  | Stumpie Arroyo               | Special Aquatic Life Use Waters   |
| Meade      | NPS       | Identified in NPS Nationwide Rivers Inventory | Cimarron River               | Hwy 23 E. Of Liberal, KS to CO/KS line  |
| Miami      | KDHE      | Lake  | Hillsdale Lake               |   |
| Miami      | KDHE      | Stream  | Marais des Cygnes River      | Special Aquatic Life Use Waters   |
| Miami      | KDHE      | Stream  | Pottawatomie Creek           | Special Aquatic Life Use Waters   |
| Miami      | KDHE      | Stream  | Middle Creek                 | Special Aquatic Life Use Waters   |
| Mitchell   | DOI/BuRec | Lake  | Glen Elder Reservoir         |   |
| Montgomery | FWS       | Burying Beetle Habitat                        |                              | Upland prairie  |
| Montgomery | KDHE      | Stream  | Onion Creek                  | Special Aquatic Life Use Waters   |
| Montgomery | KDHE      | Stream  | Verdigris River              | Special Aquatic Life Use Waters   |
| Montgomery | FWS       | Rabbitsfoot mussel Critical Habitat           |                              | Found in several waterways in Southeast KS  |
| Montgomery | FWS       | Neosho mucket mussel Critical Habitat         |                              | Found in several waterways in Southeast KS  |



**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY   | AGENCY         | TYPE  | NAME                           | NOTES  |
|----------|----------------|---|--------------------------------|--|
| Morris   | FWS            | Topeka shiner Habitat                         | Diamond Creek and tributaries  |  |
| Morris   | COE            | Lake  | Council Grove Reservoir        |  |
| Morris   | KDHE           | Stream  | Middle Creek                   | Special Aquatic Life Use Waters                |
| Morris   | KDHE           | Stream  | Lime Creek                     | Special Aquatic Life Use Waters                |
| Morris   | KDHE           | Stream  | Mill Creek, W Branch           | Special Aquatic Life Use Waters                |
| Morris   | KDHE           | Stream  | Neosho River                   | Special Aquatic Life Use Waters                |
| Morris   | KDHE           | Stream  | Six Mile Creek                 | Special Aquatic Life Use Waters                |
| Morris   | FWS            | Neosho madtom Critical Habitat                |                                | Parts of Cottonwood, Neosho, and Spring Rivers |
| Morris   | FWS            | Neosho mucket mussel Critical Habitat         |                                | Found in several waterways in Southeast KS     |
| Morton   | KDHE           | Lake  | Moss Lake East                 |  |
| Morton   | KDHE           | Lake  | Moss Lake Middle               |  |
| Morton   | KDHE           | Lake  | Moss Lake West                 |  |
| Morton   | KDHE           | Stream  | Cimarron River                 | Special Aquatic Life Use Waters                |
| Morton   | KDHE           | Stream  | Cimarron River, N Fork         | Special Aquatic Life Use Waters                |
| Morton   | NPS            | Identified in NPS Nationwide Rivers Inventory | Cimarron River                 | Hwy 23 E. Of Liberal, KS to CO/KS line         |
| Nemaha   | KDHE           | Stream  | Big Nemaha River, S Fork       | Special Aquatic Life Use Waters                |
| Nemaha   | KDHE           | Stream  | Manley Creek                   | Special Aquatic Life Use Waters                |
| Neosho   | KDHE           | Stream  | Flat Rock Creek                | Special Aquatic Life Use Waters                |
| Neosho   | KDHE           | Stream  | Neosho River                   | Special Aquatic Life Use Waters                |
| Neosho   | KDHE           | Wetland                                       | Neosho WA                      |  |
| Neosho   | FWS            | Neosho madtom Critical Habitat                |                                | Parts of Cottonwood, Neosho, and Spring Rivers |
| Neosho   | FWS            | Rabbitsfoot mussel Critical Habitat           |                                | Found in several waterways in Southeast KS     |
| Neosho   | FWS            | Neosho mucket mussel Critical Habitat         |                                | Found in several waterways in Southeast KS     |
| Norton   | DOI/BuRec      | Lake  | Keith Sebelius Reservoir       |  |
| Osage    | KDHE           | Stream  | Long Creek                     | Special Aquatic Life Use Waters                |
| Osage    | KDHE           | Stream  | Frog Creek                     | Special Aquatic Life Use Waters                |
| Osage    | KDHE           | Stream  | Appanoose Creek                | Special Aquatic Life Use Waters                |
| Ottawa   | NPS            | Natural Landmark                              | Rock City                      | 2.5 Mi. SW of Minneapolis                      |
| Pawnee   | NPS            | National Historic Site                        | Fort Larned Nat. Historic Site | 6 MI. W. Larned - Hwy 156                      |
| Phillips | KDHE/DOI/BuRec | Lake  | Kirwin Lake                    |  |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY       | AGENCY         | TYPE                           | NAME                                | NOTES                           |
|--------------|----------------|--------------------------------|-------------------------------------|---------------------------------|
| Phillips     | FWS            | National Wildlife Refuge       | Kirwin NWR                          | N. Fork of Solomon River Valley |
| Pottawatomie | FWS            | Topeka shiner Critical Habitat | Clear Fork Creek                    | Continuation of item #41 above  |
| Pottawatomie | KDHE           | Stream                         | Bucksnot Creek                      | Special Aquatic Life Use Waters |
| Pottawatomie | KDHE           | Stream                         | Spring Creek                        | Special Aquatic Life Use Waters |
| Pottawatomie | KDHE           | Stream                         | Black Vermillion River, Clear Fork  | Special Aquatic Life Use Waters |
| Pottawatomie | KDHE           | Stream                         | Kansas River                        | Special Aquatic Life Use Waters |
| Pottawatomie | KDHE           | Stream                         | Bluff Creek                         | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Mulberry Creek                      | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Amber Creek                         | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Chikaskia River                     | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Chikaskia River, N Fork             | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Elm Creek, North                    | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Elm Creek, South E Branch           | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Elm Creek , South W Branch          | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Turkey Creek                        | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Natrona Creek                       | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Ninnescah River, S Fork             | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Ninnescah River, W Branch of S Fork | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Painter Creek                       | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Sand Creek                          | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Silver Creek                        | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Stream                         | Rattlesnake Creek                   | Special Aquatic Life Use Waters |
| Pratt        | KDHE           | Wetland                        | Texas Lake WA.                      |                                 |
| Reno         | DOI/BuRec/KDHE | Lake                           | Cheney Reservoir                    |                                 |
| Reno         | FWS            | National Wildlife Refuge       | Quivira NWR                         | South-central Kansas            |
| Reno         | KDHE           | Stream                         | Arkansas River                      | Special Aquatic Life Use Waters |
| Reno         | KDHE           | Stream                         | Ninnescah River, N Fork             | Special Aquatic Life Use Waters |
| Reno         | KDHE           | Stream                         | Peace Creek                         | Special Aquatic Life Use Waters |
| Reno         | KDHE           | Stream                         | Red Rock Creek                      | Special Aquatic Life Use Waters |
| Reno         | KDHE           | Stream                         | Silver Creek                        | Special Aquatic Life Use Waters |
| Reno         | KDHE           | Stream                         | Smoots Creek                        | Special Aquatic Life Use Waters |
| Reno         | FWS            | Wetland                        | Quivira Little Salt Marsh           |                                 |
| Republic     | KDHE           | Stream                         | Republican River                    | Special Aquatic Life Use Waters |
| Republic     | KDHE           | Wetland                        | Jamestown WA.                       |                                 |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY   | AGENCY                             | TYPE  | NAME                          | NOTES  |
|----------|------------------------------------|---|-------------------------------|--|
| Rice     | FWS                                | National Wildlife Refuge                      | Quivira NWR                   | South-central Kansas   |
| Rice     | KDHE                               | Stream  | Arkansas River                | Special Aquatic Life Use Waters  |
| Rice     | KDHE                               | Stream  | Peace Creek                   | Special Aquatic Life Use Waters  |
| Rice     | KDHE                               | Stream  | Rattlesnake Creek             | Special Aquatic Life Use Waters  |
| Riley    | FWS                                | Topeka shiner Habitat                         | Walnut Creek                  | from the east section line of T7S, R6E, Sec. 19, upstream through T8S, R5E, Sec. 1 |
| Riley    | FWS                                | Topeka shiner Habitat                         | Deep Creek and tributaries    |  |
| Riley    | FWS                                | Topeka shiner Habitat                         | Wildcat Creek and tributaries |  |
| Riley    | KDHE                               | Stream  | Deep Creek                    | Special Aquatic Life Use Waters  |
| Riley    | KDHE                               | Stream  | Kansas River                  | Special Aquatic Life Use Waters  |
| Riley    | KDHE                               | Stream  | Spring Creek                  | Special Aquatic Life Use Waters  |
| Riley    | KDHE                               | Stream  | Wildcat Creek                 | Special Aquatic Life Use Waters  |
| Riley    | COE                                | Large Reservoir                               | Tuttle Creek                  |  |
| Riley    | TNC, Kansas State University (KSU) | Project Area, Biosphere Reserve               | Konza Prairie                 | S. of Manhattan  |
| Rooks    | DOI/BuRec                          | Lake  | Webster Reservoir             |  |
| Rush     | KDHE                               | Stream  | Blood Creek                   | Special Aquatic Life Use Waters  |
| Russell  | COE                                | Large Reservoir                               | Wilson Lake                   |  |
| Russell  | NPS                                | Identified in NPS Nationwide Rivers Inventory | Saline River                  | Wilson Lake to Fairport  |
| Russell  | KDHE                               | Stream  | Smoky Hill River              | Special Aquatic Life Use Waters  |
| Russell  | KDHE                               | Stream  | Saline River                  | Special Aquatic Life Use Waters  |
| Scott    | KDHE                               | Lake  | Lake Scott State Park         |  |
| Scott    | KDHE                               | Stream  | Ladder Creek                  | Special Aquatic Life Use Waters  |
| Sedgwick | KDHE                               | Stream  | Arkansas River                | Special Aquatic Life Use Waters  |
| Sedgwick | KDHE                               | Stream  | Chisolm Creek                 | Special Aquatic Life Use Waters  |
| Sedgwick | KDHE                               | Stream  | Clearwater Creek              | Special Aquatic Life Use Waters  |
| Sedgwick | KDHE                               | Stream  | Nester Creek                  | Special Aquatic Life Use Waters  |
| Sedgwick | KDHE                               | Stream  | Ninnescah River               | Special Aquatic Life Use Waters  |
| Sedgwick | KDHE                               | Stream  | Ninnescah River, S Fork       | Special Aquatic Life Use Waters  |
| Sedgwick | KDHE                               | Stream  | Sand Creek                    | Special Aquatic Life Use Waters  |
| Seward   | KDHE                               | Stream  | Cimarron River                | Special Aquatic Life Use Waters  |
| Seward   | NPS                                | Identified in NPS Nationwide Rivers Inventory | Cimarron River                | Hwy 23 E. Of Liberal, KS to CO/KS line   |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY    | AGENCY    | TYPE  | NAME                             | NOTES  |
|-----------|-----------|---|----------------------------------|--|
| Shawnee   | FWS       | Topeka shiner Habitat                         | Mission Creek                    | From Interstate Highway 70 (T11S, R14E, Sec. 33), upstream to the confluence of North Branch Mission Creek and South Branch Mission Creek (T13S, R12E, Sec. 1) |
| Shawnee   | KDHE      | Stream  | Kansas River                     | Special Aquatic Life Use Waters  |
| Shawnee   | KDHE      | Stream  | Mill Creek                       | Special Aquatic Life Use Waters  |
| Shawnee   | NPS       | National Historic Site                        | Nicodemus National Historic Site |  |
| Stafford  | FWS       | National Wildlife Refuge                      | Quivira NWR                      | South-central Kansas   |
| Stafford  | FWS       | Whooping crane Critical Habitat               | Quivira NWR                      |  |
| Stafford  | KDHE      | Stream  | Peace Creek                      | Special Aquatic Life Use Waters  |
| Stafford  | KDHE      | Stream  | Ninnescah River, N Fork          | Special Aquatic Life Use Waters  |
| Stafford  | KDHE      | Stream  | Rattlesnake Creek                | Special Aquatic Life Use Waters  |
| Stafford  | FWS       | Wetland                                       | Quivira Little Salt Marsh        | NWR  |
| Stafford  | FWS       | Wetland                                       | Quivira Big Salt Marsh           | NWR  |
| Stevens   | KDHE      | Stream  | Cimarron River                   | Special Aquatic Life Use Waters  |
| Stevens   | NPS       | Identified in NPS Nationwide Rivers Inventory | Cimarron River                   | Hwy 23 E. Of Liberal, KS to CO/KS line   |
| Sumner    | KDHE      | Stream  | Ninnescah River                  | Special Aquatic Life Use Waters  |
| Sumner    | KDHE      | Stream  | Arkansas River                   | Special Aquatic Life Use Waters  |
| Sumner    | KDHE      | Stream  | Spring Creek                     | Special Aquatic Life Use Waters  |
| Sumner    | KDHE      | Stream  | Chikaskia River                  | Special Aquatic Life Use Waters  |
| Sumner    | NPS       | Identified in NPS Nationwide Rivers Inventory | Chikaskia River                  | KS/OK line to Hwy 2, NE of Runnynede   |
| Trego     | DOI/BuRec | Lake  | Cedar Bluff Reservoir            |  |
| Wabaunsee | FWS       | Topeka shiner Habitat                         | Mill Creek and tributaries       |  |
| Wabaunsee | KDHE      | Stream  | Kansas River                     | Special Aquatic Life Use Waters  |
| Wabaunsee | KDHE      | Stream  | Deep Creek                       | Special Aquatic Life Use Waters  |
| Wabaunsee | KDHE      | Stream  | Elm Creek                        | Special Aquatic Life Use Waters  |
| Wabaunsee | KDHE      | Stream  | Illinois Creek                   | Special Aquatic Life Use Waters  |
| Wabaunsee | KDHE      | Stream  | Mill Creek, W Branch             | Special Aquatic Life Use Waters  |
| Wabaunsee | KDHE      | Stream  | Locust Creek                     | Special Aquatic Life Use Waters  |
| Wabaunsee | KDHE      | Stream  | Mill Creek                       | Special Aquatic Life Use Waters  |
| Wabaunsee | KDHE      | Stream  | Mill Creek, E Branch             | Special Aquatic Life Use Waters  |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY    | AGENCY | TYPE  | NAME                                 | NOTES  |
|-----------|--------|---|--------------------------------------|--|
| Wabaunsee | KDHE   | Stream  | Mill Creek, S Branch                 | Special Aquatic Life Use Waters  |
| Wallace   | FWS    | Topeka shiner Habitat                         | Willow Creek                         | From its confluence with the Smoky Hill River (T13S, R41W, Sec. 17), upstream through T13S, R42W, Sec. 3 |
| Wallace   | KDHE   | Stream  | Ladder Creek                         | Special Aquatic Life Use Waters  |
| Wallace   | KDHE   | Stream  | Capper Draw                          | Special Aquatic Life Use Waters  |
| Wallace   | KDHE   | Stream  | Chalk Creek                          | Special Aquatic Life Use Waters  |
| Wallace   | KDHE   | Stream  | Coon Creek                           | Special Aquatic Life Use Waters  |
| Wallace   | KDHE   | Stream  | Depperschmidt Draw                   | Special Aquatic Life Use Waters  |
| Wallace   | KDHE   | Stream  | Eagletail Creek                      | Special Aquatic Life Use Waters  |
| Wallace   | KDHE   | Stream  | Pond Creek                           | Special Aquatic Life Use Waters  |
| Wallace   | KDHE   | Stream  | Rose Creek                           | Special Aquatic Life Use Waters  |
| Wallace   | KDHE   | Stream  | Smoky Hill River                     | Special Aquatic Life Use Waters  |
| Wallace   | KDHE   | Stream  | Twin Butte Creek                     | Special Aquatic Life Use Waters  |
| Wallace   | KDHE   | Stream  | Willow Creek                         | Special Aquatic Life Use Waters  |
| Wichita   | KDHE   | Stream  | Chalk Creek                          | Special Aquatic Life Use Waters  |
| Wichita   | KDHE   | Stream  | Ladder Creek                         | Special Aquatic Life Use Waters  |
| Wilson    | FWS    | Burying Beetle habitat                        |                                      | Upland prairie   |
| Wilson    | KDHE   | Stream  | Fall River                           | Special Aquatic Life Use Waters  |
| Wilson    | KDHE   | Stream  | Verdigris River                      | Special Aquatic Life Use Waters  |
| Wilson    | NPS    | Identified in NPS Nationwide Rivers Inventory | Fall River                           | Verdigris River to Fall river Lake   |
| Wilson    | FWS    | Rabbitsfoot mussel Critical Habitat           |                                      | Found in several waterways in Southeast KS   |
| Wilson    | FWS    | Neosho mucket mussel Critical Habitat         |                                      | Found in several waterways in Southeast KS   |
| Woodson   | KDHE   | Lake  | Woodson Co. State Fishing Lake (SFL) |  |
| Woodson   | KDHE   | Lake  | Circle Lake                          |  |
| Woodson   | KDHE   | Lake  | Leonard's Lake                       |  |
| Woodson   | KDHE   | Stream  | Bloody Run                           | Special Aquatic Life Use Waters  |
| Woodson   | KDHE   | Stream  | Neosho River                         | Special Aquatic Life Use Waters  |
| Woodson   | KDHE   | Stream  | Owl Creek, South                     | Special Aquatic Life Use Waters  |
| Woodson   | KDHE   | Stream  | Verdigris River                      | Special Aquatic Life Use Waters  |
| Woodson   | KDHE   | Wetland                                       | Woodson WA.                          |  |
| Woodson   | FWS    | Neosho madtom Critical Habitat                |                                      | Parts of Cottonwood, Neosho, and Spring Rivers   |

**TABLE A.2.3**

**ENVIRONMENTALLY SENSITIVE AREAS – KANSAS**

| COUNTY    | AGENCY | TYPE  | NAME                | NOTES                                      |
|-----------|--------|---|---------------------|--|
| Woodson   | FWS    | Rabbitsfoot mussel Critical Habitat           |                     | Found in several waterways in Southeast KS |
| Woodson   | FWS    | Neosho mucket mussel Critical Habitat         |                     | Found in several waterways in Southeast KS |
| Wyandotte | KDHE   | Stream  | Kansas River        | Special Aquatic Life Use Waters            |
| Wyandotte | KDHE   | Stream  | Little Turkey Creek | Special Aquatic Life Use Waters            |
| Wyandotte | KDHE   | Stream  | Missouri River      | Special Aquatic Life Use Waters            |
| Wyandotte | NPS    | Identified in NPS Nationwide Rivers Inventory | Kansas River        | I-635 to Delaware River                    |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY                      | AGENCY                             | TYPE                    | NAME                                   | NOTES  |
|-----------------------------|------------------------------------|-------------------------|--|--|
| Hickory                     | U.S. Army Corps of Engineers (COE) | Large Reservoir         | Pomme De Terre Lake                    |  |
| Clay                        | COE                                | Large Reservoir         | Smithville Lake                        |  |
|                             | COE                                | Large Reservoir         | Harry S. Truman Lake                   |  |
| Monroe & Ralls              | COE                                | Large Reservoir         | Mark Twain Lake                        |  |
|                             | COE                                | Large Reservoir         | Stockton Lake                          |  |
|                             | COE                                | Large Reservoir         | Table Rock Lake                        |  |
|                             | COE                                | Large Reservoir         | Wappapello Lake                        |  |
| Various counties            | National Parks Service (NPS)       | National Historic Trail | California National Historic Trail     | Developed over a period of years, and contains numerous cutoffs and alternate routes. General route began at Various jumping off points in MO, including Independence and St. Joseph, and headed westward following the routes of the Oregon and Santa Fe Trails through KS and the Platte River through NE. |
| Various counties            | NPS                                | National Historic Trail | Lewis & Clark National Historic Trail  | Generally follows the Missouri River   |
| Various counties            | NPS                                | National Historic Trail | Oregon National Historic Trail         | Started in Independence, MO, and headed westward.  |
| Various counties            | NPS                                | National Historic Trail | Pony Express National Historic Trail   | Most of original trail has been obliterated through time. Some Pony Express Stations still exist. Trail started in Independence, MO, following the route of the Oregon Trail through KS toward the Platte River and the West.  |
| Various counties            | NPS                                | National Historic Trail | Santa Fe National Historic Trail       |  |
| Various counties            | NPS                                | National Historic Trail | Trail of Tears National Historic Trail | In an arc through southern MO, from just north of Cape Girardeau, northwestward to the present-day route of I-44, and then southwestward toward Tahlequah, AR.   |
| Various counties in MO & AR | COE                                | Large Reservoir         | Bull Shoals Lake                       |  |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY                        | AGENCY                       | TYPE  | NAME                           | NOTES   |
|-------------------------------|------------------------------|---|--------------------------------|---|
| Various counties in MO & AR   | COE                          | Large Reservoir                               | Norfork Lake                   |   |
|                               | U.S. Forest Service (USFS)   | National Forest                               | Mark Twain Nat. Forest         | Numerous counties in south-central Missouri                             |
|                               | USFS                         | National Wilderness Area                      | Devil's Backbone               |   |
|                               | USFS                         | National Wilderness Area                      | Hercules Glades                |   |
|                               | USFS                         | National Wilderness Area                      | Irish                          |   |
|                               | USFS                         | National Wilderness Area                      | Paddy Creek                    |   |
|                               | USFS                         | National Wilderness Area                      | Piney Creek                    |   |
|                               | USFS                         | National Wilderness Area                      | Rockpile Mountain              |   |
|                               | USFS                         | National Wilderness Area                      | Bell Mountain                  |   |
| Audrain, Callaway, Montgomery | MDC                          | Stream  | Loutre River                   | Stream contains habitat for species of conservation concern             |
| Barry, Lawrence, Stone        | MDC                          | stream  | Crane Creek                    | Crane Creek blue ribbon rout area including Wire Road Conservation Area |
| Barry                         | MDC/DNR                      | stream  | Roaring River State Park       | Roaring River from spring source to end of White Ribbon Trout Area      |
| Barry                         | NPS                          | Identified in NPS Nationwide Rivers Inventory | Shoal Creek                    | Spring River to source  |
| Barton                        | NPS                          | Natural Landmark                              | Golden Prairie                 | 16 Mi. NE of Carthage   |
| Barton                        | The Nature Conservancy (TNC) | St Conservancy Preserve                       | Shelton L Cook Memorial Meadow |   |
| Barton                        | TNC                          | St Conservancy Preserve                       | Tri-Sho Prairie                |   |
| Barton                        | TNC                          | St Conservancy Preserve                       | Hunkah Prairie                 |   |



**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY    | AGENCY                               | TYPE  | NAME                                 | NOTES  |
|-----------|--------------------------------------|---|--------------------------------------|--|
| Barton    | TNC                                  | St Conservancy Preserve                       | Pawhuska Prairie                     |  |
| Benton    | TNC                                  | St Conservancy Preserve                       | Rockhill Prairie                     |  |
| Bollinger | U.S. Fish and Wildlife Service (FWS) | National Wildlife Refuge                      | Mingo National Wildlife Refuge (NWR) | Watershed drains into Refuge   |
| Bollinger | NPS                                  | Identified in NPS Nationwide Rivers Inventory | Castor River                         |  |
| Boone     | NPS                                  | Identified in NPS Nationwide Rivers Inventory | Cedar Creek                          | Missouri River to Hwy WW   |
| Boone     | TNC                                  | St Conservancy Preserve                       | Hinkson Valley                       |  |
| Butler    | NPS                                  | Identified in NPS Nationwide Rivers Inventory | Little Black River                   | S36,T25N, R2E to MO-AR State line  |
| Callaway  | NPS                                  | Identified in NPS Nationwide Rivers Inventory | Cedar Creek                          | Missouri River to Hwy WW   |
| Callaway  | NPS                                  | Natural Landmark                              | Tucker Prairie                       | 7 Mi. NNW of Fulton  |
| Callaway  | MDC                                  | Stream  | Auxvasse Creek                       | Stream contains habitat for species of conservation concern  |
| Camden    | NPS                                  | Natural Landmark                              | Carroll Cave                         | Private  |
| Carter    | NPS                                  | National Scenic Riverway                      | Ozark National Scenic Riverway       | 134 Mi. of Jacks Fork & Current Rivers   |
| Camden    | USFW                                 | Stream  | Little Niangua River                 | Federally designated critical habitat for endangered species. Little Niangua River and 50 feet on each side of the river from 1 mile below (downstream of) Highway 54, Camden County, to county road E, Dallas County. |
| Carter    | NPS                                  | Identified in NPS Nationwide Rivers Inventory | Current River                        | Entire segment within Ozark National Scenic Riverways  |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY         | AGENCY | TYPE   | NAME                        | NOTES  |
|----------------|--------|--|-----------------------------|--|
| Cedar          | NPS    | Identified in NPS Nationwide Rivers Inventory        | Cedar Creek                 | Sac river to source  |
| Cedar          | TNC    | St Conservancy Preserve                              | Mo-Ko Prairie               |  |
| Cedar          | TNC    | St Conservancy Preserve                              | Monegaw Prairie             |  |
| Cedar          | USFWS  | Federally designated Niangua Darter critical habitat | Brush Creek                 | Brush Creek and 50 feet on each side of the creek from 1000 feet upstream of county road J to the boundary of Sections 54 and 35. Township 36 N. Range 25 W.                             |
| Chariton       | FWS    | National Wildlife Refuge                             | Swan Lake NWR               |  |
| Chariton       | NPS    | Identified in NPS Nationwide Rivers Inventory        | Locust Creek                | Grant River to Hwy. 36   |
| Chariton, Linn | MDC    | Priority watershed and conservation opportunity area | Yellow Creek                | From Grand River to Highway 36. Unchannelized prairie stream with high quality habitat and species diversity. Unique to region. Flows along Swan Lake NWR and numerous private wetlands. |
| Christian      | NPS    | Identified in NPS Nationwide Rivers Inventory        | Swan Creek                  | From S4, T26N, R18W to Bull Shoals Lake  |
| Christian      | DNR    | Missouri Outstanding State Resource Water            | Bull Creek                  | Eight miles of Bull Creek located in Sec. 24,25N,21W to Sec. 22,26N,20W  |
| Clark          | FWS    | National Wildlife Refuge                             | Great River NWR             | Fox Island Division  |
| Clark          | FWS    | National Wildlife Refuge                             | Mark Twain NWR              |  |
| Clay           | NPS    | Natural Landmark                                     | Maple Woods Natural Area    |  |
| Clinton        | TNC    | St Conservancy Preserve                              | Trice-Dedman Memorial Woods |  |
| Cooper         | FWS    | National Wildlife Refuge                             | Big Muddy NWR               | Overton Bottoms North Unit   |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY   | AGENCY | TYPE   | NAME                           | NOTES  |
|----------|--------|--|--------------------------------|--|
| Crawford | NPS    | Identified in NPS Nationwide Rivers Inventory        | Huzzah Creek                   | Meramec River to Dillard   |
| Crawford | NPS    | Identified in NPS Nationwide Rivers Inventory        | Courtois Creek                 | Huzzah Creek to Brazil   |
| Crawford | NPS    | Identified in NPS Nationwide Rivers Inventory        | Meramec River                  | Meramec State Park to Cook Station   |
| Crawford | NPS    | Identified in NPS Nationwide Rivers Inventory        | Bourbeuse River                | Noser Hill to Hwy B  |
| Crawford | NPS    | Natural Landmark                                     | Onondag Cave                   | 5 Mi. SW of Leasburg   |
| Crawford | TNC    | St Conservancy Preserve                              | Zahorsky Woods                 |  |
| Dade     | NPS    | Identified in NPS Nationwide Rivers Inventory        | Cedar Creek                    | Sac river to source  |
| Dade     | TNC    | St Conservancy Preserve                              | Niawthe Prairie                |  |
| Dade     | TNC    | St Conservancy Preserve                              | N. B. Altvater Corry Flatrocks |  |
| Dade     | TNC    | St Conservancy Preserve                              | Greenfield Glade               |  |
| Dallas   | NPS    | Identified in NPS Nationwide Rivers Inventory        | Little Niangua River           | S20, T35N, R19W to Lake of the Ozarks  |
| Dallas   | NPS    | Identified in NPS Nationwide Rivers Inventory        | Niangua River                  | Bennet Spring Branch to Camden/Dallas county line  |
| Dallas   | USFWS  | Federally designated Niangua Darter critical habitat | Little Niangua River           | Little Niangua River and 50 feet on each side of the river from 1 mile below (downstream of) Highway 54, Camden County, to county road E, Dallas County. |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY  | AGENCY | TYPE   | NAME                          | NOTES   |
|---------|--------|--|-------------------------------|---|
| Dallas  | USFWS  | Federally designated Niangua Darter critical habitat | Niangua River                 | Niangua River and 50 feet on each side of the river, from county road K upstream to 1 mile beyond county road M to the Webster County line. |
| Daviess | NPS    | Identified in NPS Nationwide Rivers Inventory        | Marrowbone Creek              | Hwy 13 to I-35  |
| Dent    | NPS    | Identified in NPS Nationwide Rivers Inventory        | Current River                 | Entire segment within Ozark National Scenic Riverways   |
| Dent    | NPS    | Identified in NPS Nationwide Rivers Inventory        | Little Piney Creek            | S21, T34N, R8W to Gasconade River   |
| Dent    | TNC    | St Conservancy Preserve                              | Hyer Woods                    |   |
| Douglas | NPS    | Identified in NPS Nationwide Rivers Inventory        | Beaver Creek                  | S24,T26N, R17W to Bull Shoals Lake  |
| Douglas | NPS    | Identified in NPS Nationwide Rivers Inventory        | Bryant Creek                  | N. Fork White River to Hwy. 14  |
| Douglas | NPS    | Identified in NPS Nationwide Rivers Inventory        | Indian Creek                  | North Fork of the White River to source   |
| Douglas | NPS    | Identified in NPS Nationwide Rivers Inventory        | North Fork White River        | Norfork Lake to source  |
| Douglas | NPS    | Identified in NPS Nationwide Rivers Inventory        | Spring Creek                  | S24, T26N, R10W to S34, T25N, R11W, almost entirely within the Mark Twain NF  |
| Douglas | TNC    | St Conservancy Preserve                              | Alma Peterson Azalea Memorial |   |
| Douglas | TNC    | St Conservancy Preserve                              | Williams Memorial Woods       |   |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY    | AGENCY | TYPE   | NAME                          | NOTES  |
|-----------|--------|--|-------------------------------|--|
| Franklin  | NPS    | Identified in NPS Nationwide Rivers Inventory        | Bourbeuse River               | Noser Mill to Hwy 8  |
| Franklin  | NPS    | Identified in NPS Nationwide Rivers Inventory        | Meramec River                 | Meramec State Park to Cook Station   |
| Gasconade | NPS    | Identified in NPS Nationwide Rivers Inventory        | Bourbeuse River               | Noser Mill to Hwy. 8   |
| Gasconade | NPS    | Identified in NPS Nationwide Rivers Inventory        | Gasconade River               | Missouri R. to source  |
| Greene    | NPS    | National Battlefield                                 | Wilson Creek Nat. Battlefield | 10 MI. SW of Springfield   |
| Greene    | USFWS  | Federally designated Niangua Darter critical habitat | Pomme de Terre River          | Pomme de Terre River and 50 feet on each side of the river from Highway 65 upstream to the Webster County line   |
| Harrison  | TNC    |  | Dunn Ranch Prairie            |  |
| Hickory   | USFWS  | Federally designated Niangua Darter critical habitat | Little Niangua River          | Little Niangua River and 50 feet on each side of the river from 1 mile below (downstream of) Highway 54, Camden County, to county road E, Dallas County. |
| Hickory   | NPS    | Identified in NPS Nationwide Rivers Inventory        | Little Niangua River          | S20, T35N, R19W to Lake of the Ozarks  |
| Holt      | FWS    | National Wildlife Refuge                             | Squaw Creek                   |  |
| Holt      | TNC    | St Conservancy Preserve                              | J. C. McCormack Loess Mounds  |  |
| Howard    | FWS    | National Wildlife Refuge                             | Big Muddy NWR                 | Lisbon Bottoms Unit  |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY    | AGENCY | TYPE  | NAME                              | NOTES  |
|-----------|--------|---|-----------------------------------|--|
| Howell    | NPS    | Identified in NPS Nationwide Rivers Inventory | Indian Creek                      | North Fork of the White River to source                                      |
| Howell    | NPS    | Identified in NPS Nationwide Rivers Inventory | Spring Creek                      | S24, T26N, R10W to S34, T25N, R11W, almost entirely within the Mark Twain NF |
| Howell    | NPS    | Identified in NPS Nationwide Rivers Inventory | Spring River and Warm Fork        | From confluence with Black River to headwaters near West Plains, MO          |
| Howell    | NPS    | Identified in NPS Nationwide Rivers Inventory | Spring River, South Fork          | From confluence with Spring River to headwaters south of South Fork, Mo      |
| Iron      | FWS    | National Wildlife Refuge                      | Pilot Knob NWR                    | Administered by Mingo NWR  |
| Jackson   | FWS    | National Wildlife Refuge                      | Big Muddy NWR                     | Jackass Bend Unit  |
| Jackson   | NPS    | National Historic Site                        | Harry Truman Nat. Historic Site   | Truman Rd & Main, Independence   |
| Jasper    | NPS    | Identified in NPS Nationwide Rivers Inventory | Spring River                      | Highway 96 to Highway 44   |
| Jasper    | TNC    | St Conservancy Preserve                       | Wha-Sha-She Prairie               |  |
| Jefferson | FWS    | National Wildlife Refuge                      | Middle Mississippi River NWR      | Harlow Island District   |
| Jefferson | TNC    | St Conservancy Preserve                       | Victoria Glade                    |  |
| Jefferson | TNC    | St Conservancy Preserve                       | N. B. Altwater LaBarque Hills     |  |
| Knox      | NPS    | Identified in NPS Nationwide Rivers Inventory | North Fork of Middle Fabius River | North Fork of the Middle Fabius River to source                              |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY    | AGENCY | TYPE  | NAME                              | NOTES   |
|-----------|--------|---|-----------------------------------|---|
| Knox      | NPS    | Identified in NPS Nationwide Rivers Inventory | South Fabius River                | Count Hwy. E to confluence of the North Fabius and the South Fabius |
| Laclede   | NPS    | Identified in NPS Nationwide Rivers Inventory | Gasconade River                   | Missouri R. to source   |
| Laclede   | NPS    | Identified in NPS Nationwide Rivers Inventory | Niangua River                     | Bennet Spring Branch to Camden/Dallas county line                   |
| Laclede   | NPS    | Identified in NPS Nationwide Rivers Inventory | Osage Fork of the Gasconade River | South of High Prairie to S23, T35N, R14W                            |
| Laclede   | TNC    | St Conservancy Preserve                       | Bennett Spring Savanna            |   |
| Lafayette | FWS    | National Wildlife Refuge                      | Big Muddy NWR                     | Baltimore Bottoms Unit  |
| Lawrence  | FWS    | National Wildlife Refuge                      | Ozark Cavefish NWR                | Administered by Mingo NWR   |
| Lawrence  | NPS    | Identified in NPS Nationwide Rivers Inventory | Spring River                      | Highway 96 to Hwy 44  |
| Lawrence  | TNC    | St Conservancy Preserve                       | Mount Vernon Prairie              |   |
| Lewis     | NPS    | Identified in NPS Nationwide Rivers Inventory | North Fork of Middle Fabius River | North Fork of Middle Fabius River to source                         |
| Lewis     | TNC    | St Conservancy Preserve                       | Accola Woods                      |   |
| Lincoln   | NPS    | Identified in NPS Nationwide Rivers Inventory | West Fork Cuivre River            | Cuivre River to County Hwy AC                                       |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY                 | AGENCY | TYPE  | NAME                       | NOTES  |
|------------------------|--------|---|----------------------------|--|
| Linn                   | NPS    | Identified in NPS Nationwide Rivers Inventory | Locust Creek               | Grand River to Hwy 36  |
| Livingston             | NPS    | Identified in NPS Nationwide Rivers Inventory | Locust Creek               | Grand River to Hwy 36  |
| Madison                | NPS    | Identified in NPS Nationwide Rivers Inventory | Castor River               |  |
| Madison                | NPS    | Identified in NPS Nationwide Rivers Inventory | Little St. Francois River  | Northwest of Fredericktown to St. Francois River                             |
| Madison                | NPS    | Identified in NPS Nationwide Rivers Inventory | St Francis River           | Lake Wappapello to Syenite   |
| Maries, Osage          |        | Stream  | Maries River               | Stream contains threatened species habitat                                   |
| Maries                 | NPS    | Identified in NPS Nationwide Rivers Inventory | Gasconade River            | Missouri R. to source  |
| Marion                 | NPS    | Natural Landmark                              | Mark Twain & Cameron Caves | 2 Mi. SE of Hannibal   |
| McDonald               | NPS    | Identified in NPS Nationwide Rivers Inventory | Big Sugar Creek            | S35,T22N, R30W to Pineville. Joins Little Sugar Creek to form the Elk River. |
| McDonald               | NPS    | Identified in NPS Nationwide Rivers Inventory | Elk River                  | From Pineville to the MO-OK State line                                       |
| Mississippi            | NPS    | Natural Landmark                              | Big Oak Tree               | Big Oak Tree State Park  |
| Moniteau, Cooper, Cole |        | Stream  | Moniteau Creek             | Stream contains endangered species habitat                                   |



**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY     | AGENCY | TYPE  | NAME  | NOTES   |
|------------|--------|---|---|---|
| Montgomery | NPS    | Identified in NPS Nationwide Rivers Inventory | West Fork Cuivre River                              | Cuivre River to County Hwy AC   |
| Newton     | FWS    | National Wildlife Refuge                      | Mingo NWR - Neosho Unit                             | Spring containing Ozark cavefish habitat                                    |
| Newton     | FWS    | National Fish Hatchery                        | Neosho National Fish Hatchery (NFH)                 |   |
| Newton     | NPS    | National Park                                 | George Washington Carver Nat. Monument              | 7. Mi s of I-44   |
| Newton     | NPS    | Identified in NPS Nationwide Rivers Inventory | Shoal Creek   |   |
| Newton     | MDC    | Stream  | Capps Creek   | Capps Creek White Ribbon Trout Area including Capps Creek Conservation Area |
| Newton     | FWS    | National Research Facility                    | Columbia Environmental & Contaminants Research Ctr. |   |
| Nodaway    | TNC    | St Conservancy Preserve                       | Dobbins Woodlands                                   |   |
| Oregon     | NPS    | Identified in NPS Nationwide Rivers Inventory | Spring River and Warm Fork                          | From confluence with Black River to headwaters near West Plains, MO         |
| Oregon     | NPS    | National Scenic River                         | Eleven Point  | Downstream from Thomasville to State Highway 142                            |
| Oregon     | NPS    | Natural Landmark                              | Grand Gulf  | 8 Mi. W of Thayer   |
| Oregon     | NPS    | Natural Landmark                              | Greer Spring  | 52 Mi. W of Poplar Bluff  |
| Osage      | FWS    | National Wildlife Refuge                      | Big Muddy NWR                                       | St. Aubert=s Island Unit  |
| Osage      | NPS    | Identified in NPS Nationwide Rivers Inventory | Gasconade River                                     | Missouri R. to source   |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY | AGENCY | TYPE   | NAME                   | NOTES   |
|--------|--------|--|------------------------|---|
| Ozark  | NPS    | Identified in NPS Nationwide Rivers Inventory          | Bryant Creek           | N. Fork White River to Hwy 14                       |
| Ozark  | NPS    | Identified in NPS Nationwide Rivers Inventory          | North Fork White River | Norfork Lake to source                              |
| Phelps | NPS    | Identified in NPS Nationwide Rivers Inventory          | Bourbeuse River        | Noser Mill to Hwy B                                 |
| Phelps | NPS    | Identified in NPS Nationwide Rivers Inventory          | Big Piney River        | Gasconade River to Hwy 63                           |
| Phelps | NPS    | Identified in NPS Nationwide Rivers Inventory          | Gasconade River        | Missouri R. to source                               |
| Phelps | NPS    | Identified in NPS Nationwide Rivers Inventory          | Little Piney Creek     | S21, T34N, R8W to Gasconade River                   |
| Phelps | NPS    | Identified in NPS Nationwide Rivers Inventory          | Meramec River          | Meramec State Park to Cook Station                  |
| Phelps | NPS    | Natural Landmark                                       | Meramec Spring         | 8 Mi. SE of St. James                               |
| Phelps | DNR    | State Outstanding Resource Waters / cold water streams | Mill Creek             | Yelton Spring to confluence with Little Piney Creek |
| Phelps | DNR    | State Outstanding Resource Waters / cold water streams | Spring Creek           | Relfe Spring to confluence with Big Piney River     |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY   | AGENCY | TYPE  | NAME                           | NOTES                                  |
|----------|--------|---|--------------------------------|--|
| Pike     | FWS    | National Wildlife Refuge                      | Great River NWR                | Clarence Cannon Refuge                 |
| Pike     | FWS    | National Wildlife Refuge                      | Mark Twain NWR                 |  |
| Pulaski  | NPS    | Identified in NPS Nationwide Rivers Inventory | Big Piney River                | Gasconade River to Hwy 63              |
| Pulaski  | NPS    | Identified in NPS Nationwide Rivers Inventory | Gasconade River                | Missouri R. to source                  |
| Reynolds | NPS    | Identified in NPS Nationwide Rivers Inventory | Black River                    | Hwy K to source                        |
| Reynolds | TNC    | St Conservancy Preserve                       | Lily Pond                      |  |
| Reynolds | TNC    | St Conservancy Preserve                       | N.B. Altwater Grasshopper Holl |  |
| Ripley   | NPS    | Identified in NPS Nationwide Rivers Inventory | Little Black River             | S36, T25N, R2E to MO-AR State line     |
| Ripley   | NPS    | Natural Landmark                              | Cupola Pond                    | Mark Twain Nat. Forest                 |
| Ripley   | TNC    | St Conservancy Preserve                       | N.B. Altwater Ponderberry      |  |
| Saline   | FWS    | National Wildlife Refuge                      | Big Muddy NWR                  | Jameson Island Unit                    |
| Schuyler | NPS    | Identified in NPS Nationwide Rivers Inventory | Middle Fabius River & N. Fork  | N. Fabius River to source              |
| Scotland | NPS    | Identified in NPS Nationwide Rivers Inventory | Middle Fabius River & N. Fork  | N. Fabius River to source              |
| Shannon  | NPS    | National Scenic Riverway                      | Ozark National Scenic Riverway | 134 Mi. of Jacks Fork & Current Rivers |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY        | AGENCY | TYPE   | NAME                              | NOTES  |
|---------------|--------|--|-----------------------------------|--|
| Shannon       | NPS    | Identified in NPS Nationwide Rivers Inventory        | Current River                     | Entire segment within Ozark National Scenic Riverways  |
| Shannon       | NPS    | Identified in NPS Nationwide Rivers Inventory        | Jacks Fork                        | Entire segment within Ozark National Scenic Riverways  |
| Shannon       | TNC    | St Conservancy Preserve                              | N.B. Altwater Shut-in-Mntn Fen    |  |
| St. Charles   | FWS    | National Wildlife Refuge                             | Mark Twain NWR                    |  |
| St. Clair     | FWS    | National Wildlife Refuge                             | Swan Lake                         |  |
| St. Clair     | USFWS  | Federally designated Niangua Darter critical habitat | Brush Creek                       | Brush Creek and 50 feet on each side of the creek from 1000 feet upstream of county road J to the boundary of Sections 54 and 35. Township 36 N. Range 25 W. |
| St. Charles   | FWS    | National Wildlife Refuge                             | Big Muddy NWR                     | Boone=s Crossing Unit  |
| St. Francois  | NPS    | Identified in NPS Nationwide Rivers Inventory        | St. Francis River                 | Lake Wappapello to Syenite   |
| St. Genevieve | NPS    | Natural Landmark                                     | Pickle Springs                    | 7 Mi. E. of Farmington   |
| St. Clair     | NPS    | Natural Landmark                                     | Taberville Prairie                | 2.5 Mi. N of Taberville  |
| St. Clair     | TNC    | St Conservancy Preserve                              | Wah'Kon-Tah Prairie               |  |
| St. Clair     | TNC    | St Conservancy Preserve                              | Lichen Glade                      |  |
| St. Francis   | TNC    | St Conservancy Preserve                              | Silas Dees Azalea & Wildflower    |  |
| St. Louis     | NPS    | National Memorial                                    | Jefferson Nat. Expansion Memorial | Mississippi Riverfront, St. Louis  |
| St. Louis     | NPS    | National Historic Site                               | Ulysses S. Grant Historic Site    | 9060 White Haven Dr. St. Louis   |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY   | AGENCY                   | TYPE  | NAME                               | NOTES   |
|----------|--------------------------|---|------------------------------------|---|
| Stoddard | FWS                      | National Wildlife Refuge                      | Mingo NWR                          |   |
| Stone    | NPS                      | Natural Landmark                              | Marvel Cave                        | 50 Mi. S of Springfield                               |
| Sullivan | NPS                      | Identified in NPS Nationwide Rivers Inventory | Locust Creek                       | End channelization to sect. 28                        |
| Taney    | Empire Electric District | Reservoir                                     | Lake Taneycomo                     |   |
| Taney    | NPS                      | Identified in NPS Nationwide Rivers Inventory | Beaver Creek                       | S24,T26N, R17W to Bull Shoals Lake                    |
| Taney    | NPS                      | Identified in NPS Nationwide Rivers Inventory | Swan Creek                         | S4, T26N, R18W to Bull Shoals Lake                    |
| Taney    | NPS                      | Natural Landmark                              | Tumbling Creek Cave                |   |
| Texas    | NPS                      | Identified in NPS Nationwide Rivers Inventory | Big Piney River                    | Gasconade River to Hwy 63                             |
| Texas    | NPS                      | Identified in NPS Nationwide Rivers Inventory | Jacks Fork                         | Entire segment within Ozark National Scenic Riverways |
| Texas    | NPS                      | Identified in NPS Nationwide Rivers Inventory | North Fork White River             | Norfork Lake to source                                |
| Texas    | NPS                      | National Scenic Riverway                      | Ozark National Scenic Riverway     | 134 Mi. of Jacks Fork & Current Rivers                |
| Vernon   | TNC                      | St Conservancy Preserve                       | Marmaton River Bottoms Wet Prairie |   |
| Vernon   | TNC                      | St Conservancy Preserve                       | Little Osage Prairie               |   |
| Vernon   | TNC                      | St Conservancy Preserve                       | Gamagrass Meadows                  |   |

**TABLE A.2.4**

**ENVIRONMENTALLY SENSITIVE AREAS – MISSOURI**

| COUNTY     | AGENCY | TYPE  | NAME                              | NOTES                                    |
|------------|--------|---|-----------------------------------|--|
| Warren     | NPS    | Natural Landmark                              | Wegener Woods                     | .25 Mi N of Holstein                     |
| Washington | NPS    | Identified in NPS Nationwide Rivers Inventory | Mineral Fork                      | Big River to Hwy F                       |
| Washington | NPS    | Identified in NPS Nationwide Rivers Inventory | Courtois Creek                    | Huzzah Creek to Brazil                   |
| Washington | NPS    | Identified in NPS Nationwide Rivers Inventory | Meramec River                     | Meramec State Park to Cook Station       |
| Wayne      | FWS    | National Wildlife Refuge                      | Mingo NWR                         |  |
| Wayne      | NPS    | Identified in NPS Nationwide Rivers Inventory | Castor River                      |  |
| Wayne      | NPS    | Identified in NPS Nationwide Rivers Inventory | St. Francis River                 | Lake Wappapello to Syerite               |
| Webster    | NPS    | Identified in NPS Nationwide Rivers Inventory | Osage Fork of the Gasconade River | South of High Prairie to S23, T35N, R14W |
| Wright     | NPS    | Identified in NPS Nationwide Rivers Inventory | Gasconade River                   | Missouri R. to source County Lake        |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY           | AGENCY                       | TYPE                      | NAME                                    | NOTES  |
|------------------|------------------------------|---------------------------|---|--|
| Various counties | National Parks Service (NPS) | National Historic Trail   | California National Historic Trail      | Developed over a period of years, and contains numerous cutoffs and alternate routes. General route began at Various jumping off points in MO, including Independence and St. Joseph, and headed westward following the routes of the Oregon and Santa Fe Trails through KS and the Platte River through NE.   |
| Various counties | NPS                          | National Historic Trail   | Lewis and Clark National Historic Trail | Generally follows the Missouri River   |
| Various counties | NPS                          | National Historic Trail   | Mormon Pioneer National Historic Trail  | Generally follows the Platte River on north side of the channel, from near Omaha to Scotts Bluff in western Nebraska.  |
| Various counties | NPS                          | National Historic Trail   | Oregon National Historic Trail          | Enters southeast Nebraska west of Odell, and generally follows the Blue River to Ayr. Then the trail cuts northwest toward Kearney and the Platte River, which it follows westward to Scotts Bluff. The trail generally follows the south side of the channel. West of Ogallala, a portion of the trail follows the S. Platte and the route of I-80 to Sydney, before cutting north again along the route of US-385 back toward the N. Platte. |
| Various counties | NPS                          | National Historic Trail   | Pony Express National Historic Trail    | Most of original trail has been obliterated through time. Some Pony Express Stations still exist. Trail started in Independence, MO, and went generally westward to San Francisco, CA, following the Platte River.   |
| Adams            | FWS                          | Waterfowl Production Area | Weseman Waterfowl Production Area (WPA) |  |
| Adams            | FWS                          | Waterfowl Production Area | Kenesaw WPA                             |  |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY   | AGENCY                                    | TYPE  | NAME  | NOTES  |
|----------|---|---|---|--|
| Adams    | Nebraska Game and Parks Commission (NGPC) | State Recreation Area                         | Crystal Lake State Recreation Area (SRA)      |  |
| Adams    | NGPC                                      | State Recreation Area                         | DLD SRA                                       |  |
| Adams    | NGPC                                      | State Recreation Area                         | Prairie Lake SRA                              |  |
| Adams    | The Nature Conservancy (TNC)              | Project Area                                  | Various Platte River                          |  |
| Antelope | NGPC                                      | State Historical Park                         | Ashfall Fossil Beds State Historic Park (SHP) |  |
| Antelope | NGPC                                      | Wildlife Management Area                      | Hackberry Creek WMA                           |  |
| Antelope | NGPC                                      | Wildlife Management Area                      | Grove Lake WMA                                |  |
| Antelope | NGPC                                      | Wildlife Management Area                      | Red Wing WMA                                  |  |
| Arthur   | TNC                                       | Project Area                                  | Arapaho Prairie                               |  |
| Arthur   | TNC                                       | Project Area                                  | Arapaho Prairie                               | Managed by University of NE                          |
| Banner   | NGPC                                      | Wildlife Management Area                      | Wildcat Hills WMA                             |  |
| Banner   | NGPC                                      | Wildlife Management Area                      | Buffalo Creek WMA                             |  |
| Blain    | NPS                                       | Identified in NPS Nationwide Rivers Inventory | Middle Loup River                             | Milburn diversion Dam to source                      |
| Blaine   | NGPC                                      | Wildlife Management Area                      | Milburn Diversion Dam WMA                     |  |
| Blaine   | NPS                                       | Identified in NPS Nationwide Rivers Inventory | Dismal River                                  | Middle Loup River to source                          |
| Boone    | NGPC                                      | Wildlife Management Area                      | Beaver Bend WMA                               |  |
| Boyd     | FWS                                       | National Wildlife Refuge                      | Karl E. Mundt National Wildlife Refuge (NWR)  |  |
| Boyd     | NGPC                                      | Wildlife Management Area                      | Hull Lake WMA                                 |  |
| Boyd     | NGPC                                      | Wildlife Management Area                      | Parshall Bridge WMA                           |  |
| Boyd     | NPS                                       | National Recreational River                   | Missouri River                                | Fort Randall Dam (SD) downstream to Knox county line |
| Boyd     | NPS                                       | National Scenic River                         | Niobrara River                                | 76 miles downstream of Valentine                     |



**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY  | AGENCY                                       | TYPE  | NAME                        | NOTES   |
|---------|--|---|-----------------------------|---|
| Boyd    | NPS  | Identified in NPS Nationwide Rivers Inventory | Niobrara River              | Keya Paha River to Antelope Creek   |
| Boyd    | NPS  | Identified in NPS Nationwide Rivers Inventory | Niobrara River              | Missouri River to Keya Paha River (omit Spencer Dam & Reservoir)          |
| Brown   | NGPC   | State Recreation Area                         | Long Lake SRA               |   |
| Brown   | NGPC   | State Recreation Area                         | Keller Park SRA             |   |
| Brown   | NGPC   | State Recreation Area                         | Long Pine SRA               |   |
| Brown   | NGPC   | Wildlife Management Area                      | Pine Glen WMA               |   |
| Brown   | NGPC   | Wildlife Management Area                      | Bobcat WMA                  |   |
| Brown   | NGPC   | Wildlife Management Area                      | Keller Park/School Land WMA |   |
| Brown   | NGPC   | Wildlife Management Area                      | Plum Creek Valley           | 1.5 miles S. of Johnstown   |
| Brown   | NGPC   | Wildlife Management Area                      | Long Pine WMA               |   |
| Brown   | NGPC   | Wildlife Management Area                      | South Twin Lake WMA         |   |
| Brown   | NGPC   | Wildlife Management Area                      | American Game Marsh WMA     |   |
| Brown   | NGPC   | Wildlife Management Area                      | Willow Lake (Brown Co) WMA  |   |
| Brown   | NGPC   | Wildlife Management Area                      | South Pine WMA              | 12 miles S. of Long Pine  |
| Brown   | NPS  | Identified in NPS Nationwide Rivers Inventory | Niobrara River              | Keya Paha River to Antelope Creek   |
| Brown   | NPS  | Identified in NPS Nationwide Rivers Inventory | Calamus                     | North Loup River to source  |
| Brown   | NPS  | Identified in NPS Nationwide Rivers Inventory | Long Pine Creek             | Niobrara River to source  |
| Brown   | TNC  | Project Area                                  | Niobrara Valley Preserve    | Parts of T32-R23 and R24, T33-R23 and R24                                 |
| Buffalo | FWS  | Whooping Crane Critical Habitat               | Platte River                | Platte River from Lexington to Denman                                     |
| Buffalo | Platte River Recovery Implementation Program | Endangered Species Act (ESA) Mitigation Land  | Wyoming property            | 2 miles E, 1 mile S of Kearney; owned by WY State for mitigation purposes |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY  | AGENCY                                       | TYPE  | NAME                                    | NOTES                           |
|---------|--|---|---|---------------------------------|
| Buffalo | FWS  | Farmers Home Administration (FMHA) easement under the NWR | Wize                                    | Section 12, T12N, R14W          |
| Buffalo | FWS  | FMHA easement under the NWR                               | Altmaier, Freddie                       | Section 31, T10N, R17W          |
| Buffalo | NAS  | Wildlife Sanctuary  | Lillian Annette Rowe Wildlife Sanctuary | South of Gibbon                 |
| Buffalo | NGPC   | State Recreation Area                                     | War Axe SRA                             |                                 |
| Buffalo | NGPC   | State Recreation Area                                     | Union Pacific SRA                       |                                 |
| Buffalo | NGPC   | State Recreation Area                                     | Windmill SRA                            |                                 |
| Buffalo | NGPC   | Wildlife Management Area                                  | Bufflehead WMA                          | 3.25 mile W of Minden INT       |
| Buffalo | NGPC   | Wildlife Management Area                                  | Bassway Strip WMA                       |                                 |
| Buffalo | NGPC   | Wildlife Management Area                                  | Coot Shallows WMA                       | 1.75 mile W of Odessa INT       |
| Buffalo | NGPC   | Wildlife Management Area                                  | Blue Hole WMA                           |                                 |
| Buffalo | NGPC   | Wildlife Management Area                                  | Kea Lake WMA                            | SW Quad, Kearney INT            |
| Buffalo | NGPC   | Wildlife Management Area                                  | Kea West WMA                            | N I-80, 1 mile W of Kearney INT |
| Buffalo | NGPC   | Wildlife Management Area                                  | East Odessa WMA                         |                                 |
| Buffalo | NGPC   | Wildlife Management Area                                  | Denman Island WMA                       |                                 |
| Buffalo | Nebraska Public Power District (NPPD)        | ESA Mitigation Land                                       | Elm Creek Island                        |                                 |
| Buffalo | TNC  | Project Area  | Various parts Platte River              | Parts of T8-R15                 |
| Buffalo | Platte River Recovery Implementation Program | ESA Mitigation Land                                       | Bartels Tract                           |                                 |
| Burt    | NGPC   | State Recreation Area                                     | Pelican Point SRA                       |                                 |
| Burt    | NGPC   | State Recreation Area                                     | Summit Lake SRA                         |                                 |
| Burt    | NGPC   | Wildlife Management Area                                  | Middle Decatur Bend WMA                 | 4 miles E of Decatur            |
| Butler  | NGPC   | Wildlife Management Area                                  | Skull Creek #1 WMA                      | 2.5 miles N, 0.75 E of Brainard |
| Butler  | NGPC   | Wildlife Management Area                                  | Skull Creek #2 WMA                      | 2 miles N, 0.5 W of Abie        |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY | AGENCY | TYPE                        | NAME                             | NOTES   |
|--------|--------|-----------------------------|----------------------------------|---|
| Butler | NGPC   | Wildlife Management Area    | Redtail WMA                      |   |
| Cass   | NGPC   | State Recreation Area       | Louisville Lakes SRA             |   |
| Cass   | NGPC   | State Park                  | Platte River State Park (SP)     |   |
| Cass   | NGPC   | State Park                  | Eugene T. Mahoney SP             |   |
| Cass   | NGPC   | Wildlife Management Area    | Randall W. Schilling WMA         |   |
| Cass   | NGPC   | Wildlife Management Area    | Cedar Creek Island               | River Access NE of Cedar                          |
| Cass   | NGPC   | Wildlife Management Area    | Rakes Creek WMA                  |   |
| Cass   | NGPC   | Wildlife Management Area    | Rhoden WMA                       | NE of Plattsmouth                                 |
| Cass   | NGPC   | Wildlife Management Area    | William Gilmour (Tobacco Island) | 3 miles S, 0.5 E of Plattsmouth                   |
| Cedar  | NGPC   | Wildlife Management Area    | Wiseman WMA                      |   |
| Cedar  | NGPC   | Wildlife Management Area    | Tatanka WMA                      |   |
| Cedar  | NGPC   | Wildlife Management Area    | Chalkrock WMA                    |   |
| Cedar  | NPS    | National Recreational River | Missouri River                   | Gavin=s Point Dam downstream to Dixon county line |
| Chase  | NGPC   | State Recreation Area       | Champion Lake SRA                |   |
| Chase  | NGPC   | State Recreation Area       | Enders Reservoir SRA             |   |
| Chase  | NGPC   | State Historical Park       | Champion Mill SHP                |   |
| Chase  | NGPC   | Wildlife Management Area    | Enders Reservoir WMA             |   |
| Chase  | NGPC   | Wildlife Management Area    | Wanamaker WMA                    |   |
| Cherry | FWS    | National Wildlife Refuge    | Fort Niobrara NWR                |   |
| Cherry | FWS    | National Wildlife Refuge    | Valentine NWR                    |   |
| Cherry | FWS    | National Wilderness Area    | Fort Niobrara                    |   |
| Cherry | NGPC   | State Historical Park       | Bowring Ranch SHP                |   |
| Cherry | NGPC   | State Park                  | Smith Falls SP                   |   |
| Cherry | NGPC   | State Recreation Area       | Cottonwood Lake SRA              |   |
| Cherry | NGPC   | State Recreation Area       | Merritt Reservoir SRA            |   |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY | AGENCY                     | TYPE  | NAME                                     | NOTES  |
|--------|----------------------------|---|--|--|
| Cherry | NGPC                       | Wildlife Management Area                      | Willow Lake WMA                          |  |
| Cherry | NGPC                       | Wildlife Management Area                      | Ballards Marsh WMA                       |  |
| Cherry | NGPC                       | Wildlife Management Area                      | Merritt Reservoir WMA                    |  |
| Cherry | NGPC                       | Wildlife Management Area                      | Anderson Bridge WMA                      |  |
| Cherry | NGPC                       | Wildlife Management Area                      | Rat and Beaver Lakes WMA                 |  |
| Cherry | NGPC                       | Wildlife Management Area                      | Shell Lake WMA                           |  |
| Cherry | NGPC                       | Wildlife Management Area                      | Cottonwood/Steverson WMA                 | 27 miles N of Hyannis  |
| Cherry | NGPC                       | Wildlife Management Area                      | Big Alkali Lake WMA                      |  |
| Cherry | NGPC                       | Wildlife Management Area                      | Borman Bridge WMA                        |  |
| Cherry | NGPC                       | Wildlife Management Area                      | Schlagel Creek WMA                       | 11 miles S, 4 W of Valentine                                       |
| Cherry | NPS                        | Identified in NPS Nationwide Rivers Inventory | Middle Loup River                        | Milburn Diversion Dam to source                                    |
| Cherry | NPS                        | National Scenic River                         | Niobrara River                           | From Valentine downstream 76 miles                                 |
| Cherry | NPS                        | Identified in NPS Nationwide Rivers Inventory | Niobrara River                           | Keya Paha River to Antelope Creek (Omit Cornell Dam and Reservoir) |
| Cherry | NPS                        | Identified in NPS Nationwide Rivers Inventory | Snake River                              | Niobrara River to source   |
| Cherry | TNC                        | Project Area                                  | Niobrara Valley Preserve                 |  |
| Cherry | TNC                        | Project Area                                  | Niobrara Valley Preserve/Horse Creek Fen | Parts of T27-R31, T33-R25 and R26, T34-R25 and R26                 |
| Cherry | U.S. Forest Service (USFS) | National Forest                               | Samuel McKelvie National Forest          |  |
| Clay   | FWS                        | National Wildlife Refuge                      | McMurtrey Marsh NWR                      |  |
| Clay   | FWS                        | Waterfowl Production Area                     | Harvard WPA                              |  |
| Clay   | FWS                        | Waterfowl Production Area                     | Hultine WPA                              |  |
| Clay   | FWS                        | Waterfowl Production Area                     | Verona WPA                               |  |
| Clay   | FWS                        | Waterfowl Production Area                     | Lange WPA                                |  |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY | AGENCY | TYPE                        | NAME                 | NOTES                  |
|--------|--------|-----------------------------|----------------------|------------------------|
| Clay   | FWS    | Waterfowl Production Area   | Theesen WPA          |                        |
| Clay   | FWS    | Waterfowl Production Area   | Glenvil WPA          |                        |
| Clay   | FWS    | Waterfowl Production Area   | Massie WPA           |                        |
| Clay   | FWS    | Waterfowl Production Area   | Harms WPA            |                        |
| Clay   | FWS    | Waterfowl Production Area   | Moger WPA            |                        |
| Clay   | FWS    | Waterfowl Production Area   | Meadowlark WPA       |                        |
| Clay   | FWS    | Waterfowl Production Area   | Green Acres WPA      |                        |
| Clay   | FWS    | Waterfowl Production Area   | Eckhardt WPA         |                        |
| Clay   | FWS    | Waterfowl Production Area   | Schuck WPA           |                        |
| Clay   | FWS    | Waterfowl Production Area   | Smith WPA            |                        |
| Clay   | FWS    | Waterfowl Production Area   | Hansen WPA           |                        |
| Clay   | NGPC   | Wildlife Management Area    | Greenwing WMA        |                        |
| Clay   | NGPC   | Wildlife Management Area    | Bulrush WMA          |                        |
| Clay   | NGPC   | Wildlife Management Area    | Bluewing WMA         |                        |
| Clay   | NGPC   | Wildlife Management Area    | White-front WMA      |                        |
| Clay   | NGPC   | Wildlife Management Area    | Greenhead WMA        |                        |
| Clay   | NGPC   | Wildlife Management Area    | Kissinger Basin WMA  |                        |
| Colfax | NGPC   | Wildlife Management Area    | Whitetail WMA        |                        |
| Cuming | NGPC   | Wildlife Management Area    | Black Island WMA     |                        |
| Custer | FWS    | FMHA easement under the NWR | Scott, John J.       | Section 10, T17N, R18W |
| Custer | FWS    | FMHA easement under the NWR | Thorton              | Section 9, T15N, R20W  |
| Custer | NGPC   | State Recreation Area       | Arnold Lake SRA      |                        |
| Custer | NGPC   | State Recreation Area       | Victoria Springs SRA |                        |
| Custer | NGPC   | Wildlife Management Area    | Pressey WMA          |                        |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY | AGENCY   | TYPE                            | NAME   | NOTES                                 |
|--------|--|---------------------------------|--|---------------------------------------|
| Custer | NGPC   | Wildlife Management Area        | Arcadia Diversion Dam WMA                      |                                       |
| Custer | NGPC   | Wildlife Management Area        | Myrtle E. Hall WMA                             |                                       |
| Dakota | NGPC   | Wildlife Management Area        | Basswood Ridge WMA                             |                                       |
| Dakota | NGPC   | Wildlife Management Area        | Omadi Bend WMA                                 | 2 miles E, 1 N of Homer               |
| Dawes  | NGPC   | State Park                      | Chadron SP                                     |                                       |
| Dawes  | NGPC   | State Recreation Area           | Box Butte Reservoir SRA                        |                                       |
| Dawes  | NGPC   | State Park                      | Fort Robinson SP                               |                                       |
| Dawes  | NGPC   | Wildlife Management Area        | Ponderosa WMA                                  |                                       |
| Dawes  | NGPC   | Wildlife Management Area        | Big Horn WMA                                   |                                       |
| Dawes  | NGPC   | Wildlife Management Area        | Whitney Inlet WMA                              | 4 miles W. of Whitney                 |
| Dawes  | NGPC   | Wildlife Management Area        | Bordeaux WMA                                   | 3 miles E of Chadron                  |
| Dawes  | TNC  | Project Area                    | Carter Ranch                                   | Parts of T31-R50                      |
| Dawes  | USFS   | National Forest                 | Oglala National Grassland                      |                                       |
| Dawes  | USFS   | National Forest                 | Nebraska National Forest - Pine Ridge District |                                       |
| Dawson | Central Nebraska Public Power and Irrigation District (CNPPID) | ESA Mitigation Land             | Jeffrey Island                                 |                                       |
| Dawson | FWS  | Whooping Crane Critical Habitat | Platte River                                   | Platte River from Lexington to Denman |
| Dawson | NGPC   | State Recreation Area           | Johnson Lake SRA                               |                                       |
| Dawson | NGPC   | State Recreation Area           | Gallagher Canyon SRA                           |                                       |
| Dawson | NGPC   | Wildlife Management Area        | E. Willow Island WMA                           |                                       |
| Dawson | NGPC   | Wildlife Management Area        | Willow Island WMA                              |                                       |
| Dawson | NGPC   | Wildlife Management Area        | Cozad WMA                                      |                                       |
| Dawson | NGPC   | Wildlife Management Area        | W. Cozad WMA                                   |                                       |
| Dawson | NGPC   | Wildlife Management Area        | East Cozad WMA                                 | S I-80, 1.5 miles E of Cozad          |
| Dawson | NGPC   | Wildlife Management Area        | Dogwood WMA                                    |                                       |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY | AGENCY | TYPE                        | NAME                | NOTES  |
|--------|--------|-----------------------------|---------------------|--|
| Dawson | NGPC   | Wildlife Management Area    | Darr WMA            | NW Quad, Darr INT  |
| Dawson | NGPC   | Wildlife Management Area    | East Darr WMA       | 0.5 miles E of Darr INT                                    |
| Dawson | NGPC   | Wildlife Management Area    | Bitterns Call WMA   |  |
| Dawson | NGPC   | Wildlife Management Area    | Overton WMA         | NW Quad Overton INT  |
| Dawson | NGPC   | Wildlife Management Area    | Blue Heron WMA      |  |
| Dawson | NGPC   | Wildlife Management Area    | Darr Strip WMA      |  |
| Dawson | NGPC   | Wildlife Management Area    | Plum Creek WMA      | 10 SW of Lexington   |
| Dawson | NGPC   | Wildlife Management Area    | West Elm Creek WMA  | N I-80, SW Elm Creek                                       |
| Dawson | NGPC   | Wildlife Management Area    | East Gothenburg WMA | 4 E Gothenburg INT   |
| Dawson | NPPD   | ESA Mitigation Land         | Cottonwood Ranch    |  |
| Dawson | NPPD   | ESA Mitigation Land         | Overton Island      |  |
| Dawson | NPPD   | ESA Mitigation Land         | Lexington Island    |  |
| Deuel  | NGPC   | Wildlife Management Area    | Goldenrod WMA       | 1 mile S, 2 E of Chappel                                   |
| Deuel  | NGPC   | Wildlife Management Area    | Bittersweet WMA     |  |
| Deuel  | NGPC   | Wildlife Management Area    | Goldeneye WMA       |  |
| Dixon  | NGPC   | State Park                  | Ponca SP            |  |
| Dixon  | NGPC   | Wildlife Management Area    | Buckskin Hills WMA  |  |
| Dixon  | NGPC   | Wildlife Management Area    | Mulberry Bend WMA   | 4 mile N, 3 W of Newcastle                                 |
| Dixon  | NPS    | National Recreational River | Missouri River      | From Cedar county line downstream to Ponca State Park (NE) |
| Dodge  | FWS    | FMHA easement under the NWR | Thomsen, Vern       | Section 32, T19N, R7E                                      |
| Dodge  | FWS    | FMHA easement under the NWR | Tuma                | SE 1/4 Section 23, T19N, R5E                               |
| Dodge  | FWS    | Waterfowl Production Area   | Haseman WPA         |  |
| Dodge  | NGPC   | State Recreation Area       | Dead Timber SRA     |  |
| Dodge  | NGPC   | State Recreation Area       | Fremont Lakes SRA   |  |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY   | AGENCY | TYPE                        | NAME                | NOTES                         |
|----------|--------|-----------------------------|---------------------|-------------------------------|
| Dodge    | NGPC   | Wildlife Management Area    | Powder Horn WMA     |                               |
| Douglas  | NGPC   | State Recreation Area       | Two Rivers SRA      |                               |
| Douglas  | NGPC   | Wildlife Management Area    | Two Rivers WMA      |                               |
| Dundy    | FWS    | FMHA easement under the NWR | Jones, Daniel       | Sections 29, 20, T1N, R41/42W |
| Dundy    | NGPC   | State Recreation Area       | Rock Creek Lake SRA |                               |
| Fillmore | FWS    | Waterfowl Production Area   | Real WPA            |                               |
| Fillmore | FWS    | Waterfowl Production Area   | Griess WPA          |                               |
| Fillmore | FWS    | Waterfowl Production Area   | Rauscher WPA        |                               |
| Fillmore | FWS    | Waterfowl Production Area   | Rolland WPA         |                               |
| Fillmore | FWS    | Waterfowl Production Area   | Morphy WPA          |                               |
| Fillmore | FWS    | Waterfowl Production Area   | Brauning WPA        |                               |
| Fillmore | FWS    | Waterfowl Production Area   | Wilkins WPA         |                               |
| Fillmore | FWS    | Waterfowl Production Area   | Krause WPA          |                               |
| Fillmore | FWS    | Waterfowl Production Area   | Mallard Haven WPA   |                               |
| Fillmore | FWS    | Waterfowl Production Area   | Millers Pond WPA    |                               |
| Fillmore | NGPC   | Wildlife Management Area    | Bluebill WMA        |                               |
| Fillmore | NGPC   | Wildlife Management Area    | Sandpiper WMA       |                               |
| Fillmore | NGPC   | Wildlife Management Area    | Redhead WMA         |                               |
| Fillmore | NGPC   | Wildlife Management Area    | Sora WMA            |                               |
| Fillmore | NGPC   | Wildlife Management Area    | Marsh Hawk WMA      |                               |
| Fillmore | TNC    | Project Area                | Marsh Hawk WMA      |                               |
| Fillmore | TNC    | Project Area                | Real WMA            |                               |
| Franklin | FWS    | Waterfowl Production Area   | Ritterbush WPA      |                               |
| Franklin | FWS    | Waterfowl Production Area   | Macon Lakes WPA     |                               |
| Franklin | FWS    | Waterfowl Production Area   | Quadhamer WPA       |                               |



**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY   | AGENCY | TYPE                        | NAME                                   | NOTES                         |
|----------|--------|-----------------------------|--|-------------------------------|
| Franklin | NGPC   | Wildlife Management Area    | Limestone Bluffs WMA                   |                               |
| Franklin | NGPC   | Wildlife Management Area    | Ash Grove WMA                          |                               |
| Frontier | NGPC   | State Recreation Area       | Red Willow Reservoir SRA               |                               |
| Frontier | NGPC   | State Recreation Area       | Medicine Creek SRA                     |                               |
| Frontier | NGPC   | Wildlife Management Area    | Red Willow Reservoir WMA               |                               |
| Frontier | NGPC   | Wildlife Management Area    | Medicine Creek WMA                     |                               |
| Furnas   | FWS    | FMHA easement under the NWR | Avon Arms                              | Sections 2, 11, 10, T4N, R23W |
| Furnas   | NGPC   | Wildlife Management Area    | Oxford WMA                             |                               |
| Furnas   | NGPC   | Wildlife Management Area    | Burton's Bend WMA                      | Along the Republican River    |
| Gage     | FWS    | FMHA easement under the NWR | Arlington, Norman                      | Section 10, T2N, R7E          |
| Gage     | FWS    | FMHA easement under the NWR | Meints                                 | Sections 25, 26, T2N, R6E     |
| Gage     | FWS    | FMHA easement under the NWR | Virmar Farms                           | Sections 3, 4, 33, T2N, R5E   |
| Gage     | NGPC   | State Recreation Area       | Rockford SRA                           |                               |
| Gage     | NGPC   | Wildlife Management Area    | Iron Horse Trail (IHT) WMA             |                               |
| Gage     | NGPC   | Wildlife Management Area    | Arrowhead WMA                          |                               |
| Gage     | NGPC   | Wildlife Management Area    | Diamond Lake WMA                       |                               |
| Gage     | NGPC   | Wildlife Management Area    | Donald Whitney Memorial WMA            | 3.5 miles W of Odell          |
| Gage     | NPS    | National Monument           | Homestead National Monument of America | 4.5 miles west of Beatrice    |
| Garden   | FWS    | National Wildlife Refuge    | Crescent Lake NWR                      |                               |
| Garden   | NGPC   | State Historical Park       | Bluewater Battlefield SHP              |                               |
| Garden   | NGPC   | State Historical Park       | Ash Hollow SHP                         |                               |
| Garden   | TNC    | Project Area                | Graves Ranch                           | Parts of T20-R45              |
| Garfield | NGPC   | State Recreation Area       | Calamus Reservoir SRA                  |                               |
| Garfield | NGPC   | Wildlife Management Area    | Mirdan Canal WMA                       |                               |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY   | AGENCY                   | TYPE  | NAME                     | NOTES                                 |
|----------|--------------------------|---|--------------------------|---------------------------------------|
| Garfield | NPS                      | Identified in NPS Nationwide Rivers Inventory | Calamus River            | North Loup River to source            |
| Gosper   | FWS                      | Whooping Crane Critical Habitat               | Platte River             | Platte River from Lexington to Denman |
| Gosper   | FWS                      | Waterfowl Production Area                     | Elley WPA                |                                       |
| Gosper   | FWS                      | Waterfowl Production Area                     | Peterson WPA             |                                       |
| Gosper   | FWS                      | Waterfowl Production Area                     | Victor Lakes WPA         |                                       |
| Gosper   | NGPC                     | State Recreation Area                         | East Phillips Canyon SRA | 8 miles S of Lexington                |
| Gosper   | NGPC                     | State Recreation Area                         | Johnson Lake SRA         |                                       |
| Gosper   | NGPC                     | State Recreation Area                         | Elwood Reservoir SRA     |                                       |
| Gosper   | NGPC                     | Wildlife Management Area                      | Plum Creek WMA           |                                       |
| Grant    | NGPC                     | Wildlife Management Area                      | Frye Lake WMA            |                                       |
| Grant    | NGPC                     | Wildlife Management Area                      | De Fair Lake WMA         | 1.5 miles E, 3 S of Hyannis           |
| Grant    | NPS                      | Natural Landmark                              | Nebraska Sandhills       | Immediately S. of Hyannis             |
| Greeley  | NGPC                     | Wildlife Management Area                      | Davis Creek WMA          |                                       |
| Hall     | FWS                      | FMHA easement under the NWR                   | Hannon                   | Sections 9, 10, T9N, R12W             |
| Hall     | FWS                      | Waterfowl Production Area                     | Hannon WPA               |                                       |
| Hall     | NGPC                     | State Recreation Area                         | Cheyenne SRA             |                                       |
| Hall     | NGPC                     | State Recreation Area                         | Mormon Island SRA        |                                       |
| Hall     | NGPC                     | Wildlife Management Area                      | Cornhusker Farm WMA      |                                       |
| Hall     | NGPC                     | Wildlife Management Area                      | Cattail WMA              | 3 miles W Alda INT                    |
| Hall     | NGPC                     | Wildlife Management Area                      | Wood River West WMA      | 4 miles S. of Wood River              |
| Hall     | NGPC                     | Wildlife Management Area                      | Martin's Reach WMA       |                                       |
| Hall     | NGPC                     | Wildlife Management Area                      | Loch Linda WMA           |                                       |
| Hall     | TNC                      | Project Area                                  | Various Platte River     | Parts of T9-R11, T10-R10              |
| Hall     | Platte River Crane Trust | Wildlife Management Area                      | Platte River Crane Trust |                                       |
| Hamilton | FWS                      | FMHA easement under the NWR                   | Mowitz, Eldred           | Section 10, T12N, R5W                 |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY    | AGENCY | TYPE  | NAME                     | NOTES                             |
|-----------|--------|---|--------------------------|-----------------------------------|
| Hamilton  | FWS    | FMHA easement under the NWR                   | Larson, Steven           | Section 18, T10N, R6W             |
| Hamilton  | FWS    | Waterfowl Production Area                     | Troester Basin WPA       |                                   |
| Hamilton  | FWS    | Waterfowl Production Area                     | Springer WPA             |                                   |
| Hamilton  | FWS    | Waterfowl Production Area                     | Nelson WPA               |                                   |
| Hamilton  | NGPC   | Wildlife Management Area                      | Deep Well WMA            |                                   |
| Hamilton  | NGPC   | Wildlife Management Area                      | Pintail WMA              |                                   |
| Hamilton  | NGPC   | Wildlife Management Area                      | Gadwall WMA              |                                   |
| Harlan    | COE    | Large Reservoir                               | Harlan County Lake       |                                   |
| Harlan    | NGPC   | Wildlife Management Area                      | Burton's Bend WMA        | Along the Republican River        |
| Harlan    | NGPC   | Wildlife Management Area                      | Southeast Sacramento WMA |                                   |
| Harlan    | NGPC   | Wildlife Management Area                      | South Sacramento WMA     |                                   |
| Hayes     | NGPC   | Wildlife Management Area                      | Frenchman WMA            | 1.5 miles N of Palisade           |
| Hayes     | NGPC   | Wildlife Management Area                      | Hayes Center WMA         |                                   |
| Hitchcock | NGPC   | State Recreation Area                         | Swanson Reservoir SRA    |                                   |
| Hitchcock | NGPC   | Wildlife Management Area                      | Swanson Reservoir WMA    |                                   |
| Holt      | NGPC   | State Recreation Area                         | Atkinson Lake SRA        |                                   |
| Holt      | NGPC   | Wildlife Management Area                      | Dry Creek WMA            |                                   |
| Holt      | NGPC   | Wildlife Management Area                      | Redbird WMA              |                                   |
| Holt      | NGPC   | Wildlife Management Area                      | Spencer Dam WMA          | 22 miles N of O'Neill             |
| Holt      | NGPC   | Wildlife Management Area                      | Goose Lake WMA           | 2 miles N of Royal                |
| Holt      | NPS    | Identified in NPS Nationwide Rivers Inventory | Niobrara River           | Keya Paha River to Antelope Creek |
| Holt      | NPS    | Identified in NPS Nationwide Rivers Inventory | Niobrara River           | Missouri River to Keya Paha River |
| Hooker    | NPS    | Identified in NPS Nationwide Rivers Inventory | Middle Loup River        | Milbourn Diversion Dam to source  |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY    | AGENCY | TYPE                            | NAME                      | NOTES   |
|-----------|--------|---------------------------------|---------------------------|---|
| Howard    | FWS    | FMHA easement under the NWR     | Gillilavd                 | Section 1, T14N, R12W   |
| Howard    | NGPC   | State Recreation Area           | North Loup SRA            |   |
| Howard    | NGPC   | Wildlife Management Area        | Harold W. Andersen WMA    |   |
| Howard    | NGPC   | Wildlife Management Area        | Loup Bottoms/Junction WMA |   |
| Howard    | NGPC   | Wildlife Management Area        | Leonard A. Koziol WMA     | 1.5 miles E, 3 N of St. Paul  |
| Howard    | NGPC   | Wildlife Management Area        | Marsh Wren WMA            | 1.5 miles S, 2 E of Elba  |
| Jefferson | NGPC   | State Recreation Area           | Rock Creek Station SRA    |   |
| Jefferson | NGPC   | State Recreation Area           | Alexandria Lakes SRA      |   |
| Jefferson | NGPC   | State Historical Park           | Rock Creek Station SHP    |   |
| Jefferson | NGPC   | Wildlife Management Area        | Rock Glen WMA             |   |
| Jefferson | NGPC   | Wildlife Management Area        | Rose Creek WMA            |   |
| Jefferson | NGPC   | Wildlife Management Area        | Alexandria Lakes WMA      |   |
| Jefferson | NGPC   | Wildlife Management Area        | Flathead WMA              | 1 mile S. of Fairbury   |
| Johnson   | NGPC   | Wildlife Management Area        | Hickory Ridge WMA         |   |
| Johnson   | NGPC   | Wildlife Management Area        | Osage WMA                 |   |
| Johnson   | NGPC   | Wildlife Management Area        | Twin Oaks WMA             |   |
| Kearney   | FWS    | Whooping Crane Critical Habitat | Platte River              | Platte River from Lexington to Denman                                     |
| Kearney   | FWS    | ESA Mitigation Land             | Wyoming property          | 2 miles E, 1 mile S of Kearney; owned by WY State for mitigation purposes |
| Kearney   | FWS    | FMHA easement under the NWR     | Nickels Brothers          | NW 1/4 Section 7, T7N, R15W   |
| Kearney   | FWS    | FMHA easement under the NWR     | Johansen, Bruce           | Section 11, T6N, R14W   |
| Kearney   | FWS    | Waterfowl Production Area       | Killdeer WPA              |   |
| Kearney   | FWS    | Waterfowl Production Area       | Clark WPA                 |   |
| Kearney   | FWS    | Waterfowl Production Area       | Youngson WPA              |   |
| Kearney   | FWS    | Waterfowl Production Area       | Frerichs WPA              |   |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY    | AGENCY | TYPE  | NAME                      | NOTES  |
|-----------|--------|---|---------------------------|--|
| Kearney   | FWS    | Waterfowl Production Area                     | Lindau WPA                |  |
| Kearney   | FWS    | Waterfowl Production Area                     | Jensen WPA                |  |
| Kearney   | FWS    | Waterfowl Production Area                     | Gleason WPA               |  |
| Kearney   | FWS    | Waterfowl Production Area                     | Bluestem WPA              |  |
| Kearney   | FWS    | Waterfowl Production Area                     | Prairie Dog WPA           |  |
| Kearney   | NGPC   | State Recreation Area                         | Fort Kearney SRA          |  |
| Kearney   | NGPC   | State Historical Park                         | Fort Kearney SHP          |  |
| Kearney   | NGPC   | Wildlife Management Area                      | Northeast Sacramento WMA  |  |
| Keith     | NGPC   | State Recreation Area                         | Lake McConaughy SRA       |  |
| Keith     | NGPC   | State Recreation Area                         | Lake Ogallala SRA         |  |
| Keith     | NGPC   | Wildlife Management Area                      | Big Springs WMA           | 0.5 mile E of Big Springs  |
| Keith     | NGPC   | Wildlife Management Area                      | Clear Creek WMA           |  |
| Keith     | NGPC   | Wildlife Management Area                      | Ogallala Strip WMA        |  |
| Keya Paha | FWS    | FMHA easement under the NWR                   | Johnson, Cecil            | Section 5, T34N, R30W  |
| Keya Paha | FWS    | FMHA easement under the NWR                   | Mead, Darrell             | Sections 20, 21, 28, 29, T32N, R19W                              |
| Keya Paha | FWS    | FMHA easement under the NWR                   | Johnson, Cecil            | Section 32, T35N, R30W   |
| Keya Paha | NGPC   | Wildlife Management Area                      | Thomas Creek WMA          |  |
| Keya Paha | NGPC   | Wildlife Management Area                      | Holt Creek WMA            | 6 miles W, 5 N of Burton   |
| Keya Paha | NPS    | Identified in NPS Nationwide Rivers Inventory | Niobrara River            | Keya Paha River to Antelope Creek (Omit Cornell Dam & Reservoir) |
| Keya Paha | NPS    | National Scenic River                         | Niobrara River            | From Valentine 76 miles downstream                               |
| Keya Paha | TNC    | Project Area                                  | Niobrara Valley Preserve  | Parts of T33-R23 and R-24  |
| Kimball   | NGPC   | State Recreation Area                         | Oliver Reservoir SRA      |  |
| Knox      | BIA    | Indian Reservation                            | Santee Indian Reservation |  |
| Knox      | FWS    | FMHA easement under the NWR                   | Wagner, Raymond 11C       | Section 8, T29N, R6W   |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY    | AGENCY | TYPE  | NAME                  | NOTES  |
|-----------|--------|---|-----------------------|--|
| Knox      | FWS    | FMHA easement under the NWR                   | Wagner, Raymond 10C   | SE 1/4 Section 6, T29N, R6W  |
| Knox      | FWS    | FMHA easement under the NWR                   | Larson Farms          | Sections 19, 20, T31N, R5W   |
| Knox      | NGPC   | State Recreation Area                         | Lewis and Clark SRA   |  |
| Knox      | NGPC   | State Park                                    | Niobrara SP           |  |
| Knox      | NGPC   | Wildlife Management Area                      | Greenvale WMA         |  |
| Knox      | NGPC   | Wildlife Management Area                      | Niobrara WMA          |  |
| Knox      | NGPC   | Wildlife Management Area                      | Bazile Creek WMA      |  |
| Knox      | NGPC   | Wildlife Management Area                      | Bohemia Prairie WMA   |  |
| Knox      | NGPC   | Wildlife Management Area                      | Ferry Landing WMA     | 3 miles E of Niobrara  |
| Knox      | NGPC   | Wildlife Management Area                      | Verdel Landing WMA    | 2 miles E, 2 N of Verdel   |
| Knox      | NPS    | National Recreational River                   | Missouri River        | Running Water SD to Fort Randall Dam   |
| Knox      | NPS    | Identified in NPS Nationwide Rivers Inventory | Niobrara River        | Missouri River to Keya Paha River  |
| Lancaster | NGPC   | State Recreation Area                         | Conestoga Lake SRA    |  |
| Lancaster | NGPC   | State Recreation Area                         | Stagecoach Lake SRA   |  |
| Lancaster | NGPC   | State Recreation Area                         | Bluestem Lake SRA     |  |
| Lancaster | NGPC   | State Recreation Area                         | Olive Creek Lake SRA  |  |
| Lancaster | NGPC   | State Recreation Area                         | Pawnee Lake SRA       |  |
| Lancaster | NGPC   | State Recreation Area                         | Branched Oak Lake SRA |  |
| Lancaster | NGPC   | State Recreation Area                         | Wagon Train Lake SRA  |  |
| Lancaster | NGPC   | Wildlife Management Area                      | Wildwood WMA          |  |
| Lancaster | NGPC   | Wildlife Management Area and Critical Habitat | Arbor Lake WMA        | Saline wetlands of eastern Nebraska; unique habitat for Salt Creek Tiger Beetle (Federally listed) & saltwort (State listed) |
| Lancaster | NGPC   | Wildlife Management Area                      | Branched Oak Lake WMA |  |
| Lancaster | NGPC   | Wildlife Management Area                      | Yankee Hill WMA       |  |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY    | AGENCY | TYPE  | NAME                       | NOTES  |
|-----------|--------|---|----------------------------|--|
| Lancaster | NGPC   | Wildlife Management Area and Critical Habitat | Jack Sinn Memorial WMA     | Saline wetlands of eastern Nebraska; unique habitat for Salt Creek Tiger Beetle (Federally listed) & saltwort (State listed) |
| Lancaster | NGPC   | Wildlife Management Area                      | Killdeer WMA               |  |
| Lancaster | NGPC   | Wildlife Management Area                      | Hedgefield WMA             |  |
| Lancaster | NGPC   | Wildlife Management Area                      | Teal Lake WMA              |  |
| Lancaster | TNC    | Project Area                                  | Little Salt Fork Marsh     | Parts of T11 and 12-R6; Saline Wetlands of eastern Nebraska  |
| Lincoln   | NGPC   | State Historical Park                         | Buffalo Bill Ranch SHP     |  |
| Lincoln   | NGPC   | State Recreation Area                         | Lake Maloney Reservoir SRA |  |
| Lincoln   | NGPC   | State Recreation Area                         | Sutherland Reservoir SRA   |  |
| Lincoln   | NGPC   | State Recreation Area                         | Buffalo Bill Ranch SRA     |  |
| Lincoln   | NGPC   | Wildlife Management Area                      | West Gothenburg WMA        | N & S I-80, 3 miles W of Brady   |
| Lincoln   | NGPC   | Wildlife Management Area                      | Sutherland Reservoir WMA   |  |
| Lincoln   | NGPC   | Wildlife Management Area                      | East Sutherland WMA        |  |
| Lincoln   | NGPC   | Wildlife Management Area                      | Brady WMA                  | SE Quad, Brady INT   |
| Lincoln   | NGPC   | Wildlife Management Area                      | West Brady WMA             | S I-80, 3 miles W of Brady   |
| Lincoln   | NGPC   | Wildlife Management Area                      | North River WMA            |  |
| Lincoln   | NGPC   | Wildlife Management Area                      | Muskrat Run WMA            |  |
| Lincoln   | NGPC   | Wildlife Management Area                      | Hershey WMA                |  |
| Lincoln   | NGPC   | Wildlife Management Area                      | East Hershey WMA           |  |
| Lincoln   | NGPC   | Wildlife Management Area                      | West Hershey WMA           | N I-80, 0.5 mile W Hershey INT   |
| Lincoln   | NGPC   | Wildlife Management Area                      | Birdwood Lake WMA          |  |
| Lincoln   | NGPC   | Wildlife Management Area                      | Platte WMA                 |  |
| Lincoln   | NGPC   | Wildlife Management Area                      | Box Elder Canyon WMA       |  |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY  | AGENCY | TYPE  | NAME                        | NOTES   |
|---------|--------|---|-----------------------------|---|
| Lincoln | NGPC   | Wildlife Management Area                      | Wellfleet WMA               |   |
| Lincoln | NGPC   | Wildlife Management Area                      | Pawnee Slough WMA           |   |
| Lincoln | NGPC   | Wildlife Management Area                      | Cottonwood Canyon WMA       |   |
| Lincoln | NGPC   | Wildlife Management Area                      | Chester Island WMA          |   |
| Lincoln | NGPC   | Wildlife Management Area                      | Jeffrey Canyon WMA          |   |
| Lincoln | NGPC   | Wildlife Management Area                      | Hansen Memorial Reserve WMA |   |
| Lincoln | NGPC   | Wildlife Management Area                      | Cedar Valley WMA            |   |
| Lincoln | NGPC   | Wildlife Management Area                      | Fremont Slough WMA          | N I-80, 4.5 miles E of North Platte               |
| Lincoln | NGPC   | Wildlife Management Area                      | West Maxwell WMA            | N I-80, 1 mile W Maxwell INT                      |
| Lincoln | NPS    | Natural Landmark                              | Kissected Loess Plains      | 17 miles SSW of Brady                             |
| Lincoln | TNC    | Project Area                                  | Muskrat Run WMA             | 302 acres, N Platte River                         |
| Lincoln | TNC    | Project Area                                  | Kelly Ranch                 | Parts of T14-R33 and R34                          |
| Loup    | NGPC   | State Recreation Area                         | Calamus Reservoir SRA       |   |
| Loup    | NGPC   | Wildlife Management Area                      | Calamus Reservoir WMA       |   |
| Loup    | NGPC   | Wildlife Management Area                      | Almeria Meadow WMA          |   |
| Loup    | NGPC   | Wildlife Management Area                      | Kent Diversion Dam WMA      |   |
| Loup    | NGPC   | Wildlife Management Area                      | Myrtle E. Hall WMA          |   |
| Loup    | NPS    | Identified in NPS Nationwide Rivers Inventory | Calamus River               | North Loup River to source                        |
| Madison | FWS    | FMHA easement under the NWR                   | Muhs                        | Section 24, T23N, R2W                             |
| Madison | FWS    | Topeka Shiner Critical Habitat                | Taylor Creek                | the 6 mi. upstream from confluence w/ Union Creek |
| Madison | NGPC   | Wildlife Management Area                      | Oak Valley WMA              |   |
| Madison | NGPC   | Wildlife Management Area                      | Elkhorn WMA                 | N edge of Norfolk                                 |
| Madison | NGPC   | Wildlife Management Area                      | Yellowbanks WMA             |   |
| Merrick | NGPC   | Wildlife Management Area                      | Bruce Cowgill WMA           | 1.5 mile E of Silver Creek                        |
| Merrick | NGPC   | Wildlife Management Area                      | Lone Tree WMA               | Inaccessible (island?)                            |



**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY   | AGENCY | TYPE                     | NAME                                | NOTES  |
|----------|--------|--------------------------|-------------------------------------|--|
| Merrick  | NGPC   | Wildlife Management Area | Silver Creek WMA                    |  |
| Morrill  | NGPC   | State Recreation Area    | Bridgeport SRA                      |  |
| Morrill  | NGPC   | Wildlife Management Area | Chet and Jane Fliesbach WMA         |  |
| Morrill  | NGPC   | Wildlife Management Area | Trupp WMA                           |  |
| Morrill  | NPS    | National Historic Site   | Chimney Rock National Historic Site | 19 miles east of Gering on Hwy 92            |
| Nance    | NGPC   | Wildlife Management Area | Loup Lands (Loup River PPD) WMA     |  |
| Nance    | NGPC   | Wildlife Management Area | Sunny Hollow WMA                    |  |
| Nance    | NGPC   | Wildlife Management Area | Council Creek WMA                   | 6.5 miles W of Genoa                         |
| Nance    | NGPC   | Wildlife Management Area | Prairie Wolf WMA                    |  |
| Nemaha   | NGPC   | State Park               | Indian Cave SP                      |  |
| Nemaha   | NGPC   | State Recreation Area    | Brownville SRA                      |  |
| Nemaha   | NGPC   | Wildlife Management Area | Peru Bottoms WMA                    | 1 mile E, 1 N of Peru                        |
| Nemaha   | NGPC   | Wildlife Management Area | Aspinwall Bend WMA                  |  |
| Nuckolls | NGPC   | Wildlife Management Area | Smartweed Marsh West WMA            |  |
| Nuckolls | NGPC   | Wildlife Management Area | Smartweed Marsh WMA                 |  |
| Otoe     | NGPC   | State Recreation Area    | Riverview Marina SRA                |  |
| Otoe     | NGPC   | State Historical Park    | Arbor Lodge SHP                     |  |
| Otoe     | NGPC   | Wildlife Management Area | Triple Creek WMA                    |  |
| Otoe     | NGPC   | Wildlife Management Area | Wilson Creek WMA                    | 2 mile N, 2 W, 0.5 N of Dunbar               |
| Otoe     | NGPC   | Wildlife Management Area | Hamburg Bend WMA                    | 1 mile S, 4.5 E, 1 S, 0.5 E of Nebraska City |
| Pawnee   | NGPC   | Wildlife Management Area | Burchard WMA                        |  |
| Pawnee   | NGPC   | Wildlife Management Area | Bowwood WMA                         |  |
| Pawnee   | NGPC   | Wildlife Management Area | Iron Horse Trail WMA                |  |
| Pawnee   | NGPC   | Wildlife Management Area | Mayberry WMA                        |  |
| Pawnee   | NGPC   | Wildlife Management Area | Table Rock WMA                      |  |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY | AGENCY | TYPE                            | NAME                    | NOTES                                 |
|--------|--------|---------------------------------|-------------------------|---------------------------------------|
| Pawnee | NGPC   | Wildlife Management Area        | Taylor's Branch WMA     |                                       |
| Pawnee | NGPC   | Wildlife Management Area        | Pawnee Prairie WMA      |                                       |
| Pawnee | NGPC   | Wildlife Management Area        | Prairie Knoll WMA       |                                       |
| Pawnee | NGPC   | Wildlife Management Area        | Lores Branch WMA        |                                       |
| Pawnee | TNC    | Project Area                    | Pawnee Prairie WMA      |                                       |
| Phelps | FWS    | Whooping Crane Critical Habitat | Platte River            | Platte River from Lexington to Denman |
| Phelps | FWS    | Waterfowl Production Area       | Johnson WPA             |                                       |
| Phelps | FWS    | Waterfowl Production Area       | Funk WPA                |                                       |
| Phelps | FWS    | Waterfowl Production Area       | Atlanta WPA             |                                       |
| Phelps | FWS    | Waterfowl Production Area       | Jones WPA               |                                       |
| Phelps | FWS    | Waterfowl Production Area       | Cottonwood WPA          |                                       |
| Phelps | FWS    | Waterfowl Production Area       | Linder WPA              |                                       |
| Phelps | NGPC   | State Recreation Area           | Sandy Channel SRA       |                                       |
| Phelps | NGPC   | Wildlife Management Area        | High Basin WMA          |                                       |
| Phelps | NGPC   | Wildlife Management Area        | West Sacramento WMA     |                                       |
| Phelps | NGPC   | Wildlife Management Area        | Sacramento - Wilcox WMA |                                       |
| Phelps | NPPD   | ESA Mitigation Land             | Cottonwood Ranch        |                                       |
| Phelps | TNC    | Project Area                    | Anderson                | Part of T8-R19                        |
| Pierce | NGPC   | State Recreation Area           | Willow Creek SRA        |                                       |
| Platte | NGPC   | Wildlife Management Area        | Lookingglass Creek WMA  |                                       |
| Platte | NGPC   | Wildlife Management Area        | George Syas WMA         |                                       |
| Platte | NGPC   | Wildlife Management Area        | Flat Water Landing WMA  | 1 mile S. of Columbus                 |
| Platte | NGPC   | Wildlife Management Area        | Wilkinson WMA           | 5 miles W, 1 N of Columbus            |
| Polk   | FWS    | FMHA easement under the NWR     | Viergutz, James R.      | Sections 11, 12, 13, T14N, R4W        |
| Polk   | FWS    | FMHA easement under the NWR     | Warner Farms            | Section 33, T13N, R3W                 |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY     | AGENCY | TYPE  | NAME                         | NOTES                             |
|------------|--------|---|------------------------------|-----------------------------------|
| Polk       | FWS    | FMHA easement under the NWR                   | Anderson, Bruce L.           | SE 1/4 Section 34, T14N, R2W      |
| Polk       | NGPC   | Wildlife Management Area                      | Flatsedge WMA                | 2.5 miles W, 2 N of Shelby        |
| Red Willow | NGPC   | State Recreation Area                         | Red Willow Reservoir SRA     |                                   |
| Red Willow | NGPC   | Wildlife Management Area                      | Bartley Diversion Dam WMA    |                                   |
| Red Willow | NGPC   | Wildlife Management Area                      | Burton's Bend WMA            | Along the Republican River        |
| Red Willow | NGPC   | Wildlife Management Area                      | Red Willow Reservoir WMA     |                                   |
| Red Willow | NGPC   | Wildlife Management Area                      | Red Willow Diversion Dam WMA |                                   |
| Richardson | NGPC   | State Recreation Area                         | Verdon Lake SRA              |                                   |
| Richardson | NGPC   | State Park                                    | Indian Cave SP               |                                   |
| Richardson | NGPC   | Wildlife Management Area                      | Four-Mile Creek WMA          |                                   |
| Richardson | NGPC   | Wildlife Management Area                      | Margrave WMA                 |                                   |
| Richardson | NGPC   | Wildlife Management Area                      | Iron Horse Trail WMA         |                                   |
| Richardson | NGPC   | Wildlife Management Area                      | South Fork WMA               | 2.5 miles S, 3.5 W of Dawson      |
| Richardson | NGPC   | Wildlife Management Area                      | Kinters Ford WMA             |                                   |
| Richardson | TNC    | Project Area                                  | Rulo Bluffs                  |                                   |
| Richardson | TNC    | Project Area                                  | Rulo Bluffs                  | Parts of T1-R18                   |
| Rock       | FWS    | National Wildlife Refuge                      | John W. & Louise Seier NWR   |                                   |
| Rock       | NAS    | Wildlife Sanctuary                            | Niobrara River               |                                   |
| Rock       | NGPC   | Wildlife Management Area                      | Fred Thomas WMA              | 11.5 miles N of Bassett on Hwy 7  |
| Rock       | NGPC   | Wildlife Management Area                      | Twin Lakes (Rock) WMA        | 20 miles S. of Bassett            |
| Rock       | NPS    | Identified in NPS Nationwide Rivers Inventory | Lone Pine Creek              | Niobrara River to source          |
| Rock       | NPS    | Identified in NPS Nationwide Rivers Inventory | Niobrara River               | Keya Paha River to Antelope Creek |
| Rock       | NPS    | Identified in NPS Nationwide Rivers Inventory | Calamus River                | North Loup River to source        |
| Saline     | FWS    | Waterfowl Production Area                     | Schwisow WPA                 |                                   |
| Saline     | NGPC   | Wildlife Management Area                      | Swan Creek WMA               |                                   |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY       | AGENCY | TYPE  | NAME                           | NOTES  |
|--------------|--------|---|--------------------------------|--|
| Saline       | NGPC   | Wildlife Management Area                      | Divoky Acres WMA               | 9 miles W, 2.5 N of Wilber   |
| Saline       | NGPC   | Wildlife Management Area                      | Shady Trail WMA                | 1 mile W, 4 N, 0.5 W, 0.5 N of Crete   |
| Sarpy        | NGPC   | State Recreation Area                         | Schramm Park SRA               |  |
| Sarpy        | NGPC   | Wildlife Management Area                      | Louisville WMA                 | 0.5 mile NW of Louisville  |
| Sarpy        | NPS    | Natural Landmark                              | Fontenelle Forest              | 1 Mile S. of Omaha   |
| Saunders     | FWS    | FMHA easement under the NWR                   | Keller, Lynn                   | Section 1, T16N, R7E   |
| Saunders     | FWS    | FMHA easement under the NWR                   | Thomas Farms                   | Sections 12,13, T13N, R9E  |
| Saunders     | FWS    | FMHA easement under the NWR                   | Keller, Lynn                   | Section 6, T16N, R8E   |
| Saunders     | NGPC   | State Recreation Area                         | Pioneer SRA                    |  |
| Saunders     | NGPC   | State Recreation Area                         | Memphis Lake SRA               |  |
| Saunders     | NGPC   | Wildlife Management Area and Critical Habitat | Jack Sinn Memorial WMA         | Saline wetlands of eastern Nebraska; unique habitat for Salt Creek Tiger Beetle (Federally listed) & saltwort (State listed) |
| Saunders     | NGPC   | Wildlife Management Area                      | Memphis Lake WMA               |  |
| Saunders     | NGPC   | Wildlife Management Area                      | Bramble WMA                    |  |
| Saunders     | NGPC   | Wildlife Management Area                      | Catfish Run WMA                | 1.2 mile E of Ashland  |
| Saunders     | NGPC   | Wildlife Management Area                      | Larkspur WMA                   | 3 miles W of Valparaiso  |
| Scotts Bluff | FWS    | National Wildlife Refuge                      | North Platte NWR               |  |
| Scotts Bluff | NGPC   | State Recreation Area                         | Lake Minutere SRA              |  |
| Scotts Bluff | NGPC   | State Recreation Area                         | Wildcat Hills SRA              |  |
| Scotts Bluff | NGPC   | Wildlife Management Area                      | Nine Mile Creek WMA            |  |
| Scotts Bluff | NGPC   | Wildlife Management Area                      | Kiowa WMA                      |  |
| Scotts Bluff | NGPC   | Wildlife Management Area                      | Cedar Canyon WMA               | 2.5 miles S and 4.5 W of Gering  |
| Scotts Bluff | NPS    | National Monument                             | Scotts Bluff National Monument | 5 miles SW of Scotts Bluff   |
| Scotts Bluff | TNC    | Project Area                                  | Kiowa WMA                      |  |
| Seward       | FWS    | Waterfowl Production Area                     | Tamora Basin WPA               |  |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY   | AGENCY | TYPE  | NAME                                | NOTES   |
|----------|--------|---|-------------------------------------|---|
| Seward   | FWS    | Waterfowl Production Area                     | Freeman Lakes WPA                   |   |
| Seward   | NGPC   | State Recreation Area                         | Blue River SRA                      |   |
| Seward   | NGPC   | Wildlife Management Area                      | Straight Water WMA                  |   |
| Seward   | NGPC   | Wildlife Management Area                      | Oak Glen WMA                        |   |
| Seward   | NGPC   | Wildlife Management Area                      | Bur Oak WMA                         |   |
| Seward   | NGPC   | Wildlife Management Area                      | Twin Lakes WMA                      |   |
| Seward   | NGPC   | Wildlife Management Area                      | Blue Bluff WMA                      | 3 miles S, 1 E, 1 N of Milford                            |
| Seward   | NGPC   | Wildlife Management Area                      | North Lake Basin WMA                |   |
| Sheridan | NGPC   | State Recreation Area                         | Walgren Lake SRA                    |   |
| Sheridan | NGPC   | Wildlife Management Area                      | Smith Lake WMA                      |   |
| Sheridan | NGPC   | Wildlife Management Area                      | Metcalf WMA                         |   |
| Sheridan | NPS    | Identified in NPS Nationwide Rivers Inventory | Snake River                         | Niobrara River to source                                  |
| Sherman  | NGPC   | State Recreation Area                         | Bowman Lake SRA                     |   |
| Sherman  | NGPC   | State Recreation Area                         | Sherman Reservoir SRA               |   |
| Sherman  | NGPC   | Wildlife Management Area                      | Sherman Reservoir WMA               |   |
| Sioux    | NGPC   | State Park                                    | Fort Robinson SP                    |   |
| Sioux    | NGPC   | State Recreation Area                         | James Ranch SRA                     |   |
| Sioux    | NGPC   | Wildlife Management Area                      | Peterson WMA                        |   |
| Sioux    | NGPC   | Wildlife Management Area                      | Gilbert-Baker WMA                   |   |
| Sioux    | NPS    | Identified in NPS Nationwide Rivers Inventory | Niobrara River                      | Entire segment within Agate Fossil Beds National Monument |
| Sioux    | NPS    | National Monument                             | Agate Fossil Beds National Monument | 20 miles north of Harrison                                |
| Sioux    | TNC    | Project Area                                  | Cherry Ranch                        | Parts of T29 and 30-R56                                   |
| Sioux    | USFS   | National Forest/Grassland                     | Oglala National Grassland           |   |
| Sioux    | USFS   | National Wilderness Area                      | Soldier Creek Wilderness            | Nebraska NF   |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY     | AGENCY | TYPE  | NAME                                       | NOTES                           |
|------------|--------|---|--|---------------------------------|
| Stanton    | NGPC   | Wildlife Management Area                      | Red Fox WMA                                |                                 |
| Stanton    | NGPC   | Wildlife Management Area                      | Wood Duck WMA                              |                                 |
| Thayer     | FWS    | FMHA easement under the NWR                   | Gerdes, Don                                | Section 9, T2N, R2W             |
| Thayer     | NGPC   | Wildlife Management Area                      | Prairie Marsh WMA                          |                                 |
| Thayer     | NGPC   | Wildlife Management Area                      | Father Hupp WMA                            |                                 |
| Thayer     | NGPC   | Wildlife Management Area                      | Meridian WMA                               |                                 |
| Thayer     | NGPC   | Wildlife Management Area                      | Prairie Marsh West WMA                     |                                 |
| Thayer     | NGPC   | Wildlife Management Area                      | Little Blue WMA                            |                                 |
| Thayer     | NGPC   | Wildlife Management Area                      | Dry Sandy WMA                              | 2 miles E, 0.75 N of Bruning    |
| Thayer     | NGPC   | Wildlife Management Area                      | Little Blue East WMA                       | 1.5 miles E of Hebron           |
| Thayer     | TNC    | Project Area                                  | Prairie Marsh WMA                          |                                 |
| Thomas     | NPS    | Identified in NPS Nationwide Rivers Inventory | Dismal River                               | Middle Loup Rive to source      |
| Thomas     | NPS    | Identified in NPS Nationwide Rivers Inventory | Middle Loup River                          | Milburn Diversion Dam to source |
| Thomas     | USFS   | National Forest                               | Nebraska National Forest - Bessey District |                                 |
| Thurston   | BIA    | Indian Reservation                            | Omaha Indian Reservation                   |                                 |
| Thurston   | BIA    | Indian Reservation                            | Winnebago Indian Reservation               |                                 |
| Valley     | FWS    | FMHA easement under the NWR                   | Plate, Willis                              | Section 34, T17N, R13W          |
| Valley     | FWS    | FMHA easement under the NWR                   | Wayne, Gregory                             | Section 33, T20N, R13W          |
| Valley     | FWS    | FMHA easement under the NWR                   | Wayne, Gregory                             | Sections 3 and 4, T19N, R13W    |
| Valley     | NGPC   | State Historical Park                         | Fort Hartsuff SHP                          |                                 |
| Valley     | NGPC   | Wildlife Management Area                      | Davis Creek WMA                            |                                 |
| Valley     | NGPC   | Wildlife Management Area                      | Scotia Canal WMA                           |                                 |
| Washington | FWS    | National Wildlife Refuge                      | Boyer Chute NWR                            |                                 |
| Washington | FWS    | National Wildlife Refuge                      | DeSoto NWR                                 |                                 |

**TABLE A.2.5**

**ENVIRONMENTALLY SENSITIVE AREAS – NEBRASKA**

| COUNTY     | AGENCY | TYPE                        | NAME                          | NOTES                 |
|------------|--------|-----------------------------|-------------------------------|-----------------------|
| Washington | NGPC   | State Historical Park       | Fort Atkinson SHP             |                       |
| Washington | TNC    | Project Area                | Cuming City Cemetery          |                       |
| Wayne      | NGPC   | Wildlife Management Area    | Sioux Strip WMA               |                       |
| Webster    | NGPC   | Wildlife Management Area    | Indian Creek WMA              |                       |
| Webster    | NGPC   | Wildlife Management Area    | Narrows WMA                   |                       |
| Webster    | NGPC   | Wildlife Management Area    | Elm Creek WMA                 |                       |
| Webster    | TNC    | Project Area                | Willa Cather Memorial Prairie |                       |
| Webster    | TNC    | Project Area                | Willa Cather Memorial Prairie | Part of T1-R11        |
| Wheeler    | NGPC   | State Recreation Area       | Pibel Lake SRA                |                       |
| York       | FWS    | FMHA easement under the NWR | Gocke, Raymond                | Section 33, T12N, R1W |
| York       | FWS    | FMHA easement under the NWR | Jack R. Anstine               | Section 28, T11N, R2W |
| York       | FWS    | FMHA easement under the NWR | Gocke, Raymond                | Section 28, T12N, R1W |
| York       | FWS    | FMHA easement under the NWR | Thiessen, Harvey              | Section 9, T9N, R2W   |
| York       | FWS    | Waterfowl Production Area   | Sinninger WPA                 |                       |
| York       | FWS    | Waterfowl Production Area   | County Line WPA               |                       |
| York       | FWS    | Waterfowl Production Area   | Heron WPA                     |                       |
| York       | FWS    | Waterfowl Production Area   | Waco WPA                      |                       |
| York       | NGPC   | Wildlife Management Area    | Renquist Basin WMA            |                       |
| York       | NGPC   | Wildlife Management Area    | Kirkpatrick Basin - S WMA     |                       |
| York       | NGPC   | Wildlife Management Area    | Kirkpatrick Basin - N WMA     |                       |
| York       | NGPC   | Wildlife Management Area    | Spikerush WMA                 |                       |
| York       | NGPC   | Wildlife Management Area    | Hidden Marsh WMA              |                       |

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**APPENDIX A.2.a**

**EXAMPLE HABITAT FACT SHEET**

**UPPER MISSISSIPPI RIVER BASIN  
ASSOCIATION DEEP MARSH ANNUAL FACT  
SHEET**

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# INLAND STRANDED OIL HABITAT FACT SHEET FOR RESPONSE: DEEP MARSH ANNUAL



## Indicator Species



wild rice (*Zizania*)

## I. Habitat Description

The deep marsh annuals habitat includes portions of lakes, ponds, marshes, or backwaters that are >10% vegetated with wild rice (*Zizania*). While this habitat is dominated by wild rice, it may have inclusions of submersed, non-rooted-floating aquatics, rooted-floating aquatics, or emergent vegetation. Deep marsh annuals are typically found in areas which are flooded semipermanently and have water depths between 0.25 and 2 meters with a silt or mucky bottom. During normal water conditions, there is little flow, though there can be wind-generated currents and stronger flows at inlets and outlets. During flood conditions, these habitats can be connected to rivers or streams, have strong currents, and the potential to carry large amounts of debris.



## II. Sensitivity to Oil Spills

The deep marsh annuals habitat is highly sensitive to oil spills. This biologically diverse habitat provides a home to many plants and animal species, including amphibians, reptiles, fish, invertebrates as well as a wide variety of migratory waterfowl and plants. Many animal species use wetlands for reproductive and early life phases, during which they are most susceptible to the effects of oil. Significant loss of this habitat would greatly affect the populations of these animals and consequently, the local ecology. During normal water levels, oil would be less likely to penetrate water-saturated soils; during floods, oil could be deposited in areas that dry out after the flood, and penetrate the loose, organic-rich surface soils.

### References/Additional Information:

General Classification Handbook for Floodplain Vegetation in Large River Systems (<http://pubs.usgs.gov/tm/2005/tm2A1/>)  
Inland Oil Spills: Options for Minimizing Environmental Impacts for Freshwater Spill Response  
([http://www.michigan.gov/documents/deq/deq-wb-wws-FreshwaterResponse\\_NOAA102706\\_265069\\_7.pdf](http://www.michigan.gov/documents/deq/deq-wb-wws-FreshwaterResponse_NOAA102706_265069_7.pdf))  
NatureServe ([natureserve.org](http://natureserve.org))  
Natural Wetland Inventory (<http://www.fws.gov/wetlands/>)  
State Natural Heritage Programs (see state website)  
The U.S. National Vegetation Classification (<http://usnvc.org/>)

# INLAND STRANDED OIL HABITAT FACT SHEET FOR RESPONSE: DEEP MARSH ANNUAL



## III. Sensitivity to Response Methods

The following text describes potential adverse impacts to this habitat resulting from various oil spill response methods and provides recommendations to reduce impact when these methods are implemented. This is not intended to preclude the use of any particular methods, but rather to aid responders in balancing the need to remove oil with the possible adverse effects of removal. More detail about the response methods themselves can be found in the [Inland Response Tactics Manual](#).

### **Least Adverse Habitat Impacts**

#### *Exclusion or Deflection Booming*

- Boom can be used to exclude or deflect the spill away from sensitive resources.
- Effectiveness is increased by positioning boom at appropriate angles for the current speed.

#### *Sorbents/Sorbent Boom*

- Water movement is needed to bring oil to the sorbent. Use on edge of vegetated area only or where water moves.
- Care is necessary during placement and recovery to minimize disturbance of vegetation. Work in boats to avoid driving oil into the sediment.
- Pom-pom type sorbents are best for heavy viscous oils that coat the strands; sorbent boom is best for light, low-viscosity oils that can penetrate into the sorbents.
- Absorbent boom must be changed frequently to prevent it from becoming a source of sheen.

#### *Flooding*

- Where there is the ability to control water levels such as locks and dams, this technique could be used to remove trapped oil; otherwise it is very difficult to herd oil trapped in vegetation towards recovery devices in open water. Contact the U.S. Army Corps of Engineers water control regarding lock and dam operation.
- Though this technique may work well, some oil may still be stranded and will need to be removed through other means.

#### *Low-Pressure, Ambient Water Flushing*

- Maintain low output pressures (less than 50 psi) to avoid disrupting the substrate and vegetation.
- Effectiveness increases with lighter oils because less residual oil is left in the environment.
- This tactic can be used with flooding to prevent re-deposition of oil.
- Use for spot removal of oil because of the limited area of effectiveness.

#### *In-Situ Burning*

- Presence of a water layer on marsh surface can protect roots.
- "Heavy ends" of petroleum product remain unburned and need to be recovered. The burn residue may sink after it cools, so quick removal is needed.
- Need to consider the amount of natural fuel present and the ability to constraint the fire to the oiled areas.
- Authorization of in-situ burning is subject to RRT approval, consultation and concurrence from the state and the Department of the Interior.

#### *Debris/ Vegetation Removal*

- Most appropriate for oils that form a persistent, thick, sticky coating on the vegetation, such as medium and heavy oils.
- Removal will release trapped oil and speed natural flushing rates.
- Debris may be associated with nests or living areas (e.g., beaver and muskrat lodges), therefore impacts on resident animal habitat need to be considered.
- If oil is trapped in floating vegetation, removal may be the only way to recover the oil in the absence of water currents.
- May be appropriate to prevent secondary oiling of wildlife.
- Damage by cleanup crews may be reduced by avoiding excessive cutting/removal, controlling access routes, or conducting operations from boats.

### **Some Adverse Habitat Impact**

#### *Natural Attenuation/Phytoremediation*

- This technique may have some adverse effects due to the fact that wild rice is an attractive food source and leaving oil could harm birds and other wildlife that come to feed. If that is not an issue, this technique has few effects.
- Lesser impact for small to moderate spills and lighter oils; avoids damage often associated with cleanup activities.
- Some cleanup may be warranted where large numbers of animals are likely to become oiled during wetland use.
- Seeding or planting may be used to assist oil degradation.

### **Most Adverse Habitat Impact**

#### *Light Equipment Oil Removal*

- Use equipment such as swamp buggies or light equipment on pontoons.
- Damage to vegetation and substrate may be reduced by controlling access routes, using pontoons or mats, or using a helicopter to bring in equipment.

#### *Sediment Removal*

- Vacuum/dredge sediments and dewater using geotube/settling tank. Treat the water and dispose of sediment.
- Excavate the sediment. Dewater the area before excavation.
- The hydrology may change and it may be difficult to restore the plant community that existed prior to the spill incident.
- Permits will be required for sediment removal and for water discharge.

## **APPENDIX A.3**

# **ECONOMICALLY SENSITIVE AREAS**

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## **APPENDIX A.3.a**

### **REGION 7**

### **SURFACE WATER INTAKES**

This information is restricted. Please contact the Region 7 Regional Response Team Coordinator to request this information; or call the EPA Region 7 Emergency Response 24-Hour Number (spill line) at (913) 281-0991 to make an emergency request for this information. .

## **APPENDIX A.3.b**

### **WATER INTAKES**

#### **MISSISSIPPI AND MISSOURI RIVER**

This information is restricted. Please contact the Region 7 Regional Response Team Coordinator to request this information; or call the EPA Region 7 Emergency Response 24-Hour Number (spill line) at (913) 281-0991 to make an emergency request for this information.



## **APPENDIX A.4**

# **FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES**

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**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES**  
**APPENDIX A.4 TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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**Note: The prairie bush-clover and western prairie fringed orchid potentially occur in all Iowa counties. In addition, the Indiana bat is assumed to occur in all counties south of Interstate 80. The list below indicates only those counties in which these species have actually been collected.**

**TABLE A.4.1**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – IOWA**

| County     | Common name                    | Scientific Name               | Group  | Status |
|------------|--------------------------------|-------------------------------|--------|--------|
| Adair      | Mead's milkweed                | <i>Asclepias meadii</i>       | Plant  | T      |
| Adair      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Adair      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Adair      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Adair      | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Adams      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Adams      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Adams      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Allamakee  | Higgins eye (pearlymussel)     | <i>Lampsilis higginsii</i>    | Clam   | E      |
| Allamakee  | Sheepnose mussel               | <i>Plethobasus cyphus</i>     | Clam   | E      |
| Allamakee  | Northern wild monkshood        | <i>Aconitum noveboracense</i> | Plant  | T      |
| Allamakee  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Allamakee  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Allamakee  | Rusty patched bumble bee       | <i>Bombus affinis</i>         | Insect | E      |
| Allamakee  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Appanoose  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Appanoose  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Appanoose  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Appanoose  | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Audubon    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Audubon    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Audubon    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Benton     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Benton     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Benton     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Black Hawk | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Black Hawk | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Black Hawk | Rusty patched bumble bee       | <i>Bombus affinis</i>         | Insect | E      |
| Black Hawk | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Boone      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Boone      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Boone      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |

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**TABLE A.4.1**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – IOWA**

| County      | Common name                    | Scientific Name               | Group   | Status |
|-------------|--------------------------------|-------------------------------|---------|--------|
| Boone       | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Bremer      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Bremer      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Bremer      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Bremer      | Eastern massasauga             | <i>Sistrurus catenatus</i>    | Reptile | T      |
| Buchanan    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Buchanan    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Buena Vista | Topeka shiner                  | <i>Notropis topeka</i>        | Fish    | E      |
| Buena Vista | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Buena Vista | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Buena Vista | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Butler      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Butler      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Butler      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Calhoun     | Topeka shiner                  | <i>Notropis topeka</i>        | Fish    | E      |
| Calhoun     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Calhoun     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Calhoun     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Carroll     | Topeka shiner                  | <i>Notropis topeka</i>        | Fish    | E      |
| Carroll     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Carroll     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Carroll     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Cass        | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Cass        | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Cass        | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Cedar       | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Cedar       | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Cedar       | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Cedar       | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Cerro Gordo | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Cerro Gordo | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Cerro Gordo | Poweshiek skipperling          | <i>Oarisma poweshiek</i>      | Insect  | E      |
| Cerro Gordo | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Cherokee    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Cherokee    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Cherokee    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |

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**TABLE A.4.1**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – IOWA**

| County    | Common name                    | Scientific Name               | Group   | Status |
|-----------|--------------------------------|-------------------------------|---------|--------|
| Chickasaw | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Chickasaw | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Chickasaw | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Chickasaw | Eastern massasauga             | <i>Sistrurus catenatus</i>    | Reptile | T      |
| Clarke    | Mead's milkweed                | <i>Asclepias meadii</i>       | Plant   | T      |
| Clarke    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Clarke    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Clarke    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Clarke    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Clay      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Clay      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Clay      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Clayton   | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i> | Clam    | E      |
| Clayton   | Higgins eye (pearlymussel)     | <i>Lampsilis higginsii</i>    | Clam    | E      |
| Clayton   | Sheepnose mussel               | <i>Plethobasus cyphus</i>     | Clam    | E      |
| Clayton   | Northern wild monkshood        | <i>Aconitum noveboracense</i> | Plant   | T      |
| Clayton   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Clayton   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Clayton   | Rusty patched bumble bee       | <i>Bombus affinis</i>         | Insect  | E      |
| Clayton   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Clayton   | Iowa Pleistocene snail         | <i>Discus macclintocki</i>    | Snail   | E      |
| Clinton   | Higgins eye (pearlymussel)     | <i>Lampsilis higginsii</i>    | Clam    | E      |
| Clinton   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Clinton   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Clinton   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Clinton   | Eastern massasauga             | <i>Sistrurus catenatus</i>    | Reptile | T      |
| Clinton   | Iowa Pleistocene snail         | <i>Discus macclintocki</i>    | Snail   | E      |
| Crawford  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Crawford  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Crawford  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Dallas    | Topeka shiner                  | <i>Notropis topeka</i>        | Fish    | E      |
| Dallas    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Dallas    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Dallas    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Dallas    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Davis     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |

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TABLE A.4.1

## FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – IOWA

| County     | Common name                    | Scientific Name               | Group  | Status |
|------------|--------------------------------|-------------------------------|--------|--------|
| Davis      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Davis      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Davis      | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Decatur    | Mead's milkweed                | <i>Asclepias meadii</i>       | Plant  | T      |
| Decatur    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Decatur    | Eastern prairie fringed orchid | <i>Platanthera leucophaea</i> | Plant  | T      |
| Decatur    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Decatur    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Decatur    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Delaware   | Northern wild monkshood        | <i>Aconitum noveboracense</i> | Plant  | T      |
| Delaware   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Delaware   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Delaware   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Des Moines | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Des Moines | Higgins eye (pearlymussel)     | <i>Lampsilis higginsii</i>    | Clam   | E      |
| Des Moines | Sheepnose mussel               | <i>Plethobasus cyphus</i>     | Clam   | E      |
| Des Moines | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Des Moines | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Des Moines | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Des Moines | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Dickinson  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Dickinson  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Dickinson  | Dakota skipper                 | <i>Hesperia dacotae</i>       | Insect | T      |
| Dickinson  | Poweshiek skipperling          | <i>Oarisma poweshiek</i>      | Insect | E      |
| Dickinson  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Dubuque    | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Dubuque    | Higgins eye (pearlymussel)     | <i>Lampsilis higginsii</i>    | Clam   | E      |
| Dubuque    | Northern wild monkshood        | <i>Aconitum noveboracense</i> | Plant  | T      |
| Dubuque    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Dubuque    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Dubuque    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Dubuque    | Iowa Pleistocene snail         | <i>Discus macclintocki</i>    | Snail  | E      |
| Emmet      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Emmet      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Emmet      | Poweshiek skipperling          | <i>Oarisma poweshiek</i>      | Insect | E      |
| Emmet      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |

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**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – IOWA**

| County   | Common name                    | Scientific Name               | Group  | Status |
|----------|--------------------------------|-------------------------------|--------|--------|
| Fayette  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Fayette  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Fayette  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Fayette  | Iowa Pleistocene snail         | <i>Discus macclintocki</i>    | Snail  | E      |
| Floyd    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Floyd    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Floyd    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Franklin | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Franklin | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Franklin | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Fremont  | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Fremont  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Fremont  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Fremont  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Greene   | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Greene   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Greene   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Greene   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Grundy   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Grundy   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Grundy   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Guthrie  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Guthrie  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Guthrie  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Guthrie  | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Hamilton | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Hamilton | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Hamilton | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Hamilton | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Hancock  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Hancock  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Hancock  | Poweshiek skipperling          | <i>Oarisma poweshiek</i>      | Insect | E      |
| Hancock  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Hardin   | Northern wild monkshood        | <i>Aconitum noveboracense</i> | Plant  | T      |
| Hardin   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Hardin   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |

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| County   | Common name                    | Scientific Name               | Group  | Status |
|----------|--------------------------------|-------------------------------|--------|--------|
| Hardin   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Harrison | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Harrison | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Harrison | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Harrison | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Henry    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Henry    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Henry    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Henry    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Howard   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Howard   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Howard   | Poweshiek skipperling          | <i>Oarisma poweshiek</i>      | Insect | E      |
| Howard   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Humboldt | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Humboldt | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Humboldt | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Humboldt | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Ida      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Ida      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Ida      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Iowa     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Iowa     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Iowa     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Iowa     | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Jackson  | Higgins eye (pearlymussel)     | <i>Lampsilis higginsii</i>    | Clam   | E      |
| Jackson  | Sheepnose mussel               | <i>Plethobasus cyphus</i>     | Clam   | E      |
| Jackson  | Northern wild monkshood        | <i>Aconitum noveboracense</i> | Plant  | T      |
| Jackson  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Jackson  | Eastern prairie fringed orchid | <i>Platanthera leucophaea</i> | Plant  | T      |
| Jackson  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Jackson  | Rusty patched bumble bee       | <i>Bombus affinis</i>         | Insect | E      |
| Jackson  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Jackson  | Iowa Pleistocene snail         | <i>Discus macclintocki</i>    | Snail  | E      |
| Jasper   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Jasper   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Jasper   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |

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**TABLE A.4.1**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – IOWA**

| County    | Common name                    | Scientific Name               | Group  | Status |
|-----------|--------------------------------|-------------------------------|--------|--------|
| Jasper    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Jefferson | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Jefferson | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Jefferson | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Jefferson | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Johnson   | Higgins eye (pearlymussel)     | <i>Lampsilis higginsii</i>    | Clam   | E      |
| Johnson   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Johnson   | Eastern prairie fringed orchid | <i>Platanthera leucophaea</i> | Plant  | T      |
| Johnson   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Johnson   | Rusty patched bumble bee       | <i>Bombus affinis</i>         | Insect | E      |
| Johnson   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Johnson   | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Jones     | Higgins eye (pearlymussel)     | <i>Lampsilis higginsii</i>    | Clam   | E      |
| Jones     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Jones     | Eastern prairie fringed orchid | <i>Platanthera leucophaea</i> | Plant  | T      |
| Jones     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Jones     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Keokuk    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Keokuk    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Keokuk    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Keokuk    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Kossuth   | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Kossuth   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Kossuth   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Kossuth   | Poweshiek skipperling          | <i>Oarisma poweshiek</i>      | Insect | E      |
| Kossuth   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Lee       | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Lee       | Sheepnose mussel               | <i>Plethobasus cyphus</i>     | Clam   | E      |
| Lee       | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Lee       | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Lee       | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Lee       | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Linn      | Higgins eye (pearlymussel)     | <i>Lampsilis higginsii</i>    | Clam   | E      |
| Linn      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Linn      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Linn      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |

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**TABLE A.4.1**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – IOWA**

| County   | Common name                    | Scientific Name               | Group  | Status |
|----------|--------------------------------|-------------------------------|--------|--------|
| Louisa   | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Louisa   | Higgins eye (pearlymussel)     | <i>Lampsilis higginsii</i>    | Clam   | E      |
| Louisa   | Sheepnose mussel               | <i>Plethobasus cyphus</i>     | Clam   | E      |
| Louisa   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Louisa   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Louisa   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Louisa   | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Lucas    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Lucas    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Lucas    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Lucas    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Lyon     | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Lyon     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Lyon     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Lyon     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Madison  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Madison  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Madison  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Madison  | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Mahaska  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Mahaska  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Mahaska  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Mahaska  | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Marion   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Marion   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Marion   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Marion   | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Marshall | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Marshall | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Marshall | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Marshall | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Mills    | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Mills    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Mills    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Mills    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Mitchell | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |

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**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – IOWA**

| County     | Common name                    | Scientific Name               | Group   | Status |
|------------|--------------------------------|-------------------------------|---------|--------|
| Mitchell   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Mitchell   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Monona     | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish    | E      |
| Monona     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Monona     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Monona     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Monroe     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Monroe     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Monroe     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Monroe     | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Montgomery | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Montgomery | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Montgomery | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Muscatine  | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i> | Clam    | E      |
| Muscatine  | Higgins eye (pearlymussel)     | <i>Lampsilis higginsii</i>    | Clam    | E      |
| Muscatine  | Sheepnose mussel               | <i>Plethobasus cyphus</i>     | Clam    | E      |
| Muscatine  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Muscatine  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Muscatine  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Muscatine  | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Muscatine  | Eastern massasauga             | <i>Sistrurus catenatus</i>    | Reptile | T      |
| O'Brien    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| O'Brien    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| O'Brien    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Osceola    | Topeka shiner                  | <i>Notropis topeka</i>        | Fish    | E      |
| Osceola    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Osceola    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Osceola    | Poweshiek skipperling          | <i>Oarisma poweshiek</i>      | Insect  | E      |
| Osceola    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Page       | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Page       | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Page       | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Palo Alto  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Palo Alto  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Palo Alto  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Plymouth   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |

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**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – IOWA**

| County        | Common name                    | Scientific Name               | Group  | Status |
|---------------|--------------------------------|-------------------------------|--------|--------|
| Plymouth      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Plymouth      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Pocahontas    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Pocahontas    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Pocahontas    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Polk          | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Polk          | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Polk          | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Polk          | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Polk          | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Pottawattamie | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Pottawattamie | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Pottawattamie | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Pottawattamie | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Pottawattamie | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Pottawattamie | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Poweshiek     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Poweshiek     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Poweshiek     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Poweshiek     | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Ringgold      | Mead's milkweed                | <i>Asclepias meadii</i>       | Plant  | T      |
| Ringgold      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Ringgold      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Ringgold      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Ringgold      | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Sac           | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Sac           | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Sac           | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Sac           | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Scott         | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Scott         | Higgins eye (pearly mussel)    | <i>Lampsilis higginsii</i>    | Clam   | E      |
| Scott         | Sheepnose mussel               | <i>Plethobasus cyphus</i>     | Clam   | E      |
| Scott         | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Scott         | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Scott         | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Scott         | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |

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## FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – IOWA

| County    | Common name                    | Scientific Name               | Group   | Status |
|-----------|--------------------------------|-------------------------------|---------|--------|
| Scott     | Eastern massasauga             | <i>Sistrurus catenatus</i>    | Reptile | T      |
| Shelby    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Shelby    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Shelby    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Sioux     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Sioux     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Sioux     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Story     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Story     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Story     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Story     | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Tama      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Tama      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Tama      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Tama      | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Taylor    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Taylor    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Taylor    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Taylor    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Union     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Union     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Union     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Union     | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Van Buren | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Van Buren | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Van Buren | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Van Buren | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Wapello   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Wapello   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Wapello   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Wapello   | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |
| Warren    | Mead's milkweed                | <i>Asclepias meadii</i>       | Plant   | T      |
| Warren    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant   | T      |
| Warren    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant   | T      |
| Warren    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal  | T      |
| Warren    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal  | E      |

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| County     | Common name                    | Scientific Name               | Group  | Status |
|------------|--------------------------------|-------------------------------|--------|--------|
| Washington | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Washington | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Washington | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Washington | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Wayne      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Wayne      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Wayne      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Wayne      | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Webster    | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Webster    | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Webster    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Webster    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Winnebago  | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Winnebago  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Winnebago  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Winneshiek | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Winneshiek | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Winneshiek | Rusty patched bumble bee       | <i>Bombus affinis</i>         | Insect | E      |
| Winneshiek | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Woodbury   | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Woodbury   | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Woodbury   | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Woodbury   | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Woodbury   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Woodbury   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Worth      | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Worth      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Worth      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Wright     | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Wright     | Prairie bush-clover            | <i>Lespedeza leptostachya</i> | Plant  | T      |
| Wright     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Wright     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |

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**TABLE A.4.2**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – KANSAS**

| County     | Common Name             | Scientific Name                       | Group  | Status |
|------------|-------------------------|---------------------------------------|--------|--------|
| Allen      | Neosho mucket           | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Allen      | Rabbitsfoot             | <i>Quadrula cylindrica cylindrica</i> | Clam   | T      |
| Allen      | Neosho madtom           | <i>Noturus placidus</i>               | Fish   | T      |
| Allen      | Mead's milkweed         | <i>Asclepias meadii</i>               | Plant  | T      |
| Allen      | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Anderson   | Mead's milkweed         | <i>Asclepias meadii</i>               | Plant  | T      |
| Anderson   | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Atchison   | Pallid sturgeon         | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Atchison   | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Barber     | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Barton     | Red knot                | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Barton     | Piping plover           | <i>Charadrius melodus</i>             | Bird   | T      |
| Barton     | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Barton     | Least tern              | <i>Sterna antillarum</i>              | Bird   | E      |
| Barton     | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Bourbon    | Mead's milkweed         | <i>Asclepias meadii</i>               | Plant  | T      |
| Bourbon    | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Brown      | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Butler     | Topeka shiner           | <i>Notropis topeka</i>                | Fish   | E      |
| Butler     | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Chase      | Neosho mucket           | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Chase      | Topeka shiner           | <i>Notropis topeka</i>                | Fish   | E      |
| Chase      | Neosho madtom           | <i>Noturus placidus</i>               | Fish   | T      |
| Chase      | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Chautauqua | American burying beetle | <i>Nicrophorus americanus</i>         | Insect | E      |
| Chautauqua | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Cherokee   | Neosho mucket           | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Cherokee   | Rabbitsfoot             | <i>Quadrula cylindrica cylindrica</i> | Clam   | T      |
| Cherokee   | Neosho madtom           | <i>Noturus placidus</i>               | Fish   | T      |
| Cherokee   | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Clark      | Piping plover           | <i>Charadrius melodus</i>             | Bird   | T      |
| Clark      | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Clark      | Least tern              | <i>Sterna antillarum</i>              | Bird   | E      |
| Clark      | Arkansas River shiner   | <i>Notropis girardi</i>               | Fish   | T      |
| Clay       | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Cloud      | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |

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| County    | Common Name                    | Scientific Name                       | Group  | Status |
|-----------|--------------------------------|---------------------------------------|--------|--------|
| Cloud     | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Coffey    | Neosho mucket                  | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Coffey    | Rabbitsfoot                    | <i>Quadrula cylindrica cylindrica</i> | Clam   | T      |
| Coffey    | Neosho madtom                  | <i>Noturus placidus</i>               | Fish   | T      |
| Coffey    | Mead's milkweed                | <i>Asclepias meadii</i>               | Plant  | T      |
| Coffey    | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Comanche  | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Comanche  | Arkansas River shiner          | <i>Notropis girardi</i>               | Fish   | T      |
| Cowley    | Least tern                     | <i>Sterna antillarum</i>              | Bird   | E      |
| Cowley    | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Crawford  | Mead's milkweed                | <i>Asclepias meadii</i>               | Plant  | T      |
| Crawford  | Gray bat                       | <i>Myotis grisescens</i>              | Mammal | E      |
| Crawford  | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Decatur   | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Dickinson | Topeka shiner                  | <i>Notropis topeka</i>                | Fish   | E      |
| Dickinson | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Doniphan  | Pallid sturgeon                | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Doniphan  | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Douglas   | Pallid sturgeon                | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Douglas   | Mead's milkweed                | <i>Asclepias meadii</i>               | Plant  | T      |
| Douglas   | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Douglas   | Rattlesnake-master borer moth  | <i>Papaipema eryngii</i>              | Insect | C      |
| Douglas   | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Edwards   | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Elk       | Neosho mucket                  | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Elk       | American burying beetle        | <i>Nicrophorus americanus</i>         | Insect | E      |
| Elk       | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Ellis     | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Ellis     | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Ellsworth | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Ellsworth | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Finney    | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Ford      | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Franklin  | Mead's milkweed                | <i>Asclepias meadii</i>               | Plant  | T      |
| Franklin  | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Geary     | Topeka shiner                  | <i>Notropis topeka</i>                | Fish   | E      |

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| County      | Common Name                    | Scientific Name                       | Group  | Status |
|-------------|--------------------------------|---------------------------------------|--------|--------|
| Geary       | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Gove        | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Graham      | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Graham      | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Gray        | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Greenwood   | Neosho mucket                  | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Greenwood   | Topeka shiner                  | <i>Notropis topeka</i>                | Fish   | E      |
| Greenwood   | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Harper      | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Harper      | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Harvey      | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Harvey      | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Haskell     | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Hodgeman    | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Jackson     | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Jefferson   | Mead's milkweed                | <i>Asclepias meadii</i>               | Plant  | T      |
| Jefferson   | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Jefferson   | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Jewell      | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Jewell      | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Johnson     | Pallid sturgeon                | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Johnson     | Mead's milkweed                | <i>Asclepias meadii</i>               | Plant  | T      |
| Johnson     | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Kingman     | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Kingman     | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Kiowa       | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Labette     | Neosho mucket                  | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Labette     | Rabbitsfoot                    | <i>Quadrula cylindrica cylindrica</i> | Clam   | T      |
| Labette     | Neosho madtom                  | <i>Noturus placidus</i>               | Fish   | T      |
| Labette     | American burying beetle        | <i>Nicrophorus americanus</i>         | Insect | E      |
| Labette     | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Lane        | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Leavenworth | Pallid sturgeon                | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Leavenworth | Mead's milkweed                | <i>Asclepias meadii</i>               | Plant  | T      |
| Leavenworth | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Leavenworth | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |

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| County     | Common Name             | Scientific Name                       | Group  | Status |
|------------|-------------------------|---------------------------------------|--------|--------|
| Lincoln    | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Lincoln    | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Linn       | Spectaclecase (mussel)  | <i>Cumberlandia monodonta</i>         | Clam   | E      |
| Linn       | Mead's milkweed         | <i>Asclepias meadii</i>               | Plant  | T      |
| Linn       | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Logan      | Black-footed ferret     | <i>Mustela nigripes</i>               | Mammal | E      |
| Lyon       | Topeka shiner           | <i>Notropis topeka</i>                | Fish   | E      |
| Lyon       | Neosho madtom           | <i>Noturus placidus</i>               | Fish   | T      |
| Lyon       | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Marion     | Topeka shiner           | <i>Notropis topeka</i>                | Fish   | E      |
| Marion     | Neosho madtom           | <i>Noturus placidus</i>               | Fish   | T      |
| Marion     | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Marshall   | Topeka shiner           | <i>Notropis topeka</i>                | Fish   | E      |
| Marshall   | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| McPherson  | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| McPherson  | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Meade      | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Meade      | Least tern              | <i>Sterna antillarum</i>              | Bird   | E      |
| Meade      | Arkansas River shiner   | <i>Notropis girardi</i>               | Fish   | T      |
| Miami      | Mead's milkweed         | <i>Asclepias meadii</i>               | Plant  | T      |
| Miami      | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Mitchell   | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Mitchell   | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Montgomery | Neosho mucket           | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Montgomery | Rabbitsfoot             | <i>Quadrula cylindrica cylindrica</i> | Clam   | T      |
| Montgomery | American burying beetle | <i>Nicrophorus americanus</i>         | Insect | E      |
| Montgomery | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Morris     | Topeka shiner           | <i>Notropis topeka</i>                | Fish   | E      |
| Morris     | Neosho madtom           | <i>Noturus placidus</i>               | Fish   | T      |
| Morris     | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Morton     | Least tern              | <i>Sterna antillarum</i>              | Bird   | E      |
| Nemaha     | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Neosho     | Neosho mucket           | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Neosho     | Rabbitsfoot             | <i>Quadrula cylindrica cylindrica</i> | Clam   | T      |
| Neosho     | Neosho madtom           | <i>Noturus placidus</i>               | Fish   | T      |
| Neosho     | Mead's milkweed         | <i>Asclepias meadii</i>               | Plant  | T      |

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| County       | Common Name                    | Scientific Name               | Group  | Status |
|--------------|--------------------------------|-------------------------------|--------|--------|
| Neosho       | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Ness         | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Norton       | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Norton       | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Osage        | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Osage        | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Osborne      | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Osborne      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Ottawa       | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Ottawa       | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Pawnee       | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Phillips     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Phillips     | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Phillips     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Pottawatomie | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Pottawatomie | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Pottawatomie | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Pottawatomie | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Pratt        | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Rawlins      | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Reno         | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Reno         | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Reno         | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Reno         | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Republic     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Republic     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Rice         | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Rice         | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Rice         | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Rice         | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Riley        | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Riley        | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Riley        | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Riley        | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Rooks        | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Rooks        | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |

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| County     | Common Name             | Scientific Name                       | Group  | Status |
|------------|-------------------------|---------------------------------------|--------|--------|
| Rooks      | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Rush       | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Russell    | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Russell    | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Saline     | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Saline     | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Scott      | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Sedgwick   | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Sedgwick   | Least tern              | <i>Sterna antillarum</i>              | Bird   | E      |
| Sedgwick   | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Seward     | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Seward     | Least tern              | <i>Sterna antillarum</i>              | Bird   | E      |
| Seward     | Arkansas River shiner   | <i>Notropis girardi</i>               | Fish   | T      |
| Shawnee    | Least tern              | <i>Sterna antillarum</i>              | Bird   | E      |
| Shawnee    | Topeka shiner           | <i>Notropis topeka</i>                | Fish   | E      |
| Shawnee    | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Sheridan   | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Smith      | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Smith      | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Stafford   | Red knot                | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Stafford   | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Stafford   | Least tern              | <i>Sterna antillarum</i>              | Bird   | E      |
| Stevens    | Least tern              | <i>Sterna antillarum</i>              | Bird   | E      |
| Sumner     | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Sumner     | Least tern              | <i>Sterna antillarum</i>              | Bird   | E      |
| Sumner     | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Trego      | Whooping crane          | <i>Grus americana</i>                 | Bird   | E      |
| Trego      | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Wabaunsee  | Piping plover           | <i>Charadrius melodus</i>             | Bird   | T      |
| Wabaunsee  | Least tern              | <i>Sterna antillarum</i>              | Bird   | E      |
| Wabaunsee  | Topeka shiner           | <i>Notropis topeka</i>                | Fish   | E      |
| Wabaunsee  | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Wallace    | Topeka shiner           | <i>Notropis topeka</i>                | Fish   | E      |
| Washington | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Wilson     | Neosho mucket           | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Wilson     | Rabbitsfoot             | <i>Quadrula cylindrica cylindrica</i> | Clam   | T      |

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**TABLE A.4.2**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – KANSAS**

| County    | Common Name             | Scientific Name                       | Group  | Status |
|-----------|-------------------------|---------------------------------------|--------|--------|
| Wilson    | American burying beetle | <i>Nicrophorus americanus</i>         | Insect | E      |
| Wilson    | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Woodson   | Neosho mucket           | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Woodson   | Rabbitsfoot             | <i>Quadrula cylindrica cylindrica</i> | Clam   | T      |
| Woodson   | Neosho madtom           | <i>Noturus placidus</i>               | Fish   | T      |
| Woodson   | Northern long-eared bat | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Wyandotte | Pallid sturgeon         | <i>Scaphirhynchus albus</i>           | Fish   | E      |

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**TABLE A.4.3**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – MISSOURI**

| County   | Common Name                    | Scientific Name                       | Group  | Status |
|----------|--------------------------------|---------------------------------------|--------|--------|
| Adair    | Mead's milkweed                | <i>Asclepias meadii</i>               | Plant  | T      |
| Adair    | Gray bat                       | <i>Myotis grisescens</i>              | Mammal | E      |
| Adair    | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Adair    | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |
| Andrew   | Red knot                       | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Andrew   | Piping plover                  | <i>Charadrius melodus</i>             | Bird   | T      |
| Andrew   | Least tern                     | <i>Sterna antillarum</i>              | Bird   | E      |
| Andrew   | Pallid sturgeon                | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Andrew   | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Andrew   | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |
| Atchison | Red knot                       | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Atchison | Piping plover                  | <i>Charadrius melodus</i>             | Bird   | T      |
| Atchison | Least tern                     | <i>Sterna antillarum</i>              | Bird   | E      |
| Atchison | Pallid sturgeon                | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Atchison | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Atchison | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Atchison | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |
| Audrain  | Gray bat                       | <i>Myotis grisescens</i>              | Mammal | E      |
| Audrain  | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Audrain  | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |
| Barry    | Neosho mucket                  | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Barry    | Ozark cavefish                 | <i>Amblyopsis rosae</i>               | Fish   | T      |
| Barry    | Running buffalo clover         | <i>Trifolium stoloniferum</i>         | Plant  | E      |
| Barry    | Ozark big-eared bat            | <i>Corynorhinus townsendii ingens</i> | Mammal | E      |
| Barry    | Gray bat                       | <i>Myotis grisescens</i>              | Mammal | E      |
| Barry    | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Barry    | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |
| Barton   | Neosho mucket                  | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Barton   | Mead's milkweed                | <i>Asclepias meadii</i>               | Plant  | T      |
| Barton   | Gray bat                       | <i>Myotis grisescens</i>              | Mammal | E      |
| Barton   | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Barton   | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |
| Bates    | Gray bat                       | <i>Myotis grisescens</i>              | Mammal | E      |
| Bates    | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Bates    | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |
| Benton   | Niangua darter                 | <i>Etheostoma nianguae</i>            | Fish   | T      |

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**TABLE A.4.3**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – MISSOURI**

| County    | Common Name                | Scientific Name                       | Group  | Status |
|-----------|----------------------------|---------------------------------------|--------|--------|
| Benton    | Mead's milkweed            | <i>Asclepias meadii</i>               | Plant  | T      |
| Benton    | Running buffalo clover     | <i>Trifolium stoloniferum</i>         | Plant  | E      |
| Benton    | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Benton    | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Benton    | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Bollinger | Curtis pearlymussel        | <i>Epioblasma florentina curtisii</i> | Clam   | E      |
| Bollinger | Snuffbox mussel            | <i>Epioblasma triquetra</i>           | Clam   | E      |
| Bollinger | Small whorled pogonia      | <i>Isotria medeoloides</i>            | Plant  | T      |
| Bollinger | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Bollinger | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Bollinger | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Boone     | Red knot                   | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Boone     | Piping plover              | <i>Charadrius melodus</i>             | Bird   | T      |
| Boone     | Least tern                 | <i>Sterna antillarum</i>              | Bird   | E      |
| Boone     | Topeka shiner              | <i>Notropis topeka</i>                | Fish   | E      |
| Boone     | Pallid sturgeon            | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Boone     | Running buffalo clover     | <i>Trifolium stoloniferum</i>         | Plant  | E      |
| Boone     | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Boone     | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Boone     | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Buchanan  | Red knot                   | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Buchanan  | Piping plover              | <i>Charadrius melodus</i>             | Bird   | T      |
| Buchanan  | Least tern                 | <i>Sterna antillarum</i>              | Bird   | E      |
| Buchanan  | Pallid sturgeon            | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Buchanan  | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Buchanan  | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Butler    | Curtis pearlymussel        | <i>Epioblasma florentina curtisii</i> | Clam   | E      |
| Butler    | Pink mucket (pearlymussel) | <i>Lampsilis abrupta</i>              | Clam   | E      |
| Butler    | Rabbitsfoot                | <i>Quadrula cylindrica cylindrica</i> | Clam   | T      |
| Butler    | Pondberry                  | <i>Lindera melissifolia</i>           | Plant  | E      |
| Butler    | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Butler    | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Butler    | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Caldwell  | Topeka shiner              | <i>Notropis topeka</i>                | Fish   | E      |
| Caldwell  | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Caldwell  | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Caldwell  | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |

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**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – MISSOURI**

| County         | Common Name                    | Scientific Name                             | Group     | Status |
|----------------|--------------------------------|---|-----------|--------|
| Callaway       | Red knot                       | <i>Calidris canutus rufa</i>                | Bird      | T      |
| Callaway       | Piping plover                  | <i>Charadrius melodus</i>                   | Bird      | T      |
| Callaway       | Least tern                     | <i>Sterna antillarum</i>                    | Bird      | E      |
| Callaway       | Scaleshell mussel              | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Callaway       | Topeka shiner                  | <i>Notropis topeka</i>                      | Fish      | E      |
| Callaway       | Pallid sturgeon                | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Callaway       | Running buffalo clover         | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Callaway       | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Callaway       | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Callaway       | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Camden         | Scaleshell mussel              | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Camden         | Niangua darter                 | <i>Etheostoma nianguae</i>                  | Fish      | T      |
| Camden         | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Camden         | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Camden         | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Cape Girardeau | Red knot                       | <i>Calidris canutus rufa</i>                | Bird      | T      |
| Cape Girardeau | Piping plover                  | <i>Charadrius melodus</i>                   | Bird      | T      |
| Cape Girardeau | Least tern                     | <i>Sterna antillarum</i>                    | Bird      | E      |
| Cape Girardeau | Pallid sturgeon                | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Cape Girardeau | Decurrent false aster          | <i>Boltonia decurrens</i>                   | Plant     | T      |
| Cape Girardeau | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Cape Girardeau | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Cape Girardeau | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Carroll        | Red knot                       | <i>Calidris canutus rufa</i>                | Bird      | T      |
| Carroll        | Piping plover                  | <i>Charadrius melodus</i>                   | Bird      | T      |
| Carroll        | Least tern                     | <i>Sterna antillarum</i>                    | Bird      | E      |
| Carroll        | Pallid sturgeon                | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Carroll        | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Carroll        | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Carroll        | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Carter         | Ozark hellbender               | <i>Cryptobranchus alleganiensis bishopi</i> | Amphibian | E      |
| Carter         | Eastern prairie fringed orchid | <i>Platanthera leucophaea</i>               | Plant     | T      |
| Carter         | Western prairie fringed orchid | <i>Platanthera praeclara</i>                | Plant     | T      |
| Carter         | Running buffalo clover         | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Carter         | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Carter         | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Carter         | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |

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**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – MISSOURI**

| County    | Common Name                | Scientific Name               | Group  | Status |
|-----------|----------------------------|-------------------------------|--------|--------|
| Cass      | Mead's milkweed            | <i>Asclepias meadii</i>       | Plant  | T      |
| Cass      | Gray bat                   | <i>Myotis grisescens</i>      | Mammal | E      |
| Cass      | Northern long-eared bat    | <i>Myotis septentrionalis</i> | Mammal | T      |
| Cass      | Indiana bat                | <i>Myotis sodalis</i>         | Mammal | E      |
| Cedar     | Spectaclecase (mussel)     | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Cedar     | Pink mucket (pearlymussel) | <i>Lampsilis abrupta</i>      | Clam   | E      |
| Cedar     | Niangua darter             | <i>Etheostoma nianguae</i>    | Fish   | T      |
| Cedar     | Mead's milkweed            | <i>Asclepias meadii</i>       | Plant  | T      |
| Cedar     | No common name             | <i>Geocarpon minimum</i>      | Plant  | T      |
| Cedar     | Running buffalo clover     | <i>Trifolium stoloniferum</i> | Plant  | E      |
| Cedar     | Gray bat                   | <i>Myotis grisescens</i>      | Mammal | E      |
| Cedar     | Northern long-eared bat    | <i>Myotis septentrionalis</i> | Mammal | T      |
| Cedar     | Indiana bat                | <i>Myotis sodalis</i>         | Mammal | E      |
| Chariton  | Red knot                   | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Chariton  | Piping plover              | <i>Charadrius melodus</i>     | Bird   | T      |
| Chariton  | Least tern                 | <i>Sterna antillarum</i>      | Bird   | E      |
| Chariton  | Pallid sturgeon            | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Chariton  | Gray bat                   | <i>Myotis grisescens</i>      | Mammal | E      |
| Chariton  | Northern long-eared bat    | <i>Myotis septentrionalis</i> | Mammal | T      |
| Chariton  | Indiana bat                | <i>Myotis sodalis</i>         | Mammal | E      |
| Christian | Virginia sneezeweed        | <i>Helenium virginicum</i>    | Plant  | T      |
| Christian | Missouri bladderpod        | <i>Physaria filiformis</i>    | Plant  | T      |
| Christian | Running buffalo clover     | <i>Trifolium stoloniferum</i> | Plant  | E      |
| Christian | Gray bat                   | <i>Myotis grisescens</i>      | Mammal | E      |
| Christian | Northern long-eared bat    | <i>Myotis septentrionalis</i> | Mammal | T      |
| Christian | Indiana bat                | <i>Myotis sodalis</i>         | Mammal | E      |
| Clark     | Red knot                   | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Clark     | Piping plover              | <i>Charadrius melodus</i>     | Bird   | T      |
| Clark     | Least tern                 | <i>Sterna antillarum</i>      | Bird   | E      |
| Clark     | Fat pocketbook             | <i>Potamilus capax</i>        | Clam   | E      |
| Clark     | Topeka shiner              | <i>Notropis topeka</i>        | Fish   | E      |
| Clark     | Gray bat                   | <i>Myotis grisescens</i>      | Mammal | E      |
| Clark     | Northern long-eared bat    | <i>Myotis septentrionalis</i> | Mammal | T      |
| Clark     | Indiana bat                | <i>Myotis sodalis</i>         | Mammal | E      |
| Clay      | Red knot                   | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Clay      | Least tern                 | <i>Sterna antillarum</i>      | Bird   | E      |
| Clay      | Pallid sturgeon            | <i>Scaphirhynchus albus</i>   | Fish   | E      |

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**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – MISSOURI**

| County                         | Common Name                   | Scientific Name               | Group  | Status |
|--------------------------------|-------------------------------|-------------------------------|--------|--------|
| Clay                           | Gray bat                      | <i>Myotis grisescens</i>      | Mammal | E      |
| Clay                           | Northern long-eared bat       | <i>Myotis septentrionalis</i> | Mammal | T      |
| Clay                           | Indiana bat                   | <i>Myotis sodalis</i>         | Mammal | E      |
| Clinton                        | Gray bat                      | <i>Myotis grisescens</i>      | Mammal | E      |
| Clinton                        | Northern long-eared bat       | <i>Myotis septentrionalis</i> | Mammal | T      |
| Clinton                        | Indiana bat                   | <i>Myotis sodalis</i>         | Mammal | E      |
| Cole                           | Red knot                      | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Cole                           | Piping plover                 | <i>Charadrius melodus</i>     | Bird   | T      |
| Cole                           | Least tern                    | <i>Sterna antillarum</i>      | Bird   | E      |
| Cole                           | Spectaclecase (mussel)        | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Cole                           | Pink mucket (pearlymussel)    | <i>Lampsilis abrupta</i>      | Clam   | E      |
| Cole                           | Scaleshell mussel             | <i>Leptodea leptodon</i>      | Clam   | E      |
| Cole                           | Topeka shiner                 | <i>Notropis topeka</i>        | Fish   | E      |
| Cole                           | Pallid sturgeon               | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Cole                           | Running buffalo clover        | <i>Trifolium stoloniferum</i> | Plant  | E      |
| Cole                           | Gray bat                      | <i>Myotis grisescens</i>      | Mammal | E      |
| Cole                           | Northern long-eared bat       | <i>Myotis septentrionalis</i> | Mammal | T      |
| Cole                           | Indiana bat                   | <i>Myotis sodalis</i>         | Mammal | E      |
| Cooper                         | Red knot                      | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Cooper                         | Piping plover                 | <i>Charadrius melodus</i>     | Bird   | T      |
| Cooper                         | Least tern                    | <i>Sterna antillarum</i>      | Bird   | E      |
| Cooper                         | Topeka shiner                 | <i>Notropis topeka</i>        | Fish   | E      |
| Cooper                         | Pallid sturgeon               | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Cooper                         | Running buffalo clover        | <i>Trifolium stoloniferum</i> | Plant  | E      |
| Cooper                         | Gray bat                      | <i>Myotis grisescens</i>      | Mammal | E      |
| Cooper                         | Northern long-eared bat       | <i>Myotis septentrionalis</i> | Mammal | T      |
| Cooper                         | Indiana bat                   | <i>Myotis sodalis</i>         | Mammal | E      |
| County-level range not defined | Rattlesnake-master borer moth | <i>Papaipema eryngii</i>      | Insect | C      |
| Crawford                       | Spectaclecase (mussel)        | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Crawford                       | Scaleshell mussel             | <i>Leptodea leptodon</i>      | Clam   | E      |
| Crawford                       | Sheepnose mussel              | <i>Plethobasus cyphus</i>     | Clam   | E      |
| Crawford                       | Running buffalo clover        | <i>Trifolium stoloniferum</i> | Plant  | E      |
| Crawford                       | Gray bat                      | <i>Myotis grisescens</i>      | Mammal | E      |
| Crawford                       | Northern long-eared bat       | <i>Myotis septentrionalis</i> | Mammal | T      |
| Crawford                       | Indiana bat                   | <i>Myotis sodalis</i>         | Mammal | E      |
| Dade                           | Mead's milkweed               | <i>Asclepias meadii</i>       | Plant  | T      |

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| County  | Common Name              | Scientific Name                             | Group     | Status |
|---------|--------------------------|---|-----------|--------|
| Dade    | No common name           | <i>Geocarpon minimum</i>                    | Plant     | T      |
| Dade    | Missouri bladderpod      | <i>Physaria filiformis</i>                  | Plant     | T      |
| Dade    | Running buffalo clover   | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Dade    | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Dade    | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Dade    | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Dallas  | Scaleshell mussel        | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Dallas  | Niangua darter           | <i>Etheostoma nianguae</i>                  | Fish      | T      |
| Dallas  | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Dallas  | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Dallas  | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Daviess | Topeka shiner            | <i>Notropis topeka</i>                      | Fish      | E      |
| Daviess | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Daviess | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Daviess | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| DeKalb  | Topeka shiner            | <i>Notropis topeka</i>                      | Fish      | E      |
| DeKalb  | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| DeKalb  | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Dent    | Ozark hellbender         | <i>Cryptobranchus alleganiensis bishopi</i> | Amphibian | E      |
| Dent    | Scaleshell mussel        | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Dent    | Virginia sneezeweed      | <i>Helenium virginicum</i>                  | Plant     | T      |
| Dent    | Running buffalo clover   | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Dent    | Hine's emerald dragonfly | <i>Somatochlora hineana</i>                 | Insect    | E      |
| Dent    | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Dent    | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Dent    | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Douglas | Ozark hellbender         | <i>Cryptobranchus alleganiensis bishopi</i> | Amphibian | E      |
| Douglas | Scaleshell mussel        | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Douglas | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Douglas | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Douglas | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Dunklin | Fat pocketbook           | <i>Potamilus capax</i>                      | Clam      | E      |
| Dunklin | Decurrent false aster    | <i>Boltonia decurrens</i>                   | Plant     | T      |
| Dunklin | Running buffalo clover   | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Dunklin | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Dunklin | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Dunklin | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |

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**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – MISSOURI**

| County    | Common Name                    | Scientific Name               | Group  | Status |
|-----------|--------------------------------|-------------------------------|--------|--------|
| Franklin  | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Franklin  | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Franklin  | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Franklin  | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Franklin  | Snuffbox mussel                | <i>Epioblasma triquetra</i>   | Clam   | E      |
| Franklin  | Pink mucket (pearlymussel)     | <i>Lampsilis abrupta</i>      | Clam   | E      |
| Franklin  | Scaleshell mussel              | <i>Leptodea leptodon</i>      | Clam   | E      |
| Franklin  | Sheepnose mussel               | <i>Plethobasus cyphus</i>     | Clam   | E      |
| Franklin  | Winged mapleleaf               | <i>Quadrula fragosa</i>       | Clam   | E      |
| Franklin  | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Franklin  | Decurrent false aster          | <i>Boltonia decurrens</i>     | Plant  | T      |
| Franklin  | Gray bat                       | <i>Myotis grisescens</i>      | Mammal | E      |
| Franklin  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Franklin  | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Gasconade | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Gasconade | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Gasconade | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Gasconade | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Gasconade | Snuffbox mussel                | <i>Epioblasma triquetra</i>   | Clam   | E      |
| Gasconade | Pink mucket (pearlymussel)     | <i>Lampsilis abrupta</i>      | Clam   | E      |
| Gasconade | Scaleshell mussel              | <i>Leptodea leptodon</i>      | Clam   | E      |
| Gasconade | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Gasconade | Gray bat                       | <i>Myotis grisescens</i>      | Mammal | E      |
| Gasconade | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Gasconade | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Gentry    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Gentry    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Greene    | Ozark cavefish                 | <i>Amblyopsis rosae</i>       | Fish   | T      |
| Greene    | Niangua darter                 | <i>Etheostoma nianguae</i>    | Fish   | T      |
| Greene    | No common name                 | <i>Geocarpon minimum</i>      | Plant  | T      |
| Greene    | Missouri bladderpod            | <i>Physaria filiformis</i>    | Plant  | T      |
| Greene    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Greene    | Gray bat                       | <i>Myotis grisescens</i>      | Mammal | E      |
| Greene    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Greene    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Grundy    | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Grundy    | Eastern prairie fringed orchid | <i>Platanthera leucophaea</i> | Plant  | T      |

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| County   | Common Name                    | Scientific Name                             | Group     | Status |
|----------|--------------------------------|---|-----------|--------|
| Grundy   | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Grundy   | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Grundy   | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Harrison | Topeka shiner                  | <i>Notropis topeka</i>                      | Fish      | E      |
| Harrison | Mead's milkweed                | <i>Asclepias meadii</i>                     | Plant     | T      |
| Harrison | Western prairie fringed orchid | <i>Platanthera praeclara</i>                | Plant     | T      |
| Harrison | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Harrison | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Henry    | Mead's milkweed                | <i>Asclepias meadii</i>                     | Plant     | T      |
| Henry    | No common name                 | <i>Geocarpon minimum</i>                    | Plant     | T      |
| Henry    | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Henry    | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Henry    | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Hickory  | Niangua darter                 | <i>Etheostoma nianguae</i>                  | Fish      | T      |
| Hickory  | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Hickory  | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Hickory  | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Holt     | Red knot                       | <i>Calidris canutus rufa</i>                | Bird      | T      |
| Holt     | Piping plover                  | <i>Charadrius melodus</i>                   | Bird      | T      |
| Holt     | Least tern                     | <i>Sterna antillarum</i>                    | Bird      | E      |
| Holt     | Pallid sturgeon                | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Holt     | Western prairie fringed orchid | <i>Platanthera praeclara</i>                | Plant     | T      |
| Holt     | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Holt     | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Howard   | Red knot                       | <i>Calidris canutus rufa</i>                | Bird      | T      |
| Howard   | Piping plover                  | <i>Charadrius melodus</i>                   | Bird      | T      |
| Howard   | Least tern                     | <i>Sterna antillarum</i>                    | Bird      | E      |
| Howard   | Pallid sturgeon                | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Howard   | Running buffalo clover         | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Howard   | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Howard   | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Howard   | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Howell   | Ozark hellbender               | <i>Cryptobranchus alleganiensis bishopi</i> | Amphibian | E      |
| Howell   | Decurrent false aster          | <i>Boltonia decurrens</i>                   | Plant     | T      |
| Howell   | Virginia sneezeweed            | <i>Helenium virginicum</i>                  | Plant     | T      |
| Howell   | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Howell   | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |

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| County    | Common Name                    | Scientific Name                       | Group  | Status |
|-----------|--------------------------------|---------------------------------------|--------|--------|
| Howell    | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |
| Iron      | Scaleshell mussel              | <i>Leptodea leptodon</i>              | Clam   | E      |
| Iron      | Mead's milkweed                | <i>Asclepias meadii</i>               | Plant  | T      |
| Iron      | Hine's emerald dragonfly       | <i>Somatochlora hineana</i>           | Insect | E      |
| Iron      | Gray bat                       | <i>Myotis grisescens</i>              | Mammal | E      |
| Iron      | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Iron      | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |
| Jackson   | Red knot                       | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Jackson   | Piping plover                  | <i>Charadrius melodus</i>             | Bird   | T      |
| Jackson   | Least tern                     | <i>Sterna antillarum</i>              | Bird   | E      |
| Jackson   | Pallid sturgeon                | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Jackson   | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Jackson   | Gray bat                       | <i>Myotis grisescens</i>              | Mammal | E      |
| Jackson   | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Jackson   | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |
| Jasper    | Neosho mucket                  | <i>Lampsilis rafinesqueana</i>        | Clam   | E      |
| Jasper    | Rabbitsfoot                    | <i>Quadrula cylindrica cylindrica</i> | Clam   | T      |
| Jasper    | Ozark cavefish                 | <i>Amblyopsis rosae</i>               | Fish   | T      |
| Jasper    | Neosho madtom                  | <i>Noturus placidus</i>               | Fish   | T      |
| Jasper    | No common name                 | <i>Geocarpon minimum</i>              | Plant  | T      |
| Jasper    | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Jasper    | Running buffalo clover         | <i>Trifolium stoloniferum</i>         | Plant  | E      |
| Jasper    | Gray bat                       | <i>Myotis grisescens</i>              | Mammal | E      |
| Jasper    | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Jasper    | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |
| Jefferson | Red knot                       | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Jefferson | Piping plover                  | <i>Charadrius melodus</i>             | Bird   | T      |
| Jefferson | Least tern                     | <i>Sterna antillarum</i>              | Bird   | E      |
| Jefferson | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i>         | Clam   | E      |
| Jefferson | Snuffbox mussel                | <i>Epioblasma triquetra</i>           | Clam   | E      |
| Jefferson | Pink mucket (pearlymussel)     | <i>Lampsilis abrupta</i>              | Clam   | E      |
| Jefferson | Scaleshell mussel              | <i>Leptodea leptodon</i>              | Clam   | E      |
| Jefferson | Sheepnose mussel               | <i>Plethobasus cyphus</i>             | Clam   | E      |
| Jefferson | Pallid sturgeon                | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Jefferson | Gray bat                       | <i>Myotis grisescens</i>              | Mammal | E      |
| Jefferson | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Jefferson | Indiana bat                    | <i>Myotis sodalis</i>                 | Mammal | E      |

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| County    | Common Name                    | Scientific Name                | Group  | Status |
|-----------|--------------------------------|--------------------------------|--------|--------|
| Johnson   | Mead's milkweed                | <i>Asclepias meadii</i>        | Plant  | T      |
| Johnson   | Western prairie fringed orchid | <i>Platanthera praeclara</i>   | Plant  | T      |
| Johnson   | Gray bat                       | <i>Myotis grisescens</i>       | Mammal | E      |
| Johnson   | Northern long-eared bat        | <i>Myotis septentrionalis</i>  | Mammal | T      |
| Johnson   | Indiana bat                    | <i>Myotis sodalis</i>          | Mammal | E      |
| Knox      | Gray bat                       | <i>Myotis grisescens</i>       | Mammal | E      |
| Knox      | Northern long-eared bat        | <i>Myotis septentrionalis</i>  | Mammal | T      |
| Knox      | Indiana bat                    | <i>Myotis sodalis</i>          | Mammal | E      |
| Laclede   | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i>  | Clam   | E      |
| Laclede   | Scaleshell mussel              | <i>Leptodea leptodon</i>       | Clam   | E      |
| Laclede   | Sheepnose mussel               | <i>Plethobasus cyphus</i>      | Clam   | E      |
| Laclede   | Running buffalo clover         | <i>Trifolium stoloniferum</i>  | Plant  | E      |
| Laclede   | Gray bat                       | <i>Myotis grisescens</i>       | Mammal | E      |
| Laclede   | Northern long-eared bat        | <i>Myotis septentrionalis</i>  | Mammal | T      |
| Laclede   | Indiana bat                    | <i>Myotis sodalis</i>          | Mammal | E      |
| Lafayette | Red knot                       | <i>Calidris canutus rufa</i>   | Bird   | T      |
| Lafayette | Piping plover                  | <i>Charadrius melodus</i>      | Bird   | T      |
| Lafayette | Least tern                     | <i>Sterna antillarum</i>       | Bird   | E      |
| Lafayette | Pallid sturgeon                | <i>Scaphirhynchus albus</i>    | Fish   | E      |
| Lafayette | Gray bat                       | <i>Myotis grisescens</i>       | Mammal | E      |
| Lafayette | Northern long-eared bat        | <i>Myotis septentrionalis</i>  | Mammal | T      |
| Lafayette | Indiana bat                    | <i>Myotis sodalis</i>          | Mammal | E      |
| Lawrence  | Neosho mucket                  | <i>Lampsilis rafinesqueana</i> | Clam   | E      |
| Lawrence  | Ozark cavefish                 | <i>Amblyopsis rosae</i>        | Fish   | T      |
| Lawrence  | No common name                 | <i>Geocarpon minimum</i>       | Plant  | T      |
| Lawrence  | Missouri bladderpod            | <i>Physaria filiformis</i>     | Plant  | T      |
| Lawrence  | Western prairie fringed orchid | <i>Platanthera praeclara</i>   | Plant  | T      |
| Lawrence  | Gray bat                       | <i>Myotis grisescens</i>       | Mammal | E      |
| Lawrence  | Northern long-eared bat        | <i>Myotis septentrionalis</i>  | Mammal | T      |
| Lawrence  | Indiana bat                    | <i>Myotis sodalis</i>          | Mammal | E      |
| Lewis     | Red knot                       | <i>Calidris canutus rufa</i>   | Bird   | T      |
| Lewis     | Piping plover                  | <i>Charadrius melodus</i>      | Bird   | T      |
| Lewis     | Least tern                     | <i>Sterna antillarum</i>       | Bird   | E      |
| Lewis     | Sheepnose mussel               | <i>Plethobasus cyphus</i>      | Clam   | E      |
| Lewis     | Pallid sturgeon                | <i>Scaphirhynchus albus</i>    | Fish   | E      |
| Lewis     | Gray bat                       | <i>Myotis grisescens</i>       | Mammal | E      |
| Lewis     | Northern long-eared bat        | <i>Myotis septentrionalis</i>  | Mammal | T      |

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| County     | Common Name                | Scientific Name                       | Group  | Status |
|------------|----------------------------|---------------------------------------|--------|--------|
| Lewis      | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Lincoln    | Red knot                   | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Lincoln    | Piping plover              | <i>Charadrius melodus</i>             | Bird   | T      |
| Lincoln    | Least tern                 | <i>Sterna antillarum</i>              | Bird   | E      |
| Lincoln    | Spectaclecase (mussel)     | <i>Cumberlandia monodonta</i>         | Clam   | E      |
| Lincoln    | Decurrent false aster      | <i>Boltonia decurrens</i>             | Plant  | T      |
| Lincoln    | Running buffalo clover     | <i>Trifolium stoloniferum</i>         | Plant  | E      |
| Lincoln    | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Lincoln    | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Lincoln    | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Linn       | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Linn       | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Linn       | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Livingston | Pallid sturgeon            | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Livingston | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Livingston | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Livingston | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Macon      | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Macon      | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Macon      | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Madison    | Rabbitsfoot                | <i>Quadrula cylindrica cylindrica</i> | Clam   | T      |
| Madison    | Running buffalo clover     | <i>Trifolium stoloniferum</i>         | Plant  | E      |
| Madison    | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Madison    | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Madison    | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Maries     | Spectaclecase (mussel)     | <i>Cumberlandia monodonta</i>         | Clam   | E      |
| Maries     | Pink mucket (pearlymussel) | <i>Lampsilis abrupta</i>              | Clam   | E      |
| Maries     | Scaleshell mussel          | <i>Leptodea leptodon</i>              | Clam   | E      |
| Maries     | Niangua darter             | <i>Etheostoma nianguae</i>            | Fish   | T      |
| Maries     | Running buffalo clover     | <i>Trifolium stoloniferum</i>         | Plant  | E      |
| Maries     | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Maries     | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Maries     | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Marion     | Red knot                   | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Marion     | Piping plover              | <i>Charadrius melodus</i>             | Bird   | T      |
| Marion     | Least tern                 | <i>Sterna antillarum</i>              | Bird   | E      |
| Marion     | Spectaclecase (mussel)     | <i>Cumberlandia monodonta</i>         | Clam   | E      |

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**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – MISSOURI**

| County      | Common Name                | Scientific Name                | Group       | Status |
|-------------|----------------------------|--------------------------------|-------------|--------|
| Marion      | Higgins eye (pearlymussel) | <i>Lampsilis higginsii</i>     | Clam        | E      |
| Marion      | Sheepnose mussel           | <i>Plethobasus cyphus</i>      | Clam        | E      |
| Marion      | Fat pocketbook             | <i>Potamilus capax</i>         | Clam        | E      |
| Marion      | Gray bat                   | <i>Myotis grisescens</i>       | Mammal      | E      |
| Marion      | Northern long-eared bat    | <i>Myotis septentrionalis</i>  | Mammal      | T      |
| Marion      | Indiana bat                | <i>Myotis sodalis</i>          | Mammal      | E      |
| McDonald    | Neosho mucket              | <i>Lampsilis rafinesqueana</i> | Clam        | E      |
| McDonald    | Cave crayfish              | <i>Cambarus aculabrum</i>      | Crustaceans | E      |
| McDonald    | Gray bat                   | <i>Myotis grisescens</i>       | Mammal      | E      |
| McDonald    | Northern long-eared bat    | <i>Myotis septentrionalis</i>  | Mammal      | T      |
| McDonald    | Indiana bat                | <i>Myotis sodalis</i>          | Mammal      | E      |
| Mercer      | Topeka shiner              | <i>Notropis topeka</i>         | Fish        | E      |
| Mercer      | Northern long-eared bat    | <i>Myotis septentrionalis</i>  | Mammal      | T      |
| Mercer      | Indiana bat                | <i>Myotis sodalis</i>          | Mammal      | E      |
| Miller      | Spectaclecase (mussel)     | <i>Cumberlandia monodonta</i>  | Clam        | E      |
| Miller      | Pink mucket (pearlymussel) | <i>Lampsilis abrupta</i>       | Clam        | E      |
| Miller      | Scaleshell mussel          | <i>Leptodea leptodon</i>       | Clam        | E      |
| Miller      | Niangua darter             | <i>Etheostoma nianguae</i>     | Fish        | T      |
| Miller      | Gray bat                   | <i>Myotis grisescens</i>       | Mammal      | E      |
| Miller      | Northern long-eared bat    | <i>Myotis septentrionalis</i>  | Mammal      | T      |
| Miller      | Indiana bat                | <i>Myotis sodalis</i>          | Mammal      | E      |
| Mississippi | Red knot                   | <i>Calidris canutus rufa</i>   | Bird        | T      |
| Mississippi | Piping plover              | <i>Charadrius melodus</i>      | Bird        | T      |
| Mississippi | Least tern                 | <i>Sterna antillarum</i>       | Bird        | E      |
| Mississippi | Fat pocketbook             | <i>Potamilus capax</i>         | Clam        | E      |
| Mississippi | Pallid sturgeon            | <i>Scaphirhynchus albus</i>    | Fish        | E      |
| Mississippi | Decurrent false aster      | <i>Boltonia decurrens</i>      | Plant       | T      |
| Mississippi | Gray bat                   | <i>Myotis grisescens</i>       | Mammal      | E      |
| Mississippi | Northern long-eared bat    | <i>Myotis septentrionalis</i>  | Mammal      | T      |
| Mississippi | Indiana bat                | <i>Myotis sodalis</i>          | Mammal      | E      |
| Moniteau    | Red knot                   | <i>Calidris canutus rufa</i>   | Bird        | T      |
| Moniteau    | Piping plover              | <i>Charadrius melodus</i>      | Bird        | T      |
| Moniteau    | Least tern                 | <i>Sterna antillarum</i>       | Bird        | E      |
| Moniteau    | Topeka shiner              | <i>Notropis topeka</i>         | Fish        | E      |
| Moniteau    | Pallid sturgeon            | <i>Scaphirhynchus albus</i>    | Fish        | E      |
| Moniteau    | Running buffalo clover     | <i>Trifolium stoloniferum</i>  | Plant       | E      |
| Moniteau    | Gray bat                   | <i>Myotis grisescens</i>       | Mammal      | E      |

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**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – MISSOURI**

| County     | Common Name                | Scientific Name                             | Group     | Status |
|------------|----------------------------|---|-----------|--------|
| Moniteau   | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Moniteau   | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Monroe     | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Monroe     | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Monroe     | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Montgomery | Scaleshell mussel          | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Montgomery | Pallid sturgeon            | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Montgomery | Running buffalo clover     | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Montgomery | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Montgomery | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Montgomery | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Morgan     | Topeka shiner              | <i>Notropis topeka</i>                      | Fish      | E      |
| Morgan     | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Morgan     | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Morgan     | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| New Madrid | Least tern                 | <i>Sterna antillarum</i>                    | Bird      | E      |
| New Madrid | Pallid sturgeon            | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| New Madrid | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| New Madrid | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| New Madrid | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Newton     | Neosho mucket              | <i>Lampsilis rafinesqueana</i>              | Clam      | E      |
| Newton     | Rabbitsfoot                | <i>Quadrula cylindrica cylindrica</i>       | Clam      | T      |
| Newton     | Ozark cavefish             | <i>Amblyopsis rosae</i>                     | Fish      | T      |
| Newton     | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Newton     | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Newton     | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Nodaway    | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Nodaway    | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Oregon     | Ozark hellbender           | <i>Cryptobranchus alleganiensis bishopi</i> | Amphibian | E      |
| Oregon     | Virginia sneezeweed        | <i>Helenium virginicum</i>                  | Plant     | T      |
| Oregon     | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Oregon     | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Oregon     | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Osage      | Spectaclecase (mussel)     | <i>Cumberlandia monodonta</i>               | Clam      | E      |
| Osage      | Pink mucket (pearlymussel) | <i>Lampsilis abrupta</i>                    | Clam      | E      |
| Osage      | Scaleshell mussel          | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Osage      | Niangua darter             | <i>Etheostoma nianguae</i>                  | Fish      | T      |

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| County   | Common Name              | Scientific Name                             | Group     | Status |
|----------|--------------------------|---|-----------|--------|
| Osage    | Pallid sturgeon          | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Osage    | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Osage    | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Osage    | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Ozark    | Ozark hellbender         | <i>Cryptobranchus alleganiensis bishopi</i> | Amphibian | E      |
| Ozark    | Running buffalo clover   | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Ozark    | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Ozark    | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Ozark    | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Pemiscot | Least tern               | <i>Sterna antillarum</i>                    | Bird      | E      |
| Pemiscot | Pallid sturgeon          | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Pemiscot | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Pemiscot | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Pemiscot | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Perry    | Least tern               | <i>Sterna antillarum</i>                    | Bird      | E      |
| Perry    | Grotto sculpin           | <i>Cottus specus</i>                        | Fish      | E      |
| Perry    | Pallid sturgeon          | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Perry    | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Perry    | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Perry    | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Pettis   | Topeka shiner            | <i>Notropis topeka</i>                      | Fish      | E      |
| Pettis   | Mead's milkweed          | <i>Asclepias meadii</i>                     | Plant     | T      |
| Pettis   | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Pettis   | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Pettis   | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Phelps   | Spectaclecase (mussel)   | <i>Cumberlandia monodonta</i>               | Clam      | E      |
| Phelps   | Snuffbox mussel          | <i>Epioblasma triquetra</i>                 | Clam      | E      |
| Phelps   | Scaleshell mussel        | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Phelps   | Running buffalo clover   | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Phelps   | Hine's emerald dragonfly | <i>Somatochlora hineana</i>                 | Insect    | E      |
| Phelps   | Gray bat                 | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Phelps   | Northern long-eared bat  | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Phelps   | Indiana bat              | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Pike     | Spectaclecase (mussel)   | <i>Cumberlandia monodonta</i>               | Clam      | E      |
| Pike     | Sheepnose mussel         | <i>Plethobasus cyphus</i>                   | Clam      | E      |
| Pike     | Fat pocketbook           | <i>Potamilus capax</i>                      | Clam      | E      |
| Pike     | Decurrent false aster    | <i>Boltonia decurrens</i>                   | Plant     | T      |

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| County   | Common Name                    | Scientific Name               | Group  | Status |
|----------|--------------------------------|-------------------------------|--------|--------|
| Pike     | Gray bat                       | <i>Myotis grisescens</i>      | Mammal | E      |
| Pike     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Pike     | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Platte   | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Platte   | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Platte   | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Platte   | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Platte   | Gray bat                       | <i>Myotis grisescens</i>      | Mammal | E      |
| Platte   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Platte   | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Polk     | Niangua darter                 | <i>Etheostoma nianguae</i>    | Fish   | T      |
| Polk     | Mead's milkweed                | <i>Asclepias meadii</i>       | Plant  | T      |
| Polk     | No common name                 | <i>Geocarpon minimum</i>      | Plant  | T      |
| Polk     | Gray bat                       | <i>Myotis grisescens</i>      | Mammal | E      |
| Polk     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Polk     | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Pulaski  | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Pulaski  | Scaleshell mussel              | <i>Leptodea leptodon</i>      | Clam   | E      |
| Pulaski  | Gray bat                       | <i>Myotis grisescens</i>      | Mammal | E      |
| Pulaski  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Pulaski  | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Putnam   | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Putnam   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Putnam   | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Ralls    | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Ralls    | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Ralls    | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Ralls    | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i> | Clam   | E      |
| Ralls    | Sheepnose mussel               | <i>Plethobasus cyphus</i>     | Clam   | E      |
| Ralls    | Fat pocketbook                 | <i>Potamilus capax</i>        | Clam   | E      |
| Ralls    | Eastern prairie fringed orchid | <i>Platanthera leucophaea</i> | Plant  | T      |
| Ralls    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Ralls    | Gray bat                       | <i>Myotis grisescens</i>      | Mammal | E      |
| Ralls    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Ralls    | Indiana bat                    | <i>Myotis sodalis</i>         | Mammal | E      |
| Randolph | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Randolph | Gray bat                       | <i>Myotis grisescens</i>      | Mammal | E      |

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| County   | Common Name                | Scientific Name                             | Group     | Status |
|----------|----------------------------|---|-----------|--------|
| Randolph | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Randolph | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Ray      | Red knot                   | <i>Calidris canutus rufa</i>                | Bird      | T      |
| Ray      | Piping plover              | <i>Charadrius melodus</i>                   | Bird      | T      |
| Ray      | Least tern                 | <i>Sterna antillarum</i>                    | Bird      | E      |
| Ray      | Topeka shiner              | <i>Notropis topeka</i>                      | Fish      | E      |
| Ray      | Pallid sturgeon            | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Ray      | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Ray      | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Ray      | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Reynolds | Mead's milkweed            | <i>Asclepias meadii</i>                     | Plant     | T      |
| Reynolds | Hine's emerald dragonfly   | <i>Somatochlora hineana</i>                 | Insect    | E      |
| Reynolds | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Reynolds | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Reynolds | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Ripley   | Ozark hellbender           | <i>Cryptobranchus alleganiensis bishopi</i> | Amphibian | E      |
| Ripley   | Curtis pearlymussel        | <i>Epioblasma florentina curtisii</i>       | Clam      | E      |
| Ripley   | Snuffbox mussel            | <i>Epioblasma triquetra</i>                 | Clam      | E      |
| Ripley   | Pink mucket (pearlymussel) | <i>Lampsilis abrupta</i>                    | Clam      | E      |
| Ripley   | Pondberry                  | <i>Lindera melissifolia</i>                 | Plant     | E      |
| Ripley   | Hine's emerald dragonfly   | <i>Somatochlora hineana</i>                 | Insect    | E      |
| Ripley   | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Ripley   | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Ripley   | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Saline   | Red knot                   | <i>Calidris canutus rufa</i>                | Bird      | T      |
| Saline   | Piping plover              | <i>Charadrius melodus</i>                   | Bird      | T      |
| Saline   | Least tern                 | <i>Sterna antillarum</i>                    | Bird      | E      |
| Saline   | Pallid sturgeon            | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Saline   | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Saline   | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Saline   | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Schuyler | Topeka shiner              | <i>Notropis topeka</i>                      | Fish      | E      |
| Schuyler | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Schuyler | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Scotland | Mead's milkweed            | <i>Asclepias meadii</i>                     | Plant     | T      |
| Scotland | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Scotland | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |

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| County       | Common Name                | Scientific Name                             | Group     | Status |
|--------------|----------------------------|---|-----------|--------|
| Scotland     | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Scott        | Red knot                   | <i>Calidris canutus rufa</i>                | Bird      | T      |
| Scott        | Piping plover              | <i>Charadrius melodus</i>                   | Bird      | T      |
| Scott        | Least tern                 | <i>Sterna antillarum</i>                    | Bird      | E      |
| Scott        | Pallid sturgeon            | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Scott        | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Scott        | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Scott        | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Shannon      | Ozark hellbender           | <i>Cryptobranchus alleganiensis bishopi</i> | Amphibian | E      |
| Shannon      | Red-cockaded woodpecker    | <i>Picoides borealis</i>                    | Bird      | E      |
| Shannon      | Virginia sneezeweed        | <i>Helenium virginicum</i>                  | Plant     | T      |
| Shannon      | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Shannon      | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Shannon      | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Shelby       | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Shelby       | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Shelby       | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| St. Charles  | Red knot                   | <i>Calidris canutus rufa</i>                | Bird      | T      |
| St. Charles  | Piping plover              | <i>Charadrius melodus</i>                   | Bird      | T      |
| St. Charles  | Least tern                 | <i>Sterna antillarum</i>                    | Bird      | E      |
| St. Charles  | Scaleshell mussel          | <i>Leptodea leptodon</i>                    | Clam      | E      |
| St. Charles  | Pallid sturgeon            | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| St. Charles  | Decurrent false aster      | <i>Boltonia decurrens</i>                   | Plant     | T      |
| St. Charles  | Running buffalo clover     | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| St. Charles  | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| St. Charles  | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| St. Charles  | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| St. Clair    | Spectaclecase (mussel)     | <i>Cumberlandia monodonta</i>               | Clam      | E      |
| St. Clair    | Pink mucket (pearlymussel) | <i>Lampsilis abrupta</i>                    | Clam      | E      |
| St. Clair    | Niangua darter             | <i>Etheostoma nianguae</i>                  | Fish      | T      |
| St. Clair    | Mead's milkweed            | <i>Asclepias meadii</i>                     | Plant     | T      |
| St. Clair    | No common name             | <i>Geocarpon minimum</i>                    | Plant     | T      |
| St. Clair    | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| St. Clair    | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| St. Clair    | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| St. Francois | Scaleshell mussel          | <i>Leptodea leptodon</i>                    | Clam      | E      |
| St. Francois | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |

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**TABLE A.4.3**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – MISSOURI**

| County           | Common Name                | Scientific Name                       | Group  | Status |
|------------------|----------------------------|---------------------------------------|--------|--------|
| St. Francois     | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| St. Francois     | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| St. Louis        | Red knot                   | <i>Calidris canutus rufa</i>          | Bird   | T      |
| St. Louis        | Piping plover              | <i>Charadrius melodus</i>             | Bird   | T      |
| St. Louis        | Least tern                 | <i>Sterna antillarum</i>              | Bird   | E      |
| St. Louis        | Spectaclecase (mussel)     | <i>Cumberlandia monodonta</i>         | Clam   | E      |
| St. Louis        | Snuffbox mussel            | <i>Epioblasma triquetra</i>           | Clam   | E      |
| St. Louis        | Pink mucket (pearlymussel) | <i>Lampsilis abrupta</i>              | Clam   | E      |
| St. Louis        | Scaleshell mussel          | <i>Leptodea leptodon</i>              | Clam   | E      |
| St. Louis        | Sheepnose mussel           | <i>Plethobasus cyphus</i>             | Clam   | E      |
| St. Louis        | Pallid sturgeon            | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| St. Louis        | Mead's milkweed            | <i>Asclepias meadii</i>               | Plant  | T      |
| St. Louis        | Decurrent false aster      | <i>Boltonia decurrens</i>             | Plant  | T      |
| St. Louis        | Running buffalo clover     | <i>Trifolium stoloniferum</i>         | Plant  | E      |
| St. Louis        | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| St. Louis        | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| St. Louis        | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| St. Louis (city) | Scaleshell mussel          | <i>Leptodea leptodon</i>              | Clam   | E      |
| St. Louis (city) | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| St. Louis (city) | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Ste. Genevieve   | Red knot                   | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Ste. Genevieve   | Piping plover              | <i>Charadrius melodus</i>             | Bird   | T      |
| Ste. Genevieve   | Least tern                 | <i>Sterna antillarum</i>              | Bird   | E      |
| Ste. Genevieve   | Scaleshell mussel          | <i>Leptodea leptodon</i>              | Clam   | E      |
| Ste. Genevieve   | Pallid sturgeon            | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Ste. Genevieve   | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Ste. Genevieve   | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Ste. Genevieve   | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Stoddard         | Red knot                   | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Stoddard         | Piping plover              | <i>Charadrius melodus</i>             | Bird   | T      |
| Stoddard         | Least tern                 | <i>Sterna antillarum</i>              | Bird   | E      |
| Stoddard         | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |
| Stoddard         | Northern long-eared bat    | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Stoddard         | Indiana bat                | <i>Myotis sodalis</i>                 | Mammal | E      |
| Stone            | Ozark cavefish             | <i>Amblyopsis rosae</i>               | Fish   | T      |
| Stone            | Ozark big-eared bat        | <i>Corynorhinus townsendii ingens</i> | Mammal | E      |
| Stone            | Gray bat                   | <i>Myotis grisescens</i>              | Mammal | E      |

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**TABLE A.4.3**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – MISSOURI**

| County     | Common Name                    | Scientific Name                             | Group     | Status |
|------------|--------------------------------|---|-----------|--------|
| Stone      | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Stone      | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Sullivan   | Mead's milkweed                | <i>Asclepias meadii</i>                     | Plant     | T      |
| Sullivan   | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Sullivan   | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Sullivan   | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Taney      | Running buffalo clover         | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Taney      | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Taney      | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Taney      | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Taney      | Tumbling Creek cavesnail       | <i>Antrobia culveri</i>                     | Snail     | E      |
| Texas      | Ozark hellbender               | <i>Cryptobranchus alleganiensis bishopi</i> | Amphibian | E      |
| Texas      | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i>               | Clam      | E      |
| Texas      | Scaleshell mussel              | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Texas      | Virginia sneezeweed            | <i>Helenium virginicum</i>                  | Plant     | T      |
| Texas      | Running buffalo clover         | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Texas      | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Texas      | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Texas      | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Vernon     | Mead's milkweed                | <i>Asclepias meadii</i>                     | Plant     | T      |
| Vernon     | Western prairie fringed orchid | <i>Platanthera praeclara</i>                | Plant     | T      |
| Vernon     | Running buffalo clover         | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Vernon     | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Vernon     | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Vernon     | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Warren     | Red knot                       | <i>Calidris canutus rufa</i>                | Bird      | T      |
| Warren     | Piping plover                  | <i>Charadrius melodus</i>                   | Bird      | T      |
| Warren     | Least tern                     | <i>Sterna antillarum</i>                    | Bird      | E      |
| Warren     | Scaleshell mussel              | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Warren     | Pallid sturgeon                | <i>Scaphirhynchus albus</i>                 | Fish      | E      |
| Warren     | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Warren     | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Warren     | Indiana bat                    | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Washington | Spectaclecase (mussel)         | <i>Cumberlandia monodonta</i>               | Clam      | E      |
| Washington | Scaleshell mussel              | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Washington | Gray bat                       | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Washington | Northern long-eared bat        | <i>Myotis septentrionalis</i>               | Mammal    | T      |

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**TABLE A.4.3**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – MISSOURI**

| County     | Common Name                | Scientific Name                             | Group     | Status |
|------------|----------------------------|---|-----------|--------|
| Washington | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Wayne      | Curtis pearlymussel        | <i>Epioblasma florentina curtisii</i>       | Clam      | E      |
| Wayne      | Snuffbox mussel            | <i>Epioblasma triquetra</i>                 | Clam      | E      |
| Wayne      | Pink mucket (pearlymussel) | <i>Lampsilis abrupta</i>                    | Clam      | E      |
| Wayne      | Rabbitsfoot                | <i>Quadrula cylindrica cylindrica</i>       | Clam      | T      |
| Wayne      | Running buffalo clover     | <i>Trifolium stoloniferum</i>               | Plant     | E      |
| Wayne      | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Wayne      | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Wayne      | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Webster    | Scaleshell mussel          | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Webster    | Niangua darter             | <i>Etheostoma nianguae</i>                  | Fish      | T      |
| Webster    | Virginia sneezeweed        | <i>Helenium virginicum</i>                  | Plant     | T      |
| Webster    | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Webster    | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Webster    | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Worth      | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Worth      | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |
| Wright     | Ozark hellbender           | <i>Cryptobranchus alleganiensis bishopi</i> | Amphibian | E      |
| Wright     | Scaleshell mussel          | <i>Leptodea leptodon</i>                    | Clam      | E      |
| Wright     | Virginia sneezeweed        | <i>Helenium virginicum</i>                  | Plant     | T      |
| Wright     | Gray bat                   | <i>Myotis grisescens</i>                    | Mammal    | E      |
| Wright     | Northern long-eared bat    | <i>Myotis septentrionalis</i>               | Mammal    | T      |
| Wright     | Indiana bat                | <i>Myotis sodalis</i>                       | Mammal    | E      |

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TABLE A.4.4

FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – NEBRASKA

| County    | Common name                    | Scientific Name               | Group  | Status |
|-----------|--------------------------------|-------------------------------|--------|--------|
| Adams     | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Adams     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Adams     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Antelope  | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Antelope  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Antelope  | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Antelope  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Arthur    | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Arthur    | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Arthur    | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Blaine    | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Blaine    | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Blaine    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Blaine    | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Blaine    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Boone     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Boone     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Boone     | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Boone     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Box Butte | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Box Butte | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Box Butte | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Boyd      | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Boyd      | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Boyd      | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Boyd      | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Boyd      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Boyd      | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Boyd      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Brown     | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Brown     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Brown     | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Brown     | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Brown     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Brown     | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Brown     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Buffalo   | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |

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**TABLE A.4.4**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – NEBRASKA**

| County   | Common name                    | Scientific Name               | Group  | Status |
|----------|--------------------------------|-------------------------------|--------|--------|
| Buffalo  | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Buffalo  | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Buffalo  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Buffalo  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Burt     | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Burt     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Burt     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Butler   | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Butler   | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Butler   | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Butler   | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Butler   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Butler   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Cass     | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Cass     | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Cass     | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Cass     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Cass     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Cedar    | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Cedar    | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Cedar    | Scaleshell mussel              | <i>Leptodea leptodon</i>      | Clam   | E      |
| Cedar    | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Cedar    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Cedar    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Chase    | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Cherry   | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Cherry   | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Cherry   | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Cherry   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Cherry   | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Cherry   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Cheyenne | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Clay     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Clay     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Clay     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Colfax   | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Colfax   | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |

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**TABLE A.4.4**

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| County  | Common name                    | Scientific Name               | Group  | Status |
|---------|--------------------------------|-------------------------------|--------|--------|
| Colfax  | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Colfax  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Colfax  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Cuming  | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Cuming  | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Cuming  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Cuming  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Custer  | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Custer  | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Custer  | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Custer  | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Custer  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Custer  | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Custer  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Dakota  | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Dakota  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Dakota  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Dawes   | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Dawes   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Dawson  | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Dawson  | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Dawson  | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Dawson  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Dawson  | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Dawson  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Dixon   | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Dixon   | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Dixon   | Scaleshell mussel              | <i>Leptodea leptodon</i>      | Clam   | E      |
| Dixon   | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Dixon   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Dixon   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Dodge   | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Dodge   | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Dodge   | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Dodge   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Dodge   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Douglas | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |

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**TABLE A.4.4**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – NEBRASKA**

| County   | Common name                    | Scientific Name               | Group  | Status |
|----------|--------------------------------|-------------------------------|--------|--------|
| Douglas  | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Douglas  | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Douglas  | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Douglas  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Douglas  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Dundy    | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Fillmore | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Fillmore | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Fillmore | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Franklin | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Franklin | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Frontier | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Frontier | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Furnas   | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Furnas   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Gage     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Gage     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Garden   | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Garden   | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Garfield | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Garfield | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Garfield | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Garfield | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Gosper   | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Gosper   | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Gosper   | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Gosper   | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Grant    | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Grant    | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Grant    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Grant    | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Grant    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Greeley  | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Greeley  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Greeley  | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Greeley  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Hall     | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |

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| County    | Common name                    | Scientific Name               | Group  | Status |
|-----------|--------------------------------|-------------------------------|--------|--------|
| Hall      | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Hall      | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Hall      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Hall      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Hamilton  | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Hamilton  | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Hamilton  | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Hamilton  | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Hamilton  | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Hamilton  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Harlan    | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Harlan    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Hayes     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Hitchcock | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Holt      | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Holt      | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Holt      | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Holt      | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Holt      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Holt      | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Holt      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Hooker    | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Hooker    | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Hooker    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Hooker    | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Hooker    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Howard    | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Howard    | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Howard    | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Howard    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Howard    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Jefferson | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Jefferson | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Jefferson | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Johnson   | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Johnson   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Johnson   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |

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| County    | Common name                    | Scientific Name                                   | Group  | Status |
|-----------|--------------------------------|---|--------|--------|
| Kearney   | Piping plover                  | <i>Charadrius melodus</i>                         | Bird   | T      |
| Kearney   | Whooping crane                 | <i>Grus americana</i>                             | Bird   | E      |
| Kearney   | Least tern                     | <i>Sterna antillarum</i>                          | Bird   | E      |
| Kearney   | Northern long-eared bat        | <i>Myotis septentrionalis</i>                     | Mammal | T      |
| Keith     | Red knot                       | <i>Calidris canutus rufa</i>                      | Bird   | T      |
| Keith     | Piping plover                  | <i>Charadrius melodus</i>                         | Bird   | T      |
| Keith     | Whooping crane                 | <i>Grus americana</i>                             | Bird   | E      |
| Keith     | Least tern                     | <i>Sterna antillarum</i>                          | Bird   | E      |
| Keith     | Blowout penstemon              | <i>Penstemon haydenii</i>                         | Plant  | E      |
| Keya Paha | Piping plover                  | <i>Charadrius melodus</i>                         | Bird   | T      |
| Keya Paha | Whooping crane                 | <i>Grus americana</i>                             | Bird   | E      |
| Keya Paha | Least tern                     | <i>Sterna antillarum</i>                          | Bird   | E      |
| Keya Paha | Blowout penstemon              | <i>Penstemon haydenii</i>                         | Plant  | E      |
| Keya Paha | Western prairie fringed orchid | <i>Platanthera praeclara</i>                      | Plant  | T      |
| Keya Paha | American burying beetle        | <i>Nicrophorus americanus</i>                     | Insect | E      |
| Keya Paha | Northern long-eared bat        | <i>Myotis septentrionalis</i>                     | Mammal | T      |
| Kimball   | Colorado Butterfly plant       | <i>Gaura neomexicana</i> var. <i>coloradensis</i> | Plant  | T      |
| Knox      | Piping plover                  | <i>Charadrius melodus</i>                         | Bird   | T      |
| Knox      | Whooping crane                 | <i>Grus americana</i>                             | Bird   | E      |
| Knox      | Least tern                     | <i>Sterna antillarum</i>                          | Bird   | E      |
| Knox      | Pallid sturgeon                | <i>Scaphirhynchus albus</i>                       | Fish   | E      |
| Knox      | Western prairie fringed orchid | <i>Platanthera praeclara</i>                      | Plant  | T      |
| Knox      | American burying beetle        | <i>Nicrophorus americanus</i>                     | Insect | E      |
| Knox      | Northern long-eared bat        | <i>Myotis septentrionalis</i>                     | Mammal | T      |
| Lancaster | Red knot                       | <i>Calidris canutus rufa</i>                      | Bird   | T      |
| Lancaster | Western prairie fringed orchid | <i>Platanthera praeclara</i>                      | Plant  | T      |
| Lancaster | Salt Creek Tiger beetle        | <i>Cicindela nevadica lincolniana</i>             | Insect | E      |
| Lancaster | Northern long-eared bat        | <i>Myotis septentrionalis</i>                     | Mammal | T      |
| Lincoln   | Red knot                       | <i>Calidris canutus rufa</i>                      | Bird   | T      |
| Lincoln   | Piping plover                  | <i>Charadrius melodus</i>                         | Bird   | T      |
| Lincoln   | Whooping crane                 | <i>Grus americana</i>                             | Bird   | E      |
| Lincoln   | Least tern                     | <i>Sterna antillarum</i>                          | Bird   | E      |
| Lincoln   | Blowout penstemon              | <i>Penstemon haydenii</i>                         | Plant  | E      |
| Lincoln   | Western prairie fringed orchid | <i>Platanthera praeclara</i>                      | Plant  | T      |
| Lincoln   | American burying beetle        | <i>Nicrophorus americanus</i>                     | Insect | E      |
| Logan     | Whooping crane                 | <i>Grus americana</i>                             | Bird   | E      |

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| County    | Common name                    | Scientific Name               | Group  | Status |
|-----------|--------------------------------|-------------------------------|--------|--------|
| Logan     | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Logan     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Logan     | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Logan     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Loup      | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Loup      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Loup      | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Loup      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Madison   | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Madison   | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Madison   | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Madison   | Topeka shiner                  | <i>Notropis topeka</i>        | Fish   | E      |
| Madison   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Madison   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| McPherson | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| McPherson | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| McPherson | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| McPherson | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| McPherson | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Merrick   | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Merrick   | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Merrick   | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Merrick   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Merrick   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Morrill   | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Morrill   | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Nance     | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Nance     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Nance     | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Nance     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Nance     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Nemaha    | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Nemaha    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Nemaha    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Nuckolls  | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Nuckolls  | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Otoe      | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |

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| County     | Common name                    | Scientific Name               | Group  | Status |
|------------|--------------------------------|-------------------------------|--------|--------|
| Otoe       | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Otoe       | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Pawnee     | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Pawnee     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Pawnee     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Perkins    | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Phelps     | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Phelps     | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Phelps     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Phelps     | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Phelps     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Phelps     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Pierce     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Pierce     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Platte     | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| Platte     | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Platte     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Platte     | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Platte     | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Platte     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Platte     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Polk       | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Polk       | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Polk       | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Polk       | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Polk       | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Red Willow | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Red Willow | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Richardson | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Richardson | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Richardson | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Rock       | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Rock       | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Rock       | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Rock       | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Rock       | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Rock       | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |

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| County       | Common name                    | Scientific Name                       | Group  | Status |
|--------------|--------------------------------|---------------------------------------|--------|--------|
| Rock         | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Saline       | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Saline       | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Saline       | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Sarpy        | Piping plover                  | <i>Charadrius melodus</i>             | Bird   | T      |
| Sarpy        | Least tern                     | <i>Sterna antillarum</i>              | Bird   | E      |
| Sarpy        | Pallid sturgeon                | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Sarpy        | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Sarpy        | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Saunders     | Piping plover                  | <i>Charadrius melodus</i>             | Bird   | T      |
| Saunders     | Least tern                     | <i>Sterna antillarum</i>              | Bird   | E      |
| Saunders     | Pallid sturgeon                | <i>Scaphirhynchus albus</i>           | Fish   | E      |
| Saunders     | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Saunders     | Salt Creek Tiger beetle        | <i>Cicindela nevadica lincolniana</i> | Insect | E      |
| Saunders     | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Scotts Bluff | Red knot                       | <i>Calidris canutus rufa</i>          | Bird   | T      |
| Scotts Bluff | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Seward       | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Seward       | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Seward       | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Sheridan     | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Sheridan     | Blowout penstemon              | <i>Penstemon haydenii</i>             | Plant  | E      |
| Sheridan     | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Sherman      | Piping plover                  | <i>Charadrius melodus</i>             | Bird   | T      |
| Sherman      | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Sherman      | Least tern                     | <i>Sterna antillarum</i>              | Bird   | E      |
| Sherman      | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Sherman      | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Sioux        | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Sioux        | Ute ladies'-tresses            | <i>Spiranthes diluvialis</i>          | Plant  | T      |
| Sioux        | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Stanton      | Piping plover                  | <i>Charadrius melodus</i>             | Bird   | T      |
| Stanton      | Least tern                     | <i>Sterna antillarum</i>              | Bird   | E      |
| Stanton      | Western prairie fringed orchid | <i>Platanthera praeclara</i>          | Plant  | T      |
| Stanton      | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |
| Thayer       | Whooping crane                 | <i>Grus americana</i>                 | Bird   | E      |
| Thayer       | Northern long-eared bat        | <i>Myotis septentrionalis</i>         | Mammal | T      |

**DISCLAIMER:** This list identifies Federally-listed endangered (E), threatened (T), and candidate (C) species as provided by the U.S. Fish and Wildlife Service on December 13, 2017. While this list provides a REASONABLY ACCURATE GUIDE, it should not be considered the final word in determining species location.

**TABLE A.4.4**

**FEDERALLY-LISTED ENDANGERED OR THREATENED SPECIES – NEBRASKA**

| County     | Common name                    | Scientific Name               | Group  | Status |
|------------|--------------------------------|-------------------------------|--------|--------|
| Thomas     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Thomas     | Blowout penstemon              | <i>Penstemon haydenii</i>     | Plant  | E      |
| Thomas     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Thomas     | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Thomas     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Thurston   | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Thurston   | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Thurston   | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Valley     | Piping plover                  | <i>Charadrius melodus</i>     | Bird   | T      |
| Valley     | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Valley     | Least tern                     | <i>Sterna antillarum</i>      | Bird   | E      |
| Valley     | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Valley     | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Valley     | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Washington | Pallid sturgeon                | <i>Scaphirhynchus albus</i>   | Fish   | E      |
| Washington | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Washington | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Wayne      | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Wayne      | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Webster    | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Webster    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| Wheeler    | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| Wheeler    | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |
| Wheeler    | American burying beetle        | <i>Nicrophorus americanus</i> | Insect | E      |
| Wheeler    | Northern long-eared bat        | <i>Myotis septentrionalis</i> | Mammal | T      |
| York       | Red knot                       | <i>Calidris canutus rufa</i>  | Bird   | T      |
| York       | Whooping crane                 | <i>Grus americana</i>         | Bird   | E      |
| York       | Western prairie fringed orchid | <i>Platanthera praeclara</i>  | Plant  | T      |

**DISCLAIMER:** This list identifies Federally-listed endangered (E), threatened (T), and candidate (C) species as provided by the U.S. Fish and Wildlife Service on December 13, 2017. While this list provides a REASONABLY ACCURATE GUIDE, it should not be considered the final word in determining species location.

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## **APPENDIX A.5**

# **METROPOLITAN STATISTICAL AREAS**

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**METROPOLITAN STATISTICAL AREAS**

**APPENDIX A.5 TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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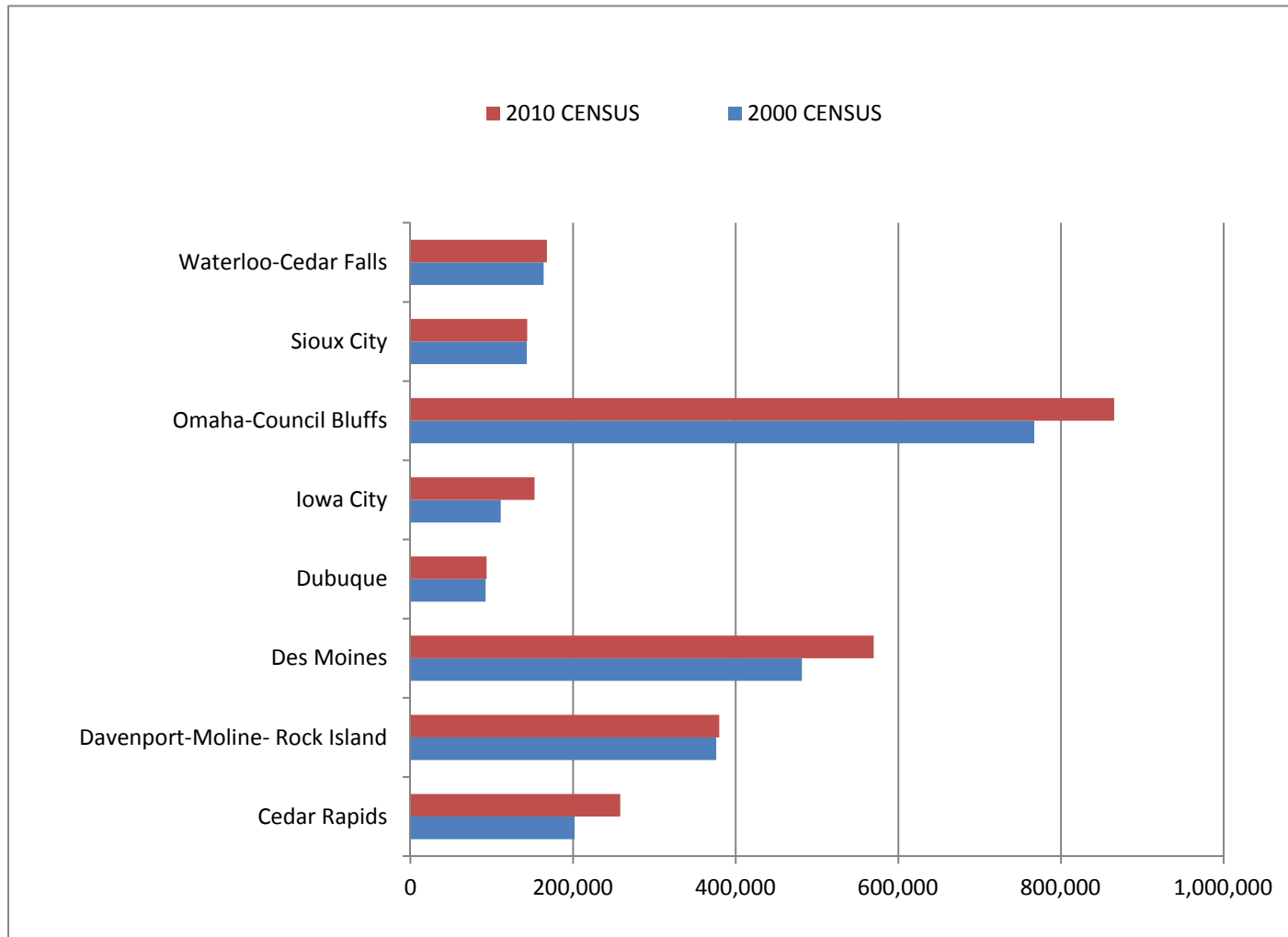
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**TABLE A.5.1**

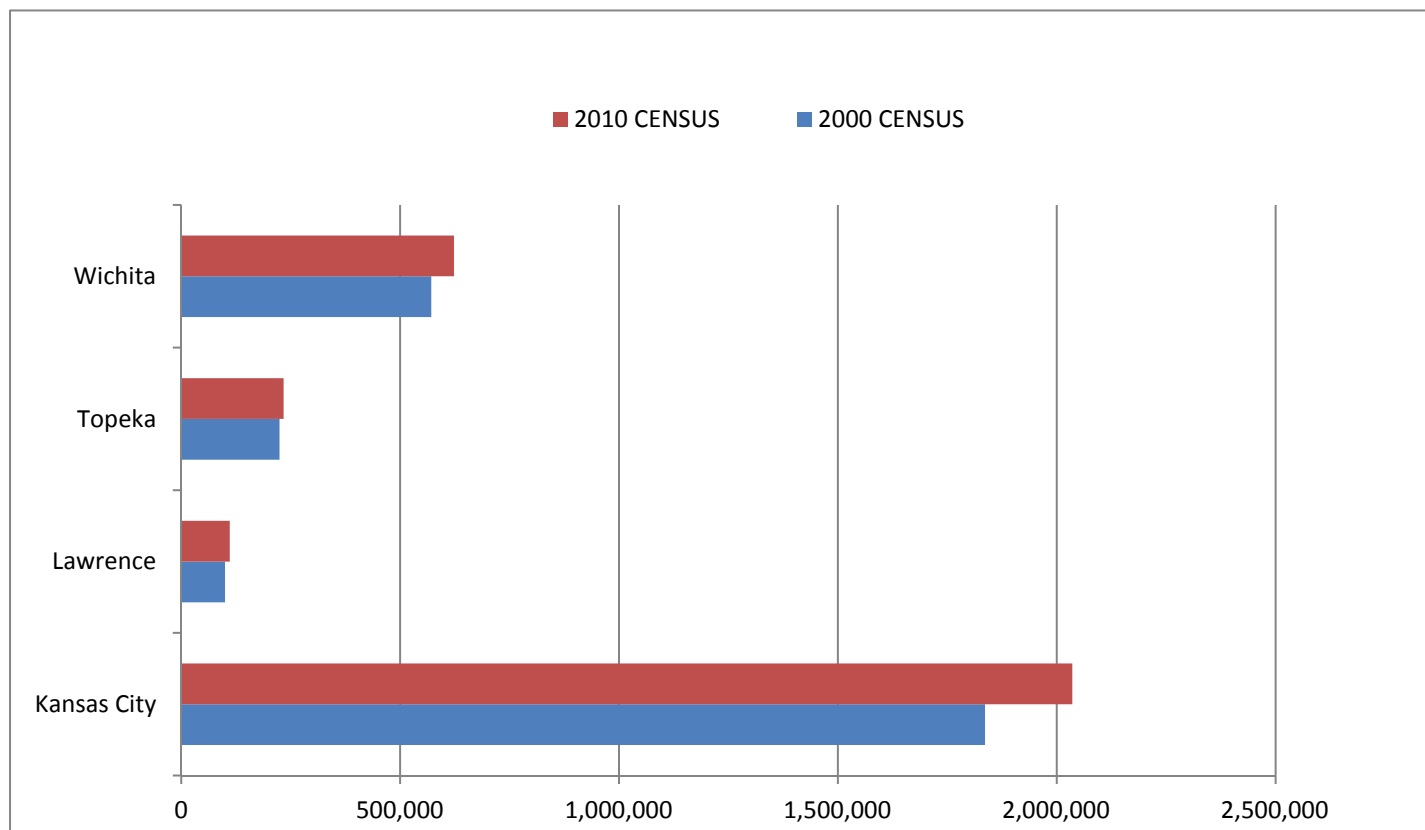
**METROPOLITAN AREAS WITH POPULATION GREATER THAN 50,000**

| STATE    | AREA                          | 2000 CENSUS | 2010 CENSUS |
|----------|-------------------------------|-------------|-------------|
| Iowa     | Cedar Rapids                  | 201,853     | 257,940     |
| Iowa     | Davenport-Moline- Rock Island | 376,019     | 379,690     |
| Iowa     | Des Moines                    | 481,394     | 569,633     |
| Iowa     | Dubuque                       | 92,384      | 93,653      |
| Iowa     | Iowa City                     | 111,006     | 152,586     |
| Iowa     | Omaha-Council Bluffs          | 767,041     | 865,350     |
| Iowa     | Sioux City                    | 143,053     | 143,577     |
| Iowa     | Waterloo-Cedar Falls          | 163,706     | 167,819     |
| Kansas   | Kansas City                   | 1,836,038   | 2,035,334   |
| Kansas   | Lawrence                      | 99,962      | 110,826     |
| Kansas   | Topeka                        | 224,551     | 233,870     |
| Kansas   | Wichita                       | 571,166     | 623,061     |
| Missouri | Columbia                      | 145,666     | 172,786     |
| Missouri | Jefferson City                | 140,052     | 149,807     |
| Missouri | Joplin                        | 157,322     | 175,518     |
| Missouri | Kansas City                   | 1,836,038   | 2,035,334   |
| Missouri | St. Joseph                    | 122,336     | 127,329     |
| Missouri | St. Louis                     | 2,698,687   | 2,812,896   |
| Missouri | Springfield                   | 368,374     | 436,712     |
| Nebraska | Lincoln                       | 266,787     | 302,157     |
| Nebraska | Omaha-Council Bluffs          | 767,041     | 865,350     |
| Nebraska | Sioux City                    | 143,053     | 143,577     |

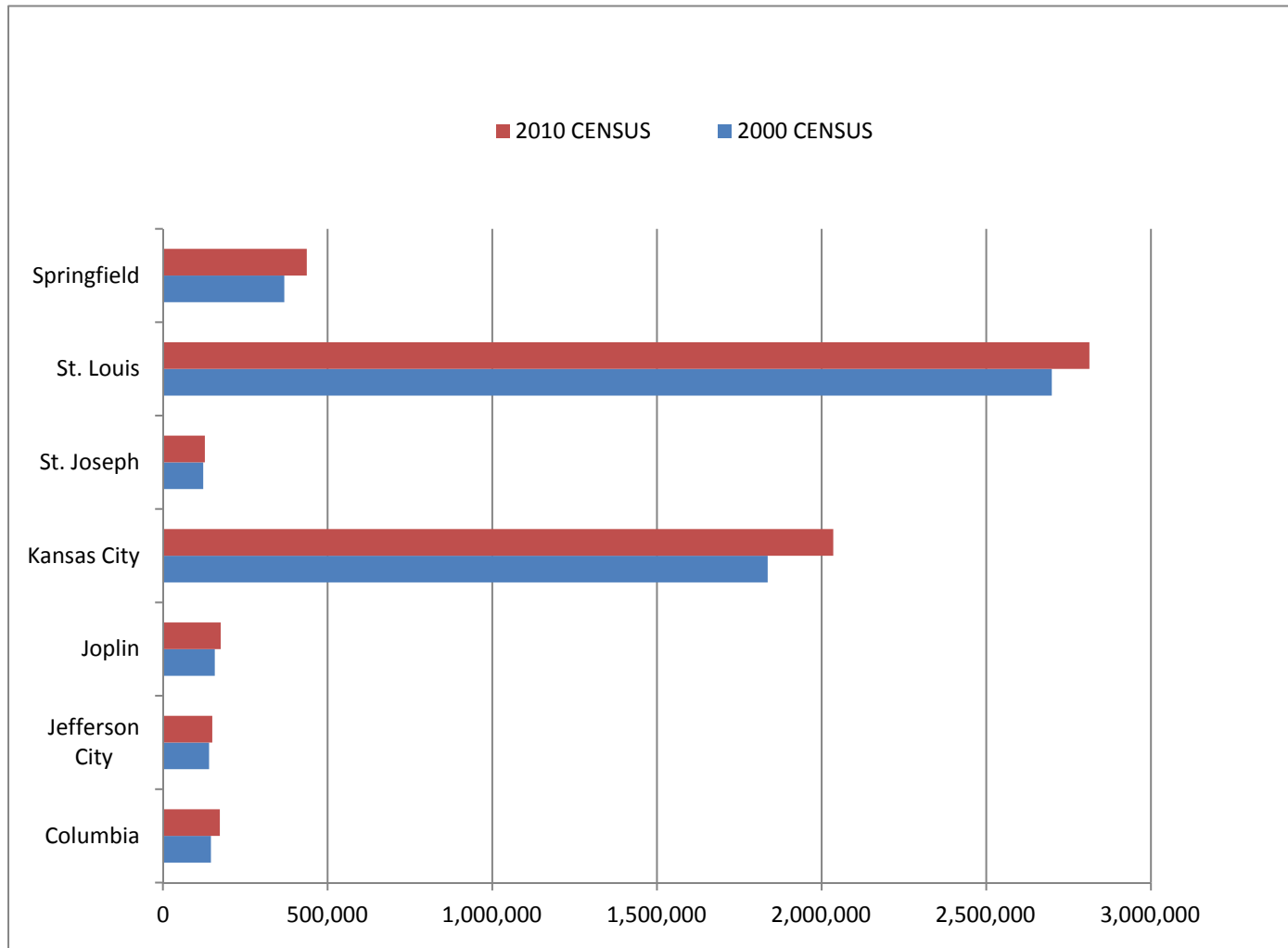
**FIGURE A.5.1**  
**POPULATION CHANGE - IOWA**



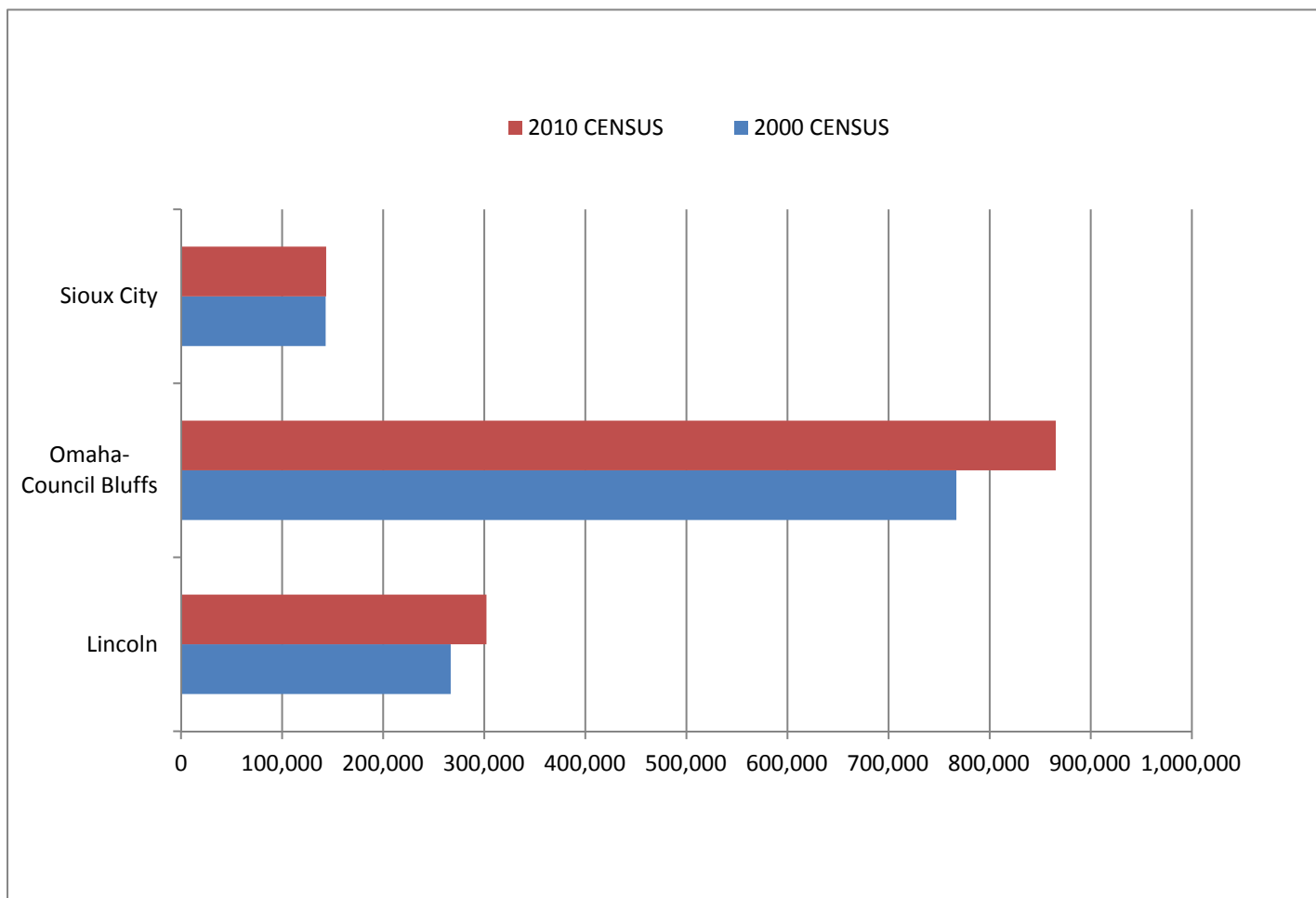
**FIGURE A.5.2**  
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**FIGURE A.5.3**  
**POPULATION CHANGE - MISSOURI**



**FIGURE A.5.4**  
**POPULATION CHANGE - NEBRASKA**



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## **APPENDIX A.6**

# **EPA WETLAND REGULATORY AUTHORITY**

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# Wetland Regulatory Authority

## Regulatory Requirements

*Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g. certain farming and forestry activities).*

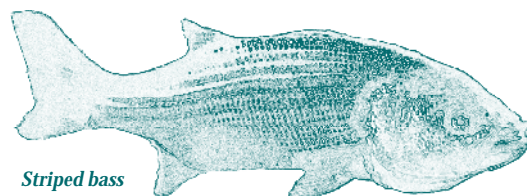


Wetlands subject to Clean Water Act Section 404 are defined as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

**T**he basic premise of the program is that no discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation's waters would be significantly degraded. In other words, when you apply for a permit, you must show that you have, to the extent practicable:

- Taken steps to avoid wetland impacts;
- Minimized potential impacts on wetlands; and
- Provided compensation for any remaining unavoidable impacts.

Proposed activities are regulated through a permit review process. An *individual permit* is required for potentially significant impacts. Individual permits are reviewed by the U.S. Army Corps of Engineers, which evaluates applications under a public interest review, as well as the environmental criteria set forth in the CWA Section 404(b)(1) Guidelines. However, for most discharges that will have only minimal adverse effects, a *general permit* may be suitable. General permits are issued on a nationwide, regional, or State basis for particular categories of activities. The general permit process eliminates individual review and allows certain activities to proceed with little or no delay, provided that the general or specific conditions for the general permit are met. For example,



Striped bass

minor road activities, utility line backfill, and bedding are activities that can be considered for a general permit. States also have a role in Section 404 decisions, through State program general permits, water quality certification, or program assumption.

## Agency Roles and Responsibilities

The roles and responsibilities of the Federal resource agencies differ in scope.

### **U.S. Army Corps of Engineers:**

- Administers day-to-day program, including individual and general permit decisions;
- Conducts or verifies jurisdictional determinations;
- Develops policy and guidance; and
- Enforces Section 404 provisions.

### **U.S. Environmental Protection Agency:**

- Develops and interprets policy, guidance and environmental criteria used in evaluating permit applications;
- Determines scope of geographic jurisdiction and applicability of exemptions;
- Approves and oversees State and Tribal assumption;
- Reviews and comments on individual permit applications;
- Has authority to prohibit, deny, or restrict the use of any defined area as a disposal site (Section 404(c));
- Can elevate specific cases (Section 404(q));
- Enforces Section 404 provisions.

## **U.S. Fish and Wildlife Service and National Marine Fisheries Service:**

- Evaluates impacts on fish and wildlife of all new Federal projects and Federally permitted projects, including projects subject to the requirements of Section 404 (pursuant to the Fish and Wildlife Coordination Act); and
- Elevates specific cases or policy issues pursuant to Section 404(q).

## **Manual for Identifying Wetlands**

The U.S. EPA and U.S. Army Corps of Engineers use the 1987 *Corps of Engineers Wetlands Delineation Manual* to identify wetlands for the CWA Section 404 permit program. The 1987 manual organizes the environmental characteristics of a potential wetland into three categories: soils, vegetation, and hydrology. The manual contains criteria for each category. Using

this approach, an area that meets all three criteria is considered a wetland.

## **Wetlands on Agricultural Lands**

Farmers who own or manage wetlands are directly affected by two important Federal programs—Section 404 of the CWA and the Swampbuster provision of the Food Security Act. The Swampbuster provision withholds certain Federal farm program benefits from farmers who convert or modify wetlands. The U.S. EPA, U.S. Army Corps of Engineers, U.S. Department of Agriculture, and U.S. Fish and Wildlife Service have established procedures to ensure consistency between the programs. Many normal farming practices are exempt from Section 404.



*Water lilies*

## **The Wetland Fact Sheet Series**

EPA843-F-04-001  
Office of Water

Wetlands Overview  
Types of Wetlands  
Threats to Wetlands  
Wetland Restoration  
Funding Wetland Projects

Functions and Values of Wetlands  
Teaching About Wetlands  
Wetland Regulatory Authority  
Wetlands Compensatory Mitigation  
Benefits of Wetland Monitoring

**For more information, call EPA's Wetlands Helpline at 1-800-832-7828**

# **Wetland Resources**

## **On the Internet**

EPA's Wetlands Website ..... [www.epa.gov/owow/wetlands/regs/](http://www.epa.gov/owow/wetlands/regs/)  
Section 404 of the Clean Water Act ..... [www.epa.gov/owow/wetlands/laws/](http://www.epa.gov/owow/wetlands/laws/)  
Wetland Delineation Manual ..... [www.wes.army.mil/el/wetlands/wlpubs.html](http://www.wes.army.mil/el/wetlands/wlpubs.html)  
U.S. Army Corps of Engineers Regulatory Program..... [www.usace.army.mil/inet/functions/cw/cecwo/reg/](http://www.usace.army.mil/inet/functions/cw/cecwo/reg/)  
U.S. Army Corps of Engineers' Waterways  
Experiment Station Environmental Laboratory ..... [www.wes.army.mil/el/wetlands/wetlands.html](http://www.wes.army.mil/el/wetlands/wetlands.html)  
Environmental Law Institute ..... [www.eli.org](http://www.eli.org)

## **In Print**

*America's Wetlands: Our Vital Link Between Land and Water.* For a copy, order from EPA's publications web site at <http://yosemite.epa.gov/water/owrcatalog.nsf> or call the EPA Wetlands Helpline at 1-800-832-7828.

*Wetlands Deskbook*, 2nd Edition, Margaret N. Strand. Available from the Environmental Law Institute. Call 1-800-433-5120; fax your request to (202) 939-3868; or e-mail to [orders@eli.org](mailto:orders@eli.org).

*Our National Wetland Heritage: A Protection Guide*, 2nd Edition, Jon A. Kusler, Ph.D., Executive Director, Association of State Wetland Managers. Available from the Environmental Law Institute. Call 1-800-433-5120; fax your request to (202) 939-3868; or e-mail to [orders@eli.org](mailto:orders@eli.org).

## **APPENDIX A.7**

# **THREATENED AND ENDANGERED SPECIES AND SENSITIVE AREAS GEOSPATIAL INFORMATION GUIDE**

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**THREATENED AND ENDANGERED SPECIES AND SENSITIVE AREAS GEOSPATIAL  
INFORMATION GUIDE**

**APPENDIX A.7 TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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## **1.0 PURPOSE**

The purpose of this document is to provide both the Federal On-Scene Coordinate (FOSC) in the U.S. Environmental Protection Agency (EPA) Region 7 and owners/operators of facilities conducting facility response planning the necessary information to locate and analyze geo information pertaining to the Federal Oil Pollution Prevention regulation (Title 40 *Code of Federal Regulations* [40 CFR] Part 112) and supporting guidance documentation. The information outlined below are primarily for use with geographic information systems (GIS) or mapping systems and are designed to help locate critical features in relation to a facility. The information may include, but is not limited to, critical habitat, threatened and endangered species (for example, terrestrial or aquatic species), public use areas, cultural and historic areas, managed and protected areas, resources extraction areas, and water supplies.

## **2.0 SPECIAL CONSIDERATIONS**

The information outlined below are not a product of the EPA and therefore the EPA does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any injury or loss resulting from the reliance upon the information. The information contained within is intended to provide guidance only, please refer to the Oil Pollution Prevention regulation found at 40 CFR Part 112 for additional information (can be found at <http://www.gpo.gov>).

Also, please note many of the resources listed below require GIS software to fully view or manipulate the information contained within.

## **3.0 GIS AND MAPPING DATA SOURCES**

There are numerous resources publicly available on-line to view and download GIS and mapping information for the various features of concern when reviewing Facility Response Planning (FRP) guidance. Below is a list of resources organized by Federal, State, and local, along with links to websites where data can be viewed and/or downloaded for use in GIS. This information, coupled with additional information gleaned from various guidance documents, will provide assistance in determining if a facility falls under FRP regulation.

*National GIS/Mapping Data Sources:*

- U.S. Fish & Wildlife Service - <http://www.fws.gov/gis/data/national/index.html>
- U.S. Fish & Wildlife Server Migratory Bird Data Center - <https://migbirdapps.fws.gov/>
- USGS GAP Analysis Program - [http://www.gap.uidaho.edu/species\\_viewer.html](http://www.gap.uidaho.edu/species_viewer.html)
- USGS Maps/GIS - <http://water.usgs.gov/maps.html>
- GeoCOMMUNITY GIS Data Depot - <http://data.geocomm.com/>
- GIS INVENTORY - <http://gisinventory.net/>

*State GIS/Mapping Data Sources:*

- Iowa
  - Natural Resources Geographic Information Systems Library - <http://www.igsb.uiowa.edu/nrgislibx/>
- Kansas
  - State of Kansas GIS Data Access and Support Center - <http://www.kansasgis.org/>
- Missouri
  - Missouri Spatial data Information Service - <http://msdis.missouri.edu/>
- Nebraska
  - NDNR Data Bank Spatial/GIS Databases - <http://dnr.ne.gov/databank/spat.html>
  - NDNR Nebraska Geospatial Data Center - <http://dnr.ne.gov/databank/geospatial.html>
  - University of Nebraska – Lincoln School of Natural Resources - <http://snr.unl.edu/data/geographygis/NebrGISdata.asp>

The tables below contain detailed information regarding threatened and endangered species and protected areas as identified by various Federal, State, and local agencies. The tables are organized first by State, and then by data category and type, followed by date, uniform resource locator (URL) and comments associated with the data. The tables can be used as a guide to streamline the research of a given area based on the State and data type in question. There are numerous types of data represented though, a majority of the information contained requires GIS software for viewing.

#### **4.0 U.S. EPA REGION 7 SENSITIVITY ATLAS**

The U.S. EPA Region 7 Sensitivity Atlas (R7 Atlas) is designed to confront the problem of inadequate and unconsolidated information regarding infrastructure and sensitive areas during a response to significant man-made and natural disasters along major river corridors within EPA Region 7. The R7 Atlas consolidates various forms of information into a comprehensive and easy-to-use web-based mapping application in which ESRI ArcGIS Viewer for Flex technology is used to deliver mapping data coupled with GIS-like functionality. The R7 Atlas is comprised of mapping components and layers including: response strategies, drinking water and utility intakes, river access points (boat ramps), sensitive species information, critical habitat information, protected areas, wetlands, mile marker locations, Nation Pipeline Mapping System (NPMS) information, river navigation charts, Public Land Survey System (PLSS) data, and bulk oil and chemical storage facilities. Each component is organized and grouped in an intuitive layer structure and is attributed with pertinent response information. Various layers are clickable in the Flex viewer map, allowing for display of information such as emergency responder contact information and boom deployment strategies in customized data pop-ups. This information provides decision makers a common operational picture to help predict, prevent, or minimize the risk to human health and the environment. The R7 Atlas is designed and built using ESRI ArcGIS Viewer for Flex technology and is easily updated and enhanced, allowing for low cost and efficient maintenance.

The R7 Atlas employs multiple levels of security and leverages a user's e-mail for further securing the application and providing a way to quickly access without the use of traditional username/password credentials. To access the application, simply navigate to <https://maps.tetrattech.com/viewers/viewers.aspx> and complete and submit the corresponding form. Your application will be processed, following which you will receive an e-mail (at the address provided) containing a secure link to the Map Portal housing the R7 Atlas. Click the thumbnail image for the R7 Sensitivity Atlas to open the R7 Atlas mapping application. In the event a user logs out of the application or clears their browser cache, they can simply navigate to the URL referenced above and verify their e-mail to receive a secure link to access the application.

For more information, please contact EPA Region 7 FOSC Jeff Pritchard.

Jeff Pritchard  
U.S. Environmental Protection Agency, Region 7 Federal On-Scene Coordinator  
11201 Renner Boulevard  
Lenexa, Kansas 66219  
Phone: 913- 551-7772  
[pritchard.jeffrey@epa.gov](mailto:pritchard.jeffrey@epa.gov)

## **5.0 GLOSSARY OF TERMS**

- **Raster:** A term typically used in GIS which represents an image. A raster or raster graphic is a data structure representing a generally rectangular grid of pixels stored in an image file format (i.e. .jpg, .png, .tif). The raster images represented in the tables below are best viewed using GIS software.
- **URL (Uniform Resource Locator):** Constitutes the reference to a website, to navigate to this link copy and paste the URL into any web browser.
- **Vector:** A term typically used in GIS representing point, line, and polygon features. A vector graphic consists of geometrical primitives (based on mathematical expressions) consisting of X and Y coordinates, which combine to form an image (not related to a raster). The vector images represented in the tables below are best viewed using GIS software.

TABLE A.7.1

IOWA SENSITIVE INFORMATION

| Iowa Category | Data Type   | Data Source                              | Year    | Format                    | Url/Path  | Data Point-of-Contact   |
|---------------|---|--|---------|---------------------------|---|---|
| <b>Birds</b>  | Bird Conservation Areas                             | Iowa DNR GIS                             | 2009    | Vector - Polygon          | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>   | <b>Casey Kohrt</b> , <a href="mailto:casey.kohrt@dnr.iowa.gov">casey.kohrt@dnr.iowa.gov</a> , 319-335-1353;<br><a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a>        |
| <b>Birds</b>  | Bird database                                       | North American Breeding Bird Survey      | Unknown | Database - Maps           | <a href="http://www.pwrc.usgs.gov/bbs/">http://www.pwrc.usgs.gov/bbs/</a>   | <b>Operations Contact:</b> Keith Pardieck, <a href="mailto:Keith.Pardieck@usgs.gov">Keith.Pardieck@usgs.gov</a><br><b>Analyses Contact:</b> John Sauer, <a href="mailto:John.Sauer@usgs.gov">John.Sauer@usgs.gov</a>  |
| <b>Birds</b>  | Bird Point Count Database                           | USGS - Patuxent Wildlife Research Center | Unknown | Database with Coordinates | <a href="http://www.pwrc.usgs.gov/point/">http://www.pwrc.usgs.gov/point/</a>   | <b>Mark Wimer</b> , <a href="mailto:mwimer@usgs.gov">mwimer@usgs.gov</a> Patuxent Wildlife Research, (301) 497-5596;<br><a href="http://www.pwrc.usgs.gov/point/index.cfm?fa=pointcount.contactUs">http://www.pwrc.usgs.gov/point/index.cfm?fa=pointcount.contactUs</a> |
| <b>Birds</b>  | Birds of Conservation Concern                       | U.S. Fish & Wildlife Service (USFWS)     | 2008    | PDF Document              | <a href="http://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf">http://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf</a> | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348   |
| <b>Birds</b>  | Endangered, threatened, and special concern animals | USFWS                                    | Unknown | Document                  | <a href="http://crithab.fws.gov/crithab/">http://crithab.fws.gov/crithab/</a>   | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348   |
| <b>Birds</b>  | Migratory Birds                                     | Migratory Bird Data Center               | Unknown | Database                  | <a href="https://migbirdapps.fws.gov/">https://migbirdapps.fws.gov/</a>   | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348   |
| <b>Birds</b>  | Natural Areas Inventory                             | Iowa DNR Interactive Mapping             | N/A     | Interactive Map           | <a href="https://programs.iowadnr.gov/naturalareasinventory/pages/Query.aspx">https://programs.iowadnr.gov/naturalareasinventory/pages/Query.aspx</a>   | <b>Casey Kohrt</b> , <a href="mailto:casey.kohrt@dnr.iowa.gov">casey.kohrt@dnr.iowa.gov</a> , (319)335-1353;<br><a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a>       |

| Iowa Category | Data Type                 | Data Source                      | Year    | Format   | Url/Path  | Data Point-of-Contact  |
|---------------|---------------------------|----------------------------------|---------|----------|---|--|
| <b>Birds</b>  | Waterfowl                 | USFWS                            | Unknown | Database | <a href="https://migbirdapps.fws.gov/">https://migbirdapps.fws.gov/</a>   | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348  |
| <b>Birds</b>  | Acadian Flycatcher (ACFL) | USGS, Gap Analysis Program (GAP) | 2011    | Raster   | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | American Bittern (AMBI)   | USGS, GAP                        | 2011    | Raster   | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | American Kestrel (MAKE)   | USGS, GAP                        | 2011    | Raster   | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Bald Eagle (BAEA)         | USGS, GAP                        | 2011    | Raster   | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Barn Owl (COBO)           | USGS, GAP                        | 2011    | Raster   | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Barred Owl (BAOW)         | USGS, GAP                        | 2011    | Raster   | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Bell's Vireo (BEVI)       | USGS, GAP                        | 2011    | Raster   | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Belted Kingfisher (BEKI)  | USGS, GAP                        | 2011    | Raster   | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Bewick's Wren (BEWR)      | USGS, GAP                        | 2011    | Raster   | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

| Iowa Category | Data Type                        | Data Source | Year | Format | Url/Path  | Data Point-of-Contact  |
|---------------|----------------------------------|-------------|------|--------|---|--|
| Birds         | Black Tern (BLTE)                | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions)  |
| Birds         | Black Tern (BLTE)                | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Black-billed Cuckoo (BBCU)       | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Black-Crowned Night-Heron (BCNH) | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Blue-winged Warbler (BWWA)       | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Bobolink (BOBO)                  | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Broad-Winged Hawk (BWAH)         | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Brown Thrasher (BRTH)            | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Burrowing Owl (BUOW)             | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Canada Goose (CAGO)              | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |



| Iowa Category | Data Type                       | Data Source | Year | Format | Url/Path  | Data Point-of-Contact  |
|---------------|---------------------------------|-------------|------|--------|---|--|
| <b>Birds</b>  | Cattle Egret (CAEG)             | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Cerulean Warbler (CERW)         | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Common Nighthawk (CONI)         | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Common Snipe (COSN)             | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Cooper's Hawk (COHA)            | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Dickcissel (DICK)               | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Double-Crested Cormorant (DCCO) | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Eared Grebe (EAGR)              | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Eastern Screech-Owl (EASO)      | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Field Sparrow (FISP)            | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |



| Iowa Category | Data Type                  | Data Source | Year | Format | Url/Path  | Data Point-of-Contact  |
|---------------|----------------------------|-------------|------|--------|---|--|
| Birds         | Grasshopper Sparrow (GRSP) | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Great blue Heron (GTBH)    | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Great Egret (GREG)         | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Great Horned Owl (GHOW)    | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Green Heron (GNBH)         | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Henslow's Sparrow (HESP)   | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Hooded Merganser (HOME)    | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Kentucky Warbler (KEWA)    | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Killdeer (KILL)            | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Least Bittern (LEBI)       | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

| Iowa Category | Data Type                    | Data Source | Year | Format | Url/Path  | Data Point-of-Contact  |
|---------------|------------------------------|-------------|------|--------|---|--|
| <b>Birds</b>  | Loggerhead Shrike (LOSH)     | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Long-eared Owl (LEOW)        | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Marsh Wren (MAWR)            | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Northern Flicker (NOFL)      | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Pied-Billed Grebe (PBGR)     | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Piping Plover (PIPL)         | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Prothonotary Warbler (PROW)  | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Red-Headed Woodpecker (RHWO) | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Red-Shouldered Hawk (RSHA)   | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| <b>Birds</b>  | Red-tailed Hawk (RTHA)       | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

| Iowa Category | Data Type                | Data Source | Year | Format | Url/Path  | Data Point-of-Contact  |
|---------------|--------------------------|-------------|------|--------|---|--|
| Birds         | Ring Neck Duck (RNDU)    | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Ring-Billed Gull (RBGU)  | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Ruddy Duck (RUDU)        | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Short-eared Owl (SEOW)   | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Spotted Sandpiper (SPSA) | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Swainson's Hawk (SWHA)   | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Upland Sandpiper (UPSA)  | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Western Grebe (WEGR)     | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Whip-poor-will (WPWI)    | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds         | Willow Flycatcher (WIFL) | USGS, GAP   | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

| Iowa Category | Data Type                                   | Data Source                           | Year    | Format           | Url/Path  | Data Point-of-Contact  |
|---------------|---|---------------------------------------|---------|------------------|---|--|
| <b>Birds</b>  | Wood Duck (WODU)                            | USGS, GAP                             | 2011    | Raster           | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions);   |
| <b>Birds</b>  | Wood Thrush (WOTH)                          | USGS, GAP                             | 2011    | Raster           | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions);   |
| <b>Fish</b>   | Bass  | Iowa Rivers Information System (IRIS) | Unknown | Embedded Maps    | <a href="http://maps.gis.iastate.edu/iris/fishatl/as/">http://maps.gis.iastate.edu/iris/fishatl/as/</a>                             | <a href="http://maps.gis.iastate.edu/iris/personnel/">http://maps.gis.iastate.edu/iris/personnel/</a>  |
| <b>Fish</b>   | Conservation and Recreation Lands - Public  | Iowa DNR GIS                          | 2014    | Vector - Polygon | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>                                       | <b>Patrick Wilke Brown</b> , patrick.wilke-brown@dnr.iowa.gov, (515) 281-6905, or <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353; <a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |
| <b>Fish</b>   | Designated Wetlands Setback                 | Iowa DNR GIS                          | 2006    | Vector - Polygon | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>                                       | <b>Patrick Wilke Brown</b> , patrick.wilke-brown@dnr.iowa.gov, (515) 281-6905, or <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353; <a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |
| <b>Fish</b>   | Federal Reservoirs                          | Iowa DNR GIS                          | 2005    | Vector - Polygon | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>                                       | <b>Patrick Wilke Brown</b> , patrick.wilke-brown@dnr.iowa.gov, (515) 281-6905, or <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353; <a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |
| <b>Fish</b>   | Fish Database                               | Fish Base Consortium                  | N/A     | Interactive Maps | <a href="http://aquamaps.org/search.php#search_tools">http://aquamaps.org/search.php#search_tools</a>                               | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>  |
| <b>Fish</b>   | Fish Database                               | Iowa DNR                              | 2014    | Info-Map         | <a href="http://www.iowadnr.gov/Fishing/IowaFishSpecies.aspx">http://www.iowadnr.gov/Fishing/IowaFishSpecies.aspx</a>               | <a href="http://www.iowadnr.gov/ContactIowaDNR.aspx">http://www.iowadnr.gov/ContactIowaDNR.aspx</a>  |
| <b>Fish</b>   | Herring                                     | Iowa Rivers Information System (IRIS) | Unknown | Embedded Maps    | <a href="http://maps.gis.iastate.edu/iris/fishatl/as/">http://maps.gis.iastate.edu/iris/fishatl/as/</a>                             | <a href="http://maps.gis.iastate.edu/iris/personnel/">http://maps.gis.iastate.edu/iris/personnel/</a>  |
| <b>Fish</b>   | Iowa Natural Areas Inventory (INAI Species) | Iowa DNR GIS                          | 2009    | Vector - point   | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>                                       | <b>Patrick Wilke Brown</b> , patrick.wilke-brown@dnr.iowa.gov, (515) 281-6905, or <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353; <a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |
| <b>Fish</b>   | Lamprey                                     | Iowa Rivers Information System (IRIS) | Unknown | Embedded Maps    | <a href="http://maps.gis.iastate.edu/iris/fishatl/as/">http://maps.gis.iastate.edu/iris/fishatl/as/</a>                             | <a href="http://maps.gis.iastate.edu/iris/personnel/">http://maps.gis.iastate.edu/iris/personnel/</a>  |

| Iowa Category | Data Type               | Data Source                              | Year    | Format        | Url/Path  | Data Point-of-Contact  |
|---------------|-------------------------|--|---------|---------------|---|--|
| <b>Fish</b>   | National Cadastral Data | USFWS                                    | 2011    | Vector        | <a href="http://www.fws.gov/GIS/data/CadastralDB/index.htm">http://www.fws.gov/GIS/data/CadastralDB/index.htm</a>                             | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348  |
| <b>Fish</b>   | Protected Streams       | Iowa DNR GIS                             | 2005    | Vector - Line | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>   | <b>Patrick Wilke Brown</b> , <a href="mailto:patrick.wilke-brown@dnr.iowa.gov">patrick.wilke-brown@dnr.iowa.gov</a> , (515) 281-6905, or <b>Casey Kohrt</b> , <a href="mailto:casey.kohrt@dnr.iowa.gov">casey.kohrt@dnr.iowa.gov</a> , (319) 335-1353; <a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |
| <b>Fish</b>   | Protected Water Areas   | Iowa DNR GIS                             | 2006    | Vector - Line | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>   | <b>Patrick Wilke Brown</b> , <a href="mailto:patrick.wilke-brown@dnr.iowa.gov">patrick.wilke-brown@dnr.iowa.gov</a> , (515) 281-6905, or <b>Casey Kohrt</b> , <a href="mailto:casey.kohrt@dnr.iowa.gov">casey.kohrt@dnr.iowa.gov</a> , (319) 335-1353; <a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |
| <b>Fish</b>   | Shad                    | Iowa Rivers Information System (IRIS)    | Unknown | Embedded Maps | <a href="http://maps.gis.iastate.edu/iris/fishatl/as/">http://maps.gis.iastate.edu/iris/fishatl/as/</a>                                       | <a href="http://maps.gis.iastate.edu/iris/personnel/">http://maps.gis.iastate.edu/iris/personnel/</a>  |
| <b>Fish</b>   | Smelt                   | Iowa Rivers Information System (IRIS)    | Unknown | Embedded Maps | <a href="http://maps.gis.iastate.edu/iris/fishatl/as/">http://maps.gis.iastate.edu/iris/fishatl/as/</a>                                       | <a href="http://maps.gis.iastate.edu/iris/personnel/">http://maps.gis.iastate.edu/iris/personnel/</a>  |
| <b>Fish</b>   | Streams Database        | USGS (National Water Information System) |         | Alphanumeric  | <a href="http://waterdata.usgs.gov/ia/nwis/current/?type=flow">http://waterdata.usgs.gov/ia/nwis/current/?type=flow</a>                       | <a href="#">USGS NWIS Feedback Request</a>   |
| <b>Fish</b>   | Sturgeon                | Iowa Rivers Information System (IRIS)    | Unknown | Embedded Maps | <a href="http://maps.gis.iastate.edu/iris/fishatl/as/">http://maps.gis.iastate.edu/iris/fishatl/as/</a>                                       | <a href="http://maps.gis.iastate.edu/iris/personnel/">http://maps.gis.iastate.edu/iris/personnel/</a>  |
| <b>Fish</b>   | Trout Streams           | Iowa DNR GIS                             | 2012    | Vector - Line | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>   | <b>Patrick Wilke Brown</b> , <a href="mailto:patrick.wilke-brown@dnr.iowa.gov">patrick.wilke-brown@dnr.iowa.gov</a> , (515) 281-6905, or <b>Casey Kohrt</b> , <a href="mailto:casey.kohrt@dnr.iowa.gov">casey.kohrt@dnr.iowa.gov</a> , (319) 335-1353; <a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |
| <b>Fish</b>   | Wilderness Areas        | Wilderness.net                           | 2011    | Vector        | <a href="http://www.wilderness.net/index.cfm?fuse=NWPS&amp;sec=geography">http://www.wilderness.net/index.cfm?fuse=NWPS&amp;sec=geography</a> | <b>Wilderness Institute</b><br>College of Forestry and Conservation<br>University of Montana<br>(406) 243-6933   |

| Iowa Category           | Data Type                    | Data Source                              | Year    | Format           | Url/Path  | Data Point-of-Contact  |
|-------------------------|------------------------------|--|---------|------------------|---|--|
| <b>Fish</b>             | Wildlife Management Areas    | Iowa DNR GIS                             | Unknown | Vector - Polygon | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>   | <b>Patrick Wilke Brown</b> , patrick.wilke-brown@dnr.iowa.gov, (515) 281-6905, or <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353; <a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a>   |
| <b>Management Areas</b> | Terrestrial Ecosystems       | WWF                                      | 2006    | Vector           | <a href="http://www.worldwildlife.org/science/data/item6373.html">http://www.worldwildlife.org/science/data/item6373.html</a>                 | <b>World Wildlife Fund</b><br>(202) 293-4800   |
| <b>Management Areas</b> | Groundwater Regions          | University of Nebraska-Lincoln           | 2012    | Vector           | <a href="http://snr.unl.edu/data/geographygis/NebrGISwater.asp#ground">http://snr.unl.edu/data/geographygis/NebrGISwater.asp#ground</a>       | <b>School of Natural Resources</b><br>University of Nebraska-Lincoln<br>402-472-3471   |
| <b>Management Areas</b> | National Parks               | National Park Service (IRMA Portal)      | 2011    | Vector           | <a href="https://irma.nps.gov/App/Reference/Profile/2181146">https://irma.nps.gov/App/Reference/Profile/2181146</a>                           | <a href="mailto:irma@nps.gov">irma@nps.gov</a> or <a href="http://www.wilderness.net/nwps/contact">http://www.wilderness.net/nwps/contact</a>  |
| <b>Management Areas</b> | Reserves                     | USGS - The National Map                  | 2012    | Vector           | <a href="http://viewer.nationalmap.gov/viewer/nhd.html?p=nhd">http://viewer.nationalmap.gov/viewer/nhd.html?p=nhd</a>                         | <b>USGS Map Service</b><br>1-888-275-8747  |
| <b>Management Areas</b> | Wilderness Areas             | Wilderness.net                           | 2011    | Vector           | <a href="http://www.wilderness.net/index.cfm?fuse=NWPS&amp;sec=geography">http://www.wilderness.net/index.cfm?fuse=NWPS&amp;sec=geography</a> | <b>Wilderness Institute</b><br>College of Forestry and Conservation<br>University of Montana<br>(406) 243-6933   |
| <b>Management Areas</b> | National Cadastral Data      | USFWS                                    | 2011    | Vector           | <a href="http://www.fws.gov/GIS/data/CadastralDB/index.htm">http://www.fws.gov/GIS/data/CadastralDB/index.htm</a>                             | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348  |
| <b>Management Areas</b> | Realtime Streamflow stations | USGS - National Water Information System | Daily   | Vector           | <a href="http://waterdata.usgs.gov/nwis/rt">http://waterdata.usgs.gov/nwis/rt</a>   | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901<br><a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> |



| Iowa Category              | Data Type                          | Data Source                                    | Year    | Format          | Url/Path  | Data Point-of-Contact   |
|----------------------------|------------------------------------|--|---------|-----------------|---|---|
| <b>Plants</b>              | Natural Areas Inventory            | Iowa DNR Interactive Mapping                   | N/A     | Interactive Map | <a href="https://programs.iowadnr.gov/naturalareasinventory/pages/Query.aspx">https://programs.iowadnr.gov/naturalareasinventory/pages/Query.aspx</a>                                 | <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353;<br><a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a>   |
| <b>Reptiles/Amphibians</b> | Northern Water Snake (NESI)        | Iowa DNR GIS                                   | 2002    | Vector - point  | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>   | <b>Patrick Wilke Brown</b> , patrick.wilke-brown@dnr.iowa.gov, (515) 281-6905, or <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353;<br><a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |
| <b>Reptiles/Amphibians</b> | Threatened species                 | International Union for Conservation of Nature | 2010    | Vector          | <a href="http://www.iucnredlist.org/technical-documents/spatial-data">http://www.iucnredlist.org/technical-documents/spatial-data</a>   | International Union for Conservation of Nature and Natural Resources - IUCN Red List of Threatened Species; <a href="mailto:redlistgis@iucn.org">redlistgis@iucn.org</a>  |
| <b>Reptiles/Amphibians</b> | Reptiles/Amp hibians Iowa Database | Iowa DNR GIS                                   | N/A     | Raster          | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>   | <b>Patrick Wilke Brown</b> , patrick.wilke-brown@dnr.iowa.gov, (515) 281-6905, or <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353;<br><a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |
| <b>Reptiles/Amphibians</b> | Reptiles/Amp hibians Iowa Database | HerpNet.net                                    | Unknown | Database - Maps | <a href="http://www.herpnet.net/Iowa-Herpetology/index.php?option=com_frontpage&amp;Itemid=1">http://www.herpnet.net/Iowa-Herpetology/index.php?option=com_frontpage&amp;Itemid=1</a> | <a href="http://www.herpnet.net/Iowa-Herpetology/index.php?option=com_contact&amp;Itemid=3">http://www.herpnet.net/Iowa-Herpetology/index.php?option=com_contact&amp;Itemid=3</a>   |
| <b>Shellfish</b>           | Freshwater Mussels                 | Iowa DNR Interactive Mapping                   | Unknown | Map             | <a href="https://programs.iowadnr.gov/naturalareasinventory/pages/Query.aspx">https://programs.iowadnr.gov/naturalareasinventory/pages/Query.aspx</a>                                 | <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353;<br><a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a>   |
| <b>Shellfish</b>           |                                    |  |         |                 |   |   |
| <b>Terrestrial Mammals</b> | Otter (LUCA)                       | Iowa DNR GIS                                   | 2002    | Raster          | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>   | <b>Patrick Wilke Brown</b> , patrick.wilke-brown@dnr.iowa.gov, (515) 281-6905, or <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353;<br><a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |
| <b>Terrestrial Mammals</b> | Beaver (CACA)                      | Iowa DNR GIS                                   | 2002    | Raster          | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>   | <b>Patrick Wilke Brown</b> , patrick.wilke-brown@dnr.iowa.gov, (515) 281-6905, or <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353;<br><a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |
| <b>Terrestrial Mammals</b> | Mink (MUVI)                        | Iowa DNR GIS                                   | 2002    | Raster          | <a href="https://programs.iowadnr.gov/nrgislibx/">https://programs.iowadnr.gov/nrgislibx/</a>   | <b>Patrick Wilke Brown</b> , patrick.wilke-brown@dnr.iowa.gov, (515) 281-6905, or <b>Casey Kohrt</b> , casey.kohrt@dnr.iowa.gov, (319) 335-1353;<br><a href="http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx">http://www.iowadnr.gov/Environment/GeologyMapping/MappingGIS.aspx</a> |

| Iowa Category                                  | Data Type                   | Data Source               | Year | Format        | Url/Path  | Data Point-of-Contact  |
|--|-----------------------------|---------------------------|------|---------------|---|--|
| <b>Terrestrial Mammals</b>                     | General Species Information | USGS GAP Analysis Program | N/A  | Vector        | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>     | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901<br><a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> |
| <b>Other Environmental and Sensitive Areas</b> | Refuge Trail                | USFWS                     | 2006 | Vector - Line | <a href="http://www.fws.gov/gis/data/national/index.html">http://www.fws.gov/gis/data/national/index.html</a> | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348  |



TABLE A.7.2

KANSAS SENSITIVE INFORMATION

| Kansas Category | Data Type                     | Data Source                                | Year    | Format                    | Url/Path  | Data Point-of-Contact   |
|-----------------|-------------------------------|--|---------|---------------------------|---|---|
| Birds           | Bird database                 | North American Breeding Bird Survey        | Unknown | Database - Maps           | <a href="http://www.pwrc.usgs.gov/bbs/">http://www.pwrc.usgs.gov/bbs/</a>   | <b>Operations Contact:</b> Keith Pardieck, <a href="mailto:Keith_Pardieck@usgs.gov">Keith_Pardieck@usgs.gov</a><br><b>Analyses Contact:</b> John Sauer, <a href="mailto:John_Sauer@usgs.gov">John_Sauer@usgs.gov</a>  |
| Birds           | Bird Point Count Database     | USGS - Patuxent Wildlife Research Center   | Unknown | Database with coordinates | <a href="http://www.pwrc.usgs.gov/point/">http://www.pwrc.usgs.gov/point/</a>   | <b>Mark Wimer</b> , <a href="mailto:mwimer@usgs.gov">mwimer@usgs.gov</a> Patuxent Wildlife Research, (301) 497-5596;<br><a href="http://www.pwrc.usgs.gov/point/index.cfm?fa=pointcount.contactUs">http://www.pwrc.usgs.gov/point/index.cfm?fa=pointcount.contactUs</a> |
| Birds           | Birds of Conservation Concern | U.S. Fish & Wildlife Service (USFWS)       | 2008    | PDF Document              | <a href="http://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf">http://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf</a> | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348   |
| Birds           | Designated Critical Habitat   | Kansas Data Access & Support Center (DASC) | 1997    | Vector                    | <a href="http://www.kansasgis.org/catalog/index.cfm">http://www.kansasgis.org/catalog/index.cfm</a>   | Kansas Department of Wildlife and Parks, (316) 672-5911   |
| Birds           | Migratory Birds               | Migratory Bird Data Center                 | Unknown | Database                  | <a href="https://migbirdapps.fws.gov/">https://migbirdapps.fws.gov/</a>   | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348   |
| Birds           | Waterfowl Birds               | USFWS                                      | Unknown | Database                  | <a href="https://migbirdapps.fws.gov/">https://migbirdapps.fws.gov/</a>   | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348   |
| Birds           | American Black Duck           | USGS Gap Analysis Program (GAP)            | 2011    | Raster                    | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>   | <b>Jocelyn Aycrigg</b> - (208)885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> - (208)885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions);                       |
| Birds           | American Kestrel              | USGS GAP                                   | 2011    | Raster                    | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>   | <b>Jocelyn Aycrigg</b> - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions);                     |

| Kansas Category | Data Type               | Data Source                                  | Year    | Format       | Url/Path  | Data Point-of-Contact   |
|-----------------|-------------------------|--|---------|--------------|---|---|
| Birds           | Baird's Sandpiper       | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Bald Eagle              | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Barn Owl                | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Barred Owl              | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Black Tern              | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Black-capped Vireo      | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Black-capped Vireo      | Kansas Dept. of Wildlife, Parks, and Tourism | Unknown | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a>                                  |
| Birds           | Bonaparte's Gull        | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Broad-Winged Hawk       | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Buff-breasted Sandpiper | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Burrowing Owl           | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Cackling Goose          | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

| Kansas Category | Data Type           | Data Source                                  | Year    | Format       | Url/Path  | Data Point-of-Contact   |
|-----------------|---------------------|--|---------|--------------|---|---|
| Birds           | Canada Goose        | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Clark's Grebe       | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Common Loon         | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Common Merganser    | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Common Tern         | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Cooper's Hawk       | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Eared Grebe         | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Eastern Screech-Owl | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Eskimo Curlew       | Kansas Dept. of Wildlife, Parks, and Tourism | Unknown | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a>                                  |
| Birds           | Ferruginous Hawk    | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Forster's Tern      | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Franklin's Gull     | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

| Kansas Category | Data Type                 | Data Source                                  | Year    | Format       | Url/Path  | Data Point-of-Contact   |
|-----------------|---------------------------|--|---------|--------------|---|---|
| Birds           | Golden Eagle              | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Great Horned Owl          | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Great White-fronted Goose | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Herring Gull              | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Hooded Merganser          | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Horned Grebe              | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Least Sandpiper           | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Least Tern                | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Least Tern                | Kansas Dept. of Wildlife, Parks, and Tourism | Unknown | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Long-eared Owl            | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Merlin                    | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Mississippi Kite          | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

| Kansas Category | Data Type              | Data Source                                  | Year    | Format       | Url/Path  | Data Point-of-Contact   |
|-----------------|------------------------|--|---------|--------------|---|---|
| Birds           | Northern Goshawk       | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Northern Harrier       | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Northern Saw-whet Owl  | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Northern Shoveler      | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Osprey                 | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Pectoral Sandpiper     | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Peregrine Falcon       | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Pied-Billed Grebe      | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Piping Plover          | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Piping Plover          | Kansas Dept. of Wildlife, Parks, and Tourism | Unknown | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Prairie Falcon         | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Red-breasted Merganser | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |



| Kansas Category | Data Type              | Data Source | Year | Format | Url/Path  | Data Point-of-Contact   |
|-----------------|------------------------|-------------|------|--------|---|---|
| Birds           | Red-shouldered Hawk    | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Red-tailed Hawk        | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Ring-Billed Gull       | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Ring-necked Duck       | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Ross's Goose           | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Rough-legged Hawk      | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Ruddy Duck             | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Sabine's Gull          | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Semipalmated Sandpiper | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Sharp-shinned Hawk     | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Short-eared Owl        | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Snow Goose             | USGS GAP    | 2011 | Raster | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

| Kansas Category | Data Type           | Data Source                                  | Year    | Format       | Url/Path  | Data Point-of-Contact   |
|-----------------|---------------------|--|---------|--------------|---|---|
| Birds           | Snowy Owl           | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Snowy Plover        | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Snowy Plover        | Kansas Dept. of Wildlife, Parks, and Tourism | Unknown | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife</a> | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Solitary Sandpiper  | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Spotted Sandpiper   | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Stilt Sandpiper     | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Swainson's Hawk     | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Turkey Vulture      | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Upland Sandpiper    | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Western Grebe       | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Western Sandpiper   | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Western Screech-owl | USGS GAP                                     | 2011    | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>                               | Jocelyn Aycrigg - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

| Kansas Category | Data Type                    | Data Source                                  | Year | Format           | Url/Path  | Data Point-of-Contact   |
|-----------------|------------------------------|--|------|------------------|---|---|
| Birds           | White-rumped Sandpiper       | USGS GAP                                     | 2011 | Raster           | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>   | <b>Jocelyn Aycrigg</b> - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Whooping Crane               | USGS GAP                                     | 2011 | Raster           | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>   | <b>Jocelyn Aycrigg</b> - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Whooping Crane               | USFWS  | 2011 | Vector           | <a href="http://criticalhabitat.fws.gov/critha/b/">http://criticalhabitat.fws.gov/critha/b/</a>   | <b>Jocelyn Aycrigg</b> - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Wilson's Phalarope           | USGS GAP                                     | 2011 | Raster           | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>   | <b>Jocelyn Aycrigg</b> - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Wilson's Snipe               | USGS GAP                                     | 2011 | Raster           | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>   | <b>Jocelyn Aycrigg</b> - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds           | Wood Duck                    | USGS GAP                                     | 2011 | Raster           | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>   | <b>Jocelyn Aycrigg</b> - (208) 885-3901 <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> - (208) 885-3534 <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Fish            | 2011 Fishing Atlas           | Kansas Dept. of Wildlife, Parks, and Tourism | 2014 | Maps             | <a href="http://kdwpt.state.ks.us/news/KD-WPT-Info/Locations/Hunting-Fishing-Maps-by-County/Fishing-Atlas/GPS-KML-Information-Files">http://kdwpt.state.ks.us/news/KD-WPT-Info/Locations/Hunting-Fishing-Maps-by-County/Fishing-Atlas/GPS-KML-Information-Files</a> | Jake George, Private Land Programs Coordinator, (620) 672-0760  |
| Fish            | Fish Database                | Fish Base Consortium                         | N/A  | Interactive Maps | <a href="http://aquamaps.org/search.php#search_tools">http://aquamaps.org/search.php#search_tools</a>   | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>   |
| Fish            | Arkansas Darter              | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map     | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a>                       | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a>  |
| Fish            | Arkansas River Shiner        | USFWS  | 2005 | Vector           | <a href="http://criticalhabitat.fws.gov/critha/b/">http://criticalhabitat.fws.gov/critha/b/</a>   | <b>Chris Lett</b> ; National GIS Coordinator<br>U.S. Fish and Wildlife Service; <a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348  |
| Fish            | Arkansas River Shiner        | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map     | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a>                       | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a>  |
| Fish            | Arkansas River Speckled Chub | Kansas Dept. of Wildlife, Parks, and Tourism | 2005 | Embedded Map     | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a>                       | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a>  |



| Kansas Category | Data Type        | Data Source                                  | Year | Format       | Url/Path  | Data Point-of-Contact  |
|-----------------|------------------|--|------|--------------|---|--|
| <b>Fish</b>     | Blackside Darter | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>     | Chestnut Lamprey | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>     | Flathead Chub    | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>     | Hornyhead Chub   | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>     | Neosho Madtom    | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>     | Pallid Sturgeon  | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>     | Plains Minnow    | Kansas Dept. of Wildlife, Parks, and Tourism | 2005 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>     | Redspot Chub     | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>     | Shoal Chub       | Kansas Dept. of Wildlife, Parks, and Tourism | 2009 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>     | Sicklefin Chub   | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |

| Kansas Category         | Data Type                        | Data Source                                  | Year | Format       | Url/Path  | Data Point-of-Contact  |
|-------------------------|----------------------------------|--|------|--------------|---|--|
| <b>Fish</b>             | Silver Chub                      | Kansas Dept. of Wildlife, Parks, and Tourism | 2005 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>             | Silverband Shiner                | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>             | Sturgeon Chub                    | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>             | Topeka Shiner                    | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Fish</b>             | Western Silvery Minnow           | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Management Areas</b> | Ecoregions                       | Kansas Data Access & Support Center (DASC)   | 2003 | Vector       | <a href="http://www.kansasgis.org/catalog/index.cfm">http://www.kansasgis.org/catalog/index.cfm</a>   | <b>Kansas Data Access and Support Center (DASC)</b> , (785) 864-2000; <a href="mailto:dasc@kgs.ku.edu">dasc@kgs.ku.edu</a>   |
| <b>Management Areas</b> | Groundwater Management Districts | Kansas DASC                                  | 2006 | Vector       | <a href="http://www.kansasgis.org/catalog/index.cfm">http://www.kansasgis.org/catalog/index.cfm</a>   | <b>Kansas DASC</b> , (785) 864-2000; <a href="mailto:dasc@kgs.ku.edu">dasc@kgs.ku.edu</a>  |
| <b>Management Areas</b> | National Cadastral Data          | USFWS  | 2011 | Vector       | <a href="http://www.fws.gov/GIS/data/CadastralDB/index.htm">http://www.fws.gov/GIS/data/CadastralDB/index.htm</a>   | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348  |
| <b>Management Areas</b> | National Parks                   | National Park Service (IRMA Portal)          | 2011 | Vector       | <a href="https://irma.nps.gov/App/Reference/Profile/2181146">https://irma.nps.gov/App/Reference/Profile/2181146</a>   | <a href="mailto:irma@nps.gov">irma@nps.gov</a> or<br><a href="http://www.wilderness.net/nwps/contact">http://www.wilderness.net/nwps/contact</a>   |

| Kansas Category      | Data Type                         | Data Source                                  | Year  | Format                  | Url/Path  | Data Point-of-Contact  |
|----------------------|-----------------------------------|--|-------|-------------------------|---|--|
| Management Areas     | Realtime Streamflow stations      | USGS - National Water Information System     | Daily | Vector                  | <a href="http://waterdata.usgs.gov/nwis/rt">http://waterdata.usgs.gov/nwis/rt</a>   | <b>Jeff Lonneker</b> ; GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program; 208-885-3534;<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b> ; GAP National Species Modeling Coordinator/Conservation Biologist<br>National Gap Analysis Program; 208-885-3901;<br><a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> |
| Management Areas     | Reserves                          | USGS - The National Map                      |       | Vector                  | <a href="http://viewer.nationalmap.gov/viewer/nhd.html?p=nhd">http://viewer.nationalmap.gov/viewer/nhd.html?p=nhd</a>   | USGS Map Service<br>1-888-275-8747   |
| Management Areas     | Riparian Inventory                | Kansas DASC                                  | 2001  | Vector                  | <a href="http://www.kansasgis.org/catalog/index.cfm">http://www.kansasgis.org/catalog/index.cfm</a>   | Kansas Data Access and Support Center (DASC), (785) 864-2000; <a href="mailto:dasc@kgs.ku.edu">dasc@kgs.ku.edu</a>   |
| Management Areas     | Terrestrial Ecosystems            | WWF  | 2006  | Vector                  | <a href="http://www.worldwildlife.org/science/data/item6373.html">http://www.worldwildlife.org/science/data/item6373.html</a>   | World Wildlife Fund<br>(202) 293-4800  |
| Management Areas     | Wilderness Areas                  | Wilderness.net                               | 2011  | Vector                  | <a href="http://www.wilderness.net/index.cfm?fuse=NWPS&amp;sec=geography">http://www.wilderness.net/index.cfm?fuse=NWPS&amp;sec=geography</a>   | Wilderness Institute<br>College of Forestry and Conservation<br>University of Montana<br>(406) 243-6933  |
| Plants               | Endangered and threatened Species | USFWS  | 2011  | List - Interactive Maps | <a href="http://ecos.fws.gov/tess_public/pub/stateListingAndOccurrenceIndividual.jsp?state=KS&amp;s8fid=112761032792&amp;s8fid=112762573902">http://ecos.fws.gov/tess_public/pub/stateListingAndOccurrenceIndividual.jsp?state=KS&amp;s8fid=112761032792&amp;s8fid=112762573902</a> | <b>Chris Lett</b> ; National GIS Coordinator; U.S. Fish and Wildlife Service; <a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a> ; 303-275-2348  |
| Reptiles/ Amphibians | Broadhead Skink                   | Kansas Dept. of Wildlife, Parks, and Tourism | 2000  | Embedded Map            | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a>                                       | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a>   |
| Reptiles/ Amphibians | Cave Salamander                   | Kansas Dept. of Wildlife, Parks, and Tourism | 2000  | Embedded Map            | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a>                                       | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a>   |
| Reptiles/ Amphibians | Common Map Turtle                 | Kansas Dept. of Wildlife, Parks, and Tourism | 2000  | Embedded Map            | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a>                                       | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a>   |
| Reptiles/ Amphibians | Eastern Narrowmouth Toad          | Kansas Dept. of Wildlife, Parks, and Tourism | 2000  | Embedded Map            | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a>                                       | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a>   |

| Kansas Category                 | Data Type              | Data Source                                  | Year | Format       | Url/Path  | Data Point-of-Contact  |
|---------------------------------|------------------------|--|------|--------------|---|--|
| <b>Reptiles/<br/>Amphibians</b> | Eastern Newt           | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Reptiles/<br/>Amphibians</b> | Green Frog             | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Reptiles/<br/>Amphibians</b> | Green Toad             | Kansas Dept. of Wildlife, Parks, and Tourism | 2005 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Reptiles/<br/>Amphibians</b> | Grotto Salamander      | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Reptiles/<br/>Amphibians</b> | Longtail Salamander    | Kansas Dept. of Wildlife, Parks, and Tourism | 2005 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Reptiles/<br/>Amphibians</b> | Many-ribbed Salamander | Kansas Dept. of Wildlife, Parks, and Tourism | 2005 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Reptiles/<br/>Amphibians</b> | Spring Peeper          | Kansas Dept. of Wildlife, Parks, and Tourism | 2005 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Reptiles/<br/>Amphibians</b> | Strecker's Chorus Frog | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Shellfish</b>                | Butterfly Mussel       | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| <b>Shellfish</b>                | Delta Hydrobe          | Kansas Dept. of Wildlife, Parks, and Tourism | 2009 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |

| Kansas Category | Data Type                  | Data Source                                  | Year | Format       | Url/Path  | Data Point-of-Contact  |
|-----------------|----------------------------|--|------|--------------|---|--|
| Shellfish       | Elktoe Mussel              | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Shellfish       | Ellipse Mussel             | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Shellfish       | Flat Floater Mussel        | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Shellfish       | Flutedshell Mussel         | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Shellfish       | Mucket Mussel              | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Shellfish       | Neosho Mucket Mussel       | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Shellfish       | Ouchita Kidneyshell Mussel | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Shellfish       | Rabbitsfoot Mussel         | Kansas Dept. of Wildlife, Parks, and Tourism | 2005 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Shellfish       | Rock Pocketbook Mussel     | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Shellfish       | Sharp Hornsnail            | Kansas Dept. of Wildlife, Parks, and Tourism | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |



| Kansas Category                         | Data Type                         | Data Source                                    | Year | Format       | Url/Path  | Data Point-of-Contact  |
|---|-----------------------------------|--|------|--------------|---|--|
| Shellfish                               | Slender Walker Snail              | Kansas Dept. of Wildlife, Parks, and Tourism   | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Shellfish                               | Western Fanshell Mussell          | Kansas Dept. of Wildlife, Parks, and Tourism   | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Terrestrial Mammals                     | Black-footed Ferret               | Kansas Dept. of Wildlife, Parks, and Tourism   | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Terrestrial Mammals                     | Eastern Spotted Skunk             | Kansas Dept. of Wildlife, Parks, and Tourism   | 2005 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Terrestrial Mammals                     | Gray Myotis                       | Kansas Dept. of Wildlife, Parks, and Tourism   | 2000 | Embedded Map | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Terrestrial Mammals                     | North American River Otter        | USGS GAP                                       | 2011 | Raster       | <a href="http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx">http://dingo.gapanalysisprogram.com/SpeciesViewer/Map.aspx</a>   | Jocelyn Aycrigg - (208)885-3901 aycrigg@uidaho.edu (general questions); Jeff Lonneker - (208)885-3534jlonneker@uidaho.edu (technical questions);   |
| Terrestrial Mammals                     | Threatened species                | International Union for Conservation of Nature | 2010 | Vector       | <a href="http://www.iucnredlist.org/technical-documents/spatial-data">http://www.iucnredlist.org/technical-documents/spatial-data</a>   | International Union for Conservation of Nature and Natural Resources - IUCN Red List of Threatened Species<br><a href="mailto:redlistgis@iucn.org">redlistgis@iucn.org</a>                           |
| Other Environmental and Sensitive Areas | Endangered and Threatened Species | Kansas Dept. of Wildlife, Parks, and Tourism   | 2009 | List         | <a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/All-Threatened-and-Endangered-Species</a> | (620) 672-5911;<br><a href="http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact">http://kdwpt.state.ks.us/news/Services/Threatened-and-Endangered-Wildlife/Contact</a> |
| Other Environmental and Sensitive Areas | Natural Communities               | Kansas DASC                                    | 2008 | Vector       | <a href="http://www.kansasgis.org/catalog/index.cfm">http://www.kansasgis.org/catalog/index.cfm</a>   | <b>Kansas DASC</b> , (785) 864-2000; <a href="mailto:dasc@kgs.ku.edu">dasc@kgs.ku.edu</a>  |

| Kansas Category                         | Data Type    | Data Source | Year | Format        | Url/Path  | Data Point-of-Contact   |
|---|--------------|-------------|------|---------------|---|---|
| Other Environmental and Sensitive Areas | Rare Species | Kansas DASC | 2008 | Vector        | <a href="http://www.kansasgis.org/catalog/index.cfm">http://www.kansasgis.org/catalog/index.cfm</a>           | <b>Kansas DASC</b> , (785) 864-2000; <a href="mailto:dasc@kgs.ku.edu">dasc@kgs.ku.edu</a>   |
| Other Environmental and Sensitive Areas | Refuge Trail | USFWS       | 2006 | Vector - Line | <a href="http://www.fws.gov/gis/data/national/index.html">http://www.fws.gov/gis/data/national/index.html</a> | <b>Chris Lett</b> ; National GIS Coordinator; U.S. Fish and Wildlife Service; <a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a> ; 303-275-2348 |

TABLE A.7.3

MISSOURI SENSITIVE INFORMATION

| Missouri Category | Data Type                     | Data Source                              | Year    | Format               | Url/Path  | Data Point-of-Contact  |
|-------------------|-------------------------------|--|---------|----------------------|---|--|
| <b>Birds</b>      | Migratory Birds               | Migratory Bird Data Center               | 2006    | Database             | <a href="https://migbirdapps.fws.gov/">https://migbirdapps.fws.gov/</a>                                   | <b>Chris Lett</b> ; National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a> ; 303-275-2348  |
| <b>Birds</b>      | American Black Duck           | USGS GAP Analysis Program                | 2011    | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions);   |
| <b>Birds</b>      | American Kestrel              | USGS GAP Analysis Program                | 2011    | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions);   |
| <b>Birds</b>      | Baird's Sandpiper             | USGS GAP Analysis Program                | 2011    | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions);   |
| <b>Birds</b>      | Bald Eagle                    | USGS GAP Analysis Program                | 2011    | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions);   |
| <b>Birds</b>      | Barn Owl                      | USGS GAP Analysis Program                | 2011    | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions);   |
| <b>Birds</b>      | Barred Owl                    | USGS GAP Analysis Program                | 2011    | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions);   |
| <b>Birds</b>      | Bird database                 | North American Breeding Bird Survey      | Unknown | Database - Maps      | <a href="http://www.pwrc.usgs.gov/bbs/">http://www.pwrc.usgs.gov/bbs/</a>                                 | <b>Keith Pardieck</b> - (301)497-5843 <a href="mailto:kpardieck@usgs.gov">kpardieck@usgs.gov</a> (Breeding Bird Survey Office); <b>Janet Haslerig</b> - (573)522-4115 x3198 <a href="mailto:janet.haslerig@mde.mo.gov">janet.haslerig@mde.mo.gov</a> (MO contact)  |
| <b>Birds</b>      | Bird Point Count Database     | USGS - Patuxent Wildlife Research Center | Unknown | Database with coord. | <a href="http://www.pwrc.usgs.gov/point/">http://www.pwrc.usgs.gov/point/</a>                             | <b>Mark Wimer</b> - (301)497-5596 <a href="mailto:mwimer@usgs.gov">mwimer@usgs.gov</a><br>Wildlife Research Center, Laurel, MD   |
| <b>Birds</b>      | Birds of Conservation Concern | U.S. Fish & Wildlife Service             | 2008    | List                 | <a href="#">Birds of Conservation Concern</a>   | <b>Migratory Birds and State Program Office</b> - (612)713-5470; <b>Chris Lett</b> - (303)275-2348 <a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a> (National GIS Coordinator); <b>Rachael Pierce</b> - (517)351-5219 <a href="mailto:rachael_pierce@fws.gov">rachael_pierce@fws.gov</a> (GIS Tech); <a href="http://www.fws.gov/midwest/midwestbird/contact.html">http://www.fws.gov/midwest/midwestbird/contact.html</a> |



| Missouri Category | Data Type               | Data Source               | Year | Format | Url/Path  | Data Point-of-Contact  |
|-------------------|-------------------------|---------------------------|------|--------|---|--|
| Birds             | Black Tern              | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Black Vulture           | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Bonaparte's Gull        | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Broad-Winged Hawk       | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Buff-breasted Sandpiper | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Cackling Goose          | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Canada Goose            | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Caspian Tern            | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Common Loon             | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Common Merganser        | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Common Tern             | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Cooper's Hawk           | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Eared Grebe             | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

| Missouri Category | Data Type                 | Data Source               | Year | Format | Url/Path  | Data Point-of-Contact  |
|-------------------|---------------------------|---------------------------|------|--------|---|--|
| Birds             | Eastern Screech-Owl       | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Forster's Tern            | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Franklin's Gull           | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Golden Eagle              | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Glaucous Gull             | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Great Horned Owl          | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Great White-fronted Goose | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Herring Gull              | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Hooded Merganser          | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Horned Grebe              | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Least Sandpiper           | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Long-eared Owl            | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Merlin                    | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

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|-------------------|------------------------|---------------------------|------|--------|---|--|
| Birds             | Mississippi Kite       | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Northern Goshawk       | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Northern Harrier       | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Northern Saw-whet Owl  | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Osprey                 | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Pectoral Sandpiper     | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Peregrine Falcon       | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Pied-Billed Grebe      | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Red-breasted Merganser | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Red-shouldered Hawk    | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Red-tailed Hawk        | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Ring-Billed Gull       | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Ring-necked Duck       | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |

| Missouri Category | Data Type              | Data Source               | Year | Format | Url/Path  | Data Point-of-Contact  |
|-------------------|------------------------|---------------------------|------|--------|---|--|
| Birds             | Ross's Goose           | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Rough-legged Hawk      | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Ruddy Duck             | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Semipalmated Sandpiper | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Sharp-shinned Hawk     | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Short-eared Owl        | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Snow Goose             | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Snowy Owl              | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Solitary Sandpiper     | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Spotted Sandpiper      | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Stilt Sandpiper        | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Swainson's Hawk        | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Turkey Vulture         | USGS GAP Analysis Program | 2011 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | Jocelyn Aycrigg, (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); Jeff Lonneker, (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |



| Missouri Category | Data Type                | Data Source                                | Year    | Format          | Url/Path  | Data Point-of-Contact  |
|-------------------|--------------------------|--|---------|-----------------|---|--|
| Birds             | Upland Sandpiper         | USGS GAP Analysis Program                  | 2011    | Raster          | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Waterfowl Birds          | U.S. Fish & Wildlife Service               | Unknown | Database        | <a href="https://migbirdapps.fws.gov/">https://migbirdapps.fws.gov/</a>   | <b>Chris Lett</b> ; National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a> ; 303-275-2348  |
| Birds             | Western Sandpiper        | USGS GAP Analysis Program                  | 2011    | Raster          | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | White-rumped Sandpiper   | USGS GAP Analysis Program                  | 2011    | Raster          | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Wilson's Phalarope       | USGS GAP Analysis Program                  | 2011    | Raster          | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Wilson's Snipe           | USGS GAP Analysis Program                  | 2011    | Raster          | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Wood Duck                | USGS GAP Analysis Program                  | 2011    | Raster          | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Least Tern               | USGS GAP Analysis Program                  | 2011    | Raster          | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Birds             | Piping Plover            | USGS GAP Analysis Program                  | 2011    | Raster          | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Fish              | Trout Management Streams | Missouri Department of Conservation        | Unknown | GDB             | <a href="http://newmdcgis.mdc.mo.gov/public-maps-gallery-1.4/public-maps-gallery/index.html">http://newmdcgis.mdc.mo.gov/public-maps-gallery-1.4/public-maps-gallery/index.html</a> | <b>Michael Klein</b> - <a href="mailto:Michael.Klein@mdc.gov">Michael.Klein@mdc.gov</a> (website contact); <a href="http://mdc.mo.gov/about-us/how-contact-us">http://mdc.mo.gov/about-us/how-contact-us</a>   |
| Fish              | Critical Habitat         | U.S. Fish & Wildlife Service               | 2011    | Vector          | <a href="http://criticalhabitat.fws.gov/critha/b/">http://criticalhabitat.fws.gov/critha/b/</a>   | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348  |
| Fish              | Nonindigenous Fish       | USGS - NAS (Nonindigenous Aquatic Species) | 2011    | Interactive Map | <a href="http://nas.er.usgs.gov/queries/StateSearch.aspx">http://nas.er.usgs.gov/queries/StateSearch.aspx</a>   | <b>Pam Fuller</b> - (352)264-3481 <a href="mailto:pfuller@usgs.gov">pfuller@usgs.gov</a> ; <a href="http://nas.er.usgs.gov/queries/StateSearch.aspx">http://nas.er.usgs.gov/queries/StateSearch.aspx</a>   |
| Fish              | Neosho Madtom            | Fish Base Consortium                       | 2011    | KMZ File        | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>   | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>   |

| Missouri Category       | Data Type                     | Data Source                               | Year    | Format   | Url/Path  | Data Point-of-Contact   |
|-------------------------|-------------------------------|---|---------|----------|---|---|
| <b>Fish</b>             | Niangua Darter                | Fish Base Consortium                      | 2011    | KMZ File | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>   | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>  |
| <b>Fish</b>             | Ozark Cavefish                | Fish Base Consortium                      | 2011    | KMZ File | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>   | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>  |
| <b>Fish</b>             | Pallid Sturgeon               | Fish Base Consortium                      | 2011    | KMZ File | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>   | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>  |
| <b>Fish</b>             | Topeka Shiner                 | Fish Base Consortium                      | 2011    | KMZ File | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>   | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>  |
| <b>Management Areas</b> | Ecoregions                    | Missouri Department of Conservation       | Unknown | GDB      | <a href="http://newmdcgis.mdc.mo.gov/-public-mapsgallery-1.4/public-maps-gallery/index.html">http://newmdcgis.mdc.mo.gov/-public-mapsgallery-1.4/public-maps-gallery/index.html</a> | <b>Michael Klein</b> - Michael.Klein@mdc.gov (website contact); <a href="http://mdc.mo.gov/about-us/how-contact-us">http://mdc.mo.gov/about-us/how-contact-us</a>   |
|                         | Conservation Areas            | Missouri Department of Conservation       | Unknown | KMZ File | <a href="http://mdc.mo.gov/discover-nature/-places-go/google-earth">http://mdc.mo.gov/discover-nature/-places-go/google-earth</a>   | <a href="http://mdc.mo.gov/about-us/how-contact-us">http://mdc.mo.gov/about-us/how-contact-us</a>   |
|                         | Groundwater Watch             | USGS - MO Active Water Level Network      | 2014    | KMZ File | <a href="http://groundwaterwatch.usgs.gov/-statemap.asp?sc=29&amp;sa=MO">http://groundwaterwatch.usgs.gov/-statemap.asp?sc=29&amp;sa=MO</a>   | <a href="http://groundwaterwatch.usgs.gov/statemap.asp?sc=29&amp;sa=MO">http://groundwaterwatch.usgs.gov/statemap.asp?sc=29&amp;sa=MO</a>   |
|                         | National Cadastral Data       | U.S. Fish & Wildlife Service              | 2011    | Vector   | <a href="http://www.fws.gov/GIS/data/-CadastralDB/index.htm">http://www.fws.gov/GIS/data/-CadastralDB/index.htm</a>   | <b>Chris Lett</b> ; National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a> ; 303-275-2348   |
|                         | National Parks                | National Park Service (IRMA Portal)       | 2011    | Vector   | <a href="https://irma.nps.gov/App/Portal">https://irma.nps.gov/App/Portal</a>   | <a href="https://irma.nps.gov/content/Contact/">https://irma.nps.gov/content/Contact/</a>   |
|                         | Real-time Streamflow stations | USGS - National Water Information System  | Daily   | Vector   | <a href="http://waterdata.usgs.gov/nwis/rt">http://waterdata.usgs.gov/nwis/rt</a>   | <a href="http://waterdata.usgs.gov/nwis/rt">http://waterdata.usgs.gov/nwis/rt</a>   |
|                         | Reserves                      | USGS - The National Map                   | Unknown | Vector   | <a href="http://viewer.nationalmap.gov/-viewer/nhd.html?p=nhd">http://viewer.nationalmap.gov/-viewer/nhd.html?p=nhd</a>   | (contact information at the bottom of the page); <a href="http://viewer.nationalmap.gov/help/5.0%20TNM%20Toolbox.htm">http://viewer.nationalmap.gov/help/5.0%20TNM%20Toolbox.htm</a>  |
|                         | Preserve Boundaries           | Missouri Spatial Data Information Service | 2009    | Vector   | <a href="http://www.msdis.missouri.edu/-data/themelist.html#admin">http://www.msdis.missouri.edu/-data/themelist.html#admin</a>   | <b>Stewart Hall</b> , University of Missouri, Columbia, MO<br>65211 Voice: (573) 882 1404 Fax: (573) 884 4239 Email: <a href="mailto:msdismail@missouri.edu">msdismail@missouri.edu</a> ; <a href="http://www.msdis.missouri.edu/contact/index.html">http://www.msdis.missouri.edu/contact/index.html</a> |
|                         | Wild Areas                    | Missouri Spatial Data Information Service | 2011    | Vector   | <a href="http://www.msdis.missouri.edu/-data/themelist.html#admin">http://www.msdis.missouri.edu/-data/themelist.html#admin</a>   | <b>Stewart Hall</b> , University of Missouri, Columbia, MO<br>65211 Voice: (573) 882 1404 Fax: (573) 884 4239 Email: <a href="mailto:msdismail@missouri.edu">msdismail@missouri.edu</a> ; <a href="http://www.msdis.missouri.edu/contact/index.html">http://www.msdis.missouri.edu/contact/index.html</a> |
|                         | Terrestrial Ecoregions        | WWF                                       | 2006    | Vector   | <a href="http://www.worldwildlife.org/-science/data/item6373.html">http://www.worldwildlife.org/-science/data/item6373.html</a>   | <a href="http://www.worldwildlife.org/about/contact">http://www.worldwildlife.org/about/contact</a>   |

| Missouri Category                       | Data Type                         | Data Source                                    | Year    | Format | Url/Path  | Data Point-of-Contact  |
|---|-----------------------------------|--|---------|--------|---|--|
|   | Wilderness Areas                  | Wilderness.net                                 | 2011    | Vector | <a href="http://www.wilderness.net">Wilderness.net</a>  | <a href="http://www.wilderness.net/NWPS/contact?f=NWPS&amp;s=geography">http://www.wilderness.net/NWPS/contact?f=NWPS&amp;s=geography</a>  |
| Reptiles/<br>Amphibians                 | Northern Leopard Frog             | USGS GAP Analysis Program                      | 2011    | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>                         | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Reptiles/<br>Amphibians                 | Alligator Snapping turtle         | USGS GAP Analysis Program                      | 2011    | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>                         | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Reptiles/<br>Amphibians                 | Ozark Hellbender                  | USGS GAP Analysis Program                      | 2014    | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>                         | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Terrestrial Mammals                     | North American River Otter        | USGS GAP Analysis Program                      | Unknown | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>                         | <b>Jocelyn Aycrigg</b> , (208) 885-3901, <a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> (general questions); <b>Jeff Lonneker</b> , (208)885-3534, <a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a> (technical questions); |
| Terrestrial Mammals                     | Threatened species                | International Union for Conservation of Nature | 2010    |        | <a href="http://www.iucnredlist.org/technicaldocuments/spatialdata">http://www.iucnredlist.org/technicaldocuments/spatialdata</a> | <a href="http://www.iucnredlist.org/about/contact-info">http://www.iucnredlist.org/about/contact-info</a>  |
| Other Environmental and Sensitive Areas | Endangered and Threatened Species | U.S. Fish & Wildlife Service                   | 2011    | List   | <a href="http://www.fws.gov/midwest/endangered/lists/statemo.html">http://www.fws.gov/midwest/endangered/lists/statemo.html</a>   | <b>Chris Lett</b> ; National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a> ; 303-275-2348  |
| Other Environmental and Sensitive Areas | Refuge Trail                      | U.S. Fish & Wildlife Service                   | Unknown | Vector | <a href="http://www.fws.gov/GIS/data/national/index.htm">http://www.fws.gov/GIS/data/national/index.htm</a>                       | <b>Chris Lett</b> ; National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a> ; 303-275-2348  |

TABLE A.7.4

NEBRASKA SENSITIVE INFORMATION

| Nebraska Category | Data Type                     | Data Source                              | Year    | Format               | Url/Path  | Data Point-of-Contact  |
|-------------------|-------------------------------|--|---------|----------------------|---|--|
| Birds             | Migratory Birds               | Migratory Bird Data Center               | 2006    | Database             | <a href="https://migbirdapps.fws.gov/">https://migbirdapps.fws.gov/</a>   | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348  |
| Birds             | American Kestrel (MAKE)       | USGS GAP Analysis Program                | 2013    | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901<br><a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> |
| Birds             | Baird's Sandpiper             | USGS GAP Analysis Program                | 2013    | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   |  |
| Birds             | Bald Eagle                    | USGS GAP Analysis Program                | 2013    | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   |  |
| Birds             | Barn Owl                      | USGS GAP Analysis Program                | 2013    | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   |  |
| Birds             | Barred Owl                    | USGS GAP Analysis Program                | 2013    | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   |  |
| Birds             | Bird database                 | North American Breeding Bird Survey      | 2011    | Database - Maps      | <a href="http://www.pwrc.usgs.gov/bbs/">http://www.pwrc.usgs.gov/bbs/</a>   | <b>Operations Contact:</b> Keith Pardieck, <a href="mailto:Keith_Pardieck@usgs.gov">Keith_Pardieck@usgs.gov</a><br><b>Analyses Contact:</b> John Sauer, <a href="mailto:John_Sauer@usgs.gov">John_Sauer@usgs.gov</a>   |
| Birds             | Bird Point Count Database     | USGS - Patuxent Wildlife Research Center | 2012    | Database with coord. | <a href="http://www.pwrc.usgs.gov/point/">http://www.pwrc.usgs.gov/point/</a>   | Mark Wimer, <a href="mailto:mwimer@usgs.gov">mwimer@usgs.gov</a> Patuxent Wildlife Research, (301) 497-5596  |
| Birds             | Birds of Conservation Concern | U.S. Fish & Wildlife Service             | 2008    | PDF Document         | <a href="http://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf">http://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf</a> | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348  |
| Birds             | Black Tern                    | USGS GAP Analysis Program                | Unknown | Raster               | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program  |



| Nebraska Category | Data Type               | Data Source               | Year | Format | Url/Path  | Data Point-of-Contact   |
|-------------------|-------------------------|---------------------------|------|--------|---|---|
| Birds             | Bonaparte's Gull        | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | 208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901<br><a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a>  |
| Birds             | Broad-Winged Hawk       | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Buff-breasted Sandpiper | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901<br><a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> |
| Birds             | Burrowing Owl           | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Cackling Goose          | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | California Gull         | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901   |
| Birds             | Canada Goose            | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Clark's Grebe           | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Common Loon             | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901   |
| Birds             | Common Merganser        | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Common Tern             | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |

| Nebraska Category | Data Type                 | Data Source               | Year | Format | Url/Path  | Data Point-of-Contact   |
|-------------------|---------------------------|---------------------------|------|--------|---|---|
| Birds             | Cooper's Hawk             | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Eared Grebe               | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Eastern Screech-Owl       | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Ferruginous Hawk          | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Forster's Tern            | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Franklin's Gull           | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Golden Eagle              | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Great Horned Owl          | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Great White-fronted Goose | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Gyr Falcon                | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Herring Gull              | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Hooded Merganser          | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |

| Nebraska Category | Data Type             | Data Source               | Year | Format | Url/Path  | Data Point-of-Contact   |
|-------------------|-----------------------|---------------------------|------|--------|---|---|
| Birds             | Horned Grebe          | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Least Sandpiper       | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Least Tern            | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Long-eared Owl        | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Merlin                | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Northern Goshawk      | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Northern Harrier      | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Northern Saw-whet Owl | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Ospery                | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Pacific Loon          | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Pectoral Sandpiper    | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Peregrine Falcon      | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |

| Nebraska Category | Data Type              | Data Source               | Year | Format | Url/Path  | Data Point-of-Contact   |
|-------------------|------------------------|---------------------------|------|--------|---|---|
| Birds             | Pied-Billed Grebe      | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Prairie Falcon         | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Red-breasted Merganser | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Red-tailed Hawk        | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Ring-Billed Gull       | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Ring-necked Duck       | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Ross's Goose           | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Rough-legged Hawk      | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Ruddy Duck             | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Semipalmated Sandpiper | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Sharp-shinned Hawk     | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |
| Birds             | Short-eared Owl        | USGS GAP Analysis Program | 2013 | Raster | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |   |

| Nebraska Category | Data Type            | Data Source                  | Year | Format   | Url/Path  | Data Point-of-Contact  |
|-------------------|----------------------|------------------------------|------|----------|---|--|
| Birds             | Snow Goose           | USGS GAP Analysis Program    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Snowy Owl            | USGS GAP Analysis Program    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |  |
| Birds             | Solitary Sandpiper   | USGS GAP Analysis Program    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |  |
| Birds             | Spotted Sandpiper    | USGS GAP Analysis Program    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Stilt Sandpiper      | USGS GAP Analysis Program    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |  |
| Birds             | Swainson's Hawk      | USGS GAP Analysis Program    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |  |
| Birds             | Trumpeter Swan       | USGS GAP Analysis Program    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Birds             | Turkey Vulture       | USGS GAP Analysis Program    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |  |
| Birds             | Upland Sandpiper     | USGS GAP Analysis Program    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> |  |
| Birds             | Waterfowl Birds      | U.S. Fish & Wildlife Service | 2011 | Database | <a href="https://migbirdapps.fws.gov/">https://migbirdapps.fws.gov/</a>                                   | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348  |
| Birds             | Western Grebe (WEGR) | USGS GAP Analysis Program    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a> | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program  |

| Nebraska Category | Data Type                             | Data Source  | Year | Format   | Url/Path  | Data Point-of-Contact  |
|-------------------|---------------------------------------|--|------|----------|---|--|
| Birds             | Western Sandpiper                     | USGS GAP Analysis Program                                    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   | 208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901<br><a href="mailto:aycrigg@uidaho.edu">aycrigg@uidaho.edu</a> |
| Birds             | White-rumped Sandpiper                | USGS GAP Analysis Program                                    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   |  |
| Birds             | Wood Duck                             | USGS GAP Analysis Program                                    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   |  |
| Birds             | Mountain Plover                       | USGS GAP Analysis Program                                    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/species_viewer.html">http://www.gap.uidaho.edu/species_viewer.html</a>   |  |
| Birds             | Piping Plover                         | U.S. Fish & Wildlife Service                                 | 2001 | Vector   | <a href="http://criticalhabitat.fws.gov/crithab/">http://criticalhabitat.fws.gov/crithab/</a>   | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a> ; 303-275-2348   |
| Birds             | Whooping Crane                        | U.S. Fish & Wildlife Service                                 | 1978 | Vector   | <a href="http://criticalhabitat.fws.gov/crithab/">http://criticalhabitat.fws.gov/crithab/</a>   |  |
| Fish              | Fish Guide                            | Nebraska Game Parks  | 2011 | Guide    | <a href="http://outdoornebraska.ne.gov/Fishing/guides/fishguide/pdf/FishGuide.pdf">http://outdoornebraska.ne.gov/Fishing/guides/fishguide/pdf/FishGuide.pdf</a> | See contact information on page 67 of the guide for list of conservation officers in each Nebraska region.   |
| Fish              | All Threatened and Endangered Species | University of Nebraska-Lincoln (School of Natural Resources) | 2013 | Map      | <a href="http://watercenter.unl.edu/watermap/threatenedendangered.asp">http://watercenter.unl.edu/watermap/threatenedendangered.asp</a>                         | <b>Tricia Liedle</b><br>Nebraska Water Center<br>402-472-3305<br>402-472-3610<br><a href="mailto:pliedle@nebraska.edu">pliedle@nebraska.edu</a>  |
| Fish              | Blacknose Shiner                      | Nebraska Library Commission                                  | 2001 | Map      | <a href="http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf">http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf</a>                                       | <b>Kristal Stoner</b><br>Wildlife Diversity Coordinator<br>Nebraska Game and Parks Commission<br><a href="mailto:Kristal.stoner@nebraska.gov">Kristal.stoner@nebraska.gov</a>  |
| Fish              | Blacknose Shiner                      | Fish Base Consortium   | 2011 | KMZ file | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>   | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>   |
| Fish              | Finescale Dace                        | Nebraska Library Commission                                  | 2001 | Map      | <a href="http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf">http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf</a>                                       | <b>Kristal Stoner</b><br>Wildlife Diversity Coordinator<br>Nebraska Game and Parks Commission<br><a href="mailto:Kristal.stoner@nebraska.gov">Kristal.stoner@nebraska.gov</a>  |
| Fish              | Finescale Dace                        | Fish Base Consortium   | 2011 | KMZ file | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>   | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>   |



| Nebraska Category | Data Type              | Data Source                  | Year | Format   | Url/Path  | Data Point-of-Contact  |
|-------------------|------------------------|------------------------------|------|----------|---|--|
| <b>Fish</b>       | Lake Sturgeon          | Nebraska Library Commission  | 2001 | Map      | <a href="http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf">http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf</a> | <b>Kristal Stoner</b><br>Wildlife Diversity Coordinator<br>Nebraska Game and Parks Commission<br>Kristal.stoner@nebraska.gov |
| <b>Fish</b>       | Lake Sturgeon          | Fish Base Consortium         | 2011 | KMZ file | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>                                       | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>   |
| <b>Fish</b>       | Northern Redbelly Dace | Nebraska Library Commission  | 2001 | Map      | <a href="http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf">http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf</a> | <b>Kristal Stoner</b><br>Wildlife Diversity Coordinator<br>Nebraska Game and Parks Commission<br>Kristal.stoner@nebraska.gov |
| <b>Fish</b>       | Northern Redbelly Dace | Fish Base Consortium         | 2011 | KMZ file | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>                                       | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>   |
| <b>Fish</b>       | Pallid Sturgeon        | Nebraska Library Commission  | 2001 | Map      | <a href="http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf">http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf</a> | <b>Kristal Stoner</b><br>Wildlife Diversity Coordinator<br>Nebraska Game and Parks Commission<br>Kristal.stoner@nebraska.gov |
| <b>Fish</b>       | Pallid Sturgeon        | Fish Base Consortium         | 2011 | KMZ file | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>                                       | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>   |
| <b>Fish</b>       | Sturgeon Chub          | Nebraska Library Commission  | 2001 | Map      | <a href="http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf">http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf</a> | <b>Kristal Stoner</b><br>Wildlife Diversity Coordinator<br>Nebraska Game and Parks Commission<br>Kristal.stoner@nebraska.gov |
| <b>Fish</b>       | Sturgeon Chub          | Fish Base Consortium         | 2011 | KMZ file | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>                                       | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>   |
| <b>Fish</b>       | Topeka Shiner          | U.S. Fish & Wildlife Service | 2004 | Vector   | <a href="http://criticalhabitat.fws.gov/crithab/">http://criticalhabitat.fws.gov/crithab/</a>                             | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br>chris_lett@fws.gov<br>303-275-2348        |
| <b>Fish</b>       | Topeka Shiner          | Fish Base Consortium         | 2011 | KMZ file | <a href="http://www.fishbase.org/search.php">http://www.fishbase.org/search.php</a>                                       | <a href="mailto:fishbase@fin.ph">fishbase@fin.ph</a>   |
| <b>Fish</b>       | Topeka Shiner          | Nebraska Library Commission  | 2001 | Map      | <a href="http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf">http://nlc1.nlc.state.ne.us/epubs/R6000/H053-2007.pdf</a> | <b>Kristal Stoner</b><br>Wildlife Diversity Coordinator<br>Nebraska Game and Parks Commission<br>Kristal.stoner@nebraska.gov |

| Nebraska Category | Data Type                    | Data Source  | Year  | Format        | Url/Path  | Data Point-of-Contact   |
|-------------------|------------------------------|--|-------|---------------|---|---|
| <b>Fish</b>       | Terrestrial Ecosystems       | WWF  | 2006  | Vector        | <a href="http://www.worldwildlife.org/science/data/item6373.html">http://www.worldwildlife.org/science/data/item6373.html</a>                 | <b>World Wildlife Fund</b><br>(202) 293-4800  |
| <b>Fish</b>       | Groundwater Regions          | University of Nebraska-Lincoln (School of Natural Resources) | 2013  | Vector        | <a href="http://snr.unl.edu/data/geographygis/NebrGISwater.asp#ground">http://snr.unl.edu/data/geographygis/NebrGISwater.asp#ground</a>       | <b>School of Natural Resources</b><br>University of Nebraska-Lincoln<br>402-472-3471  |
| <b>Fish</b>       | National Parks               | National Park Service (IRMA Portal)                          | 2011  | Vector        | <a href="https://irma.nps.gov/App/Reference/Profile/2181146">https://irma.nps.gov/App/Reference/Profile/2181146</a>                           | <a href="mailto:irma@nps.gov">irma@nps.gov</a> or<br><a href="http://www.wilderness.net/nwps/contact">http://www.wilderness.net/nwps/contact</a>  |
| <b>Fish</b>       | Reserves                     | USGS - The National Map                                      | 2013  | Vector        | <a href="http://viewer.nationalmap.gov/viewer/nhd.html?p=nhd">http://viewer.nationalmap.gov/viewer/nhd.html?p=nhd</a>                         | <b>USGS Map Service</b><br>1-888-275-8747   |
| <b>Fish</b>       | Wilderness Areas             | Wilderness.net   | 2011  | Vector        | <a href="http://www.wilderness.net/index.cfm?fuse=NWPS&amp;sec=geography">http://www.wilderness.net/index.cfm?fuse=NWPS&amp;sec=geography</a> | <b>Wilderness Institute</b><br>College of Forestry and Conservation<br>University of Montana<br>(406) 243-6933  |
| <b>Fish</b>       | National Cadastral Data      | U.S. Fish & Wildlife Service                                 | 2011  | Vector        | <a href="http://www.fws.gov/GIS/data/CadastralDB/index.htm">http://www.fws.gov/GIS/data/CadastralDB/index.htm</a>                             | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br><a href="mailto:chris_lett@fws.gov">chris_lett@fws.gov</a><br>303-275-2348   |
| <b>Fish</b>       | Realtime Streamflow stations | USGS - National Water Information System                     | Daily | Vector        | <a href="http://waterdata.usgs.gov/nwis/rt">http://waterdata.usgs.gov/nwis/rt</a>   | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| <b>Fish</b>       | Federal Reservoirs           | Central Nebraska Public Power and Irrigation District        | 2013  | List - Graphs | <a href="http://www.cnppid.com/Elevation_Flows2.htm">http://www.cnppid.com/Elevation_Flows2.htm</a>   | Central Nebraska Public Power and Irrigation District<br>(308) 995-8601   |



| Nebraska Category                       | Data Type                                  | Data Source  | Year | Format   | Url/Path  | Data Point-of-Contact   |
|---|--|--|------|----------|---|---|
| Reptiles/<br>Amphibians                 | Great Plains Skink                         | USGS GAP Analysis Program                                    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/speciesviewer.html">http://www.gap.uidaho.edu/speciesviewer.html</a>   | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Reptiles/<br>Amphibians                 | Northern Leopard Frog                      | USGS GAP Analysis Program                                    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/speciesviewer.html">http://www.gap.uidaho.edu/speciesviewer.html</a>   |   |
| Reptiles/<br>Amphibians                 | Plains Gartersnake                         | USGS GAP Analysis Program                                    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/speciesviewer.html">http://www.gap.uidaho.edu/speciesviewer.html</a>   |   |
| Reptiles/<br>Amphibians                 | Reptiles & Amphibians of Nebraska Database | University of Nebraska-Lincoln (School of Natural Resources) | 2013 | Database | <a href="http://snr.unl.edu/herpneb/">http://snr.unl.edu/herpneb/</a>   | School of Natural Resources - University of Nebraska-Lincoln<br>Telephone: 402-472-3471   |
| Reptiles/<br>Amphibians                 | General Species Information                | USGS GAP Analysis Program                                    | 2013 | Raster   | <a href="http://www.gap.uidaho.edu/speciesviewer.html">http://www.gap.uidaho.edu/speciesviewer.html</a>   | <b>Jeff Lonneker</b><br>GIS Analyst/Wildlife Biologist<br>National Gap Analysis Program<br>208-885-3534<br><a href="mailto:jlonneker@uidaho.edu">jlonneker@uidaho.edu</a><br><b>Jocelyn Aycrigg</b><br>GAP National Species Modeling<br>Coordinator/Conservation Biologist<br>National Gap Analysis Program<br>208-885-3901 |
| Reptiles/<br>Amphibians                 | Threatened species                         | International Union for Conservation of Nature               | 2010 | Vector   | <a href="http://www.iucnredlist.org/technical-documents/spatial-data">http://www.iucnredlist.org/technical-documents/spatial-data</a>                                   | <b>International Union for Conservation of Nature and Natural Resources</b> - IUCN Red List of Threatened Species<br><a href="mailto:redlistgis@iucn.org">redlistgis@iucn.org</a>   |
| Other Environmental and Sensitive Areas | Endangered and threatened Species          | Nebraska Game and Parks Commission                           | 2011 | List     | <a href="http://outdoornebraska.ne.gov/wildlife/programs/nongame/pdf/TandESpecies.pdf">http://outdoornebraska.ne.gov/wildlife/programs/nongame/pdf/TandESpecies.pdf</a> | <a href="http://mapserver.ngpc.state.ne.us/gispress/">http://mapserver.ngpc.state.ne.us/gispress/</a>   |

| Nebraska Category                       | Data Type         | Data Source  | Year | Format        | Url/Path  | Data Point-of-Contact   |
|---|-------------------|--|------|---------------|---|---|
| Other Environmental and Sensitive Areas | Native Vegetation | University of Nebraska-Lincoln (School of Natural Resources) | 2013 | Vector        | <a href="http://snr.unl.edu/data/geographygis/NebrGISland.asp">http://snr.unl.edu/data/geographygis/NebrGISland.asp</a> | <b>School of Natural Resources</b><br>University of Nebraska-Lincoln<br>Phone: 402-472-3471                           |
| Other Environmental and Sensitive Areas | Refuge Trail      | U.S. Fish & Wildlife Service                                 | 2013 | Vector - Line | <a href="http://www.fws.gov/GIS/data/national/index.htm">http://www.fws.gov/GIS/data/national/index.htm</a>             | <b>Chris Lett</b><br>National GIS Coordinator<br>U.S. Fish and Wildlife Service<br>chris_lett@fws.gov<br>303-275-2348 |

## **APPENDIX B.1**

# **REGULATED FACILITIES**

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**REGULATED FACILITIES**

**APPENDIX B.1 TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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**Facility Response Plans (FRP) Sites.** Source: U.S. EPA Region 7 FRP Database, December 21, 2017

Notes: FRP information can be viewed in the Region 7 Response and Planning Viewer. Users can request access to the viewer at <https://maps.tetrattech.com/viewers/viewers.aspx>.

| FRP Number | Facility Name  | Address  | City            | State | County               | Zip Code | Latitude | Longitude |
|------------|--|--|-----------------|-------|----------------------|----------|----------|-----------|
| 07A0115    | Merl Parr Station  | 106 11th St  | Charles City    | IA    | Black Hawk           | 50616    | 43.05270 | -92.67276 |
| 07A0021    | Magellan Pipeline Company - Waterloo Terminal  | 5360 Eldora Rd (Old Hwy 635)                       | Waterloo        | IA    | Black Hawk           | 50701    | 42.43750 | -92.42190 |
| 07A0116    | Electrifarm - MidAmerican Energy   | 3233 West Shaulis Rd                               | Waterloo        | IA    | Black Hawk           | 50704    | 42.44291 | -92.41914 |
| 07A0240    | Northland Products Company   | 1000 Rainbow Dr                                    | Waterloo        | IA    | Black Hawk           | 50701    | 42.51056 | -92.38333 |
| 07A0181    | Hawkeye Renewables - Fairbanks Ethanol Plant   | 1277 102nd St                                      | Fairbanks       | IA    | Buchanan/<br>Fayette | 50629    | 42.64070 | -92.02680 |
| 07A0229    | Valero - Albert City, LLC  | 2356 510th St                                      | Albert City     | IA    | Buena Vista          | 50510    | 42.77167 | -94.93889 |
| 07A0212    | Hawkeye Renewables Shell Rock Ethanol  | 30750 212th St - Hwy 3                             | Shell Rock      | IA    | Butler               | 50670    | 42.73750 | -92.61750 |
| 07A0300    | AGP - Manning Soybean Oil Production plant   | 1000 300 Street                                    | Manning         | IA    | Carroll              | 51455    |          |           |
| 07A0264    | REG Ralston, LLC   | 33321 215th St                                     | Ralston         | IA    | Carroll              | 51459    | 42.04392 | -94.64197 |
| 07A0025    | Magellan Pipeline Company - Mason City Terminal  | 2810 Main Ave E                                    | Clear Lake      | IA    | Cerro Gordo          | 50428    | 43.13890 | -93.35330 |
| 07A0256    | Golden Grain Energy, LLC   | 1833 43rd St SW, 14542 240th St; & 1822 43rd St SW | Mason City      | IA    | Cerro Gordo          | 50401    | 43.11203 | -93.23001 |
| 07A0269    | AGP - Mason City   | 1605 19th St. SW                                   | Mason City      | IA    | Cerro Gordo          |          |          |           |
| 07A0287    | REG Mason City   | 4172 19th Street SW                                | Mason City      | IA    | Cerro Gordo          | 50401    | 43.13443 | -93.26444 |
| 07A0232    | Little Sioux Corn Processors, L.P.   | 4808 F Ave   | Marcus          | IA    | Cherokee             | 51035    | 42.82167 | -95.76444 |
| 07A0271    | Homeland Energy Solutions, LLC   | 2779 Iowa Highway 24                               | Lawler          | IA    | Chickasaw            | 52154    | 43.07282 | -92.20644 |
| 07A0306    | AGP -Everly Oil Storage Facility   | 1755 340th Street                                  | Everly          | IA    | Clay                 | 51338    |          |           |
| 07A0179    | Camanche Facility  | 3101 - 21st St                                     | Camanche        | IA    | Clinton              | 52730    | 41.80086 | -90.28021 |
| 07A0112    | Archer Daniels Midland Company (Clinton)   | 1251 Beaver Channel Pkwy                           | Clinton         | IA    | Clinton              | 52732    | 41.82080 | -90.20830 |
| 07A0224    | Equistar Chemicals, L. P.  | 3400 Anamosa Road                                  | Clinton         | IA    | Clinton              |          | 41.81119 | -90.30010 |
| 07A0192    | Amaizing Energy, LLC - Ethanol Plant   | 2404 W Hwy 30                                      | Denison         | IA    | Crawford             | 51442    | 41.99028 | -95.39694 |
| 07A0239    | CHS Oilseed Processing   | 1310 East Howard Sstreet                           | Creston         | IA    | Dakota               | 50801    |          |           |
| 07A0128    | FEED Energy - Redfield, IA   | 1525 US Hwy 6                                      | Redfield        | IA    | Dallas               | 50233    | 41.59444 | -94.18139 |
| 07A0210    | VeraSun Dyersville Ethanol   | 3294 Vine Rd                                       | Dyersville      | IA    | Delaware             | 52040    | 42.48691 | -91.16048 |
| 07A0074    | Dept. of the Army - (Iowa Plant); U.S. Army, Iowa Army Ammunition Plant - American Ordnance, LLC | 17575 State Hwy 79                                 | Middletown      | IA    | Des Moines           | 52638    | 40.82616 | -91.26564 |
| 07A0262    | Big River Resources, LLC   | 15210 103rd Street                                 | West Burlington | IA    | Des Moines           | 52655    | 40.83169 | -91.22265 |

**Facility Response Plans (FRP) Sites.** Source: U.S. EPA Region 7 FRP Database, December 21, 2017

| FRP Number | Facility Name  | Address                   | City           | State | County    | Zip Code | Latitude | Longitude |
|------------|--|---------------------------|----------------|-------|-----------|----------|----------|-----------|
| 07A0017    | Magellan Pipeline Company - Milford Terminal           | 2451 Hwy 71               | Milford        | IA    | Dickinson | 51351    | 43.29190 | -95.15110 |
| 07A0193    | NuStar/Kaneb - Milford Terminal                        | 2127 220th St             | Milford        | IA    | Dickinson | 51351    | 43.32708 | -95.16732 |
| 07A0298    | Green Plains Superior                                  | 1495 320th Avenue         | Superior       | IA    | Dickinson | 51363    |          |           |
| 07A0010    | Magellan Pipeline Company - Dubuque Terminal           | 8038 St. Joe's Prairie Rd | Dubuque        | IA    | Dubuque   | 52003    | 42.41190 | -90.73190 |
| 07A0036    | BP Products - Dubuque Terminal                         | 15393 Old Hwy Rd          | Dubuque        | IA    | Dubuque   | 52068    | 42.48389 | -90.78778 |
| 07A0093    | Flint Hills Resources, LP - Dubuque Asphalt Plant      | 1550 Koch Court           | Dubuque        | IA    | Dubuque   | 52001    | 42.50640 | -90.65710 |
| 07A0094    | Koch Materials Co - Terminal II (Dubuque)              | 200 Terminal St           | Dubuque        | IA    | Dubuque   | 52001    | 42.49135 | -90.65888 |
| 07A0268    | Western Dubuque Biodiesel, LLC                         | 904 Jamesmeier Road       | Farley         | IA    | Dubuque   | 52046    | 42.44955 | -91.02090 |
| 07A0199    | Valero Charles City Ethanol Plant                      | 1787 Quarry Rd            | Charles City   | IA    | Floyd     | 50616    | 43.09403 | -92.74402 |
| 07A0205    | Green Plains Renewable Energy, Inc.                    | 4124 Airport Rd           | Shenandoah     | IA    | Fremont   | 51601    | 40.75722 | -95.39610 |
| 07A0257    | Louis Dreyfus Commodities Grand Junction, LLC          | 1149 U Ave                | Grand Junction | IA    | Greene    | 50107    | 42.05421 | -94.23854 |
| 07A0219    | Hawkeye Renewables - Menlo Ethanol Plant               | 3363 Talon Ave            | Menlo          | IA    | Guthrie   | 50164    | 41.52361 | -94.38194 |
| 07A0173    | Cargill, Inc. - Macy Terminal (Ackley)                 | 11186 Highway S-55        | Ackley         | IA    | Hardin    | 50601    | 42.61513 | -93.08545 |
| 07A0146    | Cargill, Inc. - Soybean Processing Plant (Iowa Falls)  | 602 Industrial Rd         | Iowa Falls     | IA    | Hardin    | 50126    | 42.51209 | -93.26489 |
| 07A0177    | Flint Hills Resources - Iowa Falls Ethanol Plant       | 21050 140th St            | Iowa Falls     | IA    | Hardin    | 50126    | 42.50481 | -93.28655 |
| 07A0216    | Flint Hills Resources (formerly Platinum Ethanol, LLC) | 2585 Quail Ave            | Arthur         | IA    | Ida       | 51431    | 42.33167 | -95.34917 |
| 07A0171    | Cargill, Inc. - Holstein Facility                      | 1317 Alpine               | Holstein       | IA    | Ida       | 51025    | 42.51537 | -95.64295 |
| 07A0263    | REG Newton, LLC  | 3426 East 28th            | Newton         | IA    | Jasper    | 50208    | 41.73109 | -93.01446 |
| 07A0019    | Magellan Pipeline Company - Iowa City Terminal         | 912 1st Ave               | Coralville     | IA    | Johnson   | 52241    | 41.68250 | -91.57030 |
| 07A0033    | BP Products - Cedar Rapids Terminal                    | 2092 Hwy 965 N.E.         | North Liberty  | IA    | Johnson   | 52317    | 41.78278 | -91.63250 |
| 07A0158    | Flint Hills Resources LP, Algona, IA                   | 832 N Main                | Algona         | IA    | Kossuth   | 50511    | 43.07596 | -94.21781 |
| 07A0299    | AGP - Algona Methyl Ester Plant                        | 2108 140th Ave            | Algona         | IA    | Kossuth   | 50511    |          |           |
| 07A0301    | AGP - Algona Soybean Oil Storage Terminal              | 1108 240th Street         | Algona         | IA    | Kossuth   | 50511    |          |           |
| 07A0249    | Global Ethanol, LLC                                    | 1660 428th St             | Lakota         | IA    | Kossuth   | 50451    | 43.38422 | -94.14375 |
| 07A0063    | Sinclair - Ft Madison Products Terminal                | 2010 35th St              | Ft Madison     | IA    | Lee       | 52627    | 40.61785 | -91.35533 |
| 07A0135    | Sinclair - Montrose Products Terminal                  | 2506 260th St             | Montrose       | IA    | Lee       | 52639    | 40.58146 | -91.42933 |
| 07A0108    | Cargill, Inc. - East Soybean Plant (Cedar Rapids)      | 411 6th St NE             | Cedar Rapids   | IA    | Linn      | 52402    | 41.98383 | -91.66711 |
| 07A0250    | Archer Daniels Midland Company                         | 1350 Waconia Ave SW       | Cedar Rapids   | IA    | Linn      | 52404    | 41.92722 | -91.68639 |
| 07A0189    | NuStar/Kaneb - Rock Rapids Terminal                    | 3025 Highway 9 St         | Rock Rapids    | IA    | Lyon      | 51246    | 43.43271 | -96.19064 |



**Facility Response Plans (FRP) Sites.** Source: U.S. EPA Region 7 FRP Database, December 21, 2017

| FRP Number | Facility Name                                      | Address                     | City           | State | County       | Zip Code | Latitude | Longitude |
|------------|--|-----------------------------|----------------|-------|--------------|----------|----------|-----------|
| 07A0176    | Bunge Soybean Processing Division (Council Bluffs) | 19560 Bunge Ave             | Council Bluffs | IA    | Mills        | 51502    | 41.14944 | -95.81112 |
| 07A0253    | Absolute Energy, LLC                               | 1372 State Line Rd          | St. Ansgar     | IA    | Mitchell     | 50472    | 43.49861 | -92.94917 |
| 07A0217    | Valero Hartley, LLC                                | 3260 Van Buren Ave          | Hartley        | IA    | Obrien       | 51346    | 43.18225 | -95.49838 |
| 07A0296    | AGP-Sheldon  | 804 Second Street           | Sheldon        | IA    | O'Brien      | 51201    |          |           |
| 07A0285    | AGP - Emmetsburg                                   | 4739 380th Street           | Emmetsburg     | IA    | Palo Alto    | 50536    |          |           |
| 07A0197    | NuStar/Kaneb - Le Mars Terminal                    | 33035 C12                   | Le Mars        | IA    | Plymouth     | 51031    | 42.89475 | -96.17463 |
| 07A0020    | Magellan Pipeline Company - Des Moines Terminal    | 2503 SE 43rd St             | Des Moines     | IA    | Polk         | 50327    | 41.55988 | -93.52942 |
| 07A0032    | Buckeye Energy Services - Des Moines Terminal      | 1501 NW 86th St             | Des Moines     | IA    | Polk         | 50325    | 41.60278 | -93.73389 |
| 07A0055    | Bituminous Materials - Des Moines                  | 900 E Raccoon               | Des Moines     | IA    | Polk         | 50309    | 41.58447 | -93.60318 |
| 07A0109    | Cargill, Inc. - Des Moines                         | 3030 E Granger Ave          | Des Moines     | IA    | Polk         | 50317    | 41.57557 | -93.55715 |
| 07A0248    | Archer Daniels Midland (ADM) - Des Moines          | 1935 East Euclid Ave        | Des Moines     | IA    | Polk         | 50313    | 41.62750 | -93.58556 |
| 07A0119    | Sycamore Energy Center - MidAmerican Energy        | 6141 NW Beaver Dr           | Johnston       | IA    | Polk         | 50131    | 41.67174 | -93.68034 |
| 07A0104    | Phillips 66 - Des Moines Terminal                  | 4500 Vandalia Rd            | Pleasant Hill  | IA    | Polk         | 50327    | 41.56870 | -93.52784 |
| 07A0117    | Pleasant Hill Energy Center                        | 3191 SE 45th St             | Pleasant Hill  | IA    | Polk         | 50217    | 41.55590 | -93.52462 |
| 07A0118    | Council Bluffs Energy Center - MidAmerician Energy | 2115 Navajo St              | Council Bluffs | IA    | Pottawatomie | 51501    | 41.18678 | -95.84122 |
| 07A0039    | Buckeye Terminals - Council Bluffs                 | 829 E South Omaha Bridge Rd | Council Bluffs | IA    | Pottawatomie | 51503    | 41.21780 | -95.83225 |
| 07A0090    | Koch Materials Co. - Council Bluffs                | 2200 River Rd               | Council Bluffs | IA    | Pottawatomie | 51501    | 41.24079 | -95.90918 |
| 07A0123    | Warren Performance Packaging                       | 2850 River Rd               | Council Bluffs | IA    | Pottawatomie | 51501    | 41.23314 | -95.90685 |
| 07A0131    | NCRA Council Bluffs Terminal                       | 825 E South Omaha Bridge Rd | Council Bluffs | IA    | Pottawatomie | 51503    | 41.21714 | -95.83398 |
| 07A0252    | Southwest Iowa Renewable Energy (SIRE)             | 10868 189th St              | Council Bluffs | IA    | Pottawatomie | 51503    | 41.17151 | -95.82865 |
| 07A0310    | Gable Corp. - SLN Facility                         | 10410 Bunge Ave             | Council Bluffs | IA    | Pottawatomie | 51503    | 41.17641 | -95.80298 |
| 07A0273    | Western Iowa Energy                                | 1220 S Central              | Wall Lake      | IA    | Sac          |          | 42.25437 | -95.09227 |
| 07A0035    | BP Products - Bettendorf Terminal                  | 75 31st St                  | Bettendorf     | IA    | Scott        | 52722    | 41.52356 | -90.48857 |
| 07A0048    | Noble Petro Bettendorf Terminal                    | 2925 Depot St               | Bettendorf     | IA    | Scott        | 52722    | 41.52518 | -90.49153 |
| 07A0085    | CITGO Petroleum Corp. - Bettendorf Terminal        | 312 S Bellingham St         | Bettendorf     | IA    | Scott        | 52722    | 41.52278 | -90.50333 |
| 07A0091    | Flint Hills Resources - Bettendorf Terminal        | 4100 Elm St                 | Bettendorf     | IA    | Scott        | 52722    | 41.52411 | -90.47712 |
| 07A0100    | Alcoa - Davenport Works                            | 4879 State St               | Bettendorf     | IA    | Scott        | 52722    | 41.53787 | -90.46632 |
| 07A0155    | Magellan Pipeline Company - Bettendorf Terminal    | 312 S Bellingham St         | Bettendorf     | IA    | Scott        | 52722    | 41.53203 | -90.46963 |
| 07A0037    | TexPar Energy, LLC (Davenport Terminal)            | 601 E Front St              | Buffalo        | IA    | Scott        | 52728    | 41.46413 | -90.67708 |

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| 07A0050    | Cargill, Inc. - Buffalo                                      | 1657 Front St              | Buffalo        | IA    | Scott      | 52728    | 41.45637 | -90.78000 |
| 07A0092    | Flint Hills Resources - Davenport                            | 501 East Front St          | Davenport      | IA    | Scott      | 52804    | 41.46435 | -90.68145 |
| 07A0227    | Siouxland Energy and Livestock Cooperative                   | 3890 Garfield Ave          | Sioux Center   | IA    | Sioux      | 51250    | 43.08560 | -96.22995 |
| 07A0288    | Siouxland Energy Cooperative (Ethanol and Rail Terminal)     | 3890 Garfield Avenue       | Sioux Center   | IA    | Sioux      | 51250    | 43.08953 | -96.23188 |
| 07A0267    | Lincolnway Energy, LLC                                       | 59511 West Lincoln Highway | Nevada         | IA    | Story      |          | 42.02540 | -93.50839 |
| 07A0294    | Bituminous Materials   | 3380 L Avenue              | Tama           | IA    | Tama       | 52339    |          |           |
| 07A0239    | Creston Bean   | 1310 East Howard St        | Creston        | IA    | Union      | 50801    | 41.06085 | -94.34504 |
| 07A0034    | BP Products - Ottumwa Terminal                               | 16848 - 87th St            | Ottumwa        | IA    | Wapello    | 52501    | 41.01222 | -92.48195 |
| 07A0291    | Cargill Eddyville  | 1 Cargill Drive            | Eddyville      | IA    | Wappelo    | 52553    |          |           |
| 07A0272    | Iowa Renewable Energy, LLC                                   | 1701 East 7th St           | Washington     | IA    | Washington |          | 41.30694 | -91.66861 |
| 07A0006    | Growmark, Inc. - Fort Dodge Terminal                         | 3140 - 200th St            | Duncombe       | IA    | Webster    | 50532    | 42.49940 | -94.02170 |
| 07A0218    | Valero Fort Dodge Ethanol                                    | 1930 Hayes Ave             | Fort Dodge     | IA    | Webster    | 50501    | 42.51423 | -94.30487 |
| 07A0223    | Tate & Lyle Fort Dodge Plant                                 | 1989 Hayes Ave             | Fort Dodge     | IA    | Webster    | 50501    | 42.50524 | -94.31461 |
| 07A0073    | AGP - Sergeant Bluff   | Port Neal Industrial Rd    | Sergeant Bluff | IA    | Woodbury   | 51054    |          |           |
| 07A0022    | Magellan Pipeline Company - Sioux City Terminal              | 4300 - 41st St             | Sioux City     | IA    | Woodbury   | 51108    | 42.53921 | -96.35682 |
| 07A0120    | Darling Facility - Sioux City                                | 1900 Murray Rd             | Sioux City     | IA    | Woodbury   | 51102    | 42.42584 | -96.38979 |
| 07A0168    | Westway Terminal Company (Sioux City)                        | 4425 41st St               | Sioux City     | IA    | Woodbury   | 51108    | 42.54082 | -96.35468 |
| 07A0172    | Cargill, Inc. - Sioux City Facility                          | 1016 Clark St.             | Sioux City     | IA    | Woodbury   | 51101    | 42.50086 | -96.39101 |
| 07A0180    | Jebro, Inc.  | 2303 Bridgeport Dr         | Sioux City     | IA    | Woodbury   | 51111    | 42.43114 | -96.37904 |
| 07A0284    | AGP - Eagle Grove  | 500 N. Commercial Avenue   | Eagle Grove    | IA    | Wright     | 50533    |          |           |
| 07A0293    | Corn, LP   | 1303 Highway 3 East        | Goldfield      | IA    | Wright     | 50542    |          |           |
| 07A0307    | Growmark, Inc. - Council Bluffs Lubricants                   | 2200 South Avenue          | Council Bluffs | IA    |            | 51503    |          |           |
| 07A0304    | Grain Processing Corp  | 1600 Oregon Street         | Muscatine      | IA    |            | 52761    |          |           |
| 07A0190    | East Kansas Agri-Energy, LLC                                 | 1304 S Main St             | Garnett        | KS    | Anderson   | 66032    | 38.27250 | -95.24000 |
| 07A0057    | Magellan Pipeline Company - Great Bend Terminal              | 48 NE Highway 156          | Great Bend     | KS    | Barton     | 67530    | 38.34933 | -98.81121 |
| 07A0040    | Coastal Refining & Mktg. - Augusta                           | 321 Oak St                 | Augusta        | KS    | Butler     | 67010    | 37.67381 | -96.98142 |
| 07A0042    | El Paso Merchant Energy - Petroleum Co. - El Dorado Terminal | 1835 N Topeka              | El Dorado      | KS    | Butler     | 67042    | 37.83836 | -96.85907 |
| 07A0072    | Frontier El Dorado Refining Co.                              | 1401 S Douglas Rd          | El Dorado      | KS    | Butler     | 67042    | 37.79560 | -96.86670 |

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| 07A0265    | MVPurchasing   | 3760 SW 20th St         | El Dorado     | KS    | Butler      |          | 37.79707 | -96.91084  |
| 07A0266    | NuStar Energy - El Dorado Station                              | 1624 Sunset             | El Dorado     | KS    | Butler      |          | 37.80472 | -96.87361  |
| 07A0141    | Empire District Electric - Riverton Power Plant                | 7240 SE Hwy 66          | Riverton      | KS    | Cherokee    | 66770    | 37.07466 | -94.69935  |
| 07A0195    | NuStar/Kaneb - Concordia Terminal                              | 1612 Deer Rd/US Hwy 24  | Delphos       | KS    | Cloud       | 67436    | 39.36412 | -97.62872  |
| 07A0069    | Valero Arkansas City Terminal                                  | 1400 South M St         | Arkansas City | KS    | Cowley      | 67005    | 37.04780 | -97.02310  |
| 07A0023    | Growmark, Inc. - St. Joe Terminal                              | 963 Vernon Rd           | Wathena       | KS    | Doniphan    | 66090    | 39.75181 | -94.92677  |
| 07A0001    | Sunflower Electric Power Corp. - Garden City Station           | 2075 West Saint John St | Garden City   | KS    | Finney      | 67846    | 37.97212 | -100.89339 |
| 07A0236    | Bonanza BioEnergy  | 2830 US Highway 50      | Garden City   | KS    | Finney      | 67846    | 37.95864 | -100.83600 |
| 07A0276    | Garden City Co-op, Inc. - Lowe Elevator                        | 6915 W. Lowe Road       | Holcomb       | KS    | Finney      |          | 38.03389 | -100.98972 |
| 07A0054    | Ergon Asphalt and Emulsions                                    | 2600 Butter and Egg Rd  | Dodge City    | KS    | Ford        | 67801    | 37.74700 | -99.97780  |
| 07A0127    | Sunflower Electric Power Corp - Dodge City Station             | 11453 Fort Dodge Rd     | Dodge City    | KS    | Ford        | 67801    | 37.73333 | -99.95000  |
| 07A0215    | Western Plains Energy, LLC                                     | 3022 County Rd 18       | Oakley        | KS    | Gove        | 67748    | 39.12149 | -100.73523 |
| 07A0203    | Ergon Asphalt and Emulsions - Halstead KS                      | 300 Industrial Rd       | Halstead      | KS    | Harvey      | 67056    | 38.00500 | -97.52167  |
| 07A0097    | Former Sunflower Army Ammunition Plant                         | 35425 W 103rd St        | Desoto        | KS    | Johnson     | 66018    | 38.94189 | -94.99608  |
| 07A0024    | Magellan Pipeline Company - Olathe Terminal                    | 13745 W 135th St        | Olathe        | KS    | Johnson     | 66062    | 38.88170 | -94.74470  |
| 07A0129    | Exxon USA - Olathe Grease Plant                                | 1400 S. Harrison        | Olathe        | KS    | Johnson     | 66061    | 38.86250 | -94.81472  |
| 07A0170    | Neosho Energy Center   | 2365 22000 Rd           | Parsons       | KS    | Labette     | 67357    | 37.30583 | -95.11250  |
| 07A0049    | Ergon Asphalt & Emissions, LLC                                 | 10520 Wolcott Dr        | Kansas City   | KS    | Leavenworth | 66109    | 39.20137 | -94.82184  |
| 07A0027    | KCP&L - La Cygne Station                                       | 25166 E 2200 Road       | La Cygne      | KS    | Linn        | 66040    | 38.34667 | -94.64167  |
| 07A0121    | Bunge (Emporia) Corporation, North America (OPD West), Inc.    | 701 East 6th Ave        | Emporia       | KS    | Lyon        | 66801    | 38.40435 | -96.16931  |
| 07A0160    | McPherson Board of Public Utilities (Power Plant No 2)         | 1128 West Avenue A      | McPherson     | KS    | McPherson   | 67460    | 38.36244 | -97.68121  |
| 07A0185    | ONEOK, Conway Facility   | 661 Highway 56          | McPherson     | KS    | McPherson   | 67460    | 38.37389 | -97.80472  |
| 07A0201    | Mid-Continent Fractionation and Storage, LLC                   | 1372 Seventh Ave        | McPherson     | KS    | McPherson   | 67460    | 38.37278 | -97.79556  |
| 07A0231    | NuStar Pipeline Operating Partnership L.P. - McPherson Station | 1152 14th Ave           | McPherson     | KS    | McPherson   |          | 38.34111 | -97.66621  |
| 07A0004    | Coffeyville Resources Refining & Marketing                     | 400 N Linden St         | Coffeyville   | KS    | Montgomery  | 67337    | 37.05000 | -95.60139  |
| 07A0295    | CleanHarbors - Coffeyville Transformer Processing Facility     | 2474 Highway 169        | Coffeyville   | KS    | Montgomery  | 67337    |          |            |
| 07A0067    | Coffeyville Resources Terminal - Phillipsburg                  | Hwy 183 N               | Phillipsburg  | KS    | Phillips    | 67661    | 39.82960 | -99.36490  |

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| 07A0206    | Prairie Horizon Agri-Energy, LLC                       | 1664 E 100 Rd                            | Phillipsburg  | KS    | Phillips     | 67661    | 39.76110 | -99.30720  |
| 07A0258    | TAMKO Building Products                                | 1598 North Highway 183                   | Phillipsburg  | KS    | Phillips     |          | 39.77034 | -99.32802  |
| 07A0149    | Jeffrey Energy Center                                  | 25905 Jeffrey Rd                         | St. Marys     | KS    | Pottawatomie | 66536    | 39.28204 | -96.11413  |
| 07A0150    | Hutchinson Energy Center                               | 3200 East 30th Ave                       | Hutchinson    | KS    | Reno         | 67502    | 38.08664 | -97.87543  |
| 07A0152    | OHLP Hutchinson  | 1910 South Broadacres Rd                 | Hutchinson    | KS    | Reno         | 67501    | 38.03330 | -97.97230  |
| 07A0159    | Enterprise Products Operating, LP - Hutchinson (EPOLP) | 2621 Mohawk Rd or 2610 S Mohawk Rd       | Hutchinson    | KS    | Reno         | 67501    | 38.02140 | -97.99273  |
| 07A0191    | NuStar/Kaneb - Hutchinson Terminal                     | 3300 E Avenue G                          | Hutchinson    | KS    | Reno         | 67501    | 38.04444 | -97.87389  |
| 07A0003    | ONEOK Field Services - Bushton                         | 777 Avenue Y                             | Bushton       | KS    | Rice         | 67427    | 38.51970 | -98.35190  |
| 07A0126    | Kansas Ethanol, LLC                                    | 1630 Ave Q                               | Lyons         | KS    | Rice         | 67554    | 38.28533 | -98.19538  |
| 07A0242    | Universal Lubricants                                   | Avenue N and 17th Rd (Sec 10, T20S, R8W) | Lyons         | KS    | Rice         | 67554    | 38.33314 | -98.18342  |
| 07A0270    | US Energy Partners, LLB DBA White Energy               | 1224 East 15th Street                    | Russell       | KS    | Russell      |          | 38.89934 | -98.84427  |
| 07A0200    | NuStar/Kaneb - Salina Terminal                         | 2137 W Old Highway 40                    | Salina        | KS    | Salina       | 67401    | 38.84139 | -97.64139  |
| 07A0056    | Magellan Pipeline Company - Scott City Terminal        | 100 Hwy 4                                | Scott City    | KS    | Scott        | 67871    | 38.59854 | -100.90599 |
| 07A0162    | Magellan Pipeline Company - Wichita Terminal           | 1120 S Meridian                          | Valley Center | KS    | Sedgwick     | 67147    | 37.81865 | -97.36986  |
| 07A0136    | Gordon Evans Energy Center                             | 6001 N. 151 St W                         | Colwich       | KS    | Sedgwick     | 67030    | 37.79033 | -97.52263  |
| 07A0041    | Coastal Refining & Mktg. - Wichita                     | 1100 East 21st St N                      | Wichita       | KS    | Sedgwick     | 67214    | 37.72422 | -97.32319  |
| 07A0047    | Phillips 66 - Wichita North                            | 2400 E 37th St N                         | Wichita       | KS    | Sedgwick     | 67219    | 37.75235 | -97.30826  |
| 07A0105    | Phillips 66 - Wichita South                            | 8001 Oak Knoll St                        | Wichita       | KS    | Sedgwick     | 67207    | 37.64996 | -97.24432  |
| 07A0106    | BG Products, Inc.                                      | 701 S Wichita                            | Wichita       | KS    | Sedgwick     | 67213    | 37.67855 | -97.34087  |
| 07A0139    | Cargill, Inc. - Oilseeds Division (Wichita)            | 1425 N. Mosley & 1417 N. Barwise         | Wichita       | KS    | Sedgwick     | 67214    | 37.70861 | -97.32778  |
| 07A0151    | Murray Gill Energy Center                              | 6100 West 55th St S                      | Wichita       | KS    | Sedgwick     | 67215    | 37.59330 | -97.41263  |
| 07A0174    | Boeing (Wichita) Integrated Defense Systems (IDS)      | 4610 S Oliver St                         | Wichita       | KS    | Sedgwick     | 67210    | 37.60453 | -97.28057  |
| 07A0225    | McConnell Air Force Base                               | 57830 Pittsburg Street, Suite 120        | Wichita       | KS    | Sedgwick     | 67221    | 37.63759 | -97.25148  |
| 07A0238    | Lubrication Engineers, Inc.                            | 1919 E Tulsa St                          | Wichita       | KS    | Sedgwick     | 67216    | 37.63572 | -97.31386  |
| 07A0259    | Universal Lubricants                                   | 2824 North Ohio                          | Wichita       | KS    | Sedgwick     |          | 37.73417 | -97.32417  |
| 07A0308    | HOC Industries, Inc.                                   | 3511 North Ohio and 3684 North Ohio      | Wichita       | KS    | Sedgwick     | 67219    |          |            |
| 07A0309    | RS Used Oil Services, Inc.                             | 2932 and 2808 North Ohio Street          | Wichita       | KS    | Sedgwick     | 67220    |          |            |

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| 07A0312    | Clean Harbors Wichita, LLC  | 2932 and 2808 North Ohio Street | Wichita      | KS    | Sedgwick  | 67219    |          |            |
| 07A0237    | Arkalon Ethanol   | 8664 Road P                     | Liberal      | KS    | Seward    | 67901    | 37.11056 | -100.80361 |
| 07A0096    | Goodyear Tire & Rubber Co. - Topeka Facility                            | 2000 NW Hwy 24                  | Topeka       | KS    | Shawnee   | 66618    | 39.09480 | -95.69562  |
| 07A0007    | Magellan Pipeline Company - Topeka Terminal                             | 8050 SW Topeka Blvd             | Wakarusa     | KS    | Shawnee   | 66546    | 38.92126 | -95.68529  |
| 07A0002    | Board of Public Utilities - Quindaro Power Station                      | 3601 N 12th St.                 | Kansas City  | KS    | Wyandotte | 66104    | 39.14830 | -94.63810  |
| 07A0008    | Magellan Pipeline Company - Fairfax West Filter Press Reclamation       | 1090C Sunshine Rd               | Kansas City  | KS    | Wyandotte | 66115    | 39.15000 | -94.63420  |
| 07A0009    | Magellan Pipeline Company - Kansas City                                 | 401 E Donovan Rd                | Kansas City  | KS    | Wyandotte | 66115    | 39.13810 | -94.60250  |
| 07A0045    | Phillips 66 - Kansas City Terminal                                      | 2029 Fairfax Trfwy              | Kansas City  | KS    | Wyandotte | 66115    | 39.12497 | -94.61045  |
| 07A0077    | Interstate Oil dba Lubripac   | 301 E. Donovan                  | Kansas City  | KS    | Wyandotte | 66115    | 39.14008 | -94.59740  |
| 07A0083    | International Paper Co.   | 401 Kindleberger Rd             | Kansas City  | KS    | Wyandotte | 66115    | 39.14972 | -94.61722  |
| 07A0124    | Sante Fe Railroad (Argentine Railyard) Locomotive Maint. Insp. Terminal | 2201 Argentine Blvd             | Kansas City  | KS    | Wyandotte | 66106    | 39.07890 | -94.65383  |
| 07A0144    | Exxon Mobil Oil Corporation - KC Lube Plant                             | 966 Sunshine Rd                 | Kansas City  | KS    | Wyandotte | 66115    | 39.14674 | -94.63188  |
| 07A0161    | Proctor & Gamble Manufacturing Company                                  | 1900 Kansas Ave                 | Kansas City  | KS    | Wyandotte | 66105    | 39.08731 | -94.65041  |
| 07A0175    | Fuchs Lubricants Co. - KC Division                                      | 2140 South 88th St              | Kansas City  | KS    | Wyandotte | 66111    | 39.06065 | -94.78368  |
| 07A0220    | Sinclair Kansas City Products Terminal                                  | 3401 Fairbanks Ave              | Kansas City  | KS    | Wyandotte | 66106    | 39.08333 | -94.66667  |
| 07A0311    | Plains All American - Cold Water Station                                |                                 | Cold Water   | KS    |           |          |          |            |
| 07A0280    | Plains Marketing - Healy Station  | Bison II Road                   | Healy        | KS    |           |          |          |            |
| 07A0303    | Pratt Energy, LLC   | 10333 Northeast 30th Street     | Pratt        | KS    |           | 67124    |          |            |
| 07A0279    | Plains Marketing - Harpers Ranch Station                                | Avenue Q                        | Raymond      | KS    |           |          |          |            |
| 07A0281    | Plains Marketing - Schurr Station                                       | X Highway                       | Sitka        | KS    |           |          |          |            |
| 07A0245    | Archer Daniels Midland Co./Mexico                                       | 400 E. Holt St                  | Mexico       | MO    | Audrain   | 65265    | 39.16917 | -91.87889  |
| 07A0005    | Magellan Pipeline Company - Columbia Terminal                           | 5531 Highway 63 S               | Columbia     | MO    | Boone     | 65201    | 38.88530 | -92.26560  |
| 07A0198    | Aquila - Lower Lake Road Generating Station (St. Joseph, MO)            | 1413 Lower Lake Rd              | St Joseph    | MO    | Buchanan  | 64504    | 39.72500 | -94.87722  |
| 07A0098    | AGP - St. Joseph  | 900 Lower Lake Rd               | St. Joseph   | MO    | Buchanan  | 64504    |          |            |
| 07A0292    | HPB - St. Joe Biodiesel   | 5701 Stockyards Expressway      | St. Joseph   | MO    | Buchanan  | 65404    |          |            |
| 07A0230    | ICM Biofuels Operator/Life Line Foods Owner                             | 2811 S. 11th St.                | St. Joseph   | MO    | Buchanan  | 64503    | 39.73943 | -94.84551  |
| 07A0202    | Poplar Bluff Power Plant  | 112 Johnson Dr                  | Poplar Bluff | MO    | Butler    | 63901    | 36.76028 | -90.38861  |

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| 07A0081    | Trans-Montaigne - Cape Girardeau Terminal                                 | 1400 S Giboney St              | Cape Girardeau    | MO    | Cape Girardeau | 63703    | 37.28528 | -89.52833 |
| 07A0211    | Show Me Ethanol, LLC  | 26530 E Hwy 24                 | Carrollton        | MO    | Carroll        | 64633    | 39.36282 | -93.45345 |
| 07A0221    | Sinclair Carrollton Products Terminal                                     | 26036 Old Highway 24           | Carrollton        | MO    | Carroll        | 64633    | 39.36528 | -93.45833 |
| 07A0031    | BP Pipeline Company   | 700 E Main Street              | Freeman           | MO    | Cass           | 64746    | 38.61709 | -94.49931 |
| 07A0143    | Brenntag - Mid South Division   | 6301 NE Birmingham Rd          | Kansas City       | MO    | Clay           | 64117    | 39.15441 | -94.50482 |
| 07A0145    | Archer Daniels Midland Company - NKC Plant                                | 200 West 19th Ave              | North Kansas City | MO    | Clay           | 64116    | 39.14184 | -94.58075 |
| 07A0154    | Jesco Resources, Inc.   | 1437 Gentry St                 | North Kansas City | MO    | Clay           | 64116    | 39.13485 | -94.57372 |
| 07A0046    | Phillips 66 - Jefferson City Terminal                                     | 2116 Idlewood Rd               | Jefferson City    | MO    | Cole           | 65109    | 38.54900 | -92.21430 |
| 07A0013    | Magellan Pipeline Company - Springfield Terminal                          | 3132 S State Hwy MM            | Brookline         | MO    | Greene         | 65619    | 37.15871 | -93.42292 |
| 07A0099    | BNSF - Springfield Yard   | 1625 N Lexington Ave           | Springfield       | MO    | Greene         | 65802    | 37.22740 | -93.31451 |
| 07A0030    | KCP&L - Montrose Station  | 400 SW Highway P               | Clinton           | MO    | Henry          | 64735    | 38.31333 | -93.93306 |
| 07A0297    | Coastal Energy Corporation  | 234 Burnham Road               | Willow Springs    | MO    | Howell         | 65793    |          |           |
| 07A0071    | Greenwood Energy Center   | 14015 S Smart Road             | Greenwood         | MO    | Jackson        | 64034    | 38.86306 | -94.30056 |
| 07A0076    | Dept. of the Army (Lake City); U.S. Army Lake City, Army Ammunition Plant | Intersection of MO Hwys 7 & 78 | Independence      | MO    | Jackson        | 64051    | 39.10393 | -94.27906 |
| 07A0026    | KCP&L - Northeast Station   | 920 N Olive Street             | Kansas City       | MO    | Jackson        | 64120    | 39.12417 | -94.55528 |
| 07A0029    | KCP&L - Hawthorn Station  | 8700 Front Street              | Kansas City       | MO    | Jackson        | 64120    | 39.12667 | -94.47917 |
| 07A0088    | Vance Brothers  | 4915 Chelsea                   | Kansas City       | MO    | Jackson        | 64130    | 39.03607 | -94.52785 |
| 07A0107    | Cargill, Inc. - Soybean Processing Facility (KC)                          | 2306 Rochester St              | Kansas City       | MO    | Jackson        | 64120    | 39.12103 | -94.55563 |
| 07A0110    | Borchers Oil, Inc.  | Front Street                   | Kansas City       | MO    | Jackson        |          | 39.12389 | -94.55611 |
| 07A0235    | Vance Brothers - Brighton   | 5201 Brighton Ave              | Kansas City       | MO    | Jackson        | 64130    | 39.03007 | -94.52657 |
| 07A0283    | Union Pacific RR KC Neff Yard   | 6400 Martin Avenue             | Kansas City       | MO    | Jackson        | 64120    |          |           |
| 07A0038    | Buckeye - Sugar Creek (BTUG)  | 1000 N Sterling Ave            | Sugar Creek       | MO    | Jackson        | 64054    | 39.12222 | -94.43750 |
| 07A0012    | Magellan Pipeline Company - Carthage Terminal                             | 18195 County Rd 138            | Jasper            | MO    | Jasper         | 64755    | 37.31360 | -94.30470 |
| 07A0070    | International Paper   | 3202 E. 20th St                | Joplin            | MO    | Jasper         | 64803    | 37.06173 | -94.47558 |
| 07A0148    | State Line Power Plan   | 2299 S State Line Ave          | Joplin            | MO    | Jasper         | 64804    | 37.07276 | -94.61773 |
| 07A0142    | Empire Energy Center  | 2537 Fir Road                  | Sarcoxi           | MO    | Jasper         | 64862    | 37.14189 | -94.10358 |
| 07A0188    | Holden Power Plant  | 100 SW State Rd 131            | Holden            | MO    | Johnson        | 64040    | 38.75333 | -93.99778 |



**Facility Response Plans (FRP) Sites.** Source: U.S. EPA Region 7 FRP Database, December 21, 2017

| FRP Number | Facility Name   | Address                         | City              | State | County                  | Zip Code | Latitude | Longitude |
|------------|---|---------------------------------|-------------------|-------|-------------------------|----------|----------|-----------|
| 07A0137    | USAF Whiteman AFB   | 509 Spirit Blvd.                | Whiteman AFB      | MO    | Johnson                 | 65305    | 38.73742 | -93.57570 |
| 07A0164    | Phillips 66 - Mount Vernon Terminal   | 15138 Hwy 96                    | Mount Vernon      | MO    | Lawrence                | 65712    | 37.10470 | -93.78820 |
| 07A0138    | TransMontaigne Company - Mt. Vernon Terminal                                      | 15376 Hwy 96                    | Mt. Vernon        | MO    | Lawrence                | 65712    | 37.19056 | -93.77917 |
| 07A0084    | Ayers Oil Company - Canton, MO Terminal   | 610 N 4th Street                | Canton            | MO    | Lewis                   | 63435    | 40.13417 | -91.51444 |
| 07A0061    | KMRC - LaGrange, MO Terminal  | 905 N Main Street               | LaGrange          | MO    | Lewis                   | 63448    | 40.05328 | -91.49692 |
| 07A0165    | ConocoPhillips - Belle Terminal   | 33139 Highway 28, E             | Belle             | MO    | Maries                  | 65013    | 38.23064 | -91.71987 |
| 07A0014    | Magellan Pipeline Company - Palmyra Terminal                                      | 6789 County Rd 312              | Palmyra           | MO    | Marion                  | 63461    | 39.87670 | -91.52690 |
| 07A0062    | Sinclair - New Madrid Terminal  | 211 Water St                    | New Madrid        | MO    | New Madrid              | 63869    | 36.58416 | -89.52410 |
| 07A0087    | Heartland Asphalt Materials   | 297 Hwy 61 S                    | New Madrid        | MO    | New Madrid              | 63869    | 36.57880 | -89.55833 |
| 07A0286    | Marquis-Missouri Terminal LLC   | 2353 North State Highway D      | Hayti             | MO    | Pemiscot                | 63851    |          |           |
| 07A0277    | Calumet Missouri, LLC   | 11089 Highway D                 | Louisiana         | MO    | Pike                    | 63353    | 39.42297 | -91.02748 |
| 07A0095    | KCI - Bulk Fuel Storage Facility  | 217 Bern St                     | Kansas City       | MO    | Platte                  | 64153    | 39.31244 | -94.71503 |
| 07A0103    | Magellan Pipeline Co. - Riverside Products Terminal                               | 6699 NW Riverpark Dr            | Riverside         | MO    | Platte                  | 64150    | 39.17946 | -94.65743 |
| 07A0028    | KCP&L - Iatan Station   | 20250 Highway 45 North          | Weston            | MO    | Platte                  | 64098    | 39.45167 | -94.97667 |
| 07A0133    | Fort Leonard Wood (U.S. Army)   | Building 2101                   | Fort Leonard Wood | MO    | Pulaski, Texas, Laclede | 65473    | 37.76540 | -92.09570 |
| 07A0166    | Unionville Power Plant  | 18895 State Highway 5           | Unionville        | MO    | Putnam                  | 63565    | 40.45989 | -93.02122 |
| 07A0169    | Mid-Missouri Energy, Inc. - Ethanol Plant   | 15311 N. Saline 65 Hwy          | Malta Bend        | MO    | Saline                  | 65339    | 39.19722 | -93.38639 |
| 07A0122    | TE Products Pipeline Co. (TEPPCO) - Cape Girardeau District (Scott City Terminal) | 10653 State Hwy N               | Scott City        | MO    | Scott County            | 63780    | 37.22627 | -89.48213 |
| 07A0132    | BKEP - St. Louis Terminal   | 201 E Nagel Street              | St. Louis         | MO    | St Louis                | 63111    | 38.54972 | -90.25222 |
| 07A0111    | The Kiesel Company / Kiesel Marine  | 1 Branch St                     | St. Louis         | MO    | St Louis City           | 63147    | 38.65885 | -90.18565 |
| 07A0246    | Buckeye Terminals - South Terminal  | 4040 S 1st St or 4070 S 1st St? | St. Louis         | MO    | St Louis City           | 63118    | 38.58003 | -90.22238 |
| 07A0102    | Conoco, Inc. - St. Charles Products Terminal                                      | 4000 Mueller Rd                 | St. Charles       | MO    | St. Charles             | 63301    | 38.82562 | -90.50705 |
| 07A0011    | Magellan Pipeline Company - St Charles Terminal                                   | 4751 Veterans Memorial Pkwy     | St. Peters        | MO    | St. Charles             | 63376    | 38.79649 | -90.58714 |
| 07A0086    | Pennzoil-Quaker State Company (dba SOPUS Products)                                | 2625 Wagner Place               | Maryland Heights  | MO    | St. Louis               | 63043    | 38.71000 | -90.42318 |
| 07A0053    | Koch Materials Co - St. Louis   | 6350 Knox Industrial Crt        | St. Louis         | MO    | St. Louis               | 63139    | 38.61711 | -90.29517 |
| 07A0058    | J. D. Street & Co. - Park Avenue  | 4067 Park Ave                   | St. Louis         | MO    | St. Louis               | 63110    | 38.62181 | -90.24923 |

**Facility Response Plans (FRP) Sites.** Source: U.S. EPA Region 7 FRP Database, December 21, 2017

| FRP Number | Facility Name   | Address                                   | City       | State | County         | Zip Code | Latitude | Longitude |
|------------|---|---|------------|-------|----------------|----------|----------|-----------|
| 07A0059    | J. D. Streett & Co. - 1st Street  | 3800 S First St                           | St. Louis  | MO    | St. Louis      | 63118    | 38.58426 | -90.21756 |
| 07A0060    | KMRC - St. Louis, MO Terminal   | 4000 Koch Road                            | St. Louis  | MO    | St. Louis      | 63129    | 38.48830 | -90.28409 |
| 07A0064    | J. D. Streett & Co. - River Road  | No 1 River Rd                             | St. Louis  | MO    | St. Louis      | 63125    | 38.50905 | -90.27341 |
| 07A0078    | Valvoline (a.k.a. Ashland)  | 3536 S First Street                       | St. Louis  | MO    | St. Louis      | 63118    | 38.58711 | -90.21328 |
| 07A0134    | Lambert - St. Louis International Airport Bulk Fuel Storage Facility          | 10750 Lambert International Blvd          | St. Louis  | MO    | St. Louis      | 63145    | 38.74167 | -90.37083 |
| 07A0065    | ARTCO - South Terminal (American River Transportation Co.)                    | 4528 S Broadway                           | St. Louis  | MO    | St. Louis City | 63111    | 38.57271 | -90.23141 |
| 07A0068    | Kinder Morgan Transmix Terminal   | 4070 S 1st St                             | St. Louis  | MO    | St. Louis City | 63118    | 38.57991 | -90.22391 |
| 07A0079    | Petroleum Fuel & Terminal Company - St. Louis Terminal                        | 1 Mullanphy Street                        | St. Louis  | MO    | St. Louis City | 63102    | 38.64306 | -90.18306 |
| 07A0080    | Buckeye Terminals, LLC - St. Louis North Terminal                             | 239 E Prairie                             | St. Louis  | MO    | St. Louis City | 63147    | 38.67950 | -90.19988 |
| 07A0130    | ARTCO - North Terminal (American River Transportation Co. - now owned by ADM) | 3854 S First St                           | St. Louis  | MO    | St. Louis City | 63118    | 38.58167 | -90.22050 |
| 07A0089    | Koch Materials Company - Cabool, MO   | Highway 181 South                         | Cabool     | MO    | Texas          | 65689    | 37.13190 | -92.07980 |
| 07A0208    | Archer Daniels Midland Company  | 17700 S Hwy T                             | Deerfield  | MO    | Vernon         | 64741    | 37.83472 | -94.58361 |
| 07A0305    | CertainTeed Roofing Plant   | 100 CertainTeed Drive                     | Jonesburg  | MO    | Montgomery     | 63351    |          |           |
| 07A0278    | Chief Ethanol Fuels, Inc.   | 4225 East South Street                    | Hastings   | NE    | Adams          | 68902    |          |           |
| 07A0204    | Valero Albion Plant   | 2615 260th St, #100                       | Albion     | NE    | Boone          | 68620    | 41.6774  | -97.9823  |
| 07A0204    | Valero Albion Plant   | 2615 260th Street                         | Albion     | NE    | Boone          | 68620    |          |           |
| 07A0052    | Alliance Mechanical Facility  | 111 West First St                         | Alliance   | NE    | Box Butte      | 69301    | 42.09506 | -102.871  |
| 07A0247    | Abengoa Bioenergy of Nebraska   | 35955 Navaho Rd                           | Ravenna    | NE    | Buffalo        | 68869    | 41.02247 | -98.8747  |
| 07A0043    | Holly Frontier/Plains Pipeline - Sidney Terminal                              | 11712 US Hwy 30                           | Sidney     | NE    | Cheyenne       | 69612    | 41.14922 | -102.934  |
| 07A0209    | SiouxLand Ethanol, LLC  | 1501 Knox Blvd                            | Jackson    | NE    | Dakota         | 68743    | 42.45247 | -96.5937  |
| 07A0125    | Offutt Air Force Base (AFB)   | 205 Looking Glass Ave Suite 121, 55 WG/CC | Offutt AFB | NE    | Douglas        | 68113    | 41.1183  | -95.9117  |
| 07A0015    | Magellan Omaha Terminal   | 2205 North 11th Street                    | Omaha      | NE    | Douglas        | 68110    |          |           |
| 07A0140    | Flint Hills Resources Omaha II Terminal                                       | 7075 N. 14th Ave                          | Omaha      | NE    | Douglas        | 68112    | 41.32185 | -95.9348  |
| 07A0153    | AGP - Omaha   | 6501 North 9th St                         | Omaha      | NE    | Douglas        | 68112    |          |           |
| 07A0213    | Westway Feed Products, Inc.   | 1201 M St                                 | Omaha      | NE    | Douglas        | 68107    | 41.21104 | -95.9295  |
| 07A0260    | Flint Hills Resources (FHR) Fairmont Facility                                 | 1214 Road G                               | Fairmont   | NE    | Fillmore       | 68354    | 40.61212 | -97.6014  |
| 07A0182    | NuStar/Kaneb - Geneva Terminal  | 1479 N 13th St                            | Geneva     | NE    | Fillmore       | 68361    | 40.55163 | -97.5939  |



**Facility Response Plans (FRP) Sites.** Source: U.S. EPA Region 7 FRP Database, December 21, 2017

| FRP Number | Facility Name   | Address               | City         | State | County       | Zip Code | Latitude | Longitude |
|------------|---|-----------------------|--------------|-------|--------------|----------|----------|-----------|
| 07A0214    | E Energy Adams, LLC   | 13238 East Aspen Rd   | Adams        | NE    | Gage         | 68301    | 40.48659 | -96.5505  |
| 07A0282    | Duonix Beatrice Facility  | 722 Kinney Drive      | Beatrice     | NE    | Gage         | 68310    |          |           |
| 07A0082    | Nebraska Public Power District - Canaday Station                  | 74965 Rd 435          | Lexington    | NE    | Gosper       | 68850    | 40.69401 | -99.7004  |
| 07A0016    | Magellan Pipeline Company - Doniphan Terminal                     | 12275 S US Hwy 281    | Doniphan     | NE    | Hall         | 68832    | 40.7508  | -98.3756  |
| 07A0233    | Blue Knight Energy Partners                                       | 4112 N Academy Rd     | Grand Island | NE    | Hall         | 68801    | 40.97639 | -98.3236  |
| 07A0302    | AGP - Hastings Soybean Oil Production Plant                       | 2801 East 7th Street  | Hastings     | NE    | Hall         | 68901    |          |           |
| 07A0241    | Green Plains Wood River   | 7874 S. 140th Rd      | Wood River   | NE    | Hall         | 68883    | 40.81541 | -98.6088  |
| 07A0289    | Aventine Renewable Energy   | 2103 Harvest Drive    | Aurora       | NE    | Hamilton     | 68818    | 40.86825 | -98.0481  |
| 07A0234    | Trenton Agri Products   | 36638 U.S. Highway 34 | Trenton      | NE    | Hitchcock    | 69044    | 40.1925  | -100.974  |
| 07A0255    | Green Plains Renewable Energy, Inc. (formerly NEDAK Ethanol, LLC) | 87590 Hillcrest Rd    | Atkinson     | NE    | Holt         | 68713    | 42.51846 | -98.9575  |
| 07A0186    | KAAPA Ethanol, LLC  | 8450 KAAPA Ln         | Minden       | NE    | Kearney      | 68959    | 40.48372 | -99.0661  |
| 07A0051    | Hobson Yard - Lincoln Facility                                    | 801 West "O" St       | Lincoln      | NE    | Lancaster    | 68528    | 40.81053 | -96.7332  |
| 07A0147    | Archer Daniels Midland Company - Lincoln                          | 7800 Thayer St        | Lincoln      | NE    | Lancaster    | 68529    | 40.86584 | -96.6174  |
| 07A0018    | Magellan Pipeline Company - Lincoln Terminal                      | 2000 Saltillo Rd      | Roca         | NE    | Lancaster    | 68430    | 40.6981  | -96.6925  |
| 07A0101    | Phillips 66 - Lincoln Terminal                                    | 1345 W Saltillo Rd    | Roca         | NE    | Lancaster    | 68430    | 40.69692 | -96.7007  |
| 07A0075    | Bailey Yard   | 4601 W. Front St      | North Platte | NE    | Lincoln      | 69101    | 41.145   | -100.833  |
| 07A0194    | NuStar/Kaneb - North Platte Terminal                              | 17504 S Hwy 83        | North Platte | NE    | Lincoln      | 69101    | 40.97742 | -100.756  |
| 07A0183    | NuStar/Kaneb - Norfolk Terminal                                   | 4708 N 13th St        | Norfolk      | NE    | Madison      | 68701    | 42.09028 | -97.4231  |
| 07A0226    | Elkhorn Valley Ethanol, LLC                                       | 3002 N Victory Rd     | Norfolk      | NE    | Madison      | 68701    | 42.06806 | -97.3814  |
| 07A0228    | Green Plains Central City, LLC                                    | 214 20th St           | Central City | NE    | Merrick      | 68826    | 41.11047 | -97.9742  |
| 07A0254    | Bridgeport Ethanol, LLC   | 10106 S Railroad Ave  | Bridgeport   | NE    | Morrill      | 69336    | 41.64222 | -103.076  |
| 07A0207    | Mid America Agri Products, LLC                                    | 76080 Rd 338          | Madrid       | NE    | Perkins      | 69150    | 40.85254 | -101.536  |
| 07A0274    | Husker Ag, LLC  | 54048 Husker Highway  | Plainview    | NE    | Pierce       | 68767    | 42.35083 | -97.7083  |
| 07A0184    | NuStar/Kaneb - Columbus Terminal                                  | 147 Road D            | Columbus     | NE    | Platte       | 68601    | 41.43761 | -97.2448  |
| 07A0196    | NuStar/Kaneb - Osceola Terminal                                   | 1705 131st Rd         | Osceola      | NE    | Polk         | 68651    | 41.19019 | -97.5216  |
| 07A0015    | Magellan Pipeline Company - Omaha Terminal                        | 2205 North 11th St    | Omaha        | NE    | Douglas      | 68110    | 41.2769  | -95.9211  |
| 07A0163    | Magellan Pipeline Company - Capehart Terminal                     | 13029 S 13th St       | Bellevue     | NE    | Sarpy        | 68123    | 41.1158  | -95.9314  |
| 07A0222    | Union Pacific RR South Morrill Yard                               | 90624 County Rd F     | Morrill      | NE    | Scotts Bluff | 69358    | 41.93397 | -103.893  |
| 07A0275    | Green Plains Ord, LLC   | 48267 Val-E Road      | Ord          | NE    | Valley       | 68862    | 41.5711  | -98.8214  |

**Facility Response Plans (FRP) Sites.** Source: U.S. EPA Region 7 FRP Database, December 21, 2017

| FRP Number | Facility Name                        | Address                   | City  | State | County     | Zip Code | Latitude | Longitude |
|------------|--------------------------------------|---------------------------|-------|-------|------------|----------|----------|-----------|
| 07A0290    | Cargill Blair                        | 650 Industrial Park Drive | Blair | NE    | Washington | 68008    |          |           |
| 07A0261    | Green Plains Energy (a.k.a. Abengoa) | 1414 Road O               | York  | NE    | York       | 68467    | 40.89559 | -97.5447  |

**Marine Transportation Related (MTR) Sites, Mississippi River.** Source: U.S. Coast Guard, Eighth District, January 2018

Notes: MTR site information can be viewed in the Region 7 Response and Planning Viewer. Users can request access to the viewer at <https://maps.tetrattech.com/viewers/viewers.aspx>.

| Facility Name                      | Material Stored                     | Address                      | County         | City           | State | Latitude | Longitude | COTP Zone   |
|------------------------------------|-------------------------------------|------------------------------|----------------|----------------|-------|----------|-----------|-------------|
| Grain Processing Corp.             | Ethyl Alcohol                       | 1600 Oregon St.              | Muscatine      | Muscatine      | IA    | 41.40151 | -91.05897 | UMR         |
| ADM                                | Alcohol/Corn Oil/Caustic Soda       | 1251 Beaver Channel Pkwy,    | Clinton        | Clinton        | IA    | 41.81989 | -90.20986 | UMR         |
| Flint Hills (Dubuque, IA)          | Asphalt                             | 1550 Koch Court              | Dubuque        | Dubuque        | IA    | 42.50541 | -90.65115 | UMR         |
| Texpar                             | Asphalt, Diesel                     | 601 E Front St.              | Scott          | Davenport      | IA    | 41.46405 | -90.67690 | UMR         |
| Flint Hills (Davenport)            | Asphalt                             | 501 E Front St               | Scott          | Davenport      | IA    | 41.46416 | -90.67992 | UMR         |
| Heartland Asphalt                  | Asphalt                             | 297 HWY 61 South             | New Madrid     | New Madrid     | MO    | 36.57891 | -89.55382 | Ohio Valley |
| TransMontaigne-Cape Girardeau      | Gasoline, Diesel                    | 1400 South Giboney Street    | Cape Girardeau | Cape Girardeau | MO    | 37.28528 | -89.52833 | Ohio Valley |
| K A Steel                          | Caustic Soda                        | 2581 Pettibone Ave           | Muscatine      | Muscatine      | IA    | 41.37184 | -91.06346 | UMR         |
| Vertex                             | Caustic Soda                        | 2619 Comanche Industrial Dr. | Clinton        | Camanche       | IA    | 41.80436 | -90.23517 | UMR         |
| Flint Hills (Bettendorf)           | Natural Gasoline                    | 4100 Elm St                  | Scott          | Bettendorf     | IA    | 41.52329 | -90.47694 | UMR         |
| Ayers Oil Co.                      | Gasoline and Diesel Fuel            | 610 North 4th Street         | Lewis          | Canton         | MO    | 40.13417 | -91.51444 | UMR         |
| ARTCO Caustic Washdock             | Caustic Soda                        | 204 15th Ave                 | Clinton        | Clinton        | IA    | 41.82333 | -90.20235 | UMR         |
| Crop Production Services           | Ammonium Thiosulfate Solution (ATS) | 500 County 406               | New Madrid     | Marston        | MO    | 36.53223 | -89.57065 | Ohio Valley |
| PF&T                               | Asphalt                             | Foot of Mullphany St         | St. Louis      | St. Louis      | MO    | 38.64205 | -90.18168 | UMR         |
| Marquis Missouri Terminals         | Oils                                | 241 Meredith Blvd.           | Pemiscot       | Hayti, MO      | MO    | 36.23587 | -89.75457 | LMR         |
| Custom Fuel Wyatt                  | Petroleum Products                  | Foot of Highway 80           | Mississippi    | Wyatt          | MO    | 36.94000 | -89.27500 | Ohio Valley |
| BASF Corporation                   | Orthoxylene                         | 3150 Highway JJ              | Marion         | Palmyra        | MO    | 39.83611 | -91.42917 | UMR         |
| CF Industries, Sales LLC - Palmyra | Anhydrous Ammonia & Urea            | 2834 County Road 359         | Marion         | Palmyra        | MO    | 39.85325 | -91.44814 | UMR         |
| Oakley Missouri                    | Ammonium Sulfate/Ammonium Nitrate   | 241 Meredith Blvd            | Pemiscot       | Hayti, MO      | MO    | 36.23587 | -89.75457 | LMR         |
| First Missouri Terminal Corp       | None                                | 94 Airport Rd                | Cape Girardeau | Scott City     | MO    | 36.57891 | -89.55382 | Ohio Valley |

**Marine Transportation Related (MTR) Sites, Mississippi River.** Source: U.S. Coast Guard, Eighth District, January 2018

| Facility Name        | Material Stored                  | Address                | County         | City         | State | Latitude | Longitude | COTP Zone   |
|----------------------|----------------------------------|------------------------|----------------|--------------|-------|----------|-----------|-------------|
| Girardeau Stevedores | Ammonium Nitrate                 | 107 Rushing Road       | Cape Girardeau | Scott City   | MO    | 37.24562 | -89.49909 | Ohio Valley |
| Wayne B Smith        | Ammonia Nitrate                  | 10415 Highway 79 South | Pike           | Louisiana    | MO    | 39.43986 | -91.03900 | UMR         |
| Hall Towing          | Ammonium Nitrate (Transfer Only) | Foot of 20th Street    | Lee            | Fort Madison | IA    | 40.62278 | -91.33306 | UMR         |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

Notes: FRP information can be viewed in the Region 7 Response and Planning Viewer. Users can request access to the viewer at <https://maps.tetrattech.com/viewers/viewers.aspx>.

| Facility Name                                | Address                              | City           | County    | State | Zip Code | Latitude  | Longitude  |
|--|--------------------------------------|----------------|-----------|-------|----------|-----------|------------|
| Ag Partners, LLC - Sutherland                | 6625 460th St.                       | Sutherland     | Adair     | IA    | 51058    | 42.981944 | -95.481667 |
| Edler-Eggers Fertilizer                      | 2124 Eastman Avenue                  | State Center   | Adair     | IA    | 50247    | 42.043617 | -93.164654 |
| North Central Cooperative-Clarion Hwy 69     | 2366 Highway 69                      | Clarion        | Adair     | IA    | 50525    | 42.706890 | -93.636040 |
| North Central Cooperative-Holmes             | 2150 Hancock                         | Clarion        | Adair     | IA    | 50423    | 42.737334 | -93.831458 |
| North Central Coop-North Bulk Plant Clarion  | 2004 Madison Ave.                    | Clarion        | Adair     | IA    | 50484    | 42.760190 | -93.734793 |
| O'toole Inc.                                 | 18602 County Rd. G 34                | Letts          | Adair     | IA    | 52501    | 41.329710 | -91.272860 |
| Postville Farmers Cooperative Society        | 325 Co-Op Drive                      | Postville      | Adair     | IA    | 52761    | 43.089430 | -91.560460 |
| Ridgeway Branch                              | 730 Railroad Street                  | Ridgeway       | Adair     | IA    | 52254    | 43.297778 | -91.990000 |
| Eberhart Farm Center, Inc. - Maquoketa Plant | 1001 E. Maple St.                    | Maquoketa      | Adams     | IA    | 52060    | 42.064492 | -90.653266 |
| Eberhart Farm Center, Inc. - Preston Plant   | 2386 418th Ave.                      | Preston        | Adams     | IA    | 52069    | 42.057150 | -90.408406 |
| St. Anthony, IA 436 Satellite                | 1419 Canfield Avenue                 | St. Anthony    | Adams     | IA    | 50514    | 42.146168 | -93.195334 |
| Innovative Ag Services - Elkader             | 24628 Highway 13 North               | Elkader        | Allamakee | IA    | 50075    | 42.869018 | -91.380749 |
| North Central Cooperative-Hutchins           | 545 230th Street                     | Hutchins       | Allamakee | IA    | 50525    | 43.092010 | -93.885060 |
| North Central Cooperative-Woden              | 103 North Main                       | Woden          | Allamakee | IA    | 52316    | 43.234667 | -93.910888 |
| North Iowa Cooperative Elevator-Swaledale    | 310 5th Street                       | Swaledale      | Allamakee | IA    | 50464    | 42.975833 | -93.314722 |
| Tyson Foods, Inc. Council Bluffs, IA         | 2700 23rd Avenue, 2101 South 29th St | Council Bluffs | Allamakee | IA    | 51442    | 41.241808 | -95.886064 |
| Tyson Fresh Meats, Inc. - Perry, IA          | 13500 I Court                        | Perry          | Allamakee | IA    | 50588    | 41.841944 | -94.126111 |
| Union, IA436 Satellite                       | 1813 Marble Road                     | Union          | Allamakee | IA    | 50595    | 42.173792 | -93.073598 |
| Farmers Cooperative Company - Bayard         | 1080 Highway 25                      | Bayard         | Appanoose | IA    | 50029    | 41.852299 | -94.549271 |
| Farmers Cooperative Company - Callender      | 305 Thomas St.                       | Callender      | Appanoose | IA    | 50523    | 42.360416 | -94.289941 |
| Farmers Coop Company - Chew Farm (Yale)      | 1323 210th St.                       | Linden         | Appanoose | IA    | 50146    | 41.737889 | -94.216667 |
| Farmers Cooperative Company - Lytton         | 115 Main St                          | Lytton         | Appanoose | IA    | 50561    | 42.421111 | -94.860000 |
| Farmers Cooperative Company - Churdan        | 302 Sand St.                         | Churdan        | Audubon   | IA    | 50050    | 42.155096 | -94.480823 |
| Farmers Cooperative Company - Dayton         | 3749 Racine Ave.                     | Dayton         | Audubon   | IA    | 50530    | 42.246667 | -94.067500 |
| Farmers Cooperative Company - Earlham        | 1409 105th St.                       | Earlham        | Audubon   | IA    | 50072    | 41.496944 | -94.163611 |
| Farmers Cooperative Company - Paton          | 587 U Ave                            | Paton          | Audubon   | IA    | 50217    | 42.139167 | -94.241667 |
| Farmers Cooperative Company - Sac City       | 2793 255th St.                       | Sac City       | Audubon   | IA    | 50583    | 42.423067 | -95.032508 |
| Farmers Cooperative Company - Ulmer          | 3231 358th St.                       | Lake View      | Audubon   | IA    | 51450    | 42.269960 | -94.948393 |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                                | Address                           | City          | County     | State | Zip Code | Latitude  | Longitude  |
|--|-----------------------------------|---------------|------------|-------|----------|-----------|------------|
| Farmers Cooperative Company - Lake City      | 621 East 6th St.                  | Lake City     | Benton     | IA    | 51449    | 42.260727 | -94.727142 |
| Farmers Cooperative Company - Early          | 2217 230th St.                    | Early         | Benton     | IA    | 50535    | 42.458516 | -95.145463 |
| Farmers Cooperative Company - Gowrie         | 3571 Indiana Ave                  | Gowrie        | Benton     | IA    | 50543    | 42.272500 | -94.246944 |
| Farmers Cooperative Company - Perry          | 1800 130th St.                    | Perry         | Benton     | IA    | 50220    | 41.844722 | -94.120000 |
| Farmers Cooperative Company - Renshaw        | 1626 M Ave                        | Bouton        | Benton     | IA    | 50039    | 41.801667 | -94.046111 |
| Farmers Cooperative Company - Rockwell City  | 2494 Marshall Ave.                | Rockwell City | Benton     | IA    | 50579    | 42.429827 | -94.668643 |
| Farmers Cooperative Company - Yale           | 1209 North St, Po Box 262         | Yale          | Benton     | IA    | 50277    | 41.771490 | -94.351870 |
| Farmers Cooperative Company - Yetter         | 3265 Durante Ave.                 | Yetter        | Benton     | IA    | 51433    | 42.314697 | -94.843330 |
| Farmers Cooperative Company - Linden         | 13113 210th St                    | Linden        | Black Hawk | IA    | 50146    | 41.731820 | -94.218299 |
| Farmers Cooperative Company - Lohrville      | 1301 5th St.                      | Lohrville     | Black Hawk | IA    | 51453    | 42.266389 | -94.534167 |
| Farmers Cooperative Company - Palm Grove     | 2150 320th Street                 | Fort Dodge    | Black Hawk | IA    | 50501    | 42.324576 | -94.174332 |
| Farmers Cooperative Company - Somers         | 411 6th Avenue                    | Somers        | Black Hawk | IA    | 50586    | 42.381244 | -94.428664 |
| Iowa Quality Beef                            | 3337 L Avenue                     | Tama          | Black Hawk | IA    | 52402    | 41.958611 | -92.550000 |
| Prairie Ag Coop Mt Union                     | 409 West Railroad                 | Mount Union   | Black Hawk | IA    | 52659    | 41.058889 | -91.395833 |
| Prairie Ag Coop Winfield                     | 602 South Locust Street           | Winfield      | Black Hawk | IA    | 52660    | 41.122500 | -91.438889 |
| Taygold Cooperative                          | Hwy 25 South                      | Clearfield    | Black Hawk | IA    | 50851    | 40.793056 | -94.472778 |
| Tyson Fresh Meats, Inc. - Waterloo, IA       | 501 North Elk Run Road            | Waterloo      | Black Hawk | IA    | 52738    | 42.508611 | -92.261389 |
| 21st Century Coop - Cumberland IA Plant      | South Main                        | Cumberland    | Boone      | IA    | 50843    | 41.270343 | -94.869824 |
| 35th Street                                  | 16725 245th Street                | Mason City    | Boone      | IA    | 50401    | 43.116404 | -93.187274 |
| Archer Coop Grain Co.                        | 112 Cherokee Ave.                 | Archer        | Boone      | IA    | 51231    | 43.115668 | -95.747878 |
| Farmers Cooperative Company - Farnhamville   | 105 Garfield Av                   | Farnhamville  | Boone      | IA    | 50538    | 42.274849 | -94.398804 |
| Farmers Cooperative Company - Oyens Facility | 325 Commercial Street             | Oyens         | Boone      | IA    | 51045    | 42.818472 | -96.059889 |
| Farmers Cooperative Company - Readlyn        | 335 West 1st Street               | Readlyn       | Boone      | IA    | 50668    | 42.700832 | -92.227219 |
| Nichols Agriservice LLC                      | 1783 Davis Ave.                   | Nichols       | Boone      | IA    | 51031    | 41.484190 | -91.308450 |
| Prairie Ag Coop Yarmouth                     | 23400 205th Ave Hwy X23           | Yarmouth      | Boone      | IA    | 52001    | 41.023611 | -91.321944 |
| Tyson Fresh Meats, Inc. - Denison            | 2490 Lincoln Way                  | Denison       | Boone      | IA    | 50220    | 42.001415 | -95.382751 |
| Tyson Fresh Meats, Inc. - Storm Lake         | 1009 Richland Street              | Storm Lake    | Boone      | IA    | 50703    | 42.640000 | -95.187500 |
| 21st Century Cooperative - Fontanelle        | 220 West Washington, P.O. Box 386 | Fontanelle    | Bremer     | IA    | 50846    | 41.290222 | -94.569111 |
| Farmers Cooperative Company - Akron Facility | 110 River Road                    | Akron         | Bremer     | IA    | 51001    | 42.826724 | -96.564143 |
| Farmers Cooperative Company - Shell Rock     | 727 South Cherry Street           | Shell Rock    | Bremer     | IA    | 50670    | 42.706095 | -92.588545 |

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| Facility Name                              | Address                 | City           | County      | State | Zip Code | Latitude  | Longitude  |
|--|-------------------------|----------------|-------------|-------|----------|-----------|------------|
| Farmers Cooperative Company - West Lemars  | 30459 Highway 3         | Lemars         | Bremer      | IA    | 51031    | 42.793056 | -96.224333 |
| North Iowa Cooperative Elevator - Plymouth | 19683 325th Street      | Plymouth       | Bremer      | IA    | 50401    | 43.239444 | -93.125556 |
| North Iowa Cooperative Elevator-Portland   | 19856 Main Street       | Mason City     | Bremer      | IA    | 52157    | 43.129417 | -93.125373 |
| Winterset Water Treatment Plant            | 3301 Cedar Bridge Road  | Winterset      | Bremer      | IA    | 52078    | 41.363611 | -93.992417 |
| 21st Century Coop - Greenfield             | 601 Sw 2nd              | Greenfield     | Buchanan    | IA    | 50849    | 41.295833 | -94.462222 |
| Agriland FS, Inc. - Lenox                  | Hwy 49 North            | Lenox          | Buchanan    | IA    | 50851    | 40.893056 | -94.566667 |
| Agriland FS, Inc. - Prescott               | 1301 Quince Ave         | Prescott       | Buchanan    | IA    | 50859    | 41.114722 | -94.604167 |
| Corning, IA 474                            | 1823 Brooks Road        | Corning        | Buchanan    | IA    | 50841    | 40.979194 | -94.770944 |
| Gavilon Ag Service, Inc. Benton NH3        | 2410 County Hwy P27     | Benton         | Buchanan    | IA    | 50835    | 40.694722 | -94.387500 |
| Gavilon Ag Services, LLC Creston           | 1308 East Howard Street | Creston        | Buchanan    | IA    | 50801    | 41.060010 | -94.344080 |
| Gavilon Ag Services, LLC Shenandoah        | 303 Northwest Road      | Shenandoah     | Buchanan    | IA    | 51601    | 40.768339 | -95.377067 |
| Leiner Davis Gelatin Corporation           | 7001 Brady Street       | Davenport      | Buchanan    | IA    | 50201    | 41.590833 | -90.568611 |
| Little Cedar Co-Op Elevator                | 4259 Quail Avenue       | Little Cedar   | Buchanan    | IA    | 51035    | 43.380611 | -92.724121 |
| Westco Agronomy Company, LLC - Casey       | 103 Sherman Street      | Casey          | Buchanan    | IA    | 50066    | 41.504539 | -94.517123 |
| Westco Ag Co., LLC DBA Pelgrow-Stuart      | 215 South Madison       | Stuart         | Buchanan    | IA    | 50250    | 41.502390 | -94.309560 |
| Gold-Eagle Cooperative-Titonka             | 2201 325th Street       | Titonka        | Buena Vista | IA    | 50480    | 43.235200 | -94.028800 |
| Maxyield Cooperative                       | North Railroad Street   | Klemme         | Buena Vista | IA    | 51333    | 43.008750 | -93.603850 |
| Maxyield Cooperative - Garner              | 440 Highway 18 East     | Garner         | Buena Vista | IA    | 50457    | 43.106150 | -93.597550 |
| New Century FS -Williamsburg               | 610 S Maplewood Ave.    | Williamsburg   | Buena Vista | IA    | 52349    | 41.654167 | -91.997778 |
| Silveredge Co-Op                           | 39999 Hilton Road       | Edgewood       | Buena Vista | IA    | 52076    | 42.646283 | -91.370115 |
| Silveredge Cooperative, Delhi Location     | 2416 St. Hwy. 38        | Delhi          | Buena Vista | IA    | 50665    | 42.437938 | -91.329443 |
| Stateline Cooperative - Armstrong Facility | 5670 Highway 9 East     | Armstrong      | Buena Vista | IA    | 50539    | 43.391083 | -94.467278 |
| Stateline Cooperative - Fenton Facility    | 809 Maple Street        | Fenton         | Buena Vista | IA    | 50451    | 43.221306 | -94.428167 |
| Stateline Cooperative - Lone Rock Facility | 105 Main Street         | Lone Rock      | Buena Vista | IA    | 50514    | 43.218500 | -94.329111 |
| Stateline Cooperative - Ringsted Facility  | 1 East 240th Street     | Ringsted       | Buena Vista | IA    | 50522    | 43.299472 | -94.511667 |
| Burlington Municipal Waterworks            | 3000 Des Moines Avenue  | Burlington     | Butler      | IA    | 52601    | 40.843055 | -91.108330 |
| Council Bluffs Water Works                 | 2000 North 25th Street  | Council Bluffs | Butler      | IA    | 51502    | 41.278361 | -95.882556 |
| DWT at Generation Station                  | Dick Drake Way          | Muscatine      | Butler      | IA    | 52761    | 41.394241 | -91.060793 |
| Five Star Cooperative - Joice              | 355 410th Street        | Joice          | Butler      | IA    | 50446    | 43.355787 | -93.446891 |
| Five Star Cooperative - Lake Mills         | 101 North Park          | Lake Mills     | Butler      | IA    | 50450    | 43.420944 | -93.539944 |



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| Five Star Cooperative - Scarville            | 101 West First Street            | Scarville    | Butler  | IA    | 50473    | 43.468987 | -93.616090 |
| Grandview Avenue Drinking Water Treatment    | Dick Drake Way, Grandview Avenue | Muscatine    | Butler  | IA    | 52761    | 41.390149 | -91.061638 |
| Innovative Ag Services - Elma                | 305 North Busti Ave              | Elma         | Butler  | IA    | 50601    | 43.249722 | -92.437056 |
| Linn Cooperative Oil Co.                     | 726 Dubuque Rd.                  | Springville  | Butler  | IA    | 52315    | 42.056667 | -91.434723 |
| Power Generation Station                     | Dick Drake Way                   | Muscatine    | Butler  | IA    | 52644    | 41.388611 | -91.058056 |
| Preston, IA 495                              | Po Box 250, 406 East White       | Preston      | Butler  | IA    | 50423    | 42.054722 | -90.387778 |
| Progress Park Drinking Water Treatment       | 49th Street South                | Muscatine    | Butler  | IA    | 52002    | 41.370833 | -91.124722 |
| Stateline Cooperative - Ledyard Facility     | 4403 150th Ave                   | Ledyard      | Butler  | IA    | 50578    | 43.407333 | -94.168917 |
| Stateline Cooperative - N Burt Ag Facility   | 142 North Long Street            | Bancroft     | Butler  | IA    | 50451    | 43.297000 | -94.219639 |
| Stateline Cooperative - South Burt           | 102 Walnut Street                | Burt         | Butler  | IA    | 50424    | 43.197000 | -94.217611 |
| Agriland FS, Inc. - Hedrick                  | 30754 Hwy 149                    | Hedrick      | Calhoun | IA    | 52563    | 41.212500 | -92.213056 |
| Agvantage FS - Dewar - Aa                    | 5901 1st St., P.O. Box 80        | Dewar        | Calhoun | IA    | 50623    | 42.525833 | -92.220833 |
| Agvantage FS - Hawkeye-Aa                    | 20836 R Ave                      | Hawkeye      | Calhoun | IA    | 52147    | 42.932500 | -91.942778 |
| Agvantage FS - Lamont - Aa                   | 1354 Washburn Ave., P.O. Box 80  | Lamont       | Calhoun | IA    | 50650    | 42.591944 | -91.646944 |
| Agvantage FS - Quasqueton - Aa               | 2595 Racine Ave                  | Winthrop     | Calhoun | IA    | 50682    | 42.414722 | -91.751111 |
| Agvantage FS - West Union - Aa               | 300 West Franklin                | West Union   | Calhoun | IA    | 52175    | 42.951389 | -91.816111 |
| Gavilon Fertilizer, LLC                      | 401 Boyer Valley Rd.             | Denison      | Calhoun | IA    | 51442    | 42.007222 | -95.369444 |
| Golden Crisp Premium Foods                   | 251 15th Street NE               | Sioux Center | Calhoun | IA    | 51250    | 43.092280 | -96.171980 |
| Iowa City Wastewater Treatment - South Plant | 4366 Napoleon St. SE             | Iowa City    | Calhoun | IA    | 52245    | 41.610583 | -91.504528 |
| Linn Cooperative Oil Co.-Newhall Plant       | 2851 71st St                     | Newhall      | Calhoun | IA    | 50454    | 41.993876 | -91.940864 |
| Ottumwa Water & Hydro                        | 230 Turner Drive                 | Ottumwa      | Calhoun | IA    | 52404    | 41.018333 | -92.416664 |
| Pinnacle Foods - Fort Madison Plant          | 2467 Henry Ladyn Drive, Hwy 61 S | Fort Madison | Calhoun | IA    | 50666    | 40.576665 | -91.437459 |
| Vision Ag LLC - Batavia (Market Street)      | 303 Market Street                | Batavia      | Calhoun | IA    | 52540    | 40.992778 | -92.167806 |
| Vision Ag LLC - Hedrick                      | 121 West 1st Street              | Hedrick      | Calhoun | IA    | 52247    | 41.170542 | -92.310414 |
| Agriland FS, Inc. - Albia                    | 6281 160th St.                   | Albia        | Carroll | IA    | 52531    | 41.074617 | -92.855217 |
| Agriland FS, Inc. - Bloomfield               | 22686 Hwy 2                      | Bloomfield   | Carroll | IA    | 52537    | 40.733287 | -92.390559 |
| Agriland FS, Inc. - Conesville               | 18602 Hwy 70                     | Conesville   | Carroll | IA    | 52739    | 41.330000 | -91.353611 |
| Agriland FS, Inc. - Fairfield                | 2901 West Grimes                 | Fairfield    | Carroll | IA    | 52556    | 41.010833 | -91.996944 |
| Agriland FS, Inc. - Knoxville                | 1166 Quaker Drive                | Knoxville    | Carroll | IA    | 50138    | 41.253717 | -93.122400 |
| Agriland FS, Inc. - Moravia                  | 802 West North Street            | Moravia      | Carroll | IA    | 52571    | 40.891944 | -92.825833 |



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| Agriland FS, Inc. - Oskaloosa                | 2305 Highway 23, P.O. Box 1040 | Oskaloosa      | Carroll     | IA    | 52577    | 41.280278 | -92.622500 |
| Agriland FS, Inc. - Stockport                | 28022 120th St.                | Stockport      | Carroll     | IA    | 52651    | 40.871635 | -91.832569 |
| Agriland FS, Inc. - Washington               | 425 Hwy 1 & 92                 | Washington     | Carroll     | IA    | 52353    | 41.302500 | -91.716944 |
| Agriland FS, Inc. - Webster                  | 14584 232nd Avenue             | Webster        | Carroll     | IA    | 52355    | 41.444755 | -92.160689 |
| Agriland FS, Inc. - Wyman                    | 28465 Cty Rd G62               | Crawfordsville | Carroll     | IA    | 52621    | 41.189722 | -91.475556 |
| Agvantage FS - Hazleton - Aa                 | 1877 110th St                  | Hazleton       | Carroll     | IA    | 50641    | 42.629167 | -91.906667 |
| Agvantage FS - Maynard - Aa                  | 255 5th Street N.              | Maynard        | Carroll     | IA    | 50655    | 42.775833 | -91.883889 |
| Farmers Cooperative Elevator Company         | 109 Isabella Street            | Radcliffe      | Carroll     | IA    | 50230    | 42.312222 | -93.432222 |
| Agvantage FS - Alburnett 8336                | 2686 Old Quaas Rd.             | Alburnett      | Cass        | IA    | 52202    | 42.141267 | -91.627149 |
| Agvantage FS - Anamosa 7499                  | 13475 Circle Drive             | Anamosa        | Cass        | IA    | 52205    | 42.127148 | -91.264192 |
| Agvantage FS - Dewitt 8238                   | 625 1st St.                    | Dewitt         | Cass        | IA    | 52742    | 41.815278 | -90.540000 |
| Agvantage FS - Lone Tree 7649                | 6350 Wapsi Ave.                | Lone Tree      | Cass        | IA    | 52755    | 41.470556 | -91.425556 |
| Agvantage FS - Onslow 8265                   | 12992 Hwy 136                  | Onslow         | Cass        | IA    | 52321    | 42.119722 | -91.013889 |
| Iowa City Wastewater Treatment - North Plant | 1000 South Clinton St.         | Iowa City      | Cass        | IA    | 52240    | 41.648362 | -91.535075 |
| Koch Nitrogen Company, LLC - Nitrogen Plant  | 3162 200th St. Duncombe, Ia    | Fort Dodge     | Cass        | IA    | 51430    | 42.500556 | -94.016667 |
| Kraft Foods Group, Inc - Davenport           | 1337 West Second Street        | Davenport      | Cass        | IA    | 51565    | 41.520833 | -90.593889 |
| Muscatine Plant - Monsanto Company           | 2500 Wiggins Road              | Muscatine      | Cass        | IA    | 51566    | 41.350000 | -91.080833 |
| Agvantage FS - Bennett                       | 21 Main St.                    | Bennett        | Cedar       | IA    | 52721    | 41.737222 | -90.973056 |
| Agvantage FS - Calamus                       | 105 1st St.                    | Calamus        | Cedar       | IA    | 52729    | 41.825833 | -90.766944 |
| Agvantage FS - Low Moor                      | 208 1st Ave                    | Low Moor       | Cedar       | IA    | 52757    | 41.802500 | -90.355833 |
| Agvantage FS - Mechanicsville                | 301 E. Cherry                  | Mechanicsville | Cedar       | IA    | 52306    | 41.902222 | -91.254722 |
| Agvantage FS - Miles                         | 48770 17th Street              | Miles          | Cedar       | IA    | 52064    | 42.048333 | -90.330833 |
| Agvantage FS - Otter Creek                   | 22067 183rd Ave.               | La Motte       | Cedar       | IA    | 52054    | 42.225556 | -90.680833 |
| Agvantage FS - Oxford                        | 1693 Lower Old Hwy 6           | Oxford         | Cedar       | IA    | 52322    | 41.730000 | -91.765000 |
| Agvantage FS - Wheatland                     | 1063 Hwy 30 W.                 | Wheatland      | Cedar       | IA    | 52777    | 41.840000 | -90.886111 |
| Turpak Foods And Companies                   | 6201 Macarthur Street          | Sioux City     | Cedar       | IA    | 50801    | 42.398333 | -96.371667 |
| Agriland FS, Inc. - Audobon                  | 1914 220th Street              | Audobon        | Cerro Gordo | IA    | 50025    | 41.688056 | -94.915000 |
| Agriland FS, Inc. - Avoca                    | 110 E. Ellsworth               | Avoca          | Cerro Gordo | IA    | 51521    | 41.473611 | -95.335000 |
| Agriland FS, Inc. - Griswold                 | 54911 Troy Road                | Griswold       | Cerro Gordo | IA    | 51535    | 41.227778 | -95.140833 |
| Agriland FS, Inc. - Malvern                  | 500 W. 5th                     | Malvern        | Cerro Gordo | IA    | 51551    | 41.003333 | -95.590833 |

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| Agriland FS, Inc. - Missouri Valley          | 1850 335th St.                      | Missouri Valley | Cerro Gordo | IA    | 51555    | 41.520833 | -95.945833 |
| Agvantage FS - Grand Mound                   | 903 Dewitt Street                   | Grand Mound     | Cerro Gordo | IA    | 52751    | 41.825000 | -90.643333 |
| Agvantage FS - Maquoketa                     | 20081 22nd St                       | Maquoketa       | Cerro Gordo | IA    | 52060    | 42.052222 | -90.664722 |
| Linde - Muscatine                            | 2200 Stewart Road                   | Muscatine       | Cerro Gordo | IA    | 52336    | 41.389701 | -91.071923 |
| New Cooperative, Inc. - Glidden              | 102 South Carroll                   | Glidden         | Cerro Gordo | IA    | 50544    | 42.054900 | -94.725160 |
| New Cooperative, Inc. - Lanesboro            | 215 Main Street                     | Lanesboro       | Cerro Gordo | IA    | 50560    | 42.184910 | -94.687980 |
| New Cooperative, Inc. - Lidderdale           | Railroad Street & Healey Avenue     | Lidderdale      | Cerro Gordo | IA    | 50034    | 42.125000 | -94.781111 |
| Vision Ag LLC - Fremont                      | 32035 120th Avenue                  | Fremont         | Cerro Gordo | IA    | 52563    | 41.191042 | -92.373075 |
| Wellman Farm Center, Inc.                    | 1340 Fir Avenue, Box 2              | Wellman         | Cerro Gordo | IA    | 51440    | 41.460833 | -91.842500 |
| Agvantage FS - Allison                       | 20902 Hwy 3 West, P.O. Box 606      | Allison         | Cherokee    | IA    | 50602    | 42.744167 | -92.810556 |
| Agvantage FS - Aplington                     | 17995 Hwy 57                        | Aplington       | Cherokee    | IA    | 50604    | 42.583889 | -92.870000 |
| Agvantage FS - Davis Corners                 | 14287 Hwy 9                         | Lime Springs    | Cherokee    | IA    | 52155    | 43.371389 | -92.292500 |
| Agvantage FS - Grundy Center                 | 1001 A Ave., P.O. Box 183           | Grundy Center   | Cherokee    | IA    | 50638    | 42.368889 | -92.775833 |
| Agvantage FS - Janesville                    | 513 7th Street, P.O. Box 387        | Janesville      | Cherokee    | IA    | 50647    | 42.643333 | -92.458611 |
| Agvantage FS - Tripoli                       | 309 Railroad Ave.                   | Tripoli         | Cherokee    | IA    | 50676    | 42.808333 | -92.253889 |
| Green Plains Grain Co., LLC, Everly          | 704 N. Main                         | Everly          | Cherokee    | IA    | 51338    | 43.166000 | -95.326833 |
| Koch Nitrogen Co. - Ft. Madison Terminal     | 6107 Orthoway Road                  | Ft. Madison     | Cherokee    | IA    | 50438    | 40.597778 | -91.401111 |
| Agvantage FS - Mona (Lyle)                   | 1392 Stateline Street, P.O. Box 187 | Mona            | Chickasaw   | IA    | 55953    | 43.498889 | -92.945278 |
| Agvantage FS - Nora Springs                  | 1270 150th Street, P.O. Box 626     | Nora Springs    | Chickasaw   | IA    | 50458    | 43.140556 | -92.971667 |
| Agvantage FS - Osage                         | 3526 Lancer Ave.                    | Osage           | Chickasaw   | IA    | 50461    | 43.271389 | -92.810833 |
| Agvantage FS - Sumner                        | 1429 Whitetail Ave.                 | Sumner          | Chickasaw   | IA    | 50674    | 42.843889 | -92.120000 |
| Hormel Foods Corporation Algona Plant        | Highway 18 East                     | Algona          | Chickasaw   | IA    | 50138    | 43.079722 | -94.223056 |
| Koch Nitrogen Co. - Marshalltown Terminal    | 3046 Garwin Road                    | Marshalltown    | Chickasaw   | IA    | 51054    | 42.092250 | -92.832550 |
| MFA Agri-Service - Humeston                  | 829 N. Front Street                 | Humeston        | Chickasaw   | IA    | 50144    | 40.867222 | -93.500278 |
| Tanner Industries, Inc.                      | 2320 South Avenue                   | Council Bluffs  | Chickasaw   | IA    | 50613    | 41.238611 | -95.841111 |
| TCCS Sioux City, IA                          | 3939 South Lewis Boulevard          | Sioux City      | Chickasaw   | IA    | 52240    | 42.440556 | -96.373056 |
| Agriland FS, Inc. - Logan                    | 404 South 3rd                       | Logan           | Clarke      | IA    | 51546    | 41.638889 | -95.789167 |
| Ajinomoto North America, Inc.                | 1 Ajinomoto Drive                   | Eddyville       | Clarke      | IA    | 52553    | 41.148611 | -92.646389 |
| Farmers Cooperative Society- (FS) Melvin NH3 | 2544 Sorral Avenue                  | Melvin          | Clarke      | IA    | 51350    | 43.280833 | -95.604722 |
| MFA Agri Service - Corydon                   | 2184 Hwy. 2 West                    | Corydon         | Clarke      | IA    | 50123    | 40.760278 | -93.328611 |

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| MFA Agri Service - Leon                      | 18865 Us Hwy. 69              | Leon           | Clarke  | IA    | 50147    | 40.770900 | -93.748398 |
| MFA Agri Service - Lineville                 | 100 East County Road          | Lineville      | Clarke  | IA    | 50851    | 40.595556 | -93.521389 |
| NA-Churs Alpine Solutions - Red Oak Plant    | 1705 North Broadway           | Red Oak        | Clarke  | IA    | 50201    | 41.020278 | -95.233889 |
| Crystal Distribution Services, Inc.          | 1442 Sycamore Street          | Waterloo       | Clay    | IA    | 50703    | 42.492778 | -92.324165 |
| Farmers Cooperative Company - Coon Rapids    | Hwy. 141 West                 | Coon Rapids    | Clay    | IA    | 50058    | 41.871111 | -94.687222 |
| Kemin Industries, Inc. - Des Moines Facility | 2100 Maury St.                | Des Moines     | Clay    | IA    | 52632    | 41.582222 | -93.580000 |
| Osceola Food LLC                             | 1027 Warren Avenue            | Osceola        | Clay    | IA    | 50213    | 41.024444 | -93.786389 |
| River Valley Cooperative - Sperry            | 11723 Sperry Road             | Sperry         | Clay    | IA    | 52773    | 40.955935 | -91.154014 |
| Westco Ag Co., LLC - Audubon South Plant     | 207 Market Street             | Audubon        | Clay    | IA    | 50036    | 41.711237 | -94.929559 |
| Rathbun Regional Water Association, Inc.     | 16166 Highway J29             | Centerville    | Clay    | IA    | 52404    | 40.816944 | -92.890556 |
| East River Station Water Treatment Plant     | 1719 East River Drive         | Davenport      | Clayton | IA    | 52803    | 41.529333 | -90.547667 |
| Grain Processing Corporation                 | 1600 Oregon St.               | Muscatine      | Clayton | IA    | 52761    | 41.397861 | -91.060889 |
| Koch Nitrogen Company - Washington Term      | 2156 Fir Avenue               | Keota          | Clayton | IA    | 50501    | 41.343889 | -91.846890 |
| New Century FS - Garrison                    | 100 Pine St.                  | Garrison       | Clayton | IA    | 52308    | 42.142161 | -92.145307 |
| Osceola Water Plant                          | 2320 W Clay Street            | Osceola        | Clayton | IA    | 52577    | 41.041389 | -93.805556 |
| Twelve Mile Water Treatment Plant            | 1730 Lark Ave.                | Creston        | Clayton | IA    | 50441    | 41.051840 | -94.259600 |
| Viafield - Manly                             | 201 South St., Box E          | Manly          | Clayton | IA    | 50459    | 43.283056 | -93.203056 |
| Westco Ag Co., LLC - Audubon North Plant     | 207 Market Street             | Audubon        | Clayton | IA    | 50025    | 41.718778 | -94.934524 |
| Westco Agronomy Company, LLC - Exira         | 103 West Washington           | Exira          | Clayton | IA    | 50107    | 41.592889 | -94.888917 |
| Westco Agronomy Company, LLC - Nelson        | 2197 Chestnut Road            | Guthrie Center | Clayton | IA    | 50217    | 41.689358 | -94.726101 |
| Agriland FS, Inc. - Underwood                | 701 Railroad Hwy.             | Underwood      | Clinton | IA    | 51576    | 41.380278 | -95.683333 |
| Cargill                                      | 1034 Hwy 146                  | New Sharon     | Clinton | IA    | 50207    | 41.502000 | -92.649450 |
| Cargill Meat Solutions, Ottumwa, IA          | 600 South Iowa                | Ottumwa        | Clinton | IA    | 52501    | 41.004700 | -92.395300 |
| New Century FS - Millersburg                 | 1633 Hwy F52 Trail, Po Box 69 | Millersburg    | Clinton | IA    | 50157    | 41.582222 | -92.175833 |
| Northern Ag Service, Inc.                    | 105 Armour St                 | West Union     | Clinton | IA    | 50476    | 42.953056 | -91.805833 |
| ONEOK North System, L.L.C. - Storage         | 4401 Vandalia Road            | Pleasant Hill  | Clinton | IA    | 50461    | 41.565788 | -93.526799 |
| Tama-Benton Cooperative - Vinton             | 711 South K" Ave."            | Vinton         | Clinton | IA    | 51501    | 42.164167 | -92.041111 |
| Tyson Retail Deli, Inc. Cherokee, Ia         | 1300 South Lake Street        | Cherokee       | Clinton | IA    | 51576    | 42.729810 | -95.560557 |
| Westco Agronomy Company, LLC - Adair         | 110 Audubon Street            | Adair          | Clinton | IA    | 50025    | 41.500984 | -94.637442 |
| Westco Agronomy Company, LLC - Boone         | 1095 T Avenue                 | Boone          | Clinton | IA    | 50040    | 42.051556 | -93.801972 |

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| Facility Name                              | Address                              | City             | County   | State | Zip Code | Latitude  | Longitude  |
|--|--------------------------------------|------------------|----------|-------|----------|-----------|------------|
| Westco Agronomy Company, LLC               | 101 West 2nd Street                  | Grand Junction   | Clinton  | IA    | 51444    | 42.040317 | -94.240166 |
| Westco Agronomy Company, LLC - Halbur      | 200 East 1st Street                  | Halbur           | Clinton  | IA    | 50129    | 42.004887 | -94.971563 |
| Westco Agronomy Company, LLC - Jefferson   | 1500 North Mulberry                  | Jefferson        | Clinton  | IA    | 50129    | 42.028215 | -94.369640 |
| Westco Agronomy Company, LLC - South       | 1669 North Avenue                    | Jefferson        | Clinton  | IA    | 50115    | 41.984218 | -94.375996 |
| Westco Agronomy Company, LLC - Ralston     | 406 1 St Street                      | Ralston          | Clinton  | IA    | 51462    | 42.040833 | -94.636139 |
| Westco Agronomy Company, LLC - Scranton    | 1204 Main - P.O. Box 276             | Scranton         | Clinton  | IA    | 51463    | 42.019056 | -94.546833 |
| Westco Agronomy Company, LLC - Templeton   | 326 North Railway Street             | Templeton        | Clinton  | IA    | 50276    | 41.921111 | -94.943250 |
| Agriland FS, Inc. - Corley                 | 1229 Street F58                      | Harlan           | Crawford | IA    | 51537    | 41.577222 | -95.334444 |
| Cedar County Cooperative - Tipton          | 1201 Newton Avenue                   | Tipton           | Crawford | IA    | 52772    | 41.771667 | -91.098611 |
| Cedar County Cooperative - West Branch     | 1546 Baker Avenue                    | West Branch      | Crawford | IA    | 52358    | 41.723555 | -91.344153 |
| Clear Lake Terminal                        | 3114 Main Avenue                     | Clear Lake       | Crawford | IA    | 50428    | 43.138040 | -93.351936 |
| Climax Molybdenum Company                  | 2598 Highway 61                      | Fort Madison     | Crawford | IA    | 52627    | 40.582500 | -91.422778 |
| Farm Fertilizer Company                    | 909 Highway 218 North, Box 143       | La Porte City    | Crawford | IA    | 50651    | 42.321944 | -92.199444 |
| Farmers Cooperative Company - Dumont South | 12774 Hwy 3                          | Dumont           | Crawford | IA    | 50625    | 42.743889 | -92.968611 |
| Five Star Cooperative - Mason City         | 16682 (A) 245th Street               | Mason City       | Crawford | IA    | 50401    | 43.120757 | -93.187476 |
| Hopkinton, IA6027                          | 3105 Highway 38 South                | Hopkinton        | Crawford | IA    | 50511    | 42.338333 | -91.239722 |
| Iowa City Terminal                         | 207 Pipeline Road                    | Coralville       | Crawford | IA    | 52240    | 41.679770 | -91.568621 |
| Mediapolis, IA6036 Satellite               | 23054 Highway 61                     | Mediapolis       | Crawford | IA    | 52627    | 41.014722 | -91.169722 |
| New Century FS - La Porte City             | 3434 East Eagle Road                 | La Porte City    | Crawford | IA    | 50162    | 42.340833 | -92.289444 |
| Northern Country Cooperative Company       | 2202 470th Street                    | Stacyville       | Crawford | IA    | 50481    | 43.443102 | -92.789883 |
| Bb&P Grain Handlers 2009                   | 1843 Hwy 169, 2 Miles N of Winterset | Winterset        | Dallas   | IA    | 50273    | 41.380285 | -94.014253 |
| Farm Service Coop-Atlantic                 | 54464 Olive Street                   | Atlantic         | Dallas   | IA    | 50022    | 41.440167 | -95.000444 |
| Farm Service Coop-Denison                  | 1023 5th Avenue South                | Denison          | Dallas   | IA    | 51442    | 42.010710 | -95.359180 |
| Farm Service Coop-Irwin                    | 406 Front Street                     | Irwin            | Dallas   | IA    | 51446    | 41.789389 | -95.204611 |
| Farm Service Coop-Oakland                  | Hwy 6 & 59 North Junction            | Oakland          | Dallas   | IA    | 51560    | 41.317306 | -95.384611 |
| Farm Service Coop-Schleswig                | 2150 D. Ave.                         | Schleswig        | Dallas   | IA    | 51461    | 42.168028 | -95.449444 |
| Farm Service Coop-Shelby                   | 32216 385th Street                   | Shelby           | Dallas   | IA    | 51571    | 41.480028 | -95.453028 |
| Fredericksburg Farmers Cooperative         | 211 Riverview Drive                  | Waucoma          | Dallas   | IA    | 52171    | 43.055583 | -92.037278 |
| Silveredge Cooperative                     | 36919 St. Sebald Road                | Strawberry Point | Dallas   | IA    | 52223    | 42.689167 | -91.568611 |
| The University of Iowa Water Plant         | 208 W. Burlington Street             | Iowa City        | Dallas   | IA    | 52641    | 41.658611 | -91.539444 |

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|---|----------------------------|--------------|------------|-------|----------|-----------|------------|
| Vision Ag LLC - Sigourney                     | 20709 255th Street         | Sigourney    | Dallas     | IA    | 52651    | 41.287086 | -92.205074 |
| Westco Ag Co., LLC DBA Pelgrow - Anita        | S. Highway 148             | Anita        | Dallas     | IA    | 50022    | 41.419739 | -94.759140 |
| Westco Ag Co., LLC DBA Pelgrow - Griswold     | 54912 Troy Road            | Griswold     | Dallas     | IA    | 50853    | 41.228778 | -95.140250 |
| Westco Ag Co., LLC DBA Pelgrow - Massena      | 74880 Clark Ave.           | Massena      | Dallas     | IA    | 51560    | 41.251549 | -94.760509 |
| Westco Ag Co, LLC DBA Pelgrow - Oakland       | 504 North Highway          | Oakland      | Dallas     | IA    | 50002    | 41.312649 | -95.394692 |
| Atalissa, IA 6004 Satellite                   | 2015 Highway 6             | Atalissa     | Davis      | IA    | 52720    | 41.568611 | -91.170000 |
| Three Rivers FS Company Elkader NH3           | 24544 Hiway 13 N.          | Elkader      | Davis      | IA    | 52157    | 42.869722 | -91.383611 |
| United Farmers Mercantile Coop Villisca North | 401 North U Avenue         | Villisca     | Davis      | IA    | 50864    | 40.933583 | -94.984917 |
| Gold-Eagle Cooperative - Hardy                | 105 West Railroad Street   | Hardy        | Decatur    | IA    | 50545    | 42.810589 | -94.054554 |
| Pro Cooperative Inc. - Rutland                | One First Street South     | Rutland      | Decatur    | IA    | 50563    | 42.760120 | -94.290216 |
| Great Lakes Cooperative - Superior NH3 Plant  | 603 Railroad Street        | Superior     | Delaware   | IA    | 51363    | 43.432611 | -94.947778 |
| Millard Refrigerated Services                 | 8 "K" Avenue               | Ottumwa      | Delaware   | IA    | 50168    | 41.005304 | -92.392894 |
| Ogden, IA 434                                 | 1186 G Avenue              | Ogden        | Delaware   | IA    | 50327    | 42.037738 | -94.046184 |
| Pro Cooperative Inc. - Pocahontas             | Highway 4 North            | Pocahontas   | Delaware   | IA    | 50582    | 42.739438 | -94.680193 |
| Three Rivers FS Company Manchester NH3        | 1000 S. 5th St.            | Manchester   | Delaware   | IA    | 52537    | 42.474444 | -91.464722 |
| United Cooperative - Stonega                  | 2159 Stonega Avenue        | Webster City | Delaware   | IA    | 50595    | 42.476615 | -93.713036 |
| United Cooperative/Highview                   | 1324 220th Street          | Webster City | Delaware   | IA    | 50249    | 42.473047 | -93.909084 |
| United Cooperative/Stratford                  | 719 Commercial Street      | Stratford    | Delaware   | IA    | 51638    | 42.269600 | -93.924400 |
| F. J. Krob & Company/Rowley                   | 95 Rowley Street           | Rowley       | Des Moines | IA    | 52329    | 42.372083 | -91.840875 |
| Farmers Coop Society - Ireton                 | 1004 Highway K-30          | Ireton       | Des Moines | IA    | 51027    | 42.968934 | -96.313533 |
| Forest City Distribution Center-3m Company    | 806 West Crystal Lake Road | Forest City  | Des Moines | IA    | 50436    | 43.246944 | -93.646389 |
| Northern Country Coop Company (Toeterville)   | 4701 Hickory Ave           | Toeterville  | Des Moines | IA    | 52324    | 43.443889 | -92.890833 |
| Pro Cooperative Inc. - Bradgate               | 500 South Public Road      | Bradgate     | Des Moines | IA    | 50541    | 42.801056 | -94.417889 |
| Pro Cooperative Inc. - Pioneer                | 110 Main Street            | Pioneer      | Des Moines | IA    | 50574    | 42.652972 | -94.392167 |
| Pro Cooperative Inc. - Rolfe                  | 708 Broad Street           | Rolfe        | Des Moines | IA    | 52240    | 42.811477 | -94.529331 |
| Pine Ridge Farms, LLC                         | 1801 Maury Street          | Des Moines   | Dickinson  | IA    | 52627    | 41.581198 | -93.584830 |
| Three Rivers FS Company Earlville NH3         | 102 Northside Rd.          | Earlville    | Dickinson  | IA    | 52068    | 42.481944 | -91.267222 |
| Agvantage FS - Charles City                   | 2131 Old Highway Road      | Charles City | Dubuque    | IA    | 50616    | 43.047917 | -92.668972 |
| Hydrite Chemical Co. - Waterloo               | 2815 Wcf&N Drive           | Waterloo     | Dubuque    | IA    | 50049    | 42.537778 | -92.368889 |
| Innovative Ag Services - Cleves East          | 33181 159th Street         | Ackley       | Dubuque    | IA    | 52043    | 42.472347 | -93.045959 |



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| Maxyield Coop - Algona                       | 2106 140th Avenue                  | Algona         | Dubuque | IA    | 50423    | 43.077748 | -94.186680 |
| Maxyield Coop - Mallard                      | Miller Street                      | Mallard        | Dubuque | IA    | 50598    | 42.944111 | -94.687000 |
| Maxyield Coop - Whittemore                   | 502 Railroad Street                | Whittemore     | Dubuque | IA    | 50449    | 43.065287 | -94.427138 |
| Maxyield Cooperative - Dickens               | 202 First Street                   | Dickens        | Dubuque | IA    | 50438    | 43.130750 | -95.025278 |
| Maxyield Cooperative - West Bend             | 18 135th Street                    | West Bend      | Dubuque | IA    | 52637    | 42.957528 | -94.440444 |
| Three Rivers FS Company Centralia NH3        | 18177 Olde Hiway Rd                | Centralia      | Dubuque | IA    | 52043    | 42.466944 | -90.843611 |
| Two Rivers Cooperative - Otley               | 1691 Business Highway 163          | Otley          | Dubuque | IA    | 50256    | 41.455514 | -93.027727 |
| Charter Oak Ag Supply, Inc.                  | 698 Railroad St.                   | Charter Oak    | Emmet   | IA    | 51439    | 42.069405 | -95.582988 |
| Hormel Foods Corporation Knoxville Plant     | 209 N. Godfrey Lane                | Knoxville      | Emmet   | IA    | 50665    | 41.318056 | -93.060556 |
| Three Rivers FS Company Giard NH3            | 25278 Hiway 18                     | Mcgregor       | Emmet   | IA    | 52053    | 43.004444 | -91.303889 |
| Three Rivers FS Company Holy Cross NH3       | 20362 Holy Cross Rd.               | Holy Cross     | Emmet   | IA    | 52057    | 42.592778 | -90.986389 |
| Anderson Erickson Dairy Company              | 2229 Hubbell Avenue                | Des Moines     | Fayette | IA    | 50317    | 41.601389 | -93.576389 |
| Conagra Frozen Foods                         | 1023 4th Street                    | Council Bluffs | Fayette | IA    | 51503    | 41.249911 | -95.850069 |
| Farm Service Company                         | 306 West 6th Street                | Malvern        | Fayette | IA    | 51551    | 41.003965 | -95.588983 |
| Farmers Feed & Grain Company Inc.            | 1564 Hwy 9                         | Riceville      | Fayette | IA    | 50466    | 43.363806 | -92.544472 |
| Farmland Foods, Inc.                         | 800 Industrial Drive               | Denison        | Fayette | IA    | 51442    | 42.027778 | -95.359718 |
| Garnavillo, IA483                            | 25245 Highway 52                   | Garnavillo     | Fayette | IA    | 52049    | 42.860861 | -91.231892 |
| Hawkins Water Treatment Group                | 101 Greene Street                  | Slater         | Fayette | IA    | 50244    | 41.882473 | -93.687324 |
| New Century FS - Brooklyn                    | 4188 V18 Rd                        | Brooklyn       | Fayette | IA    | 52346    | 41.688333 | -92.451667 |
| Pro Cooperative Inc. - Havelock              | Intersection Clay St. & 210th Ave. | Havelock       | Fayette | IA    | 50541    | 42.831510 | -94.697370 |
| Procter & Gamble Hair Care LLC - Iowa City   | 2200 Lower Muscatine Road          | Iowa City      | Fayette | IA    | 52761    | 41.638723 | -91.501632 |
| Vogel Agri-Service, Inc.                     | 3151 Washington, Po Box 226        | Hamburg        | Fayette | IA    | 51041    | 40.591944 | -95.659444 |
| Fredericksburg Farmers Coop - Jack. Junction | 3203 State Highway 24, Po Box 132  | Waucoma        | Floyd   | IA    | 52171    | 43.115070 | -92.033369 |
| Ida Grove, IA 6016                           | 5655 Highway 175                   | Ida Grove      | Floyd   | IA    | 52046    | 42.348611 | -95.507222 |
| New Century FS - Newton                      | 253 Hwy S52n                       | Newton         | Floyd   | IA    | 52342    | 41.700833 | -93.174167 |
| Northwest Water Treatment Plant              | 7807 Ellis Road                    | Palo           | Floyd   | IA    | 51054    | 41.994167 | -91.771111 |
| Pro Cooperative Inc. - Gilmore City          | 33333 530th Street                 | Gilmore City   | Floyd   | IA    | 50546    | 42.717546 | -94.613958 |
| Pro Cooperative Inc. - Manson                | 1303 9th Avenue                    | Manson         | Floyd   | IA    | 50581    | 42.527650 | -94.535640 |
| River Valley Cooperative - Ryan              | 101 Union St.                      | Ryan           | Floyd   | IA    | 52650    | 42.348611 | -91.482222 |
| United Farmers Mercantile Coop Red Oak       | 203 West Oak Street                | Red Oak        | Floyd   | IA    | 51601    | 41.017306 | -95.235250 |

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|--|----------------------------------|-------------------|----------|-------|----------|-----------|------------|
| Wall Lake, IA 6026                         | 202 East First Street            | Wall Lake         | Floyd    | IA    | 51577    | 42.270556 | -95.086944 |
| Agriland FS, Inc. - Murray                 | 7th & Troy                       | Murray            | Franklin | IA    | 50174    | 41.043889 | -93.944722 |
| Cf Industries Sales, LLC - Garner Terminal | Highway 18 East, 2445 Welch Ave. | Garner            | Franklin | IA    | 50438    | 43.117500 | -93.540000 |
| Farmers Elevator Cooperative - Inwood NH3  | 307 Maple Street                 | Inwood            | Franklin | IA    | 51240    | 43.306412 | -96.433619 |
| Farmland Foods, Inc. - Carroll, IA         | 401 South Grant Road             | Carroll           | Franklin | IA    | 51401    | 42.062333 | -94.860222 |
| General Mills, Inc. - Cedar Rapids         | 4800 Edgewood Road Southwest     | Cedar Rapids      | Franklin | IA    | 52406    | 41.933333 | -91.718056 |
| Leinen, Inc.                               | 105 Main Street                  | Portsmouth        | Franklin | IA    | 52806    | 41.650917 | -95.516972 |
| New Century FS - Albion                    | 1605 Meyer Ave.                  | Albion            | Franklin | IA    | 50208    | 42.122500 | -92.997222 |
| New Century FS - Melbourne                 | 307 Railway St                   | Melbourne         | Franklin | IA    | 50208    | 41.945000 | -93.100278 |
| New Century FS - Traer                     | 2617 Hwy 8e                      | Traer             | Franklin | IA    | 52211    | 42.190556 | -92.453611 |
| Praxair - Fort Dodge, IA                   | 3160 200th Street                | Duncombe          | Franklin | IA    | 51238    | 42.500360 | -94.022178 |
| Premium Pet Health                         | 101 14 Th St. S.E.               | Orange City       | Franklin | IA    | 52069    | 42.990370 | -96.058454 |
| Tyson Fresh Meats, Inc. - Louisa Co.       | Highway 70 North                 | Columbus Junction | Franklin | IA    | 51012    | 41.296667 | -91.356944 |
| Whiting, IA 442                            | 810 Highway K 45 N, Po Box 285   | Whiting           | Franklin | IA    | 51063    | 42.129160 | -96.151585 |
| East Central Iowa Cooperative/ Hudson      | 1144 Hwy. 63 North               | Hudson            | Fremont  | IA    | 50643    | 42.416077 | -92.447921 |
| Five Star Cooperative - Lawler             | 1890 Ridgeway Blvd.              | Lawler            | Fremont  | IA    | 52154    | 43.084113 | -92.164828 |
| Gold-Eagle Cooperative-Thor                | 319 North Ann Street             | Thor              | Fremont  | IA    | 50591    | 42.691635 | -94.050400 |
| New Coop, Inc. - Bode/ Formerly Bode Coop  | 1914 130th Street                | Bode              | Fremont  | IA    | 50552    | 42.872330 | -94.288640 |
| United Suppliers Inc.-Pacific Junction Ia  | 60597 19th St.                   | Pacific Junction  | Fremont  | IA    | 51529    | 41.008333 | -95.802778 |
| Westco Ag Co., LLC DBA Pelgrow - Atlantic  | 603 West 2nd Street              | Atlantic          | Fremont  | IA    | 51531    | 41.408667 | -95.022500 |
| Westco Ag Co., LLC DBA Pelgrow - Stuart    | 504 East Front Street            | Stuart            | Fremont  | IA    | 50022    | 41.503434 | -94.311945 |
| Agvantage FS - Alexander Fert Plant        | 250 190th Street                 | Alexander         | Greene   | IA    | 50420    | 42.804444 | -93.468333 |
| Agvantage FS - Coulter Elevator            | 20 Grant Street                  | Coulter           | Greene   | IA    | 50431    | 42.738071 | -93.364598 |
| Agvantage FS - Thornton Plant              | 206 Ash Street                   | Thornton          | Greene   | IA    | 50479    | 42.945278 | -93.375556 |
| Farley, IA 480 Satellite                   | 11155 Holy Cross Road            | Farley            | Greene   | IA    | 52046    | 42.457511 | -91.007021 |
| Farmers Cooperative Company - Bondurant    | 2020 2nd Street Ne               | Bondurant         | Greene   | IA    | 50035    | 41.705769 | -93.435974 |
| Farmers Cooperative Company - Collins      | 70500 South Main Street          | Collins           | Greene   | IA    | 50055    | 41.898663 | -93.304695 |
| Farmer's Elevator & Exchange, Inc.         | 105 Hwy 61 North                 | Wapello           | Greene   | IA    | 52653    | 41.179900 | -91.196100 |
| Oskaloosa, IA 437 Satellite                | 3070 Independence Avenue         | Oskaloosa         | Greene   | IA    | 52134    | 41.209349 | -92.707349 |
| River Valley Cooperative - Sunbury NH3     | 2223 - 290th Street              | Sunbury/Wilton    | Greene   | IA    | 51020    | 41.671111 | -90.933333 |

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| Tama-Benton Cooperative - Dysart             | 1411 Talmage Street                   | Dysart          | Greene   | IA    | 52349    | 42.174444 | -92.318333 |
| Agvantage FS - Hampton Plant                 | 1327 Olive Ave.                       | Hampton         | Grundy   | IA    | 50441    | 42.736389 | -93.220278 |
| Farmers Cooperative Company - Altoona        | 102 First Street N                    | Altoona         | Grundy   | IA    | 50009    | 41.650921 | -93.465500 |
| Farmers Cooperative Company - New Hartford   | 705 Packwaukee St, Po Box 307         | New Hartford    | Grundy   | IA    | 50660    | 42.564121 | -92.619041 |
| First Cooperative Association - Laurens NH3  | 400 Walnut Street                     | Laurens         | Grundy   | IA    | 50554    | 42.844872 | -94.854557 |
| First Cooperative Association - Webb NH3     | 305 - 3rd Street                      | Webb            | Grundy   | IA    | 51366    | 42.947222 | -95.009167 |
| Gibson, IA430 (West)                         | Po Box 185, 101 West Elevator         | Gibson          | Grundy   | IA    | 50104    | 41.480250 | -92.395806 |
| New Century FS - Toledo                      | 108 S West St                         | Toledo          | Grundy   | IA    | 50675    | 41.994444 | -92.583056 |
| River Valley Cooperative - Durant NH3        | 3478 A Highway 927                    | Durant          | Grundy   | IA    | 52748    | 41.596111 | -90.882778 |
| First Cooperative Association - Aurelia NH3  | 100 S. Main, P. O. Box 426            | Aurelia         | Guthrie  | IA    | 51005    | 42.707484 | -95.434480 |
| First Cooperative Association - Cleghorn NH3 | 113 South Lewis Avenue                | Cleghorn        | Guthrie  | IA    | 51014    | 42.810493 | -95.710115 |
| First Coop Association - Linn Grove NH3      | 8015 - 15th Street                    | Linn Grove      | Guthrie  | IA    | 51033    | 42.887778 | -95.235000 |
| First Cooperative Association - Marathon NH3 | 212 North Agora                       | Marathon        | Guthrie  | IA    | 50565    | 42.858516 | -94.978447 |
| First Cooperative Association - Peterson NH3 | 100 Front Street                      | Peterson        | Guthrie  | IA    | 51047    | 42.916107 | -95.342907 |
| New Century FS - Garwin                      | 101 Anna, Po Box 189                  | Garwin          | Guthrie  | IA    | 50635    | 42.096111 | -92.679167 |
| Viafield - Elgin                             | 1245 Otter Creek Road                 | Elgin           | Guthrie  | IA    | 50650    | 42.952489 | -91.645584 |
| Ag Partners, LLC - Albert City               | 4973 230th Ave.                       | Albert City     | Hamilton | IA    | 50510    | 42.796528 | -94.953111 |
| Aspinwall Cooperative Co. - Manning NH3      | 12438 - 311th St. (911), 820 - 3rd St | Manning         | Hamilton | IA    | 51455    | 41.905000 | -95.044444 |
| Farmers Cooperative Company - Dike           | 107 Front Street, P. O. Box 10        | Dike            | Hamilton | IA    | 50624    | 42.463051 | -92.630951 |
| Innovative Ag Services - Andrew              | 312 S. Jefferson, Po Box 127          | Andrew          | Hamilton | IA    | 52033    | 42.148568 | -90.595620 |
| Innovative Ag Services - Cascade             | 1705 1st Avenue E, Po Box 787         | Cascade         | Hamilton | IA    | 52212    | 42.309513 | -90.989930 |
| Innovative Ag Services - Center Junction     | 12202 105th Avenue                    | Center Junction | Hamilton | IA    | 52214    | 42.110000 | -91.082778 |
| Innovative Ag Services - Central City        | 450 South River Street, Po Box 485    | Central City    | Hamilton | IA    | 50601    | 42.197748 | -91.526660 |
| Innovative Ag Services - Farley              | 800 Jamesmeier Road, Po Box 37        | Farley          | Hamilton | IA    | 50006    | 42.449951 | -91.022872 |
| Innovative Ag Services - Hopkinton           | 3076 Hwy. 38 Southeast, Po Box 160    | Hopkinton       | Hamilton | IA    | 50122    | 42.344444 | -91.240000 |
| Innovative Ag Services - Independence        | 81 11th Street Ne                     | Independence    | Hamilton | IA    | 52057    | 42.477778 | -91.895556 |
| Innovative Ag Services - Manchester          | 1100 S. 5th Street                    | Manchester      | Hamilton | IA    | 52159    | 42.473313 | -91.462578 |
| Innovative Ag Services - Monticello          | 2010 S. Main Street                   | Monticello      | Hamilton | IA    | 50206    | 42.210278 | -91.191389 |
| North Ice Cream Plant                        | 121 2nd Avenue Se                     | Le Mars         | Hamilton | IA    | 50477    | 42.791164 | -96.164368 |
| Viafield                                     | 600 -16th Street N.                   | Northwood       | Hamilton | IA    | 52164    | 43.448306 | -93.211365 |



**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                                | Address                           | City         | County  | State | Zip Code | Latitude  | Longitude  |
|--|-----------------------------------|--------------|---------|-------|----------|-----------|------------|
| Agvantage FS - Alden                         | 13730 Co. Hwy S27                 | Alden        | Hancock | IA    | 50006    | 42.502778 | -93.380278 |
| Agvantage FS - Eldora                        | 29234 Hwy 175 W.                  | Eldora       | Hancock | IA    | 50627    | 42.359722 | -93.133333 |
| Aurora Elevator, Inc.                        | 415 Woodruff Street               | Aurora       | Hancock | IA    | 50607    | 42.620110 | -91.728920 |
| Dean Foods North Central, LLC - Le Mars, Ia  | 1188 Lincoln Street Sw            | Le Mars      | Hancock | IA    | 51031    | 42.779500 | -96.182800 |
| Farm Service Company                         | 109 Depot Street                  | Randolph     | Hancock | IA    | 51649    | 40.872250 | -95.564861 |
| First Cooperative Association - Schaller NH3 | 1457 County Road                  | Schaller     | Hancock | IA    | 51053    | 42.504020 | -95.297358 |
| Heartland Co-Op Kellogg                      | 10081 Hwy 6, P.O. Box 68          | Kellogg      | Hancock | IA    | 50135    | 41.704722 | -92.900000 |
| Keswick, IA432                               | Po Box 56, 14303 Highway 22 South | Keswick      | Hancock | IA    | 50207    | 41.448517 | -92.240898 |
| Millard Refrigerated Services                | 601 Industrial Drive              | Denison      | Hancock | IA    | 50313    | 42.027291 | -95.361234 |
| Millard Refrigerated Services                | 1650 East Madison                 | Des Moines   | Hancock | IA    | 52240    | 41.634197 | -93.593236 |
| Mingo, IA445                                 | Po Box 148, 206 Railroad          | Mingo        | Hancock | IA    | 52310    | 41.769219 | -93.285335 |
| River Valley Cooperative - Dixon NH3         | 29434 Allen Grove Road            | Dixon        | Hancock | IA    | 52305    | 41.733333 | -90.772222 |
| Westco Agronomy Company, LLC - Woodward      | 110 Railroad                      | Woodward     | Hancock | IA    | 51560    | 41.859952 | -93.914061 |
| Western Iowa Co-Op                           | 3330 Merville Blacktop            | Hornick      | Hancock | IA    | 51048    | 42.224099 | -96.093766 |
| Farm Service Company                         | 112 West Railroad Ave.            | Silver City  | Hardin  | IA    | 51571    | 41.110000 | -95.635278 |
| Farm Service Company                         | 501 Front Street                  | Neola        | Hardin  | IA    | 51559    | 41.447222 | -95.617500 |
| Farm Service Company                         | Highway 92 East                   | Treynor      | Hardin  | IA    | 51575    | 41.233889 | -95.584167 |
| Farm Service Company                         | 301 South East Street, Po Box 110 | Henderson    | Hardin  | IA    | 51541    | 41.139444 | -95.433611 |
| Farmers Cooperative Company - Hampton        | 1316 Olive Avenue                 | Hampton      | Hardin  | IA    | 50441    | 42.732869 | -93.224084 |
| Farmers Cooperative Company - Latimer        | 852 170th Street                  | Latimer      | Hardin  | IA    | 50452    | 42.775105 | -93.350487 |
| Farmers Cooperative Company - Macy           | 11277 County Hwy S 55             | Ackley       | Hardin  | IA    | 50601    | 42.539543 | -93.145195 |
| Farmers Cooperative Company - Plainfield     | 1466 Badger Avenue                | Plainfield   | Hardin  | IA    | 50666    | 42.837875 | -92.535622 |
| Farmers Elevator Coop - Rock Valley NH3      | 1219 Main Street, P. O. Box 37    | Rock Valley  | Hardin  | IA    | 51247    | 43.202889 | -96.296611 |
| Five Star Cooperative - Cartersville         | 21823 - 160th Street              | Rockwell     | Hardin  | IA    | 50469    | 42.993154 | -93.085907 |
| Heartland Co-Op Baxter                       | 6275 N. 95th Ave. W.              | Baxter       | Hardin  | IA    | 50028    | 41.825556 | -93.141389 |
| Heartland Co-Op Colo                         | 417 2nd Street                    | Colo         | Hardin  | IA    | 50056    | 42.018588 | -93.310888 |
| Heartland Co-Op Laurel                       | 202 E. Market                     | Laurel       | Hardin  | IA    | 50141    | 41.883889 | -92.918333 |
| Heartland Co-Op Pickering                    | 3111 290th Street, Po Box 98      | Gilman       | Hardin  | IA    | 50106    | 41.937500 | -92.816944 |
| Heartland Co-Op Prairie City                 | 9180 S. 80th Ave. West            | Prairie City | Hardin  | IA    | 50228    | 41.596111 | -93.212222 |
| Low Moor Ag Service, Inc.                    | 2590 - 380th Avenue               | Low Moor     | Hardin  | IA    | 50560    | 41.803333 | -90.358611 |

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| Facility Name                                | Address                        | City           | County   | State | Zip Code | Latitude  | Longitude  |
|--|--------------------------------|----------------|----------|-------|----------|-----------|------------|
| South Central Coop - Columbia                | 2441 Highway 14                | Columbia       | Hardin   | IA    | 50123    | 41.172778 | -93.178333 |
| Stateline Cooperative - Lakota Facility      | 1906 Highway 9                 | Lakota         | Hardin   | IA    | 50556    | 43.384722 | -94.076528 |
| Chemtreat, Inc., Eldridge, Ia                | 200 East Trails Road           | Eldridge       | Harrison | IA    | 52748    | 41.621889 | -90.574806 |
| Clarinda Co-Op Co. Formerly River Valley Ag. | 401 North 1st Street           | Clarinda       | Harrison | IA    | 51632    | 40.742104 | -95.017139 |
| Farmers Cooperative Company - Ackley         | 302 North Franklin Avenue      | Ackley         | Harrison | IA    | 50601    | 42.558796 | -93.057648 |
| Five Star Cooperative - Dougherty            | 150 North Main Street          | Dougherty      | Harrison | IA    | 50433    | 42.922665 | -93.039721 |
| Heartland Co-Op Winterset                    | 2110 Norwood Ave               | Winterset      | Harrison | IA    | 50273    | 41.343546 | -93.981208 |
| Innovative Ag Services - Garden City         | 31578 Hwy. S-27                | Garden City    | Harrison | IA    | 50102    | 42.245128 | -93.394285 |
| Innovative Ag Services - Hubbard             | 115 E. Oak St                  | Hubbard        | Harrison | IA    | 50627    | 42.308383 | -93.301562 |
| Innovative Ag Services - Union               | 302 East St., Po Box 159       | Union          | Harrison | IA    | 52172    | 42.252222 | -93.060833 |
| Stateline Cooperative - Buffalo Center       | 3413 Highway 9 East            | Buffalo Center | Harrison | IA    | 50528    | 43.383806 | -93.924417 |
| Stateline Cooperative - Swea City Facility   | 402 Highway P-30               | Swea City      | Harrison | IA    | 51535    | 43.386111 | -94.308056 |
| Farmers Elev. Coop. - Rock Rapids NH3        | 210 North Story St.            | Rock Rapids    | Henry    | IA    | 51246    | 43.434060 | -96.168259 |
| Innovative Ag Services - Monona              | 20113 Old Highway 18 And 52    | Monona         | Henry    | IA    | 52310    | 43.061664 | -91.407716 |
| Innovative Ag Services - Williams East       | 3145 - 210th Street, Po Box 98 | Williams       | Henry    | IA    | 50271    | 42.486020 | -93.548594 |
| Mid-Iowa Cooperative - Green Mountain NH3    | 502 Green Mountain Road        | Green Mountain | Henry    | IA    | 50609    | 42.100806 | -92.817278 |
| Truro Grain - Purchased From Heartland Coop  | 100 South East Street          | Truro          | Henry    | IA    | 51111    | 41.207405 | -93.842116 |
| Viafield                                     | 51 E. Floyd Street             | Rudd           | Henry    | IA    | 50674    | 43.125833 | -92.895000 |
| Viafield                                     | 533 Bradford St, P. O. Box 38  | Marble Rock    | Henry    | IA    | 50459    | 42.966944 | -92.864722 |
| Ag Partners, LLC - Calumet                   | 312 South Railway Avenue       | Calumet        | Howard   | IA    | 51009    | 42.942667 | -95.549194 |
| Farmers Cooperative Company - Bradford       | 1349 75th Street               | Bradford       | Howard   | IA    | 50041    | 42.629940 | -93.252319 |
| Heart of Iowa Cooperative                    | 605 Broadway                   | Barnes City    | Howard   | IA    | 50027    | 41.509619 | -92.466625 |
| Innovative Ag Services - Waukon              | 445 Old Highway 9              | Waukon         | Howard   | IA    | 50271    | 43.269063 | -91.538158 |
| Mid-Iowa Cooperative - New Beaman Site       | 18935 - 330th Street           | Beaman         | Howard   | IA    | 50269    | 42.224972 | -92.846222 |
| Western Iowa Coop - Turin, Iowa              | 23298 Lapenteur Memorial Road  | Turin          | Howard   | IA    | 51063    | 42.017741 | -95.965789 |
| CF Industries Sales, LLC - Spencer Terminal  | 3425 180th Ave.                | Spencer        | Humboldt | IA    | 51301    | 43.153889 | -95.232500 |
| Farmers Cooperative Company - Leland         | 222 W. Broadway                | Leland         | Humboldt | IA    | 50453    | 43.338611 | -93.638889 |
| Farmers Elevator Cooperative - Alvord NH3    | 208 - 3rd Street               | Alvord         | Humboldt | IA    | 51230    | 43.341956 | -96.302375 |
| Farmers Elevator Cooperative - Doon NH3      | 101 West Main, P. O. Box 217   | Doon           | Humboldt | IA    | 51235    | 43.281124 | -96.238084 |
| Farmers Elevator Cooperative - Hawarden      | 902 - 7th St                   | Hawarden       | Humboldt | IA    | 51023    | 42.991944 | -96.481111 |

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|--|----------------------------------|------------------|----------|-------|----------|-----------|------------|
| Heartland Co-Op Redfield East            | 1540 302nd Street                | Redfield         | Humboldt | IA    | 50233    | 41.596040 | -94.172429 |
| Heartland Co-Op Waukee                   | 529 Ashworth                     | Waukee           | Humboldt | IA    | 50263    | 41.611867 | -93.883840 |
| Moville, IA6061                          | 201 North First Street           | Moville          | Humboldt | IA    | 52761    | 42.492778 | -96.073889 |
| North English, IA432                     | 211 East Lakeview                | North English    | Humboldt | IA    | 52316    | 41.513182 | -92.073571 |
| Rohrer Brothers, Inc. Brooklyn NH3       | 209 Railroad Ave.                | Brooklyn         | Humboldt | IA    | 52347    | 41.728889 | -92.443333 |
| Rohrer Brothers, Inc. Victor NH3         | 415 First St.                    | Victor           | Humboldt | IA    | 52632    | 41.734722 | -92.293611 |
| Western Iowa Coop                        | 38594 Hwy 175                    | Mapleton         | Humboldt | IA    | 51523    | 42.185643 | -95.795845 |
| Farmers Cooperative Company - Rake       | 3771 500th Street                | Rake             | Ida      | IA    | 50465    | 43.486893 | -93.919190 |
| Farmers Cooperative Company - Thompson   | 425 Harrison Street North        | Thompson         | Ida      | IA    | 50478    | 43.375278 | -93.775556 |
| Innovative Ag Services - Alden           | 13600 County Hwy S-27            | Alden            | Ida      | IA    | 52030    | 42.504467 | -93.379534 |
| Mid-Iowa Cooperative - Whitten NH3       | 14314 - 310th Street             | Whitten          | Ida      | IA    | 51442    | 42.251443 | -92.937725 |
| Millard Refrigerated Services            | 2710 Hwy 6 East                  | Iowa City        | Ida      | IA    | 52641    | 41.635517 | -91.495525 |
| Sioux Fertilizer Inc. NH3                | 491 3rd Street, Po Box 344       | Hawarden         | Ida      | IA    | 51250    | 42.989806 | -96.489528 |
| Vertex Chemical Corporation Camanche, Ia | 2619 Camanche Industrial Park Dr | Camanche         | Ida      | IA    | 50606    | 41.806944 | -90.239167 |
| Heartland Co-Op Collins                  | 222 Railroad St.                 | Collins          | Iowa     | IA    | 50055    | 41.900127 | -93.305552 |
| Heartland Co-Op Melbourne                | 2630 Hart Avenue                 | Melbourne        | Iowa     | IA    | 50162    | 41.978118 | -93.097266 |
| Innovative Ag Services - Ellsworth       | 829 Highway 175, Po Box 190      | Ellsworth        | Iowa     | IA    | 50628    | 42.310199 | -93.575854 |
| Innovative Ag Services - New Providence  | 27654 County Highway S-55        | New Providence   | Iowa     | IA    | 50664    | 42.302242 | -93.168329 |
| Innovative Ag Services - Owasa           | 306 Berkley Street               | Iowa Falls       | Iowa     | IA    | 50258    | 42.431944 | -93.202222 |
| New Cooperative, Inc. - Otho-NH3         | 2148-250th Street                | Otho             | Iowa     | IA    | 50575    | 42.425722 | -94.174111 |
| New Cooperative, Inc. - Palmer           | 206 Main Street, P.O. Box 149    | Palmer           | Iowa     | IA    | 51451    | 42.628661 | -94.603004 |
| Whiting, IA442 Satellite                 | 20509 165th Street               | Whiting          | Iowa     | IA    | 51401    | 42.119526 | -96.145500 |
| Farm Service Company                     | 2921 Highway 30                  | Logan            | Jackson  | IA    | 51546    | 41.661228 | -95.747761 |
| Farm Service Company                     | 808 Depot                        | Pacific Junction | Jackson  | IA    | 51561    | 41.017500 | -95.801389 |
| Farmers Cooperative Company - Remsen NH3 | 16461 Marion Street, Po Box 260  | Remsen           | Jackson  | IA    | 51050    | 42.816000 | -95.979000 |
| Hancock, IA447                           | 317 West Kimball                 | Hancock          | Jackson  | IA    | 51536    | 41.389778 | -95.365333 |
| Key Cooperative                          | 1380 Hwy 63                      | New Sharon       | Jackson  | IA    | 50208    | 41.453343 | -92.646852 |
| New Cooperative, Inc. - Duncombe-NH3     | 700 Eagle Street                 | Duncombe         | Jackson  | IA    | 50548    | 42.466000 | -93.980583 |
| New Cooperative, Inc. - Knierim-NH3      | 101 Main Street                  | Knierim          | Jackson  | IA    | 50569    | 42.455028 | -94.453972 |
| New Cooperative, Inc. - Badger           | 100 Center Avenue                | Badger           | Jasper   | IA    | 50518    | 42.616417 | -94.147750 |

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| Facility Name                              | Address                             | City           | County    | State | Zip Code | Latitude  | Longitude  |
|--|-------------------------------------|----------------|-----------|-------|----------|-----------|------------|
| New Cooperative, Inc. - Barnum-NH3         | 1941 Dakota Avenue                  | Barnum         | Jasper    | IA    | 50524    | 42.511222 | -94.384139 |
| New Cooperative, Inc. - Humbolt-NH3        | 1203 North 11th Street              | Humbolt        | Jasper    | IA    | 51453    | 42.735306 | -94.222389 |
| New Cooperative, Inc. - Knoke-NH3          | 1767 Knoke Drive                    | Pomeroy        | Jasper    | IA    | 50579    | 42.519000 | -94.764778 |
| New Cooperative, Inc. - Lohrville-NH3      | 1216-3rd Street, Po Box 26          | Lohrville      | Jasper    | IA    | 50566    | 42.267750 | -94.534944 |
| New Cooperative, Inc. - Roelyn             | 1207 Main Street                    | Moorland       | Jasper    | IA    | 51452    | 42.415639 | -94.353083 |
| New Cooperative, Inc. - Vincent-NH3        | 205 North 1st Street                | Vincent        | Jasper    | IA    | 50594    | 42.594083 | -94.018361 |
| Oakland Foods, Div. of OSI Industries, LLC | 21876 North Highway 59              | Oakland        | Jasper    | IA    | 51458    | 41.330556 | -95.386667 |
| Agvantage FS - Downey                      | 202 Peedee Street                   | West Branch    | Jefferson | IA    | 52358    | 41.616944 | -91.348611 |
| Boone, IA446                               | 1164 S Avenue                       | Boone          | Jefferson | IA    | 50036    | 42.039000 | -93.815000 |
| CF Industries Nitrogen, LLC - Port Neal    | 1182 260th Street                   | Sergeant Bluff | Jefferson | IA    | 51054    | 42.329444 | -96.377778 |
| Monticello, IA486                          | 19967 Business Highway 151          | Monticello     | Jefferson | IA    | 51039    | 42.220500 | -91.188889 |
| New Cooperative, Inc. – Clare - NH3        | 100 N. Hood Street                  | Clare          | Jefferson | IA    | 50575    | 42.589250 | -94.347028 |
| Agrineed, Inc. Denmark                     | 1514 303rd Avenue                   | Denmark        | Johnson   | IA    | 52624    | 40.737500 | -91.326944 |
| Colo, IA Satellite 416                     | 23959 730th Avenue                  | Colo           | Johnson   | IA    | 50056    | 42.008500 | -93.252694 |
| Farm Service Coop-Moorhead                 | 29552 State Hwy 183                 | Moorhead       | Johnson   | IA    | 51558    | 41.928762 | -95.835719 |
| Farmers Cooperative Company - Dows NH3     | 304 Ellsworth Street, P. O. Box 410 | Dows           | Johnson   | IA    | 50071    | 42.655694 | -93.497667 |
| Farmers Cooperative Company - Rowan NH3    | 100 Main Street                     | Rowan          | Johnson   | IA    | 50470    | 42.740111 | -93.553278 |
| Heartland Co-Op Belle Plaine               | West 8th Street                     | Belle Plaine   | Johnson   | IA    | 52208    | 41.891079 | -92.288079 |
| Heartland Co-Op Blainstown                 | 7624 21st Ave.                      | Blainstown     | Johnson   | IA    | 52209    | 41.917011 | -92.083802 |
| Iowa Fertilizer Sales Inc. NH3             | 4765 Hwy 143 N, Po Box 648          | Marcus         | Johnson   | IA    | 52339    | 42.826946 | -95.798988 |
| Luverne, IA426                             | 109 Linn Street, Po Box 159         | Luverne        | Johnson   | IA    | 50560    | 42.916806 | -94.081750 |
| Nevada, IA416                              | Po Box 401, 829 E Avenue            | Nevada         | Johnson   | IA    | 52361    | 42.014778 | -93.445583 |
| Odebolt, IA6018                            | 119 North Walnut Street             | Odebolt        | Johnson   | IA    | 51458    | 42.313611 | -95.251111 |
| Viafield                                   | 15081 O" Avenue"                    | Randalia       | Johnson   | IA    | 50471    | 42.847778 | -91.885833 |
| Agriland FS, Inc. - Humeston               | 420 North 4th Street                | Humeston       | Jones     | IA    | 50123    | 40.862778 | -93.494167 |
| Agriland FS, Inc. - Indianola              | 2616 West 2nd Avenue                | Indianola      | Jones     | IA    | 50125    | 41.356389 | -93.596111 |
| Agvantage FS - Gifford (Union)             | 29323 State Hwy 215                 | Gifford        | Jones     | IA    | 50259    | 42.276049 | -93.074269 |
| River Valley Cooperative - Calamus NH3     | 2417 190th Avenue                   | Calamus        | Jones     | IA    | 52747    | 41.826193 | -90.721872 |
| River Valley Cooperative - Lost Nation NH3 | 1475 Highway 136                    | Lost Nation    | Jones     | IA    | 52748    | 41.970833 | -90.808333 |
| Vision Ag LLC - Kalona                     | 102 South 14th                      | Kalona         | Jones     | IA    | 52248    | 41.482389 | -91.694222 |

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| Facility Name                                 | Address                         | City         | County  | State | Zip Code | Latitude  | Longitude  |
|---|---------------------------------|--------------|---------|-------|----------|-----------|------------|
| West Central Cooperative - Dedham             | 510 North 4th Avenue, Po Box 76 | Dedham       | Jones   | IA    | 51455    | 41.915530 | -94.818840 |
| Coin, IA6013                                  | 2838 Hackberry Avenue           | Coin         | Keokuk  | IA    | 51636    | 40.634444 | -95.225000 |
| Cooperative Elevator Assoc. - Ocheyedon NH3   | 781 Lover's Lane                | Ocheyedon    | Keokuk  | IA    | 51354    | 43.418889 | -95.532222 |
| Creston, IA6014                               | 1726 Osage Street               | Creston      | Keokuk  | IA    | 50801    | 41.053155 | -94.335089 |
| Danbury, IA6010                               | 105 South East Street           | Danbury      | Keokuk  | IA    | 51019    | 42.233056 | -95.720556 |
| Des Moines Wastewater Reclamation Authority   | 3000 Vandalia Road              | Des Moines   | Keokuk  | IA    | 50317    | 41.572778 | -93.557778 |
| Green Valley Chemical Corp                    | 1284 North Cherry Street Road   | Creston      | Keokuk  | IA    | 50801    | 41.116502 | -94.354341 |
| Heartland Co-Op Conroy                        | 445 "F" Street                  | Conroy       | Keokuk  | IA    | 52220    | 41.727333 | -92.001419 |
| J Avenue Water Treatment Plant                | 761 J Avenue Ne                 | Cedar Rapids | Keokuk  | IA    | 50158    | 42.000556 | -91.676389 |
| South Central Coop - Humeston                 | 319 W. Guy Porter Rd.           | Humeston     | Keokuk  | IA    | 50139    | 40.856389 | -93.501389 |
| Viafield                                      | 3989 Warbler Avenue             | Grafton      | Keokuk  | IA    | 50653    | 43.341389 | -93.063333 |
| Water Pollution Control Facilities            | 7525 Bertram Road Se            | Cedar Rapids | Keokuk  | IA    | 52172    | 41.958278 | -91.563583 |
| Agriland FS, Inc. - Orient                    | 108 Jackson Road                | Orient       | Kossuth | IA    | 50858    | 41.202778 | -94.424444 |
| Breda, IA6011                                 | 112 Granite Avenue              | Breda        | Kossuth | IA    | 51436    | 42.179444 | -94.973333 |
| Cooperative Elevator Association - Sibley NH3 | 1107 - 2nd Avenue               | Sibley       | Kossuth | IA    | 51249    | 43.396987 | -95.753184 |
| Cooperative Elevator Association- Harris NH3  | 6905 - 140th Street             | Harris       | Kossuth | IA    | 51345    | 43.444722 | -95.425556 |
| Dunlap, IA6015                                | 306 West Highway 37             | Dunlap       | Kossuth | IA    | 51529    | 41.856667 | -95.603889 |
| Farmers Coop Society - Sioux Center           | 109 3rd Avenue, S.W.            | Sioux Center | Kossuth | IA    | 51250    | 43.077344 | -96.178950 |
| First Cooperative Association - Cherokee      | 530 River Road                  | Cherokee     | Kossuth | IA    | 51012    | 42.745278 | -95.558611 |
| Heartland Co-Op Lincoln                       | 105 W. Main St., Po Box 168     | Lincoln      | Kossuth | IA    | 50652    | 42.264365 | -92.692878 |
| Heartland Co-Op Reinbeck                      | 107 N. Pioneer Road             | Reinbeck     | Kossuth | IA    | 50669    | 42.327500 | -92.593333 |
| Innovative Ag Services - Faulkner             | 410 Faulkner Lane               | Ackley       | Kossuth | IA    | 50102    | 42.613917 | -93.085167 |
| Luverne, IA6017                               | 107 East Street                 | Luverne      | Kossuth | IA    | 50213    | 43.007500 | -94.193611 |
| New Century FS - Gladbrook                    | 2 Garfield, Po Box 332          | Gladbrook    | Kossuth | IA    | 50112    | 42.189722 | -92.720000 |
| New Century FS - Grinnell                     | 1017 Ogan Ave, Po Box 781       | Grinnell     | Kossuth | IA    | 50651    | 41.724444 | -92.723056 |
| River Valley Cooperative - S/M Eldridge       | 200 South 18th Avenue           | Eldridge     | Kossuth | IA    | 52216    | 41.653087 | -90.563230 |
| River Valley Cooperative - Walcott            | 1009 North Main Street          | Walcott      | Kossuth | IA    | 52729    | 41.593889 | -90.773611 |
| Sac City, IA6035 Satellite                    | 3316 255th Street               | Sac City     | Kossuth | IA    | 50619    | 42.421111 | -94.934444 |
| Ag Partners, LLC - Alta 1                     | 13 North Main                   | Alta         | Lee     | IA    | 51002    | 42.674722 | -95.299444 |
| Ag Partners, LLC - Alton                      | 601 10th St. Se                 | Alton        | Lee     | IA    | 51003    | 42.987222 | -96.006389 |

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| Facility Name                             | Address                           | City            | County | State | Zip Code | Latitude  | Longitude  |
|---|-----------------------------------|-----------------|--------|-------|----------|-----------|------------|
| Ag Partners, LLC - Hartley                | 3232 Vanburen                     | Hartley         | Lee    | IA    | 51346    | 43.180167 | -95.495167 |
| Ag Partners, LLC - Royal                  | 101 Market St.                    | Royal           | Lee    | IA    | 51357    | 43.067111 | -95.285250 |
| Agriland FS, Inc. - Winterset             | 421 North 10th Street             | Winterset       | Lee    | IA    | 50273    | 41.337778 | -94.003056 |
| Anthon, IA6062 Satellite (Rock Branch)    | 2071 Rock Branch Road             | Anthon          | Lee    | IA    | 51004    | 42.402264 | -95.868425 |
| Farmers Cooperative Company - Newell      | 6275 200th Avenue                 | Newell          | Lee    | IA    | 50568    | 42.608170 | -95.014069 |
| Five Star Cooperative - Nashua            | 185 Mills Street                  | Nashua          | Lee    | IA    | 50658    | 42.964314 | -92.531320 |
| Five Star Cooperative - New Hampton       | 1949 North Linn Ave.              | New Hampton     | Lee    | IA    | 50659    | 43.074343 | -92.319003 |
| Heart of Iowa Cooperative-Legrand         | 1004 Highway E-49                 | Marshalltown    | Lee    | IA    | 50158    | 41.978333 | -92.763889 |
| New Century FS - Baxter                   | 5616 Hwy 14 E                     | Newton          | Lee    | IA    | 50632    | 41.820000 | -92.985000 |
| United Western Coop-Missouri Valley       | 220 E. Lincoln Hwy                | Missouri Valley | Lee    | IA    | 51556    | 41.555630 | -95.882130 |
| West Liberty Foods L.L.C.                 | 207 West 2nd Street, P.O. Box 318 | West Liberty    | Lee    | IA    | 52641    | 41.569167 | -91.265833 |
| Westco Ag Co., LLC DBA Pelgrow - Adair    | 1012 Broad St.                    | Adair           | Lee    | IA    | 50020    | 41.498501 | -94.655843 |
| A &K Feed & Grain Co. Inc.                | 14530 50th Street                 | Lime Springs    | Linn   | IA    | 52155    | 43.443500 | -92.286940 |
| Ag Partners, LLC - Fonda                  | 62048 110th Ave.                  | Fonda           | Linn   | IA    | 50540    | 42.588528 | -94.893222 |
| Agriland FS, Inc. - Canby                 | 1608 160th Street                 | Casey           | Linn   | IA    | 50048    | 41.416389 | -94.566667 |
| Ajinomoto Heartland, Inc.                 | 1 Heartland Drive                 | Eddyville       | Linn   | IA    | 52553    | 41.143330 | -92.649167 |
| Donnellson Elevator Co. Mt. Hamill        | 1564 143rd St.                    | Donnellson      | Linn   | IA    | 52625    | 40.749850 | -91.611500 |
| Farmers Coop Society - Little Rock        | 502 Sectionline Road              | Little Rock     | Linn   | IA    | 51243    | 43.445931 | -95.879238 |
| Farmers Coop. Elev. Co. - Schleswig       | 313 Cedar Street                  | Schleswig       | Linn   | IA    | 51461    | 42.164722 | -95.435556 |
| Farmers Cooperative Company - Packard     | 13625 Packard Avenue              | Packard         | Linn   | IA    | 50619    | 42.853056 | -92.730833 |
| Hillshire Brands Company - Storm Lake, IA | 315 Vilas Road                    | Storm Lake      | Linn   | IA    | 50588    | 42.639288 | -95.184100 |
| Peve Crop Service                         | 2181 State Highway 2              | Bedford         | Linn   | IA    | 50672    | 40.676944 | -94.707222 |
| Primera Foods - Britt, IA                 | 1260 Highway 18                   | Britt           | Linn   | IA    | 50520    | 43.103168 | -93.741875 |
| Quality Refrigerated Services             | 225 West 21st Street              | Spencer         | Linn   | IA    | 52544    | 43.159579 | -95.149309 |
| Troy Elevator, Inc.                       | 30919 - 215th Street              | Bloomfield      | Linn   | IA    | 52536    | 40.747990 | -92.237586 |
| Twin State, Inc. - Hampton                | 1455 140th Street                 | Hampton         | Linn   | IA    | 52747    | 42.730264 | -93.230304 |
| Cargill, Inc.                             | 1710 16th St., S.E., N/A          | Cedar Rapids    | Louisa | IA    | 52401    | 41.970278 | -91.644444 |
| Future Foam, Inc                          | 400 North 10th Street             | Council Bluffs  | Louisa | IA    | 51503    | 41.265971 | -95.859273 |
| Golden Furrow Fertilizer, Inc.            | 906 Karr Ave.                     | Bloomfield      | Louisa | IA    | 52537    | 40.744410 | -92.430007 |
| Jbs Marshalltown Pork Facility            | 402 N 10th Avenue                 | Marshalltown    | Louisa | IA    | 50501    | 42.054417 | -92.897944 |



**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                           | Address                       | City         | County  | State | Zip Code | Latitude  | Longitude  |
|---|-------------------------------|--------------|---------|-------|----------|-----------|------------|
| New Cooperative, Inc. - Pomeroy         | 602 East Harrison Street      | Pomeroy      | Louisa  | IA    | 50516    | 42.544261 | -94.675048 |
| Maxyield Coop - Emmetsburg              | 4498 Works Rd                 | Emmetsburg   | Lucas   | IA    | 50562    | 43.110972 | -94.699583 |
| Penford Products Co.                    | 1001 First Street Sw          | Cedar Rapids | Lucas   | IA    | 51648    | 41.968056 | -91.667500 |
| Agrineed, Inc.                          | 2490 300th Street             | Montrose     | Lyon    | IA    | 52639    | 40.526111 | -91.433611 |
| City of Sioux City Water Plant          | 1101 Tri View Avenue          | Sioux City   | Lyon    | IA    | 51103    | 42.494328 | -96.421328 |
| Farmers Cooperative Company - Paullina  | 141 North Main                | Paullina     | Lyon    | IA    | 51046    | 42.980556 | -95.686111 |
| Golden Furrow - Mt. Union Inc.          | 22641 220th Ave               | Mount Union  | Lyon    | IA    | 52644    | 41.009556 | -91.352694 |
| Heartland Co-Op Stanhope                | 515 Railway Street            | Stanhope     | Lyon    | IA    | 50246    | 42.287500 | -93.798060 |
| River Valley Cooperative - Eldridge NH3 | 201 S. 18th Avenue            | Eldridge     | Lyon    | IA    | 52778    | 41.653178 | -90.562075 |
| Consumers Cooperative Society           | 3000 Heartland Drive          | Coralville   | Madison | IA    | 52241    | 41.695214 | -91.619637 |
| Heartland Co-Op Jewell                  | First And Lyon Street         | Jewell       | Madison | IA    | 50130    | 42.311530 | -93.643080 |
| Heartland Co-Op Randall                 | 305 First Street              | Randall      | Madison | IA    | 50231    | 42.237530 | -93.604420 |
| Heartland Co-Op Rippey                  | 403 Percival                  | Rippey       | Madison | IA    | 50235    | 41.934722 | -94.198333 |
| Roquette America, Inc. (Keokuk)         | 1003 S. 5th. Street           | Keokuk       | Madison | IA    | 50583    | 40.388532 | -91.394735 |
| South Ice Cream Plant                   | 1191 18th Street Sw           | Le Mars      | Madison | IA    | 51503    | 42.771896 | -96.183563 |
| Viafield - Lamont                       | 1301 Washburn Avenue          | Lamont       | Madison | IA    | 50456    | 42.599810 | -91.648610 |
| Donnellson Elevator Co. Donnellson      | 224 Mill St.                  | Donnellson   | Mahaska | IA    | 52625    | 40.643675 | -91.560575 |
| Heartland Co-Op Cambridge               | 315 South Water               | Cambridge    | Mahaska | IA    | 50046    | 41.895310 | -93.524940 |
| Heartland Coop- Holland                 | 203 Market Street, Po Box 126 | Holland      | Mahaska | IA    | 50642    | 42.398833 | -92.800556 |
| Heartland Co-Op Panora                  | 2190 Utopia Avenue            | Panora       | Mahaska | IA    | 50216    | 41.693832 | -94.347664 |
| Heartland Co-Op Zearing                 | 15985 720th Avenue            | Zearing      | Mahaska | IA    | 50278    | 42.122890 | -93.270973 |
| John W. Pray Water Treatment Plant      | 600 Phinney Park Drive        | Fort Dodge   | Mahaska | IA    | 50317    | 42.507970 | -94.203915 |
| Key Cooperative                         | 504 6th Ave.                  | Sully        | Mahaska | IA    | 50134    | 41.575000 | -92.847222 |
| Adm Corn Processing - Cedar Rapids      | 1350 Waconia Avenue, Sw       | Cedar Rapids | Marion  | IA    | 52404    | 41.927222 | -91.687500 |
| Berne Co-Op Association                 | 18530 Hwy 141 North           | Ute          | Marion  | IA    | 51060    | 42.059116 | -95.712420 |
| Heartland Co-Op Alleman                 | 13800 NE 6th                  | Alleman      | Marion  | IA    | 50007    | 41.812778 | -93.610275 |
| Heartland Co-Op Poverty Hollow          | 18836 Hayes Street            | Ackworth     | Marion  | IA    | 50001    | 41.392250 | -93.445892 |
| Key Cooperative                         | 1669 Hwy 14 North             | Newton       | Marion  | IA    | 50251    | 41.715051 | -93.067165 |
| Key Cooperative                         | 330 West St                   | Grinnell     | Marion  | IA    | 50112    | 41.727156 | -92.722206 |
| River Valley Cooperative - Clarence NH3 | 1675 - 140th Street           | Clarence     | Marion  | IA    | 52745    | 41.887555 | -91.043073 |

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| Facility Name                                 | Address                          | City            | County   | State | Zip Code | Latitude  | Longitude  |
|---|----------------------------------|-----------------|----------|-------|----------|-----------|------------|
| Western Iowa Co-Op                            | 531 Driftwood                    | Correctionville | Marion   | IA    | 51026    | 42.476356 | -95.786946 |
| Adm Corn Processing                           | 1251 Beaver Channel Parkway      | Clinton         | Marshall | IA    | 52732    | 41.820611 | -90.209611 |
| Equistar Chemicals, Lp Clinton Plant          | 3400 Anamosa Road                | Clinton         | Marshall | IA    | 52732    | 41.808200 | -90.292477 |
| Farmers Coop Co. - Mount Ayr Branch           | 2169 U.S. Highway 169            | Mount Ayr       | Marshall | IA    | 50854    | 40.729466 | -94.224196 |
| Farmers Cooperative Co.- Macksburg Location   | 306 N. East St.                  | Macksburg       | Marshall | IA    | 50155    | 41.218315 | -94.185986 |
| Heartland Co-Op Dallas Center                 | 1107 Sycamore                    | Dallas Center   | Marshall | IA    | 50063    | 41.682580 | -93.958060 |
| Heartland Co-Op Elkhart                       | 4415 NE 108th Avenue             | Elkhart         | Marshall | IA    | 50073    | 41.756416 | -93.526031 |
| Heartland Co-Op Goodhue                       | 5650 E. Army Post Road           | Carlisle        | Marshall | IA    | 50317    | 41.524720 | -93.506740 |
| Heartland Co-Op Mitchellville                 | 101 S. Center Avenue             | Mitchellville   | Marshall | IA    | 50169    | 41.666694 | -93.358833 |
| River Valley Cooperative - Martelle NH3       | 24528 County Road E-45           | Martelle        | Marshall | IA    | 52330    | 42.022222 | -91.356944 |
| Viafield                                      | 291 South Main                   | Arlington       | Marshall | IA    | 50440    | 42.743323 | -91.661681 |
| Western Iowa Co-Op                            | 520 Front Street                 | Pierson         | Marshall | IA    | 51061    | 42.541656 | -95.866351 |
| Cloverleaf Cold Storage Plant #6              | 2640 Murray Street.              | Sioux City      | Mills    | IA    | 51111    | 42.426667 | -96.376389 |
| Cloverleaf of Lemars                          | 1609 18th Street S.W.            | Lemars          | Mills    | IA    | 51031    | 42.772222 | -96.185000 |
| Cloverleaf of Cherokee                        | 1530 S. 2nd Street, P.O. Box 452 | Cherokee        | Mills    | IA    | 51012    | 42.717361 | -95.553119 |
| Curly's Foods Inc.                            | 1000 Cunningham Drive            | Sioux City      | Mills    | IA    | 51106    | 42.484173 | -96.382429 |
| Heartland Co-Op Evansville                    | 5855 Hiway 65/69 North           | Indianola       | Mills    | IA    | 50125    | 41.440250 | -93.557724 |
| Heartland Co-Op Luther                        | 411 Luther Street                | Luther          | Mills    | IA    | 50152    | 41.968060 | -93.822280 |
| Heartland Co-Op Napier                        | 1588 Xenia Drive                 | Ames            | Mills    | IA    | 50014    | 41.980972 | -93.713196 |
| Art's Milling Service, Inc.                   | 326 100th Street East            | Protivin        | Mitchell | IA    | 52163    | 43.213020 | -92.088610 |
| Clinton Feed & Grain, Inc.                    | 1571 Main Ave                    | Clinton         | Mitchell | IA    | 52732    | 41.873556 | -90.220056 |
| Farmers Coop Co. - Arispe Branch              | 400 Us Highway 169               | Arispe          | Mitchell | IA    | 50831    | 40.950833 | -94.221667 |
| Heartland Co-Op Booneville                    | 29927-360th Street               | Booneville      | Mitchell | IA    | 50038    | 41.521668 | -93.898497 |
| Heartland Co-Op Redfield West                 | 1535 Highway 6                   | Redfield        | Mitchell | IA    | 50233    | 41.595694 | -94.173444 |
| Heartland Co-Op Ruble                         | 20594 G24 Hiway                  | Hartford        | Mitchell | IA    | 50118    | 41.435054 | -93.411720 |
| Heartland Co-Op Slater                        | 1120 West 1st Avenue             | Slater          | Mitchell | IA    | 50244    | 41.883060 | -93.697250 |
| Vision Ag LLC - Keota                         | 2038 Keokuk / Washington Road    | Keota           | Mitchell | IA    | 52248    | 41.363250 | -91.945889 |
| West Central Cooperative - Mannng             | 619 Julia St.                    | Manning         | Mitchell | IA    | 52776    | 41.913190 | -95.063720 |
| Chem Gro of Houghton Inc. - Houghton Facility | 504 Main Street, P O Box 76      | Houghton        | Monona   | IA    | 52631    | 40.784972 | -91.608444 |
| Cloverleaf Cold Storage Plant #1              | 2800 Cloverleaf Court            | Sioux City      | Monona   | IA    | 51111    | 42.426944 | -96.371389 |



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|--|--------------------------------|----------------|------------|-------|----------|-----------|------------|
| Cogdill Farm Supply, Inc.                      | 104 West Fulton                | Dow City       | Monona     | IA    | 51528    | 41.931447 | -95.495702 |
| Farmers Union Cooperative                      | 1913 County Rd B-32            | Ossian         | Monona     | IA    | 52161    | 43.146642 | -91.778698 |
| New Cooperative, Inc. - Woolstock              | 1632 330th Street              | Woolstock      | Monona     | IA    | 51443    | 42.571808 | -93.843354 |
| Plumrose Usa, Inc- Council Bluffs Facility     | 2650 23rd Avenue, P.O. Box 436 | Council Bluffs | Monona     | IA    | 51038    | 41.242963 | -95.885244 |
| United Farmers Mercantile Coop Shenandoah      | Hwy 48 And Ferguson Road       | Shenandoah     | Monona     | IA    | 50864    | 40.771750 | -95.366306 |
| Vogel Paint & Wax Co., Inc.                    | 1020 Albany Place S.E.         | Orange City    | Monona     | IA    | 52231    | 42.993889 | -96.058611 |
| Western Iowa Co-Op                             | 300 Main                       | Blencoe        | Monona     | IA    | 51016    | 41.928842 | -96.082658 |
| Chem Gro of Houghton Inc.                      | 1280 240th Avenue              | West Point     | Monroe     | IA    | 52656    | 40.772806 | -91.448500 |
| Stateline Cooperative - Maple Hill             | 1746 500th Avenue              | Armstrong      | Monroe     | IA    | 50517    | 43.393096 | -94.599252 |
| Troy Elevator, Inc. Formerly Roemerman F&G     | 104 E. South Street            | Blakesburg     | Monroe     | IA    | 50257    | 40.959439 | -92.635867 |
| Vision Ag LLC - West Chester                   | 214 West Highway 92            | West Chester   | Monroe     | IA    | 51648    | 41.335587 | -91.816687 |
| Agrium U.S. Inc. - Early Terminal              | 1887 Highway 71                | Early          | Montgomery | IA    | 50535    | 42.520389 | -95.152686 |
| Chem Gro of Houghton Inc. - Hillsboro Facility | 103 North Cedar                | Hillsboro      | Montgomery | IA    | 52630    | 40.837028 | -91.713139 |
| Chem Gro of Houghton Inc.-Mt. Hamill Facility  | 1433 155th Ave                 | Donnellson     | Montgomery | IA    | 52625    | 40.752667 | -91.612361 |
| Farmers Coop Co. - Osceola Branch              | 221 Townline Road              | Osceola        | Montgomery | IA    | 50213    | 41.048475 | -93.761859 |
| Western Iowa Co-Op                             | 203 Main                       | Washta         | Montgomery | IA    | 51059    | 42.572771 | -95.717098 |
| Agrium U.S. Inc. - Garner Terminal             | 2410 Vail Avenue               | Garner         | Muscatine  | IA    | 50438    | 43.113790 | -93.555590 |
| Clarinda Co-Op Co.                             | Hwy 2 & 71 By-Pass             | Clarinda       | Muscatine  | IA    | 51632    | 40.733333 | -95.018056 |
| Cogdill Farm Supply, Inc.                      | 301 North Railway Street       | Panama         | Muscatine  | IA    | 51562    | 41.728761 | -95.471671 |
| Farmers Cooperative Company - Kesley           | 15751 265th St.                | Kesley         | Muscatine  | IA    | 50649    | 42.662510 | -92.912670 |
| Floyd County Ag Center, DBA                    | 2521 7 Mile Rd.                | Charles City   | Muscatine  | IA    | 50616    | 43.060833 | -92.727500 |
| Heartland Co-Op Hunnerdose                     | 12732 Pershing Street          | Indianola      | Muscatine  | IA    | 50125    | 41.277999 | -93.563110 |
| Heartland Co-Op Minburn                        | 2263 187th Road                | Minburn        | Muscatine  | IA    | 50167    | 41.763053 | -94.035835 |
| Sethness Products, Inc                         | 1347 Beaver Channel Parkway    | Clinton        | Muscatine  | IA    | 51537    | 41.816134 | -90.217187 |
| Smith Fertilizer And Grain-Knoxville           | 1650 Quebec St.                | Knoxville      | Muscatine  | IA    | 50225    | 41.246500 | -93.031300 |
| United Western Coop-Modale                     | 2645 Fowler Avenue             | Modale         | Muscatine  | IA    | 51557    | 41.619290 | -95.993090 |
| United Western Coop-Mondamin                   | 111 North Main Street          | Mondamin       | Muscatine  | IA    | 50510    | 41.711000 | -96.024472 |
| Westco Ag Co., LLC - Audubon Great Dane        | 417 Market Street              | Audubon        | Muscatine  | IA    | 50025    | 41.721446 | -94.936356 |
| Koch Nitrogen Co.- Sergeant Bluff Terminal     | 2735 Port Neal Circle          | Sergeant Bluff | O'brien    | IA    | 52248    | 42.308111 | -96.363056 |
| Smith Fertilizer And Grain-Pleasantville       | 702 E. Jasper                  | Pleasantville  | O'brien    | IA    | 50680    | 41.398400 | -93.273200 |

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| Facility Name                                 | Address                   | City         | County    | State | Zip Code | Latitude  | Longitude  |
|---|---------------------------|--------------|-----------|-------|----------|-----------|------------|
| Van Diest Supply Company                      | 3514 Briggs Woods Road    | Stanhope     | O'brien   | IA    | 50595    | 42.279949 | -93.795349 |
| Van Diest Supply Company                      | 304 Main St.              | Duncombe     | O'brien   | IA    | 50541    | 42.472500 | -93.994167 |
| Van Diest Supply Company                      | 2141 Poplar Grove Avenue  | Blairsburg   | O'brien   | IA    | 50036    | 42.479444 | -93.677222 |
| Van Diest Supply Company                      | 1237 270th St.            | Gilmore City | O'brien   | IA    | 50246    | 42.661000 | -94.396715 |
| Van Diest Supply Company                      | 403 Front St.             | Barnum       | O'brien   | IA    | 50034    | 42.508719 | -94.368529 |
| Van Diest Supply Company                      | 1434 220th St.            | Webster City | O'brien   | IA    | 52730    | 42.470000 | -93.890000 |
| Danisco US, Inc. (Formerly Genencor Internat) | 1000 41st Ave Dr Sw       | Cedar Rapids | Osceola   | IA    | 52404    | 41.940000 | -91.640389 |
| Eldon C. Stutsman, Inc. - Hills Facility      | 121 Lassie Street         | Hills        | Osceola   | IA    | 52235    | 41.553194 | -91.536056 |
| Gold-Eagle Cooperative-Corwith                | 303 NE Main Street        | Corwith      | Osceola   | IA    | 50430    | 42.993056 | -93.954167 |
| Gold-Eagle Cooperative-Eagle Grove            | 1200 North Arthur Avenue  | Eagle Grove  | Osceola   | IA    | 50533    | 42.675800 | -93.904100 |
| Gold-Eagle Cooperative-Livermore              | 508 6th Street            | Livermore    | Osceola   | IA    | 50558    | 42.865800 | -94.187700 |
| Gold-Eagle Cooperative-Renwick                | 207 South Smith Street    | Renwick      | Osceola   | IA    | 50572    | 42.828056 | -93.981667 |
| Agvantage FS - Independence - Aa              | 1859 Golf Course Blvd.    | Independence | Page      | IA    | 50644    | 42.470833 | -91.923056 |
| Eldon C. Stutsman, Inc. - Riverside Facility  | 410 E. River Street       | Riverside    | Page      | IA    | 52327    | 41.480375 | -91.573213 |
| Koch Nitrogen Company - Garner Terminal       | 2415 Vail Avenue          | Garner       | Page      | IA    | 50158    | 43.113575 | -93.558178 |
| Vision Ag LLC - Keota (FCA)                   | 2040 Keokuk-Washington Rd | Keota        | Page      | IA    | 52567    | 41.362639 | -91.945833 |
| Westco Agronomy Company, LLC - Boxholm        | 29 Beech Street           | Boxholm      | Page      | IA    | 50048    | 42.176306 | -94.102306 |
| Westco Ag Co., LLC DBA Pelgrow - Elk Horn     | 1010 Northeast 1st St.    | Elk Horn     | Page      | IA    | 51535    | 41.598344 | -95.055540 |
| Chem Gro of Houghton Inc. - Olds Facility     | 1212 Iowa Ave             | Mt. Pleasant | Palo Alto | IA    | 52641    | 41.134163 | -91.565639 |
| Vision Ag LLC - Ainsworth                     | 2952 Highway 92           | Ainsworth    | Palo Alto | IA    | 52533    | 41.290417 | -91.570833 |
| Vision Ag LLC - Brighton                      | 3370 Germanville Road     | Brighton     | Palo Alto | IA    | 52561    | 41.290417 | -91.570833 |
| Vision Ag LLC - Libertyville                  | 201 Mill St.              | Libertyville | Palo Alto | IA    | 52585    | 40.960814 | -92.055624 |
| Agriland FS, Inc. - Corydon                   | 908 Fairgrounds           | Corydon      | Plymouth  | IA    | 50060    | 40.767500 | -93.326667 |
| Farmers Cooperative Company - Allison         | 233 Spruce St.            | Allison      | Plymouth  | IA    | 50602    | 42.751057 | -92.799896 |
| Fredericksburg Farmers Coop - Hawkeye         | 102 N. Burrell Street     | Hawkeye      | Plymouth  | IA    | 52147    | 42.944589 | -91.954035 |
| Innovative Ag Services - Geneva               | 407 Front Street East     | Geneva       | Plymouth  | IA    | 52237    | 42.677094 | -93.128835 |
| Innovative Ag Services - Oran                 | 24701 Oran St             | Oran         | Plymouth  | IA    | 50126    | 42.700000 | -92.074028 |
| Maxyield Coop - Britt                         | 107 5th Street Nw         | Britt        | Plymouth  | IA    | 50536    | 43.101130 | -93.804715 |
| Merschman Fertilizer LLC                      | 2351 Ortho Road           | Fort Madison | Plymouth  | IA    | 50060    | 40.616667 | -91.383056 |
| Sunrise Farms, Inc.                           | 2060 White Ave.           | Harris       | Plymouth  | IA    | 52761    | 43.352306 | -95.442778 |

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| Facility Name                            | Address                             | City           | County     | State | Zip Code | Latitude  | Longitude  |
|--|-------------------------------------|----------------|------------|-------|----------|-----------|------------|
| Sweetland Ag Tech LLC (North)            | 3094 170 Street                     | Muscatine      | Plymouth   | IA    | 50021    | 41.497028 | -90.962528 |
| Twin State, Inc. - Durant                | 2206 Old Highway 6 West             | Durant         | Plymouth   | IA    | 50214    | 41.600833 | -90.938056 |
| Vision Ag LLC - Richland                 | 709 East Highway 78                 | Richland       | Plymouth   | IA    | 52591    | 41.178626 | -91.989763 |
| Vision Ag LLC - Stockport                | 13794 Route W 30                    | Stockport      | Plymouth   | IA    | 52359    | 40.846114 | -91.831970 |
| W. C. Gretter & Sons, Inc.               | 209 Main Street                     | Harper         | Plymouth   | IA    | 51466    | 41.362167 | -92.049750 |
| Chem-Tech Limited - Production Plant     | 1006 Business Highway 5             | Pleasantville  | Pocahontas | IA    | 50225    | 41.396038 | -93.273134 |
| Farmers Cooperative Company - Aredale    | 101 Audubon St                      | Aredale        | Pocahontas | IA    | 50605    | 42.834507 | -93.004616 |
| Floyd                                    | 514 South Floyd Boulevard           | Sioux City     | Pocahontas | IA    | 51101    | 42.486389 | -96.392778 |
| Gold-Eagle Cooperative-Wesley            | 104 3rd Street North                | Wesley         | Pocahontas | IA    | 50483    | 43.089167 | -93.995278 |
| Keokuk Water Treatment Plant             | 8 N. Water Street, 20 N. 4th Street | Keokuk         | Pocahontas | IA    | 50630    | 40.392444 | -91.378000 |
| Nulex, Inc.                              | 2717 Port Neal Circle               | Sergeant Bluff | Pocahontas | IA    | 51560    | 42.310833 | -96.361111 |
| Taygold Cooperative Lenox Iowa           | 701 East Van Buren, P. O. Box 68    | Lenox          | Pocahontas | IA    | 51106    | 40.885556 | -94.550556 |
| Allied Gas & Chemical Company            | 1807 17th Ave. East                 | Oskaloosa      | Polk       | IA    | 52577    | 41.279804 | -92.623650 |
| Americold, Bettendorf - Plant # 80562    | 6875 State Street, Op Box 928       | Bettendorf     | Polk       | IA    | 52722    | 41.557553 | -90.434517 |
| Americold, Fort Dodge - Plant # 80565    | 3543 Maple Dr.                      | Fort Dodge     | Polk       | IA    | 50501    | 42.498840 | -94.133660 |
| Armour -Eckrich Meats LLC                | 1401 South Eisenhower Ave           | Mason City     | Polk       | IA    | 50401    | 43.142080 | -93.260530 |
| Farmers Coop. Elev. Co. - Westside       | 1000 Hwy 30 West, Hwy 30 & 1st St   | Westside       | Polk       | IA    | 51467    | 42.076637 | -95.110622 |
| Farmers Cooperative Company - Buckeye    | 202 Prairie Avenue                  | Buckeye        | Polk       | IA    | 50043    | 42.420609 | -93.376091 |
| Golden Furrow Fertilizer, Inc.           | 709 West 6th St                     | Hedrick        | Polk       | IA    | 52563    | 41.176167 | -92.334944 |
| Heart of Iowa Cooperative                | 421 East Main Street                | Zearing        | Polk       | IA    | 50278    | 42.159827 | -93.290491 |
| Heart of Iowa Coop, DBA Key Cooperative  | 200 West 1st Street                 | Story City     | Polk       | IA    | 50248    | 42.179417 | -93.604694 |
| Heart of Iowa Coop, DBA, Key Cooperative | 65507 Richland Street               | Fernald        | Polk       | IA    | 50201    | 42.069134 | -93.397379 |
| Heart of Iowa Coop, DBA, Key Cooperative | 324 Main Street                     | Gilbert        | Polk       | IA    | 50105    | 42.110103 | -93.649806 |
| Heart of Iowa Coop, DBA, Key Cooperative | 22703 600th Ave.                    | Nevada         | Polk       | IA    | 50201    | 42.026387 | -93.505500 |
| Helena Chemical Company - Seymour        | County S-60 & East Garden Road      | Seymour        | Polk       | IA    | 52590    | 40.667130 | -93.113758 |
| Key Cooperative-Kelley Location          | 27948 - 530th Ave                   | Kelley         | Polk       | IA    | 50201    | 41.951865 | -93.638378 |
| Kinder Morgan - New Hampton Terminal     | 1690 La Salle Avenue                | New Hampton    | Polk       | IA    | 51557    | 43.112500 | -92.315556 |
| Kiron, IA 6018 Satellite                 | 10 Eureka Street                    | Kiron          | Polk       | IA    | 52627    | 42.193611 | -95.325000 |
| South Central Coop - Chariton            | 2120 Osceola Avenue                 | Chariton       | Polk       | IA    | 50057    | 41.033535 | -93.337844 |
| South Central Coop - Lacona              | 300 South Washington                | Lacona         | Polk       | IA    | 50140    | 41.185204 | -93.383725 |

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| Facility Name                                 | Address                            | City           | County        | State | Zip Code | Latitude  | Longitude  |
|---|------------------------------------|----------------|---------------|-------|----------|-----------|------------|
| South Central Coop - Melcher                  | 126 Southeast Second Street        | Melcher        | Polk          | IA    | 50166    | 41.222450 | -93.239508 |
| South Central Coop - Milo                     | 101 First Street                   | Milo           | Polk          | IA    | 51031    | 41.287589 | -93.437296 |
| Steinbeck And Sons Inc.                       | 69888 612th St.                    | Griswold       | Polk          | IA    | 51345    | 41.218172 | -95.017764 |
| Thermal Corporation of America                | 1405 West Washington St.           | Mount Pleasant | Polk          | IA    | 52041    | 40.967222 | -91.572778 |
| Agvantage FS - Sheffield                      | 307 West St.                       | Sheffield      | Pottawattamie | IA    | 50475    | 42.895556 | -93.231111 |
| Car-Freshner Corporation                      | 315 East Industrial Street         | Dewitt         | Pottawattamie | IA    | 52742    | 41.809444 | -90.530833 |
| Exel Inc.                                     | 1035 Warren Ave.                   | Osceola        | Pottawattamie | IA    | 50213    | 41.023616 | -93.788739 |
| Farm Service Company                          | 1410 Filmore Street                | Sidney         | Pottawattamie | IA    | 51652    | 40.748873 | -95.629662 |
| First Cooperative Association - Holstein      | 212 North Main Street              | Holstein       | Pottawattamie | IA    | 51025    | 42.491024 | -95.546612 |
| General Mills Operations, Inc.                | 6101 Southeast 52nd Street         | Carlisle       | Pottawattamie | IA    | 50047    | 41.526944 | -93.506944 |
| Golden Furrow Fertilizer, Inc.                | 21736 205th St.                    | Keosauqua      | Pottawattamie | IA    | 52565    | 40.747222 | -91.953611 |
| Hy-Vee Perishables Center                     | 21591 490th Street                 | Chariton       | Pottawattamie | IA    | 51445    | 41.030467 | -93.335170 |
| Innovative Ag Services - Winthrop             | 2443 Vincent Avenue                | Winthrop       | Pottawattamie | IA    | 52241    | 42.437611 | -91.658278 |
| Osage Cooperative Elevator                    | 216 Mechanic St.                   | Osage          | Pottawattamie | IA    | 50213    | 43.287945 | -92.823656 |
| Ostrander Farmers' Coop - Chester             | P.O. Box 6, 109 West Market Street | Chester        | Pottawattamie | IA    | 52754    | 43.490996 | -92.362827 |
| Prairie Land Cooperative -Hunts Site          | 33836 Highway 57                   | Ackley         | Pottawattamie | IA    | 50532    | 42.555833 | -93.032222 |
| Quality Chef Foods-Div. of H.J. Heinz Company | 4601 C Street Sw                   | Cedar Rapids   | Pottawattamie | IA    | 51301    | 41.930889 | -91.635861 |
| Rod's Fertilizer & Sales, Inc.                | 117 N. Main St., Po Box 99         | Galva          | Pottawattamie | IA    | 52211    | 42.508900 | -95.418700 |
| Sinclair Elevator, Inc.                       | 32746 Sinclair Avenue              | Parkersburg    | Pottawattamie | IA    | 51023    | 42.573198 | -92.730376 |
| South Central Coop - Lamon                    | 1260 West Main, County Rd J-55     | Lamon          | Pottawattamie | IA    | 50163    | 40.623939 | -93.955564 |
| Stateline Cooperative - Cylinder Facility     | 3875 525th Avenue                  | Cylinder       | Pottawattamie | IA    | 50559    | 43.087472 | -94.552778 |
| United Farmers Mercantile Coop Essex          | 411 North Street                   | Essex          | Pottawattamie | IA    | 51566    | 40.836111 | -95.308333 |
| Van Diest Supply Company                      | 1294 S Avenue                      | Boone          | Pottawattamie | IA    | 50532    | 42.024139 | -93.815028 |
| Farmer's Cooperative Elev. Co. Kingsley       | 24 West 1st St.                    | Kingsley       | Poweshiek     | IA    | 51028    | 42.586259 | -95.965841 |
| Farmers Mill Inc.                             | 3324 - 100th Street                | Protivin       | Poweshiek     | IA    | 52163    | 43.212245 | -92.094470 |
| M & M Ag Service, Inc.                        | 1415 North Main Street             | Osceola        | Poweshiek     | IA    | 50563    | 41.048444 | -93.761881 |
| United Western Coop-Little Sioux              | 4313 Vine St.                      | Little Sioux   | Poweshiek     | IA    | 51555    | 41.803583 | -96.044500 |
| Viafield                                      | 24932 - 150th Street               | Sumner         | Poweshiek     | IA    | 52141    | 42.849107 | -92.078909 |
| New Cooperative, Inc. - Blairsburg            | 501 Lake Street                    | Blairsburg     | Ringgold      | IA    | 50599    | 42.481446 | -93.640355 |
| Tama-Benton Cooperative - Clutier             | 311 Front Street, P.O. Box 176     | Clutier        | Ringgold      | IA    | 52224    | 42.076389 | -92.403611 |

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|---|--------------------------------|------------------|--------|-------|----------|-----------|------------|
| Carson Grain Company                          | 5301 Troy Mills Road           | Walker           | Sac    | IA    | 52352    | 42.245841 | -91.681100 |
| Farmers Cooperative Elevator / Ottosen        | 71 Brady Street                | Ottosen          | Sac    | IA    | 50570    | 42.896700 | -94.380900 |
| Fredericksburg Farmers Coop - Bremer          | 1905 Ivory Avenue              | Bremer           | Sac    | IA    | 50677    | 42.773096 | -92.393493 |
| Fredericksburg Farmers Coop - Fredericksburg  | 110 North Jefferson            | Fredericksburg   | Sac    | IA    | 50630    | 42.966278 | -92.202889 |
| Golden Furrow Fertilizer, Inc.                | 1367 Highway 16                | Eldon            | Sac    | IA    | 52554    | 40.905000 | -92.201111 |
| Huisinga Fertilizer L.L.C.                    | 19481 310th St.                | Parkersburg      | Sac    | IA    | 50703    | 42.599776 | -92.842079 |
| Perishable Distributors of Iowa               | 2741 Pdi Place                 | Ankeny           | Sac    | IA    | 50683    | 41.700556 | -93.585278 |
| Sidles Top Crop                               | 23915 218th Ave.               | Centerville      | Sac    | IA    | 52042    | 40.698056 | -92.873056 |
| Snittjer Grain Co., Inc.                      | 1 Kennedy Lane                 | Wellsburg        | Sac    | IA    | 50049    | 42.438856 | -92.931884 |
| Sport Wade, Inc                               | 2769 Hwy 69                    | Weldon           | Sac    | IA    | 50239    | 40.899722 | -93.767222 |
| United Farmers Mercantile Coop Villisca South | 200 West 7th Street            | Villisca         | Sac    | IA    | 51561    | 40.925553 | -94.980393 |
| Walnut Creek Fertilizer                       | 405 Pearl St.                  | Walnut           | Sac    | IA    | 52403    | 41.475438 | -95.225405 |
| Ag Partners, LLC - Merrill                    | 214 Third Street               | Merrill          | Scott  | IA    | 51038    | 42.718056 | -96.249722 |
| Agvantage FS - Waukon                         | 718 9th Street Nw              | Waukon           | Scott  | IA    | 52172    | 43.277222 | -91.490556 |
| Cargill Kitchen Solutions                     | 1750 S. Benjamin Ave.          | Mason City       | Scott  | IA    | 50401    | 43.134722 | -93.230556 |
| Dyersville, IA480                             | 214 4th Avenue Ne              | Dyersville       | Scott  | IA    | 52040    | 42.486972 | -91.122139 |
| Feed Energy - Pacific Junction Plant          | 20160 Kelting Avenue           | Pacific Junction | Scott  | IA    | 51561    | 41.009444 | -95.801389 |
| Golden Furrow Fertilizer, Inc.                | 25601 205th Ave                | Yarmouth         | Scott  | IA    | 52660    | 41.061167 | -91.325139 |
| Marzetti Frozen Pasta, Inc.                   | 803 8th Street, Sw             | Altoona          | Scott  | IA    | 50511    | 41.645472 | -93.472944 |
| New Coop, Inc. - Luverne/Formerly Bode Coop   | 101 Peavey Drive               | Luverne          | Scott  | IA    | 52766    | 42.907611 | -94.087639 |
| Underwood Farm Supply L.L.C.                  | 26201 Magnolia Rd              | Underwood        | Scott  | IA    | 50258    | 41.375773 | -95.685960 |
| Vogel Agri Service, LLC                       | 1921 - 195th Avenue            | Percival         | Scott  | IA    | 51640    | 40.762307 | -95.813586 |
| East Central Iowa Cooperative - Jesup NH3     | 2326 Benson Shady Grove Avenue | Jesup            | Shelby | IA    | 50648    | 42.453178 | -92.053856 |
| Farmers Cooperative Company - Britt           | 2290 Grant Avenue              | Britt            | Shelby | IA    | 50423    | 43.096336 | -93.844330 |
| Farmers Coop Co. - Dows NH3 Nurse Tanks       | 749 Apricot Avenue             | Dows             | Shelby | IA    | 50071    | 42.652583 | -93.487861 |
| King Agri Sales                               | 1410 Highway 127               | Mondamin         | Shelby | IA    | 51448    | 41.710212 | -96.039405 |
| Michael Foods - EPC                           | 100 Papetti's Parkway          | Lenox            | Shelby | IA    | 50637    | 40.869194 | -94.564278 |
| New Cooperative, Inc. - Rands Nurse Tanks     | 2784 - 320th Street            | Rockwell City    | Shelby | IA    | 50594    | 42.325139 | -94.577833 |
| North English, IA432 Satellite                | 207 East Lakeview              | North English    | Shelby | IA    | 51031    | 41.512604 | -92.075558 |
| Westco Agronomy Company, LLC - Dawson         | 212 South 1st Street           | Dawson           | Shelby | IA    | 50076    | 41.841019 | -94.218617 |



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| Ag Partners, LLC - Alta 2                       | 5692 50th Ave.                   | Alta            | Sioux  | IA    | 51002    | 42.692222 | -95.308333 |
| Denison Foods                                   | 710 Highway 59 South             | Denison         | Sioux  | IA    | 51442    | 42.008500 | -95.365200 |
| Estherville Foods, Inc.                         | 105 North Fourth Street          | Estherville     | Sioux  | IA    | 51334    | 43.403833 | -94.840278 |
| Farm Service Company                            | 3299 Italy Ave.                  | Missouri Valley | Sioux  | IA    | 51555    | 41.528011 | -95.937735 |
| Farmers Cooperative Company - Maxwell           | 33509 650th Avenue               | Maxwell         | Sioux  | IA    | 50161    | 41.869972 | -93.406860 |
| Gibson, IA430 Satellite (East)                  | 101 East Elevator (2nd Location) | Gibson          | Sioux  | IA    | 50104    | 41.478944 | -92.392833 |
| Green Plains Holdings Ii, LLC. Lakota           | 1660 428th St                    | Lakota          | Sioux  | IA    | 50451    | 43.383889 | -94.144444 |
| Heartland Co-Op Marengo                         | 2104 Highway 6 Trail             | Marengo         | Sioux  | IA    | 52301    | 41.786805 | -92.082932 |
| Manson Ag Services, Inc.                        | 1677 Tabor Avenue                | Manson          | Sioux  | IA    | 52301    | 42.548133 | -94.541844 |
| New Cooperative, Inc. - Roelyn Nurse Tanks      | Property West of Carter Avenue   | Moorland        | Sioux  | IA    | 50532    | 42.415639 | -94.353083 |
| New Coop, Inc. - Vincent-NH3 Nurse Tanks        | N of Elevator by Land-O-Lakes    | Vincent         | Sioux  | IA    | 50566    | 42.595162 | -94.019733 |
| Poet Biorefining - Coon Rapids                  | 1015 Grant Ave.                  | Coon Rapids     | Sioux  | IA    | 50841    | 41.860750 | -94.628528 |
| Villisca Elevator Inc, East                     | 500 East 8th Street              | Villisca        | Sioux  | IA    | 52201    | 40.924824 | -94.974479 |
| Agriland FS, Inc. - Kirkman                     | 1635 Peach Road                  | Kirkman         | Story  | IA    | 51447    | 41.741389 | -95.251944 |
| Agvantage FS - New Hampton West                 | 1930 Linn Drive                  | New Hampton     | Story  | IA    | 50659    | 43.078611 | -92.316389 |
| Air Liquide Industrial US, CO2 Facility         | 1584 Market Avenue               | Galva           | Story  | IA    | 51020    | 42.477139 | -95.416333 |
| Big River Resources West Burlington, LLC        | 15210 103rd Street               | West Burlington | Story  | IA    | 52655    | 40.831795 | -91.221326 |
| Bob's Farm Center, Inc.                         | 16950 330th St.                  | Conrad          | Story  | IA    | 50621    | 42.223444 | -92.886565 |
| Coop Elev. Association - Hartley Nurse Tank     | 333 South Central Avenue         | Hartley         | Story  | IA    | 51346    | 43.177352 | -95.477333 |
| Farmers Cooperative Company - Granville         | 902 Broad Street                 | Granville       | Story  | IA    | 51022    | 42.986389 | -95.873611 |
| Farmers Cooperative Company - Rockford          | 2383 Dancer Avenue               | Rockford        | Story  | IA    | 50468    | 43.011068 | -92.966071 |
| Farmers Elevator Coop - Lester                  | 2215 Iowa Highway 9              | Lester          | Story  | IA    | 51242    | 43.431694 | -96.347889 |
| Hawkins Water Treatment Group - Eldridge        | 300 S 14th Avenue                | Eldridge        | Story  | IA    | 52748    | 41.652787 | -90.566638 |
| Heartland Co-Op Mitchellville South             | 1349-112th Street                | Mitchellville   | Story  | IA    | 50169    | 41.658500 | -93.356903 |
| Iowa City Water Treatment Facility              | 80 Stephen Atkins Dr.            | Iowa City       | Story  | IA    | 50009    | 41.688747 | -91.545570 |
| Iowa Cold Storage                               | 612 Adventureland Drive Ne       | Altoona         | Story  | IA    | 51035    | 41.664346 | -93.455729 |
| Little Sioux Corn Processors, Llp               | 4808 F Street                    | Marcus          | Story  | IA    | 50107    | 42.822000 | -95.766700 |
| Millard Refrigerated Services                   | 2227 East Commerce Street        | Mount Pleasant  | Story  | IA    | 52501    | 40.972380 | -91.522580 |
| Odebolt, IA6018 Satellite (North Walnut Street) | 200 North Walnut Street          | Odebolt         | Story  | IA    | 50212    | 42.315401 | -95.253062 |
| Poet Biorefining - Ashton                       | 4970 260th Street                | Ashton          | Story  | IA    | 50058    | 43.276944 | -95.808333 |

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| Poet Biorefining - Hanlontown                | 3638 Fir Avenue                    | Hanlontown     | Story     | IA    | 50130    | 43.292135 | -93.392639 |
| Postville Bulk Plant                         | 280 North West St.                 | Postville      | Story     | IA    | 52162    | 43.086944 | -91.578333 |
| Viafield - Northwood Nurse Tanks             | 315 - 16th Street North            | Northwood      | Story     | IA    | 50864    | 43.448110 | -93.210422 |
| Westco Ag Co., LLC DBA Pelgrow - Atl         | 60511 Glacier Rd.                  | Atlantic       | Story     | IA    | 50250    | 41.416778 | -95.029083 |
| Agri Star Meat & Poultry, LLC                | 220 N. West St.                    | Postville      | Tama      | IA    | 52162    | 43.087222 | -91.582500 |
| Agvantage FS - Garner                        | 1880 Highway 18 West               | Garner         | Tama      | IA    | 50438    | 43.103427 | -93.618228 |
| Flint Hills Resources Iowa Falls, LLC        | 21050 140th Street                 | Iowa Falls     | Tama      | IA    | 50126    | 42.505318 | -93.282043 |
| Golden Grain Energy, LLC                     | 1822 43rd Street Sw                | Mason City     | Tama      | IA    | 50401    | 43.116220 | -93.229360 |
| Greater Des Moines Energy Center             | 4401 Carlisle Road                 | Pleasant Hill  | Tama      | IA    | 50327    | 41.556340 | -93.525390 |
| Northern Ag Service, Inc.                    | 29953 141st St                     | Mcgregor       | Tama      | IA    | 52175    | 43.020833 | -91.209444 |
| Odebolt, IA 6018 Satellite (N Des Moines St) | 200 North Des Moines Street        | Odebolt        | Tama      | IA    | 51458    | 42.314167 | -95.245833 |
| Vision Ag LLC - Batavia (Ash Ave)            | 2235 Ash Avenue                    | Batavia        | Tama      | IA    | 52533    | 40.983882 | -92.168473 |
| West Liberty Foods, Mount Pleasant           | 2225 East Commerce Drive           | Mount Pleasant | Tama      | IA    | 50002    | 40.972380 | -91.522580 |
| Enterprise Ogden Terminal & Storage          | 277 220th Street                   | Ogden          | Taylor    | IA    | 50212    | 42.035656 | -94.111180 |
| Enterprise Sanborn Terminal & Storage        | 3220 Silver Ave.                   | Sanborn        | Taylor    | IA    | 52248    | 43.181035 | -95.622464 |
| Enterprise Whiting Terminal & Storage        | 16653 Highway K45                  | Whiting        | Taylor    | IA    | 51063    | 42.117711 | -96.142350 |
| Nor-Am Cold Storage                          | 1555 21st Street S.W.              | Le Mars        | Taylor    | IA    | 50430    | 42.767571 | -96.188847 |
| Poet Biorefining - Emmetsburg                | 4724 380th Street                  | Emmetsburg     | Taylor    | IA    | 50543    | 43.094056 | -94.647000 |
| Amaizing Energy, LLC                         | 2404 West Highway 30, P.O. Box 309 | Denison        | Union     | IA    | 51442    | 41.992100 | -95.394200 |
| Enterprise Cantril Terminal & Storage        | 14601 Highway 2                    | Cantril        | Union     | IA    | 52542    | 40.646141 | -92.090713 |
| Enterprise Dubuque Terminal & Storage        | 10708 Higginsport Road             | Zwingle        | Union     | IA    | 52709    | 42.338090 | -90.698230 |
| Ft. Madison Terminal                         | 2673 240th Street                  | Ft. Madison    | Union     | IA    | 52627    | 40.611100 | -91.397700 |
| Red Star Yeast Company                       | 950 60th Ave Sw                    | Cedar Rapids   | Union     | IA    | 50576    | 41.920000 | -91.682222 |
| Corn, LP                                     | 1303 Highway 3 East, Po Box 280    | Goldfield      | Van Buren | IA    | 50542    | 42.732400 | -93.911400 |
| Innovative Ag Services - Hwy 175 Eldora      | 23954 E Ave                        | Eldora         | Van Buren | IA    | 50644    | 42.354654 | -92.942039 |
| Sysco Iowa, Inc.                             | One Sysco Place                    | Ankeny         | Van Buren | IA    | 52217    | 41.711183 | -93.588940 |
| Valero Renewable Fuels, LLC - Fort Dodge     | 1930 Hayes Avenue                  | Fort Dodge     | Van Buren | IA    | 50518    | 42.511111 | -94.300556 |
| Fareway Stores, Inc.                         | 2300 E. Eighth Street              | Boone          | Wapello   | IA    | 50036    | 42.061778 | -93.845611 |
| Flint Hills Resources Fairbank, LLC          | 1277 102nd Street                  | Fairbank       | Wapello   | IA    | 50629    | 42.642572 | -92.027839 |
| Lincolnway Energy, LLC                       | 59511 West Lincoln Hwy             | Nevada         | Wapello   | IA    | 52761    | 42.025800 | -93.508800 |

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| Poet Biorefining - Gowrie                | 1562 320th Street             | Gowrie         | Wapello    | IA    | 50444    | 42.319599 | -94.287604 |
| Poet Biorefining - Jewell                | 2601 320th Street             | Jewell         | Wapello    | IA    | 52162    | 42.328959 | -93.662869 |
| Farmers Cooperative Company - Greene     | 2081 Floydline St             | Greene         | Warren     | IA    | 50636    | 42.907667 | -92.812306 |
| Farmers Cooperative Company - Shell Rock | 29023 280th St.               | Shell Rock     | Warren     | IA    | 50670    | 42.642691 | -92.653153 |
| Heartland Co-Op Malcom                   | 1001 E. Railroad Drive        | Malcom         | Warren     | IA    | 50157    | 41.704296 | -92.547106 |
| Sioux-Preme Packing Company              | 4241 Us 75 Avenue             | Sioux Center   | Warren     | IA    | 52544    | 43.035500 | -96.177200 |
| Valero Renewable Fuels Albert City       | 2356 510th Street, Po Box 398 | Albert City    | Warren     | IA    | 50616    | 42.775400 | -94.941900 |
| Valero Renewable Fuels Company LLC       | 1787 Quarry Road              | Charles City   | Warren     | IA    | 51346    | 43.097315 | -92.744697 |
| Wyoming, IA485                           | 5999 75th Street              | Wyoming        | Warren     | IA    |          | 42.041649 | -90.994401 |
| Burke Corporation                        | 1516 South D Avenue           | Nevada         | Washington | IA    | 50201    | 42.008277 | -93.438778 |
| Enterprise Iowa City Terminal            | 5354 American Legion Road     | Iowa City      | Washington | IA    | 52240    | 41.616500 | -91.410639 |
| Farmers Cooperative Company - Rands      | 2691 310th Street             | Rockwell City  | Washington | IA    | 50579    | 42.340237 | -94.592567 |
| Farmers Cooperative Company - Scarville  | 49113 170th Ave               | Scarville      | Washington | IA    | 50473    | 43.474366 | -93.635845 |
| Green Plains Shenandoah, LLC.            | 4124 Airport Road             | Shenandoah     | Washington | IA    | 51601    | 40.757040 | -95.399770 |
| Pine Lake Corn Processors, L.P.          | 33371 170th Street            | Steamboat Rock | Washington | IA    | 50317    | 42.458734 | -93.058230 |
| Poet Biorefining - Corning, LLC          | 1680 Brooks Road              | Corning        | Washington | IA    | 50536    | 40.966329 | -94.794564 |
| Prairie Farms-Dubuque                    | 3510 Central Ave.             | Dubuque        | Washington | IA    | 50601    | 42.529694 | -90.684389 |
| Quad County Corn Processors              | 6059 159th St.                | Galva          | Washington | IA    | 52404    | 42.477777 | -95.414722 |
| Siouxland Energy And Livestock Coop      | 3890 Garfield Avenue          | Sioux Center   | Washington | IA    | 51250    | 43.085500 | -96.235111 |
| Absolute Energy, L.L.C.                  | 1372 State Line Road          | St. Ansgar     | Wayne      | IA    | 50472    | 43.497147 | -92.953019 |
| Burr Oak Branch                          | 3480 Us Highway 52            | Decorah        | Wayne      | IA    | 52101    | 43.438776 | -91.859199 |
| Clinton Feed Route 30                    | 4540 Lincolnway               | Clinton        | Wayne      | IA    | 52732    | 41.817560 | -90.296310 |
| Green Plains Superior LLC                | 1495 320th Ave                | Estherville    | Wayne      | IA    | 51334    | 43.431000 | -94.961000 |
| Rod's Fertilizer & Sales, Inc.           | 103 Buena Vista St            | Galva          | Wayne      | IA    | 51020    | 42.510000 | -95.413700 |
| Valero Renewable Fuels Company LLC       | 3260 Van Buren Avenue         | Hartley        | Wayne      | IA    | 50501    | 43.176389 | -95.503056 |
| Worthington, IA492 Satellite             | 29150 East Worthington Road   | Worthington    | Wayne      | IA    | 52362    | 42.396580 | -91.058980 |
| Adm Clinton Cogeneration                 | 1800 S. 5th Street            | Clinton        | Webster    | IA    | 52732    | 41.827778 | -90.198056 |
| Big River United Energy, LLC             | 3294 Vine Road                | Dyersville     | Webster    | IA    | 52040    | 42.486944 | -91.163611 |
| Brayton, IA447 Satellite                 | 504 Clinton Street            | Brayton        | Webster    | IA    | 50042    | 41.545280 | -94.921390 |
| Colorbiotics                             | 1725 Dayton Avenue            | Ames           | Webster    | IA    | 50010    | 42.039113 | -93.583951 |



**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                              | Address                           | City           | County     | State | Zip Code | Latitude  | Longitude  |
|--|-----------------------------------|----------------|------------|-------|----------|-----------|------------|
| Farmers Cooperative Company - Berkley      | Hwy 169 & 280th Street (E-57)     | Ogden          | Webster    | IA    | 50212    | 41.950861 | -94.041333 |
| Farmers Cooperative Company - Farlin       | 1407 190th Street                 | Jefferson      | Webster    | IA    | 50129    | 42.077183 | -94.376778 |
| Farmers Cooperative Company - Panther      | 23926 H Avenue, Hwy 44 & H Avenue | Minburn        | Webster    | IA    | 50167    | 41.689426 | -94.143616 |
| Farmers Cooperative Company - Rake West    | 641 North 6th Street              | Rake           | Webster    | IA    | 50465    | 43.485497 | -93.924400 |
| Flint Hills Resources Menlo, LLC           | 3363 Talon Avenue                 | Menlo          | Webster    | IA    | 50164    | 41.523611 | -94.381944 |
| Flint Hills Resources Shell Rock, LLC      | 30750 212th Street                | Shell Rock     | Webster    | IA    | 50670    | 42.737611 | -92.617611 |
| Golden Furrow Fertilizer, Inc.             | 2091 115th St                     | Fairfield      | Webster    | IA    | 52556    | 41.141805 | -91.966423 |
| Helena Industries, Inc.                    | 3525 Vandalia Road                | Des Moines     | Webster    | IA    | 50317    | 41.568117 | -93.546448 |
| Homeland Energy Solutions, LLC             | 2779 IAHwy 24                     | Lawler         | Webster    | IA    | 52237    | 43.070207 | -92.205000 |
| Innovative Ag Services - Williams West     | 3131 210th St                     | Williams       | Webster    | IA    | 50682    | 42.486047 | -93.552534 |
| Kerry Ingredients And Flavours             | 341 S Jefferson Avenue            | Fredericksburg | Webster    | IA    | 50136    | 42.962390 | -92.203280 |
| Kohorst Farms, Inc.                        | 15401 Concord Ave.                | Arcadia        | Webster    | IA    | 52802    | 42.132198 | -95.053902 |
| Louis Dreyfus Commodities, LLC             | 1149 U Avenue                     | Grand Junction | Webster    | IA    | 52757    | 42.053825 | -94.236215 |
| North Central Cooperative                  | 1040 North Main                   | Kanawha        | Webster    | IA    | 50525    | 42.944235 | -93.794163 |
| Platinum Ethanol, LLC                      | 2585 Quail Avenue, Po Box 10      | Arthur         | Webster    | IA    | 51501    | 42.331738 | -95.353736 |
| Plymouth Energy LLC.                       | 22056 K42                         | Merrill        | Webster    | IA    | 51232    | 42.731192 | -96.249577 |
| Schneider Milling, Inc. - Barnett NH3 Site | 16019 Union Ave                   | Clarksville    | Webster    | IA    | 50676    | 42.817180 | -92.635602 |
| Target Food Distribution Center T3895      | 2115 Technology Parkway           | Cedar Falls    | Webster    | IA    | 50840    | 42.475610 | -92.471075 |
| Whiting Terminal & Storage                 | 16653 Highway K45                 | Whiting        | Webster    | IA    | 51063    | 42.117711 | -96.142350 |
| Wiederin, Inc.                             | 14374 Mahogany Ave.               | Carroll        | Webster    | IA    | 50273    | 42.148101 | -94.857498 |
| Agvantage FS - Acklet West                 | 27354 Hwy 57 Sw                   | Iowa Falls     | Winnebago  | IA    | 50126    | 42.555833 | -93.157500 |
| Agvantage FS - Delmar West                 | 1195 220th Ave                    | Delmar         | Winnebago  | IA    | 52037    | 42.004990 | -90.658760 |
| Agvantage FS - Waukon 2 (Wagon Park)       | 1719 Prairie Ave Nw               | Waukon         | Winnebago  | IA    | 52172    | 43.284573 | -91.502495 |
| Bhj Usa, Inc.                              | 2472 170th Street                 | Fort Dodge     | Winnebago  | IA    | 50501    | 42.544489 | -94.154042 |
| Des Moines Butane Storage                  | 2503 Se 43rd Street               | Des Moines     | Winnebago  | IA    | 50327    | 41.563889 | -93.526944 |
| Heart of Iowa Cooperative- S-14 Location   | 13585 620th Ave                   | Roland         | Winnebago  | IA    | 50236    | 42.159722 | -93.463611 |
| Progressive Processing LLC                 | 1205 Chavanelle Court             | Dubuque        | Winnebago  | IA    | 51031    | 42.488917 | -90.766444 |
| Smith Fertilizer And Grain                 | 1605 South 24th Street            | Centerville    | Winnebago  | IA    | 50113    | 40.719334 | -92.858387 |
| Golden Furrow Fertilizer, Inc.             | 2774 Hwy 5                        | Moravia        | Winneshiek | IA    | 52571    | 40.902571 | -92.828631 |
| Percival, IA6046 Satellite                 | 1975 206th Street                 | Percival       | Winneshiek | IA    | 50021    | 40.750362 | -95.808914 |

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| Southwest Iowa Renewable Energy            | 10868 189th St                    | Council Bluffs | Winneshiek | IA    | 50264    | 41.173014 | -95.828398 |
| Waukon Feed Ranch                          | 615 Old Hwy 9                     | Waukon         | Winneshiek | IA    | 52356    | 43.266596 | -91.505820 |
| Agriland FS, Inc. - Dallas County          | 23986 A Ave                       | Panora         | Woodbury   | IA    | 50216    | 41.689330 | -94.280380 |
| Agvantage FS - Wilton                      | 1830 290th Street                 | Wilton         | Woodbury   | IA    | 52778    | 41.670010 | -91.009816 |
| Airgas Usa, LLC - Ankeny, Ia               | 410 Se Creekview                  | Ankeny         | Woodbury   | IA    | 50021    | 41.727184 | -93.575011 |
| Anthon, IA6062 Satellite (Miller Ave)      | 207 Miller Avenue                 | Anthon         | Woodbury   | IA    | 51004    | 42.389684 | -95.867549 |
| Cedar River Poultry                        | 901 North Main Street, Po Box 245 | Charles City   | Woodbury   | IA    | 50616    | 43.073807 | -92.673553 |
| Conagra Foods - Waterloo                   | 2701 Midport Blvd                 | Waterloo       | Woodbury   | IA    | 50703    | 42.544556 | -92.390611 |
| Farmers Cooperative Co. - Early Main Site  | 2340 Highway 71                   | Early          | Woodbury   | IA    | 50535    | 42.451283 | -95.148036 |
| Farmers Feed                               | 1085 420th St                     | St. Ansgar     | Woodbury   | IA    | 50472    | 43.371436 | -93.007592 |
| Maxyield Cooperative - Meservey            | 2441 A Balsam Ave.                | Meservey       | Woodbury   | IA    | 50597    | 42.929480 | -93.475970 |
| New Century FS                             | 510 North K Ave.                  | Vinton         | Woodbury   | IA    | 52229    | 42.173287 | -92.036299 |
| Premium Iowa Pork, LLC                     | 108 1st Ave South                 | Hospers        | Woodbury   | IA    | 51041    | 43.073160 | -95.908450 |
| Rembrandt                                  | 1419 480th St.                    | Rembrandt      | Woodbury   | IA    | 52165    | 42.821978 | -95.128389 |
| Schneider Milling, Inc. - Tripoli NH3 Site | 1854 Piedmont Ave                 | Tripoli        | Woodbury   | IA    | 52732    | 42.778708 | -92.258813 |
| Shelby County Cookers                      | 1231 870th Street                 | Harlan         | Woodbury   | IA    | 52544    | 41.625215 | -95.332714 |
| Two Rivers Cooperative - Tracy             | 1004 265th Street                 | Tracy          | Woodbury   | IA    | 51501    | 41.269220 | -92.866360 |
| Westco Agronomy Company, LLC - Paton       | 2149 130th Street, Po Box 128     | Paton          | Woodbury   | IA    | 51459    | 42.165560 | -94.233633 |
| Westco Ag Company, LLC DBA Pelgrow         | 41938 Industrial Road             | Oakland        | Woodbury   | IA    | 51034    | 41.349300 | -95.385500 |
| Farm Service Cooperative-Defiance          | 1131 2200th St.                   | Defiance       | Worth      | IA    | 51527    | 41.819380 | -95.351120 |
| Farmers Feed                               | 4180 Redball Rd                   | St. Ansgar     | Worth      | IA    | 50472    | 43.370383 | -92.911704 |
| Garnavillo, IA483 Satellite                | 23732 Highway 52                  | Garnavillo     | Worth      | IA    | 52049    | 42.882098 | -91.242560 |
| New Century FS - Van Horne 2               | 806 1st Ave                       | Van Horne      | Worth      | IA    | 52349    | 42.006597 | -92.090755 |
| New Century FS - Vinton South              | 1901 West 13th St                 | Vinton         | Worth      | IA    | 50519    | 42.160450 | -92.046680 |
| Plainfield, Ia                             | 32859 110th Street                | Plainfield     | Worth      | IA    | 51431    | 42.891110 | -92.574125 |
| Atchison County Agchoice Ammonia Plant     | 1964 270 Street                   | Coin           | Wright     | IA    | 51636    | 40.654900 | -95.231010 |
| Cj Bio America                             | 1946 Harvest Avenue               | Fort Dodge     | Wright     | IA    | 50501    | 42.512471 | -94.311070 |
| Innovative Ag Services - Cleves            | 15871 Co Highway S56              | Ackley         | Wright     | IA    | 50601    | 42.474589 | -93.050285 |
| Key Cooperative-Rail Facility              | 22703 600th Ave                   | Nevada         | Wright     | IA    | 50659    | 42.026264 | -93.505991 |
| Marengo                                    | 2285 Highway 6 Trail              | Marengo        | Wright     | IA    | 50009    | 41.786740 | -92.082862 |

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| New Cooperative, Inc. - Lanyon                    | 2024 390th Street               | Harcourt    | Wright   | IA    | 50571    | 42.224147 | -94.199116  |
| Pro-V Packing                                     | 801 6th Street S W              | Lemars      | Wright   | IA    | 51020    | 42.786508 | -96.178963  |
| Clearwater Coop                                   | 9700 S 135th W                  | Clearwater  | Allen    | KS    | 67026    | 37.516227 | -97.496165  |
| Mulvane Coop                                      | 220 West Poplar                 | Mulvane     | Allen    | KS    | 67110    | 37.471528 | -97.244722  |
| Peck Coop   | 828 North E" Street"            | Peck        | Allen    | KS    | 67120    | 37.480000 | -97.373333  |
| Farmers Cooperative Grain Company-Caldwell        | 102 N. Arapahoe, Po Box 191     | Caldwell    | Anderson | KS    | 67022    | 37.033583 | -97.604028  |
| Fowler Equity Exchange                            | Corner So. Main & Old Hwy 54    | Fowler      | Anderson | KS    | 67844    | 37.378559 | -100.193493 |
| Halstead  | 12306 Sw 36th                   | Halstead    | Anderson | KS    | 67506    | 37.999444 | -97.523889  |
| Helena Chemical Company - Seneca, Kansas          | 1301 Baltimore Street           | Seneca      | Anderson | KS    | 66538    | 39.833056 | -96.073333  |
| Mount Hope  | 9800 N. 279th W.                | Mount Hope  | Anderson | KS    | 67108    | 37.861722 | -97.664278  |
| Parsons Water Treatment Plant                     | 1625 N. Lincoln Street          | Parsons     | Anderson | KS    | 67357    | 37.359194 | -95.261694  |
| Patterson   | 20920 S.W. 84th                 | Burrton     | Anderson | KS    | 67020    | 37.942055 | -97.656250  |
| Bazine NH3 Plant                                  | 204 West Washington             | Bazine      | Atchison | KS    | 67516    | 38.452044 | -99.693647  |
| Askren Plant                                      | 8520 N. Scott Rd                | Garden City | Atchison | KS    | 67846    | 38.073342 | -100.718607 |
| Lowe Fertilizer Plant And Elevator                | 6915 W. Lowe Rd.                | Garden City | Atchison | KS    | 67846    | 38.033303 | -100.988758 |
| Plymell Plant                                     | 200 E. Plymell Rd.              | Garden City | Atchison | KS    | 67846    | 37.809098 | -100.867636 |
| Tennis Elevator                                   | 2790 W. Tennis Rd.              | Garden City | Atchison | KS    | 67846    | 38.162528 | -100.911028 |
| Wolf Elevator                                     | 12835 W. Lowe Rd.               | Garden City | Atchison | KS    | 67846    | 38.032500 | -101.096194 |
| Copeland North East Branch                        | 2260 70 Th Rd                   | Copeland    | Barber   | KS    | 67837    | 37.649705 | -100.697466 |
| Partridge   | 20 N. Main                      | Partridge   | Barber   | KS    | 67566    | 37.969750 | -98.094500  |
| Sublette Cooperative, Inc.- North Satellite Plant | Hyw83 And Rd 60                 | Sublette    | Barber   | KS    | 67877    | 37.665255 | -100.871763 |
| Sublette Cooperative, Inc.- South Satellite Plant | Road O & Road 23, Nw1/4-9-31-32 | Kismet      | Barber   | KS    | 67859    | 37.366835 | -100.814011 |
| Sublette Town Plant                               | 900 West Highway 56             | Sublette    | Barber   | KS    | 67877    | 37.479248 | -100.859391 |
| Adams Corner                                      | 404 N. Nickerson Rd.            | Nickerson   | Barton   | KS    | 67561    | 38.058028 | -98.088083  |
| Ellis NH3 Plant                                   | 10th & Monroe, P.O. Box 138     | Ellis       | Barton   | KS    | 67637    | 38.936722 | -99.557694  |
| Farmers Cooperative - Hanover                     | 498 West North St.              | Hanover     | Barton   | KS    | 66945    | 39.895889 | -96.883217  |
| Farmers Cooperative Company - Ashland Facility    | 1/2 Mile South of Ashland, Ks   | Ashland     | Barton   | KS    | 67831    | 37.165972 | -99.769722  |
| Frontier Ag Inc - Rexford NH3                     | 405 N Main St                   | Rexford     | Barton   | KS    | 67753    | 39.472417 | -100.742545 |
| Home City NH3                                     | 208 2nd St.                     | Home        | Barton   | KS    | 66438    | 39.839098 | -96.521945  |
| Navarre   | 1552 Main Street                | Navarre     | Barton   | KS    | 67451    | 38.795316 | -97.101974  |

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|--|------------------------------------|-------------|----------|-------|----------|-----------|-------------|
| Plains NH3                                 | 206 E. Indiana                     | Plains      | Barton   | KS    | 67869    | 37.259582 | -100.585953 |
| Randall                                    | 101 Walnut Street                  | Randall     | Barton   | KS    | 66963    | 39.639444 | -98.040694  |
| Southern Plains Coop - Greensburg Location | 311 N. Main                        | Greensburg  | Barton   | KS    | 67054    | 37.609029 | -99.289440  |
| Waterville                                 | 601 East Hiway 9                   | Waterville  | Barton   | KS    | 66548    | 39.688925 | -96.739960  |
| West Plant NH3                             | 14531 Rd 16                        | Plains      | Barton   | KS    | 67869    | 37.271889 | -100.807222 |
| Hobart NH3                                 | 13160 "8" Road                     | Plains      | Bourbon  | KS    | 67869    | 37.291111 | -100.522500 |
| City of Winfield Municipal Water Plant     | 15250 101st Road                   | Winfield    | Brown    | KS    | 67156    | 37.267892 | -96.968769  |
| Greenleaf NH3                              | 3rd & Railroad                     | Greenleaf   | Brown    | KS    | 66943    | 39.729203 | -96.977967  |
| Harcros Chemicals Inc. - Kansas City       | 5200 Speaker Rd.                   | Kansas City | Brown    | KS    | 66106    | 39.095527 | -94.697164  |
| Kanza Coop, Stafford South Elevator        | 700 S. Main Street                 | Stafford    | Brown    | KS    | 67578    | 37.954333 | -98.599000  |
| Kanza Coop, Zenith Branch                  | 2 Blks N. of Us 50 Highway         | Zenith      | Brown    | KS    | 67578    | 37.958779 | -98.495928  |
| Linn NH3                                   | 102 5th St.                        | Linn        | Brown    | KS    | 66953    | 39.682286 | -97.078842  |
| Nickerson                                  | 1 South Nickerson St.              | Nickerson   | Brown    | KS    | 67561    | 38.146625 | -98.084179  |
| Piqua Farmers Cooperative Assn.            | 1st & Washington, P.O. Box 67      | Piqua       | Brown    | KS    | 66761    | 37.920833 | -95.533056  |
| Skyland Grain, LLC. - Bear Creek Plant     | 19 Miles Sw of Syracuse Ks         | Syracuse    | Brown    | KS    | 67878    | 38.090000 | -101.522933 |
| Skyland Grain, LLC. - North Kendall Plant  | 11 Miles North & 1 East of Kendall | Kendall     | Brown    | KS    | 67857    | 37.797416 | -101.888450 |
| Syracuse Plant                             | Highway 27(South of Town)          | Syracuse    | Brown    | KS    | 67878    | 37.968433 | -101.752100 |
| Washington NH3                             | 106 E. Railroad                    | Washington  | Brown    | KS    | 66968    | 39.810243 | -97.049618  |
| Anthony Farmers Coop-Harper NH3            | 202 W. 6th                         | Harper      | Butler   | KS    | 67058    | 37.290361 | -98.029444  |
| Anthony Farmers Coop-NH3                   | 519 W. Main                        | Anthony     | Butler   | KS    | 67003    | 37.152278 | -98.035806  |
| Anthony Farmers Coop-Shook NH3             | 315 Sw 55th Ave                    | Anthony     | Butler   | KS    | 67003    | 37.107158 | -98.139173  |
| Anthony Farmers Coop-Spring NH3            | 673 S Highway 179                  | Anthony     | Butler   | KS    | 67003    | 37.143098 | -98.039874  |
| Farmway Co-Op, Inc. Hunter                 | 1563 X Road                        | Hunter      | Butler   | KS    | 67452    | 39.234544 | -98.390710  |
| Fredonia Cooperative Association           | West Washington                    | Fredonia    | Butler   | KS    | 66736    | 37.528392 | -95.834980  |
| Murphy's LLC                               | Po Box 54, 390 West Sac&Fox        | Lebo        | Butler   | KS    | 66856    | 38.412424 | -95.861552  |
| Skyland Grain, LLC - South Kendall Plant   | 11 Miles South & 9 Miles East      | Kendall     | Butler   | KS    | 67857    | 37.827567 | -101.602517 |
| Farmway Co-Op, Inc. Scottsville            | 2332 Commercial Ave                | Scottsville | Cherokee | KS    | 67420    | 39.544125 | -97.953678  |
| Farmway Co-Op, Inc. Vesper                 | 1397 E Lark Drive                  | Vesper      | Cherokee | KS    | 67455    | 39.031415 | -98.280442  |
| Scott Cooperative Association - Pence      | 11890 N. Cherokee Rd.              | Scott City  | Cheyenne | KS    | 67871    | 38.653930 | -101.072720 |
| Big Bow North Plant                        | 302 E. First Ave, Big Bow          | Johnson     | Cheyenne | KS    | 67855    | 37.561683 | -101.560343 |

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| CHS Inc - Wallace                             | Highway 40, P.O. Box 128     | Wallace     | Cheyenne | KS    | 67761    | 38.911111 | -101.592222 |
| CHS Inc- Weskan                               | 255 Highway 40               | Weskan      | Cheyenne | KS    | 67762    | 38.869167 | -101.968889 |
| Farmway Co-Op, Inc. Tipton                    | 108 Washington St, Po Box 57 | Tipton      | Cheyenne | KS    | 67485    | 39.336192 | -98.466210  |
| Farmway Co-Op, Inc. Westfall                  | Po Box 501 East Main St      | Westfall    | Cheyenne | KS    | 67455    | 38.930820 | -98.011018  |
| Saunders Facility                             | 15400 West Hwy 160           | Saunders    | Cheyenne | KS    | 67862    | 37.471111 | -102.038333 |
| Scott Cooperative Association - Marienthal    | 100 Marienthal Rd.           | Marienthal  | Cheyenne | KS    | 67863    | 38.485888 | -101.221478 |
| Farmway Co-Op, Inc. Belleville                | 1200 180 Rd                  | Belleville  | Clark    | KS    | 66935    | 39.813235 | -97.615531  |
| Manter Facility                               | 206 Railway                  | Manter      | Clark    | KS    | 67862    | 37.521222 | -101.887172 |
| Scott Cooperative Association - Shallow Water | 481 W. Road 75               | Scott City  | Clark    | KS    | 67871    | 38.372230 | -100.914890 |
| Scott Cooperative Association - Scott City    | 206 Wayne St.                | Scott City  | Clark    | KS    | 67871    | 38.485750 | -100.896120 |
| Farmway Co-Op, Inc. Beloit Fertilizer         | 1101 Cottonwood St.          | Beloit      | Clay     | KS    | 67420    | 39.454067 | -98.096052  |
| Farmway Co-Op, Inc. Cawler City               | Railroad Ave., Po Box 47     | Cawker City | Clay     | KS    | 67430    | 39.506533 | -98.441994  |
| Farmway Co-Op, Inc. Concordia                 | 1649 Rust Road E. Hwy 9      | Concordia   | Clay     | KS    | 66901    | 39.574471 | -97.621337  |
| Farmway Co-Op, Inc. Courtland                 | West Pershing, Po Box 256    | Courtland   | Clay     | KS    | 66939    | 39.781728 | -97.901142  |
| Galva, KS 5547                                | 644 22nd Avenue              | Galva       | Clay     | KS    | 67443    | 38.266888 | -97.518082  |
| Atwood Simplot Grower Solutions               | 21432 Highway 36             | Atwood      | Cloud    | KS    | 67730    | 39.812397 | -101.028883 |
| Great Bend Coop-Ellinwood Branch              | 104 South Kennedy            | Ellinwood   | Cloud    | KS    | 67526    | 38.353238 | -98.586117  |
| Jennings: NH3 Plant                           | 2422 Highway 383             | Jennings    | Cloud    | KS    | 67643    | 39.684340 | -100.287890 |
| Johnson Facility                              | 304 E. Highland Ave          | Johnson     | Cloud    | KS    | 67855    | 37.562778 | -101.744416 |
| Tyson Fresh Meats, Inc. - Emporia, Ks         | 2101 West 6th                | Emporia     | Cloud    | KS    | 66801    | 38.402778 | -96.211113  |
| Tyson Fresh Meats, Inc. - Finney Co. Ks       | West Highway 50              | Holcomb     | Cloud    | KS    | 67851    | 38.000000 | -101.026111 |
| Alton Elevator                                | 2574 W 65th Drive            | Alton       | Coffey   | KS    | 67623    | 39.472417 | -98.966639  |
| Great Bend Coop-Pawnee Rock Branch            | 317 Pawnee Ave.              | Pawnee Rock | Coffey   | KS    | 67567    | 38.268303 | -98.973775  |
| Morganville, KS 5541                          | 402 Mill Road                | Morganville | Coffey   | KS    | 67468    | 39.471315 | -97.209289  |
| Republic, KS 5542                             | 310 Broadway                 | Republic    | Coffey   | KS    | 66964    | 39.924444 | -97.827330  |
| Beloit, KS 5533 Satellite                     | 1212 East Cottonwood Street  | Beloit      | Comanche | KS    | 67420    | 39.453250 | -98.095056  |
| Hunter, KS 5538                               | 1563 X Road                  | Hunter      | Comanche | KS    | 67452    | 39.234222 | -98.391139  |
| Concordia, KS 5531 (West)                     | 815 West 4th Street          | Concordia   | Cowley   | KS    | 66901    | 39.574083 | -97.671472  |
| Courtland, KS 5536                            | 261 Queen Road               | Courtland   | Cowley   | KS    | 66939    | 39.784194 | -97.902222  |
| Downs, KS 5537                                | 415 East Commercial Street   | Downs       | Cowley   | KS    | 67437    | 39.496972 | -98.535417  |

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|--|------------------------------------|--------------|-----------|-------|----------|-----------|-------------|
| Haddam, KS Satellite                       | 204 Deer Road                      | Haddam       | Cowley    | KS    | 66944    | 39.865528 | -97.294667  |
| Lincoln - Walker Products, Inc.            | 1378 N. 170th Road                 | Lincoln      | Cowley    | KS    | 67455    | 39.048694 | -98.190333  |
| Lucas NH3 Plant North                      | Wolf & Hwy 18, 20160 Mellard Rd    | Lucas        | Cowley    | KS    | 67648    | 39.066084 | -98.541224  |
| Mahaska, KS 5539 Satellite                 | 101 North Main                     | Mahaska      | Cowley    | KS    | 66955    | 39.991000 | -97.354278  |
| Minneapolis, KS 5540                       | 1040 East 10th Street              | Minneapolis  | Cowley    | KS    | 67467    | 39.131556 | -97.686028  |
| Woodston NH3 Facility                      | 1110 Elevator Road                 | Woodston     | Cowley    | KS    | 67675    | 39.455972 | -99.089028  |
| Agri Producers Inc. (Linc)                 | 6th Street, Po Box 156             | Lincolnvill  | Crawford  | KS    | 66858    | 38.493195 | -96.955785  |
| Agri Producers Inc. (Tampa)                | 205 Main Street, Po Box 25         | Tampa        | Crawford  | KS    | 67483    | 38.545454 | -97.155181  |
| Golden Valley, Inc. - Sanford              | S. of Hwy U.S. 183 & 156 Junction  | Larned       | Crawford  | KS    | 67550    | 38.182222 | -99.315694  |
| Gypsum                                     | 515 East 6th, Po Box 98            | Gypsum       | Crawford  | KS    | 67448    | 38.703889 | -97.421389  |
| Satanta North Plant                        | Rural Route 1                      | Satanta      | Crawford  | KS    | 67870    | 37.684981 | -101.035913 |
| Satanta Plant                              | West Us Highway 56                 | Satanta      | Crawford  | KS    | 67870    | 37.438191 | -100.993751 |
| The Coop Elevator & Supply - Englewood     | 1 Mi. N. of Englewood & 3/10 Mi E. | Englewood    | Crawford  | KS    | 67840    | 37.048348 | -99.984576  |
| Frankfort                                  | 402 W 2nd Street                   | Frankfort    | Decatur   | KS    | 66427    | 39.706659 | -96.426727  |
| Summerfield                                | 115 6th Street                     | Summerfield  | Dickenson | KS    | 66541    | 39.999549 | -96.354166  |
| Marietta                                   | 104 Main Street                    | Marietta     | Dickinson | KS    | 66518    | 39.943700 | -96.608658  |
| Beattie                                    | 203 Hamilton Street                | Beattie      | Doniphan  | KS    | 66406    | 39.859648 | -96.417871  |
| Beaver Grain, Inc.                         | 1905 Main Street                   | Beaver       | Doniphan  | KS    | 64525    | 38.638695 | -98.665566  |
| Bendena Ag, Inc.                           | 218 Railroad Street                | Bendena      | Doniphan  | KS    | 66008    | 39.742222 | -95.179472  |
| Delphos Cooperative Association            | 413 W. 1st Street                  | Delphos      | Doniphan  | KS    | 67436    | 39.271351 | -97.770533  |
| Rangeland Cooperatives, Inc. - Logan       | 306 E. Main                        | Logan        | Doniphan  | KS    | 67646    | 39.661470 | -99.559096  |
| Rangeland Cooperatives, Inc.- Phillipsburg | 788 2nd Street                     | Phillipsburg | Doniphan  | KS    | 67661    | 39.768554 | -99.328342  |
| Rangeland Cooperatives, Inc.- Prairie View | W. Main                            | Prarie View  | Doniphan  | KS    | 67664    | 39.830024 | -99.573004  |
| The Beattie Farmers Union Coop Association | 11th And Main                      | Blue Rapids  | Doniphan  | KS    | 66411    | 39.675006 | -96.661624  |
| Wathena, Ks                                | 2243 Highway 36                    | Wathena      | Doniphan  | KS    | 66090    | 39.755278 | -94.938889  |
| Yates Center                               | 700 West Rutledge                  | Yates Center | Doniphan  | KS    | 66783    | 37.880670 | -95.742241  |
| Accu-Rate Services Inc.                    | 9001 S. West Rd                    | Sedgwick     | Douglas   | KS    | 67135    | 37.933855 | -97.391266  |
| Barnes NH3                                 | 2751 Barnes Ave                    | Barnes       | Douglas   | KS    | 66933    | 39.710616 | -96.870869  |
| Farmers Union Mercantile & Shipping Assoc. | 1027 17 Road                       | Stockton     | Douglas   | KS    | 67669    | 39.427778 | -99.305000  |
| Kanza Coop, Coats                          | 507 Main St.                       | Coats        | Douglas   | KS    | 67028    | 37.509917 | -98.827778  |



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| Rangeland Cooperatives, Inc. - Gretna          | Main Street                   | Phillipsburg   | Douglas   | KS    | 67661    | 39.763645 | -99.212804  |
| Danville Cooperative Association               | 324 Ryan Avenue               | Danville       | Edwards   | KS    | 67036    | 37.288817 | -97.894083  |
| Farmers Coop Grain Ass'n (Rome)                | 891 S. Rome St.               | Wellington     | Edwards   | KS    | 67152    | 37.160000 | -97.391944  |
| Farmers Coop Grain Ass'n (South Haven)         | 403 West Clyde                | South Haven    | Edwards   | KS    | 67140    | 37.053998 | -97.404621  |
| Farmers Coop Grain Assoc. - Conway Springs     | 534 E. Parallel               | Conway Springs | Edwards   | KS    | 67031    | 37.388530 | -97.633284  |
| Glade  | Railroad And 183 Highway      | Glade          | Edwards   | KS    | 67639    | 39.679189 | -99.308544  |
| Kensington                                     | 228 S. Main                   | Kensington     | Edwards   | KS    | 66951    | 39.763887 | -99.030841  |
| Toulon NH3 Plant                               | 2011 Highway 40               | Toulon         | Edwards   | KS    | 67601    | 38.851382 | -99.239431  |
| Valley Grain And Fertilizer Co., Inc.          | 1752 Coronado Road            | Highland       | Edwards   | KS    | 66035    | 39.864702 | -95.263792  |
| Agra   | 5th And Railroad              | Agra           | Ellis     | KS    | 67621    | 39.763552 | -99.114552  |
| Danville Coop Association (Bluff Branch)       | North Main                    | Bluff City     | Ellis     | KS    | 67018    | 37.079500 | -97.875203  |
| Farmers Coop Grain Ass'n (Mayfield)            | 169 S. Chicaskia Rd           | Mayfield       | Ellis     | KS    | 67103    | 37.261298 | -97.587521  |
| Farmers Coop Grain Ass'n (Oxford)              | 710 S. Sumner St.             | Oxford         | Ellis     | KS    | 67119    | 37.268254 | -97.168652  |
| Yocemento NH3 Plant                            | 1558 Yocemento Avenue         | Yocemento      | Ellis     | KS    | 67601    | 38.907404 | -99.423943  |
| Zurich NH3 Plant                               | 502 South Main                | Zurich         | Ellis     | KS    | 67676    | 39.229361 | -99.436193  |
| Elkhart Cooperative Equity Exchange - Elkhart  | 840 Border, P.O. Box 210      | Elkhart        | Ellsworth | KS    | 67950    | 36.999167 | -101.895556 |
| Elkhart Coop Equity Exchange - Richfield       | State Hwy 27, County Road 10  | Richfield      | Ellsworth | KS    | 67953    | 37.259167 | -101.872778 |
| Great Bend Coop - Albert Branch                | 806 North Main                | Albert         | Ellsworth | KS    | 67511    | 38.455576 | -99.009238  |
| Kirwin   | 5th & Genesse                 | Kirwin         | Ellsworth | KS    | 67644    | 39.675781 | -99.116363  |
| Mears Fertilizer, Inc.                         | 629 North Industrial Road     | El Dorado      | Ellsworth | KS    | 67042    | 37.824151 | -96.910504  |
| Plainville NH3 Plant                           | East Highway 18               | Plainville     | Ellsworth | KS    | 67663    | 39.232811 | -99.286839  |
| Ag Partners Cooperative, Inc. - Sabetha        | 2750 Acorn Road               | Sabetha        | Finney    | KS    | 66534    | 39.905833 | -95.785556  |
| Athol NH3                                      | 205 Railway                   | Athol          | Finney    | KS    | 66932    | 39.763677 | -98.923337  |
| Danville Coop Association (Argonia Branch)     | 164 N. Argonia Rd.            | Argonia        | Finney    | KS    | 67004    | 37.278186 | -97.763160  |
| Elkhart Cooperative Equity Exchange - Dermot   | County Road 23, County Road Z | Rolla          | Finney    | KS    | 67954    | 37.329722 | -101.644722 |
| Elkhart Cooperative Equity Exchange - Feterita | U.S. Hwy 56, State Hwy 25     | Hugoton        | Finney    | KS    | 67951    | 37.153611 | -101.482222 |
| Elkhart Coop Equity Exchange - Rolla East      | U.S. Hwy 56, County Road 24   | Rolla          | Finney    | KS    | 67954    | 37.121389 | -101.625278 |
| Fort Scott Water Treatment Plant               | 910 Burke Street              | Fort Scott     | Finney    | KS    | 66701    | 37.829972 | -94.716833  |
| Mid-West Fertilizer, Inc. - Nortonville        | 602 Main Street               | Nortonville    | Finney    | KS    | 66060    | 39.419689 | -95.333041  |
| Mission Plant                                  | 8029 Sw 24th                  | Newton         | Finney    | KS    | 67114    | 38.010832 | -97.459347  |

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| Natoma NH3 Plant                         | 613 N. 1st Street                | Natoma        | Finney   | KS    | 67651    | 39.184722 | -99.009834  |
| Ncca-St. Marys                           | 805 W Bertrand                   | St. Marys     | Finney   | KS    | 66536    | 39.195694 | -96.075056  |
| Rca Mullinville Location                 | 220 South Main St                | Mullinville   | Finney   | KS    | 67109    | 37.582891 | -99.477074  |
| Redbarn Pet Products, LLC                | 30 Southeast #10 Road            | Great Bend    | Finney   | KS    | 67530    | 38.347366 | -98.771300  |
| Smith Center NH3 Plant                   | Airport Road South               | Smith Center  | Finney   | KS    | 66967    | 39.765516 | -98.790802  |
| Two Rivers Coop Geuda Springs            | 100 West Grain Avenue            | Geuda Springs | Finney   | KS    | 57051    | 37.104970 | -97.151023  |
| Two Rivers Coop Udall Branch             | 112 South East Street            | Udall         | Finney   | KS    | 67146    | 37.385423 | -97.115748  |
| Valley Co-Op, Inc. - Hackney             | 22324, 71st Road                 | Winfield      | Finney   | KS    | 67156    | 37.169183 | -97.024102  |
| Ag Partners Cooperative, Inc. - Padonia  | 153 1st St                       | Hiawatha      | Ford     | KS    | 66434    | 39.923608 | -95.561797  |
| Farmers Cooperative Union (Claflin, KS)  | Intersect. of Hwy 4 & NE 140 Ave | Claflin       | Ford     | KS    | 67525    | 38.522703 | -98.517663  |
| Farmers Cooperative Union (Bushton, KS)  | 105 N. Third Street              | Bushton       | Ford     | KS    | 67427    | 38.514972 | -98.392861  |
| Farmers Cooperative Union (Chase, KS)    | 839 Us Highway 56                | Chase         | Ford     | KS    | 67524    | 38.348079 | -98.341848  |
| Farmers Cooperative Union (Lyons, KS)    | 321 North Grand                  | Lyons         | Ford     | KS    | 67554    | 38.351685 | -98.200554  |
| Farmers Cooperative Union (Saxman, KS)   | 2015 Ave. R                      | Sterling      | Ford     | KS    | 67579    | 38.282138 | -98.127176  |
| Farmers Cooperative Union (Sterling, KS) | 1010 W Garfield Ave.             | Sterling      | Ford     | KS    | 67579    | 38.203160 | -98.218737  |
| Galatia NH3 Plant                        | 101 Steinert                     | Galatia       | Ford     | KS    | 67565    | 38.638808 | -98.964047  |
| Gorham NH3 Plant                         | 129 Clifford                     | Gorham        | Ford     | KS    | 67640    | 38.881589 | -99.020009  |
| Minneola Coop, Inc.                      | 414 Front Street, Box 376        | Minneola      | Ford     | KS    | 67865    | 37.444423 | -100.016859 |
| Minneola Coop, Inc. - Bloom Location     | 309 Main Street                  | Bloom         | Ford     | KS    | 67865    | 37.487551 | -99.897681  |
| Minneola Coop, Inc. - West Location      | A Road                           | Minneola      | Ford     | KS    | 67865    | 37.474688 | -100.153354 |
| Olmitz NH3 Plant                         | 200 Jackson Ave.                 | Olmitz        | Ford     | KS    | 67564    | 38.518611 | -98.937389  |
| Satanta Gas Plant                        | 10565 East Road 20               | Ulysses       | Ford     | KS    | 67880    | 37.459722 | -101.169722 |
| Valley Co-Op, Inc. - Atlanta             | 410 Locust Street, Po Box 63     | Atlanta       | Ford     | KS    | 67008    | 37.435151 | -96.764974  |
| Valley Co-Op, Inc. - Kellogg             | 16101 23rd Road                  | Winfield      | Ford     | KS    | 67156    | 37.257222 | -97.108333  |
| Victoria NH3 Plant                       | East Highway 40                  | Victoria      | Ford     | KS    | 67671    | 38.849642 | -99.141640  |
| Rca Kalvesta Location                    | 33335 E. Hwy K156                | Kalvesta      | Franklin | KS    | 67856    | 38.058324 | -100.278896 |
| Ulysses Booster Station                  | 8 Miles South of Ulysses On Sh25 | Ulysses       | Franklin | KS    | 67880    | 37.459444 | -101.358889 |
| Farmers Cooperative Union                | 100 S. Pioneer                   | Alden         | Geary    | KS    | 67512    | 38.240667 | -98.307750  |
| Hoisington NH3 Plant                     | 202 East Railroad                | Hoisington    | Geary    | KS    | 67544    | 38.508622 | -98.774679  |
| RCA Wright                               | 10881 Main Street, Po Box 38     | Wright        | Geary    | KS    | 67882    | 37.783794 | -99.888069  |



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| Farmers Cooperative Union (Frederick, KS) | 405 First Street                 | Geneseo      | Gove    | KS    | 67444    | 38.515059 | -98.266171  |
| Frontier Ag Inc - Bird City NH3 Plant     | West Hwy 36                      | Bird City    | Gove    | KS    | 67731    | 39.757556 | -101.533944 |
| Frontier Ag Inc - Brewster NH3 Plant      | Kansas And Railroad              | Brewster     | Gove    | KS    | 67732    | 39.360221 | -101.380241 |
| Frontier Ag Inc - Mcdonald NH3 Plant      | West Hwy 36                      | Mcdonald     | Gove    | KS    | 67745    | 39.781380 | -101.374988 |
| Jewell                                    | 620 N. Sheridan                  | Jewell       | Gove    | KS    | 66949    | 39.676528 | -98.152778  |
| Ness City - NH3 Plant                     | 917 W. Sycamore Street           | Ness City    | Gove    | KS    | 67560    | 38.452062 | -99.916802  |
| RCA Spearville Location                   | 201 Santa Fe                     | Spearville   | Gove    | KS    | 67876    | 37.852724 | -99.754929  |
| Benton                                    | 2775 Sw Prairie Creek Rd         | Benton       | Grant   | KS    | 67017    | 37.793944 | -97.096889  |
| CHS Inc - Selden                          | 7756 W. Highway 83               | Selden       | Grant   | KS    | 67757    | 39.536221 | -100.584816 |
| Frontier Ag Inc - Goodland                | 1202 West Hwy 24                 | Goodland     | Grant   | KS    | 67735    | 39.339834 | -101.730151 |
| Frontier Ag Inc - Ruleton                 | 1050 West Hwy24                  | Ruleton      | Grant   | KS    | 67735    | 39.339444 | -101.888889 |
| Frontier Ag Inc - Townsend Plant          | 5450 County Rd 14                | Goodland     | Grant   | KS    | 67743    | 39.200330 | -101.819750 |
| Lenora NH3 Plant                          | 9914 State Highway 9             | Lenora       | Grant   | KS    | 67645    | 39.617332 | -100.003672 |
| OK Coop-Hazelton NH3                      | 300 N. Ave. D                    | Hazelton     | Grant   | KS    | 67061    | 37.092875 | -98.408460  |
| Peabody                                   | 202 S Maple                      | Peabody      | Grant   | KS    | 66866    | 38.175256 | -97.113264  |
| Troy, KS (Fanning)                        | 1495 Highway 7                   | Troy         | Grant   | KS    | 66087    | 39.826899 | -95.154992  |
| Walton                                    | 100 W South St, Po Box 177       | Walton       | Grant   | KS    | 67151    | 38.116027 | -97.256607  |
| Big Bow Facility                          | 951 S. Big Bow Grade             | Big Bow      | Gray    | KS    | 67855    | 37.561681 | -101.560410 |
| Burns                                     | E Broadway & Hwy 77, P.O. Box 58 | Burns        | Gray    | KS    | 66840    | 38.090550 | -96.880600  |
| CHS Inc - Colby                           | 2122 Us Hwy 24                   | Colby        | Gray    | KS    | 67701    | 39.391882 | -101.013659 |
| CHS Inc - Gem                             | 2084 Cty Rd 27                   | Gem          | Gray    | KS    | 67734    | 39.419214 | -100.907534 |
| Gridley                                   | 312 Main Street                  | Gridley      | Gray    | KS    | 66852    | 38.096944 | -95.880833  |
| OK Coop - Hardtner NH3                    | Osage St.                        | Hardtner     | Gray    | KS    | 67057    | 37.010383 | -98.648892  |
| OK Coop - Kiowa NH3                       | 130 Main St.                     | Kiowa        | Gray    | KS    | 67070    | 37.019972 | -98.490607  |
| Olathe Water Treatment Plant No. 2        | 27065 W. 83rd Street             | Lenexa       | Gray    | KS    | 66227    | 38.974200 | -94.899400  |
| Rca Wilroads Location                     | 11769 Lariat Way                 | Dodge City   | Gray    | KS    | 67801    | 37.701354 | -99.894019  |
| Ulysses Stubbs Road Plant                 | 346 N Stubbs Rd                  | Ulysses      | Gray    | KS    | 67880    | 37.581538 | -101.343696 |
| Water Treatment Plant                     | 520 E. Oak                       | Independence | Gray    | KS    | 67301    | 37.229631 | -95.691147  |
| Whitewater                                | 223 S Ash                        | Whitewater   | Gray    | KS    | 67154    | 37.962094 | -97.152458  |
| Beachner Grain, Inc.                      | 905 W. Miami                     | Paola        | Greeley | KS    | 66071    | 38.571230 | -94.889966  |

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| Beachner Grain, Inc.                         | 108 E Dorman                     | Fontana     | Greeley  | KS    | 66026    | 38.427308 | -94.839391  |
| Cairo Cooperative Equity Exchange - Penalosa | 265 S. Penalosa St..             | Penalosa    | Greeley  | KS    | 67121    | 37.714677 | -98.319800  |
| Westphalia                                   | 610 Warne                        | Westphalia  | Greeley  | KS    | 66093    | 38.179722 | -95.490278  |
| Copeland, KS 670                             | 2502 Highway 56                  | Copeland    | Hamilton | KS    | 67837    | 37.543325 | -100.628855 |
| Leroy  | 505 6th Street                   | Leroy       | Hamilton | KS    | 66857    | 38.081389 | -95.631389  |
| NCCA-Vliets                                  | 405 Main St.                     | Vliets      | Hamilton | KS    | 66544    | 39.714972 | -96.334528  |
| Ryus Plant                                   | 6500 S Hwy 190                   | Satanta     | Hamilton | KS    | 67870    | 37.497333 | -101.106333 |
| Colby Fertilizer, Inc.                       | 1580 K-25                        | Colby       | Harper   | KS    | 67701    | 39.347476 | -101.055881 |
| Farmway Co-Op, Inc. Asherville               | 1391 Leann Ln, Rr 2, Box 21      | Beloit      | Harper   | KS    | 67420    | 39.405833 | -97.978222  |
| Hugoton Plant                                | 509 Nw Ave                       | Hugoton     | Harper   | KS    | 67951    | 37.182167 | -101.356500 |
| Kinsley, KS 701 Satellite                    | 314 West 10th                    | Kinsley     | Harper   | KS    | 67547    | 37.917167 | -99.420167  |
| NCCA-Seneca                                  | 223 E. Main                      | Seneca      | Harper   | KS    | 66538    | 39.836139 | -96.052417  |
| Perryton Equity Exchange- Prairieola, Kansas | Nw Corner County Roads J And 26  | Prairieola  | Harper   | KS    | 67951    | 37.112500 | -101.105000 |
| Plains, KS 768                               | 800 Madison Street               | Plains      | Harper   | KS    | 67869    | 37.264167 | -100.580000 |
| Skyland Grain LLC. - Syracuse North Plant    | 13 Miles North of Syracuse       | Syracuse    | Harper   | KS    | 67878    | 38.175300 | -101.759267 |
| Cooperative Grain & Supply - Canton East     | 27th Street & Highway 56         | Canton      | Harvey   | KS    | 67428    | 38.375833 | -97.427000  |
| Copeland, KS 668                             | 492 Ww Road                      | Copeland    | Harvey   | KS    | 67837    | 37.680841 | -100.688524 |
| Hugoton Harmony Plant                        | 12n,1w of Hwy 54 & 25 In Hugoton | Hugoton     | Harvey   | KS    | 67951    | 37.359213 | -101.360718 |
| Jetmore, KS 697                              | 1122 South Main Street           | Jetmore     | Harvey   | KS    | 67854    | 38.077634 | -99.890844  |
| Kinsley, KS 701 Satellite (South)            | 140th U Road                     | Kinsley     | Harvey   | KS    | 67547    | 37.791626 | -99.322348  |
| NCCA-Baileyville                             | 388 U.S. Hwy 36                  | Baileyville | Harvey   | KS    | 66404    | 39.840806 | -96.189028  |
| Oakley, KS 763 Satellite                     | 104 South Freeman Avenue         | Oakley      | Harvey   | KS    | 67748    | 39.124289 | -100.845186 |
| Palco - NH3 Plant                            | 104 South Main                   | Palco       | Harvey   | KS    | 67657    | 39.249667 | -99.557000  |
| Timken - NH3 Plant                           | 300 N. Railroad Ave.             | Timken      | Harvey   | KS    | 67575    | 38.473821 | -99.173926  |
| Belpre, KS 674                               | 1859 270th Avenue                | Belpre      | Haskell  | KS    | 67519    | 37.832353 | -99.097284  |
| Bison - NH3 Plant                            | 100 N. Main, Po Box 358          | Bison       | Haskell  | KS    | 67520    | 38.524016 | -99.199155  |
| Conway                                       | 1361 Center Street               | Conway      | Haskell  | KS    | 67460    | 38.371158 | -97.788299  |
| Leoti, KS 702                                | 505 North 4th Street             | Leoti       | Haskell  | KS    | 67861    | 38.486167 | -101.354000 |
| Liebenthal - NH3 Plant                       | R.R.                             | Liebenthal  | Haskell  | KS    | 67553    | 38.670318 | -99.316992  |
| Main Lakin Branch Plant                      | 1/2 Mile S. Lakin State Hwy 25   | Lakin       | Haskell  | KS    | 67860    | 37.930278 | -101.253472 |

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| Plains, KS 768 Satellite                      | 3211 4 Road                         | Plains        | Haskell   | KS    | 67869    | 37.431833 | -100.599167 |
| Pratt, KS 672 Satellite                       | 80492 West Highway 54               | Pratt         | Haskell   | KS    | 67124    | 37.633500 | -98.897833  |
| Farmers Coop Company - Coldwater Branch       | About 1 Mile South of Coldwater, Ks | Coldwater     | Hodgeman  | KS    | 67029    | 37.250182 | -99.328689  |
| Farmers Coop Company - Protection Branch      | 1/2 Mile North of Protection Office | Protection    | Hodgeman  | KS    | 67127    | 37.214915 | -99.483726  |
| Montezuma, KS 708                             | 28605 12 Road                       | Montezuma     | Hodgeman  | KS    | 67867    | 37.597667 | -100.454333 |
| Otis - NH3 Plant                              | 3rd Mary Street                     | Otis          | Hodgeman  | KS    | 67565    | 38.536389 | -99.045278  |
| Farmers Union Cooperative - Spring Hill       | 110 South Frank                     | Spring Hill   | Jackson   | KS    | 66083    | 38.742500 | -94.815278  |
| The Dodge City Coop Exchange - Beeler         | 101 S. Main                         | Beeler        | Jackson   | KS    | 67518    | 38.442822 | -100.196972 |
| Cairo Cooperative Equity Exchange - Arlington | 215 W. Main                         | Arlington     | Jefferson | KS    | 67514    | 37.894041 | -98.180107  |
| Cairo Cooperative Equity Exchange - Turon     | North Highway 61                    | Turon         | Jefferson | KS    | 67583    | 37.811005 | -98.429830  |
| Gavilon Fertilizer LLC                        | 2 S. Holiday St.                    | Nickerson     | Jefferson | KS    | 67561    | 38.142500 | -98.077500  |
| Guetterman Brothers Elevator, Inc.            | 409 South Street, Po Box 44         | Bucyrus       | Jefferson | KS    | 66013    | 38.721438 | -94.719163  |
| Mccune Farmers Union Coop Association         | 8th & Main St., P.O. Box 58         | Mccune        | Jefferson | KS    | 66753    | 37.350515 | -95.018942  |
| Cairo Cooperative Equity Exchange - Cairo     | 100 Cairo Main Street               | Cunningham    | Jewell    | KS    | 67035    | 37.652759 | -98.556280  |
| Cairo Coop Equity Exchange - Cunningham       | 120 W. Santa Fe                     | Cunningham    | Jewell    | KS    | 67035    | 37.643492 | -98.427873  |
| Cairo Cooperative Equity Exchange - Preston   | 108 W. 5th                          | Preston       | Jewell    | KS    | 67583    | 37.758009 | -98.559052  |
| Dermot Branch                                 | County Road Z, County Road 1        | Hugoton       | Jewell    | KS    | 67951    | 37.329417 | -101.554667 |
| Garden City, KS 675                           | 715 South Vfw Road                  | Garden City   | Jewell    | KS    | 67846    | 37.970167 | -100.902333 |
| Hiland Dairy - Wichita                        | 700 East Central                    | Wichita       | Jewell    | KS    | 67202    | 37.693956 | -97.329764  |
| Moscow Branch Plant                           | State Highway 56, County Road 21    | Moscow        | Jewell    | KS    | 67953    | 37.339341 | -101.191448 |
| Savolt Location                               | 14471 S. Kansas Road                | Friend        | Jewell    | KS    | 67871    | 38.273093 | -100.923843 |
| Alta Vista                                    | 607 Washington                      | Alta Vista    | Johnson   | KS    | 66834    | 38.863286 | -96.494343  |
| Arkansas City Water Treatment Plant           | 513 W. Washington                   | Arkansas City | Johnson   | KS    | 67005    | 37.059722 | -97.044444  |
| Brewster, KS 683 Satellite                    | 410 Railroad Street                 | Brewster      | Johnson   | KS    | 67732    | 39.361333 | -101.372500 |
| Elbing Grain LLC                              | 150 East 2nd                        | Elbing        | Johnson   | KS    | 67041    | 38.052446 | -97.125776  |
| Greensburg, KS 673                            | Junction Highway 183 & Highway 54   | Greensburg    | Johnson   | KS    | 67054    | 37.608333 | -99.319000  |
| Helena Chemical Company                       | 1004 N Anderson Road                | Garden City   | Johnson   | KS    | 67846    | 37.972921 | -100.919547 |
| Koch Nitrogen Co., LLC - Conway Terminal      | 1451 5th Avenue                     | Mcpherson     | Johnson   | KS    | 67460    | 38.383639 | -97.839472  |
| Lyons, KS 5556 Satellite (W 5th St)           | 700 West 5th Street                 | Lyons         | Johnson   | KS    | 67554    | 38.354167 | -98.210833  |
| Marquette                                     | 504 Washington                      | Marquette     | Johnson   | KS    | 67464    | 38.558603 | -97.837228  |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                             | Address                           | City           | County      | State | Zip Code | Latitude  | Longitude   |
|---|-----------------------------------|----------------|-------------|-------|----------|-----------|-------------|
| Pikes Fertilizer                          | 330 North 140th                   | Girard         | Johnson     | KS    | 68743    | 37.547162 | -94.851269  |
| Shallow Water, KS 774 Satellite           | Southwest 1/4 32-21-30            | Shallow Water  | Johnson     | KS    | 67871    | 38.177167 | -100.646167 |
| Westmoreland                              | 203 S Hiway 99                    | Westmoreland   | Johnson     | KS    | 66549    | 39.391472 | -96.407667  |
| City of Hays Water Softening Plant        | 1000 Vine Street                  | Hays           | Kearny      | KS    | 67601    | 38.867150 | -99.317600  |
| Forbo Adhesives, LLC                      | 3150 Fiberglass Road              | Kansas City    | Kearny      | KS    | 66115    | 39.144890 | -94.617383  |
| Salina Water Treatment Plant              | 401 South Fifth Street            | Salina         | Kearny      | KS    | 67401    | 38.832778 | -97.607500  |
| U.S. Foodservice - Topeka                 | 4725 Nw Us Hwy 24                 | Topeka         | Kearny      | KS    | 66618    | 39.089669 | -95.735015  |
| Ag Partners Cooperative, Inc. - Hamlin    | 201 Front St.-Hamlin              | Hamlin         | Kingman     | KS    | 66434    | 39.914167 | -95.627222  |
| Ag Partners Cooperative, Inc. - Hiawatha  | 708 S Tenth Street                | Hiawatha       | Kingman     | KS    | 66434    | 39.846944 | -95.541944  |
| Ag Partners Cooperative, Inc. - Powhattan | 200 Main Street, Po Box 125       | Powhattan      | Kingman     | KS    | 66527    | 39.760556 | -95.631944  |
| Ag Partners Cooperative, Inc. - Robinson  | 211 Railroad                      | Robinson       | Kingman     | KS    | 66532    | 39.815000 | -95.407778  |
| Bartlett Coop Association (Mound Valley)  | 7th And Oak                       | Mound Valley   | Kingman     | KS    | 67354    | 37.208333 | -95.402472  |
| Rural Gas, Inc.                           | 201 "M" Street                    | Belleville     | Kingman     | KS    | 66935    | 39.840314 | -97.631692  |
| Ulysses Dealer Fertilizer Plant           | 795 South Road H                  | Ulysses        | Kingman     | KS    | 67880    | 37.570889 | -101.401667 |
| Farmers Coop Equity - Medicine Lodge      | 1447 Nw River Road                | Medicine Lodge | Kiowa       | KS    | 67104    | 37.286440 | -98.595096  |
| Hoover's Inc.                             | 309 2nd Street                    | Greenleaf      | Kiowa       | KS    | 66943    | 39.730606 | -96.977735  |
| ITW Professional Brands                   | 805 East Old 56 Highway           | Olathe         | Kiowa       | KS    | 66061    | 38.866344 | -94.810019  |
| Moundridge                                | 245 Homestead Trail               | Moundridge     | Kiowa       | KS    | 67107    | 38.209090 | -97.530492  |
| Emporia Water Treatment Plant             | 2910 West 24th Avenue             | Emporia        | Labette     | KS    | 66801    | 38.428509 | -96.217710  |
| Farmers Coop Equity - Nashville           | 110 Main                          | Nashville      | Labette     | KS    | 67112    | 37.441904 | -98.422097  |
| Farmers Coop Equity - Isabel              | 300 Main                          | Isabel         | Labette     | KS    | 67065    | 37.466667 | -98.550000  |
| Farmers Coop Equity - Sawyer              | 214 S. Carter                     | Sawyer         | Labette     | KS    | 67134    | 37.497012 | -98.679474  |
| Mid-West Fertilizer, Inc. - Independence  | 3498 Russ Meyer Blvd.             | Independence   | Labette     | KS    | 67301    | 37.166882 | -95.765128  |
| Miltonvale                                | 113 1st Street                    | Miltonvale     | Labette     | KS    | 67466    | 39.347522 | -97.445175  |
| Clay Center                               | 625 West Court Street, Po Box 524 | Clay Center    | Lane        | KS    | 67432    | 39.376403 | -97.143266  |
| Leonardville                              | 12900 Barton Rd                   | Leonardville   | Lane        | KS    | 66449    | 39.365125 | -96.842754  |
| Castleton                                 | 2114 W Main                       | Castleton      | Leavenworth | KS    | 67501    | 37.867538 | -97.969315  |
| F & F Feeds, Inc.                         | 2700 W. South Avenue              | Emporia        | Leavenworth | KS    | 66801    | 38.398861 | -96.212720  |
| Goessel                                   | 720 E Centennial                  | Goessel        | Leavenworth | KS    | 67053    | 38.249587 | -97.337127  |
| Groveland                                 | 1066 Comanche Rd                  | Inman          | Leavenworth | KS    | 67546    | 38.290012 | -97.731243  |

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| Facility Name                                   | Address                                 | City         | County   | State | Zip Code | Latitude  | Longitude   |
|---|---|--------------|----------|-------|----------|-----------|-------------|
| Airgas Specialty Products Inc., Kansas City, Ks | 2500 State Line Road                    | Kansas City  | Lincoln  | KS    | 66103    | 39.093761 | -94.606590  |
| Beachner Grain, Inc. - Neodesha                 | 10th & Mill St.                         | Neodesha     | Lincoln  | KS    | 66757    | 37.414085 | -95.684983  |
| Frontier Ag Inc - Mcdonald East Plant           | East Hwy 36                             | Mcdonald     | Lincoln  | KS    | 67745    | 39.784444 | -101.352778 |
| Jayhawk Gas Plant                               | 13201 E. Hwy. 160                       | Ulysses      | Lincoln  | KS    | 67880    | 37.561770 | -101.121790 |
| Mid-West Fertilizer, Inc. - Liberty             | 5136 Cr 3420                            | Liberty      | Lincoln  | KS    | 67351    | 37.155380 | -95.593532  |
| Cheney Gas Plant                                | 3120 Se 140th Ave.                      | Cheney       | Linn     | KS    | 67025    | 37.603051 | -97.862371  |
| Jackson Dairy                                   | 2600 East 4th Street                    | Hutchinson   | Linn     | KS    | 67504    | 38.058889 | -97.882778  |
| Bartlett Coop Assoc. (Oswego)                   | West 4th Street                         | Oswego       | Logan    | KS    | 67356    | 37.168920 | -95.127030  |
| Frontier Ag Inc - Atwood NH3 Facility           | Hwy 25 North                            | Atwood       | Logan    | KS    | 67730    | 39.832809 | -101.046350 |
| Frontier Ag Inc - Bird City West                | East Hwy 36                             | Bird City    | Logan    | KS    | 67731    | 39.756667 | -101.531667 |
| National Helium Plant                           | E on Hwy 54, 1.5 Miles N on Route 2     | Liberal      | Logan    | KS    | 67901    | 37.159222 | -100.762139 |
| Agchoice - Parsons                              | 3205 Boyd St.                           | Parsons      | Lyon     | KS    | 67357    | 37.368333 | -95.280833  |
| Agchoice - Weir                                 | 9197 NE 50th St.                        | Weir         | Lyon     | KS    | 66781    | 37.313056 | -94.740479  |
| City of Liberal Domestic Waste Treatment Plant  | Highway 83                              | Liberal      | Lyon     | KS    | 67901    | 37.056637 | -100.903252 |
| Farmers Coop Grain Ass'n (Wellington)           | 9011 N 'A' St                           | Wellington   | Lyon     | KS    | 67152    | 37.305388 | -97.393738  |
| Lone Pine Ag-Services, Inc                      | 1557 E 100 Rd                           | Lecompton    | Lyon     | KS    | 66050    | 38.966313 | -95.484300  |
| Millard Refrigerated Services                   | 2350 South 98th Street                  | Edwardsville | Lyon     | KS    | 66111    | 39.056501 | -94.804304  |
| Nekoma - NH3 Plant                              | Hwy K-96                                | Nekoma       | Lyon     | KS    | 67559    | 38.472778 | -99.442500  |
| Brenntag Southwest, Inc. Wichita                | 1502 North Barwise                      | Wichita      | Marion   | KS    | 67214    | 37.710556 | -97.329444  |
| City of Gardner, Hillsdale WTP                  | 22705 South Moonlight Road              | Spring Hill  | Marion   | KS    | 66083    | 38.715556 | -94.905700  |
| Conway Lpg Storage Facility                     | 661 Hwy 56                              | Mcpherson    | Marion   | KS    | 67460    | 38.373330 | -97.803176  |
| Farmers Coop Elevator Company - Clonmel         | 7115 S. 183rd Street                    | Clonmel      | Marion   | KS    | 67149    | 37.563146 | -97.553642  |
| Farmers Cooperative Company - Haviland          | Old Hwy. 54 And Main Street             | Haviland     | Marion   | KS    | 67059    | 37.614499 | -99.114668  |
| Pawnee County Cooperative - Larned              | Highway 56 1 Mile West of Larned        | Larned       | Marion   | KS    | 67550    | 38.168991 | -99.109539  |
| Pawnee County Coop-Garfield Branch              | Highway 56                              | Garfield     | Marion   | KS    | 67529    | 38.072697 | -99.245737  |
| Reser's Fine Foods, Inc. Deer Creek Plant       | 3215 Se 6th St                          | Topeka       | Marion   | KS    | 66607    | 39.044167 | -95.631667  |
| Tri-Rotor Crop Services, LLC - Fort Plant       | 8995 E. Rd. 5, Intersect. of 5th & S Rd | Ulysses      | Marion   | KS    | 67880    | 37.678486 | -101.199686 |
| Bartlett Grain Company, L.P.                    | Highway 56                              | Moscow       | Marshall | KS    | 67952    | 37.330145 | -101.204636 |
| Bartlett Grain Company, L.P.                    | North Benton Street                     | St. Francis  | Marshall | KS    | 67756    | 39.780269 | -101.800706 |
| Dillons Distribution Center                     | 2700 East 4th Avenue                    | Hutchinson   | Marshall | KS    | 67501    | 38.058722 | -97.883500  |

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| Facility Name                                | Address                              | City          | County    | State | Zip Code | Latitude  | Longitude   |
|--|--------------------------------------|---------------|-----------|-------|----------|-----------|-------------|
| Golden Plant                                 | Road 21 And Road E                   | Ulysses       | Marshall  | KS    | 67880    | 37.447068 | -101.453229 |
| Lydia Plant                                  | 23 Mi N of Lakin On Hwy 25           | Lakin         | Marshall  | KS    | 67860    | 38.254330 | -101.269592 |
| Menno Plant Lakin Branch                     | Hwy 25, 14 North & 5 West of Ulysses | Lakin         | Marshall  | KS    | 67860    | 37.777924 | -101.454560 |
| Russell Water Treatment Plant                | 210 S. Front                         | Russell       | Marshall  | KS    | 67665    | 38.882843 | -98.855287  |
| The Dodge City Coop Exchange - Jumbo         | 2396 Ii Road                         | Ensign        | Marshall  | KS    | 67841    | 37.503804 | -100.235018 |
| The Dodge City Coop Exchange - Kalvesta      | 33335 State Rd 156                   | Kalvesta      | Marshall  | KS    | 67835    | 38.059538 | -100.289496 |
| The Dodge City Coop Exchange - Monte North   | 6050 Y Road                          | Montezuma     | Marshall  | KS    | 67867    | 37.649176 | -100.551901 |
| Adm Milling Company                          | 1000 S. Mill Rd.                     | Arkansas City | Mcpherson | KS    | 67005    | 37.050556 | -97.025833  |
| Andale                                       | 5742 N 247th West                    | Andale        | Mcpherson | KS    | 67001    | 37.785671 | -97.625421  |
| Bartlett Grain Company, L.P.                 | 407 Bartlett Avenue                  | Levant        | Mcpherson | KS    | 67743    | 39.386305 | -101.195892 |
| Clyde NH3                                    | 201 Upton                            | Clyde         | Mcpherson | KS    | 66938    | 39.592146 | -97.387699  |
| Colwich                                      | 143 N. Colorado                      | Colwich       | Mcpherson | KS    | 67030    | 37.784472 | -97.540611  |
| Dold Foods, LLC                              | 2929 N. Ohio Street                  | Wichita       | Mcpherson | KS    | 67219    | 37.736670 | -97.325640  |
| Downs Elevator                               | 614 Railroad                         | Downs         | Mcpherson | KS    | 67437    | 39.509761 | -98.530111  |
| Farmers Coop Elevator Company - Anness       | 11430 Anness Road                    | Milton        | Mcpherson | KS    | 67601    | 37.481944 | -97.728889  |
| Farmers Coop Elevator Company - Garden Plain | 401 N. Main, P.O. Box 316            | Garden Plain  | Mcpherson | KS    | 67050    | 37.650572 | -97.683811  |
| Farmers Coop Elevator Company - Norwich      | 137 N. Main, PO Box 217              | Norwich       | Mcpherson | KS    | 67116    | 37.460459 | -97.848882  |
| Frontier Ag Inc-Kanorado                     | 123 Railroad Ave.                    | Kanorado      | Mcpherson | KS    | 67741    | 39.333333 | -102.033389 |
| Mccracken - NH3 Plant                        | Hwy 4 And Railroad Avenue            | Mccracken     | Mcpherson | KS    | 67556    | 38.582667 | -99.572500  |
| NCRA SRU-ATS                                 | 1360 Iron Horse Road                 | Mcpherson     | Mcpherson | KS    | 67460    | 38.348695 | -97.673223  |
| Sedgwick                                     | 4th And Jackson                      | Sedgwick      | Mcpherson | KS    | 67135    | 37.918441 | -97.421953  |
| Southern Plains Coop - Lewis                 | 100 North Main                       | Lewis         | Mcpherson | KS    | 67552    | 37.940842 | -99.250977  |
| Southern Plains Coop - Centerview Branch     | South County Road 35, P.O. Box 128   | Lewis         | Mcpherson | KS    | 67552    | 37.755401 | -99.269265  |
| Sublette, KS 775                             | 1892 North Highway 83                | Sublette      | Mcpherson | KS    | 67877    | 37.477667 | -100.868500 |
| The Dodge City Coop Exchange - Howell        | 10884 102 Rd                         | Dodge City    | Mcpherson | KS    | 67801    | 37.782583 | -100.178069 |
| The Dodge City Coop Exchange - Ingalls North | Jct of D And 12 Rd                   | Ingalls       | Mcpherson | KS    | 67853    | 37.957778 | -100.482500 |
| The Dodge City Coop Exchange - Kingsdown     | Main And Coop                        | Kingsdown     | Mcpherson | KS    | 67858    | 37.524235 | -99.761572  |
| The Dodge City Coop Exchange - Monte South   | 34000 6 Rd                           | Montezuma     | Mcpherson | KS    | 67867    | 37.518310 | -100.561724 |
| Woods Plant                                  | Hwy 51, 16 Miles E of Hugoton        | Sublette      | Mcpherson | KS    | 67877    | 37.169173 | -101.048494 |
| Cargill Meat Solutions, Dodge City, KS       | 3201 E Highway 400                   | Dodge City    | Meade     | KS    | 67801    | 37.736389 | -99.955833  |



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|---|-------------------------------------|----------------|------------|-------|----------|-----------|-------------|
| Clifton NH3                                   | 522 1st Road                        | Clifton        | Meade      | KS    | 66937    | 39.580970 | -97.289420  |
| Farmers Coop Elevator Co. - Pretty Prairie    | 202 South Santa Fe                  | Pretty Prairie | Meade      | KS    | 67570    | 37.783667 | -98.019333  |
| Farmers Cooperative Company - Trousdale       | 8 Miles North of Haviland           | Haviland       | Meade      | KS    | 67059    | 37.724218 | -99.106940  |
| Hansen Water Treatment Plant                  | 7601 Holliday Drive                 | Kansas City    | Meade      | KS    | 66106    | 39.053611 | -94.755278  |
| Koch Nitrogen Company, LLC- Nitrogen Plant    | 11559 East U.S, Highway 50          | Dodge City     | Meade      | KS    | 67801    | 37.778300 | -99.930740  |
| Millard Refrigerated Services                 | 3105 East Trail Road                | Dodge City     | Meade      | KS    | 67801    | 37.736778 | -99.960058  |
| ONEOK Hydrocarbon, L.P.- Fractionator         | 1910 South Broadacres Road          | Hutchinson     | Meade      | KS    | 67501    | 38.029260 | -97.976840  |
| Southern Plains Coop - Belpre Branch          | Larned And Railroad Streets         | Belpre         | Meade      | KS    | 67519    | 37.955940 | -99.100006  |
| Topeka Water Treatment Plant                  | 3245 Waterworks Drive               | Topeka         | Meade      | KS    | 66606    | 39.070556 | -95.717222  |
| Beachner Grain, Inc.                          | 804 E 6th                           | Garnett        | Miami      | KS    | 66032    | 38.278611 | -95.228611  |
| Farmers Coop Elevator Co. - Belmont Branch    | 8500 Se Burns Ave                   | Kingman        | Miami      | KS    | 67068    | 37.523693 | -97.987273  |
| Farmers Coop Elevator Co. - Cheney Branch     | 71st Street And 407 West            | Cheney         | Miami      | KS    | 67025    | 37.561251 | -97.807149  |
| Geary Grain, Inc.                             | 340 East 13th Street                | Junction City  | Miami      | KS    | 66441    | 39.030278 | -96.822500  |
| Unilever - Olathe                             | 27080 West 159th Street             | New Century    | Miami      | KS    | 66031    | 38.840556 | -94.895972  |
| Abengoa Bioenergy Corp., Ethanol Facility     | 523 East Union Ave, P.O.Box 427     | Colwich        | Mitchell   | KS    | 67030    | 37.784722 | -97.535528  |
| Agchoice - Emporia                            | 1779 Road G                         | Emporia        | Mitchell   | KS    | 66801    | 38.416944 | -96.244444  |
| Burr Oak Elevator                             | 556 South Main                      | Burr Oak       | Mitchell   | KS    | 66936    | 39.866270 | -98.305127  |
| Frontier Ag Inc - Ransom                      | 1 Mile South, Po Box 246            | Ransom         | Mitchell   | KS    | 67572    | 38.623837 | -99.936467  |
| Furley  | 10745 Avenue F (In Furley)          | Valley Center  | Mitchell   | KS    | 67147    | 37.879278 | -97.214056  |
| Portis Elevator                               | 219 Market Street                   | Portis         | Mitchell   | KS    | 67474    | 39.567819 | -98.705184  |
| Southeast Nebraska Coop - Herkimer            | 875 6th Road                        | Marysville     | Mitchell   | KS    | 66508    | 39.889444 | -96.714722  |
| The Cooperative Elevator & Supply - Edwards   | 3/4 Mi So. of Road Intersect C & 20 | Meade          | Mitchell   | KS    | 67864    | 37.437917 | -100.306583 |
| The Cooperative Elevator & Supply - Meade     | N. Fowler Street                    | Meade          | Mitchell   | KS    | 67864    | 37.294048 | -100.341359 |
| The Cooperative Elevator & Supply - Missler   | 11162 13 Road                       | Meade          | Mitchell   | KS    | 67864    | 37.318053 | -100.434422 |
| Beachner Grain, Inc.                          | 230 W Brown St.                     | Greeley        | Montgomery | KS    | 66033    | 38.365000 | -95.130278  |
| Bellaire Elevator                             | 14092 V Road                        | Lebanon        | Montgomery | KS    | 66952    | 39.798750 | -98.672778  |
| City of Wellington, KS Water Treatment Plant  | 50th Street South & Lake Road       | Wellington     | Montgomery | KS    | 67152    | 37.212821 | -97.533879  |
| Farmers Coop Grain Association - Belle Plaine | 125 S. Lincoln                      | Belle Plaine   | Montgomery | KS    | 67013    | 37.388087 | -97.279600  |
| Future Foam, Inc                              | 1500 South East 6th Street          | Newton         | Montgomery | KS    | 67114    | 38.038394 | -97.320021  |
| Innovia Films Inc                             | 6000 Se 2nd Street                  | Tecumseh       | Montgomery | KS    | 66542    | 39.053083 | -95.557837  |

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| Facility Name                            | Address                     | City        | County     | State | Zip Code | Latitude  | Longitude   |
|--|-----------------------------|-------------|------------|-------|----------|-----------|-------------|
| ONEOK Hydrocarbon, L.P. - Isom Plant     | 462 U.S. Highway 56 West    | Mcpherson   | Montgomery | KS    | 67460    | 38.379900 | -97.839050  |
| Haven                                    | 112 W 2nd St                | Haven       | Morton     | KS    | 67543    | 37.905314 | -97.774212  |
| The Dodge City Coop Exchange - Alva      | 5020 13 Rd                  | Montezuma   | Morton     | KS    | 67867    | 37.416067 | -100.433707 |
| The Dodge City Coop Exchange - Ensign    | 706 Bent                    | Ensign      | Morton     | KS    | 67841    | 37.655062 | -100.230368 |
| The Dodge City Coop Exchange - Richland  | 10996 Saddle Rd.            | Dodge City  | Morton     | KS    | 67801    | 37.649444 | -100.034722 |
| Baker Services, Inc.                     | 1699 Highway 59             | Atchison    | Nemaha     | KS    | 66002    | 39.557389 | -95.142500  |
| Edgerton                                 | 1002 E. 2nd                 | Edgerton    | Nemaha     | KS    | 66021    | 38.760097 | -95.009345  |
| ExxonMobil Olathe Grease Plant           | 1400 South Harrison Street  | Olathe      | Nemaha     | KS    | 66061    | 38.862500 | -94.814722  |
| Meriden NH3                              | 201 Dawson                  | Meriden     | Nemaha     | KS    | 66512    | 39.193303 | -95.568846  |
| Perry NH3-Jb Pearl                       | 406 Front Street            | Perry       | Nemaha     | KS    | 66073    | 39.072606 | -95.390241  |
| The Dodge City Coop Exchange - Bosse     | 106 North Broadway          | Hanston     | Nemaha     | KS    | 67849    | 38.119868 | -99.715563  |
| The Dodge City Coop Exchange - Haggard   | 19502 Highway 56            | Haggard     | Nemaha     | KS    | 67842    | 37.633563 | -100.321731 |
| Beachner Grain, Inc.                     | 210 S. Commercial           | Lacygne     | Neosho     | KS    | 66040    | 38.343878 | -94.761458  |
| Burlingame                               | 246 South Kansas Street     | Burlingame  | Neosho     | KS    | 66413    | 38.751917 | -95.829639  |
| Galva                                    | 101 N Main                  | Galva       | Neosho     | KS    | 67443    | 38.384522 | -97.538373  |
| The Dodge City Coop Exchange - Montezuma | 401 W Texcoco               | Montezuma   | Neosho     | KS    | 67867    | 37.597885 | -100.448090 |
| Alexander - NH3 Plant                    | 200 West K-96               | Alexander   | Ness       | KS    | 67513    | 38.467222 | -99.555000  |
| Beachner Grain, Inc.                     | 29086 Nw. Walnut            | Garnett     | Ness       | KS    | 66032    | 38.317944 | -95.436863  |
| Cedar NH3                                | Kansas Highway 9, Po Box D  | Cedar       | Ness       | KS    | 67628    | 39.660090 | -98.935315  |
| Lancaster NH3                            | 300 West Broadway           | Lancaster   | Ness       | KS    | 66041    | 39.575484 | -95.306316  |
| Overbrook                                | 102 Oak Street, Po Box 304  | Overbrook   | Ness       | KS    | 66524    | 38.776043 | -95.558920  |
| Rush Center -- NH3 Plant                 | 819 West Union              | Rush Center | Ness       | KS    | 67575    | 38.466389 | -99.318611  |
| Palmer Grain, Inc.                       | 208 North Nadeau, Po Box 10 | Palmer      | Norton     | KS    | 66962    | 39.632392 | -97.126254  |
| Beachner Grain, Inc.                     | 601 South Martindale        | Kincaid     | Osage      | KS    | 66039    | 38.079442 | -95.150900  |
| Buhler                                   | 101 S Main                  | Buhler      | Osage      | KS    | 67522    | 38.130218 | -97.764436  |
| Lindsborg                                | 320 E Lincoln               | Lindsborg   | Osage      | KS    | 67456    | 38.573738 | -97.671070  |
| Midland                                  | 1941 Diagonal Road Rear     | Midland     | Osage      | KS    | 66046    | 39.027608 | -95.239823  |
| Farmland Foods, Inc.                     | 2323 S. Sheridan            | Wichita     | Osborne    | KS    | 67213    | 37.651950 | -97.381912  |
| Frontier El Dorado Refining LLC          | 1401 South Douglas Road     | El Dorado   | Osborne    | KS    | 67042    | 37.799722 | -96.866667  |
| Mgp Ingredients, Inc.                    | 1300 Main Street            | Atchison    | Osborne    | KS    | 66002    | 39.561000 | -95.133300  |



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| Facility Name                                | Address                         | City             | County       | State | Zip Code | Latitude  | Longitude   |
|--|---------------------------------|------------------|--------------|-------|----------|-----------|-------------|
| Mid-West Fertilizer, Inc. - Winchester       | 305 Walnut                      | Winchester       | Osborne      | KS    | 66097    | 39.322466 | -95.263049  |
| The Dodge City Coop Exchange - Ford          | 12th And Prairie Streets        | Ford             | Osborne      | KS    | 67842    | 37.632285 | -99.750180  |
| The Dodge City Coop Exchange - Ingalls South | 15102 11 Rd                     | Ingalls          | Osborne      | KS    | 67853    | 37.794800 | -100.468956 |
| The Hillshire Brands Company                 | 4612 Speaker Road               | Kansas City      | Osborne      | KS    | 66106    | 39.095751 | -94.684573  |
| Agchoice - Osage City                        | 426 North Third                 | Osage City       | Ottawa       | KS    | 66523    | 38.637935 | -95.831124  |
| Associated Wholesale Grocers, Inc.           | 5000 Kansas Avenue              | Kansas City      | Ottawa       | KS    | 66106    | 39.091222 | -94.691417  |
| Brownell - NH3 Plant                         | Highway 4 & Broadway            | Brownell         | Pawnee       | KS    | 67521    | 38.638667 | -99.743333  |
| Goodland, KS 683 (West)                      | 1723 Wyoming                    | Goodland         | Pawnee       | KS    | 67735    | 39.340694 | -101.725082 |
| Pawnee County Cooperative-Dartmouth Branch   | 650 East Barton Co. Rd.         | Great Bend       | Pawnee       | KS    | 67530    | 38.363344 | -98.655471  |
| Sublette, KS 668 Satellite                   | Plymell Road And County Road 15 | Sublette         | Pawnee       | KS    | 67846    | 37.810189 | -100.834874 |
| The Dodge City Coop Exchange - Gray          | Highway 156                     | Hanston          | Pawnee       | KS    | 67523    | 38.158802 | -99.642842  |
| Water Treatment Plant                        | 1815 W Pine St,                 | Wichita          | Pawnee       | KS    | 67203    | 37.695620 | -97.361854  |
| Ag Service Inc.                              | 1830 Kanza                      | Hillsboro        | Phillips     | KS    | 67063    | 38.337744 | -97.169139  |
| Benton                                       | 2000 Sw Meadowlark Road         | Benton           | Phillips     | KS    | 67017    | 37.788951 | -97.118598  |
| Cooperative Grain & Supply - Crop Production | 121 Santa Fe St.                | Hillsboro        | Phillips     | KS    | 67063    | 38.359528 | -97.185194  |
| Cooperative Grain & Supply - Marion          | 320 S. Third                    | Marion           | Phillips     | KS    | 66861    | 38.344874 | -97.018964  |
| Danisco Usa Inc.                             | 201 New Century Parkway         | New Century      | Phillips     | KS    | 66031    | 38.836111 | -94.898611  |
| Little River, KS 5555 Satellite              | 1090 Main Street                | Little River     | Phillips     | KS    | 67457    | 38.392307 | -98.016464  |
| National Cooperative Refinery Association    | 1391 Iron Horse Road            | Mcpherson        | Phillips     | KS    | 67460    | 38.346806 | -97.671361  |
| United Suppliers, Inc--Salina Ks             | 2461 Centenial                  | Salina           | Phillips     | KS    | 67401    | 38.796639 | -97.633583  |
| Agchoice - Hepler                            | 600 4th St.                     | Hepler           | Pottawatomie | KS    | 66746    | 37.663889 | -94.970833  |
| Danville Coop Association (Freeport Branch)  | 102 East First Box 236          | Freeport         | Pottawatomie | KS    | 67049    | 37.197018 | -97.857796  |
| Mid-West Fertilizer, Inc. - Chanute          | 1971 South Country Club Rd      | Chanute          | Pottawatomie | KS    | 66720    | 37.661622 | -95.489458  |
| National Cooperative Refinery Association    | 775 Landmark Lane               | Mcpherson        | Pottawatomie | KS    | 67460    | 38.369028 | -97.782778  |
| Schwan's Global Supply Chain, Inc.           | 3019 Scanlan Avenue             | Salina           | Pottawatomie | KS    | 67401    | 38.783611 | -97.635556  |
| Tyson Prepared Foods - South Hutchinson, KS  | 9 North Washington Street       | South Hutchinson | Pottawatomie | KS    | 67505    | 38.029345 | -97.942749  |
| United Suppliers, Inc -Cimarron Ks           | 19405 East Highway 50           | Cimarron         | Pottawatomie | KS    | 67835    | 37.802778 | -100.316972 |
| Ellsworth Coop                               | P.O.Box 397                     | Ellsworth        | Pratt        | KS    | 67439    | 38.730345 | -98.235903  |
| Frontier Ag Inc - Menlo                      | 100 N. 5th                      | Menlo            | Pratt        | KS    | 67753    | 39.354355 | -100.724051 |
| Frontier Ag Inc - Oakley                     | 1195 Albert                     | Oakley           | Pratt        | KS    | 67748    | 39.123859 | -100.866633 |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                                 | Address                            | City          | County   | State | Zip Code | Latitude  | Longitude   |
|---|------------------------------------|---------------|----------|-------|----------|-----------|-------------|
| Frontier Ag Inc - Quinter                     | 7085 Highway 40                    | Quinter       | Pratt    | KS    | 67752    | 39.074848 | -100.243495 |
| Frontier Ag Inc - Quinter South Plant         | 6248 County Rd G                   | Quinter       | Pratt    | KS    | 67752    | 38.786017 | -100.327857 |
| Frontier Ag Inc - Seguin                      | Rr 2 Box 71a - Seguin              | Hoxie         | Pratt    | KS    | 67740    | 39.291965 | -100.621401 |
| Frontier Ag Inc - Studley                     | Highway 24                         | Studley       | Pratt    | KS    | 67740    | 39.354287 | -100.163099 |
| Hartford, KS Satellite                        | Road Y5                            | Hartford      | Pratt    | KS    | 66854    | 38.300198 | -95.958331  |
| Holyrood NH3 Plant                            | 200 E. Sante Fe                    | Holyrood      | Pratt    | KS    | 67450    | 38.588955 | -98.403985  |
| Junction City - Armour Eckrich Meats, LLC     | 1920 Lacy Drive                    | Junction City | Pratt    | KS    | 66441    | 39.002258 | -96.866585  |
| Frontier Ag Inc - Mingo                       | 116 Minser - Mingo                 | Colby         | Rawlins  | KS    | 67701    | 39.276189 | -100.960109 |
| Occidental Chemical Corporation               | 6200 S. Ridge Rd.                  | Wichita       | Rawlins  | KS    | 67215    | 37.581667 | -97.425278  |
| Reser's Fine Foods, Inc. - Topeka Salad Plant | 3167 Se 10th Street                | Topeka        | Rawlins  | KS    | 66607    | 39.036944 | -95.635806  |
| Bushton Gas Plant                             | 777 Avenue Y                       | Bushton       | Reno     | KS    | 67427    | 38.522073 | -98.353109  |
| Evonik Jayhawk Fine Chemicals                 | 8545 Se Jayhawk Drive              | Galena        | Reno     | KS    | 66739    | 37.118611 | -94.676944  |
| Frontier Ag Inc - Breton                      | 3179 Us 83 - Breton                | Rexford       | Reno     | KS    | 67753    | 39.449571 | -100.815354 |
| Frontier Ag Inc - Grinnell                    | Us 40                              | Grinnell      | Reno     | KS    | 67738    | 39.118515 | -100.629036 |
| Frontier Ag Inc - Page City                   | 1860 U.S. Hwy 40 - Page City       | Winona        | Reno     | KS    | 67764    | 39.087675 | -101.154155 |
| Kanza Coop, Byers Branch                      | 1 M. North, 2 M. West of Byers, Ks | Byers         | Reno     | KS    | 67021    | 37.805194 | -98.904500  |
| Kanza Coop, Dillwyn Branch                    | Rt. 1                              | Macksville    | Reno     | KS    | 67557    | 37.971537 | -98.881013  |
| Kanza Coop, Randle Branch                     | 17 Sw 40th Street                  | Pratt         | Reno     | KS    | 67124    | 37.586389 | -98.740000  |
| Lehigh  | 111 West Main                      | Lehigh        | Reno     | KS    | 67073    | 38.372024 | -97.303256  |
| National Beef Packing Co., LLC, Dodge City    | 2000 East Trail Street             | Dodge City    | Reno     | KS    | 67801    | 37.748000 | -99.984806  |
| National Beef Packing Company, LLC, Liberal   | 1501 E. 8th Street                 | Liberal       | Reno     | KS    | 67901    | 37.052611 | -100.899500 |
| Offerle Coop (Bellefont)                      | 10275 Commercial Ave.              | Bellefont     | Reno     | KS    | 67876    | 37.873307 | -99.658921  |
| Offerle Coop (Bucklin)                        | 610 N. Seacat                      | Bucklin       | Reno     | KS    | 67834    | 37.552642 | -99.634168  |
| Offerle Coop (Offerle)                        | Elm Street, Po Box 90              | Offerle       | Reno     | KS    | 67563    | 37.890161 | -99.554599  |
| Offerle Coop (Rich)                           | Route 1                            | Ashland       | Reno     | KS    | 67831    | 37.336916 | -99.632584  |
| Offerle Coop (Strecker)                       | Route 2                            | Kinsley       | Reno     | KS    | 67547    | 37.978547 | -99.642439  |
| Offerle Coop (Tieben)                         | Tieben Plant                       | Spearville    | Reno     | KS    | 67876    | 37.733210 | -99.638395  |
| Praxair - Dodge City, KS                      | 11547 Highway 50                   | Wright        | Reno     | KS    | 67882    | 37.778820 | -99.933784  |
| St Francis Mercantile - NH3 Plant             | 12 Mi on CR 14 & 1 Mi. W. On Cr C  | St. Francis   | Reno     | KS    | 67756    | 39.597891 | -101.826870 |
| Air Products Manufacturing Corporation        | 6601 South Ridge Rd                | Haysville     | Republic | KS    | 67060    | 37.574167 | -97.426111  |

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|--|-------------------------------------|----------------|----------|-------|----------|-----------|-------------|
| Chemstar Products Company                  | 503 West Hayes                      | Mcpherson      | Republic | KS    | 67460    | 38.364829 | -97.673269  |
| City of Chanute Water Treatment Plant      | 900 South Katy                      | Chanute        | Republic | KS    | 66720    | 37.671944 | -95.442778  |
| Farmers Cooperative Union (Geneseo, KS)    | 803 South Main                      | Geneseo        | Republic | KS    | 67444    | 38.521944 | -98.161250  |
| Farmers Cooperative Union (Lorraine, KS)   | 101 South Main                      | Lorraine       | Republic | KS    | 67459    | 38.566250 | -98.316250  |
| Russell NH3 Plant                          | 1.5 Miles N. Hwy 281                | Russell        | Republic | KS    | 67665    | 38.912975 | -98.854113  |
| St Francis Mercantile - In Town Plant      | 123 North River                     | St. Francis    | Republic | KS    | 67756    | 39.777097 | -101.804906 |
| The Fuller Brush Company                   | One Fuller Way                      | Great Bend     | Republic | KS    | 67530    | 38.358056 | -98.850833  |
| Tyson Prepared Foods - Hutchinson, Ks      | 521 South Main                      | Hutchinson     | Republic | KS    | 67501    | 38.045078 | -97.933212  |
| Bartlett Cooperative Association           | 401 Main                            | Bartlett       | Rice     | KS    | 67332    | 37.054444 | -95.209167  |
| Chs Inc - Flying V                         | 695 Kansas Co Rd                    | Sharon Springs | Rice     | KS    | 67758    | 38.783056 | -101.743333 |
| Chs Inc - Kanco                            | West Highway 96 And Rd 2            | Kanco          | Rice     | KS    | 67879    | 38.471796 | -102.009019 |
| Chs Inc - North Plant                      | 1594 K27 And Road D                 | Tribune        | Rice     | KS    | 67879    | 38.654444 | -101.753056 |
| Coffeyville Resources Refining & Marketing | 400 North Linden Street             | Coffeyville    | Rice     | KS    | 67337    | 37.050556 | -95.602222  |
| Dorrance NH3 Plant                         | 601 K-231 Highway                   | Dorrance       | Rice     | KS    | 67634    | 38.846587 | -98.584836  |
| Grainfield, KS Satellite                   | 218 East Front Street               | Grainfield     | Rice     | KS    | 67737    | 39.110276 | -100.462500 |
| Junction City Water Treatment Plant        | 2101 N. Jackson St., P.O.Box 686    | Junction City  | Rice     | KS    | 66441    | 39.045666 | -96.837772  |
| NCCA - Wamego                              | 18090 Military Trail Road           | Wamego         | Rice     | KS    | 66547    | 39.202556 | -96.295417  |
| Pittsburg, Kansas Water Treatment Plan     | 602 South Free Kings Highway        | Pittsburg      | Rice     | KS    | 66762    | 37.402500 | -94.670278  |
| Poole Chemical - Holcomb, Ks               | 200 W. Railroad Avenue              | Holcomb        | Rice     | KS    | 67851    | 37.986111 | -100.991667 |
| The Procter & Gamble Manufacturing Company | 1900 Kansas Avenue                  | Kansas City    | Rice     | KS    | 66105    | 39.089722 | -94.653889  |
| Water Plant #1                             | 1220 N 2nd St.                      | Leavenworth    | Rice     | KS    | 66048    | 39.330556 | -94.912778  |
| Friend Terminal L.L.C.                     | 401 West Road 10                    | Scott City     | Riley    | KS    | 67871    | 38.278060 | -100.912670 |
| CHS Inc - Selkirk                          | 500 K96 And Road C                  | Selkirk        | Rooks    | KS    | 67861    | 38.473889 | -101.538889 |
| CHS Inc - Tribune                          | Tribune Trail South                 | Tribune        | Rooks    | KS    | 67879    | 38.458798 | -101.757794 |
| Hoxie, KS 5523                             | Route 1, 3 Miles West Highway 24    | Hoxie          | Rooks    | KS    | 67740    | 39.379833 | -100.486361 |
| Mcgraw Fertilizer Service Inc.             | 21742 207th Street, Box 464         | Tonganoxie     | Rooks    | KS    | 66086    | 39.168035 | -95.058866  |
| NCCA-Corning                               | 754 State Hwy 63                    | Corning        | Rooks    | KS    | 66417    | 39.661194 | -96.032639  |
| Seguin, KS 5523 Satellite                  | East of Rd 100 West and Rd 50 South | Seguin         | Rooks    | KS    | 67753    | 39.337500 | -100.594444 |
| City of El Dorado Water Treatment Facility | 380 East Central                    | El Dorado      | Rush     | KS    | 67042    | 37.818302 | -96.844765  |
| Manhattan                                  | 3384 Excel Road                     | Manhattan      | Rush     | KS    | 66502    | 39.192278 | -96.504278  |

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| Facility Name                                   | Address                           | City          | County   | State | Zip Code | Latitude  | Longitude   |
|---|-----------------------------------|---------------|----------|-------|----------|-----------|-------------|
| Muscotah NH3                                    | South Shawnee St.                 | Muscotah      | Rush     | KS    | 66058    | 39.549639 | -95.523139  |
| Onaga   | 401 Oak Drive                     | Onaga         | Rush     | KS    | 66521    | 39.480306 | -96.175028  |
| Ottawa Coop                                     | 521 N. Locust                     | Ottawa        | Rush     | KS    | 66067    | 38.625000 | -95.271944  |
| Ottawa Water Treatment Plant                    | 301 Beech                         | Ottawa        | Rush     | KS    | 66067    | 38.613659 | -95.280375  |
| Stafford County Flour Mills Company             | 108 S Church Street               | Hudson        | Rush     | KS    | 67545    | 38.102810 | -98.658700  |
| Systech Environmental Corporation               | 1420 South Cement Road            | Fredonia      | Rush     | KS    | 66736    | 37.508064 | -95.823967  |
| Ag Partners Cooperative, Inc. - Denton          | 404 Locust                        | Denton        | Russell  | KS    | 66017    | 39.732778 | -95.268333  |
| Americold, Garden City - Plant # 78407          | 2007 W. Mary St.                  | Garden City   | Russell  | KS    | 67846    | 37.990505 | -100.894159 |
| Americold, Wichita # 75113                      | 2707 N. Mead                      | Wichita       | Russell  | KS    | 67219    | 37.732393 | -97.328266  |
| City of Hays Wastewater Treatment Plant         | 1498 E. Highway 40 Bypass         | Hays          | Russell  | KS    | 67601    | 38.860639 | -99.312417  |
| Mankato Elevator                                | 901 North Commercial              | Mankato       | Russell  | KS    | 66956    | 39.795941 | -98.208901  |
| Mid-West Fertilizer, Inc. - Thayer              | 4151 80th Road                    | Thayer        | Russell  | KS    | 66776    | 37.483860 | -95.468218  |
| Producers Cooperative Association-Girard        | 164 W. 140th Ave                  | Girard        | Russell  | KS    | 66743    | 37.547151 | -94.851248  |
| Silica Grain Lc                                 | 1270 2nd Rd                       | Ellinwood     | Russell  | KS    | 67526    | 38.351278 | -98.461444  |
| Tessengerlo Kerley, Inc. - Coffeyville Facility | 515 N. Laurel St.                 | Coffeyville   | Russell  | KS    | 67337    | 37.048587 | -95.611253  |
| Williams NG Liquids Conway Fractionator         | 1407 Fifth Avenue                 | Mcperson      | Russell  | KS    | 67460    | 38.377500 | -97.833056  |
| Coffeyville Resources Nitrogen Fertilizers      | 701 East Martin Street            | Coffeyville   | Saline   | KS    | 67337    | 37.046472 | -95.600750  |
| Creekstone Farms Premium Beef, LLC              | 604 W Goff St                     | Arkansas City | Saline   | KS    | 67005    | 37.103600 | -97.046100  |
| Great Bend Coop-Radium Branch                   | Rural Route 2, Box 149            | Radium        | Saline   | KS    | 67550    | 38.174871 | -98.898119  |
| Silver Lake, KS                                 | 2620 Huxman Road                  | Silver Lake   | Saline   | KS    | 66519    | 39.097222 | -95.797222  |
| Spivey Gas Plant                                | 1500 Nw 100th Avenue              | Harper        | Saline   | KS    | 67058    | 37.371284 | -98.219974  |
| Frontier Ag Inc - Utica                         | 406 South Jackson, Highway 4      | Utica         | Scott    | KS    | 67584    | 38.640000 | -100.174167 |
| Golden Valley, Inc. - Burdett                   | 302 Locust                        | Burdett       | Scott    | KS    | 67523    | 38.191890 | -99.524950  |
| Golden Valley, Inc. - Rozel                     | 101 Santa Fe                      | Rozel         | Scott    | KS    | 67574    | 38.193770 | -99.400232  |
| Hiawatha, KS                                    | 1803 Oregon Street                | Hiawatha      | Scott    | KS    | 66434    | 39.850228 | -95.555747  |
| Robinson, KS                                    | 1299 Ashpoint Road                | Robinson      | Scott    | KS    | 66532    | 39.798023 | -95.325590  |
| Rossville, KS Satellite                         | 5734 Northwest Bailey Road        | Rossville     | Scott    | KS    | 66533    | 39.150074 | -95.979622  |
| White Cloud, KS                                 | 101 Highway 7                     | White Cloud   | Scott    | KS    | 66094    | 39.976767 | -95.291814  |
| Airosol Co. Inc.                                | 1206 Illinois Street              | Neodesha      | Sedgwick | KS    | 66757    | 37.421667 | -95.687500  |
| Beaver Grain, Inc. (North)                      | Steve Majors, Northeast 60th Ave. | Beaver        | Sedgwick | KS    | 67525    | 38.651804 | -98.664528  |

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|--|-------------------------------------|-------------|----------|-------|----------|-----------|-------------|
| Blackwolf NH3 Plant                              | 876 8th Road                        | Blackwolf   | Sedgwick | KS    | 67490    | 38.758854 | -98.362352  |
| Cuba NH3 # 2                                     | 508 Bedford                         | Cuba        | Sedgwick | KS    | 66940    | 39.803300 | -97.456270  |
| Downs, KS 5537 Satellite                         | East Commercial Street              | Downs       | Sedgwick | KS    | 67437    | 39.501917 | -98.538500  |
| DPC Enterprises, L.P.                            | 3105 North Mead Street              | Wichita     | Sedgwick | KS    | 67214    | 37.740600 | -97.329200  |
| Esbon Grain & Fertilizer, Inc.                   | 520 Depot                           | Esbon       | Sedgwick | KS    | 66941    | 39.821039 | -98.433856  |
| Holton NH3                                       | K-116 & V. Road, 16795 K116         | Holton      | Sedgwick | KS    | 66436    | 39.461290 | -95.645480  |
| Hutchinson Storage Facility                      | 2610 South Mohawk Road              | Hutchinson  | Sedgwick | KS    | 67501    | 38.021500 | -97.992861  |
| Lincoln, Walker Products Trailer Staging         | 414 South 6th Street                | Lincoln     | Sedgwick | KS    | 67455    | 39.036583 | -98.152639  |
| Mid-West Fertilizer, Inc. - Iola                 | 713 North Industrial Road           | Iola        | Sedgwick | KS    | 66749    | 37.928333 | -95.410000  |
| Morrill NH3                                      | 270 & Coyote Rd.                    | Morrill     | Sedgwick | KS    | 66515    | 39.899001 | -95.714910  |
| Morrowville, KS Satellite 5209                   | 409 East Railway                    | Morrowville | Sedgwick | KS    | 66958    | 39.847083 | -97.169125  |
| NCCA - Centralia                                 | South 4th St.                       | Centralia   | Sedgwick | KS    | 66415    | 39.722139 | -96.130528  |
| Nearman Water Treatment Plant                    | 4301 Brenner Road                   | Kansas City | Sedgwick | KS    | 66104    | 39.162611 | -94.706056  |
| Rsa Microtech LLC                                | 510 East Trail Street               | Dodge City  | Sedgwick | KS    | 67801    | 37.750944 | -100.011389 |
| Russell - Nurse Tank Location                    | 10th & Fossil                       | Russell     | Sedgwick | KS    | 67665    | 38.895095 | -98.854810  |
| Russell Stover Candies, Inc. Abilene, Kansas     | 1993 Caramel Blvd.                  | Abilene     | Sedgwick | KS    | 67410    | 38.933900 | -97.252900  |
| Sysco Kansas City, Inc.                          | 1915 Kansas City Road               | Olathe      | Sedgwick | KS    | 66051    | 38.901333 | -94.787083  |
| Valley Grain And Fertilizer Co., Inc.            | 409 Main Street                     | Everest     | Sedgwick | KS    | 66424    | 39.676608 | -95.423090  |
| Beachner Grain, Inc. - Nv                        | 15050 Hwy 47                        | Erie        | Seward   | KS    | 66733    | 37.515667 | -95.269778  |
| CFS West Holdings, Inc.                          | 101 Prairie Village Drive           | New Century | Seward   | KS    | 66031    | 38.826944 | -94.901944  |
| Lebanon Elevator - South Plant                   | South Highway 281 - South Plant     | Lebanon     | Seward   | KS    | 66952    | 39.803295 | -98.559497  |
| Luray Elevator - West Plant                      | West K-18 Highway                   | Luray       | Seward   | KS    | 67649    | 39.117500 | -98.699167  |
| Mankato Elevator - West Plant                    | West Highway 36                     | Mankato     | Seward   | KS    | 66956    | 39.785879 | -98.230331  |
| Osborne Elevator - West Plant                    | 1251 West Highway 24                | Osborne     | Seward   | KS    | 67473    | 39.451667 | -98.721944  |
| Russell Stover Candies, Inc. - Iola Kansas Plant | 1995 Marshmallow Lane               | Iola        | Seward   | KS    | 66749    | 37.941500 | -95.415400  |
| Tyson Foods Olathe, KS Distribution              | 20701 West 159th Street             | Olathe      | Seward   | KS    | 66062    | 38.836389 | -94.823611  |
| Bern NH3   | Intersection of Main St. & O" Road" | Bern        | Shawnee  | KS    | 66408    | 39.962278 | -95.978389  |
| Coffeyville, Kansas Water Treatment Plant        | North River Road                    | Coffeyville | Shawnee  | KS    | 67337    | 37.061276 | -95.635822  |
| East Morrill NH3                                 | 1974 260 St.                        | Hiawatha    | Shawnee  | KS    | 66434    | 39.886111 | -95.438056  |
| Goodland Simplot Grower Solutions                | 6425 Rd. 21                         | Goodland    | Shawnee  | KS    | 67735    | 39.339444 | -101.687972 |

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| Facility Name                              | Address                        | City           | County   | State | Zip Code | Latitude  | Longitude   |
|--|--------------------------------|----------------|----------|-------|----------|-----------|-------------|
| Halstead, KS 5549 Satellite                | 12625 North West 12th          | Halstead       | Shawnee  | KS    | 67056    | 38.057110 | -97.528750  |
| Huron, KS Satellite                        | 12730 334 Road                 | Huron          | Shawnee  | KS    | 66038    | 39.652332 | -95.285751  |
| The Dodge City Coop Exchange - Cimarron    | County Rd 19 & L               | Cimarron       | Shawnee  | KS    | 67835    | 37.842215 | -100.336779 |
| Troy, KS (Bendena)                         | 882 Highway 7                  | Troy           | Shawnee  | KS    | 66087    | 39.738194 | -95.143196  |
| U.S. Energy Partners, LLC DBA White Energy | 1224 East 15th Street          | Russell        | Shawnee  | KS    | 67665    | 38.898751 | -98.839936  |
| Waverly                                    | 2595 Trefoil Road              | Waverly        | Shawnee  | KS    | 66871    | 38.404600 | -95.599678  |
| Agchoice - Olpe                            | 1046 County Rd 80              | Olpe           | Sheridan | KS    | 66865    | 38.275278 | -96.181667  |
| Beloit, KS 5533                            | 424 East Elliot Street         | Beloit         | Sheridan | KS    | 67420    | 39.455570 | -98.090691  |
| Farmers Cooperative Company (Great Plains) | 30211 Nw 70th Ave              | Pratt          | Sheridan | KS    | 67124    | 37.694569 | -98.867257  |
| Farmers Coop Union (Claflin Nurse Tanks)   | 1097 N. E. 130 Ave.            | Claflin        | Sheridan | KS    | 67525    | 38.521500 | -98.536333  |
| Frontenac Kansas Plant 4                   | 1600 West Mckay Street         | Frontenac      | Sheridan | KS    | 66763    | 37.455175 | -94.722132  |
| Superior Deshler Inc. - Northbranch        | 2960 - 78- Rd, Northbranch     | Burr Oak       | Sheridan | KS    | 66936    | 39.984006 | -98.371218  |
| County Line                                | Se of NE 6-11-37               | Winona         | Sherman  | KS    | 67764    | 39.087673 | -101.154139 |
| Frontier Ag Inc - Office Staging Area      | East Hwy 36                    | Bird City      | Sherman  | KS    | 67731    | 39.756111 | -101.531667 |
| Frontier Ag Inc - Walden NH3 Facility      | Intersection County Rds 26 & D | Bird City      | Sherman  | KS    | 67731    | 39.610556 | -101.581111 |
| J&H Service                                | Kansas & Birch                 | Burr Oak       | Sherman  | KS    | 66936    | 39.865974 | -98.304879  |
| Lefty's Soil Service                       | 500 North Wichita Ave          | Dighton        | Sherman  | KS    | 67839    | 38.486898 | -100.463977 |
| National Cold Storage, Inc.                | 12755 Loring Drive, Po Box 356 | Bonner Springs | Sherman  | KS    | 66012    | 39.005589 | -94.925259  |
| Paradise Grain Co., Inc.                   | 102 E. Ave "E"                 | Paradise       | Sherman  | KS    | 67658    | 39.112778 | -98.915972  |
| Banner Creek LLC                           | 619 East 4th Street            | Holton         | Smith    | KS    | 66436    | 39.461853 | -95.727537  |
| Brubaker Fertilizer Incorporated           | 80255 S. E. 50th Avenue        | Sawyer         | Smith    | KS    | 67134    | 37.523023 | -98.647184  |
| Farmers Union Mercantile & Shipping Assoc. | Road 5 & J                     | Stockton       | Smith    | KS    | 67669    | 39.437152 | -99.529611  |
| Farmway Co-Op, Inc. Lincoln                | South First Street             | Lincoln        | Smith    | KS    | 67455    | 39.035489 | -98.143003  |
| Helena Chemical Company                    | 806 East State Hwy 9           | Centralia      | Smith    | KS    | 66415    | 39.725300 | -96.106682  |
| Independent Farm Services                  | 351 E 300 Rd                   | Overbrook      | Smith    | KS    | 66524    | 38.788965 | -95.446469  |
| Norway NH3                                 | 107 Nelson                     | Norway         | Smith    | KS    | 66961    | 39.694701 | -97.773437  |
| Western Plains Energy LLC                  | 3022 County Road 18            | Oakley         | Smith    | KS    | 67748    | 39.123333 | -100.736667 |
| Hugoton West Plant                         | 1580 West 10th Street          | Hugoton        | Stafford | KS    | 67951    | 37.173314 | -101.386911 |
| JB Pearl Sales & Service                   | 27425 W Hwy 24                 | St. Marys      | Stafford | KS    | 66536    | 39.195664 | -96.074706  |
| Louisburg Ammonia Plant                    | 10290 W271st                   | Louisburg      | Stafford | KS    | 66053    | 38.637182 | -94.703748  |



**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                              | Address                             | City         | County   | State | Zip Code | Latitude  | Longitude   |
|--|-------------------------------------|--------------|----------|-------|----------|-----------|-------------|
| Neis Farm's                                | 408 N. Locust                       | Eudora       | Stafford | KS    | 66025    | 38.950310 | -95.096282  |
| S&M Farms                                  | 5852 E 125th                        | Overbrook    | Stafford | KS    | 66524    | 38.842431 | -95.553736  |
| Conway Terminal & Storage                  | 1426 Fifth Avenue                   | Mcpherson    | Stanton  | KS    | 67460    | 38.380278 | -97.831111  |
| Enterprise Clay Center Terminal & Storage  | 2598 Navajo Road                    | Clay Center  | Stanton  | KS    | 67432    | 39.495218 | -97.126880  |
| Mcfs Conway Underground East               | 1299 8th Avenue                     | Mcpherson    | Stanton  | KS    | 67460    | 38.363889 | -97.776667  |
| Mcfs Conway West Underground               | 1426 5th Ave., Bldg 3               | Mcpherson    | Stanton  | KS    | 67460    | 38.380315 | -97.831139  |
| Mcfs Mitchell                              | 1145 23rd                           | Lyons        | Stanton  | KS    | 67554    | 38.376389 | -98.080833  |
| Bushton Fractionator & Underground Storage | 777 Avenue Y                        | Bushton      | Stevens  | KS    | 67427    | 38.522073 | -98.353109  |
| East Kansas Agri-Energy, LLC               | 1304 Main Street                    | Garnett      | Stevens  | KS    | 66032    | 38.271522 | -95.237414  |
| Kocher + Beck USA, L.P.                    | 15850 West 99th Street              | Lenexa       | Stevens  | KS    | 66219    | 38.949533 | -94.768987  |
| Lucas NH3 Plant East                       | 300 S. Harvest                      | Lucas        | Stevens  | KS    | 67648    | 39.053045 | -98.526510  |
| Nation Pizza Products, LP                  | 1144 Bridger Court                  | Mcpherson    | Stevens  | KS    | 67460    | 38.356922 | -97.684064  |
| Prairie Horizon Agri-Energy, LLC           | 1664 East 100 Road, Po Box 368      | Phillipsburg | Stevens  | KS    | 67661    | 39.761100 | -99.307200  |
| Reading, KS                                | 2080 Highway 56                     | Reading      | Stevens  | KS    | 66868    | 38.652781 | -95.989582  |
| Schwan's Logistics LLC                     | 3150 Centennial Rd                  | Salina       | Stevens  | KS    | 67401    | 38.781111 | -97.634444  |
| Sublette Cooperative, Inc. - West          | 1452-Ff Rd                          | Satanta      | Stevens  | KS    | 67870    | 37.540196 | -100.998353 |
| T & T Chemical, Inc.                       | 2554 County Road 76                 | Quinter      | Stevens  | KS    | 67752    | 39.053611 | -100.201389 |
| Tribune, KS 702 Satellite                  | 291 Road 21                         | Tribune      | Stevens  | KS    | 67879    | 38.656581 | -101.660061 |
| Arkalon Ethanol, LLC                       | 8664 Road P                         | Liberal      | Sumner   | KS    | 67901    | 37.110556 | -100.803611 |
| Bonanza Bioenergy, LLC                     | 2830 E. U.S. Highway 50             | Garden City  | Sumner   | KS    | 67846    | 37.958639 | -100.836000 |
| Concordia, KS 5531 Satellite (East)        | 601 Industrial Road                 | Concordia    | Sumner   | KS    | 66901    | 39.572582 | -97.630836  |
| Cuba NH3                                   | 100 South Baird                     | Cuba         | Sumner   | KS    | 66940    | 39.796200 | -97.457560  |
| Gaylord, KS 5550                           | 310 First Street                    | Gaylord      | Sumner   | KS    | 67368    | 39.644722 | -98.841393  |
| Hawkins Water Treatment Group - Kansas     | 1202 East 2nd Avenue                | Garnett      | Sumner   | KS    | 66032    | 38.284444 | -95.220000  |
| Kansas Ethanol, LLC                        | 1630 Avenue Q                       | Lyons        | Sumner   | KS    | 67554    | 38.284551 | -98.194397  |
| Lacygne Generating Station                 | 25166 East 2200 Road                | Lacygne      | Sumner   | KS    | 66040    | 38.348500 | -94.645400  |
| Lightcap Plant                             | Road 5 And Road S, Southeast Corner | Ulysses      | Sumner   | KS    | 67880    | 37.677553 | -101.198213 |
| Nesika Energy, LLC                         | 1020 70 Road                        | Scandia      | Sumner   | KS    | 66966    | 39.786396 | -97.821186  |
| Pikes Fertilizer Tank Storage              | 510 E. Orange                       | Girard       | Sumner   | KS    | 68743    | 37.504992 | -94.836733  |
| Water Plant #2                             | 982 N. Highway 5                    | Lansing      | Sumner   | KS    | 66043    | 39.266389 | -94.885556  |

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| Facility Name                                      | Address                          | City         | County     | State | Zip Code | Latitude  | Longitude   |
|--|----------------------------------|--------------|------------|-------|----------|-----------|-------------|
| Clay Center Terminal & Storage                     | 2598 Navajo Road                 | Clay Center  | Thomas     | KS    | 67432    | 39.495019 | -97.127596  |
| Farmway Co-Op, Inc. Glen Elder                     | 2121 F Road                      | Glen Elder   | Thomas     | KS    | 67446    | 39.496325 | -98.281597  |
| Hoxie, KS 5523 Satellite                           | North of Intersection 60n & 100e | Hoxie        | Thomas     | KS    | 67740    | 39.444193 | -100.255278 |
| Hutchinson Water Treatment Center                  | 803 W. 23rd                      | Hutchinson   | Thomas     | KS    | 67502    | 38.078972 | -97.913694  |
| JB Pearl - Lawrence Facility                       | 1685 E 1600 Rd                   | Lawrence     | Thomas     | KS    | 66044    | 38.983313 | -95.207733  |
| Mcperson, KS Satellite                             | 1055 Kiowa Road                  | Mcperson     | Thomas     | KS    | 67460    | 38.361176 | -97.729754  |
| Milepost   | 1591 S. Rd E.                    | Ulysses      | Thomas     | KS    | 67880    | 37.564539 | -101.457541 |
| Mulvane Cooperative Union - Rock                   | 401 Hornaday                     | Rock         | Thomas     | KS    | 67131    | 37.439583 | -97.008896  |
| Smith Center, KS 3901                              | 15092 190 Road                   | Smith Center | Thomas     | KS    | 66967    | 39.742964 | -98.787448  |
| Waterville, KS 5560                                | 430 South Colorado               | Waterville   | Thomas     | KS    | 66548    | 39.688215 | -96.754208  |
| Hi Plains Feed LLC                                 | 1650 N. Sherlock Rd.             | Garden City  | Wabaunsee  | KS    | 67846    | 37.976476 | -100.935752 |
| Tri-Rotor Crop Services LLC - Hugoton              | 1540 West 10th                   | Hugoton      | Wabaunsee  | KS    | 67951    | 37.173329 | -101.386821 |
| Mid-Continent Market Center, L.L.C.-Yaggy Facility | 4817 North Dean Road             | Hutchinson   | Wallace    | KS    | 67502    | 38.105454 | -98.033222  |
| Mid-West Fertilizer, Inc. - Oswego                 | 12062 Us Hwy 59                  | Oswego       | Wallace    | KS    | 67356    | 37.171900 | -95.127029  |
| Nustar Energy Lp - Mcpherson Station               | 1152 14th Ave.                   | Mcperson     | Wallace    | KS    | 67460    | 38.342322 | -97.667002  |
| Ag Service Inc Hesston                             | 9201 North Emma Creek Road       | Hesston      | Washington | KS    | 67062    | 38.153903 | -97.445479  |
| Dighton North                                      | 171 N. Hwy 23                    | Dighton      | Washington | KS    | 67839    | 38.511295 | -100.467867 |
| Eif Kc Landfill Gas, LLC                           | 17955 Holliday Dr                | Shawnee      | Washington | KS    | 66217    | 39.033180 | -94.804747  |
| G+ Ag Inc  | 1114 Road A                      | Hugoton      | Washington | KS    | 67951    | 36.998026 | -101.372268 |
| Harveyville Seed Co., Inc                          | 100 Main St., P.O. Box 8         | Harveyville  | Washington | KS    | 66431    | 38.793312 | -95.961055  |
| Kanza Cooperative Association - Iuka Plant         | 50132 N. Highway 281             | Iuka         | Washington | KS    | 67066    | 37.722822 | -98.737153  |
| Kingman Gas Plant                                  | 13433 NE 10th Street             | Cheney       | Washington | KS    | 67025    | 37.660205 | -97.872533  |
| Mid-West Fertilizer, Inc. - Iola West              | 506 West Lincoln                 | Iola         | Washington | KS    | 66749    | 37.928500 | -95.414694  |
| Oskaloosa, Ks                                      | 10152 Us 59 Highway              | Oskaloosa    | Washington | KS    | 66066    | 39.229759 | -95.310052  |
| Rooney Plant                                       | Road 26 And Road F               | Satanta      | Washington | KS    | 67870    | 37.355300 | -100.977930 |
| Scott City, KS 675 Satellite                       | 980 West Road 70                 | Scott City   | Washington | KS    | 67871    | 38.366593 | -100.924094 |
| Affiliated Foods Midwest Coop., Inc.               | 1301 Oak St.                     | Elwood       | Wichita    | KS    | 66024    | 39.753749 | -94.887040  |
| Poole Chemical - Oakley                            | 3013 Cr 4050                     | Oakley       | Wichita    | KS    | 67748    | 39.123625 | -100.837736 |
| Reser's Fine Foods. Inc. - Distribution Center     | 3121 Se 6th Avenue               | Topeka       | Wichita    | KS    | 66607    | 39.043962 | -95.635880  |
| Central Ag LLC                                     | 14436 Nw Hopkins Switch Rd       | Burns        | Wilson     | KS    | 66840    | 38.034800 | -96.931700  |



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| Facility Name                                  | Address                         | City            | County    | State | Zip Code | Latitude  | Longitude   |
|--|---------------------------------|-----------------|-----------|-------|----------|-----------|-------------|
| Compton NH3 Plant                              | 8990 N. Taos Road               | Scott City      | Wilson    | KS    | 67871    | 38.612877 | -100.760087 |
| Edwards Chemicals, Inc.                        | 1504 Roseport Road, Po Box 488  | Elwood          | Wilson    | KS    | 66024    | 39.747758 | -94.889479  |
| JB Pearl-Onaga Road Facility                   | 6005 Onaga Road                 | Wamego          | Wilson    | KS    | 66547    | 39.239021 | -96.230040  |
| Ag Partners Cooperative, Inc. - Willis NH3     | 1574 150th St.                  | Hiawatha        | Woodson   | KS    | 66434    | 39.722780 | -95.508086  |
| JB Pearl-Sandy Hook Facility                   | 6200 Nw Maple Hill Rd.          | St. Marys       | Woodson   | KS    | 66536    | 39.158211 | -96.027354  |
| Abengoa Bioenergy Biomass of Kansas, LLC       | 1043 Road P                     | Hugoton         | Wyandotte | KS    | 67951    | 37.181518 | -101.385012 |
| Ag Partners Cooperative, Inc. - Powhattan NH3  | 928 180th St.                   | Powhattan       | Wyandotte | KS    | 66527    | 39.769116 | -95.635291  |
| Clay Center, KS 5535                           | 1169 18th Road                  | Clay Center     | Wyandotte | KS    | 67432    | 39.329029 | -97.128693  |
| Concordia, KS 5531 Satellite                   | Vale Road And Highway 81        | Concordia       | Wyandotte | KS    | 66901    | 39.623433 | -97.660967  |
| Mars Chocolate North America, LLC              | 100 Mars Blvd                   | Topeka          | Wyandotte | KS    | 66619    | 38.932437 | -95.692600  |
| Preferred Ag Services Inc                      | 1 Mile W of 83 Hwy at Road 6    | Garden City     | Wyandotte | KS    | 67846    | 38.062976 | -100.910782 |
| Reno County Gas Processing Plant               | SE 1/4 Section 33, Twnshp 25 S  | Turon           | Wyandotte | KS    | 67583    | 37.825287 | -98.425052  |
| Spielman Fertilizer                            | 2611 254th Rd                   | Muscotah        | Wyandotte | KS    | 66058    | 39.499368 | -95.516935  |
| Talmage  | 3006 Fair Road                  | Talmage         | Wyandotte | KS    | 67482    | 39.032211 | -97.259321  |
| Goodland, KS (Industrial Street) 683 Satellite | 1402 West Industrial Street     | Goodland        |           | KS    | 67735    | 39.343763 | -101.730746 |
| Cameron Municipal Water Treatment Plant        | 1100 West Eighth Street         | Cameron         | Adair     | MO    | 64429    | 39.746583 | -94.251722  |
| Saint Charles, Mo                              | 24 Main Street                  | Saint Charles   | Adair     | MO    | 63301    | 38.878420 | -90.451323  |
| Air Products, Hannibal                         | C/O Basf, Route 168 And Jj Spur | Palmyra         | Andrew    | MO    | 63461    | 39.834167 | -91.429722  |
| Cooperative Association # 130                  | 206 Bluff Street                | Rhineland       | Andrew    | MO    | 65069    | 38.718611 | -91.517778  |
| Ricketts Farm Service, Inc.                    | 29453 Jackson Ave               | Salisbury       | Andrew    | MO    | 65281    | 39.412109 | -92.864608  |
| Agriservices of Brunswick, LLC. - Agland       | 118 E. Helm St.                 | Brookfield      | Atchison  | MO    | 64628    | 39.785306 | -93.071139  |
| Dyno Nobel, Inc. - Louisiana, Missouri Plant   | 11025 Highway D                 | Louisiana       | Atchison  | MO    | 63353    | 39.428333 | -91.032500  |
| General Mills - Joplin                         | 3007 Stephens Blvd              | Joplin          | Atchison  | MO    | 64804    | 37.056642 | -94.464935  |
| Meadville, Mo                                  | West John Street                | Meadville       | Atchison  | MO    | 64659    | 39.785028 | -93.304361  |
| Ricketts Farm Service, Inc.                    | 29394 Sterling Ave              | Salisbury       | Atchison  | MO    | 65281    | 39.411278 | -92.834667  |
| Salisbury Ag Center, Inc.                      | 303 N. Weber                    | Salisbury       | Atchison  | MO    | 65281    | 39.425944 | -92.798444  |
| Simmons Foods, Swcp                            | 10700 South State Hwy 43 N      | South West City | Atchison  | MO    | 64863    | 36.543611 | -94.598889  |
| Yocum Service Inc.                             | 203 East 2nd Street             | Mound City      | Atchison  | MO    | 64470    | 40.128839 | -95.228784  |
| Central Missouri Agriservice, LLC. - Marshall  | 211 N. Lyon St                  | Marshall        | Audrain   | MO    | 65340    | 39.123056 | -93.202222  |
| Hiland Dairy - Springfield, Mo                 | 1133 E. Kearney                 | Springfield     | Audrain   | MO    | 65803    | 37.241667 | -93.275274  |

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| Facility Name                               | Address                      | City            | County   | State | Zip Code | Latitude  | Longitude  |
|---|------------------------------|-----------------|----------|-------|----------|-----------|------------|
| Kennett, Mo                                 | 19303 Highway 25 North       | Kennett         | Audrain  | MO    | 63857    | 36.270861 | -90.032222 |
| MFA Agri Service - Marion County            | 6040 Hwy. 24                 | Hannibal        | Audrain  | MO    | 63401    | 39.728056 | -91.509444 |
| MFA Bulk Plant - Tipton                     | 74986 Hwy. 50                | Tipton          | Audrain  | MO    | 65081    | 38.668611 | -92.840556 |
| Pilot Grove Cooperative, Inc.               | 12302 Hwy 135                | Pilot Grove     | Audrain  | MO    | 65276    | 38.867841 | -92.917256 |
| Reichhold, Inc.                             | 249 St. Louis Avenue         | Valley Park     | Audrain  | MO    | 63088    | 38.550319 | -90.488365 |
| MFA Agri Service - Kahoka                   | Hwy. 136 E.                  | Kahoka          | Barry    | MO    | 63445    | 40.420833 | -91.703056 |
| MFA Agri Service - Norborne                 | 11791 Hwy. 10                | Norborne        | Barry    | MO    | 64668    | 39.263333 | -93.726944 |
| MFA Anhydrous Ammonia Plant - Laddonia      | Audrain Road 530             | Laddonia        | Barry    | MO    | 63352    | 39.244722 | -91.638056 |
| MFA Anhydrous Ammonia Plant                 | 314 South Missouri           | New Franklin    | Barry    | MO    | 65274    | 39.012778 | -92.737222 |
| MFA Bulk Plant - Vandalia                   | 800 W. Washington            | Vandalia        | Barry    | MO    | 63382    | 39.306944 | -91.494444 |
| Central Missouri Agriservice, LLC. - Slater | 227 Industrial Blvd          | Slater          | Barton   | MO    | 65349    | 39.217222 | -93.060833 |
| MFA Bulk Plant - Higginsville               | W. 24th Terrace              | Higginsville    | Barton   | MO    | 64037    | 39.070000 | -93.743333 |
| MFA Bulk Plant - Memphis                    | 362 South Ridge Street       | Memphis         | Barton   | MO    | 63555    | 40.454722 | -92.161944 |
| Sur-Gro Plant Food Co. Inc.-Maitland        | 31624 Holt 170               | Maitland        | Barton   | MO    | 64466    | 40.159167 | -95.114167 |
| Americold - St. Louis                       | 8501 Page Boulevard          | Vinita Park     | Bates    | MO    | 63114    | 38.687222 | -90.341667 |
| Ice Cream Specialties, Inc.- St. Louis      | 8419 Hanley Industrial Drive | Brentwood       | Bates    | MO    | 63144    | 38.625000 | -90.339444 |
| MFA Agri Service - Salisbury                | Front & Mill                 | Salisbury       | Bates    | MO    | 65281    | 39.424167 | -92.804167 |
| MFA Bulk Plant - Bosworth                   | 200 S. Kansas                | Bosworth        | Bates    | MO    | 64623    | 39.468889 | -93.333333 |
| MFA Bulk Plant - Shelbina                   | Hwy. 36 West                 | Shelbina        | Bates    | MO    | 63468    | 39.700833 | -92.073611 |
| Schafer Fertilizer, Inc. - Nurse Tanks      | # 4 Highway Aa               | Wellsville      | Bates    | MO    | 63348    | 39.082460 | -91.565770 |
| MFA Agri Service - Alma                     | 106 E. Collins               | Alma            | Benton   | MO    | 64001    | 39.095778 | -93.542778 |
| Central Missouri Agriservice, LLC.-Waverly  | 215 East Thomas Drive        | Waverly         | Boone    | MO    | 64096    | 39.213306 | -93.513194 |
| MFA Agri Service - Advance                  | 104 E. South Street          | Advance         | Boone    | MO    | 63730    | 37.103056 | -89.909444 |
| MFA Agri Service - Jefferson City           | 1009 4th Street              | Jefferson City  | Boone    | MO    | 65101    | 38.595278 | -92.175000 |
| MFA Bulk Plant - Montgomery City            | 335 Short Street             | Montgomery City | Boone    | MO    | 63361    | 38.963611 | -91.494722 |
| MFA Exchange B/P of Chamois-Morrison        | 312 E. Railroad St.          | Chamois         | Boone    | MO    | 65024    | 38.677222 | -91.766389 |
| Consumers Oil Company                       | 431 North Depot              | Maryville       | Buchanan | MO    | 64468    | 40.349480 | -94.854900 |
| Coop Association #2 Bulk Plant              | 110 West Link Drive          | Washington      | Buchanan | MO    | 63090    | 38.568056 | -91.053056 |
| MFA Agri Service - Chaffee                  | 1980 Cummins                 | Chaffee         | Buchanan | MO    | 63740    | 37.191111 | -89.675833 |
| MFA Agri Service - Elsberry                 | 402 N. Main St.              | Elsberry        | Buchanan | MO    | 63343    | 39.169600 | -90.781917 |

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| Facility Name                                  | Address                            | City           | County         | State | Zip Code | Latitude  | Longitude  |
|--|------------------------------------|----------------|----------------|-------|----------|-----------|------------|
| MFA Agri Service - Jackson                     | 1770 Lee Avenue                    | Jackson        | Buchanan       | MO    | 63755    | 37.366389 | -89.675000 |
| MFA Anhydrous Ammonia Plant - Lexington        | 10601 Highway 224                  | Lexington      | Buchanan       | MO    | 64067    | 39.174167 | -93.906389 |
| MFA Anhydrous Plant - Perryville               | 3501 South Hwy. 61                 | Perryville     | Buchanan       | MO    | 63775    | 37.696111 | -89.817778 |
| MFA Anhydrous Plant - Ste. Genevieve           | 8970 Little Rock Road              | Ste. Genevieve | Buchanan       | MO    | 63670    | 37.995556 | -90.051944 |
| MFA Bulk Fertilizer Plant - Wentzville         | 1016 Wilmer Road                   | Wentzville     | Buchanan       | MO    | 63385    | 38.807500 | -90.868056 |
| MFA Bulk Plant - Levasy                        | 36906 E. 24 Hwy.                   | Levasy         | Buchanan       | MO    | 64066    | 39.136389 | -94.146667 |
| Service And Supply Cooperative                 | 2727 Audrain Road 557              | Vandalia       | Buchanan       | MO    | 63382    | 39.296278 | -91.517806 |
| Service And Supply Cooperative                 | 22 Coop Avenue, Po Box 176         | New Florence   | Caldwell       | MO    | 63363    | 38.900750 | -91.449100 |
| Service And Supply Cooperative                 | 17107 Pike Road 488                | Bowling Green  | Caldwell       | MO    | 63334    | 39.342444 | -91.234472 |
| Allredge Feed & Seed, Inc.                     | 105 W. Railroad, P.O. Box 98       | Stanberry      | Callaway       | MO    | 64489    | 40.209740 | -94.537580 |
| Ray-Carroll County Grain Growers, Inc.         | 17149 Hwy 24                       | Brunswick      | Callaway       | MO    | 65236    | 39.431944 | -93.149167 |
| Service And Supply Cooperative                 | 1196 Hwy E, Po Box 48              | Bellflower     | Callaway       | MO    | 63333    | 39.018583 | -91.352972 |
| Ray-Carroll County Grain Growers, Inc.         | 26274 Hwy 24, Po Box 249           | Carrollton     | Cape Girardeau | MO    | 64633    | 39.366108 | -93.450780 |
| Ray-Carroll County Grain Growers, Inc., Hardin | 700 East Main Street               | Hardin         | Cape Girardeau | MO    | 64035    | 39.271111 | -93.825000 |
| Ray-Carroll County Grain Growers, Inc.         | 110 North Railroad                 | Mayview        | Cape Girardeau | MO    | 64071    | 39.053864 | -93.834928 |
| Ray-Carroll County Grain Growers, Inc.         | Sante Fe, Cunningham               | Norborne       | Cape Girardeau | MO    | 64668    | 39.304722 | -93.673611 |
| Ray-Carroll County Grain Growers, Inc          | 314 West Centre Street             | Sumner         | Cape Girardeau | MO    | 64681    | 39.656389 | -93.246389 |
| Ray-Carroll County Grain Growers, Inc.         | 30537 Co Rd 308 (Formerly Wakenda) | Carrollton     | Cape Girardeau | MO    | 64633    | 39.313333 | -93.375556 |
| Agriservices of Brunswick, LLC. - East         | Highway 24 East                    | Brunswick      | Carroll        | MO    | 65236    | 39.421188 | -93.116504 |
| Bleigh Farms, Inc.                             | 9037 Hwy 168                       | Palmyra        | Carroll        | MO    | 63461    | 39.776315 | -91.423025 |
| Chillicothe Municipal Utilities                | 1425 Waterworks Road               | Chillicothe    | Carroll        | MO    | 64601    | 39.783889 | -93.561111 |
| Kraft Foods Global Inc.                        | 2035 E. Bennett Street             | Springfield    | Carroll        | MO    | 65804    | 37.188889 | -93.256667 |
| Kraft Foods Group, Inc. - Columbia             | 4600 Waco Road                     | Columbia       | Carroll        | MO    | 65203    | 39.010000 | -92.270833 |
| MFA Agri Service - Benton                      | 11 MFA Road                        | Benton         | Carroll        | MO    | 63736    | 37.076827 | -89.516092 |
| MFA Agri Service - Carytown                    | 14677 County Rd. 138               | Carthage       | Carroll        | MO    | 64836    | 37.265240 | -94.308768 |
| MFA Agri Service - Ste. Genevieve              | 10940 Industrial Drive             | Ste. Genevieve | Carroll        | MO    | 63670    | 37.964722 | -90.060833 |
| Supervalu - St. Louis Distribution             | 7101 Hazelwood Ave                 | Berkeley       | Carroll        | MO    | 63134    | 38.766389 | -90.340667 |
| Americold - Sikeston                           | 2500 Rose Parkway                  | Sikeston       | Cass           | MO    | 63801    | 36.926666 | -89.620555 |
| Atlanta, Mo 443 Satellite                      | 30017 State Highway J              | Atlanta        | Cass           | MO    | 63530    | 39.920066 | -92.476271 |
| Conagra Foods                                  | 204 Vine Street                    | Macon          | Cass           | MO    | 63552    | 39.737337 | -92.470274 |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                                   | Address                            | City                | County   | State | Zip Code | Latitude  | Longitude  |
|---|------------------------------------|---------------------|----------|-------|----------|-----------|------------|
| Cook's Ham, Inc - Kansas City, Mo Facility      | 13825 Wyandotte                    | Kansas City         | Cass     | MO    | 64145    | 38.876937 | -94.596662 |
| Kirksville Water Treatment Plant                | 2300 W Potter Avenue               | Kirksville          | Cass     | MO    | 63501    | 40.214444 | -92.606667 |
| Shoal Creek Wastewater Treatment Facility       | 2860 Apricot Drive                 | Joplin              | Cass     | MO    | 64804    | 37.032500 | -94.589167 |
| Two Rivers FS, Inc. - Taylor                    | 614 Birch Lane                     | Taylor              | Cass     | MO    | 63471    | 39.925000 | -91.525556 |
| Conagra Frozen Foods                            | 200 Banquet Drive                  | Marshall            | Chariton | MO    | 65340    | 39.121667 | -93.198611 |
| Henry County Water Company WTP                  | 1101 Coal Creek Road               | Clinton             | Chariton | MO    | 64735    | 38.351389 | -93.755278 |
| Liter Fertilizer And Chemicals, Inc.            | 505 West Highway 19                | Center              | Chariton | MO    | 63436    | 39.507456 | -91.534045 |
| MFA Agri Service - Gallatin                     | 24395 Hwy. 6                       | Gallatin            | Chariton | MO    | 64640    | 39.930556 | -93.941111 |
| MFA Agri Service - Maryville                    | 221 N. Depot                       | Maryville           | Chariton | MO    | 64468    | 40.347778 | -94.855278 |
| MFA Agri Service - Sheridan                     | 103 East Jefferson                 | Sheridan            | Chariton | MO    | 64486    | 40.518611 | -94.611111 |
| MFA Agri Service - Trenton                      | 3031 Pleasant Plain                | Trenton             | Chariton | MO    | 64683    | 40.093889 | -93.613056 |
| Sur-Gro Plant Food Co. Inc.- Forest City        | 202 S. Walnut                      | Forest City         | Chariton | MO    | 64451    | 39.979722 | -95.191944 |
| Tanner Industries, Inc.                         | Rose Ave & Daniel Boone Drive      | Neosho              | Chariton | MO    | 64850    | 36.803056 | -94.387222 |
| MFA Agri Service - Conception Junction          | Main And Wabash                    | Conception Junction | Clark    | MO    | 64434    | 40.270278 | -94.692500 |
| MFA Agri Service - Laredo                       | 410 East 2nd Street                | Laredo              | Clark    | MO    | 64652    | 40.026944 | -93.442778 |
| Roberts Dairy - Kansas City, Mo                 | 3805 Emmanuel Cleaver II           | Kansas City         | Clark    | MO    | 64128    | 39.055349 | -94.519433 |
| MFA Agri Service - Albany                       | 408 South Birch                    | Albany              | Clay     | MO    | 64402    | 40.243889 | -94.341667 |
| MFA Agri Service - Guilford                     | 102 State Hwy M                    | Guilford            | Clay     | MO    | 64457    | 40.169167 | -94.738611 |
| MFA Bulk Fertilizer Plant - Brookfield          | 27635 Hwy. Ff                      | Brookfield          | Clay     | MO    | 64628    | 39.785278 | -93.129167 |
| MFA Bulk Plant - Fairfax                        | Hwy. 59                            | Fairfax             | Clay     | MO    | 64446    | 40.339945 | -95.396410 |
| Albaugh, Inc.                                   | 4900 Stockyard Expressway          | St. Joseph          | Clinton  | MO    | 64504    | 39.722600 | -94.870100 |
| MFA Agri Service - Fairfax                      | 26245 N. Hwy. 59                   | Fairfax             | Clinton  | MO    | 64446    | 40.339912 | -95.396395 |
| MFA Bulk Plant - Tindall                        | 700 Metcalf                        | Tindall             | Clinton  | MO    | 64683    | 40.159444 | -93.610833 |
| Trenton Municipal Utilities WTP                 | 1043 West Crowder Road, Po Box 108 | Trenton             | Clinton  | MO    | 64683    | 40.079444 | -93.632222 |
| MFA Agri Service - St. Joseph                   | 2715 South 6th Street              | St. Joseph          | Cooper   | MO    | 64501    | 39.737778 | -94.851944 |
| Tyson Foods, Inc. Monett, Mo.                   | 800 County Rd.                     | Monett              | Cooper   | MO    | 65708    | 36.918611 | -93.913611 |
| Tyson Foods, Inc. Noel, Mo.                     | One Tyson Ave.                     | Noel                | Cooper   | MO    | 64854    | 36.553611 | -94.490556 |
| Tyson Foods, Inc. Sedalia, Mo. Processing Plant | 19571 Whitfield Rd.                | Sedalia             | Cooper   | MO    | 65301    | 38.748889 | -93.321389 |
| Anheuser-Busch – St. Louis Brewery              | One Busch Place, 137-1             | St. Louis           | Daviess  | MO    | 63118    | 38.596064 | -90.212888 |
| Carthage Water And Electric                     | 300 S. River                       | Carthage            | Daviess  | MO    | 64836    | 37.175833 | -94.299444 |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                               | Address                        | City         | County   | State | Zip Code | Latitude  | Longitude  |
|---|--------------------------------|--------------|----------|-------|----------|-----------|------------|
| Courtney Bend Water Treatment Plant         | 14700 Cement City Rd.          | Sugar Creek  | Dekalb   | MO    | 64058    | 39.158333 | -94.400556 |
| Good Humor Corporation Sikeston North       | 2400 Rose Parkway              | Sikeston     | Dekalb   | MO    | 63801    | 36.924919 | -89.620337 |
| Tyson Foods, Inc. Dexter, Mo.               | 1001 East Stoddard, Po Box 547 | Dexter       | Dunklin  | MO    | 63841    | 36.793306 | -89.944917 |
| C.P.W.S.D. # 2 of Ray County                | 7906 Highway O                 | Orrick       | Franklin | MO    | 64077    | 39.234722 | -94.137500 |
| Faultless Starch/Bon Ami Company            | 1025 W. 8th Street             | Kansas City  | Franklin | MO    | 64101    | 39.105459 | -94.595847 |
| George's, Inc. Processing Plant             | 9066 State Hwy W"              | Butterfield  | Franklin | MO    | 65623    | 36.745833 | -93.921667 |
| Helena Chemical Company - Wyaconda, Mo      | 121 E. Jefferson               | Wyaconda     | Franklin | MO    | 63474    | 40.401800 | -91.916178 |
| Meadows Water Treatment Plant               | 3718 Fall Creek Road           | Branson      | Franklin | MO    | 65616    | 36.622500 | -93.256389 |
| MFA Agri Service - Martinsburg              | 15778 Audrain Road 741         | Martinsburg  | Franklin | MO    | 65264    | 39.107778 | -91.668889 |
| Ag Coop Services, Inc                       | 18860 Highway 87 East          | Boonville    | Gentry   | MO    | 65233    | 38.957500 | -92.717222 |
| Ag Coop Services, Inc                       | 2420 Clinton Rd                | Sedalia      | Gentry   | MO    | 65301    | 38.690278 | -93.243333 |
| Kansas City Foam                            | 555 Nw Platte Valley Dr        | Riverside    | Gentry   | MO    | 64150    | 39.171308 | -94.631680 |
| MFA Agri Service - Mexico                   | 2816 East Liberty              | Mexico       | Gentry   | MO    | 65265    | 39.159528 | -91.843833 |
| Woodbridge Corporation - St. Peters         | 11 Cermak Blvd.                | St. Peters   | Gentry   | MO    | 63376    | 38.808212 | -90.646287 |
| Adm Milling Company                         | 5020 Shreve Ave.               | St. Louis    | Greene   | MO    | 63115    | 38.684167 | -90.236944 |
| Heiman Inc.                                 | Third & Vernon                 | Rockville    | Greene   | MO    | 64780    | 38.071806 | -94.079278 |
| Helena Chemical Company - Memphis, Mo       | Rural Route 2, Box 27h         | Memphis      | Greene   | MO    | 63555    | 40.499769 | -92.161764 |
| Old Monroe Elevator And Supply Company      | 263 North Main Street, Box 215 | Old Monroe   | Greene   | MO    | 63369    | 38.935798 | -90.748917 |
| SFI - Carthage Plant                        | 127 Claxton Street             | Carthage     | Greene   | MO    | 64836    | 37.184056 | -94.311611 |
| SFI - Clinton Plant                         | 935 Nusbaum Street             | Clinton      | Greene   | MO    | 64735    | 38.387222 | -93.760556 |
| SFI - Monett Plant                          | 10 Dairy Street                | Monett       | Greene   | MO    | 65708    | 36.916389 | -93.926611 |
| SFI - Mt. Vernon Plant                      | 108 West North Street          | Mount Vernon | Greene   | MO    | 65712    | 37.105194 | -93.821444 |
| The Dow Chemical Company                    | 500 Dow Industrial Drive       | Pevely       | Greene   | MO    | 63070    | 38.283620 | -90.390530 |
| BCP Ingredients Incorporated                | 299 Extension Street           | Verona       | Grundy   | MO    | 65769    | 36.962822 | -93.798237 |
| Compton Drive Wastewater Treatment Plant    | 601 Compton Drive              | Branson      | Grundy   | MO    | 65616    | 36.658611 | -93.215833 |
| Crowder Wastewater Plant                    | 675 Radio Rd.                  | Neosho       | Grundy   | MO    | 64850    | 36.815668 | -94.380229 |
| Water Filtration Plant                      | 15318 Kentucky Rd.             | Neosho       | Grundy   | MO    | 64850    | 36.892943 | -94.373602 |
| West Central Agriservices, LLC. - Rich Hill | 700 East Walnut                | Rich Hill    | Grundy   | MO    | 64779    | 38.098859 | -94.361013 |
| Young's Agri Service, Inc.                  | 29363 Highway K                | Keytesville  | Grundy   | MO    | 65261    | 39.414200 | -92.930500 |
| Chain of Rocks Water Treatment Plant        | 10450 Riverview Drive          | St. Louis    | Harrison | MO    | 63137    | 38.755556 | -90.188806 |



**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                               | Address                     | City          | County   | State | Zip Code | Latitude  | Longitude  |
|---|-----------------------------|---------------|----------|-------|----------|-----------|------------|
| Euticals Inc.                               | 2460 West Bennett Street    | Springfield   | Harrison | MO    | 65807    | 37.189722 | -93.325278 |
| Howard Bend Water Treatment Plant           | 14769 Olive Blvd., Na       | Chesterfield  | Harrison | MO    | 63017    | 38.679150 | -90.543609 |
| Producers MFA Agri Service - Nevada         | 905 E. Hickory St.          | Nevada        | Harrison | MO    | 64772    | 37.842777 | -94.345276 |
| Farmers Cooperative Services, Inc           | 7180 Hwy 168                | Palmyra       | Henry    | MO    | 63461    | 39.809654 | -91.508436 |
| MFA Agri Service - West Liquid Plant        | 22501 North March Road      | Centralia     | Henry    | MO    | 65240    | 39.218333 | -92.162500 |
| Monroe County Service Company               | 25139 Business Hwy 24       | Paris         | Henry    | MO    | 65275    | 39.467756 | -92.016531 |
| Sedalia Water Treatment Plant               | Water Works Road            | Sedalia       | Henry    | MO    | 65301    | 38.664444 | -93.223611 |
| Bartlett Grain Company, L.P.                | 725 S. Main Street          | Carrollton    | Holt     | MO    | 64633    | 39.350722 | -93.494611 |
| Bartlett Grain Company, L.P.                | 31697 Thomas Drive          | Waverly       | Holt     | MO    | 64096    | 39.214420 | -93.508414 |
| Chula Farmers Coop                          | 215 Manning Ave             | Chula         | Holt     | MO    | 64635    | 39.922782 | -93.474886 |
| Farmers Cooperative Services, Inc           | Highway 6 South             | Ewing         | Holt     | MO    | 63440    | 40.002920 | -91.711804 |
| Farmers Elevator & Exchange Company         | 11523 Highway J             | Monroe City   | Holt     | MO    | 63456    | 39.659194 | -91.661028 |
| Osborn NH3                                  | 690 Clinton Ave, Po Box 116 | Osborn        | Holt     | MO    | 64474    | 39.746917 | -94.358167 |
| Paris, Mo 429                               | 26411 Monroe Road 720       | Paris         | Holt     | MO    | 65275    | 39.368461 | -91.996983 |
| Plattsburg NH3                              | 4514 W. Hwy 116             | Plattsburg    | Holt     | MO    | 64477    | 39.559036 | -94.505522 |
| Tyson Retail Deli, Concordia Mo             | 1901 South Saint Louis St.  | Concordia     | Holt     | MO    | 64020    | 38.968056 | -93.566111 |
| Consumers Oil And Supply Company            | 100 Railroad Street         | Braymer       | Howard   | MO    | 64624    | 39.587250 | -93.791278 |
| Coop Service Center                         | 8759 Route A                | Whitewater    | Howard   | MO    | 63785    | 37.235623 | -89.796345 |
| Lincoln County Farmers Coop                 | 461 Hwy J                   | Troy          | Howard   | MO    | 63379    | 38.959444 | -90.996667 |
| Prairie Home Cooperative                    | 9238 Highway 87             | Prairie Home  | Iron     | MO    | 65068    | 38.808278 | -92.585000 |
| BASF - Hannibal Plant                       | 3150 Highway Jj, Na         | Palmyra       | Jackson  | MO    | 63461    | 39.833319 | -91.437035 |
| Cf Industries Sales, LLC - Palmyra Terminal | 2838 County Road #359       | Palmyra       | Jackson  | MO    | 63461    | 39.843864 | -91.441606 |
| Coop Service Center                         | 506 East Washington Street  | Jackson       | Jackson  | MO    | 63755    | 37.381416 | -89.662326 |
| DPC Enterprises, L.P.                       | 1785 Highway 61 South       | Festus        | Jackson  | MO    | 63028    | 38.180556 | -90.391667 |
| Kansas City, Missouri Water Treatment Plant | 1 Nw Briarcliff Road        | Kansas City   | Jackson  | MO    | 64116    | 39.155972 | -94.583889 |
| Milan Processing                            | 832 East Third Street, Na   | Milan         | Jackson  | MO    | 63556    | 40.202100 | -93.116900 |
| MO Valley Agri-Service of Atchison County   | 17800 Hwy 136 W             | Rock Port     | Jackson  | MO    | 64482    | 40.420083 | -95.522389 |
| National Starch LLC.- N. Kansas City        | 1001 Bedford Ave.           | N Kansas City | Jackson  | MO    | 64116    | 39.129320 | -94.569036 |
| Palmyra, Mo 3512                            | 6825 County Road 338        | Palmyra       | Jackson  | MO    | 63461    | 39.880278 | -91.523611 |
| Perry, Mo 3514                              | 28262 Mexico Road           | Perry         | Jackson  | MO    | 63462    | 39.421667 | -91.659722 |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                               | Address                      | City              | County    | State | Zip Code | Latitude  | Longitude  |
|---|------------------------------|-------------------|-----------|-------|----------|-----------|------------|
| Two Rivers FS, Inc. - Kahoka                | Jct Hwy. 136 & 81            | Kahoka            | Jackson   | MO    | 63445    | 40.414041 | -91.720959 |
| Associated Wholesale Grocers, Inc.          | 3201 E. Division St          | Springfield       | Jasper    | MO    | 65802    | 37.225998 | -93.229629 |
| Biokyowa, Inc.                              | 5469 Nash Road               | Cape Girardeau    | Jasper    | MO    | 63702    | 37.239722 | -89.600278 |
| Brushy Creek Facility                       | 10827 Highway Kk             | Boss              | Jasper    | MO    | 65440    | 37.538356 | -91.129469 |
| Buckman Laboratories, Incorporated          | 14664 East State Highway 47  | Cadet             | Jasper    | MO    | 63630    | 37.983333 | -90.690833 |
| Buick Facility                              | 270 Forest Road 2231, Hwy Kk | Boss              | Jasper    | MO    | 65440    | 37.605556 | -91.125000 |
| Dyno Nobel Carthage Plant                   | 17562 Gum Road               | Carthage          | Jasper    | MO    | 64836    | 37.153056 | -94.374444 |
| Farmland Foods, Inc - Milan, Missouri       | 22123 Highway 5              | Milan             | Jasper    | MO    | 63556    | 40.218240 | -93.118800 |
| Fletcher Facility                           | 230 County Road 849          | Centerville       | Jasper    | MO    | 63633    | 37.538333 | -91.128889 |
| Guier Chemical & Fertilizer, Inc.           | 13992 Hwy K                  | Houstonia         | Jasper    | MO    | 65333    | 38.879514 | -93.364148 |
| Prairie Farms Hazelwood                     | 6040 North Lindbergh Blvd.   | Hazelwood         | Jasper    | MO    | 63042    | 38.768806 | -90.364888 |
| Sunedison - St. Peters                      | 501 Pearl Drive              | O'fallon          | Jasper    | MO    | 63376    | 38.811944 | -90.658889 |
| Sur-Gro Plant Food Company, Inc-Dearborn    | 512 W Highway Z              | Dearborn          | Jasper    | MO    | 64439    | 39.524756 | -94.774535 |
| Westboro, Mo 448                            | Po Box 193, 501 South Adams  | Westboro          | Jasper    | MO    | 64498    | 40.534194 | -95.319361 |
| Omnium St. Joseph                           | 1417 Lower Lake Road         | Saint Joseph      | Jefferson | MO    | 64506    | 39.720833 | -94.882500 |
| Sensient Colors LLC                         | 2515 N Jefferson Ave         | St. Louis         | Jefferson | MO    | 63106    | 38.651267 | -90.216508 |
| Missouri American Water Company North Plant | 2800 Charbonier Road         | Florissant        | Johnson   | MO    | 63031    | 38.819722 | -90.369444 |
| Rockwood Pigments Na, Inc.                  | 303 E. Hoffmeister Ave       | St. Louis         | Johnson   | MO    | 63125    | 38.528843 | -90.270779 |
| Cargill, Marshall, Mo                       | Highway 20 West              | Marshall          | Knox      | MO    | 65340    | 39.118300 | -93.247500 |
| MO American Water Company Central Plant     | 901 Hog Hollow               | Chesterfield      | Knox      | MO    | 63017    | 38.688889 | -90.523056 |
| O'fallon Casting                            | 600 Cannonball Lane          | O'fallon          | Knox      | MO    | 63366    | 38.804172 | -90.662668 |
| Southeast Cooperative Service Company, Inc  | 25564 Co Rd 326              | Messler           | Knox      | MO    | 63771    | 37.066944 | -89.802222 |
| Arnette Polymers, LLC                       | 8905 S. Wollard Blvd         | Richmond          | Lafayette | MO    | 64085    | 39.249640 | -93.946304 |
| Blackman Water Treatment Plant              | 2601 South Blackman Road     | Springfield       | Lafayette | MO    | 65809    | 37.165333 | -93.221028 |
| Dawn Food Products, Inc.                    | 1400 Vance Road              | Mexico            | Lafayette | MO    | 65265    | 39.116611 | -91.903503 |
| Excelsior Springs Water Treatment Plant     | 29805 NE 108th St.           | Excelsior Springs | Lafayette | MO    | 64024    | 39.287222 | -94.223333 |
| Fulbright Water Treatment Plant             | 3920 N. Farmer               | Springfield       | Lafayette | MO    | 65803    | 37.270000 | -93.308639 |
| MFA Bulk Plant - Heetco                     | 12461 Hwy 6                  | Labelle           | Lafayette | MO    | 63447    | 40.112778 | -91.903889 |
| Wastewater Treatment Plant                  | 700 S. Arch St.              | Hannibal          | Lafayette | MO    | 63401    | 39.698500 | -91.368900 |
| West Central Agriservices, LLC. - Chilhowee | 209 East Barnum, Po Box 67   | Chilhowee         | Lafayette | MO    | 64733    | 38.582778 | -93.851250 |

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| Facility Name                                | Address                          | City           | County     | State | Zip Code | Latitude  | Longitude  |
|--|----------------------------------|----------------|------------|-------|----------|-----------|------------|
| Whitmire Micro-Gen Research Labs, Inc.       | 3568 Tree Court Industrial Blvd  | Kirkwood       | Lafayette  | MO    | 63122    | 38.561389 | -90.458056 |
| Agriservices of Brunswick, LLC.              | Highway 24 West                  | Brunswick      | Lawrence   | MO    | 65236    | 39.406944 | -93.201389 |
| Bowling Green, Mo 713                        | 16083 Business Hwy 61 N          | Bowling Green  | Lawrence   | MO    | 63334    | 39.357139 | -91.211389 |
| Plaze, Incorporated                          | 105 Bolte Lane                   | St. Clair      | Lawrence   | MO    | 63077    | 38.362593 | -90.986824 |
| Cargill Meat Solutions, Inc., California     | 1001 E Smith                     | California     | Lewis      | MO    | 65018    | 38.628889 | -92.551389 |
| Continental Cement Company, LLC              | 10107 Highway 79                 | Hannibal       | Lewis      | MO    | 63401    | 39.679722 | -91.311389 |
| Mid-West Fertilizer, Inc. - Metz             | 154 South Main                   | Metz           | Lewis      | MO    | 64765    | 37.995010 | -94.443466 |
| West Central Agriservices, LLC. - Adrian     | S. 71 Highway, Rr#3, Box 335     | Adrian         | Lewis      | MO    | 64720    | 38.382500 | -94.352778 |
| Craig Supply Co.                             | 14814 Highway 59                 | Craig          | Lincoln    | MO    | 64437    | 40.192910 | -95.365710 |
| Mid-West Fertilizer, Inc. - Deerfield        | 1st And Railroad                 | Deerfield      | Lincoln    | MO    | 64741    | 37.837297 | -94.505270 |
| Mid-West Fertilizer, Inc. - Sheldon          | 5th & Main                       | Sheldon        | Lincoln    | MO    | 64784    | 37.647528 | -94.238417 |
| Bayer Cropscience                            | 8400 Hawthorn Road               | Kansas City    | Linn       | MO    | 64120    | 39.121667 | -94.475833 |
| Brenntag Mid-South, Inc.                     | 126 Chouteau Avenue              | St. Louis      | Linn       | MO    | 63102    | 38.615694 | -90.190091 |
| City of Columbia Water Treatment Plant       | 6851 West State Hwy K            | Columbia       | Linn       | MO    | 65203    | 38.886500 | -92.442700 |
| Brenntag Mid-South, Inc.                     | 5200 Stillwell Rd.               | Kansas City    | Livingston | MO    | 64120    | 39.143453 | -94.520252 |
| Edwards Chemicals, Inc.                      | 515 Middleton Street             | Saint Joseph   | Livingston | MO    | 64505    | 39.778555 | -94.853888 |
| Windsor Foods                                | 5695 S. Davinci Lane             | Carthage       | Livingston | MO    | 64836    | 37.101389 | -94.313889 |
| Aerofil Technology, Inc.                     | 225 Industrial Park Drive        | Sullivan       | Macon      | MO    | 63080    | 38.226892 | -91.171496 |
| Brenntag Mid-South, Inc.                     | 2235 W. Battlefield Road         | Springfield    | Macon      | MO    | 65807    | 37.160444 | -93.323944 |
| Butterball, LLC                              | 411 North Main Street            | Carthage       | Macon      | MO    | 64836    | 37.183421 | -94.311447 |
| Heiman Agri Services, Inc.                   | Sale Barn Road                   | Butler         | Macon      | MO    | 64730    | 38.265273 | -94.345080 |
| Humphrey Feed And Seed                       | 22593 State Hwy 16               | Monticello     | Macon      | MO    | 63457    | 40.111111 | -91.712500 |
| Agchoice North - Rock Port                   | 17287 West Hwy. 136              | Rock Port      | Marion     | MO    | 64482    | 40.421306 | -95.533889 |
| Backes & Toelke Agri Products, Inc.          | 9948 Hwy 100                     | New Haven      | Marion     | MO    | 63068    | 38.598982 | -91.256108 |
| Cape Rock Treatment Plant #1                 | 20 E. Cape Rock Dr.              | Cape Girardeau | Marion     | MO    | 63701    | 37.327500 | -89.500028 |
| City of Monett Wastewater Treatment Facility | 50 N. Eisenhower                 | Monett         | Marion     | MO    | 65708    | 36.916952 | -93.939155 |
| Clarence Cannon Wholesale Water Commission   | 34146 Route U                    | Stoutsville    | Marion     | MO    | 65283    | 39.497492 | -91.848201 |
| Elantas Pdg, Inc.                            | 5200 N. Second St.               | St. Louis      | Marion     | MO    | 63147    | 38.680073 | -90.204918 |
| MFA Agri Service - Glasgow                   | 303 Industrial Drive             | Glasgow        | Marion     | MO    | 65254    | 39.221667 | -92.842500 |
| Rushville Fertilizer Plant                   | Lost Creeek Rd And Us Highway 59 | Rushville      | Marion     | MO    | 64484    | 39.588063 | -95.029689 |



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| Facility Name                                 | Address                         | City         | County      | State | Zip Code | Latitude  | Longitude  |
|---|---------------------------------|--------------|-------------|-------|----------|-----------|------------|
| Straatmann Feed & Transfer, Inc.              | 3601 Old Hwy. 100               | Labadie      | Marion      | MO    | 63055    | 38.500681 | -90.895625 |
| Water Treatment Plant, City of Lamar          | 2003 S. Hagny                   | Lamar        | Marion      | MO    | 64759    | 37.482583 | -94.263528 |
| West Central Agriservices, LLC. - Centerview  | 103 S. Main, Po Box 66          | Centerview   | Marion      | MO    | 64019    | 38.743889 | -93.847222 |
| Producers Exchange Number 84                  | 102 North Main Street           | Ionia        | Mcdonald    | MO    | 65335    | 38.501306 | -93.322944 |
| Unilever Ice Cream Sikeston South             | 1010 County Line Road           | Sikeston     | Mcdonald    | MO    | 63801    | 36.867500 | -89.558889 |
| Agriservices of Brunswick, LLC. - Mendon      | 1 Brunswick Street              | Mendon       | Mississippi | MO    | 64660    | 39.591389 | -93.138611 |
| Central Missouri Agriservice LLC. - Blackburn | 215-219 West Park St.           | Blackburn    | Monroe      | MO    | 65321    | 39.104667 | -93.486806 |
| Mesmer Fertilizer, Inc.                       | 168 West 1st Street             | Bethel       | Monroe      | MO    | 63434    | 39.889050 | -92.023027 |
| Springfield - 3m Company                      | 3211 East Chestnut Expy         | Springfield  | Monroe      | MO    | 65802    | 37.213097 | -93.228012 |
| Kraft Foods Kirksville                        | 2504 North Industrial Road      | Kirksville   | Monteau     | MO    | 63501    | 40.219546 | -92.590543 |
| Americold, Carthage Plant # 81302             | 1331 Civil War Rd.              | Carthage     | Montgomery  | MO    | 64836    | 37.190803 | -94.326589 |
| Americold, Marshall #75114                    | 3465 West Arrow                 | Marshall     | Montgomery  | MO    | 65340    | 39.118150 | -93.243369 |
| General Mills, Inc. - Kansas City             | 2917 Guinotte Avenue            | Kansas City  | Montgomery  | MO    | 64120    | 39.119167 | -94.545556 |
| Liberal, Mo                                   | 1246 West Highway K, Po Box 279 | Liberal      | Montgomery  | MO    | 64762    | 37.565278 | -94.523333 |
| MFA Agri Service - Lone Elm                   | 10672 Hwy B                     | Bunceton     | Montgomery  | MO    | 65237    | 38.843025 | -92.737242 |
| Nor-Am Ice & Cold Plant C                     | 3401 Stockyard Expressway       | Saint Joseph | Montgomery  | MO    | 64504    | 39.736667 | -94.858056 |
| Smart Warehousing, LLC                        | 16500 East Truman Road          | Independence | Montgomery  | MO    | 64050    | 39.091109 | -94.384005 |
| Dexter Lpg Terminal                           | 19905 State Highway 114         | Dexter       | Morgan      | MO    | 63841    | 36.789220 | -89.916240 |
| Ag Coop Services, Inc.                        | Highway 127 South               | Lamonte      | New Madrid  | MO    | 65337    | 38.751916 | -93.426981 |
| New Madrid Power Plant                        | 41 St. Jude Road                | Marston      | New Madrid  | MO    | 63866    | 36.515833 | -89.564722 |
| Acme Supply Company -- Malta Bend             | North Linn And Pacific Streets  | Malta Bend   | Newton      | MO    | 65339    | 39.197222 | -93.359722 |
| Acme Supply Company, LLC -- Marshall          | 19342 South Saline 65 Hwy       | Marshall     | Newton      | MO    | 65340    | 39.068889 | -93.194920 |
| Hoffman & Reed Inc                            | 151 Broadway, Po Box 135        | Gilman City  | Newton      | MO    | 64642    | 40.134556 | -93.871278 |
| Hoffman & Reed Inc                            | 915 Shanklin, Po Box 67         | Trenton      | Newton      | MO    | 64683    | 40.077536 | -93.612170 |
| River Valley Ag Services, LLC                 | 401 East Warren Street          | Hopkins      | Newton      | MO    | 64461    | 40.552271 | -94.818085 |
| Atkinson Farm Service                         | 5235 Old Highway 40             | Kingdom City | Nodaway     | MO    | 65262    | 38.953889 | -91.955000 |
| Bunton Farms Inc.                             | 62 E Hwy C                      | Lamar        | Nodaway     | MO    | 64759    | 37.589300 | -94.282155 |
| Dairy Farmers of America - Cabool             | 950 Metrecal Trace              | Cabool       | Nodaway     | MO    | 65689    | 37.120000 | -92.106667 |
| Dairy Farmers of America - Springfield        | 800 West Tampa                  | Springfield  | Nodaway     | MO    | 65802    | 37.213655 | -93.300272 |
| Gage's Fertilizer & Grain, Inc.               | 105 South High St.              | Stanberry    | Nodaway     | MO    | 64489    | 40.211778 | -94.543500 |

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| Facility Name                                   | Address                             | City             | County   | State | Zip Code | Latitude  | Longitude  |
|---|-------------------------------------|------------------|----------|-------|----------|-----------|------------|
| Gage's Fertilizer & Grain, Inc.                 | 101 Main Street                     | Maitland         | Nodaway  | MO    | 64466    | 40.201667 | -95.071671 |
| Heimsoth Agri. Service, Inc.                    | 305 Coal Street                     | Corder           | Nodaway  | MO    | 64021    | 39.099107 | -93.637093 |
| Missouri American Water Co. St. Joseph Plant    | 800 NE County Line Road             | St. Joseph       | Nodaway  | MO    | 64505    | 39.820833 | -94.855000 |
| Northeast Missouri Co-Op Service                | Hwy 15 East                         | Novelty          | Nodaway  | MO    | 63460    | 40.011963 | -92.165452 |
| Northeast Missouri Co-Op Service                | Santa Fe Railroad East              | Baring           | Nodaway  | MO    | 63531    | 40.244205 | -92.201069 |
| South Central Coop - Cainsville                 | 130 Main Street, E Route N, .3 Mi E | Cainsville       | Nodaway  | MO    | 64632    | 40.438833 | -93.765500 |
| Tarkio Cooperative, Inc.                        | 04 Main                             | Tarkio           | Osage    | MO    | 64491    | 40.440830 | -95.374910 |
| Perishable Warehouse                            | 12921 Enterprise Way                | Bridgeton        | Perry    | MO    | 63044    | 38.770742 | -90.430218 |
| West Central Agriservices, LLC. - Harrisonville | 28101 S. State Rt. Tt               | Harrisonville    | Perry    | MO    | 64701    | 38.606944 | -94.301111 |
| Conagra Foods                                   | 1401 Harris Avenue                  | Trenton          | Pettis   | MO    | 64683    | 40.079951 | -93.609180 |
| Hillshire Brands- St. Joseph, Missouri          | 5807 Mitchell Avenue                | St. Joseph       | Pettis   | MO    | 64507    | 39.756010 | -94.759900 |
| Loida Ag Service, LLC                           | 166 Main St                         | Mcbride          | Pettis   | MO    | 63776    | 37.831161 | -89.840585 |
| Producers Exchange Bulk Plant - Golden City     | 614 Se 100th Lane                   | Golden City      | Pettis   | MO    | 64748    | 37.405556 | -94.115000 |
| Rea Grain And Feed, Inc.                        | 175 Byers Street                    | Rea              | Pettis   | MO    | 64480    | 40.063443 | -94.765600 |
| Sainte Genevieve, Mo                            | 23860 Bourbon Road                  | Sainte Genevieve | Pettis   | MO    | 63670    | 37.948654 | -90.020069 |
| Vogel Agri-Service, Inc.                        | Junction of County Roads A & D      | Watson           | Pettis   | MO    | 64496    | 40.476667 | -95.614722 |
| KCPL - Hawthorn Generating Facility             | 8700 East Front Street              | Kansas City      | Pike     | MO    | 64120    | 39.130833 | -94.477778 |
| LHB Industries                                  | 8833 Fleischer Place                | Berkeley         | Pike     | MO    | 63134    | 38.759337 | -90.341264 |
| Northeast MO Grain DBA Poet Biorefinery         | 30211 Major Drive                   | Macon            | Pike     | MO    | 63552    | 39.747778 | -92.383611 |
| River Valley Ag Services, LLC                   | 100 W Mcpherson St, Hwy 148 & 246   | Hopkins          | Pike     | MO    | 64461    | 40.547121 | -94.822486 |
| Baker Services, Inc. Farley                     | 45 Hwy & Baker Rd.                  | Farley           | Platte   | MO    | 64028    | 39.266418 | -94.817567 |
| Geocycle  | 14744 Highway 79 N                  | Clarksville      | Platte   | MO    | 63336    | 39.375666 | -90.943718 |
| Northeast Missouri Co-Op Service                | West Reid Street                    | Edina            | Platte   | MO    | 63537    | 40.162887 | -92.179815 |
| Tyson Fresh Meats Fwh, Montgomery City          | 1001 Harness Drive                  | Montgomery City  | Platte   | MO    | 63361    | 38.964899 | -91.488753 |
| Dairy Farmers of America, Inc., Monett, Mo      | 10 Dairy Street                     | Monett           | Ralls    | MO    | 65708    | 36.916667 | -93.926111 |
| Gage's Fertilizer & Grain, Inc.                 | 31019 E. 260th Ave.                 | Bethany          | Ralls    | MO    | 64424    | 40.263111 | -93.930667 |
| Mrm Ag Service, Inc.                            | 3468 W. Hwy 80                      | East Prairie     | Ralls    | MO    | 63845    | 36.784615 | -89.415307 |
| River Valley Ag Services, LLC                   | 31972 State Highway H               | Maryville        | Ralls    | MO    | 64468    | 40.260278 | -94.932778 |
| MFA Agri Service - Grant City                   | 104 N. High Street                  | Grant City       | Randolph | MO    | 64456    | 40.489268 | -94.413061 |

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| Facility Name                                  | Address                             | City             | County   | State | Zip Code | Latitude  | Longitude  |
|--|-------------------------------------|------------------|----------|-------|----------|-----------|------------|
| NCMRWC Water Plant                             | 21299 Hwy 5                         | Milan            | Randolph | MO    | 63556    | 40.221491 | -93.110058 |
| Wal-Mart Distribution Center #6065             | 5100 Brookhart Drive                | Harrisonville    | Randolph | MO    | 64701    | 38.610650 | -94.357481 |
| Backes & Toelke DBA Marthasville Ag Center     | 15998 State Hwy 47                  | Marthasville     | Ray      | MO    | 63357    | 38.633806 | -91.065861 |
| Cascades-Plastics                              | 7501 S Spoede Lane                  | Warrenton        | Ray      | MO    | 63383    | 38.804743 | -91.116974 |
| Dogwood Energy Facility                        | 25111 E. 175th Street, P.O. Box 110 | Pleasant Hill    | Ray      | MO    | 64080    | 38.793438 | -94.300295 |
| MFA Agri Service - Cedar Creek                 | 2887 County Road 269                | Columbia         | Ray      | MO    | 65202    | 38.959096 | -92.130727 |
| Brenntag Mid-South, Inc.                       | 139 East Soper Street               | St. Louis        | Reynolds | MO    | 63111    | 38.555222 | -90.248405 |
| Plattsburg Terminal                            | 2985 Highway 33 North               | Plattsburg       | Reynolds | MO    | 64477    | 39.600178 | -94.410258 |
| Wal-Mart Distribution Center #6077             | 1309 Hwy. 24 East                   | Moberly          | Reynolds | MO    | 65270    | 39.450480 | -92.420030 |
| Agriland FS, Inc. - Bethany                    | 35554 E State Hwy 146               | Bethany          | Saline   | MO    | 64424    | 40.199664 | -93.933919 |
| Church & Dwight Co., Inc.                      | 1607 Anaconda Road                  | Harrisonville    | Saline   | MO    | 64701    | 38.637639 | -94.364139 |
| Golden Triangle Energy                         | 15053 Highway 111                   | Craig            | Saline   | MO    | 64437    | 40.188761 | -95.368600 |
| Jasper Products LLC                            | 3877 East 27th                      | Joplin           | Saline   | MO    | 64804    | 37.061588 | -94.464695 |
| MFA Agri Service - Pattonsburg South           | 18563 Us Hwy 69                     | Pattonsburg      | Saline   | MO    | 64670    | 40.010933 | -94.120350 |
| MFA Anhydrous Ammonia Plant                    | 29400 Colony Ave.                   | New Cambria      | Saline   | MO    | 63558    | 39.765833 | -92.761667 |
| Orrick, Mo                                     | 208 East North Front Street         | Orrick           | Saline   | MO    | 64077    | 39.213780 | -94.124489 |
| Ray-Carroll County Grain Growers, Inc., Slater | 29261 N. Highway 240                | Slater           | Saline   | MO    | 65349    | 39.211155 | -93.076370 |
| Sfi - Clearfield Plant                         | 116 East Oak Street                 | Clinton          | Saline   | MO    | 64735    | 38.375000 | -93.775000 |
| United Industries Corporation - Chapin Plant   | 8464 Chapin Industrial Drive        | St. Louis        | Saline   | MO    | 63114    | 38.690000 | -90.341389 |
| Baring Farm Service Inc                        | Depot Road                          | Baring           | Scotland | MO    | 63531    | 40.241111 | -92.205833 |
| Mallinckrodt Inc.                              | 3600 North Second Street            | St. Louis        | Scotland | MO    | 63147    | 38.661800 | -90.193400 |
| Marchem Corporation                            | 2500 Adie Road                      | Maryland Heights | Scotland | MO    | 63074    | 38.705833 | -90.422500 |
| Carthage Terminal                              | 18195 County Rd 138, Box 308        | Jasper           | Scott    | MO    | 64755    | 37.313611 | -94.305000 |
| Cloverleaf Cold Storage - Chillicothe          | 500 Corporate Drive                 | Chillicothe      | Scott    | MO    | 64601    | 39.777778 | -93.537500 |
| Enterprise Kearney Terminal & Storage          | 1015 North Jefferson                | Kearney          | Scott    | MO    | 64060    | 39.388805 | -94.368720 |
| Kelso Milling Co.                              | 1205 Main St.                       | Scott City       | Scott    | MO    | 63780    | 37.216613 | -89.523652 |
| Twin River Foods, Inc.                         | 225 North Washington                | Neosho           | Scott    | MO    | 64850    | 36.871389 | -94.366667 |
| Enterprise Moberly Terminal & Storage          | 7552 North Highway 63               | Cairo            | Shelby   | MO    | 65239    | 39.521550 | -92.441654 |
| Mo. Valley Agri-Service of Atchison County     | 28969 Hwy 159                       | Forest City      | Shelby   | MO    | 64451    | 40.080112 | -95.168678 |
| Triumph Foods LLC                              | 5302 Stockyards Expressway          | Saint Joseph     | Shelby   | MO    | 64504    | 39.720000 | -94.875278 |

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|---|--------------------------------------|---------------------|-------------|-------|----------|-----------|------------|
| Aldi, Incorporated                          | 475 Pearl Drive, Pob 8800            | O'fallon            | St. Charles | MO    | 63366    | 38.810000 | -90.654722 |
| MFA Agri Service - Burlington Junction      | 1101 W. Main St.                     | Burlington Junction | St. Charles | MO    | 64428    | 40.445556 | -95.077222 |
| Mid-Missouri Energy, LLC                    | 15311 North Saline 65 Highway        | Malta Bend          | St. Charles | MO    | 65339    | 39.196791 | -93.383270 |
| Midwest Sterilization Corporation - Jackson | 1204 Lenco Avenue, P.O. Box 411      | Jackson             | St. Charles | MO    | 63755    | 37.370621 | -89.686958 |
| Missouri Ethanol, LLC                       | 809 North Pine Street                | Ladonia             | St. Charles | MO    | 63352    | 39.249029 | -91.640968 |
| Schreiber Foods - Fairview Facility         | 1112 West Fairview Avenue            | Carthage            | St. Charles | MO    | 64836    | 37.152911 | -94.326686 |
| Sur-Gro Plant Food Company                  | 99 Nw 280th Street                   | Plattsburg          | St. Charles | MO    | 64477    | 39.600000 | -94.412500 |
| Asbury Power Plant                          | 21133 Uphill Road                    | Asbury              | St. Louis   | MO    | 64832    | 37.360010 | -94.591030 |
| County Line Ag Service LLC                  | 40455 State Route Y                  | Graham              | St. Louis   | MO    | 64455    | 40.135968 | -95.021859 |
| Farmers Ag And Grain Supply Inc.            | First And Railroad, P O Box 90       | Deerfield           | St. Louis   | MO    | 64741    | 37.839229 | -94.499238 |
| Farmers Supply                              | 17502 U.S. Highway 136 East          | Burlington Junction | St. Louis   | MO    | 64428    | 40.441000 | -95.053806 |
| Golden Furrow - Davis Co., Inc.             | Rt 2 Box 145f, Hwy 15n               | Memphis             | St. Louis   | MO    | 63555    | 40.529778 | -92.161667 |
| Hawkins Water Treatment Group - Mo          | 191 North Rangeline Road             | Columbia            | St. Louis   | MO    | 65201    | 38.950109 | -92.204865 |
| Iatan Power Plant                           | 20250 Highway 45 North               | Weston              | St. Louis   | MO    | 64098    | 39.448000 | -94.980800 |
| Kerry, Inc.                                 | 8155 New Hampshire                   | St Louis            | St. Louis   | MO    | 63123    | 38.565187 | -90.328480 |
| Lifeline Foods, LLC                         | 2811 South 11th Street               | St. Joseph          | St. Louis   | MO    | 64503    | 39.739200 | -94.846400 |
| MFA Agri Service - Glasgow Agronomy         | 402 10th Street                      | Glasgow             | St. Louis   | MO    | 65254    | 39.224500 | -92.830194 |
| MFA Agri Service - Hamilton                 | North Hughes Street                  | Hamilton            | St. Louis   | MO    | 64644    | 39.743333 | -94.000556 |
| MFA Agri Service - Maysville                | 1302 S. Water St.                    | Maysville           | St. Louis   | MO    | 64469    | 39.879167 | -94.363333 |
| MFA Anhydrous Plant                         | 29317 State Hwy M                    | Barnard             | St. Louis   | MO    | 64423    | 40.172164 | -94.834156 |
| MFA Bulk Plant - Hale                       | 30749 J Hwy.                         | Hale                | St. Louis   | MO    | 64643    | 39.600278 | -93.371667 |
| Mid-Missouri Agri Service - Emma            | 32102 Emma Road                      | Concordia           | St. Louis   | MO    | 64020    | 38.972222 | -93.504750 |
| Mount Vernon Products Terminal              | 15138 Highway 96                     | Mt. Vernon          | St. Louis   | MO    | 65712    | 37.190833 | -93.783333 |
| Nor-Am Ice And Cold, Plant B                | 2700 Stockyard Expressway            | Saint Joseph        | St. Louis   | MO    | 64501    | 39.740833 | -94.858056 |
| Schafer Fertilizer, Inc. - Main Facility    | On Hwy AA 3/4 Mile N of Polar Street | Wellsville          | St. Louis   | MO    | 63348    | 39.087140 | -91.566340 |
| Show Me Ethanol, LLC                        | 26530 Highway 24 East                | Carrollton          | St. Louis   | MO    | 64633    | 39.365233 | -93.448935 |
| Sur-Gro Plant Food                          | 4698 Us Highway 169                  | King City           | St. Louis   | MO    | 64463    | 40.039444 | -94.526944 |
| Sur-Gro Plant Food Co. Inc.-Forest City     | 205 S. Walnut                        | Forest City         | St. Louis   | MO    | 64451    | 39.979167 | -95.191111 |

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| Facility Name                            | Address                            | City          | County         | State | Zip Code | Latitude  | Longitude  |
|--|------------------------------------|---------------|----------------|-------|----------|-----------|------------|
| Sysco St. Louis, LLC                     | 3850 Mueller Road                  | St. Charles   | St. Louis      | MO    | 63301    | 38.832369 | -90.514122 |
| Thomas Hill Energy Center                | 5693 Hwy F                         | Clifton Hill  | St. Louis      | MO    | 65244    | 39.554722 | -92.636667 |
| ADM Milling Company                      | 323 Meridian                       | Carthage      | Ste. Genevieve | MO    | 64839    | 37.182110 | -94.309280 |
| MFA Anhydrous Plant                      | E Minton St.                       | Fortsecue     | Ste. Genevieve | MO    | 64452    | 40.052112 | -95.313721 |
| Sweetwater Mine And Mill                 | Route 1                            | Reynolds      | Ste. Genevieve | MO    | 63666    | 37.360000 | -91.148000 |
| Cloud Mfg.                               | #10 Williams Drive                 | Union         | Stoddard       | MO    | 63084    | 38.465070 | -91.026480 |
| Gage's Fertilizer & Grain, Inc.          | 805 Mill St.                       | Albany        | Stoddard       | MO    | 64402    | 40.244111 | -94.341028 |
| Jacobson Warehouse Co.                   | 7405 Cr 328                        | Palmyra       | Stoddard       | MO    | 63461    | 39.805056 | -91.498344 |
| Savannah Drinking Wtp                    | 9331 State Route T                 | Amazonia      | Stoddard       | MO    | 64421    | 39.914444 | -94.879440 |
| Ag Coop Services, Inc.                   | 199 N. Walnut                      | Lamonte       | Sullivan       | MO    | 65337    | 38.775278 | -93.424722 |
| Hawkins Water Treatment Group - Columbia | 1400 Boone Industrial Drive        | Columbia      | Sullivan       | MO    | 65202    | 38.997698 | -92.319335 |
| Helena, Mo                               | 14616 Holt Street                  | Helena        | Sullivan       | MO    | 64459    | 39.913788 | -94.646775 |
| Amvac Chemical Corp. Hannibal Plant      | 3150 Highway Jj                    | Palmyra       | Taney          | MO    | 63461    | 39.831920 | -91.432436 |
| Fertilizer Service Company               | 601 Us Hwy 59 North                | Fairfax       | Taney          | MO    | 64446    | 40.345198 | -95.396624 |
| Garden City Plant                        | Section25, Township44, Range30     | Garden City   | Texas          | MO    | 64747    | 38.573761 | -94.174923 |
| La Monte, Mo                             | 511 West Front Street              | La Monte      | Vernon         | MO    | 65337    | 38.764718 | -93.431131 |
| MFA Agri Service B/P                     | 29098 July Road                    | Laplata       | Vernon         | MO    | 63549    | 40.012535 | -92.492096 |
| Mid-West Fertilizer, Inc. - Drexel       | 133 E Industrial Drive             | Drexel        | Vernon         | MO    | 64742    | 38.491833 | -94.608056 |
| Tri State Tank                           | 1201 W. 31st Street                | Kansas City   | Vernon         | MO    | 64108    | 39.071518 | -94.600716 |
| Urich                                    | 50 Southwest Highway K             | Urich         | Vernon         | MO    | 64788    | 38.366022 | -94.012585 |
| Jefferson & Vernon                       | Jefferson & Vernon                 | Rockville     | Warren         | MO    | 64780    | 38.071760 | -94.079671 |
| Two Rivers FS, Inc. - Canton             | 13734 Us Hwy 61                    | Canton        | Warren         | MO    | 63435    | 40.198652 | -91.523216 |
| Pleasant Hill, Mo                        | 105 Welch Street                   | Pleasant Hill | Washington     | MO    | 64080    | 38.781629 | -94.270410 |
| Adrian Plant                             | Rr 2 Box 157                       | Adrian        | Worth          | MO    | 64720    | 38.410155 | -94.403286 |
| Clarence, Mo 3552 Satellite              | 5933 Shelby County Road 309        | Clarence      | Worth          | MO    | 63437    | 39.739101 | -92.232923 |
| AGP Grain Marketing LLC - Roseland       | 11816 West Clark St., P.O. Box 127 | Roseland      | Adams          | NE    | 68973    | 40.46953  | -98.5541   |
| Gavilon Fertilizer LLC                   | 4935 East J St.                    | Hastings      | Adams          | NE    | 68901    | 40.56861  | -98.305    |
| AGP Grain Marketing LLC - AYR            | 4235 West Lincoln Avenue           | Ayr           | Adams          | NE    | 68925    | 40.43988  | -98.4406   |
| Hastings, NE 5211                        | 150 North Blaine Avenue            | Hastings      | Adams          | NE    | 68901    | 40.58368  | -98.3346   |
| Equalizer Midwest, Incorporated          | 4955 East South Street             | Hastings      | Adams          | NE    | 68901    | 40.58306  | -98.3053   |



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| Facility Name                                    | Address   | City         | County    | State | Zip Code | Latitude | Longitude |
|--|---|--------------|-----------|-------|----------|----------|-----------|
| Hayland  | 7940 N. Hayland Ave.                            | Prosser      | Adams     | NE    | 68883    | 40.66675 | -98.5908  |
| Holstein   | 9870 S. Main Ave.                               | Holstein     | Adams     | NE    | 68950    | 40.46421 | -98.6541  |
| Trumbull   | 647 Hartford Street                             | Trumbull     | Adams     | NE    | 68980    | 40.67772 | -98.2778  |
| Hansen   | 10445 N. Apple Ave.                             | Hansen       | Adams     | NE    | 68901    | 40.69581 | -98.3681  |
| Kenesaw  | 18250 West 26th St.                             | Kenesaw      | Adams     | NE    | 68956    | 40.61276 | -98.6595  |
| Juniata  | 200 S. Depot Street                             | Juniata      | Adams     | NE    | 68955    | 40.5927  | -98.5096  |
| Chief Ethanol Fuels, INC.                        | 4225 East South Street, PO Box 488              | Hastings     | Adams     | NE    | 68902    | 40.585   | -98.3189  |
| Fairfield Non-Stock Co-Op Fertilizer Association | 9865 South Showboat blv, Section 28, T 6N, R 9W | Pauline      | Adams     | NE    | 68941    | 40.46417 | -98.3439  |
| Bubba Foods, LLC                                 | 2001 Summit Avenue                              | Hastings     | Adams     | NE    | 68901    | 40.56956 | -98.4069  |
| United Suppliers, Inc--Hastings, NE              | 5780 East J Street                              | Hastings     | Adams     | NE    | 68901    | 40.56861 | -98.2955  |
| Nebraska Cold Storage                            | 600 East 39th Street                            | Hastings     | Adams     | NE    | 68901    | 40.6225  | -98.3747  |
| Whelan Energy Center Unit 2                      | 4520 East South Street                          | Hastings     | Adams     | NE    | 68901    | 40.58045 | -98.3115  |
| Central Valley Ag Cooperative - Elgin East       | Norco Road and Old Mill Road                    | Elgin        | Antelope  | NE    | 68660    | 41.98823 | -98.0466  |
| Central Valley Ag Cooperative - Elgin Tank Farm  | North Highway 14                                | Elgin        | Antelope  | NE    | 68660    | 41.98978 | -98.0829  |
| Ag Agronomy Center LLC - Oakdale                 | 90 Mill Street, West Highway 275                | Oakdale      | Antelope  | NE    | 68761    | 42.07545 | -97.9705  |
| Helena Chemical Company - Brunswick, NE          | 523rd and Highway 20                            | Brunswick    | Antelope  | NE    | 68720    | 42.34072 | -98.0419  |
| Helena Chemical Company                          | Hwy 32 and Hwy 14 Intersection                  | Petersburg   | Boone     | NE    | 68652    | 41.85078 | -98.0832  |
| Central Valley Ag Cooperative - St Edward        | 8th Street-5 blocks South of Beaver             | St. Edward   | Boone     | NE    | 68660    | 41.56222 | -97.8589  |
| Helena Chemical Company - Albion, NE             | 2493 State Highway 14                           | Albion       | Boone     | NE    | 68620    | 41.6981  | -98.0074  |
| Country Partners COOP - Cedar Rapids             | 605 West Main, Hwy 56 & 350th St.               | Cedar Rapids | Boone     | NE    | 68627    | 41.55358 | -98.118   |
| Country Partners COOP - Albion                   | 2504 Old Mill Road                              | Albion       | Boone     | NE    | 68620    | 41.6983  | -98.0123  |
| VALERO ALBION PLANT                              | 2615 260th St                                   | Albion       | Boone     | NE    | 68620    | 41.68033 | -97.9813  |
| Alliance Anhydrous Ammonia Storage               | 4TH & Burlington                                | Alliance     | Box Butte | NE    | 69301    | 42.09778 | -102.883  |
| Berea Simplot Grower Solutions                   | 1610 Co Rd 65                                   | Alliance     | Box Butte | NE    | 69301    | 42.21556 | -102.978  |
| Alliance Terminal                                | 2371 Hwy 2                                      | Alliance     | Box Butte | NE    | 69301    | 42.1075  | -102.897  |
| Butte Farm Supply Inc.                           | 48256 St Hwy 12                                 | Butte        | Boyd      | NE    | 68722    | 42.91367 | -98.84    |
| Farmers Ranchers Cooperative Ainsworth-Anhydrous | West U.S. Highway 20                            | Ainsworth    | Brown     | NE    | 69210    | 42.55078 | -99.8909  |
| Madison's Great Western                          | 87794 429th Ave                                 | Ainsworth    | Brown     | NE    | 69210    | 42.55139 | -99.8833  |
| Gibbon Packing, LLC.                             | 218 East Highway 30                             | Gibbon       | Buffalo   | NE    | 68840    | 40.75285 | -98.8373  |

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|--|-------------------------------------|-------------|---------|-------|----------|----------|-----------|
| Aurora Cooperative - Gibbon                        | 44740 West U.S. HWY 30              | Gibbon      | Buffalo | NE    | 68840    | 40.74161 | -98.885   |
| Farmers Cooperative Association                    | 35885 Ravenna Road                  | Ravenna     | Buffalo | NE    | 68869    | 41.01624 | -98.9114  |
| Aurora Cooperative - Buda                          | 6540 East 39th Street               | Kearney     | Buffalo | NE    | 68847    | 40.71358 | -98.9968  |
| Bowie Fertilizer, Inc.                             | 201 Railroad Street                 | Riverdale   | Buffalo | NE    | 68870    | 40.7819  | -99.1615  |
| Bowie Fertilizer, Inc.                             | 204 West North Street               | Miller      | Buffalo | NE    | 68858    | 40.92935 | -99.3905  |
| Agricultural Services Inc., of Shelton, NE         | 523 Railroad Street, P.O. Box 238   | Shelton     | Buffalo | NE    | 68876    | 40.77837 | -98.7385  |
| Trotter Fertilizer                                 | 317 Cemetary Road, PO Box 217       | Pleasanton  | Buffalo | NE    | 68866    | 40.97513 | -99.0842  |
| Optic Fertilizer, Incorporated                     | 6090 Optic Road                     | Gibbon      | Buffalo | NE    | 68840    | 40.73111 | -98.9206  |
| Aurora Cooperative - Sodtown NH3 Plant             | 30250 Shelton Road                  | Ravenna     | Buffalo | NE    | 68869    | 40.96769 | -98.7402  |
| Lepirino Foods Company, Ravenna, NE Plant          | 102 Lincoln Ave.                    | Ravenna     | Buffalo | NE    | 68869    | 41.02485 | -98.906   |
| Nebraska Turkey Growers Cooperative                | 12 Lawn Avenue, PO Box 640          | Gibbon      | Buffalo | NE    | 68840    | 40.65214 | -99.4268  |
| Abengoa Bioenergy Of Nebraska                      | 35955 Navaho Road                   | Ravenna     | Buffalo | NE    | 68869    | 41.02047 | -98.8698  |
| Central Valley Ag Cooperative - Tekamah            | "B" Street                          | Tekamah     | Burt    | NE    | 68061    | 41.76538 | -96.2245  |
| Midwest Service Company                            | 649 South Highway 75                | Tekamah     | Burt    | NE    | 68061    | 41.76209 | -96.221   |
| Central Valley Ag Cooperative - Oakland - East Hub | 1007 County Road O, PO Box 125      | Oakland     | Burt    | NE    | 68045    | 41.88197 | -96.4747  |
| United Farmers Cooperative Rising City Town NH3    | 235 Walnut Street                   | Rising City | Butler  | NE    | 68658    | 41.19833 | -97.2961  |
| Frontier Cooperative Co. - Brainard                | 0.3 Mile East of Lincoln & Hamilton | Brainard    | Butler  | NE    | 68626    | 41.18361 | -96.9961  |
| Frontier Cooperative Co. - Garrison                | 4 Blks. South of KL & 30th Roads    | Garrison    | Butler  | NE    | 68639    | 41.17528 | -97.1675  |
| Frontier Cooperative Co. - Yanka                   | 3541 O Road                         | David City  | Butler  | NE    | 68632    | 41.25667 | -97.1019  |
| Frontier Cooperative Co. - Dwight                  | 3 Blocks South of Maple & RR Sts.   | Dwight      | Butler  | NE    | 68635    | 41.08056 | -97.0175  |
| Frontier Cooperative Co. - Bellwood                | 3 Blks. West of Maple and State St. | Bellwood    | Butler  | NE    | 68624    | 41.34417 | -97.2378  |
| United Farmers Cooperative Ulysses NH3             | 4th and B Street, Box 8             | Ulysses     | Butler  | NE    | 68669    | 41.06878 | -97.2013  |
| Plattsmouth Terminal                               | 13909 Chicago Avenue                | Plattsmouth | Cass    | NE    | 68048    | 40.98153 | -95.8919  |
| Midwest Farmers Coop - Plattsmouth                 | 815 Mynard Road                     | Plattsmouth | Cass    | NE    | 68048    | 40.97227 | -95.9241  |
| Midwest Farmers Coop - Greenwood                   | 1 Mile South on U.S. Highway 6      | Greenwood   | Cass    | NE    | 68366    | 40.94681 | -96.4606  |
| Midwest Farmers Coop - Manley                      | 300 Manley Lane                     | Manley      | Cass    | NE    | 68403    | 40.91756 | -96.1637  |
| Midwest Farmers Coop - Murdock                     | 417 Railroad                        | Murdock     | Cass    | NE    | 68407    | 40.92372 | -96.2802  |
| Midwest Farmers Coop - Elmwood                     | 304 South 3rd                       | Elmwood     | Cass    | NE    | 68349    | 40.83792 | -96.2963  |
| Ahrens Grain, LLC                                  | 301 Railroad Avenue                 | Murray      | Cass    | NE    | 68409    | 40.91722 | -95.9256  |

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| Nehawka  | 5420 Anderson Drive                           | Nehawka     | Cass     | NE    | 68413    | 40.83582 | -95.9957  |
| Crop Production Services - Imperial, NE          | 901 East Highway 6                            | Imperial    | Chase    | NE    | 69033    | 40.50478 | -101.625  |
| Frenchman Valley Coop                            | 100 Douglas Street, Box 578                   | Imperial    | Chase    | NE    | 69033    | 40.51317 | -101.648  |
| Frenchman Valley Coop                            | 73687 333 Avenue, Box 578                     | Imperial    | Chase    | NE    | 69033    | 40.50477 | -101.625  |
| Frenchman Valley Coop - Sidney                   | Easr Highway 30                               | Sidney      | Cheyenne | NE    | 69162    | 41.14425 | -102.967  |
| Frenchman Valley Coop Weyerts - NH3              | Wyerts Rd. 139 North at Co. Rd. 65            | Lodgepole   | Cheyenne | NE    | 69149    | 41.30923 | -102.725  |
| Aurora Cooperative - Eldorado NH3 Plant          | US HW 14, 5 mi east/ 5 mi north of Harvard,NE | Aurora      | Clay     | NE    | 68818    | 40.68306 | -97.9964  |
| Aurora Cooperative - Clay Center NH3 Plant       | 401 W. Fairfield                              | Clay Center | Clay     | NE    | 68933    | 40.52    | -98.0592  |
| Aurora Cooperative - Ong NH3 Plant               | 107 Main Street                               | Ong         | Clay     | NE    | 68452    | 40.39639 | -97.8369  |
| Aurora Cooperative - Harvard                     | 108 N. Adams Avenue                           | Harvard     | Clay     | NE    | 68944    | 40.61694 | -98.0956  |
| C & M Supply Inc - Deweese                       | 210 South                                     | Deweese     | Clay     | NE    | 68934    | 40.35592 | -98.1369  |
| Edgar, NE 5207 Satellite                         | 30251 Road R                                  | Edgar       | Clay     | NE    | 68935    | 40.37184 | -97.9765  |
| Saronville                                       | 100 S. Main St.                               | Saronville  | Clay     | NE    | 68975    | 40.60311 | -97.9366  |
| Sutton - Hwy 41                                  | 6 miles E. of Clay Center on Hwy 41           | Sutton      | Clay     | NE    | 68979    | 40.52555 | -97.9371  |
| Sutton   | West DLD Road                                 | Sutton      | Clay     | NE    | 68979    | 40.61071 | -97.8806  |
| Fairfield Non-Stock Co-Op Fertilizer Association | 30490 RD-Q                                    | Edgar       | Clay     | NE    | 68935    | 40.40833 | -97.9958  |
| Fairfield Non-Stock Co-Op Fertilizer Association | 31080 ROAD C, Section 16, T 6N, R 8W          | Glenvil     | Clay     | NE    | 68941    | 40.49389 | -98.2411  |
| Fairfield Non-Stock Co-Op Fertilizer Association | 2nd and D" Streets"                           | Fairfield   | Clay     | NE    | 68938    | 40.42833 | -98.1056  |
| George Bros. Propane & Fertilizer Corp. - Sutton | Hiway 6 & Saunders Ave.                       | Sutton      | Clay     | NE    | 68979    | 40.59647 | -97.8603  |
| George Bros. Propane & Fertilizer Corp, Verona   | 1750 Road 315                                 | Clay Center | Clay     | NE    | 68933    | 40.55525 | -97.9657  |
| Agp Grain Marketing Llc - Anan                   | 600 Road 309, Box 56                          | Glenville   | Clay     | NE    | 68941    | 40.46558 | -98.1828  |
| Aurora Cooperative - Harvard East Site           | N. Furnas Ave & N. Depot St                   | Harvard     | Clay     | NE    | 68944    | 40.61722 | -98.0911  |
| Schuyler Cooperative Assn. Anhydrous Plant       | 1303 G Street                                 | Schuyler    | Colfax   | NE    | 68661    | 41.44914 | -97.053   |
| Schuyler Cooperative Assn. Anhydrous North Plant | Hyw. 15 & Road S                              | Schuyler    | Colfax   | NE    | 68661    | 41.65586 | -97.0587  |
| Schuyler Cooperative Assn. Richland Location     | 310 E. Front                                  | Richland    | Colfax   | NE    | 68601    | 41.43806 | -97.2106  |
| Schuyler Cooperative Assn. -Richland Anhy. Plant | R.R. 5 Box 141                                | Richland    | Colfax   | NE    | 68601    | 41.43133 | -97.2144  |
| Farmers Union Co-Op Supply, Ammonia Loc.         | 214 East 1st Street                           | Clarkson    | Colfax   | NE    | 68629    | 41.72747 | -97.121   |
| Cargill Meat Solutions, Schuyler NE              | 590 Road 9                                    | Schuyler    | Colfax   | NE    | 68661    | 41.4514  | -97.095   |
| Cooperative Supply Inc. Leigh Anhydrous Plant    | County Road Southwest of Town                 | Leigh       | Colfax   | NE    | 68643    | 41.69278 | -97.2434  |



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| Husker Coop Schulyer Branch                         | 1199 Road E                            | Schulyer         | Colfax | NE    | 68661    | 41.45167 | -97.0422  |
| Farmers Union Co-Op Supply, Ammonia Loc.            | 120 N 1st St                           | Howells          | Colfax | NE    | 68641    | 41.72622 | -97.0017  |
| Nor-Am Cold Storage                                 | 481 Road 9                             | Schulyer         | Colfax | NE    | 68661    | 41.45    | -97.0985  |
| West Point Dairy Products, LLC                      | 1715 E Road                            | West Point       | Cuming | NE    | 68788    | 41.79834 | -96.708   |
| Kaup Seed & Fertilizer, INC.                        | 892 18th Rd                            | West Point       | Cuming | NE    | 68788    | 41.85759 | -96.6895  |
| Central Valley Ag Cooperative - West Point 15th RO  | 650 15TH Road                          | West Point       | Cuming | NE    | 68788    | 41.82295 | -96.7489  |
| Central Valley Ag Cooperative - West Point - Mill   | 1308 North Mill                        | West Point       | Cuming | NE    | 68788    | 41.85267 | -96.7142  |
| Central Valley Ag Cooperative - Bancroft            | 108 East Cedar Street                  | Bancroft         | Cuming | NE    | 68004    | 42.01417 | -96.5714  |
| Land O' Frost                                       | 126 West Grant Street                  | West Point       | Cuming | NE    | 68788    | 41.83889 | -96.7228  |
| Trotter Grain And Fertilizer                        | 1120 West Main, P O Box 305            | Ansley           | Custer | NE    | 68814    | 41.28799 | -99.3881  |
| All Points Cooperative - Ansley                     | R.R. 2, Box 37A, 79942 Hwy 183         | Ansley           | Custer | NE    | 68814    | 41.41497 | -99.3859  |
| Farmers Coop Grain Co. - Merna NH3                  | 1/2 Mile S Marker #270, HWY # 2        | Merna            | Custer | NE    | 68856    | 41.46606 | -99.7506  |
| FARMERS COOP GRAIN CO. - ANSELMO                    | Evelyn & HWY #2                        | Anselmo          | Custer | NE    | 68813    | 41.61508 | -99.8608  |
| Trotter Fertilizer                                  | 80136 Airport Road                     | Broken Bow       | Custer | NE    | 68822    | 41.44333 | -99.6353  |
| Trotter Grain And Fertilizer                        | 300 East Edith                         | Sargent          | Custer | NE    | 68874    | 41.64295 | -99.3626  |
| Tyson Fresh Meats, Inc. Dakota City, NE             | Highway 35, IBP Avenue                 | Dakota City      | Dakota | NE    | 68731    | 42.42889 | -96.4169  |
| South Sioux City, NE Facility                       | 360 164th Street                       | South Sioux City | Dakota | NE    | 68776    | 42.43111 | -96.4178  |
| Siouxland Ethanol, LLC                              | 1501 Knox Boulevard                    | Jackson          | Dakota | NE    | 68743    | 42.45514 | -96.5968  |
| Tyson Fresh Meats, Inc.-Lexington                   | 1500 Plum Creek Parkway                | Lexington        | Dawson | NE    | 68850    | 40.76111 | -99.7369  |
| All Points Cooperative - Cozad North                | 404 Willow Street                      | Cozad            | Dawson | NE    | 69130    | 40.85579 | -99.9748  |
| All Points Cooperative - Gothenburg                 | 102 8th St                             | Gothenburg       | Dawson | NE    | 69138    | 40.92989 | -100.169  |
| All Points Cooperative - Sumner - NH3               | Hwy 40 & Road 445                      | Sumner           | Dawson | NE    | 68878    | 40.95269 | -99.5116  |
| All Points Cooperative - Lexington - NH3            | 1306 East Walnut                       | Lexington        | Dawson | NE    | 68850    | 40.76836 | -99.7171  |
| All Points Cooperative - Gothenburg Trailer Storage | 3 blocks north of Agronomy Building    | Gothenburg       | Dawson | NE    | 69138    | 40.93397 | -100.171  |
| Cornhusker Energy Lexington                         | 1111 East Industrial Drive, PO Box 814 | Lexington        | Dawson | NE    | 68850    | 40.76675 | -99.725   |
| Farmers Cooperative Elevator Association            | Box 476, 106 Pine Street               | Big Springs      | Deuel  | NE    | 69122    | 41.06033 | -102.077  |
| Frenchman Valley Coop Chappell - NH3                | County Rd 14 at Co. Rd. 165            | Chappell         | Deuel  | NE    | 69122    | 41.09303 | -102.478  |

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|---|----------------------------------|------------|---------|-------|----------|----------|-----------|
| Michael Foods, Inc. D/B/A M.G. Waldbaum Company | 105 North Main Street            | Wakefield  | Dixon   | NE    | 68784    | 42.27164 | -96.8641  |
| Dixon Elevator Co.                              | 205 1st, POB 8                   | Dixon      | Dixon   | NE    | 68732    | 42.4147  | -96.9979  |
| Central Valley Ag Cooperative - Snyder          | P.O. Box 97, 1st & Ash Street    | Snyder     | Dodge   | NE    | 68063    | 41.70207 | -96.7893  |
| Central Valley Ag Cooperative - Hooper          | 1870 Highway 275                 | Hooper     | Dodge   | NE    | 68031    | 41.61223 | -96.5591  |
| Monke Bros. Fertilizer - Nickerson Location     | 325 East Cedar Street            | Nickerson  | Dodge   | NE    | 68044    | 41.53434 | -96.4671  |
| Scribner Grain & Lumber                         | 223 Railroad Street, Highway 275 | Scribner   | Dodge   | NE    | 68057    | 41.66698 | -96.6688  |
| Cooperative Supply Inc. - Dodge                 | 2nd & Cedar Streets              | Dodge      | Dodge   | NE    | 68633    | 41.7207  | -96.8861  |
| CF Industries Sales, LLC - Fremont Terminal     | 1949 E. County Road S            | Fremont    | Dodge   | NE    | 68025    | 41.4775  | -96.4719  |
| Husker Coop North Bend                          | 641 West 6th Street              | North Bend | Dodge   | NE    | 68649    | 41.46056 | -96.7878  |
| Hormel Foods Corporation - Fremont Plant        | 900 South Platte Avenue          | Fremont    | Dodge   | NE    | 68025    | 41.42306 | -96.4853  |
| Fremont Beef Company                            | 960 South Schneider Street       | Fremont    | Dodge   | NE    | 68026    | 41.42023 | -96.4891  |
| Kruger Feed And Seed                            | 320 W. 6th St.                   | North Bend | Dodge   | NE    | 68649    | 41.46147 | -96.7883  |
| Americold, Fremont - Plant #78402               | 950 South Schneider St.          | Fremont    | Dodge   | NE    | 68025    | 41.42097 | -96.4894  |
| Kruger Feed And Seed                            | 1923 Co. Rd. 8                   | North Bend | Dodge   | NE    | 68649    | 41.4775  | -96.7706  |
| Monke Bros. Fertilizer - Bennington Location    | 16311 Bennington Road            | Bennington | Douglas | NE    | 68007    | 41.36428 | -96.1682  |
| Skylark Meats Llc                               | 4430 South 110th Street          | Omaha      | Douglas | NE    | 68137    | 41.215   | -96.0844  |
| United States Cold Storage, Omaha 30th Street   | 4302 South 30th Street           | Omaha      | Douglas | NE    | 68107    | 41.21806 | -95.9594  |
| Millard Refrigerated Services                   | 13039 Renfro Circle              | Omaha      | Douglas | NE    | 68137    | 41.2026  | -96.1184  |
| Florence Water Treatment Plant                  | 2710 Grebe Street                | Omaha      | Douglas | NE    | 68112    | 41.33667 | -95.9558  |
| Millard Refrigerated Services                   | 2523 Gomez Avenue                | Omaha      | Douglas | NE    | 68107    | 41.19994 | -95.951   |
| Omaha Dry                                       | 5015 South 33rd Street           | Omaha      | Douglas | NE    | 68107    | 41.20806 | -95.9619  |
| Gilsa Dairy Products And Services               | 7122 J Street                    | Omaha      | Douglas | NE    | 68117    | 41.21556 | -96.0225  |
| XI Four Star Beef Inc                           | 3435 Edward Babe Gomez Ave       | Omaha      | Douglas | NE    | 68107    | 41.20953 | -95.9657  |
| Omaha Steaks "F" Street Plant                   | 9203 "F" Street                  | Omaha      | Douglas | NE    | 68127    | 41.2176  | -96.056   |
| Greater Omaha Packing Co., Inc.                 | 3001 L Street                    | Omaha      | Douglas | NE    | 68107    | 41.21211 | -95.9586  |
| Casa De Oro Foods, LLC                          | 4433 South 94th Street           | Omaha      | Douglas | NE    | 68127    | 41.21444 | -96.0575  |
| Nash Finch Company Omaha Facility               | 4228 South 72nd Street           | Omaha      | Douglas | NE    | 68127    | 41.21667 | -96.0244  |
| Tyson Foods (Omaha, Ne. Bacon Plant)            | 13076 Renfro Circle              | Omaha      | Douglas | NE    | 68137    | 41.20306 | -96.1169  |
| Nebraska Beef, LTD.                             | 4501 South 36th Street           | Omaha      | Douglas | NE    | 68107    | 41.21497 | -95.966   |
| D&D Foods, Inc                                  | 9425 N. 48th Street              | Omaha      | Douglas | NE    | 68152    | 41.3457  | -95.9837  |

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| Quality Pork International, Inc.                   | 10404 F Plaza                     | Omaha     | Douglas  | NE    | 68127    | 41.22    | -96.0767  |
| Platte West Water Treatment Plant                  | 21212 West Q Street               | Omaha     | Douglas  | NE    | 68022    | 41.20778 | -96.2492  |
| BHJ USA Inc.                                       | 2516 Edward Babe Gomez Ave.       | Omaha     | Douglas  | NE    | 68107    | 41.20014 | -95.9504  |
| St. Francis Merc. - Haigler, NE. - NH3 Plant       | North Porter Avenue               | Haigler   | Dundy    | NE    | 69030    | 40.01641 | -101.942  |
| Aurora Cooperative - Geneva NH3 Plant              | 703 G Street                      | Geneva    | Fillmore | NE    | 68361    | 40.52389 | -97.6061  |
| Fairmont, NE 5212                                  | 2010 Road 11                      | Fairmont  | Fillmore | NE    | 68354    | 40.63235 | -97.6347  |
| Grafton  | 375 N. Tatro Ave.                 | Grafton   | Fillmore | NE    | 68365    | 40.62677 | -97.7092  |
| Farmers Cooperative - Fairmont                     | E. Prospect St.                   | Fairmont  | Fillmore | NE    | 68354    | 40.63883 | -97.5758  |
| Farmers Cooperative - Exeter                       | 919 N. Exeter Ave.                | Exeter    | Fillmore | NE    | 68351    | 40.65439 | -97.4511  |
| Farmers Cooperative - Milligan                     | 307 N" Street"                    | Milligan  | Fillmore | NE    | 68406    | 40.49664 | -97.3871  |
| Farmers Cooperative - Ohioa                        | 702 North Main Street             | Ohioa     | Fillmore | NE    | 68416    | 40.41892 | -97.4527  |
| Shickley Grain Company                             | Highway 74 & Road 6               | Shickley  | Fillmore | NE    | 68436    | 40.42181 | -97.7282  |
| George Bros. Propane & Fertilizer Corp. - Shickley | Hiway 41 & Road 6                 | Grafton   | Fillmore | NE    | 68365    | 40.52503 | -97.7284  |
| Norder Supply, Inc. - Strang Branch                | Main Street                       | Strang    | Fillmore | NE    | 68444    | 40.4161  | -97.5859  |
| Norder Agri Supply, Inc.-Shickley Branch           | East Hwy. 74520 Rd. 7             | Shickley  | Fillmore | NE    | 68436    | 40.42186 | -97.7282  |
| Flint Hills Resources Fairmont, LLC                | 1214 Road G                       | Fairmont  | Fillmore | NE    | 68354    | 40.6135  | -97.6005  |
| Nustar Energy LP-Geneva Terminal                   | 1417 Highway 81                   | Geneva    | Fillmore | NE    | 68361    | 40.55175 | -97.5938  |
| Aurora Cooperative - Upland                        | Nebraska Spur 31A                 | Upland    | Franklin | NE    | 68981    | 40.31943 | -98.9041  |
| Franklin   | 1705 "G" St.                      | Franklin  | Franklin | NE    | 68939    | 40.08926 | -98.953   |
| Cooperative Producers, Inc. - Franklin West        | 1202 15TH Avenue                  | Franklin  | Franklin | NE    | 68939    | 40.1047  | -98.953   |
| Hildreth   | 509 S. Railway St.                | Hildreth  | Franklin | NE    | 68947    | 40.3398  | -99.046   |
| Campbell   | 807 Broad St.                     | Campbell  | Franklin | NE    | 68932    | 40.30051 | -98.7289  |
| All Points Cooperative - Eustis                    | 303 East Railroad St.             | Eustis    | Frontier | NE    | 69028    | 40.66131 | -100.025  |
| Cambridge: Orafino NH3 Plant                       | 73697 Road 406                    | Cambridge | Frontier | NE    | 69022    | 40.51139 | -100.23   |
| All Points Cooperative - Eustis Trailer Storage    | 1/2 mile east of Fertilizer Plant | Eustis    | Frontier | NE    | 69028    | 40.65936 | -100.019  |
| Cambridge: NH3 Plant                               | 40827 Highway 6 and 34            | Cambridge | Furnas   | NE    | 69002    | 40.27778 | -100.191  |
| Nebraska Corn Processing, LLC                      | 107 Potter Street                 | Cambridge | Furnas   | NE    | 69022    | 40.28105 | -100.16   |
| Farmers Cooperative - Pickrell                     | 583 East Pickrell Road            | Pickrell  | Gage     | NE    | 68422    | 40.37828 | -96.7187  |
| Wymore Fertilizer/Filley                           | Jct. S. 134th Rd & E. Dogwood Rd  | Filley    | Gage     | NE    | 68357    | 40.36364 | -96.5396  |
| Koch Nitrogen Company, LLC Beatrice Nitrogen Plant | 21178 Southwest 89th Rd.          | Beatrice  | Gage     | NE    | 68310    | 40.32    | -96.8392  |

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|--|---|--------------|----------|-------|----------|----------|-----------|
| Farmers Cooperative - Blue Springs             | 600 West Broad Road                     | Blue Springs | Gage     | NE    | 68318    | 40.14058 | -96.671   |
| Agrium U.S. Inc - Homestead, NE                | 22292 Southwest 89th Street             | Beatrice     | Gage     | NE    | 68310    | 40.31028 | -96.8399  |
| Southeast Nebraska Coop - Virginia             | 204 4th Street, PO Box 57               | Virginia     | Gage     | NE    | 68458    | 40.24721 | -96.4954  |
| Southeast Nebraska Coop - Beatrice             | 403 South 3rd Street                    | Beatrice     | Gage     | NE    | 68310    | 40.26125 | -96.7506  |
| Farmers Cooperative - Odell                    | 110 Main St.                            | Odell        | Gage     | NE    | 68415    | 40.04611 | -96.8003  |
| Farmers Cooperative - Hoag                     | 21169 SW 80th Lane                      | Beatrice     | Gage     | NE    | 68310    | 40.31861 | -96.8325  |
| Farmers Cooperative - Barneston                | 204 West Grand Ave.                     | Barneston    | Gage     | NE    | 68309    | 40.04778 | -96.5772  |
| Farmers Cooperative Company - Adams West Plant | 9639 East State Highway 41              | Adams        | Gage     | NE    | 68301    | 40.46472 | -96.59    |
| Farmers Cooperative Company - Adams Downtown   | 531 Main St.                            | Adams        | Gage     | NE    | 68301    | 40.46083 | -96.5064  |
| Southeast Nebraska Coop - Holmesville          | 100 B" Street"                          | Holmesville  | Gage     | NE    | 68374    | 40.20139 | -96.6611  |
| Southeast Nebraska Coop - Liberty              | 102 1st Street                          | Liberty      | Gage     | NE    | 68381    | 40.08333 | -96.4819  |
| Southeast Nebraska Cooperative - Ellis         | 30873 Commercial                        | Ellis        | Gage     | NE    | 68310    | 40.21864 | -96.8753  |
| Wymore Fertilizer Company                      | 4th and G Street                        | Wymore       | Gage     | NE    | 68466    | 40.12194 | -96.6583  |
| E Energy Adams, LLC                            | 13238 E. Aspen Road                     | Adams        | Gage     | NE    | 68301    | 40.48569 | -96.5474  |
| Oshkosh Anhydrous Ammonia Storage              | 17560 W Hwy 26                          | Oshkosh      | Garden   | NE    | 69154    | 41.41617 | -102.37   |
| Maverick Fertilizer                            | 350 So Railroad, PO Box 337             | Burwell      | Garfield | NE    | 68823    | 41.77856 | -99.1396  |
| CHS Inc - Smithfield                           | Hwy 23 at Commercial                    | Smithfield   | Gosper   | NE    | 68976    | 40.57056 | -99.7422  |
| Country Partners Cooperative - Spalding        | 310 East Railroad Ave                   | Spalding     | Greeley  | NE    | 68665    | 41.68423 | -98.3598  |
| Riverside Fertilizer & Propane, Inc.           | 80272 Grist Mill Ave                    | Scotia       | Greeley  | NE    | 68875    | 41.46169 | -98.7034  |
| Trotter Fertilizer                             | P O Box 159, 50448 Hwy 91               | Spalding     | Greeley  | NE    | 68665    | 41.6963  | -98.398   |
| Aurora Cooperative - Grand Island Terminal     | 920 N. Shady Bend Road                  | Grand Island | Hall     | NE    | 68802    | 40.94028 | -98.3047  |
| Aurora Cooperative - Doniphan NH3 Plant        | 101 E. Plum Street                      | Doniphan     | Hall     | NE    | 68832    | 40.77139 | -98.3689  |
| Aurora Cooperative - Wood River NH3 Plant      | 6236 S. Schauppsville Rd                | Wood River   | Hall     | NE    | 68883    | 40.84139 | -98.5319  |
| Aurora Cooperative - Cairo NH3 Plant           | 10501 W. One-R Road                     | Cairo        | Hall     | NE    | 68824    | 41.00322 | -98.5409  |
| Jbs - Grand Island Beef Processing Facility    | 555 South Stuhr Rd                      | Grand Island | Hall     | NE    | 68801    | 40.92258 | -98.3189  |
| Wood River                                     | 15123 W. Wood River Rd.                 | Wood River   | Hall     | NE    | 68883    | 40.8283  | -98.6292  |
| Agricultural Services Inc., Of Doniphan NE     | 101 East Pine Street, P.O. Box 174      | Doniphan     | Hall     | NE    | 68832    | 40.7697  | -98.3689  |
| Agricultural Services Inc., Of Grand Island NE | 2777 N. Broadwell Street, P.O. Box 1428 | Grand Island | Hall     | NE    | 68802    | 40.95183 | -98.3583  |
| Agricultural Services Inc., Of Cairo NE        | North HWY 11, P.O. Box 397              | Cairo        | Hall     | NE    | 68824    | 41.00536 | -98.6091  |
| Millard Refrigerated Services                  | 205 East Roberts                        | Grand Island | Hall     | NE    | 68803    | 40.95037 | -98.3523  |

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| Facility Name                                      | Address                                | City         | County    | State | Zip Code | Latitude | Longitude |
|--|--|--------------|-----------|-------|----------|----------|-----------|
| Agricultural Services Inc., Of Alda NE             | Railroad Street, P.O Box 150           | Alda         | Hall      | NE    | 68810    | 40.86865 | -98.4676  |
| Mccain Foods Usa, Inc., Grand Island, Nebraska     | 204 East Roberts Street                | Grand Island | Hall      | NE    | 68803    | 40.95001 | -98.3525  |
| Agricultural Services Inc., Of Wood River NE       | 106 West Railroad Street, P.O. Box 158 | Wood River   | Hall      | NE    | 68883    | 40.81772 | -98.604   |
| Pioneer Trail Energy                               | 7874 South 140th Road                  | Wood River   | Hall      | NE    | 68883    | 40.81472 | -98.6117  |
| Aurora Cooperative - Doniphan Nurse Tanks          | .25 mi E of S. Blaine & W. Giltner     | Doniphan     | Hall      | NE    | 68832    | 40.77178 | -98.3547  |
| Aurora Cooperative - Gi Agronomy                   | 4155 East Hwy 30                       | Grand Island | Hall      | NE    | 68801    | 40.94163 | -98.2926  |
| Aurora Cooperative - Aurora South NH3 Plant        | 315 8th Street, P.O. Box 209           | Aurora       | Hamilton  | NE    | 68818    | 40.85861 | -98.0086  |
| Aurora Cooperative - Murphy NH3 Plant              | 905 Murphy Road                        | Phillips     | Hamilton  | NE    | 68865    | 40.87989 | -98.1161  |
| Aurora Cooperative - Marquette NH3 Plant           | 203 Railroad Street                    | Marquette    | Hamilton  | NE    | 68854    | 41.00389 | -98.0097  |
| United Farmers Cooperative Stockham NH3            | Main Street                            | Stockham     | Hamilton  | NE    | 68818    | 40.71833 | -97.9444  |
| Koch Nitrogen Company - Aurora Terminal            | 1101 West Highway 34                   | Aurora       | Hamilton  | NE    | 68818    | 40.8741  | -98.0921  |
| Giltner  | 23 Railroad Street                     | Giltner      | Hamilton  | NE    | 68841    | 40.77475 | -98.1505  |
| Agricultural Services Inc., Of Phillips NE         | East Street                            | Phillips     | Hamilton  | NE    | 68865    | 40.89422 | -98.2128  |
| CF Industries Sales, LLC - Aurora Terminal         | 1059 West Highway 34                   | Aurora       | Hamilton  | NE    | 68818    | 40.87583 | -98.0992  |
| United Farmers Cooperative Hampton East NH3        | 1307 South X Road                      | Hampton      | Hamilton  | NE    | 68843    | 40.88156 | -97.8647  |
| United Farmers Cooperative Hordville NH3           | Oak & Elm Streets                      | Hordville    | Hamilton  | NE    | 68846    | 41.07753 | -97.8858  |
| United Farmers Cooperative Hampton North NH3       | 20th & North W Road                    | Hampton      | Hamilton  | NE    | 68843    | 40.97331 | -97.883   |
| Nebraska Energy L.L.C.                             | 1205 South "O" Road                    | Aurora       | Hamilton  | NE    | 68818    | 40.86731 | -98.0387  |
| Aurora Cooperative - Railroad Ave Location         | 7th Street & Railroad Avenue           | Aurora       | Hamilton  | NE    | 68818    | 40.86194 | -98.0089  |
| United Farmers Cooperative- Jensen Plant           | Intersection of Co. Roads 18 & "O"     | Aurora       | Hamilton  | NE    | 68818    | 40.94552 | -98.038   |
| United Farmers Cooperative                         | 2304 Highway 14, P. O. Box 38          | Marquette    | Hamilton  | NE    | 68854    | 41.02548 | -97.9962  |
| Aventine Renewable Energy - Aurora West, LLC       | 2103 Harvest Drive                     | Aurora       | Hamilton  | NE    | 68818    | 40.87004 | -98.0455  |
| Culbertson Dealer Fertilize (CDF) and Retail Plant | 71748 Rail Road Avenue                 | Culbertson   | Hitchcock | NE    | 69024    | 40.22681 | -100.83   |
| Trenton Agri Products, LLC                         | 36638 US Highway 34                    | Trenton      | Hitchcock | NE    | 69044    | 40.19249 | -100.975  |
| Atkinson Fertilizer Inc.                           | 476TH Avenue & 881 Road                | Atkinson     | Holt      | NE    | 68713    | 42.59444 | -98.9725  |
| Ag Agronomy Center LLC - Ewing                     | 84785 508th Avenue                     | Ewing        | Holt      | NE    | 68735    | 42.11532 | -98.3416  |
| Stuart Fertilizer And Grain Inc.                   | 468TH Avenue & US HWY 20               | Stuart       | Holt      | NE    | 68780    | 42.59278 | -99.1272  |
| Agricultural Services Inc., Of Page NE             | 124 South 5th Street                   | Page         | Holt      | NE    | 68766    | 42.39999 | -98.4185  |
| Agricultural Services Inc., Of Emmet NE            | 605 South Main Street                  | Emmet        | Holt      | NE    | 68734    | 42.4743  | -98.8067  |
| Central Valley Ag Cooperative - O'Neill            | 87069 494th Avenue                     | O'Neill      | Holt      | NE    | 68763    | 42.44788 | -98.6199  |

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|---|-----------------------------------|------------|-----------|-------|----------|----------|-----------|
| Green Plains Atkinson, LLC.                     | 87590 Hillcrest Road              | Atkinson   | Holt      | NE    | 68713    | 42.51886 | -98.9591  |
| Trotter Fertilizer                              | 515 West Market St., PO Box 185   | Elba       | Howard    | NE    | 68835    | 41.28476 | -98.5654  |
| Agricultural Services Inc., Of Boelus, NE       | 422 8th Street                    | Boelus     | Howard    | NE    | 68820    | 41.0748  | -98.713   |
| Trotter Fertilizer                              | 502 Lander Ave, P.O. Box 155      | Farwell    | Howard    | NE    | 68838    | 41.21748 | -98.6274  |
| AGRICULTURAL SERVICES INC., OF ST. LIBORY NE    | North Spruce Street               | St. Libory | Howard    | NE    | 68872    | 41.08312 | -98.3554  |
| Aurora Cooperative - St. Paul NH3 Plant         | 1009 Twin Forks Lane              | St. Paul   | Howard    | NE    | 68873    | 41.25167 | -98.4611  |
| Aurora Cooperative - Dannebrog NH3 Plant        | 303 East Depot Street             | Dannebrog  | Howard    | NE    | 68831    | 41.11611 | -98.5442  |
| Fairbury, NE 5208                               | 71910 Highway 15                  | Fairbury   | Jefferson | NE    | 68352    | 40.2491  | -97.1791  |
| Farmers Cooperative - Harbine                   | 57890 Highway 136                 | Jansen     | Jefferson | NE    | 68377    | 40.19236 | -96.9758  |
| Farmers Cooperative - Diller                    | 603 Commercial Street             | Diller     | Jefferson | NE    | 68342    | 40.10528 | -96.9358  |
| Farmers Cooperative - Daykin                    | 602 Jefferson Street              | Daykin     | Jefferson | NE    | 68338    | 40.32644 | -97.2998  |
| Farmers Cooperative - Fairbury                  | 56845 Airport Road                | Fairbury   | Jefferson | NE    | 68352    | 40.16917 | -97.1742  |
| Farmers Cooperative - Jansen                    | 200 Broad Street                  | Jansen     | Jefferson | NE    | 68377    | 40.18285 | -97.0849  |
| Farmers Cooperative - Plymouth                  | 601 South County Road             | Plymouth   | Jefferson | NE    | 68424    | 40.29667 | -96.9919  |
| Loveland Products Inc.                          | 71025 569th Avenue                | Fairbury   | Jefferson | NE    | 68352    | 40.12083 | -97.1603  |
| Farmers Cooperative - Reynolds                  | 101 North Railway Street          | Reynolds   | Jefferson | NE    | 68429    | 40.05861 | -97.3378  |
| Farmers Cooperative Company - Cook Branch       | 202 South 3rd                     | Cook       | Johnson   | NE    | 68329    | 40.50806 | -96.1639  |
| Farmers Cooperative Company - St. Mary's Branch | 262 Pearle St.                    | St. Mary   | Johnson   | NE    | 68432    | 40.42389 | -96.2911  |
| Southeast Nebraska Coop - Sterling              | 755 Broadway Street, P.O. Box 399 | Sterling   | Johnson   | NE    | 68443    | 40.4595  | -96.3835  |
| Farmers Cooperative Company - Tecumseh          | 600 South 10th. St.               | Tecumseh   | Johnson   | NE    | 68450    | 40.3625  | -96.1875  |
| Farmers Cooperative Company - Elk Creek         | 425 Elk Street                    | Elk Creek  | Johnson   | NE    | 68348    | 40.28548 | -96.1293  |
| Tecumseh Poultry, LLC                           | 333 South Third Street            | Tecumseh   | Johnson   | NE    | 68450    | 40.36472 | -96.1961  |
| Aurora Cooperative - Keene                      | 435 Railroad Street               | Axtell     | Kearney   | NE    | 68924    | 40.42491 | -99.0678  |
| Axtell  | 101 South Main Street             | Axtell     | Kearney   | NE    | 68924    | 40.47715 | -99.1278  |
| Wilcox  | S. Briggs Street                  | Wilcox     | Kearney   | NE    | 68982    | 40.36416 | -99.1724  |
| Norman  | Main St.                          | Norman     | Kearney   | NE    | 68963    | 40.47967 | -98.7914  |
| Minden  | 1 block N. of 13th & Brown        | Minden     | Kearney   | NE    | 68959    | 40.50778 | -98.9522  |
| KAAPA Ethanol, L.L.C.                           | 8450 KAAPA Lane                   | Minden     | Kearney   | NE    | 68959    | 40.48327 | -99.0753  |
| Clean Harbors Environmental Services, Inc.      | 2247 South Highway 71             | Kimball    | Kimball   | NE    | 69145    | 41.155   | -103.654  |
| Frenchman Valley Coop - Kimball - NH3           | 201 West Front                    | Kimball    | Kimball   | NE    | 69145    | 41.23964 | -103.665  |



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|---|-----------------------------------|--------------|-----------|-------|----------|----------|-----------|
| Battle Creek Farmers Cooperative - Bloomfield, NE | 229 N. Broadway                   | Bloomfield   | Knox      | NE    | 68718    | 42.60306 | -97.6444  |
| Farmers Cooperative Company - Bennet Branch       | 355 Hackberry St.                 | Bennet       | Lancaster | NE    | 68317    | 40.67796 | -96.5057  |
| Farmers Cooperative Company                       | 11400 N 148th St.                 | Waverly      | Lancaster | NE    | 68462    | 40.92611 | -96.52    |
| Farmland Foods - Lincoln, NE Facility             | 200 South 2nd Street              | Lincoln      | Lancaster | NE    | 68508    | 40.81306 | -96.7183  |
| Midwest Farmers Coop - Walton                     | 1621 South 118th                  | Walton       | Lancaster | NE    | 68461    | 40.79639 | -96.5639  |
| Tri-Con Industries, Ltd. Manufacturing Plant      | 4000 NW 44th st.                  | Lincoln      | Lancaster | NE    | 68524    | 40.85417 | -96.7811  |
| FARMERS COOPERATIVE - RAYMOND                     | 14540 West Railroad Street        | Raymond      | Lancaster | NE    | 68428    | 40.95417 | -96.7827  |
| FARMERS COOPERATIVE - EMERALD                     | 8800 West Haven                   | Emerald      | Lancaster | NE    | 68528    | 40.81792 | -96.8414  |
| Koch Nitrogen Company - Greenwood Terminal        | 18805 Highway 6                   | Greenwood    | Lancaster | NE    | 68366    | 40.94194 | -96.4678  |
| Farmers Cooperative - Kramer                      | 101 Main St. (Kramer)             | Crete        | Lancaster | NE    | 68333    | 40.58778 | -96.8744  |
| District Energy Corporation 9th & K Thermal Plant | 503 South 9th Street              | Lincoln      | Lancaster | NE    | 68508    | 40.80886 | -96.7089  |
| Rokeby Generating Station                         | 8000 SW 12th Street               | Lincoln      | Lancaster | NE    | 68523    | 40.73192 | -96.7371  |
| Davey Plant                                       | 14th & Agnew Road                 | Davey        | Lancaster | NE    | 68336    | 41.01795 | -96.7     |
| Farmers Cooperative - Firth                       | 305 Main Street                   | Firth        | Lancaster | NE    | 68358    | 40.5315  | -96.6069  |
| Farmers Cooperative - Princeton                   | 1305 Broad Street                 | Princeton    | Lancaster | NE    | 68404    | 40.57372 | -96.7029  |
| Millard Refrigerated Services                     | 3600 NW 12st Street               | Lincoln      | Lancaster | NE    | 68521    | 40.84767 | -96.7373  |
| Farmers Cooperative - Roca                        | 15505 A" Street"                  | Roca         | Lancaster | NE    | 68430    | 40.65781 | -96.6644  |
| Terry Bundy Generating Station                    | 7707 Bluff Road                   | Lincoln      | Lancaster | NE    | 68517    | 40.91092 | -96.6148  |
| Farmers Cooperative - Hallam                      | SW 72nd Hallam Road               | Hallam       | Lancaster | NE    | 68368    | 40.54889 | -96.8147  |
| Enterprise Greenwood Terminal & Storage           | 18805 Highway 6                   | Greenwood    | Lancaster | NE    | 68366    | 40.94381 | -96.468   |
| MBA Poultry                                       | 13151 Dovers Street               | Waverly      | Lancaster | NE    | 68462    | 40.90126 | -96.544   |
| ADM Milling Company Lincoln, NE                   | 540 South Street                  | Lincoln      | Lancaster | NE    | 68502    | 40.79167 | -96.7136  |
| UNIVERSAL COLD STORAGE                            | 1601 Pioneers Blvd                | Lincoln      | Lancaster | NE    | 68502    | 40.77018 | -96.7015  |
| Greenwood Terminal & Storage                      | 18805 Highway 6                   | Greenwood    | Lancaster | NE    | 68366    | 40.94306 | -96.4669  |
| Hawkins Water Treatment Group-Roca                | 1066 Saltillo Road                | Roca         | Lancaster | NE    | 68430    | 40.70053 | -96.7078  |
| Sysco Lincoln, Inc.                               | 900 Kingbird Rd                   | Lincoln      | Lancaster | NE    | 68521    | 40.85511 | -96.7348  |
| Hershey Simplot Grower Solutions                  | 401 E. Front Street               | Hershey      | Lincoln   | NE    | 69143    | 41.1595  | -100.996  |
| Midwest Renewable Energy, LLC                     | 27532 W Hwy 30                    | Sutherland   | Lincoln   | NE    | 69165    | 41.16083 | -101.09   |
| Nustar Energy LP- North Platte Terminal           | 17504 S. Hwy 83                   | North Platte | Lincoln   | NE    | 69101    | 40.97643 | -100.755  |
| Logan County Cooperative Oil Association          | 34 U. S. Highway 83, P.O. Box 248 | Stapleton    | Logan     | NE    | 69163    | 41.42528 | -100.502  |

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| Tyson Fresh Meats, Inc., Madison, NE          | 1200 Industrial Parkway                       | Madison      | Madison  | NE    | 68748    | 41.81778 | -97.4683  |
| Roberts Dairy, Norfolk, NE                    | 700 East Omaha Avenue                         | Norfolk      | Madison  | NE    | 68701    | 42.01769 | -97.3985  |
| Farmers Pride - Madison                       | WEST HIGHWAY 32                               | Madison      | Madison  | NE    | 68748    | 41.82936 | -97.4702  |
| Farmers Cooperative Oil Co. Newman Grove Anhy | County Line Rd.                               | Newman Grove | Madison  | NE    | 68758    | 41.7431  | -97.7727  |
| Battle Creek Farmers Cooperative - BC South   | South Hwy 121                                 | Battle Creek | Madison  | NE    | 68715    | 41.96833 | -97.6022  |
| City Of Norfolk East Water Plant              | 111 South 1st Street                          | Norfolk      | Madison  | NE    | 68701    | 42.03194 | -97.4067  |
| City Of Norfolk West Water Plant              | 300 South 49th Street                         | Norfolk      | Madison  | NE    | 68701    | 42.02935 | -97.4855  |
| Elkhorn Valley Ethanol, LLC                   | 3002 North Victory Road                       | Norfolk      | Madison  | NE    | 68701    | 42.06806 | -97.3814  |
| Nustar Energy LP - Norfolk Terminal           | 4708 North 13th Street                        | Norfolk      | Madison  | NE    | 68701    | 42.08905 | -97.4256  |
| Aurora Cooperative - Clarks NH3 Plant         | 2341 23rd Road                                | Clarks       | Merrick  | NE    | 68628    | 41.19583 | -97.8703  |
| Husker Coop Silver Creek Branch               | 1/8 Mile East on Highway 30                   | Silver Creek | Merrick  | NE    | 68663    | 41.31756 | -97.6596  |
| Aurora Cooperative - Central City NH3 Plant   | 1561 13th Road                                | Central City | Merrick  | NE    | 68826    | 41.085   | -98.0578  |
| Agricultural Services Inc., Of Archer NE      | 2132 Archer Road                              | Archer       | Merrick  | NE    | 68816    | 41.16783 | -98.1383  |
| AGROSERVICE, INC.                             | Highway 30 and Chestnut Street                | Silver Creek | Merrick  | NE    | 68663    | 41.31804 | -97.6585  |
| Central Valley Ag Cooperative - Clarks        | 2947 26th Road                                | Clarks       | Merrick  | NE    | 68628    | 41.28444 | -97.8094  |
| Four Seasons Ag                               | 901 Zurick Street                             | Palmer       | Merrick  | NE    | 68864    | 41.22048 | -98.2586  |
| Green Plains Central City Llc.                | 214 20th Street                               | Central City | Merrick  | NE    | 68826    | 41.10972 | -97.9714  |
| Bayard Simplot Grower Solutions               | 201 Main Street                               | Bayard       | Morill   | NE    | 69334    | 41.75303 | -103.329  |
| Panhandle Cooperative Assn-Bridgeport         | 425 W. Railroad                               | Bridgeport   | Morrill  | NE    | 69336    | 41.66833 | -103.105  |
| Bridgeport Ethanol, LLC                       | 9216 Road 90                                  | Bridgeport   | Morrill  | NE    | 69336    | 41.64455 | -103.078  |
| Bridgeport, NE 5513                           | 9262 South Railroad Avenue                    | Bridgeport   | Morrill  | NE    | 69336    | 41.64815 | -103.083  |
| Central Valley Ag Cooperative - Fullerton     | 500ft NW of N. Broadway & Co. Road            | Fullerton    | Nance    | NE    | 68638    | 41.37417 | -97.9681  |
| Central Valley Ag Cooperative - Genoa         | 1 Blk. S. of Willard & Elm                    | Genoa        | Nance    | NE    | 68640    | 41.44806 | -97.7258  |
| Husker Coop Belgrade Branch                   | 47271 N 216 Ave                               | Belgrade     | Nance    | NE    | 68623    | 41.46167 | -98.0697  |
| Husker Coop Genoa Branch                      | 222 Willard                                   | Genoa        | Nance    | NE    | 68640    | 41.44722 | -97.7261  |
| Dettmer Farm Service Inc. (Main Plant)        | 504 10th St, PO Box 160                       | Auburn       | Nemaha   | NE    | 68305    | 40.3952  | -95.8314  |
| Dettmer Farm Service Inc. (South Plant)       | 1 block West of Hwy 75 on 28th St, PO Box 160 | Auburn       | Nemaha   | NE    | 68305    | 40.3748  | -95.8396  |
| Midwest Farmers Coop                          | 4th and Main Streets                          | Brock        | Nemaha   | NE    | 68320    | 40.48462 | -95.9596  |
| Debruce Ag Service Inc. - Howe, NE            | 203 West Street                               | Howe         | Nemaha   | NE    | 68305    | 40.32152 | -95.8197  |
| C & M Supply Inc. - Oak Plant                 | Highway S-65A                                 | Oak          | Nuckolls | NE    | 68964    | 40.25369 | -97.896   |



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|--|-------------------------------|---------------|----------|-------|----------|----------|-----------|
| C & M Supply Inc.-Ruskin Plant                 | 4609 Hwy 136                  | Ruskin        | Nuckolls | NE    | 68974    | 40.14755 | -97.8755  |
| Superior, NE 5210                              | 1221 East 3rd Street          | Superior      | Nuckolls | NE    | 68978    | 40.01809 | -98.053   |
| Cooperative Producers, Inc. - Lawrence         | 411 West 2ND Street           | Lawrence      | Nuckolls | NE    | 68957    | 40.29302 | -98.2652  |
| Aurora Cooperative - Hardy NH3 Plant           | 410 West Railroad Street      | Hardy         | Nuckolls | NE    | 68943    | 40.00833 | -97.9303  |
| Nelson   | 1 mile N. of Nelson on Hwy 14 | Nelson        | Nuckolls | NE    | 68961    | 40.21977 | -98.0686  |
| C & M Supply Inc.- Abdal Plant                 | 922 Road 3300                 | Superior      | Nuckolls | NE    | 68978    | 40.12139 | -98.1233  |
| Nebraska City Water Treatment Plant            | 406 North 1st Street          | Nebraska City | Otoe     | NE    | 68410    | 40.67541 | -95.8439  |
| Farmers Coop Company--Palmyra Branch           | 125 Front St,                 | Palmyra       | Otoe     | NE    | 68418    | 40.70506 | -96.3711  |
| Farmers Cooperative Company - Burr             | 333 Main St.                  | Burr          | Otoe     | NE    | 68301    | 40.53667 | -96.3044  |
| Farmers Coop Company                           | 3rd and Market Street         | Talmage       | Otoe     | NE    | 68448    | 40.53278 | -96.0201  |
| Midwest Farmers Coop - Dunbar                  | 202 East Indiana St.          | Dunbar        | Otoe     | NE    | 68346    | 40.66932 | -96.0288  |
| Midwest Farmers Coop - Nebraska City           | 5811 G Road                   | Nebraska City | Otoe     | NE    | 68410    | 40.6979  | -95.9107  |
| Cargill Meat Solutions Corporation             | 2601 Industrial Road          | Nebraska City | Otoe     | NE    | 68410    | 40.6667  | -95.88    |
| Midwest Farmers Coop                           | 2960 "E" Rd.                  | Syracuse      | Otoe     | NE    | 68446    | 40.72528 | -96.1814  |
| Diversified Foods And Seasonings, Inc.         | 1320 South 19th Street        | Nebraska City | Otoe     | NE    | 68410    | 40.66425 | -95.8692  |
| Omaha Public Power Nebraska City Power Station | 7264 L Road                   | Nebraska City | Otoe     | NE    | 68410    | 40.62056 | -95.7736  |
| NCCA-Pawnee City                               | E. Hwy 50                     | Pawnee City   | Pawnee   | NE    | 68420    | 40.10981 | -96.1222  |
| Southeast Nebraska Coop - Burchard             | 401 1st St., P.O. Box 154     | Burchard      | Pawnee   | NE    | 68323    | 40.14556 | -96.3518  |
| Pawnee Fertilizer Inc Plant                    | 62126 Highway 8               | Pawnee City   | Pawnee   | NE    | 68420    | 40.11001 | -96.1749  |
| Dubois NH3                                     | 889 1st St.                   | DuBois        | Pawnee   | NE    | 68345    | 40.03639 | -96.05    |
| Hi Line Cooperative, Inc.-Grant Terminal       | 32880 Road 759 3/4            | Grant         | Perkins  | NE    | 69140    | 40.8403  | -101.708  |
| Frenchman Valley Coop                          | 32945 Highway 23              | Grant         | Perkins  | NE    | 69140    | 40.84072 | -101.698  |
| Frenchman Valley Coop                          | 104 E Hyw 23                  | Venango       | Perkins  | NE    | 69168    | 40.7673  | -102.039  |
| Frenchman Valley Coop                          | 32870 Road 759 3/4            | Grant         | Perkins  | NE    | 69140    | 40.84031 | -101.712  |
| Mid America Agri Products/Wheatland, LLC       | 76080 County Rd 338           | Madrid        | Perkins  | NE    | 69150    | 40.85401 | -101.54   |
| Cargill Aghorizons - Holdrege Wholesale        | 11828 733 Road                | Holdrege      | Phelps   | NE    | 68949    | 40.45139 | -99.2986  |
| Rusty's Fertilizer Company, Inc.               | 74697 U.S. Highway 183        | Elm Creek     | Phelps   | NE    | 68836    | 40.65758 | -99.3799  |
| Funk   | U. S. Highway 6               | Funk          | Phelps   | NE    | 68940    | 40.45935 | -99.262   |
| CHS Inc - Loomis                               | East Hwy 23                   | Loomis        | Phelps   | NE    | 68958    | 40.48013 | -99.5116  |
| CHS Inc - Loomis North                         | 9 mI. North on Loomis Road    | Loomis        | Phelps   | NE    | 68958    | 40.62075 | -99.5123  |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                                     | Address  | City       | County     | State | Zip Code | Latitude | Longitude |
|---|--|------------|------------|-------|----------|----------|-----------|
| CHS Inc - Holdrege North                          | 8 Mi. North of Holdrege on Hwy 183                         | Holdrege   | Phelps     | NE    | 68949    | 40.55367 | -99.3801  |
| CHS Inc - Bertrand Trailer Storage                | West Highway 23  | Bertrand   | Phelps     | NE    | 68927    | 40.53167 | -99.6433  |
| Battle Creek Farmers Cooperative- Plainview, NE   | Junction Highways 20 and 13                                | Plainview  | Pierce     | NE    | 68769    | 42.34899 | -97.7967  |
| Battle Creek Farmers Cooperative Pierce, NE       | 0.5 miles west of Hwy 13 on Road 854                       | Pierce     | Pierce     | NE    | 68767    | 42.20694 | -97.5428  |
| Battle Creek Farmers Cooperative - Osmond, NE     | West Hwy 20  | Osmond     | Pierce     | NE    | 68765    | 42.35222 | -97.6056  |
| Husker Ag, LLC                                    | 54048 Hwy 20   | Plainview  | Pierce     | NE    | 68769    | 42.35028 | -97.7064  |
| Central Valley Ag Cooperative - Columbus          | 1362 3rd Avenue  | Columbus   | Platte     | NE    | 68601    | 41.42911 | -97.332   |
| Central Valley Ag Cooperative - Humphrey          | 26983 467th Street, facility same-<br>wrong address before | Humphrey   | Platte     | NE    | 68642    | 41.69437 | -97.472   |
| Farmers Co-Op Association                         | 106 Pine Street  | Lindsay    | Platte     | NE    | 68644    | 41.69782 | -97.6947  |
| Adm Corn Processing - Columbus                    | 3000 East 8th Street                                       | Columbus   | Platte     | NE    | 68601    | 41.42139 | -97.2886  |
| Cargill Meat Solutions, Cargill Value Added Meats | 1529 23rd Street   | Columbus   | Platte     | NE    | 68601    | 41.43578 | -97.308   |
| Husker Coop Tarnov Branch                         | 108 1 Street   | Tarnov     | Platte     | NE    | 68642    | 41.61722 | -97.5008  |
| Husker Coop Duncan Branch                         | Main Ave. and Highway 30                                   | Duncan     | Platte     | NE    | 68634    | 41.38889 | -97.4925  |
| Husker Coop Oconee Branch                         | Route 2, Highway 22  | Columbus   | Platte     | NE    | 68601    | 41.47306 | -97.5214  |
| Husker Coop Columbus Elevator                     | 1854 14th Avenue   | Columbus   | Platte     | NE    | 68601    | 41.43417 | -97.3431  |
| Creston Fertilizer Co., Inc.                      | 401 1st Street   | Creston    | Platte     | NE    | 68633    | 41.70709 | -97.3656  |
| Preister Ag Supply                                | 30551 430th Ave., Route 1 Box 70                           | Monroe     | Platte     | NE    | 68647    | 41.53731 | -97.6768  |
| Central Valley Ag Cooperative - Monroe            | 36262 Hwy 22   | Monroe     | Platte     | NE    | 68647    | 41.47361 | -97.5933  |
| Harless Oil Company                               | 320 Polk Avenue  | Polk       | Polk       | NE    | 68654    | 41.07899 | -97.781   |
| United Farmers Cooperative Shelby NH3             | 1 Blk. East of Birch & Pine Streets                        | Shelby     | Polk       | NE    | 68662    | 41.19371 | -97.4165  |
| United Farmers Cooperative Polk NH3               | Railroad Avenue  | Polk       | Polk       | NE    | 68654    | 41.07908 | -97.7844  |
| United Farmers Cooperative Stromsburg NH3         | M and 23 Roads   | Stromsburg | Polk       | NE    | 68666    | 41.08025 | -97.5784  |
| Husker Coop Osceola Branch                        | 940 Central  | Osceola    | Polk       | NE    | 68651    | 41.17806 | -97.5546  |
| McCook, NE 5511                                   | 101 Burlington Road  | McCook     | Red Willow | NE    | 69001    | 40.1959  | -100.629  |
| Frenchman Valley Coop.                            | Burlington Northern Yards                                  | McCook     | Red Willow | NE    | 69001    | 40.19422 | -100.625  |
| Ag Partners Cooperative, Inc. - Rulo, NE          | 3rd and Bayliss  | Rulo       | Richardson | NE    | 68431    | 40.05444 | -95.4311  |
| J.T. Farm Service, Inc.                           | 204 W. 4th Street  | Verdon     | Richardson | NE    | 68457    | 40.14906 | -95.7148  |
| Scholl Fertilizer Inc.                            | 5th and Wilson   | Falls City | Richardson | NE    | 68355    | 40.04975 | -95.5986  |
| Nebraska Fertilizer Company, Inc.                 | Box 96 Route 1   | Rulo       | Richardson | NE    | 68431    | 40.05722 | -95.4617  |
| Stateline NH3                                     | 64016 705 Road   | Dawson     | Richardson | NE    | 68337    | 40.04428 | -95.8203  |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                              | Address                             | City         | County       | State | Zip Code | Latitude | Longitude |
|--|-------------------------------------|--------------|--------------|-------|----------|----------|-----------|
| Ag Partners Cooperative, Inc.-Humboldt     | 730 South Railroad                  | Humboldt     | Richardson   | NE    | 68376    | 40.1575  | -95.9464  |
| Dawson Ag Center                           | 63834-710 RD                        | Dawson       | Richardson   | NE    | 68337    | 40.117   | -95.8533  |
| Farmland Foods, Inc. - Crete Plant         | 2223 County Road I                  | Crete        | Saline       | NE    | 68333    | 40.57972 | -96.9647  |
| Farmers Cooperative - Dorchester South     | .25 mi. S. of Jctn. Hwy 41& 15      | Western      | Saline       | NE    | 68464    | 40.50683 | -97.1801  |
| Farmers Cooperative - Friend               | 455 County Road D                   | Friend       | Saline       | NE    | 68359    | 40.65458 | -97.3016  |
| Farmers Cooperative - Dorchester East      | State Highway 33 - 1 Mile E of Town | Dorchester   | Saline       | NE    | 68343    | 40.64025 | -97.0948  |
| Farmers Cooperative - Western              | 2224 State Hwy 15                   | Western      | Saline       | NE    | 68464    | 40.38972 | -97.1783  |
| Farmers Cooperative - Wilber               | 2136 State Hwy 41                   | Wilbur       | Saline       | NE    | 68465    | 40.48194 | -96.95    |
| Farmers Cooperative - Dewitt               | 2336 County Road UU                 | De Witt      | Saline       | NE    | 68341    | 40.40028 | -96.9456  |
| Farmers Cooperative - Swanton              | 101 South Filmore                   | Swanton      | Saline       | NE    | 68445    | 40.37778 | -97.0789  |
| Farmers Union Cooperative Company          | 650 US Highway 6                    | Friend       | Saline       | NE    | 68359    | 40.65561 | -97.2654  |
| Americold, Crete #75121                    | 2228 County Road I                  | Crete        | Saline       | NE    | 68333    | 40.58222 | -96.9633  |
| Crete Cold Storage                         | 2220 County Road I                  | Crete        | Saline       | NE    | 68333    | 40.58475 | -96.9668  |
| Farmers Union Co-Op - Gretna               | 810 Burns Place                     | Gretna       | Sarpy        | NE    | 68028    | 41.1425  | -96.2494  |
| Dpc Industries, Inc.                       | 11202 South 25th Street             | Omaha        | Sarpy        | NE    | 68123    | 41.14722 | -95.9542  |
| Platte River Water Treatment Plant         | 4001 LaPlatte Road                  | Omaha        | Sarpy        | NE    | 68123    | 41.0725  | -95.9733  |
| United States Cold Storage, Omaha Oakdale  | 10711 Olive Street                  | Omaha        | Sarpy        | NE    | 68128    | 41.185   | -96.08    |
| Ashland Water Treatment Facility           | 401 East Highway 6                  | Ashland      | Saunders     | NE    | 68003    | 41.03889 | -96.3531  |
| Farmers Union Coop                         | East Cedar Street                   | Cedar Bluffs | Saunders     | NE    | 68015    | 41.39994 | -96.6095  |
| Frontier Cooperative Co. - Weston          | Corner of Rd. 23 and Dump Rd.       | Weston       | Saunders     | NE    | 68070    | 41.19639 | -96.7358  |
| Frontier Cooperative Co. - Ceresco         | 1 Blk. East of First and Adams Sts. | Ceresco      | Saunders     | NE    | 68017    | 41.05639 | -96.6431  |
| Krumel Grain                               | 1548 County Road 16                 | Wahoo        | Saunders     | NE    | 68066    | 41.22733 | -96.6021  |
| Schuyler Cooperative Assn. Kavan Anhydrous | 2645 C Road 18                      | Cedar Bluffs | Saunders     | NE    | 68015    | 41.38497 | -96.6452  |
| E3 Biofuels-Mead, LLC                      | 1344 County Road 10                 | Mead         | Saunders     | NE    | 68041    | 41.19619 | -96.475   |
| Monke Bros. Fertilizer - Cedar Bluffs      | 2309 County Road 20                 | Cedar Bluffs | Saunders     | NE    | 68015    | 41.34038 | -96.6788  |
| Frontier Cooperative Co. - Mead NH3        | 1551 County Road 11                 | Mead         | Saunders     | NE    | 68041    | 41.22592 | -96.5046  |
| Morrill Anhydrous Ammonia Storage          | 70927 W Highway 26                  | Morrill      | Scotts Bluff | NE    | 69358    | 41.96278 | -103.932  |
| Midwest Pms Minatare Nebraska              | 100 Railway St.                     | Minatare     | Scotts Bluff | NE    | 69356    | 41.6978  | -103.361  |
| Panhandle Cooperative Assn- Scottsbluff    | 1412 E. 7th Street                  | Scottsbluff  | Scotts Bluff | NE    | 69361    | 41.85278 | -103.645  |
| Gering Anhydrous Ammonia Storage           | 1290 Rundell Road                   | Gering       | Scotts Bluff | NE    | 69341    | 41.82028 | -103.641  |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                                  | Address                             | City            | County   | State | Zip Code | Latitude | Longitude |
|--|-------------------------------------|-----------------|----------|-------|----------|----------|-----------|
| Farmers Cooperative - Cordova                  | 305 Hector                          | Cordova         | Seward   | NE    | 68350    | 40.71686 | -97.3554  |
| Farmers Cooperative - Pleasant Dale            | 680 159th Road                      | Pleasant Dale   | Seward   | NE    | 68423    | 40.78217 | -96.9351  |
| Farmers Cooperative - Milford                  | 2775 Van Dorn Road                  | Milford         | Seward   | NE    | 68405    | 40.78503 | -97.0974  |
| Farmers Cooperative - Seward East              | 1333 238th St.                      | Seward          | Seward   | NE    | 68434    | 40.90172 | -97.0446  |
| Farmers Cooperative - Campbell                 | 292nd and Fletcher Road             | Seward          | Seward   | NE    | 68434    | 40.87193 | -97.1199  |
| United Farmers Cooperative Staplehurst NH3     | 1/2 Mile N of 350& Branched Oak Rds | Staplehurst     | Seward   | NE    | 68439    | 40.98156 | -97.1969  |
| United Farmers Cooperative Bee NH3             | 120 Elm Street                      | Bee             | Seward   | NE    | 68314    | 41.00672 | -97.0608  |
| United Farmers Cooperative Beaver Crossing NH3 | South and Omaha Streets             | Beaver Crossing | Seward   | NE    | 68313    | 40.77578 | -97.2834  |
| United Farmers Cooperative Tamora NH3          | 465 South Railroad                  | Tamora          | Seward   | NE    | 68434    | 40.89424 | -97.2241  |
| United Farmers Cooperative Utica Town NH3      | 555 First Street                    | Utica           | Seward   | NE    | 68456    | 40.895   | -97.3389  |
| Mirage Flats Anhydrous Ammonia Storage         | 4340 440th Road                     | Hay Springs     | Sheridan | NE    | 69347    | 42.49889 | -102.664  |
| Ashton Feed & Grain                            | 100 East Hiway 92, P.O.Box 130      | Ashton          | Sherman  | NE    | 68817    | 41.24883 | -98.7923  |
| Trotter Grain And Fertilizer                   | 1122 "O" St.                        | Loup City       | Sherman  | NE    | 68853    | 41.27432 | -98.9735  |
| Trotter Fertilizer                             | 216 Haller, PO Box 150              | Litchfield      | Sherman  | NE    | 68852    | 41.15764 | -99.1507  |
| Farmers Cooperative - Pilger                   | 2.5 miles south of hwys 15&275 Jct. | Pilger          | Stanton  | NE    | 68768    | 41.98248 | -97.0593  |
| Chester, NE 5534                               | 421 Croop Street                    | Chester         | Thayer   | NE    | 68327    | 40.00722 | -97.6153  |
| Aurora Cooperative - Carleton NH3 Plant        | 210 3rd Street                      | Carleton        | Thayer   | NE    | 68326    | 40.29861 | -97.6717  |
| Davenport, NE 5206                             | 207 South Maple Avenue              | Davenport       | Thayer   | NE    | 68335    | 40.3104  | -97.8136  |
| Deshler, NE 5205                               | 5372 Highway 136                    | Deshler         | Thayer   | NE    | 68340    | 40.14716 | -97.7318  |
| Aurora Cooperative - Hubbell                   | 320 North Railroad                  | Hubbell         | Thayer   | NE    | 68375    | 40.00694 | -97.4975  |
| Aurora Cooperative - Byron NH3 Plant           | 308 North Railroad                  | Byron           | Thayer   | NE    | 68325    | 40.00278 | -97.7686  |
| Aurora Cooperative - Chester NH3 Plant         | South Old HW81                      | Chester         | Thayer   | NE    | 68327    | 40.00616 | -97.6134  |
| Bruning Grain & Feed - Bruning                 | 417 West Railway                    | Bruning         | Thayer   | NE    | 68322    | 40.33208 | -97.5691  |
| Norder Supply, Inc.-Hebron Branch              | 1st & Olive                         | Hebron          | Thayer   | NE    | 68370    | 40.16743 | -97.5958  |
| Pender Grain, Inc. - Pender                    | 3rd and Willis                      | Pender          | Thurston | NE    | 68047    | 42.11611 | -96.7049  |
| Country Partners Cooperative - Ord Bulk Plant  | 528 N. 14th St.                     | Ord             | Valley   | NE    | 68862    | 41.60646 | -98.9265  |
| Trotter Grain And Fertilizer                   | 300 Railroad, PO BOX 158            | Arcadia         | Valley   | NE    | 68815    | 41.43    | -99.129   |
| Trotter Fertilizer And Propane                 | 15th & G                            | Ord             | Valley   | NE    | 68862    | 41.60769 | -98.928   |
| Country Partners Coop - Ord Tank Farm          | 81180 S. Hwy 70, P.O. Box 208       | Ord             | Valley   | NE    | 68862    | 41.58898 | -98.9571  |
| Green Plains Ord, LLC                          | 48267 Val-E Road                    | Ord             | Valley   | NE    | 68862    | 41.5711  | -98.8214  |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                                | Address                            | City        | County     | State | Zip Code | Latitude | Longitude |
|--|------------------------------------|-------------|------------|-------|----------|----------|-----------|
| Trotter Terminal                             | 81216 Hwy 11                       | Ord         | Valley     | NE    | 68862    | 41.58613 | -98.8883  |
| Monke Bros. Fertilizer - Rollands Location   | 11037 Rolland Lane                 | Blair       | Washington | NE    | 68008    | 41.53911 | -96.2656  |
| Monke Bros. Fertilizer - Arlington Location  | 4870 County Road P9                | Arlington   | Washington | NE    | 68002    | 41.44948 | -96.3559  |
| CF Industries Sales, LLC - Blair Terminal    | 250 Industrial Park Drive          | Blair       | Washington | NE    | 68008    | 41.54247 | -96.0993  |
| Blair Water Treatment Facility               | 742 East Fairview Drive            | Blair       | Washington | NE    | 68008    | 41.5525  | -96.1019  |
| Novozymes Blair, Inc                         | 600 S. 1st Street, P.O. Box 388    | Blair       | Washington | NE    | 68008    | 41.53682 | -96.1106  |
| Farmers Cooperative - Winside                | .5 Block south of 502 Main Street  | Winside     | Wayne      | NE    | 68790    | 42.17478 | -97.1741  |
| AGP Grain Marketing Llc - Cowles             | Rural Route 2, BOX 132             | Blue Hill   | Webster    | NE    | 68930    | 40.1726  | -98.4467  |
| AGP Grain Marketing Llc - Rosemont           | Rural Route 2, Box 103             | Blue Hill   | Webster    | NE    | 68930    | 40.28665 | -98.364   |
| Cooperative Producers, Inc. - Red Cloud      | 521 South Webster                  | Red Cloud   | Webster    | NE    | 68970    | 40.07636 | -98.5201  |
| Ely's Inc.                                   | 101 University Street              | Guide Rock  | Webster    | NE    | 68942    | 40.07076 | -98.3307  |
| Farmers Union Cooperative Company            | 102 University                     | Guide Rock  | Webster    | NE    | 68942    | 40.07081 | -98.3288  |
| Blue Hill                                    | P.O. Box 336, South Highway 281    | Blue Hill   | Webster    | NE    | 68903    | 40.31981 | -98.4446  |
| Abengoa Bioenergy Corporation York           | 1414 County Road O                 | York        | York       | NE    | 68467    | 40.89561 | -97.5437  |
| United Farmers Cooperative Bradshaw West NH3 | 1365 C Road                        | Bradshaw    | York       | NE    | 68319    | 40.88056 | -97.7892  |
| Henderson Community Co-Op                    | Railroad St. and Gilbert Ave.      | Lushton     | York       | NE    | 68371    | 40.72388 | -97.7268  |
| Henderson Community Co-Op                    | Two blocks N. of Oak St.           | Henderson   | York       | NE    | 68371    | 40.78656 | -97.8163  |
| Farmers Cooperative - Mccool Junction        | 104 N. 6th Street                  | McCool Jct. | York       | NE    | 68401    | 40.7425  | -97.5912  |
| Aurora Cooperative - Lushton                 | North Gilbert Street               | Lushton     | York       | NE    | 68383    | 40.72722 | -97.7244  |
| Aurora Cooperative - Henderson               | 951 Oak St.                        | Henderson   | York       | NE    | 68371    | 40.78576 | -97.8173  |
| United Farmers Cooperative Gresham NH3       | 500 Depot Street, P.O. Box 0       | Gresham     | York       | NE    | 68367    | 41.02917 | -97.4031  |
| United Farmers Cooperative Knox Plant NH3    | 1/2 Mile East on County Road 9     | York        | York       | NE    | 68467    | 40.81333 | -97.5898  |
| United Farmers Cooperative Waco NH3          | 202 Midland Street                 | Waco        | York       | NE    | 68460    | 40.89467 | -97.4601  |
| United Farmers Cooperative Thayer NH3        | 305 Cedar                          | Thayer      | York       | NE    | 68460    | 40.96942 | -97.4973  |
| United Farmers Cooperative York NH3          | 1403 Road 14                       | York        | York       | NE    | 68467    | 40.88656 | -97.5744  |
| United Farmers Cooperative Siebert NH3       | 507 Road "H"                       | York        | York       | NE    | 68467    | 40.76233 | -97.6915  |
| United Farmers Cooperative West BLUE NH3     | County Roads '4' and 'S'           | Waco        | York       | NE    | 68460    | 40.7415  | -97.4645  |
| United Farmers Cooperative Utica South NH3   | 1/2 mile West of Co. Road V & Rd.9 | Utica       | York       | NE    | 68456    | 40.81401 | -97.4106  |
| United Farmers Cooperative Benedict West NH3 | Intersection of Roads F & 22       | Benedict    | York       | NE    | 68316    | 41.00275 | -97.7307  |
| United Farmers Cooperative Benedict Town NH3 | South Railroad Street              | Benedict    | York       | NE    | 68316    | 41.00406 | -97.6073  |

**Risk Management Program (RMP) Sites.** Source: U.S. Environmental Protection Agency, Region 7 RMP Database, January 2017

| Facility Name                      | Address                            | City     | County | State | Zip Code | Latitude | Longitude |
|------------------------------------|------------------------------------|----------|--------|-------|----------|----------|-----------|
| York Cold Storage                  | 402 Commerce Street                | York     | York   | NE    | 68467    | 40.87272 | -97.5969  |
| Aurora Cooperative - York Location | 1320 Road L                        | York     | York   | NE    | 68467    | 40.88345 | -97.6159  |
| AGP Grain Marketing LLC - Roseland | 11816 West Clark St., P.O. Box 127 | Roseland | Adams  | NE    | 68973    | 40.46953 | -98.5541  |

## **APPENDIX B.2**

# **REGULATED PIPELINES**

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This information is restricted. Please contact the Region 7 Regional Response Team Coordinator to request this information; or call the EPA Region 7 Emergency Response 24-Hour Number (spill line) at (913) 281-0991 to make an emergency request for this information.

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## **APPENDIX C.1**

# **OIL SPILL REMOVAL ORGANIZATIONS (OSRO), CLASSIFIED BY USCG AND TRACKED IN THE RESPONSE RESOURCE INVENTORY (RRI)**

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**OIL SPILL REMOVAL ORGANIZATIONS (OSRO), CLASSIFIED BY USCG AND TRACKED  
IN THE RESPONSE RESOURCE INVENTORY (RRI)**

**APPENDIX C.1 TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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| Table C.1.2: OSRO CONTACT INFORMATION ..... | 4                  |

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## Oil Spill Removal Organizations (OSRO):

The U.S. Coast Guard National Strike Force Coordination Center (NSFCC) maintains the Response Resource Inventory (RRI) database listing all local equipment. The database can be accessed at <https://cgrri.uscg.mil/UserReports/WebClassificationReport.aspx>.

For RRI issues please contact: <https://cgrri.uscg.mil/contactUs.aspx> or (252) 331-6000.

| TABLE C.1.1: USCG DISTRICT 8 OSROs   |  |
|--|--|
| <b>COTP Zone: Lincoln, Nebraska</b>  |  |
| A Clean Environment Inc. - OSRO Number: 9  |  |
| Oil Mop Inc. - OSRO Number: 12   |  |
| Clean Harbors Environmental Services - OSRO Number: 13 - <i>Group V Capabilities</i> |  |
| National Response Corporation - OSRO Number: 16 - <i>Group V Capabilities</i>        |  |
| Marine Spill Response Corporation - OSRO Number: 22 - <i>Group V Capabilities</i>    |  |
| Heritage Environmental Services, Inc. - OSRO Number: 45                              |  |
| Environmental Restoration, LLC - OSRO Number: 156                                    |  |
| Environmental Management Specialists, Inc. - OSRO Number: 473                        |  |
| <b>COTP Zone: Lower Mississippi</b>  |  |
| Marine Pollution Control Corporation - OSRO Number: 3 - <i>Group V Capabilities</i>  |  |
| Bertucci Industrial Services - OSRO Number: 5  |  |
| Lewis Environmental Group - OSRO Number: 8   |  |
| A Clean Environment Inc. - OSRO Number: 9  |  |
| ACME Products - OSRO Number: 10  |  |
| Oil Mop Inc. - OSRO Number: 12 - <i>Group V Capabilities</i>                         |  |
| Clean Harbors Environmental Services - OSRO Number: 13 - <i>Group V Capabilities</i> |  |
| National Response Corporation - OSRO Number: 16 - <i>Group V Capabilities</i>        |  |
| Marine Spill Response Corporation - OSRO Number: 22 - <i>Group V Capabilities</i>    |  |
| Garner Environmental Services - OSRO Number: 27                                      |  |
| HEPACO, Inc. - OSRO Number: 32   |  |
| United States Environmental Services, L.L.C. - OSRO Number: 38                       |  |
| Industrial Marine Service, Inc. - OSRO Number: 39                                    |  |
| Heritage Environmental Services, Inc. - OSRO Number: 45                              |  |
| Oil Recovery Company, Inc. - OSRO Number: 73   |  |
| American Pollution Control, Inc. - OSRO Number: 102 - <i>Group V Capabilities</i>    |  |
| HAZ-MAT Response, Inc. - OSRO Number: 104  |  |
| First Response, Inc. - OSRO Number: 114  |  |
| T&T Marine Salvage, Inc. - OSRO Number: 115 - <i>Group V Capabilities</i>            |  |
| Hulls Environmental Services - OSRO Number: 148                                      |  |
| Moran Environmental Recovery - OSRO Number: 151                                      |  |
| Environmental Restoration, LLC - OSRO Number: 156                                    |  |
| TAS Environmental Services LP - OSRO Number: 157                                     |  |
| Jims Tank Service - OSRO Number: 168   |  |
| Marion Environmental - OSRO Number: 173  |  |

| <b>TABLE C.1.1: USCG DISTRICT 8 OSROs</b>   |
|---|
| Phoenix Pollution Control & Environmental Services - OSRO Number: 206                       |
| Allied International Emergency, LLC - OSRO Number: 216                                      |
| SWS Environmental Services - OSRO Number: 247 - <i>Group V Capabilities</i>                 |
| Environmental Specialists Inc - OSRO Number: 266  |
| Complete Environmental and Remediation Co. - OSRO Number: 348                               |
| Future Environmental Inc. - OSRO Number: 350  |
| Unified Recovery Group, LLC - OSRO Number: 398  |
| Miller Environmental Services, Inc. - OSRO Number: 426 - <i>Group V Capabilities</i>        |
| Environmental Management Specialists, Inc. - OSRO Number: 473 - <i>Group V Capabilities</i> |
| Danos and Curole Marine Contractors, LLC - OSRO Number: 541                                 |
| Enhanced Environmental & Emergency Services, Inc. - OSRO Number: 578                        |
| <b>COTP Zone: Ohio Valley</b>   |
| LCM Corporation - OSRO Number: 1  |
| Marine Pollution Control Corporation - OSRO Number: 3 - <i>Group V Capabilities</i>         |
| Lewis Environmental Group - OSRO Number: 8  |
| A Clean Environment Inc. - OSRO Number: 9   |
| Oil Mop Inc. - OSRO Number: 12 - <i>Group V Capabilities</i>                                |
| Clean Harbors Environmental Services - OSRO Number: 13 - <i>Group V Capabilities</i>        |
| Veolia -ES Special Services, Inc. - OSRO Number: 14   |
| National Response Corporation - OSRO Number: 16 - <i>Group V Capabilities</i>               |
| Miller Environmental Group - OSRO Number: 20  |
| Marine Spill Response Corporation - OSRO Number: 22 - <i>Group V Capabilities</i>           |
| Industrial Cleanup, Inc. - OSRO Number: 23  |
| Phillips PSC - OSRO Number: 25  |
| Garner Environmental Services - OSRO Number: 27   |
| HEPACO, Inc. - OSRO Number: 32  |
| United States Environmental Services, L.L.C. - OSRO Number: 38                              |
| Heritage Environmental Services, Inc. - OSRO Number: 45                                     |
| American Enviro-Services/Evergreen Environmental - OSRO Number: 96                          |
| HAZ-MAT Response, Inc. - OSRO Number: 104 - <i>Group V Capabilities</i>                     |
| Summit Environmental Services - OSRO Number: 107  |
| First Response, Inc. - OSRO Number: 114   |
| T&T Marine Salvage, Inc. - OSRO Number: 115 - <i>Group V Capabilities</i>                   |
| Hulls Environmental Services - OSRO Number: 148   |
| Moran Environmental Recovery - OSRO Number: 151   |
| Environmental Restoration, LLC - OSRO Number: 156   |
| Marion Environmental - OSRO Number: 173   |
| SET Environmental Inc - OSRO Number: 245  |
| SWS Environmental Services - OSRO Number: 247 - <i>Group V Capabilities</i>                 |
| Environmental Specialists Inc - OSRO Number: 266  |
| Pettit Environmental Inc. - OSRO Number: 304  |
| Future Environmental Inc. - OSRO Number: 350  |



| <b>TABLE C.1.1: USCG DISTRICT 8 OSROs</b>   |
|---|
| Kemron/CMC Environmental Services - OSRO Number: 437  |
| ECO-Tech USA, LLC - OSRO Number: 446  |
| PECCO, Inc. - OSRO Number: 452  |
| Environmental Management Specialists, Inc. - OSRO Number: 473 - <i>Group V Capabilities</i> |
| Sunpro, Inc. - OSRO Number: 476   |
| Environmental Remediation Services, Inc. - OSRO Number: 519                                 |
| Superior Environmental Solutions - OSRO Number: 627 - <i>Group V Capabilities</i>           |
| <b>COTP Zone: Upper Mississippi</b>   |
| Marine Pollution Control Corporation - OSRO Number: 3 - <i>Group V Capabilities</i>         |
| Lewis Environmental Group - OSRO Number: 8  |
| A Clean Environment Inc. - OSRO Number: 9   |
| ACME Products - OSRO Number: 10   |
| Oil Mop Inc. - OSRO Number: 12 - <i>Group V Capabilities</i>                                |
| Clean Harbors Environmental Services - OSRO Number: 13 - <i>Group V Capabilities</i>        |
| Veolia -ES Special Services, Inc. - OSRO Number: 14   |
| National Response Corporation - OSRO Number: 16 - <i>Group V Capabilities</i>               |
| Marine Spill Response Corporation - OSRO Number: 22 - <i>Group V Capabilities</i>           |
| Garner Environmental Services - OSRO Number: 27   |
| HEPACO, Inc. - OSRO Number: 32  |
| United States Environmental Services, L.L.C. - OSRO Number: 38                              |
| Industrial Marine Service, Inc. - OSRO Number: 39   |
| Heritage Environmental Services, Inc. - OSRO Number: 45                                     |
| Bay West - OSRO Number: 76  |
| American Pollution Control, Inc. - OSRO Number: 102 - <i>Group V Capabilities</i>           |
| HAZ-MAT Response, Inc. - OSRO Number: 104 - <i>Group V Capabilities</i>                     |
| Tradebe Environmental, LLC - OSRO Number: 114   |
| T&T Marine Salvage, Inc. - OSRO Number: 115 - <i>Group V Capabilities</i>                   |
| Hulls Environmental Services - OSRO Number: 148   |
| Environmental Restoration, LLC - OSRO Number: 156   |
| National Industrial Maintenance Inc. - OSRO Number: 158                                     |
| Phoenix Pollution Control & Environmental Services - OSRO Number: 206                       |
| SET Environmental Inc - OSRO Number: 245  |
| SWS Environmental Services - OSRO Number: 247 - <i>Group V Capabilities</i>                 |
| Environmental Specialists Inc - OSRO Number: 266  |
| Future Environmental Inc. - OSRO Number: 350  |
| Environmental Management Specialists, Inc. - OSRO Number: 473 - <i>Group V Capabilities</i> |
| Beltrami Industrial Services - OSRO Number: 615   |
| Jarrett Industries, Inc. - OSRO Number: 692   |

**TABLE C.1.2: OSRO CONTACT INFORMATION**

| OSRO Number | Organization Name                            | Address   | Contacts  | Official Phone | Business Phone | Fax Number     |
|-------------|--|---|---|----------------|----------------|----------------|
| 1           | LCM Corporation                              | 3321 Shenandoah Avenue N.W.,<br>Roanoke, VA, 24034    | Larry Logan,<br>Lawrence Musgrove III             | (800) 774-5583 | (540) 344-5583 | (540) 342-9438 |
| 3           | Marine Pollution Control Corporation         | 8631 West Jefferson, Detroit, MI, 48209               | David Usher,<br>William Hazel                     | (313) 849-2333 | (313) 849-2333 | (313) 849-1623 |
| 8           | Lewis Environmental Group                    | 155 Railroad Plaza, Royersford, PA,<br>19468          | Stephen Peln                                      | (610) 495-6695 | (610) 495-6695 | ~              |
| 9           | A Clean Environment Inc.                     | P.O. Box 40, Wilson, OK, 73463                        | Gary Lytle,<br>Lonnie W. Edwards                  | (800) 259-8347 | (580) 668-2347 | (580) 668-2960 |
| 10          | ACME Products                                | 2666 N. Darlington, Tulsa, OK, 74115                  | David Pollard                                     | (918) 836-7184 | (918) 836-7184 | (918) 836-9197 |
| 12          | Oil Mop Inc.                                 | 131 Keating Drive, Belle Chase, LA,<br>70037          | Joseph J Christiana,<br>Wesley Rogers             | (800) 645-6671 | (504) 394-6110 | (504) 392-8977 |
| 13          | Clean Harbors Environmental Services         | 42 Longwater Drive, Norwell, MA,<br>02061-9149        | Scott Metzger<br>John Rodier                      | (800) 645-8265 | (781) 792-5740 | ~              |
| 14          | Veolia -ES Special Services, Inc.            | N104 W13275 Donges Bay Road,<br>Germantown, WI, 53022 | Jon Borkenhagen,<br>John Hergert                  | (800) 688-4005 | (262) 236-8130 | (262) 236-8140 |
| 16          | National Response Corporation                | 3500 Sunrise Highway, Great River, NY,<br>11739       | Ray McCoy   | (631) 224-9141 | ~              | (631) 224-9086 |
| 20          | Miller Environmental Group                   | 538 Edwards Ave., Calverton, NY, 11933                | Mark Miller<br>George Wallace                     | (631) 369-4900 | ~              | (631) 369-4909 |
| 22          | Marine Spill Response Corporation            | 220 Spring Street Suite 500, Herndon,<br>VA, 20170    | Judith Roos                                       | (703) 326-5617 | ~              | ~              |
| 25          | Phillips PSC                                 | 268 Power Blvd, Reserve, LA, 70084                    | Rob Field   | (985) 536-7612 | (985) 536-7612 | (985) 536-8727 |
| 27          | Garner Environmental Services                | 1717 West 13th Street, Deer Park, TX,<br>77536        | Bruce Dumesnil,<br>Mikie Sopczak                  | (800) 424-1716 | (281) 930-1200 | (281) 478-0296 |
| 32          | HEPACO, Inc.                                 | 2711 Burch Drive, Charlotte, NC, 28210                | Ron L. Horton, Jr.,<br>Rhonda Pope                | (800) 888-7689 | (704) 598-9782 | (704) 598-7823 |
| 38          | United States Environmental Services, L.L.C. | 15109 Heathrow Forest Parkway,<br>Houston, TX, 77032  | Justin Plant,<br>Forrest Zolczer                  | (817) 845-5912 | (888) 279-9930 | (281) 606-4961 |
| 39          | Industrial Marine Service, Inc.              | 1301 Marsh Street, Norfolk, VA, 23501                 | Steve Gogan,<br>Bryan Genzler                     | (757) 543-5718 | (757) 543-5718 | (757) 543-4561 |
| 45          | Heritage Environmental Services, Inc.        | 7901 West Morris St., Indianapolis, IN,<br>46231      | Kevin Reinhard,<br>Angie Martin,<br>Ernest Walker | (800) 487-7455 | (317) 243-0811 | (317) 486-2852 |
| 73          | Oil Recovery Company, Inc.                   | 1101 South Conception Street, Mobile,<br>AL, 36603    | Jason Smith                                       | (251) 432-4223 | (800) 350-0443 | (251) 433-7681 |
| 76          | Bay West                                     | 5 Empire Drive, St. Paul, MN, 55103                   | Bill Lazarz,<br>Craig Rebishke                    | (651) 291-3442 | (651) 291-0456 | (651) 291-0099 |

| OSRO Number | Organization Name                                  | Address  | Contacts                         | Official Phone | Business Phone | Fax Number     |
|-------------|--|--|----------------------------------|----------------|----------------|----------------|
| 96          | Amercan Enviro-Services/Evergreen Environmental    | 1000 South 1st Street, Shelbyville, KY, 40065        | Kris Smith                       | (502) 633-3939 | (888) 625-5434 | (502) 633-3287 |
| 102         | American Pollution Control, Inc.                   | 401 W Admiral Doyle, New Iberia, LA, 70560           | Mike Watts                       | (800) 482-6765 | (337) 365-7847 | (337) 365-8890 |
| 104         | HAZ-MAT Response, Inc.                             | 1203C South Parker, Olathe, KS, 66061                | John W. Stockdale                | (800) 229-5252 | (913) 782-5151 | (800) 972-6206 |
| 107         | Summit Environmental Services                      | 2125 Glennview Drive, Evansville, IN, 47720          | Andy Shoulders                   | (800) 448-4931 | (812) 421-1744 | (812) 421-8106 |
| 114         | Tradebe Environmental, LLC                         | 1411 South Dickerson Road, Goodlettsville, TN, 37072 | Jordan Denney, Robert Jones      | (224) 422-7381 | ~              | (615) 868-5544 |
| 115         | T&T Marine Salvage, Inc.                           | 9723 Teichman Road, Galveston, TX, 77554             | Kevin Teichman, Jim Elliott      | (409) 744-1222 | (409) 744-1222 | (409) 744-5218 |
| 148         | Hulls Environmental Services                       | 6988 Reck Road, Wilson, OK, 73463                    | Tony Payne, David Hull           | (580) 668-3456 | (580) 668-2222 | (580) 668-2255 |
| 151         | Moran Environmental Recovery                       | 75D York Ave, Randolph, MA, 02368                    | John Silva, Tim House            | (781) 815-1100 | (781) 815-1100 | (781) 815-1104 |
| 156         | Environmental Restoration, LLC                     | 1666 Fabick Drive, Fenton, MO, 63026                 | Randy Cross, Russ Gullede        | (636) 680-2419 | (636) 680-2402 | (636) 680-2483 |
| 157         | TAS Environmental Services LP                      | 3929 California Parkway East, Ft. Worth, TX, 76119   | Ed Genovese, Steve Black         | (817) 535-7222 | (888) 654-0111 | (817) 535-8187 |
| 158         | National Industrial Maintenance Inc.               | 4530 Baring Avenue, East Chicago, IN, 46312          | Gale Gentry, William Dennison    | (219) 398-6660 | (219) 398-6660 | (219) 397-9316 |
| 168         | Jims Tank Service                                  | P. O. Box 281431, Memphis, TN, 38168                 | Nathan Coulpes, Lance Berryhill  | (901) 634-8680 | (901) 626-7009 | (870) 732-2029 |
| 173         | Marion Environmental                               | 115 Parmenas Ln., Chattanooga, TN, 37405             | Paul Van Alatyne, Louise Gallant | (888) 888-8149 | (423) 499-4919 | (423) 892-5122 |
| 206         | Phoenix Pollution Control & Environmental Services | 7111 Decker Dr., Baytown, TX, 77520                  | Nelson Fetgatter, Reese Majoue   | (832) 247-7273 | (281) 838-3400 | (281) 424-7748 |
| 216         | Allied International Emergency, LLC                | 2333 Delante Street, Haltom City, TX, 76117          | Derek Tuttle, Ty McKee           | (800) 980-7911 | (817) 595-0100 | (817) 595-0125 |
| 245         | SET Environmental Inc                              | 450 Sumac Road, Wheeling, IL, 60090                  | Mike Lanenga, Mark Parquette     | (847) 537-9221 | ~              | ~              |
| 247         | SWS Environmental Services                         | 1619 Moylan Road, Panama City Beach, FL, 32407       | Jim Nardozzi, Harry Marsh        | (850) 234-8428 | (800) 852-8878 | (850) 234-2451 |
| 266         | ENVIRONMENTAL SPECIALISTS INC                      | 3001 E 83RD STREET, KANSAS CITY, MO, 64132           | Alan E Wolfe                     | (816) 935-0912 | (816) 523-5081 | (816) 523-0183 |
| 348         | Complete Environmental and Remediation Co.         | 401 County Farm Rd, Wayensboro, MS, 39367            | Kati Kelley                      | (601) 794-2704 | (601) 735-2541 | (601) 794-2740 |

| OSRO Number | Organization Name                                 | Address   | Contacts                        | Official Phone | Business Phone | Fax Number     |
|-------------|---|---|---------------------------------|----------------|----------------|----------------|
| 350         | Future Environmental Inc.                         | 19701 S. 97th Ave, Mokena, IL, 60448                      | Joe Halper,<br>Dan Quick        | (708) 479-6900 | ~              | (708) 479-6890 |
| 398         | GreenCo Services LLC                              | 21602 Doc McDuffie Rd, Foley, AL,<br>36535                | Julie Legere,<br>David Green    | (251) 971-2210 | (251) 971-2210 | (251) 971-2139 |
| 426         | Miller Environmental Services, Inc.               | 600 Flato Rd., Corpus Christi, TX, 78408                  | Charles Keenan,<br>Brian Cox    | (800) 929-7227 | (337) 882-9800 | (337) 882-9801 |
| 437         | Kemron/CMC Environmental Services                 | 1359A Ellsworth Industrial Blvd,NW,<br>Atlanta, GA, 30318 | Thomas Thrower,<br>John Mount   | (678) 857-9581 | (404) 601-6926 | (404) 636-7162 |
| 446         | ECO-Tech USA, LLC                                 | 1313 South Main St, London, KY, 40741                     | Jimmy Lewis,<br>Jason Lewis     | (606) 864-3013 | (606) 864-3013 | (606) 864-3019 |
| 452         | PECCO, Inc.                                       | 250 Etter Drive, Nicholasville, KY,<br>40356              | Scottie Perdue                  | (859) 887-5508 | (877) 543-9590 | (859) 887-5610 |
| 473         | Environmental Management Specialists, Inc.        | 6909 Engle Rd. Suite C-31, Cleveland,<br>OH, 44130        | Tim Acri,<br>Levi Cordle        | (440) 816-1107 | (513) 309-7461 | (440) 816-2504 |
| 476         | Sunpro, Inc.                                      | 7640 Whipple Avenue NW, North<br>Canton, OH, 44720        | Peter Eliades,<br>Todd Hollis   | (800) 488-0910 | (330) 966-0910 | (330) 966-1954 |
| 519         | Environmental Remediation Services, Inc.          | 4010 Option Pass, Fort Wayne, IN, 46818                   | Rod M Wilson,<br>Mark J Weaver  | (260) 489-7062 | ~              | (260) 489-5752 |
| 541         | DANOS AND CUROLE MARINE CONTRACTORS, LLC          | 13083 Hwy 308, Larose, LA, 70373                          | Douglas Kunkle                  | (985) 693-3313 | (985) 696-0117 | ~              |
| 578         | Enhanced Environmental & Emergency Services, Inc. | 1682 Springridge Rd, Raymond, MS,<br>39154                | J.T. Newman,<br>Ryan Bridgers   | (844) 333-0939 | (601) 897-4595 | (844) 325-0511 |
| 615         | beltrami industrial services                      | 12297 Hwy 2 NW, Solway, MN, 56678                         | Randy Forseth,<br>Jeff Forseth  | (218) 751-7537 | (218) 751-7537 | (218) 751-0236 |
| 627         | Superior Environmental Solutions                  | 9996 Joseph James Dr, Cincinnati, OH,<br>45246            | Bryan K. Martin,<br>Tom Harnish | (513) 874-8355 | (513) 874-8355 | (513) 874-8555 |
| 692         | Jarrett Industries, Inc.                          | 1600 Madison Ave, South Roxana, IL,<br>62087              | Ron Weber,<br>Meghan Riebeling  | (618) 251-4116 | ~              | (618) 251-2196 |

All OSRO contact information gathered from the USCG RRI, January 2018.

## **APPENDIX C.2**

# **OTHER RESPONSE CONTRACTORS**

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## REMOVAL CONTRACTORS IN REGION 7

For local oil spill removal contractors in the Region 7 States, the following contractors were identified. The responsible party may have other contractors available.

### **Iowa**

Bodine Environmental Services, Inc. – (563) 243-1144  
Enviromark Corporation – (563) 388-9100  
Hydro-Klean, Inc. – (515) 283-0500  
Seneca Companies – (800) 369-5500

### **Kansas**

CC EnvironKlean, Inc. – (800) 643-7049  
EMR, Inc – (877) 244-8544  
Haz-Mat Response Inc. – (800) 229-5252 (Olathe), (620) 603-6460 (Great Bend)

### **Missouri**

Environmental Restoration, LLC – (888) 814-7477  
Environmental Works, Inc. – (417) 890-9500  
Heritage Environmental Services – (877) 436-8778  
Mid-America Environmental Solutions – (800) 736-3590  
SET Environmental, Inc. – (888) 347-6060  
Sunbelt Environmental Services Inc. – (800) 333-5052  
The Kiesel Company – (877) 354-5551

### **Nebraska**

Environmental Restoration, LLC – (888) 814-7477  
Environmental Solutions, Inc. – (888) 908-5700  
Haz-Mat Response Inc – (308) 532-5753

Source: <http://www.cleanupoil.com>, 2014

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## **APPENDIX C.3**

# **U.S. ENVIRONMENTAL PROTECTION AGENCY RESPONSE TEAMS AND EQUIPMENT**

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## **U.S. ENVIRONMENTAL PROTECTION AGENCY RESPONSE TEAMS AND EQUIPMENT**

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### **Region 7 Emergency Response 913-281-0991**

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#### **Environmental Response Team (ERT) 732-321-6660**

Building 18 - MS 101  
2890 Woodbridge Avenue  
Edison, NJ 08837

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#### **Radiological Emergency Response Team (RERT) Sam Poppell, Team Commander 334-546-7214 Gregg Dempsey, Team Commander 702-494-7040**

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#### **Chemical, Biological, Radiological and Nuclear Consequence Management Advisory Team (CMAT) EPA Emergency Operations Center 202-564-3850**

### Environmental Protection Agency Region 7 Equipment

For a complete list of available EPA Region 7 equipment, contact EPA Region 7 at 913-281-0991

| Model Manufacturer      | Model Name/Number                           | Count |
|-------------------------|---|-------|
| Motorola                | Portable Radios                             | 60    |
| Turner Designs          | 10-AU Fluorometer                           | 1     |
| Wildco                  | 1200-032 Kemmerer Sampler                   | 1     |
| Parr Instrument Company | 1341 Plain Jacket Calorimeter               | 1     |
| Icarus Instruments      | 1621-100-01 Indoor Transceiver              | 1     |
| Action Environmental    | 18 DH Multi-Purpose Skimmer                 | 1     |
| Wildco                  | 196 Dredge Sampler                          | 1     |
| Lab Safety Supply       | 200304 Petroleum Hand Pump                  | 1     |
| Geoprobe                | 5400 Geoprobe                               | 1     |
| YSI                     | 556 MPS Water Quality Meter                 | 4     |
| Slope Industries, Inc.  | 57000100 Discrete Interval Sampler          | 1     |
| Scott Health & Safety   | SCBA Tanks                                  | 89    |
| Iridium                 | 9505 Satellite Phone                        | 8     |
| Drager Safety           | Accuro 2000 Pump                            | 1     |
| Raytheon                | ACU-1000 Interpolation Unit                 | 1     |
| Sensidyne               | Aircon-2 Pump                               | 6     |
| Scott Health & Safety   | Air-Pak Fifty 4.5 SCBA                      | 26    |
| Proengin                | AP2Ce Chemical Agent Monitor                | 2     |
| Proengin                | AP4C Chemical Agent Monitor                 | 2     |
| RAE Systems             | AreaRAE PGM-5020                            | 4     |
|                         | Boat (no model number)                      | 4     |
|                         | Boat Motor, 15 horsepower (no model number) | 1     |
|                         | Boat Trailer (no model number)              | 4     |
| Ekman                   | Bottom Grab Sampler, 6 inch x 6 inch        | 1     |
| Scott Health & Safety   | C420 Plus CBRN PAPR                         | 19    |
| Bauer                   | CFS II-3S Fill/Containment System           | 1     |
| Drager Safety           | CMS Analyzer                                | 3     |
| Thermo Electron         | DataRAM 4 DR-4000 Area Particulate Monitor  | 4     |
|                         | Dredge, Ponar--Wildco (Model unknown)       | 1     |
|                         | Equipment Trailer (no model number)         | 6     |
| Ahura                   | First Defender                              | 1     |
| MSA                     | Five Star                                   | 1     |
|                         | Flash Point Tester (no model number)        | 2     |
|                         | Forklift (no model number)                  | 1     |
| Fisher                  | FX-3 Pipe & Cable Locator (metal detector)  | 1     |
|                         | Gas Generator, 2-10 KW (no model number)    | 2     |

| Model Manufacturer               | Model Name/Number                          | Count |
|----------------------------------|--|-------|
| Sensidyne                        | GilAir-5 Pump                              | 2     |
| Thermo                           | GPS-1 High Volume PUF                      | 43    |
| Thermo                           | GUV-16H GMW PM-10                          | 12    |
| Thermo                           | GV2360 GMW TSP Volumetric                  | 6     |
| HazTech Systems                  | HazCat Kit KT 1042                         | 1     |
| HazTech Systems                  | HazCat Kit KT 1209                         | 2     |
| Smiths Detection Inc.            | HazMatID                                   | 1     |
| Thermo Electron                  | Identifinder Gamma Spectrometer            | 2     |
| Arizona Instruments              | Jerome 431-X                               | 2     |
|                                  | John Boat (no model number)                | 1     |
| Outlaw Eagle Manufacturing       | Landing Craft (no model number)            | 1     |
| Safe Environment Engineering     | Life-Line LINC MultiRae                    | 2     |
| Ohio Lumex                       | Lumex RA-915+                              | 2     |
| Ohio Lumex Co.                   | Lumex RA-915M                              | 1     |
| Environmental Monitoring Systems | Megalite High Vol pump                     | 5     |
|                                  | Mobile Command Post (no model number)      | 2     |
|                                  | Equipment Truck                            | 1     |
|                                  | Mobile Satellite Dish                      | 3     |
| Ludlum Measurements              | Model 12 General Survey Meter              | 1     |
| Ludlum Measurements              | Model 14C General Survey Meter             | 1     |
| Ludlum Measurements              | Model 15 Beta/Gamma/Neutron Meter          | 3     |
| Ludlum Measurements              | Model 19 MicroR Meter                      | 1     |
| Ludlum Measurements              | Model 192 MicroR Meter                     | 2     |
| Ludlum Measurements              | Model 2221 General Survey Meter            | 2     |
| Ludlum Measurements              | Model 2241-2 Digital Scalar/Ratemeter      | 3     |
| Ludlum Measurements              | Model 2241-3 Digital Scalar/Ratemeter      | 4     |
| Ludlum Measurements              | Model 239-1 Floor Monitor                  | 2     |
| Ludlum Measurements              | Model 3030 Alpha/Beta Scalar               | 2     |
| Ludlum Measurements              | Model 44-20 NaI Scintillator               | 1     |
| Ludlum Measurements              | Model 52-1 Portal Monitor                  | 2     |
| Kawasaki                         | Mule                                       | 1     |
| MSA                              | Navigator Bullard Thermal Imaging Camera   | 1     |
| MSA                              | Passport                                   | 1     |
| TSI                              | Portacount Plus 8038                       | 1     |
| RAE Systems                      | ppbRAE Plus Photoionization Detector (PID) | 2     |
| BGI, Inc                         | PQ200 Fine Particulate Sampler             | 12    |
| Solinst Canada, Ltd.             | Pump, Peristaltic                          | 1     |
| Kappler/DuPont                   | Responder                                  | 4     |

| Model Manufacturer                 | Model Name/Number                            | Count |
|------------------------------------|--|-------|
| Kappler/DuPont                     | Responder CSM                                | 12    |
| Thermo Electron                    | RO-20 Ion Chamber                            | 2     |
| Berkeley Nucleonics                | SAM 940 Defender Gamma Spectrometer          | 2     |
| TVI Corporation                    | SD1-TTB02-GZ Individual Decontamination Unit | 1     |
| TVI Corporation                    | SD3-UZA08-GZ 3-Line Decontamination Unit     | 1     |
| Zellweger Analytics                | Single Point Monitor (SPM)                   | 2     |
| American Marine                    | TDS-118 Oil Skimmer                          | 2     |
| RAE Systems                        | ToxiRAE II Single Gas Monitor                | 5     |
| Foxboro                            | TVA 1000B PID/FID Combination Detector       | 2     |
| DuPont                             | Tychem TK Commander Level A                  | 30    |
|                                    | Ventilation Fan (no model number)            | 3     |
|                                    | Vortex pump, SV 750C                         | 1     |
| WeatherHawk                        | WeatherHawk 520 Wireless Weather Station     | 2     |
| Coastal Environmental Systems, Inc | Weatherpak MTR Weather Station               | 1     |
| HazTech Systems                    | WMD Kit KT 1035                              | 2     |
| Drager Safety                      | X-am 7000                                    | 2     |

## **APPENDIX D.1**

# **STATE EMERGENCY RESPONSE COMMISSIONS**

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**REGION 7 STATE EMERGENCY RESPONSE COMMISSIONS (SERC)**

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## **APPENDIX D.2**

# **LOCAL EMERGENCY PLANNING COMMISSIONS**

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For Local Emergency Planning Committees (LEPC) Contact Information in the Region 7 States, go to:

Iowa - [http://www.homelandsecurity.iowa.gov/documents/ierc/LEPC\\_Contacts.pdf](http://www.homelandsecurity.iowa.gov/documents/ierc/LEPC_Contacts.pdf)

Kansas - <http://www.kansastag.gov/kdem.asp?PageID=177>

Missouri - <https://sema.dps.mo.gov/docs/programs/executive/MERC/LEPC-addresses.pdf>

Nebraska - <http://www.nema.ne.gov/technological/lepc-home.html>

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## **APPENDIX D.3**

# **REGION 7 REGIONAL RESPONSE TEAM MEMBERS**

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## REGIONAL RESPONSE TEAM MEMBERS

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E-MAIL: [joe.francis@nebraska.gov](mailto:joe.francis@nebraska.gov)

#### **ALTERNATE:**

##### **Mark Lohnes**

Nebraska Department of Environmental Quality  
SARA Title III Coordinator  
P.O. Box 98922  
Lincoln, NE 68509  
WORK: (402) 471-4251  
FAX: (402) 471-2909  
24 HOUR NO: (402) 471-4545  
E-MAIL: [mark.lohnes@nebraska.gov](mailto:mark.lohnes@nebraska.gov)

### **17.4.2 Nebraska Emergency Management Agency**

##### **Kim Plouzek**

Nebraska State Emergency Response Commission  
995 East Highway 33  
Crete, NE 68333  
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E-MAIL: [kplouzek@phsneb.org](mailto:kplouzek@phsneb.org)

**John Grimes**

Nebraska State Emergency Response Commission  
995 East Highway 33  
Crete, NE 68333  
WORK: (402) 649-5479  
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**18.0 EPA REGION 7 ON-SCENE COORDINATORS**

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**Tanyi Tanyi**

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## **APPENDIX D.4**

### **REGION 7 AREA COMMITTEE**

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## 1.0 EMERGENCY CONTACTS

### 1.1 EMERGENCY RESPONSE CONTACTS (24-HOUR NUMBERS)

|   |                |
|---|----------------|
| National Response Center (NRC) .....          | (800) 424-8802 |
| USCG, Eighth District .....                   | (504) 583-6225 |
| EPA, Region VII .....                         | (913) 281-0991 |
| Iowa Dept. of Natural Resources .....         | (515) 725-8694 |
| Kansas Dept. of Health & Environment .....    | (785) 296-1679 |
| Missouri Dept. of Natural Resources .....     | (573) 634-2436 |
| Nebraska Dept. of Environmental Quality ..... | (402) 471-4545 |

### 1.2 RESPONSE AND/OR PLANNING ASSISTANCE CONTACTS

|   |                |
|---|----------------|
| Agency Toxic Substance & Disease for Registry (ATSDR) ..... | (404) 347-4062 |
| American Petroleum Institute .....                          | (202) 682-8000 |
| Bureau of Explosives via CHEMTREC .....                     | (800) 424-9300 |
| Centers for Disease Control (CDC) .....                     | (404) 639-2888 |
| Chemical Transportation Emergency Center (CHEMTREC) .....   | (800) 424-9300 |
| Planning assistance .....                                   | (202) 887-1255 |
| Chlorine Institute .....                                    | (202) 775-2790 |
| Environmental Response Team (ERT) .....                     | (908) 321-6660 |
| Emergency Response Cleanup Services Contracts (ERCS) .....  | (800) 334-0004 |
| National Pesticides Telecommunication Network .....         | (800) 858-7378 |
| National Pollution Fund Center (NPFC) .....                 | (703) 872-6000 |
| NPFC Command Duty Officer (after hours) .....               | (202) 494-9118 |
| OSHA Hot-Line .....   | (800) 321-6742 |
| Public Health Services (PHS) .....                          | (816) 426-3491 |
| RCRA/CERCLA Hot-Line .....                                  | (800) 424-9346 |

|   |                |
|---|----------------|
| Safe Drinking Water Act .....                                 | (800) 426-4791 |
| SARA/CEPP Hot-Line.....                                       | (800) 535-0202 |
| Scientific Support Coordinators (SSC)                         |                |
| NOAA.....   | (202) 526-6317 |
| EPA.....  | (908) 321-6660 |
| Superfund Technical Assistance and Response Team (START)..... | (913) 432-9961 |
| NIOSH Technical Information .....                             | (800) 356-4674 |
| National Fire Equipment System .....                          | (209) 466-9512 |
| 7:45 - 4:15 Cen. Time .....                                   | (817) 334-2605 |
| 2:15 - 3:15 Pac. Time .....                                   | (209) 946-6382 |
| USCG National Strike Force Coordination Center (NFSCC).....   | (919) 331-6000 |
| Atlantic Strike Team .....                                    | (609) 724-0008 |
| Gulf Strike Team .....  | (251) 441-6601 |
| Pacific Strike Team.....                                      | (415) 883-3311 |
| U.S. Navy Supervisor of Salvage (SUPSALV)                     |                |
| SUPSALV.....  | (703) 602-7527 |
| Emergency Activation .....                                    | (703) 607-2578 |

Region 7 Area Committee is the same as Region 7 Regional Response Team (RRT) except that it is chaired by Federal On-Scene Coordinator.

**Eric Nold**

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Lenexa, Kansas 66219  
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FAX: (913) 551-7151  
24-HOUR NO: (913) 281-0991  
E-MAIL: [nold.eric@epa.gov](mailto:nold.eric@epa.gov)

## **APPENDIX D.5**

# **TRIBAL NOTIFICATION CONTACT INFORMATION**

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## 1.0 EPA REGION 7 MEMORANDUM FOR MAINTAINING RESPONSE CONTACTS FOR TRIBAL GOVERNMENTS

The following memorandum describes Region 7 protocols for maintaining emergency contact information for Tribal Governments.



### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 7

11201 Renner Boulevard  
Lenexa, Kansas 66219

OCT 28 2016

#### MEMORANDUM

**SUBJECT:** Region 7 Protocol for Maintaining Emergency Response Contacts for Tribal Governments

**FROM:** Kenneth S. Buchholz, Chief - Assessment, Emergency Response, & Removal Branch

**THRU:** Mary P. Peterson, Director - Superfund Division

**TO:** Eugene Lee, Chief - Emergency Operations and Continuity Branch, OEM, OLEM

This memorandum is in response to a memorandum dated Sept. 12, 2016, from Mathy Stanislaus titled "Identifying Emergency Response Contacts for Tribal Governments." The five items requested in that memo are provided below and detail Region 7's protocol for maintaining and updating tribal contact information.

#### 1. Region 7 tribal overview

Region 7 includes nine federally-recognized tribes that are headquartered within the four states. In addition, three tribes, which are headquartered elsewhere, own significant property within the region. Significant property refers to all properties other than individual tribal homes and includes large acreage and businesses. Emergency contacts for the additional three tribes will also be maintained by Region 7.

#### 2. Region 7 tribes and status of National Response Center application agreements

Two tribes in Region 7 have NRC application agreements:

1. Ponca Tribe of Nebraska, Niobrara, Nebraska
2. Sac & Fox Nation of Missouri in Kansas & Nebraska, Reserve, Kansas

The seven remaining tribes in R7 do not have agreements:

3. Iowa Tribe of Kansas and Nebraska, White Cloud, Kansas
4. Kickapoo Tribe in Kansas, Horton, Kansas
5. Meskwaki Nation, Sac & Fox Tribe of the MS in Iowa, Tama, Iowa
6. Omaha Tribe of Nebraska and Iowa, Macy, Nebraska
7. Prairie Band Potawatomi Nation, Mayetta, Kansas
8. Santee Sioux Nation, Niobrara, Nebraska
9. Winnebago Tribe of Nebraska, Winnebago, Nebraska

NRC application agreement status is unknown at present for the three tribes that have property in Region 7 but are headquartered elsewhere:

1. Quapaw, Miami, Oklahoma
2. Pine Ridge – Ogallala Sioux, Pine Ridge, South Dakota
3. Wyandotte, Wyandotte, Oklahoma

### **3. Contact information for tribal emergency response officials**

Attachment 1, Tribal Government Emergency Contacts for R7, contains all pertinent contact information for tribes headquartered or with property in Region 7.

### **4. Process for updates, including RRT review of regional and area contingency plans**

Region 7 Tribal Coordinators Patrick Bustos and Stanley Holder conduct a quarterly Regional Tribal Operations Committee (RTOC) meeting with participation from all nine tribes. The Region 7 tribal coordinators will review the emergency contact list (see attachment 1) at each meeting. Any changes will be provided to Superfund Tribal Coordinator Todd Davis, who will then forward the changes to Superfund removal managers and Federal On-Scene Coordinators (FOSC).

The Region 7 Regional Response Team (RRT) coordinator will annually update the Regional Integrated Contingency Plan (RICP) with the most up-to-date contact table, as will FOSCs with sub-area plans that have tribal lands. The Region 7 RRT coordinator will also maintain this contact table on the Region 7 RRT website.

At least annually, R7 tribal coordinators will review the geographic information system (GIS) layer of Indian country in the region with the RTOC. Any changes to boundaries that indicate additional tribal lands will be provided to Superfund Tribal Coordinator Todd Davis, who will forward the changes to the R7 RRT coordinator. The R7 RRT coordinator will then forward the information to the GIS contractor who will update the GIS layer for the Emergency Response (ER) Dashboard.

### **5. Downstream notifications**

Any changes in the Tribal Government Emergency Contacts for R7 table (see attachment 1) will be forwarded to a GIS contractor to update the ER Dashboard, which is utilized by all regional EPA duty officers. If an incident may impact tribal lands, the EPA duty officer will use this information to notify the affected tribe(s).

All Region 7 tribes with public water systems have approved Emergency Response Plans for their drinking water systems, copies of which are maintained by the Water, Wetlands, & Pesticides Division (WWPD). WWPD Tribal Coordinator Kim Willis-Burr maintains a contact phone list for all tribal water system operators.

This protocol will be updated as emergency response contact information changes or if there is a change in status of NRC application agreements.

If you have any questions about Region 7's protocol on maintaining emergency contacts for tribal governments, please contact me at (913)551-7473 or [buchholz.kenneth@epa.gov](mailto:buchholz.kenneth@epa.gov), or contact Eric Nold of my staff at (913)551-7488 or [nold.eric@epa.gov](mailto:nold.eric@epa.gov).

Attachment: Tribal Government Emergency Contacts for Region 7

**TABLE D.5.1**

**ATTACHMENT 1: TRIBAL GOVERNMENT EMERGENCY CONTACTS FOR REGION 7**

| First Name | Last Name   | Emergency Response Phone | Organization   | Position/Title                       | Address                                       |
|------------|-------------|--------------------------|--|--------------------------------------|---|
| Allen      | Kelly       | 785-595-3258             | Iowa Tribe of Kansas and Nebraska                            | Vice Chairman                        | 3345 B. Thrasher Rd, White Cloud, KS 66094    |
| Scott      | Elrod       | 785-595-6614             | Iowa Tribe of Kansas and Nebraska                            | Conservation Officer                 | 3345 B. Thrasher Rd, White Cloud, KS 66094    |
| Eric       | Sheets      | 785-741-2988             | Kickapoo Tribe in Kansas                                     | Environmental Director               | 824 111 <sup>th</sup> Dr, Horton KS 66439     |
| Melvin     | Lewis       | 785-288-1523             | Kickapoo Tribe in Kansas                                     | Emergency Response Manager           | 824 111 <sup>th</sup> Dr, Horton KS 66439     |
| Jarrett    | Pfrimmer    | 515-212-0547             | Meskwaki Nation (Sac & Fox Tribe of the Mississippi in Iowa) | Environmental Director               | 1826 340 <sup>th</sup> St, Tama IA 52339-9629 |
| Kelly      | Schott      | 319-939-7422             | Meskwaki Nation (Sac & Fox Tribe of the Mississippi in Iowa) | Program Coordinator                  | 1826 340 <sup>th</sup> St, Tama IA 52339-9629 |
| March      | Runner      | 907-854-0444             | Meskwaki Nation (Sac & Fox Tribe of the Mississippi in Iowa) | Tribal Executive Director            | 349 Meskwaki Rd, Tama IA 52339                |
| Ed         | Tyndal      | 402-837-5906             | Omaha Tribe of Nebraska and Iowa                             | Police Captain                       | P.O. Box 368 Macy, NE 68039                   |
| Carroll    | Webster Jr. | 402-385-8044             | Omaha Tribe of Nebraska and Iowa                             | Emergency Response Manager           | P.O. Box 368 Macy, NE 68039                   |
| Tim        | Grant       | 402-385-8035             | Omaha Tribe of Nebraska and Iowa                             | Environmental Director               | P.O. Box 368 Macy, NE 68039                   |
| Allison    | Gienapp     | 402-358-0084             | Ponca Tribe of Nebraska                                      | Tribal Response Program Tech         | 2523 Woodbine, Niobrara, NE                   |
| Georja     | Kreibs      | 785-633-4769             | Ponca Tribe of Nebraska                                      | Tribal Response Program Tech         | 1701 E St, Lincoln, NE                        |
| Virginia   | LeClere     | 785-608-6484             | Prairie Band Potawatomi Nation                               | Environmental Director               | 16281 Q Rd, Mayetta, KS 66509                 |
| Kristen    | Wamego      | 785-845-7416             | Prairie Band Potawatomi Nation                               | General Manager of Tribal Operations | 16281 Q Rd, Mayetta, KS 66509                 |
| James      | Jensen      | 785-742-0053 x24         | Sac & Fox Nation of Missouri in Kansas & Nebraska            | Vice Chairman                        | 305 N. Main St, Reserve, KS 66434             |
| Mark       | Junker      | 785-742-4706             | Sac & Fox Nation of Missouri in Kansas & Nebraska            | Brownfield Coordinator               | 305 N. Main St, Reserve, KS 66434             |

| First Name   | Last Name | Emergency Response Phone | Organization                | Position/Title                          | Address   |
|--|-----------|--------------------------|-----------------------------|---|---|
| Alisha   | Bartling  | 402-358-1333             | Santee Sioux Nation         | Environmental Director                  | 52948 Hwy 12, Niobrara NE 68760                                 |
| Victoria   | Goodin    | 402-922-0144             | Winnebago Tribe of Nebraska | Brownfields Coordinator                 | P.O. Box 687<br>Winnebago, NE 68071                             |
| Isaac  | Smith     | 402-922-3175             | Winnebago Tribe of Nebraska | Tribal Councilman                       | P.O. Box 687<br>Winnebago, NE 68071                             |
| Matthew  | May       | 402-833-8367             | Winnebago Tribe of Nebraska | Emergency Response Tech                 | P.O. Box 689<br>Winnebago, NE 68071                             |
| <b>Tribes Headquartered Outside Region 7 with Land in Region 7</b> |           |                          |                             |   |   |
| Lloydell   | Mesteth   | 605-441-0595             | Pine Ridge – Oglala Sioux   | Environmental Director                  | P.O. Box 2008<br>Pine Ridge, SD 57770                           |
| Denise   | Mesteth   | 605-441-7716             | Pine Ridge – Oglala Sioux   | Tribal Lands Director                   | P.O. Box 2070<br>Pine Ridge, SD 57770                           |
| Jeff   | Reeves    | 918-533-2902             | Quapaw                      | Emergency Response                      | 6300 S. Hwy 69A<br>Miami, OK 74354                              |
| Christen   | Lee       | 417-437-8913             | Wyandotte                   | Planning and Natural Resources Director | 64790 E. Hwy 60<br>Wyandotte, OK 74370                          |
| Chris  | Phelps    | 816-585-4596             | Wyandotte                   | Investigator Gaming Commission          | 825 N 7 <sup>th</sup> Street, Ste. 400<br>Kansas City, KS 66101 |

## **APPENDIX E**

# **OIL SPILL RESPONSE NATIONAL POLLUTION FUNDS CENTER REQUIREMENTS**

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## Oil Spill Response NPFC Requirements NRDA Requirements

OSC Meeting  
Jan 2015

1

## Obtain a Federal Project Number (FPN)

- Establish the Project Ceiling
- Access Ceiling and Number Assignment Processing System (CANAPS) at <https://npfc.uscg.mil/canaps/> (EPA/USCG only)
- Users must log into CANAPS using individual accounts
- Account passwords expire every 3 months

2

## Obtain a Federal Project Number (FPN)

- You will receive an e-mail to change your password or account will expire
- If you forget your password, type in your e-mail and CANAPS will e-mail you a confirmation code to change your password – it takes 5 minutes
- Follow New Project Wizard instructions to open a new project and request funds.
- Initial funding amount may be limited to \$25K due to funding constraints.

3

## Oil Spill Data Sheet

Located at H:\SUPR\SHARE\FORMS\Site-related Forms\Oil Spill Data Sheet 2.24.2011.doc

| EPA Region VII Oil Spill Data Sheet     |  |
|---|--|
| 1. Point of Contact (OSC)               |  |
| Telephone Number                        |  |
| 2. Federal Project Number (FPN)         |  |
| 3. Spill Site Name                      |  |
| Spill Location                          |  |
| 4. FPN Ceiling                          |  |
| Estimated EPA Salary Costs              |  |
| Estimated EPA Travel Costs              |  |
| Estimated BOA Contractor Costs          |  |
| Estimated EPA Contractor Costs          |  |
| Estimated EPA Contactor Costs           |  |
| EPA Indirect Costs (% changes annually) |  |
| MDNR                                    |  |
| Other -                                 |  |
| Other (contingency)                     |  |
| Other Federal Agency                    |  |
| Other -                                 |  |
| 5. Date FPN Opened                      |  |
| NPFC Account String                     |  |
| NPFC DCN                                |  |
| EPA Reimbursable Account Number         |  |

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## Make Notifications (EPA OSCs)

- Send the CANAPS e-mail to:
  - Teri Hankins (Hankins.teri@epa.gov)
  - ERSB Branch Chief

Send Oil Spill Data Sheet to Teri Hankins and Debbie Bishop

Send copy of issued PRFAs to:

Teri Hankins  
National Pollution Fund Center

4/9/2015

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## NPFC CANAPS Web Site

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# NPFC CANAPS Web Site

**Online and Number Assignment Processing System (CANAPS)**

**Acting on behalf of: EPA Region 7** **(Updated)**

**1** Due to the critical availability of CERCLA response funds available for Coast Guard (CG) responding to a CGA's incidents, effective immediately, Region 7 will administer CANAPS regarding a CGA's incidents. Other Regions will continue to respond to CGA's and will administer CANAPS for the NPFC's top Other, the NPFC's top Other will be required to respond to all NPFC's.

The CANAPS website will guide you through the steps to request a new project number and allow you to amend a previously completed project. Use of this system is restricted to authorized Coast Guard and Environmental Protection Agency (EPA) users only. Unauthorized use is prohibited.

☐ **New Project Wizard**  
Create a new project and request a new project number and assign from the NPFC.

☐ **Cancel Project**  
Cancel a previously completed project - can only when a project is not completed.

☐ **CANAPS Ends**  
Check to see answers to many common questions in CANAPS/PA.

☐ **Change Account Settings**  
Change your CANAPS account settings (e.g., email ID).

☐ **Change Settings**  
Increase or decrease the rating for an existing project.

☐ **Check Project Cancellation**  
Check to see why a previously completed project was cancelled.

☐ **CANAPS FAQs**  
Frequently Asked Questions (FAQs) for CANAPS and Users.

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# Issue Pollution Removal Funding Authorizations

- **Non-Federal Agency PRFA**
  - For States and other non-Federal government
- **Federal Agency PRFA**
  - For Federal agencies besides EPA and USCG
- **Attach Funding Conditions and Statement of Work**
- **Forms and examples at:**
- **H:\SUPRIERSB\FORMS\EPA use)  
<http://www.uscg.mil/hq/npfc/prfa.htm> (state)**

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# Non-Federal Agency PRFA Form

**Recipient Agency:** \_\_\_\_\_

**Address:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

1. **Purpose**

This document authorizes reimbursement to the Recipient Agency from the Oil Spill Liability Trust Fund or CERCLA funds for certain removal costs incurred in response to the following pollution incident, \_\_\_\_\_, Federal Project Number/CERCLA Project Number, \_\_\_\_\_. This funding authorization is expressly contingent on the Recipient's compliance with all requirements contained herein.

2. **Approved Functions and Reimbursement Limit**

Costs will be reimbursed only for actions that are directed or approved in advance by the Federal On-Scene Coordinator (FOSC). Approval may be verbal or written. Assessment, restoration, rehabilitation or replacement of natural resources damaged by the spill are not covered.

Maximum limit of authorization: \$ \_\_\_\_\_.

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# Federal Agency PRFA Form

Federal Agency  
Pollution Removal Funding Authorization

|                               |  |
|-------------------------------|--|
| Recipient Agency              |  |
| Address                       |  |
| Agency Locator Code (ALC)     |  |
| Agency DUNS                   |  |
| Agency Tax ID                 |  |
| Treasury Account Symbol (TAS) |  |

1. Purpose

This document authorizes reimbursement to the Recipient Agency from the OI Spill Liability

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# PRFA SOW

- Should include:
  - Name of Spill
  - FPN Number
  - Recipient Agency
  - Background Information
  - Work to be performed
  - Follow up time frame for letter report summarizing cause, extent response effort and for Final Report

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# Natural Resources Damage Assessments (NRDA)

- A 1997 Department of Justice decision opened the doors for more direct access to the OSLTF to help cover the costs of reclaiming our nation's natural resources following an incident .
- NPFC established the Natural Resource Damage (NRD) Claims Division, to deal with NRD claims.

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## Natural Resources Damage Assessments (NRDA)

- **Oil Pollution Act of 1990 (OPA) defines the term natural resources** as land, fish, wildlife, biota, air, rivers, lakes, streams, or drinking water that belongs to, is managed by, or held in trust by the United States, or any state or local government or Indian tribe.
- The term **natural resources damages (NRD)** refers to costs incurred when natural resources are injured or destroyed by an oil spill, including the cost of assessing those impacts.

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## Natural Resources Damage Assessments (NRDA)

- Those who own, manage, or hold in trust natural resources are designated as Trustees and may submit NRD claims.
- Trustees include representatives from
  - Department of Agriculture
  - Department of Commerce (National Oceanic and Atmospheric Administration)
  - Department of Defense
  - Department of Energy
  - Department of the Interior
  - States & Territories, Indian Tribes, and Foreign Countries

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## Natural Resources Damage Assessments (NRDA)

- Natural resource damage claims are intended to pay for the costs of:
  - Assessing the damage;
  - Restoring, rehabilitating, replacing, or acquiring the equivalent of the natural resources injured by the oil spill; and
  - Compensating for the lost use of the affected resources.
- Depending on the circumstance, claims can provide funding "up-front" or in a reimbursable manner. Costs claimed must be based on a plan that has been made available for public comment.

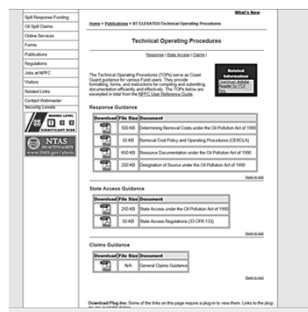
15

## Natural Resources Damage Assessments (NRDA)

- Federal Lead Administrative Trustees (FLATs) may also access the OSLTF to initiate preassessment activities in accordance with an Interagency Agreement (IAG) between the FLAT and the NPFC. Additional guidance and forms trustees can use to document costs can be found at NRD Claims & Initiate Requests Quarterly Progress & Cost Documentation Reporting Forms.
- To initiate pre-assessment requests, please contact the appropriate Claims Manager for your region. For funding requests outside of business hours, call (800) 759-7243 PIN 2073906.

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## NRDA Funding Guidance



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## NRDA Funding Guidance

- **Bottom Line:**  
EPA should not be requesting NPFC response funds for NRDA on behalf of Trustees!
- If you need technical assistance for response-related issues, issue Federal or non-Federal Agency PRFA

18

## Responsible Party Enforcement

- PRP Search
- Notice of Federal Interest Letter  
H:\SUPR\ERSB\FORMS\EPA use)
- Administrative Orders
- Access Warrants

19

## Manage the Response

- Write the initial, ongoing and final POLREPS
- Contact the USCG if costs will exceed \$250K
  - A Site-Specific IAG may be required if costs will exceed \$250K
- Track and approve removal costs
- Track Progress

20

## NPFC Evaluation Factors

- Is the substance involved an oil
- Was there an actual discharge or a substantial threat of a discharge
- What navigable water was or would be effected.

*If these conditions cannot be substantiated, funding is not authorized.*

U.S. Environmental Protection  
Agency

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## Navigable Water Issues

- What's the name of the waterway impacted?
- What's the latitude and longitude of the entry point?
- What navigable water may be affected?
- What is the path to the navigable water?
- What is the distance to the navigable water?
- What is the probability that any of the discharged oil will enter the navigable water?
- Under what conditions will this occur?

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## EPA's Navigable Water Definition

- Navigable waters based on 40 CFR 112.2 means the waters of the United States. The term includes:
  - All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide
  - All interstate waters, including interstate wetlands

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## EPA's Navigable Water Definition

(continued)

- The term also includes all other waters such as intrastate lakes, rivers, streams (including intermittent streams), ....the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:
  - that are or could be used by interstate or foreign travelers for recreational or other purposes; or
  - from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or,
  - that are or could be used for industrial purposes by industries in interstate commerce.

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- All impoundments of waters otherwise defined as waters of the United States under this section;
- Tributaries of waters identified in paragraphs (1)(i) through (iv) of this definition;
- The Territorial sea; and
- Wetlands adjacent to waters identified in paragraph (1) of this definition.

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- POLREP
- Final Report and Related Information
- Cost and Cost Documentation
  - Including Final Invoice Certified Correct by FOSC (SF 1080)
- PRFA
- Recipient Agency's State DUNS # (data universal numbering system) and Tax ID #

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## Form Used to Request Reimbursement from the U.S. Coast Guard

[illegible]

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- National Pollution Funds Center website:  
<http://www.uscg.mil/hq/npfc/index.htm>
- National Pollution Funds Center User Reference Guide:
  - EPA: G\ER&R\OIL FORMS & LTRS\NPFC USER GUIDE
  - State, Others: <http://www.uscg.mil/hq/npfc/urg/index.htm>
  - Appendix B: *Funding Guidance for Oil Spills and Hazardous Material Releases*

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# **APPENDIX F**

## **REGIONAL SPILL HISTORY**

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Spill history information is now available on-line at two locations:

- Enforcement and Compliance History Online (ECHO) website:

<https://echo.epa.gov/>

- National Response Center website:

<http://www.nrc.uscg.mil/>

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## **APPENDIX G**

# **NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN (NCP)**

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# **NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN (NCP)**

**40 CFR Part 300  
July 1, 2015**

Current version available at:

<https://www.gpo.gov/fdsys/pkg/CFR-2015-title40-vol28/xml/CFR-2015-title40-vol28-part300.xml>

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## **APPENDIX H**

# **NATIONAL RESPONSE FRAMEWORK, EMERGENCY SUPPORT FUNCTION 10**

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The National Response Framework is located at <https://www.fema.gov/media-library/assets/documents/117791>. Specific to this plan is the Emergency Support Function #10 – Oil and Hazardous Materials Response Annex at [https://www.fema.gov/media-library-data/1470149472600-da7148fddd4ed137534486036abba0e8/ESF\\_10\\_Oil\\_and\\_Hazardous\\_Materials\\_20160705\\_508.pdf](https://www.fema.gov/media-library-data/1470149472600-da7148fddd4ed137534486036abba0e8/ESF_10_Oil_and_Hazardous_Materials_20160705_508.pdf).

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# National Response Framework

*Third Edition*  
*June 2016*



**Homeland  
Security**

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## Executive Summary

The National Response Framework is a guide to how the Nation responds to all types of disasters and emergencies. It is built on scalable, flexible, and adaptable concepts identified in the National Incident Management System to align key roles and responsibilities across the Nation. This Framework describes specific authorities and best practices for managing incidents that range from the serious but purely local to large-scale terrorist attacks or catastrophic natural disasters. The National Response Framework describes the principles, roles and responsibilities, and coordinating structures for delivering the core capabilities required to respond to an incident and further describes how response efforts integrate with those of the other mission areas. **This Framework is always in effect and describes the doctrine under which the Nation responds to incidents.** The structures, roles, and responsibilities described in this Framework can be partially or fully implemented in the context of a threat or hazard, in anticipation of a significant event, or in response to an incident. Selective implementation of National Response Framework structures and procedures allows for a scaled response, delivery of the specific resources and capabilities, and a level of coordination appropriate to each incident.

The Response mission area focuses on ensuring that the Nation is able to respond effectively to all types of incidents that range from those that are adequately handled with local assets to those of catastrophic proportion that require marshaling the capabilities of the entire Nation. The objectives of the Response mission area define the capabilities necessary to save lives, protect property and the environment, meet basic human needs, stabilize the incident, restore basic services and community functionality, and establish a safe and secure environment to facilitate the integration of recovery activities.<sup>1</sup> The Response mission area includes 15 core capabilities: planning; public information and warning; operational coordination; critical transportation; environmental response/health and safety; fatality management services; fire management and suppression; infrastructure systems; logistics and supply chain management; mass care services; mass search and rescue operations; on-scene security, protection, and law enforcement; operational communications; public health, healthcare, and emergency medical services; and situational assessment.

The priorities of the Response mission area are to save lives, protect property and the environment, stabilize the incident, and provide for basic human needs. The following principles establish fundamental doctrine for the Response mission area: engaged partnership; tiered response; scalable, flexible, and adaptable operational capabilities; unity of effort through unified command; and readiness to act.

Scalable, flexible, and adaptable coordinating structures are essential in aligning the key roles and responsibilities to deliver the Response mission area's core capabilities. The flexibility of such structures helps ensure that communities across the country can organize response efforts to address a variety of risks based on their unique needs, capabilities, demographics, governing structures, and non-traditional partners. This Framework is not based on a one-size-fits-all organizational construct, but instead acknowledges the concept of tiered response, which emphasizes that response to incidents should be handled at the lowest jurisdictional level capable of handling the mission.

<sup>1</sup> As with all activities in support of the National Preparedness Goal, activities taken under the response mission must be consistent with all pertinent statutes and policies, particularly those involving privacy and civil and human rights, such as the Americans with Disabilities Act of 1990, Rehabilitation Act of 1973, and Civil Rights Act of 1964.

In implementing the National Response Framework to build national preparedness, partners are encouraged to develop a shared understanding of broad-level strategic implications as they make critical decisions in building future capacity and capability. The whole community should be engaged in examining and implementing the strategy and doctrine contained in this Framework, considering both current and future requirements in the process.

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## Introduction

The National Preparedness System outlines an organized process for the whole community to move forward with their preparedness activities and achieve the National Preparedness Goal. The National Preparedness System integrates efforts across the five preparedness mission areas—Prevention, Protection, Mitigation, Response, and Recovery—in order to achieve the goal of a secure and resilient Nation. The National Response Framework (NRF), part of the National Preparedness System, sets the strategy and doctrine for how the whole community builds, sustains, and delivers the Response core capabilities identified in the National Preparedness Goal in an integrated manner with the other mission areas. This third edition of the NRF reflects the insights and lessons learned from real-world incidents and the implementation of the National Preparedness System.

**Prevention:** The capabilities necessary to avoid, prevent, or stop a threatened or actual act of terrorism. Within the context of national preparedness, the term “prevention” refers to preventing imminent threats.

**Protection:** The capabilities necessary to secure the homeland against acts of terrorism and manmade or natural disasters.

**Mitigation:** The capabilities necessary to reduce loss of life and property by lessening the impact of disasters.

**Response:** The capabilities necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred.

**Recovery:** The capabilities necessary to assist communities affected by an incident to recover effectively.

## Framework Purpose and Organization

The NRF is a guide to how the Nation responds to all types of disasters and emergencies. It is built on scalable, flexible, and adaptable concepts identified in the National Incident Management System (NIMS)<sup>2</sup> to align key roles and responsibilities across the Nation. The NRF describes specific authorities and best practices for managing incidents that range from the serious but purely local to large-scale terrorist attacks or catastrophic<sup>3</sup> natural disasters.

This document supersedes the NRF that was issued in May 2013. It becomes effective 60 days after publication.

The term “response,” as used in the NRF, includes actions to save lives, protect property and the environment, stabilize communities, and meet basic human needs following an incident. Response also includes the execution of emergency plans and actions to support short-term recovery. The NRF describes doctrine for managing any type of disaster or emergency regardless of scale, scope, and complexity. This Framework explains common response disciplines and processes that have been

<sup>2</sup> <http://www.fema.gov/national-incident-management-system>

<sup>3</sup> A catastrophic incident is defined as any natural or manmade incident, including terrorism, that results in extraordinary levels of mass casualties, damage, or disruption severely affecting the population, infrastructure, environment, economy, national morale, or government functions.

developed at all levels of government (local, state, tribal, territorial, insular area,<sup>4</sup> and Federal) and have matured over time.

To support the Goal, the objectives of the NRF are to:

- Describe scalable, flexible, and adaptable coordinating structures, as well as key roles and responsibilities for integrating capabilities across the whole community,<sup>5</sup> to support the efforts of local, state, tribal, territorial, insular area, and Federal governments in responding to actual and potential incidents.
- Describe, across the whole community, the steps needed to prepare for delivering the response core capabilities.
- Foster integration and coordination of activities within the Response mission area.
- Outline how the Response mission area relates to the other mission areas, as well as the relationship between the Response core capabilities and the core capabilities in other mission areas.
- Provide guidance through doctrine and establish the foundation for the development of the Response Federal Interagency Operational Plan (FIOP).
- Incorporate continuity operations and planning to facilitate the performance of response core capabilities during all hazards emergencies or other situations that may disrupt normal operations.

The NRF is composed of a base document, Emergency Support Function (ESF) Annexes, and Support Annexes. The annexes provide detailed information to assist with the implementation of the NRF.

- **ESF Annexes** describe the Federal coordinating structures that group resources and capabilities into functional areas that are most frequently needed in a national response.
- **Support Annexes** describe the essential supporting processes and considerations that are most common to the majority of incidents.

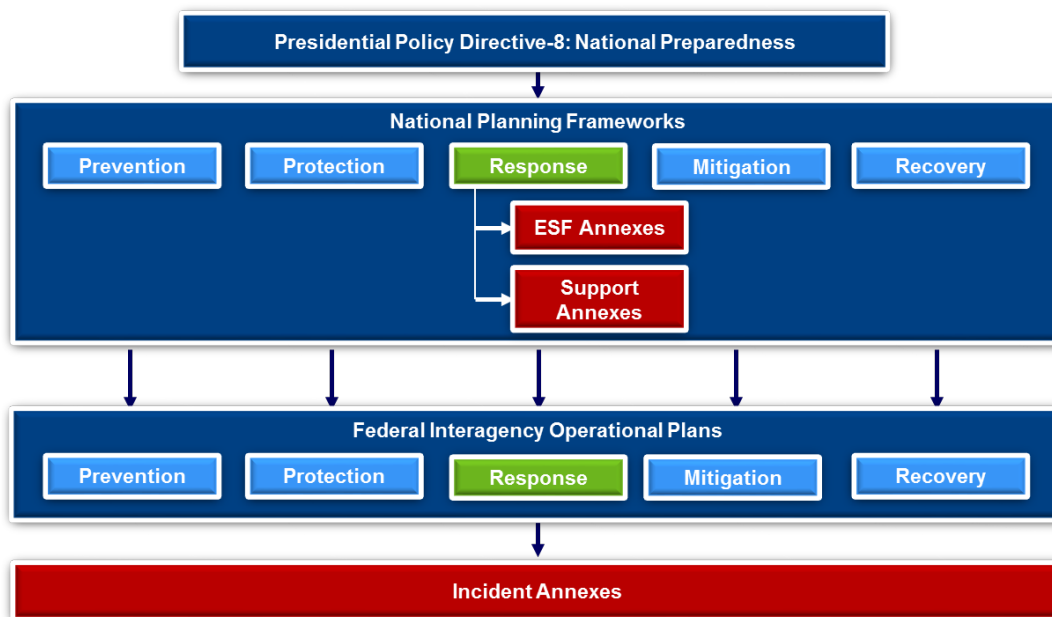
Note that the incident annexes, which address response to specific risks and hazards, can now be found as annexes to the Response FIOP rather than as supplements to the NRF. This change is consistent with guidance in the National Preparedness System.

---

<sup>4</sup> Per the Stafford Act, insular areas include Guam, the Commonwealth of the Northern Mariana Islands, American Samoa, and the U.S. Virgin Islands. Other statutes or departments and agencies may define the term insular area differently.

<sup>5</sup> Whole community includes individuals and communities, the private and nonprofit sectors, faith-based organizations, and all levels of government (local, regional/metropolitan, state, tribal, territorial, insular area, and Federal). Whole community is defined in the National Preparedness Goal as “a focus on enabling the participation in national preparedness activities of a wider range of players from the private and nonprofit sectors, including nongovernmental organizations and the general public, in conjunction with the participation of all levels of governmental in order to foster better coordination and working relationships.” The National Preparedness Goal may be found online at <http://www.fema.gov>.





**Figure 1: NRF and FIOP Structure**

## *Evolution of the Framework*

The NRF builds on over 20 years of Federal response guidance beginning with the Federal Response Plan published in 1992, which focused largely on Federal roles and responsibilities. The establishment of the Department of Homeland Security (DHS) and the emphasis on the development and implementation of common incident management and response principles led to the development of the National Response Plan (NRP) in 2004. The NRP broke new ground by integrating all levels of government, the private sector, and nongovernmental organizations (NGO) into a common incident management framework. In 2008, the NRP was superseded by the first NRF, which streamlined the guidance and integrated lessons learned from Hurricane Katrina and other incidents.

This NRF reiterates the principles and concepts of the 2013 version of the NRF and implements the new requirements and terminology of the National Preparedness System. By fostering a holistic approach to response, this NRF emphasizes the need for the involvement of the whole community. Along with the National Planning Frameworks for other mission areas, this document now describes the all-important integration and inter-relationships among the mission areas of Prevention, Protection, Mitigation, Response, and Recovery.

## *Relationship to NIMS*

The response protocols and structures described in the NRF align with NIMS. NIMS provides the incident management basis for the NRF and defines standard command and management structures. Standardizing national response doctrine on NIMS provides a consistent, nationwide template to enable the whole community to work together to prevent, protect against, mitigate, respond to, and recover from the effects of incidents regardless of cause, size, location, or complexity.

All of the components of the NIMS—including preparedness, communications and information management, resource management, and command and management—support response. The NIMS concepts of multiagency coordination and unified command are described in the command and management component of NIMS. These two concepts are essential to effective response operations

because they address the importance of: (1) developing a single set of objectives, (2) using a collective, strategic approach, (3) improving information flow and coordination, (4) creating a common understanding of joint priorities and limitations, (5) ensuring that no agency's legal authorities are compromised or neglected, and (6) optimizing the combined efforts of all participants under a single plan.

## *Intended Audience*

Although the NRF is intended to provide guidance for the whole community, it focuses especially on the needs of those who are involved in delivering and applying the response core capabilities defined in the National Preparedness Goal. This includes emergency management practitioners, first responders, community leaders, and government officials who must collectively understand and assess the needs of their respective communities and organizations and determine the best ways to organize and strengthen their resilience.

**The NRF is intended to be used by the whole community.** The whole community includes individuals, families, households, communities, the private and nonprofit sectors, faith-based organizations, and local, state, tribal, territorial, and Federal governments. This all-inclusive approach focuses efforts and enables a full range of stakeholders to participate in national preparedness activities and to be full partners in incident response. Government resources alone cannot meet all the needs of those affected by major disasters. All elements of the community must be activated, engaged, and integrated to respond to a major or catastrophic incident.

Engaging the whole community, particularly with regards to developing individual and community preparedness, is essential to the Nation's success in achieving resilience and national preparedness. By providing equal access to acquire and use the necessary knowledge and skills, this Framework is intended to enable the whole community to contribute to and benefit from national preparedness. This includes children<sup>6</sup>; older adults; individuals with disabilities and others with access and functional needs<sup>7</sup>; those from religious, racial, and ethnically diverse backgrounds; people with limited English proficiency; and owners of animals, including household pets and service and assistance animals. Their contributions must be integrated into the Nation's efforts, and their needs must be incorporated as the whole community plans and executes the core capabilities.<sup>8</sup>

## **Scope**

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The NRF describes structures for implementing nationwide response policy and operational coordination for all types of domestic incidents.<sup>9</sup> This section describes the scope of the Response

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<sup>6</sup> Children require a unique set of considerations across the core capabilities contained within this document. Their needs must be taken into consideration as part of any integrated planning effort.

<sup>7</sup> Access and functional needs refers to persons who may have additional needs before, during and after an incident in functional areas, including but not limited to: maintaining health, independence, communication, transportation, support, services, self-determination, and medical care. Individuals in need of additional response assistance may include those who have disabilities; live in institutionalized settings; are older adults; are children; are from diverse cultures; have limited English proficiency or are non-English speaking; or are transportation disadvantaged.

<sup>8</sup> For further information, see the Core Capabilities section.

<sup>9</sup> A domestic incident may have international and diplomatic impacts and implications that call for coordination and consultations with foreign governments and international organizations. The NRF also applies to the domestic response to incidents of foreign origin that impact the United States. See the International Coordination Support Annex for more information.

mission area, the guiding principles of response doctrine and their application, and how risk informs response planning.

The Response mission area focuses on ensuring that the Nation is able to respond effectively to all types of incidents that range from those that are adequately handled with local assets to those of catastrophic proportion that require marshaling the capabilities of the entire Nation. The objectives of the Response mission area define the capabilities necessary to save lives, protect property and the environment, meet basic human needs, stabilize the incident, restore basic services and community functionality, and establish a safe and secure environment to facilitate the integration of recovery activities.<sup>10</sup>

The NRF describes the principles, roles and responsibilities, and coordinating structures for delivering the core capabilities required to respond to any incident and further describes how response efforts integrate with those of the other mission areas. **The NRF is always in effect, and elements can be implemented at any time.** The structures, roles, and responsibilities described in the NRF can be partially or fully implemented in the context of a threat or hazard, in anticipation of a significant event, or in response to an incident. Selective implementation of NRF structures and procedures allows for a scaled response, delivery of the specific resources and capabilities, and a level of coordination appropriate to each incident.

In this Framework, the term ‘incident’ includes actual or potential emergencies and disasters resulting from all types of threats and hazards, ranging from accidents and natural disasters to cyber intrusions and terrorist attacks. The NRF’s structures and procedures address how Federal departments and agencies coordinate support for local, state, tribal, territorial, and insular area governments.

Nothing in the NRF is intended to alter or impede the ability of any local, state, tribal, territorial, insular area, or Federal government department or agency to carry out its authorities or meet its responsibilities under applicable laws, executive orders, and directives.

## Guiding Principles

The priorities of response are to save lives, protect property and the environment, stabilize the incident, and provide for basic human needs. The following principles establish fundamental doctrine for the Response mission area: (1) engaged partnership, (2) tiered response, (3) scalable, flexible, and adaptable operational capabilities, (4) unity of effort through unified command, and (5) readiness to act. These principles are rooted in the Federal system and the Constitution’s division of responsibilities between state and Federal governments. These principles reflect the history of emergency management and the distilled wisdom of responders and leaders across the whole community.

## Engaged Partnership

Effective partnership relies on engaging all elements of the whole community, as well as international partners in some cases. This also includes survivors who may require assistance and who may also be resources to support community response and recovery.

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<sup>10</sup> As with all activities in support of the National Preparedness Goal, activities taken under the response mission must be consistent with all pertinent statutes and policies, particularly those involving privacy and civil and human rights, such as the Americans with Disabilities Act of 1990, Rehabilitation Act of 1973, and Civil Rights Act of 1964.

Those who lead emergency response efforts must communicate and support engagement with the whole community by developing shared goals and aligning capabilities to reduce the risk of any jurisdiction being overwhelmed in times of crisis. Layered, mutually supporting capabilities of individuals, communities, the private sector, NGOs, and governments at all levels allow for coordinated planning in times of calm and effective response in times of crisis. Engaged partnership and coalition building includes ongoing clear, consistent, accessible, effective,<sup>11</sup> and culturally and linguistically appropriate communication and shared situational awareness about an incident to ensure an appropriate response.

### **Tiered Response**

Most incidents begin and end locally and are managed at the local or tribal level. These incidents may require a unified response from local agencies, the private sector, and NGOs. Some may require additional support from neighboring jurisdictions or state governments. A smaller number of incidents require Federal support or are led by the Federal Government.<sup>12</sup> National response protocols are structured to provide tiered levels of support when additional resources or capabilities are needed.

### **Scalable, Flexible, and Adaptable Operational Capabilities**

As incidents change in size, scope, and complexity, response efforts must adapt to meet evolving requirements. The number, type, and sources of resources must be able to expand rapidly to meet the changing needs associated with a given incident and its cascading effects. As needs grow and change, response processes must remain nimble and adaptable. The structures and processes described in the NRF must be able to surge resources from the whole community. As incidents stabilize, response efforts must be flexible to facilitate the integration of recovery activities.

### **Unity of Effort through Unified Command**

Effective, unified command is indispensable to response activities and requires a clear understanding of the roles and responsibilities of all participating organizations.<sup>13</sup> The Incident Command System (ICS), a component of NIMS, is an important element in ensuring interoperability across multi-jurisdictional or multiagency incident management activities. Unified command, a central tenet of ICS, enables organizations with jurisdictional authority or functional responsibility for an incident to support each other through the use of mutually developed incident objectives. Each participating agency maintains its own authority, responsibility, and accountability.

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<sup>11</sup> Information, warnings, and communications associated with emergency management must ensure effective communication, such as through the use of appropriate auxiliary aids and services (e.g., interpreters, captioning, alternate format documents) for individuals with disabilities, and provide meaningful access to limited English proficient individuals.

<sup>12</sup> Certain incidents such as a pandemic or cyber event may not be limited to a specific geographic area and may be managed at the local, state, tribal, territorial, insular area, or Federal level depending on the nature of the incident.

<sup>13</sup> The ICS's "unified command" concept is distinct from the military use of this term. Concepts of "command" and "unity of command" have distinct legal and cultural meanings for military forces and military operations. Military forces always remain under the control of the military chain of command and are subject to redirection or recall at any time. Military forces do not operate under the command of the incident commander or under the unified command structure, but they do coordinate with response partners and work toward a unity of effort while maintaining their internal chain of command.

## Readiness to Act

Effective response requires a readiness to act that is balanced with an understanding of the risks and hazards responders face. From individuals and communities to the private and nonprofit sectors, faith-based organizations, and all levels of government (local, state, tribal, territorial, insular area, and Federal), national response depends on the ability to act decisively. A forward-leaning posture is imperative for incidents that may expand rapidly in size, scope, or complexity, as well as incidents that occur without warning. Decisive action is often required to save lives and protect property and the environment. Although some risk to responders may be unavoidable, all response personnel are responsible for anticipating and managing risk through proper planning, organizing, equipping, training, and exercising.

## Risk Basis

The NRF leverages the results of the Strategic National Risk Assessment (SNRA), contained in the second edition of the National Preparedness Goal, to build and deliver the response core capabilities. The results indicate that a wide range of threats and hazards continue to pose a significant risk to the Nation, affirming the need for an all-hazards, capability-based approach to preparedness planning. The results contained in the Goal include:

- Natural hazards, including hurricanes, earthquakes, tornados, drought, wildfires, winter storms, and floods, present a significant and varied risk across the country. Climate change has the potential to cause the consequence of weather-related hazards to become more severe.
- A virulent strain of pandemic influenza could kill hundreds of thousands of Americans, affect millions more, and result in economic loss. Additional human and animal infectious diseases, including those undiscovered, may present significant risks.
- Technological and accidental hazards, such as transportation system failures, dam failures, or chemical spills or releases, have the potential to cause extensive fatalities and severe economic impacts. In addition, these hazards may increase due to aging infrastructure.
- Terrorist organizations or affiliates may seek to acquire, build, and use weapons of mass destruction (WMD). Conventional terrorist attacks, including those by “lone actors” employing physical threats such as explosives and armed attacks, present a continued risk to the Nation.
- Cybersecurity threats exploit the increased complexity and connectivity of critical infrastructure systems, placing the Nation’s security, economy, and public safety and health at risk. Malicious cyber activity can have catastrophic consequences, which in turn, can lead to other hazards, such as power grid failures or financial system failures. These cascading hazards increase the potential impact of cyber incidents.
- Some incidents, such as explosives attacks or earthquakes, generally cause more localized impacts, while other incidents, such as human pandemics, may cause impacts that are dispersed throughout the Nation, thus creating different types of impacts for planners to consider.

No single threat or hazard exists in isolation. As an example, a hurricane can lead to flooding, dam failures, and hazardous materials spills. The Framework, therefore, focuses on core capabilities that can be applied to deal with cascading effects. Since many incidents occur with little or no warning, these capabilities must be able to be delivered in a no-notice environment.

Effective continuity planning helps to ensure the uninterrupted ability to engage partners; respond appropriately with scaled, flexible, and adaptable operational capabilities; specify succession to

office and delegations of authority to protect the unity of effort and command; and to account for the availability of responders regardless of the threat or hazard.

In order to establish the basis for these capabilities, planning factors drawn from a number of different scenarios are used to develop the Response FIOP, which supplements the NRF. Refer to the Operational Planning section for additional details on planning assumptions.

## **Roles and Responsibilities**

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Effective response depends on integration of the whole community and all partners executing their roles and responsibilities. This section describes those roles and responsibilities and sharpens the focus on identifying who is involved with the Response mission area. It also addresses what the various partners must do to deliver the response core capabilities and to integrate successfully with the Prevention, Protection, Mitigation, and Recovery mission areas.

An effective, unified national response requires layered, mutually supporting capabilities. Individuals and communities, the private and nonprofit sectors, faith-based organizations, and all levels of government (local, state, tribal, territorial, insular area, and Federal) should each understand their respective roles and responsibilities and how to complement each other in achieving shared goals. All elements of the whole community play prominent roles in developing the core capabilities needed to respond to incidents. This includes developing plans, conducting assessments and exercises, providing and directing resources and capabilities, and gathering lessons learned. These activities require that all partners understand how they fit within and are supported by the structures described in the NRF.

Emergency management staff in all jurisdictions have a fundamental responsibility to consider the needs of all members of the whole community. The potential contributions of all these individuals toward delivering core capabilities during incident response (e.g., through associations and alliances that serve the people identified above) should be incorporated into planning efforts.

Emergency management staff must also consider those who own or have responsibility for animals, both as members of the community who may be affected by incidents and as a potential means of supporting response efforts. This includes those with household pets, service and assistance animals, working dogs, and agricultural animals/livestock, as well as those who have responsibility for wildlife, exotic animals, zoo animals, research animals, and animals housed in shelters, rescue organizations, breeding facilities, and sanctuaries.

### ***Individuals, Families, and Households***

Although not formally part of emergency management operations, individuals, families, and households play an important role in emergency preparedness and response. By reducing hazards in and around their homes by efforts such as raising utilities above flood level or securing unanchored objects against the threat of high winds, individuals reduce potential emergency response requirements. Individuals, families, and households should also prepare emergency supply kits and emergency plans, so they can take care of themselves and their neighbors until assistance arrives. Information on emergency preparedness can be found at many community, state, and Federal emergency management Web sites, such as <http://www.ready.gov>.

Individuals can also contribute to the preparedness and resilience of their households and communities by volunteering with emergency organizations (e.g., the local chapter of the American Red Cross, Medical Reserve Corps, or Community Emergency Response Teams [CERT]) and completing emergency response training courses. Individuals, families, and households should make



preparations with family members who have access and functional needs or medical needs. Their plans should also include provisions for their animals, including household pets or service and assistance animals. During an actual disaster, emergency, or threat, individuals, households, and families should monitor emergency communications and follow guidance and instructions provided by local authorities.

## Communities

Communities are groups that share goals, values, and institutions. They are not always bound by geographic boundaries or political divisions. Instead, they may be faith-based organizations, neighborhood partnerships, advocacy groups, academia, social and community groups, and associations. Communities bring people together in different ways for different reasons, but each provides opportunities for sharing information and promoting collective action. Engaging these groups in preparedness efforts, particularly at the local and state levels, is important to identifying their needs and taking advantage of their potential contributions.

## Nongovernmental Organizations

NGOs play vital roles at the local, state, tribal, territorial, insular area, and national levels in delivering important services, including those associated with the response core capabilities. NGOs include voluntary, racial and ethnic, faith-based, veteran-based, and nonprofit organizations that provide sheltering, emergency food supplies, and other essential support services. NGOs are inherently independent and committed to specific interests and values. These interests and values drive the groups' operational priorities and shape the resources they provide. NGOs bolster government efforts at all levels and often provide specialized services to the whole community. NGOs are key partners in preparedness activities and response operations.

Examples of NGO contributions include:

- Training, management, and coordination of volunteers and donated goods.
- Identifying and communicating physically accessible shelter locations and needed supplies to support people displaced by an incident.
- Providing emergency commodities and services, such as water, food, shelter, assistance with family reunification, clothing, and supplies for post-emergency cleanup.
- Supporting the evacuation, rescue, care, and sheltering of animals displaced by the incident.
- Providing search and rescue, transportation, and logistics services and support.
- Identifying those whose needs have not been met and helping to provide assistance.
- Providing health, medical, mental health, and behavioral health resources.
- Assisting, coordinating, and providing assistance to individuals with access and functional needs.

At the same time when NGOs support response core capabilities, they may also require government assistance. When planning for local community emergency management resources, government organizations should consider the potential need to better enable NGOs to perform their essential response functions.

Some NGOs are officially designated as support elements to national response capabilities:

- **The American Red Cross.** The American Red Cross is chartered by Congress to provide relief to survivors of disasters and help people prevent, prepare for, and respond to emergencies. The

Red Cross has a legal status of “a federal instrumentality” and maintains a special relationship with the Federal Government. In this capacity, the American Red Cross supports several ESFs and the delivery of multiple core capabilities.

- **National Voluntary Organizations Active in Disaster (National VOAD).**<sup>14</sup> National VOAD is the forum where organizations share knowledge and resources throughout the disaster cycle—preparation, response, recovery, and mitigation—to help disaster survivors and their communities. National VOAD is a consortium of approximately 50 national organizations and 55 territorial and state equivalents.
- **Volunteers and Donations.** Incident response operations frequently exceed the resources of government organizations. Volunteers and donors support response efforts in many ways, and governments at all levels must plan ahead to incorporate volunteers and donated resources into response activities. The goal of volunteer and donations management is to support jurisdictions affected by disasters through close collaboration with the voluntary organizations and agencies. The objective is to manage the influx of volunteers and donations to voluntary agencies and all levels of government before, during, and after an incident. Additional information may be found in the Volunteers and Donations Management Support Annex.
- **National Center for Missing & Exploited Children (NCMEC).** Within the NCMEC, the National Emergency Child Locator Center (NECLC) facilitates the expeditious identification and reunification of children with their families.

### *Private Sector Entities*

Private sector organizations contribute to response efforts through partnerships with each level of government. They play key roles before, during, and after incidents. Private sector entities include large, medium, and small businesses; commerce, private cultural and educational institutions; and industry; as well as public/private partnerships that have been established specifically for emergency management purposes. During an incident, key private sector partners should have a direct link to emergency managers and, in some cases, be involved in the decision making process. Strong integration into response efforts can offer many benefits to both the public and private sectors.

Private sector organizations may be affected by direct or indirect consequences of an incident. Such organizations include entities that are significant to local, regional, and national economic recovery from an incident. Examples include major employers and suppliers of key commodities or services. As key elements of the national economy, it is important for private sector organizations of all types and sizes to take every precaution necessary to boost resilience, the better to stay in business or resume normal operations quickly.

Unique private sector organizations including critical infrastructure and regulated entities may require additional efforts to promote resilience. Critical infrastructure—such as privately owned transportation and transit, telecommunications, utilities, financial institutions, hospitals, and other health regulated facilities—should have effective business continuity plans.

Owners/operators of certain regulated facilities or hazardous operations may be legally responsible for preparing for and preventing incidents and responding when an incident occurs. For example, Federal regulations require owners/operators of nuclear power plants to maintain emergency plans and to perform assessments, notifications, and training for incident response.

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<sup>14</sup> Additional information is available at <http://www.nvoad.org>.



Private sector entities may serve as partners in state and local emergency preparedness and response organizations and activities and with Federal sector-specific agencies. Private sector entities often participate in state and local preparedness activities by providing resources (donated or compensated) during an incident—including specialized teams, essential services, equipment, and advanced technologies—through local public-private emergency plans or mutual aid and assistance agreements or in response to requests from government and nongovernmental-volunteer initiatives.

A fundamental responsibility of private sector organizations is to provide for the welfare of their employees in the workplace. In addition, some businesses play an essential role in protecting critical infrastructure systems and implementing plans for the rapid reestablishment of normal commercial activities and critical infrastructure operations following a disruption. In many cases, private sector organizations have immediate access to commodities and services that can support incident response, making them key potential contributors of resources necessary to deliver the core capabilities. How the private sector participates in response activities varies based on the type of organization and the nature of the incident.

Examples of key private sector activities include:

- Addressing the response needs of employees, infrastructure, and facilities.
- Protecting information and maintaining the continuity of business operations.
- Planning for, responding to, and recovering from incidents that impact their own infrastructure and facilities.
- Collaborating with emergency management personnel to determine what assistance may be required and how they can provide needed support.
- Contributing to communication and information-sharing efforts during incidents.
- Planning, training, and exercising their response capabilities.
- Providing assistance specified under mutual aid and assistance agreements.
- Contributing resources, personnel, and expertise; helping to shape objectives; and receiving information about the status of the community.

## Local Governments

The responsibility for responding to natural and manmade incidents that have recognizable geographic boundaries generally begins at the local level with individuals and public officials in the county, parish, city, or town affected by an incident. The following paragraphs describe the responsibilities of specific local officials who have emergency management responsibilities.

### Chief Elected or Appointed Official

Jurisdictional chief executives are responsible for the public safety and welfare of the people of their jurisdiction. These officials provide strategic guidance and resources across all five mission areas. Chief elected or appointed officials must have a clear understanding of their emergency management roles and responsibilities and how to apply the response core capabilities as they may need to make decisions regarding resources and operations during an incident. Lives may depend on their decisions. Elected and appointed officials also routinely shape or modify laws, policies, and budgets to aid preparedness efforts and improve emergency management and response capabilities. The local chief executive's response duties may include:

- Obtaining assistance from other governmental agencies.

- Providing direction for response activities.
- Ensuring appropriate information is provided to the public.

### **Emergency Manager**

The jurisdiction's emergency manager oversees the day-to-day emergency management programs and activities. The emergency manager works with chief elected and appointed officials to establish unified objectives regarding the jurisdiction's emergency plans and activities. This role entails coordinating and integrating all elements of the community. The emergency manager coordinates the local emergency management program. This includes assessing the capacity and readiness to deliver the capabilities most likely required during an incident and identifying and correcting any shortfalls. The local emergency manager's duties often include:

- Advising elected and appointed officials during a response.
- Conducting response operations in accordance with the NIMS.
- Coordinating the functions of local agencies.
- Coordinating the development of plans and working cooperatively with other local agencies, community organizations, private sector entities, and NGOs.
- Developing and maintaining mutual aid and assistance agreements.
- Coordinating resource requests during an incident through the management of an emergency operations center.
- Coordinating damage assessments during an incident.
- Advising and informing local officials and the public about emergency management activities during an incident.
- Developing and executing accessible public awareness and education programs.
- Conducting exercises to test plans and systems and obtain lessons learned.
- Coordinating integration of the rights of individuals with disabilities, individuals from racially and ethnically diverse backgrounds, and others with access and functional needs into emergency planning and response.
- Helping to ensure the continuation of essential services and functions through the development and implementation of continuity of operations plans.

### **Other Local Departments and Agencies**

Department and agency heads collaborate with the emergency manager during the development of local emergency plans and provide key response resources. Participation in the planning process helps to ensure that specific capabilities are integrated into a workable plan to safeguard the community. These department and agency heads and their staffs develop, plan, and train on internal policies and procedures to meet response needs safely. They also participate in interagency training and exercises to develop and maintain necessary capabilities.

### **State, Tribal, Territorial, and Insular Area Governments**

State, tribal, territorial, and insular area governments are responsible for the health and welfare of their residents, communities, lands, and cultural heritage.

## States

State governments<sup>15</sup> supplement local efforts before, during, and after incidents by applying in-state resources first. If a state anticipates that its resources may be exceeded, the governor<sup>16</sup> may request assistance from other states or the Federal Government through a Stafford Act Declaration.

The following paragraphs describe some of the relevant roles and responsibilities of key officials.

### *Governor*

The public safety and welfare of a state's residents are the fundamental responsibilities of every governor. The governor coordinates state resources and provides the strategic guidance for response to all types of incidents. This includes supporting local governments as needed and coordinating assistance with other states and the Federal Government. A governor also:

- In accordance with state law, may make, amend, or suspend certain orders or regulations associated with response.
- Communicates to the public, in an accessible manner (e.g., effective communications to address all members of the whole community), and helps people, businesses, and organizations cope with the consequences of any type of incident.
- Coordinates with tribal governments within the state.
- Commands the state military forces (National Guard personnel not in Federal service and state militias).
- Coordinates assistance from other states through interstate mutual aid and assistance agreements, such as the Emergency Management Assistance Compact (EMAC).<sup>17</sup>

### *State Homeland Security Advisor*

Many states have designated homeland security advisors who serve as counsel to the governor on homeland security issues and may serve as a liaison between the governor's office, the state homeland security structure, and other organizations both inside and outside of the state. The advisor often chairs a committee composed of representatives of relevant state agencies, including public safety, the National Guard, emergency management, public health, environment, agriculture, and others charged with developing prevention, protection, mitigation, response, and recovery strategies.

### *State Emergency Management Agency Director*

All states have laws mandating the establishment of a state emergency management agency, as well as the emergency plans coordinated by that agency. The director of the state emergency management agency is responsible for ensuring that the state is prepared to deal with large-scale emergencies and

<sup>15</sup> States are sovereign entities, and the governor has responsibility for public safety and welfare. Although U.S. territories, possessions, freely associated states, and tribal governments also have sovereign rights, there are unique factors involved in working with these entities. Federal assistance is available to states and to the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. Federal disaster preparedness, response, and recovery assistance is available to the Federated States of Micronesia and the Republic of the Marshall Islands pursuant to Compacts of Free Association. The extent to which Federal response or assistance is provided to tribes, territories, and insular areas under other Federal laws is defined in those laws and supporting regulations.

<sup>16</sup> "Governor" is used throughout this document to refer to the chief executive of states, territories, and insular areas.

<sup>17</sup> A reference paper on EMAC is available at <http://www.emacweb.org>.

coordinating the statewide response to any such incident. This includes supporting local and tribal governments as needed, coordinating assistance with other states and the Federal Government, and, in some cases, with NGOs and private sector organizations. The state emergency management agency may dispatch personnel to assist in the response and recovery effort.

### ***National Guard***

The National Guard is an important state and Federal resource available for planning, preparing, and responding to natural or manmade incidents. National Guard members have expertise in critical areas, such as emergency medical response; communications; logistics; search and rescue; civil engineering; chemical, biological, radiological, and nuclear response and planning; and decontamination.<sup>18</sup>

The governor may activate elements of the National Guard to support state domestic civil support functions and activities. The state adjutant general may assign members of the Guard to assist with state, regional, and Federal civil support plans.

### ***Other State Departments and Agencies***

State department and agency heads and their staffs develop, plan, and train on internal policies and procedures to meet response and recovery needs. They also participate in interagency training and exercises to develop and maintain the necessary capabilities. They are vital to the state's overall emergency management program, as they bring expertise spanning various response functions and serve as core members of the state emergency operations center (EOC) and incident command posts (ICP). Many of them have direct experience in providing accessible and vital services to the whole community during response operations. State departments and agencies typically work in close coordination with their Federal counterpart agencies during joint state and Federal responses, and under some Federal laws, they may request assistance from these Federal partners.

### **Tribes**

The United States has a trust relationship with federally-recognized Indian tribes and recognizes their right to self-government. Under the Stafford Act, federally-recognized Indian tribes may directly request their own emergency and major declaration, or they may request assistance under a state request. In addition, federally-recognized Indian tribes can request Federal assistance for incidents that impact the tribe, but do not result in a Stafford Act declaration.

In accordance with the Stafford Act, the Chief Executive<sup>19</sup> of an affected Indian tribal government may submit a request for a declaration by the President. Tribal governments are responsible for coordinating resources to address actual or potential incidents.

Tribes are encouraged to build relationships with local jurisdictions and their states as they may have resources most readily available. The NRF's Tribal Coordination Support Annex outlines processes and mechanisms that tribal governments may use to request Federal assistance during an incident.

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<sup>18</sup> The President may call National Guard forces into Federal service for domestic duties, including pursuant to under section 12406 of Title 10 (providing such authority e.g., in cases of invasion by a foreign nation, rebellion against the authority of the United States, or where the President is unable to execute the laws of the United States with regular forces) under 10 U.S. Code § 12406). When called into Federal service, National Guardsmen are employed under Title 10 of the U.S. Code and are no longer under the command of the governor. Instead, they operate under the Secretary of Defense.

<sup>19</sup> The Stafford Act uses the term "Chief Executive" to refer to the person who is the Chief, Chairman, Governor, President, or similar executive official of an Indian tribal government.

### ***Chief Executive***

The Chief Executive is responsible for the public safety and welfare of his or her respective tribe. The Chief Executive:

- Coordinates resources needed to respond to incidents of all types.
- In accordance with the law, may make, amend, or suspend certain orders or regulations associated with the response.
- Communicates with the public in an accessible manner and helps people, businesses, and organizations cope with the consequences of any type of incident.
- Negotiates mutual aid and assistance agreements with other local jurisdictions, states, tribes, territories, and insular area governments.
- Can request Federal assistance.

### **Territories/Insular Area Governments**

Territorial and insular area governments are responsible for coordinating resources to address actual or potential incidents. Due to their remote locations, territories and insular area governments often face unique challenges in receiving assistance from outside the jurisdiction quickly and often request assistance from neighboring islands, other nearby countries, states, private sector or NGO resources, or the Federal Government.

#### ***Territorial/Insular Area Leader***

The territorial/insular area leader is responsible for the public safety and welfare of the people of his/her jurisdiction. As authorized by the territorial or insular area government, the leader:

- Coordinates resources needed to respond to incidents of all types.
- In accordance with the law, may make, amend, or suspend certain orders or regulations associated with the response.
- Communicates with the public in an accessible manner and helps people, businesses, and organizations cope with the consequences of any type of incident.
- Commands the territory's military forces.
- Negotiates mutual aid and assistance agreements with other local jurisdictions, states, tribes, territories, and insular area governments.
- Can request Federal assistance.

### ***Federal Government***

The Federal Government maintains a wide range of capabilities and resources that may be required to deal with domestic incidents in order to save lives and protect property and the environment while ensuring the protection of privacy, civil rights, and civil liberties. To be successful, any approach to the delivery of Response capabilities will require an all-of-nation approach. All Federal departments and agencies must cooperate with one another, and with local, state, tribal, territorial, and insular area governments, community members, and the private sector to the maximum extent possible.

The Federal Government becomes involved with a response when Federal interests are involved; when state, local, tribal, or territorial resources are overwhelmed and Federal assistance is requested;

or as authorized or required by statute, regulation, or policy. Accordingly, in some instances, the Federal Government may play a supporting role to state, local, tribal, or territorial authorities by providing Federal assistance to the affected parties. For example, the Federal Government provides assistance to state, local, tribal, and territorial authorities when the President declares a major disaster or emergency under the Stafford Act. In other instances, the Federal Government may play a leading role in the response where the Federal Government has primary jurisdiction or when incidents occur on Federal property (e.g., National Parks, military bases).

Regardless of the type of incident, the President leads the Federal Government response effort to ensure that the necessary resources are applied quickly and efficiently to large-scale and catastrophic incidents. Different Federal departments or agencies lead coordination of the Federal Government's response depending on the type and magnitude of the incident and are also supported by other agencies that bring their relevant capabilities to bear in responding to the incident. For example, FEMA leads and coordinates Federal response and assistance when the President declares a major disaster or emergency under the Stafford Act. Similarly, the Department of Health and Human Services (HHS) leads all Federal public health and medical response to public health emergencies and incidents covered by the NRF.

### ***Secretary of Homeland Security***

In conjunction with these efforts, the statutory mission of the Department of Homeland Security is to act as a focal point regarding both natural and manmade crises and emergency planning. Pursuant to the Homeland Security Act and Presidential directive, the Secretary of Homeland Security is the principal federal official for domestic incident management. The Secretary of Homeland Security coordinates preparedness activities within the United States to respond to and recover from terrorist attacks, major disasters, and other emergencies. The Secretary coordinates with Federal entities to provide for Federal unity of efforts for domestic incident management.

As part of these responsibilities, the Secretary provides the Executive Branch with an overall architecture for domestic incident management and coordinates the Federal response, as required. The Secretary of Homeland Security may monitor activities and activate specific response mechanisms to support other Federal departments and agencies without assuming the overall coordination of the Federal response during incidents that do not require the Secretary to coordinate the response or do not result in a Stafford Act declaration. Other Federal departments and agencies carry out their response authorities and responsibilities within this overarching construct of DHS coordination.

Unity of effort differs from unity of command. Various Federal departments and agencies may have statutory responsibilities and lead roles based upon the unique circumstances of the incident. Unity of effort provides coordination through cooperation and common interests and does not interfere with Federal departments' and agencies' supervisory, command, or statutory authorities. The Secretary ensures that overall Federal actions are unified, complete, and synchronized to prevent unfilled gaps or seams in the Federal Government's overarching effort. This coordinated approach ensures that the Federal actions undertaken by DHS and other departments and agencies are harmonized and mutually supportive. The Secretary executes these coordination responsibilities, in part, by engaging directly with the President and relevant Cabinet, department, agency, and DHS component heads as is necessary to ensure a focused, efficient, and unified Federal preparedness posture. All Federal departments and agencies, in turn, cooperate with the Secretary in executing domestic incident management duties.

The Secretary's responsibilities also include management of the broad "emergency management" and "response" authorities of FEMA and other DHS components. DHS component heads may have lead



response roles or other significant roles depending on the type and severity of the incident. For example, the U.S. Secret Service is the lead agency for security design, planning, and implementation of National Special Security Events (NSSE) while the Assistant Secretary for Cybersecurity and Communications coordinates the response to significant cyber incidents.

### ***FEMA Administrator***

The Administrator is the principal advisor to the President, the Secretary of Homeland Security, and the Homeland Security Council regarding emergency management. The FEMA Administrator's duties include assisting the President, through the Secretary, in carrying out the Stafford Act, operation of the National Response Coordination Center (NRCC), the effective support of all ESFs, and more generally, preparation for, protection against, response to, and recovery from all-hazards incidents. Reporting to the Secretary of Homeland Security, the FEMA Administrator is also responsible for managing the core DHS grant programs supporting homeland security activities.<sup>20</sup>

### ***Attorney General***

Like other Executive Branch departments and agencies, the Department of Justice and the Federal Bureau of Investigation (FBI) will endeavor to coordinate their activities with other members of the law enforcement community, and with members of the Intelligence Community, to achieve maximum cooperation consistent with the law and operational necessity.

The Attorney General has lead responsibility for criminal investigations of terrorist acts or terrorist threats by individuals or groups inside the United States, or directed at United States citizens or institutions abroad, where such acts are within the Federal criminal jurisdiction of the United States, as well as for related intelligence collection activities within the United States, subject to the National Security Act of 1947 (as amended), and other applicable law, Executive Order 12333 (as amended), and Attorney General-approved procedures pursuant to that Executive Order. Generally acting through the FBI, the Attorney General, in cooperation with other Federal departments and agencies engaged in activities to protect our national security, shall also coordinate the activities of the other members of the law enforcement community to detect, prevent, preempt, and disrupt terrorist attacks against the United States. In addition, the Attorney General, generally acting through the FBI Director, has primary responsibility for searching for, finding, and neutralizing WMD within the United States.

The Attorney General approves requests submitted by state governors pursuant to the Emergency Federal Law Enforcement Assistance Act for personnel and other Federal law enforcement support during incidents. The Attorney General also enforces Federal civil rights laws, such as the Americans with Disabilities Act of 1990, Rehabilitation Act of 1973, and the Civil Rights Act of 1964. Further information on the Attorney General's role is provided in the National Prevention Framework and Prevention FIOP.

### ***Secretary of Defense***

The Secretary of Defense has authority, direction, and control over the Department of Defense (DOD).<sup>21</sup> DOD resources may be committed when requested by another Federal agency and approved by the Secretary of Defense, or when directed by the President. However certain DOD

<sup>20</sup> See the Post-Katrina Emergency Management Reform Act, enacted as part of the FY 2007 DHS Appropriations Act, P.L. 109-295.

<sup>21</sup> 10 U.S.C. §113.

officials and organizations may provide support under the immediate response authority,<sup>22</sup> a mutual aid agreement with the local community,<sup>23</sup> or pursuant to independent authorities or agreements.<sup>24</sup> When DOD resources are authorized to support civil authorities, command of those forces remains with the Secretary of Defense. DOD elements in the incident area of operations coordinate closely with response organizations at all levels.

### ***Secretary of State***

A domestic incident may have international and diplomatic implications that call for coordination and consultation with foreign governments and international organizations. The Secretary of State is responsible for all communication and coordination between the U.S. Government and other nations regarding the response to a domestic crisis. The Department of State also coordinates international offers of assistance and formally accepts or declines these offers on behalf of the U.S. Government based on needs conveyed by Federal departments and agencies as stated in the International Coordination Support Annex. Some types of international assistance are pre-identified, and bilateral agreements are already established. For example, the USDA/Forest Service and Department of the Interior have joint bilateral agreements with several countries for wildland firefighting support.

### ***Director of National Intelligence***

The Director of National Intelligence serves as the head of the Intelligence Community, acts as the principal advisor to the President for intelligence matters relating to national security, and oversees and directs implementation of the National Intelligence Program. The Intelligence Community, comprising 17 elements across the Federal Government, functions consistent with laws, executive orders, regulations, and policies to support the national security-related missions of the U.S. Government. It provides a range of analytic products, including those that assess threats to the homeland and inform planning, capability development, and operational activities of homeland security enterprise partners and stakeholders. In addition to intelligence community elements with specific homeland security missions, the Office of the Director of National Intelligence maintains a number of mission and support centers that provide unique capabilities for homeland security partners.

### ***Other Federal Department and Agency Heads***

Various Federal departments or agencies play primary, coordinating, or support roles in delivering response core capabilities. In some circumstances, other Federal agencies may have a lead or support role in coordinating operations, or elements of operations, consistent with applicable legal authorities. Nothing in the NRF precludes any Federal department or agency from executing its

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<sup>22</sup> In response to a request for assistance from a civilian authority, under imminently serious conditions, and if time does not permit approval from higher authority, DOD officials may provide an immediate response by temporarily employing the resources under their control, subject to any supplemental direction provided by higher headquarters, to save lives, prevent human suffering, or mitigate great property damage within the United States. Immediate response authority does not permit actions that would subject civilians to the use of military power that is regulatory, prescriptive, proscriptive, or compulsory. (DOD Directive 3025.18)

<sup>23</sup> DOD installation commanders may provide support to local jurisdictions under mutual aid agreements (also known as reciprocal fire protection agreements), when requested.

<sup>24</sup> The U.S. Army Corps of Engineers has independent statutory authorities regarding emergency management, such as Section 5 of the Flood Control Act of 1941 (Public Law 84-99) (e.g., providing technical assistance; direct assistance such as providing sandbags, pumps, and other types of flood fight materials, emergency contracting; and emergency water assistance due to contaminated water source). Also, the Defense Logistics Agency has an interagency agreement with FEMA to provide commodities including fuel to civil authorities responding to disasters.



existing authorities. For all incidents, Federal department and agency heads serve as advisors for the Executive Branch relative to their areas of responsibility.

When the Secretary of Homeland Security is not coordinating the overall response, Federal departments and agencies may coordinate Federal operations under their own statutory authorities, or as designated by the President, and may activate response structures applicable to those authorities. The head of the department or agency may also request the Secretary of Homeland Security to activate NRF structures and elements (e.g. Incident Management Assistance Teams and National Operation Center elements) to provide additional assistance, while still retaining leadership for the response.

Several Federal departments and agencies have authorities to respond to and declare specific types of disasters or emergencies. These authorities may be exercised independently of, concurrently with, or become part of a Federal response coordinated by the Secretary of Homeland Security, pursuant to Presidential directive. Federal departments and agencies carry out their response authorities and responsibilities within the NRF's overarching construct or under supplementary or complementary operational plans. Table 1 provides examples of scenarios in which specific Federal departments and agencies have the responsibility for coordinating response activities. This is not an all-inclusive list.

**Table 1: Examples of Other Federal Department and Agency Authorities<sup>25</sup>**

| Scenario                              | Department/Agency                       | Authorities  |
|---------------------------------------|---|--|
| Agricultural and Food Incident        | Department of Agriculture (USDA)        | The Secretary of Agriculture has the authority to declare an <b>extraordinary emergency</b> and take action due to the presence of a pest or disease of livestock that threatens livestock in the United States. (7 U.S. Code § 8306 [2007]).<br><br>The Secretary of Agriculture also has the authority to declare an <b>extraordinary emergency</b> and take action due to the presence of a plant pest or noxious weed whose presence threatens plants or plant products of the United States. (7 U.S. Code § 7715 [2007]). |
| Public Health Emergency <sup>26</sup> | Department of Health and Human Services | The Secretary of the Department of Health and Human Services has the authority to take actions to protect the public health and welfare, declare a <b>public health emergency</b> , and to prepare for and respond to public health emergencies. (Public Health Service Act, 42 U.S. Code §§ 201 <i>et seq.</i> ).   |
| Oil and Hazardous Materials Spills    | EPA or USCG                             | The EPA and USCG have the authority to take actions to respond to oil discharges and releases of hazardous substances, pollutants, and contaminants, including leading the response. (42 U.S. Code § 9601, <i>et seq.</i> , 33 U.S. Code § 1251 <i>et seq.</i> ) The EPA Administrator and Commandant of the USCG <sup>27</sup> may also classify an oil discharge as a <b>Spill of National Significance</b> and designate senior officials to participate in the response. (40 CFR § 300.323). <sup>28</sup>                 |

<sup>25</sup> These authorities may be exercised independently of, concurrently with, or become part of a Federal response coordinated by the Secretary of Homeland Security pursuant to Presidential directive.

<sup>26</sup> A declaration of a public health emergency may make available any funds appropriated to the Public Health Emergency Fund.

<sup>27</sup> The Commandant of the USCG coordinates the designation of a Spill of National Significance with the Secretary of Homeland Security, as appropriate.

<sup>28</sup> See the ESF #10 – Oil and Hazardous Materials Response Annex for more information on these authorities.

When a Federal department, agency, or component of DHS has responsibility for directing or managing a major aspect of a response coordinated by the Secretary of Homeland Security, that organization is part of the national leadership for the incident and is represented in field, regional, and headquarters unified command and coordination organizations.

Additional information regarding Federal department and agency roles in delivering core capabilities may be found in the Coordinating Structures and Integration section and in the various annexes to this Framework.

## **Core Capabilities**

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Once an incident occurs, efforts focus on saving lives, protecting property and the environment, and preserving the social, economic, cultural, and political structure of the jurisdiction. Depending on the size, scope, and magnitude of an incident, local, state, tribal, territorial, and insular area governments, and, in some cases, the Federal Government, may be called to action. The response core capabilities are the activities that generally must be accomplished in incident response regardless of which levels of government are involved.

These core capabilities were developed based on the results of the SNRA which identified a variety of threats and hazards that pose a significant risk to the Nation. Each mission area—Prevention, Protection, Mitigation, Response, and Recovery—identified functions that would be required to address these threats and hazards; these are the core capabilities. The core capabilities are distinct critical elements necessary to achieve the Goal. They provide a common vocabulary describing the significant functions that must be developed and executed across the whole community to ensure national preparedness.

This section addresses the core capabilities for the Response mission area and the actions required to build and deliver these capabilities.

### ***Context of the Response Mission Area***

By engaging the whole community to build and deliver the response core capabilities, the Nation is better prepared to respond to any threat or hazard, assist in restoring basic services and community functionality, and facilitate the integration of recovery activities. The Response mission area includes 15 core capabilities—12 that apply to response and 3 that are common to all 5 mission areas. Table 2 lists the core capabilities associated with each of the five mission areas.

Table 2: Core Capabilities by Mission Area<sup>29</sup>

| Prevention                           |  | Protection                              | Mitigation                        | Response                       | Recovery          |  |
|--------------------------------------|--|---|-----------------------------------|--------------------------------|-------------------|--|
| Planning                             |  |   |                                   |                                |                   |  |
| Public Information and Warning       |  |   |                                   |                                |                   |  |
| Operational Coordination             |  |   |                                   |                                |                   |  |
| Intelligence and Information Sharing |  | Community Resilience                    | Infrastructure Systems            |                                |                   |  |
| Interdiction and Disruption          |  |   | Long-term Vulnerability Reduction | Critical Transportation        | Economic Recovery |  |
| Screening, Search, and Detection     |  |   |                                   |                                |                   | Environmental Response/Health and Safety |
| Forensics and Attribution            | Access Control and Identity Verification               | Risk and Disaster Resilience Assessment |                                   |                                |                   |  |
|                                      | Cybersecurity  |   | Fire Management and Suppression   | Natural and Cultural Resources |                   |  |
|                                      | Physical Protective Measures                           |   |                                   |                                |                   |  |
|                                      | Risk Management for Protection Programs and Activities |   |                                   |                                |                   |  |
|                                      | Supply Chain Integrity and Security                    |   |                                   |                                |                   |  |
|                                      |  |   |                                   |                                |                   |  |
|                                      |  |   |                                   |                                |                   |  |
|                                      |  |   |                                   |                                |                   |  |
|                                      |  |   |                                   |                                |                   |  |
|                                      |  |   |                                   |                                |                   |  |

<sup>29</sup> Planning, Public Information and Warning, and Operational Coordination are common to all mission areas.

Table 3 provides a summary of each response core capability and the critical tasks to achieve its objective.

**Table 3: Overview of Response Core Capabilities in the National Preparedness Goal**

| Core Capabilities and Critical Tasks  |  |
|---|--|
| <b>1. Planning</b><br><i>(Cross-cutting with all mission areas)</i>   | <b>Objective:</b> Conduct a systematic process engaging the whole community as appropriate in the development of executable strategic, operational, and/or tactical-level approaches to meet defined objectives.   |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>Develop operational plans that adequately identify critical objectives based on the planning requirements, provide a complete and integrated picture of the sequence and scope of the tasks to achieve the objectives, and are implementable within the time frame contemplated in the plan using available resources.</li> </ul>   |  |
| <b>2. Public Information and Warning</b><br><i>(Cross-cutting with all mission areas)</i>   | <b>Objective:</b> Deliver coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken and the assistance being made available. |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>Inform all affected segments of society by all means necessary, including accessible tools in multiple formats of critical lifesaving and life-sustaining information to expedite the delivery of emergency services and aid the public in taking protective actions.</li> <li>Deliver credible and actionable messages to inform ongoing emergency services and the public about protective measures and other life-sustaining actions and facilitate the integration of recovery activities.</li> </ul>   |  |
| <b>3. Operational Coordination</b><br><i>(Cross-cutting with all mission areas)</i>   | <b>Objective:</b> Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.  |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>Mobilize all critical resources and establish command, control, and coordination structures within the affected community and other coordinating bodies in surrounding communities and across the Nation and maintain as needed throughout the duration of an incident.</li> <li>Enhance and maintain command, control, and coordination structures, consistent with the National Incident Management System (NIMS), to meet basic human needs, stabilize the incident, and facilitate the integration of restoration and recovery activities.</li> </ul> |  |

| Core Capabilities and Critical Tasks  |  |
|---|--|
| <b>4. Critical Transportation</b>   | <b>Objective:</b> Provide transportation (including infrastructure access and accessible transportation services) for response priority objectives, including the evacuation of people and animals, and the delivery of vital response personnel, equipment, and services into the affected areas.   |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>▪ Monitor and report the status of and damage to the transportation system and infrastructure.</li> <li>▪ Identify temporary alternative transportation solutions to be implemented when primary systems or routes are unavailable or overwhelmed.</li> <li>▪ Implement appropriate air traffic and airspace management measures.</li> <li>▪ Coordinate regulatory waivers and exemptions.</li> <li>▪ Provide longer-term coordination of the restoration and recovery of the affected transportation systems and infrastructure if required.</li> <li>▪ Ensure basic human needs are met, stabilize the incident, transition into recovery for an affected area, and restore basic services and community functionality.</li> <li>▪ Clear debris from any route type (i.e., road, rail, airfield, port facility, waterway) to facilitate response operations.</li> </ul> |  |
| <b>5. Environmental Response/Health and Safety</b>  | <b>Objective:</b> Conduct appropriate measures to ensure the protection of the health and safety of the public and workers, as well as the environment, from all-hazards in support of responder operations and the affected communities.  |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>▪ Identify, assess, and mitigate worker health and safety hazards and disseminate health and safety guidance and resources to response and recovery workers.</li> <li>▪ Minimize public exposure to environmental hazards through assessment of the hazards and implementation of public protective actions.</li> <li>▪ Detect, assess, stabilize, and clean up releases of oil and hazardous materials into the environment, including buildings/structures, and properly manage waste.</li> <li>▪ Identify, evaluate, and implement measures to prevent and minimize impacts to the environment, natural and cultural resources, and historic properties from all-hazard emergencies and response operations.</li> </ul>  |  |
| <b>6. Fatality Management Services</b>  | <b>Objective:</b> Provide fatality management services, including decedent remains recovery and victim identification, working with local, state, tribal, territorial, insular area, and Federal authorities to provide mortuary processes, temporary storage or permanent internment solutions, sharing information with mass care services for the purpose of reunifying family members and caregivers with missing persons/remains, and providing counseling to the bereaved. |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>▪ Establish and maintain operations to recover a significant number of fatalities over a geographically dispersed area.</li> <li>▪ Mitigate hazards from remains, facilitate care to survivors, and return remains for final disposition.</li> </ul>  |  |

| Core Capabilities and Critical Tasks  |  |
|---|--|
| <b>7. Fire Management and Suppression</b>   | <b>Objective:</b> Provide structural, wildland, and specialized firefighting capabilities to manage and suppress fires of all types, kinds, and complexities while protecting the lives, property, and the environment in the affected area. |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>Provide traditional first response or initial attack firefighting services.</li> <li>Conduct expanded or extended attack firefighting and support operations through coordinated response of fire management and specialized fire suppression resources.</li> <li>Ensure the coordinated deployment of appropriate local, regional, national, and international fire management and fire suppression resources to reinforce firefighting efforts and maintain an appropriate level of protection for subsequent fires.</li> </ul>   |  |
| <b>8. Infrastructure Systems</b><br>(Cross-cutting with Recovery mission area)  | <b>Objective:</b> Stabilize critical infrastructure functions, minimize health and safety threats, and efficiently restore and revitalize systems and services to support a viable, resilient community.                                     |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>Decrease and stabilize immediate infrastructure threats to the affected population, to include survivors in the heavily-damaged zone, nearby communities that may be affected by cascading effects, and mass care support facilities and evacuation processing centers with a focus on life-sustainment and congregate care services.</li> <li>Re-establish critical infrastructure within the affected areas to support ongoing emergency response operations, life sustainment, community functionality, and facilitate the integration of recovery activities.</li> <li>Provide for the clearance, removal, and disposal of debris.</li> <li>Formalize partnerships with governmental and private sector cyber incident or emergency response teams to accept, triage, and collaboratively respond to cascading impacts in an efficient manner.</li> </ul> |  |
| <b>9. Mass Care Services</b>  | <b>Objective:</b> Provide life-sustaining and human services to the affected population, to include hydration, feeding, sheltering, temporary housing, evacuee support, reunification, and distribution of emergency supplies.               |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>Move and deliver resources and capabilities to meet the needs of disaster survivors, including children and adults with disabilities and/or access and functional needs.</li> <li>Establish, staff, and equip emergency shelters and other temporary housing options ensuring that shelters and temporary housing units are physically accessible for children and adults with disabilities and/or with access and functional needs.</li> <li>Move from congregate care to non-congregate care alternatives, and provide relocation assistance or interim housing solutions for families unable to return to their pre-disaster homes.</li> </ul>   |  |

| Core Capabilities and Critical Tasks   |  |
|--|--|
| <b>10. Mass Search and Rescue Operations</b>   | <b>Objective:</b> Deliver traditional and atypical search and rescue capabilities, including personnel, services, animals, and assets to survivors in need, with the goal of saving the greatest number of endangered lives in the shortest time possible.   |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>Conduct search and rescue operations to locate and rescue persons in distress.</li> <li>Initiate community-based search and rescue support operations across a wide geographically dispersed area.</li> <li>Ensure the synchronized deployment of local, regional, national, and international teams to reinforce ongoing search and rescue efforts and facilitate the integration of recovery activities.</li> </ul>  |  |
| <b>11. On-scene Security, Protection, and Law Enforcement</b>  | <b>Objective:</b> Ensure a safe and secure environment through law enforcement and related security and protection operations for people and communities located within affected areas and also for response personnel engaged in lifesaving and life-sustaining operations.   |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>Establish a safe and secure environment in an affected area.</li> <li>Provide and maintain on-scene security and meet the protection needs of the affected population over a geographically dispersed area while eliminating or mitigating the risk of further damage to persons, property, and the environment.</li> </ul>  |  |
| <b>12. Operational Communications</b>  | <b>Objective:</b> Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces.   |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>Ensure the capacity to communicate with both the emergency response community and the affected populations and establish interoperable voice and data communications between local, state, tribal, territorial, and Federal first responders.</li> <li>Re-establish sufficient communications infrastructure within the affected areas to support ongoing life-sustaining activities, provide basic human needs, and facilitate the integration of recovery activities.</li> <li>Re-establish critical information networks, including cybersecurity information-sharing networks, in order to inform situational awareness, enable incident response, and support the resiliency of key systems.</li> </ul> |  |
| <b>13. Logistics and Supply Chain Management</b>   | <b>Objective:</b> Deliver essential commodities, equipment, and services in support of impacted communities and survivors, to include emergency power and fuel support, as well as the coordination of access to community staples. Synchronize logistics capabilities and enable the restoration of impacted supply chains. |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>Mobilize and deliver governmental, nongovernmental, and private sector resources within and outside of the affected area to save lives, sustain lives, meet basic human needs, stabilize the incident, and facilitate the integration of recovery efforts, to include moving and delivering resources and services to meet the needs of disaster survivors.</li> <li>Enhance public and private resource and services support for an affected area.</li> </ul>   |  |



| Core Capabilities and Critical Tasks   |   |
|--|---|
| <b>14. Public Health, Healthcare, and Emergency Medical Services</b>   | <b>Objective:</b> Provide lifesaving medical treatment via Emergency Medical Services and related operations and avoid additional disease and injury by providing targeted public health, medical, and behavioral health support, and products to all affected populations. |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>▪ Deliver medical countermeasures to exposed populations.</li> <li>▪ Complete triage and initial stabilization of illness or casualties and begin definitive care for those likely to benefit from care and survive. Develop public health interventions to maintain and improve the health of individuals placed at risk due to disruptions in healthcare and societal support networks.</li> <li>▪ Return medical surge resources to pre-incident levels, complete health assessments, and identify recovery processes.</li> </ul>   |   |
| <b>15. Situational Assessment</b>  | <b>Objective:</b> Provide all decision makers with decision-relevant information regarding the nature and extent of the hazard, any cascading effects, and the status of the response.  |
| <b>Critical Tasks:</b> <ul style="list-style-type: none"> <li>▪ Deliver information sufficient to inform decision making regarding immediate lifesaving and life-sustaining activities, and engage governmental, private, and civic sector resources within and outside of the affected area to meet basic human needs and stabilize the incident.</li> <li>▪ Deliver enhanced information to reinforce ongoing lifesaving and life-sustaining activities, and engage governmental, private, and civic sector resources within and outside of the affected area to meet basic human needs, stabilize the incident, and facilitate the integration of recovery activities.</li> </ul> |   |

No core capability is the responsibility of any one party or single level of government. Each requires an approach that integrates the abilities of elements in the whole community from the individual through the Federal Government, including traditional and non-traditional partners. The Nation must be prepared to deal not only with the normal type of incidents that communities handle every day, but also with incidents of catastrophic proportions. Most of the resources and functions required at the local level to deliver a given core capability are provided by local government agencies with additional members of the community assisting as needed. Catastrophic incidents require many more response assets and engagement with a broader set of partners.<sup>30</sup> Community involvement is vital to providing additional response support. Local residents may well be the primary source of additional manpower in the first hours and days after a catastrophic incident.

### Cross-cutting Response Core Capabilities

Three response core capabilities—Planning, Public Information and Warning, and Operational Coordination—span all five mission areas. These common core capabilities are essential to the success of the other core capabilities. They help establish unity of effort among all those involved in the Response mission area.

<sup>30</sup> Given the scope and magnitude of a catastrophic incident, waivers, exceptions, and exemptions to policy, regulations, and laws may be available in order to save and sustain life, and to protect property and the environment. However, any such waivers, exceptions, and exemptions must be consistent with laws that preserve human and civil rights and protect individuals with disabilities and others with access and functional needs.



- **Planning.** Planning makes it possible to manage the life cycle of a potential crisis, determine capability requirements, and help stakeholders learn their roles. It includes the collection, analysis, and dissemination of risk assessment data and the development of plans, procedures, mutual aid and assistance agreements, strategies, and other arrangements to perform specific missions and tasks. Governments at all levels have a responsibility to develop all-hazards response plans prior to and during an incident. Including a broad range of partners in the planning process helps ensure that the needs and potential contributions of all elements are integrated into workable plans.

In addition, governments at all levels should establish continuity plans to ensure seamless and immediate continuation of mission-essential functions during an incident. Continuity plans should identify essential functions, succession and delegation of authority, continuity facilities, communication capabilities, and human resource issues.

- **Public Information and Warning.** For an effective response, jurisdictions must provide accurate and accessible information to decision makers and the public. This includes development of accessible message content, such as incident facts, health risk warnings, pre-incident recommendations, evacuation guidance, and other protective measures. It also includes developing strategies for when, where, how, and by whom information will be delivered and ensuring that all levels of government agree on unified messages. Information must be shared with the public and other members of the response community efficiently, effectively, and in an accessible manner. Effective public information and warning is particularly important in dealing with incidents that start small but may evolve to have greater consequences.
- **Operational Coordination.** For incident response, coordination of operations must occur both among those tasked to deliver the various response core capabilities and with those delivering the core capabilities of other mission areas. This coordination occurs through response structures based on clearly established roles, responsibilities, and reporting protocols. Using NIMS principles, structures, and coordinating processes enhances the efficiency and effectiveness of response. Specific actions to achieve this core capability may include coordinating initial actions, managing ESFs, coordinating requests for additional support, and identifying and integrating resources and capabilities.

## Integration among Response Core Capabilities and Mission Areas

Interdependencies exist among many of the core capabilities. For example, organizations involved in providing Mass Care Services often rely on resources and functions from organizations that provide Critical Transportation or Logistics and Supply Chain Management for commodities distribution; Public Information and Warning for messaging, translators, and interpreters; and Operational Communications for reporting and communication that allows shelters to stay in touch with operations centers.

The core capabilities in various mission areas may also be linked through shared assets and services. For example, the functionality provided by geographic information systems can be applied across multiple response core capabilities, as well as core capabilities in the other four mission areas. Thus synergy among mission area resources and processes is important to maximize capabilities and minimize risk. The overarching nature of functions described in these capabilities frequently involves either support to or cooperation of several incident management partners to ensure the seamless integration of prevention, protection, mitigation, response, and recovery activities.

Potential points of intersection between the Response mission area and other mission areas include the following:

- **Prevention.** Many Response and Prevention mission area decisions will have interdependencies upon operations. Strong operational coordination and information sharing between these mission areas will best position the whole community to save lives, protect property, and prevent terrorist attacks and follow-on attacks. As an example, Prevention activities may identify and locate WMD material. The sharing of this information along with technical data will inform response activities resulting in swift public information and warning and protective guidance.
- **Protection.** Protection of critical infrastructure systems and implementation of plans for the rapid restoration of commercial activities and critical infrastructure operations are crucial aspects of the Protection mission area. Many of the 16 critical infrastructure sectors<sup>31</sup> within the Protection mission area are also represented in the Response mission area. For example, the Logistics and Supply Chain Management capability depends on private sector owners and operators of critical infrastructure for achieving the capability's objective.
- **Mitigation.** Achieving the mitigation core capability preliminary targets allows for the incorporation of lessons learned in the analysis and planning processes and makes the response core capabilities more resilient and effective.
- **Recovery.** Even while response activities are underway, recovery operations must begin. The emphasis on response gradually gives way to recovery operations; however, recovery core capabilities may involve some of the same functions as response core capabilities. This includes providing essential public health and safety services, restoring interrupted utility and other essential services, reestablishing transportation routes, providing food and shelter for those displaced by an incident, protecting natural and cultural resources and performing environmental compliance, ensuring equal access, reunifying children who have been displaced from their families/guardians, and reopening schools and child care centers.

These overlapping areas are identified through comprehensive planning with the whole community to ensure that they are properly addressed during the response to an incident. Ensuring that operational plans properly account for the integration of mission areas is essential.

## *Response Actions to Deliver Core Capabilities*

This section describes the key tasks each major element of the whole community must accomplish to be prepared to deliver the core capabilities. More detailed concepts of operations for the delivery of the core capabilities are provided in the Response FIOP and operational plans developed by various jurisdictions, the private sector, and NGOs.

### **Individuals and Households**

Many individuals have talents and experience that can be tapped to support core capabilities. Individuals can contribute to the delivery of response core capabilities through community organizations, by participating in community preparedness activities, such as CERT, and by ensuring that they have household/family emergency plans.<sup>32</sup>

### **Private Sector**

Roles and responsibilities of private sector entities are described in the Roles and Responsibilities section. Private sector entities can assist in delivering the response core capabilities by collaborating

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<sup>31</sup> The critical infrastructure sectors are described in the 2013 National Infrastructure Protection Plan.

<sup>32</sup> Individual and household preparedness information can be located at <http://www.ready.gov/make-a-plan>.

with emergency management personnel before an incident occurs to determine what assistance may be necessary and how they can support local emergency management during response operations.<sup>33</sup>

## Nongovernmental Organizations

NGOs manage volunteers and resources that bolster government efforts to ensure a successful incident response. Collaboration with responders, governments at all levels, and other agencies and organizations helps NGOs to tailor and direct their efforts that are necessary to accomplish and deliver the response core capabilities.

## Local, State, and Tribal Actions

Communities apply NIMS principles to integrate response plans and resources across jurisdictions and departments as well as with the private sector and NGOs. Neighboring communities play a key role by providing support through a network of mutual aid and assistance agreements that identify the resources that communities may be able to share during an incident.

The state is the gateway to many government resources that help communities respond. When an incident grows or has the potential to grow beyond the capability of a local jurisdiction and responders cannot meet the needs with mutual aid and assistance resources, local officials contact the state. Tribes may request assistance from the state or the Federal Government. Upon receiving a request for assistance from a local or tribal government, state officials may:

- Coordinate warnings and public information through the activation of the state's public communications strategy.
- Distribute supplies stockpiled to meet the needs of the emergency.
- Provide technical assistance and support to meet the response and recovery needs.
- Suspend or waive statutes, rules, ordinances, and orders, to the extent permitted by law, to ensure timely performance of response functions.
- Implement state volunteer and donations management plans and coordinate with the private sector and NGOs.
- Order or recommend evacuations ensuring the integration and inclusion of the requirements of populations such as children; individuals with disabilities and others with access and functional needs; those from religious, racial, and ethnically diverse communities; people with limited English proficiency; and owners of animals, including household pets and service and assistance animals.
- Mobilize resources to meet the requirements of individuals with disabilities and others with access and functional needs in compliance with Federal civil rights laws.

If local resources are inadequate, local authorities may seek assistance from the county emergency manager or the state. Under some Federal authorities, local jurisdictions and tribes may also seek assistance directly from the Federal Government for non-Stafford Act incidents.

## State-to-State Assistance

If additional resources are required, states can request assistance from other states through interstate mutual aid and assistance agreements such as EMAC. Administered by the National Emergency

<sup>33</sup> Additional information sharing and collaborative opportunities can be located at FEMA Private Sector Focus <http://www.fema.gov/private-sector>.

Management Association, EMAC is an interstate mutual aid agreement that streamlines the interstate mutual aid and assistance process.

## **Federal Authorities**

Federal assistance can be provided to state, local, and tribal jurisdictions, as well as to other Federal departments and agencies, through a number of different mechanisms and authorities. Federal financial assistance may also be available for disability-related access and functional needs equipment.

### ***Federal Response and Assistance Available Without a Stafford Act Declaration***

The NRF covers the full range of complex and constantly changing requirements in anticipation of, or in response to, threats or actual incidents. In addition to Stafford Act support, the NRF or other supplementary or complementary operational plans may be applied to respond or provide other forms of support.

### **Federal Departments and Agencies Acting Under Their Own Authorities**

Immediate lifesaving assistance to states, as well as other types of assistance, such as wildland firefighting support or response to an agricultural disease or cybersecurity incident, are performed by Federal departments or agencies under their own authorities and funding or through reciprocal mutual assistance agreements. Some Federal departments or agencies conduct or may lead Federal response actions under their own authorities using funding sources other than the President's Disaster Relief Fund. For example, specific trust funds are established under Federal environmental laws to support and fund oil and hazardous substances response operations.

### **Federal-to-Federal Support**

Federal departments and agencies may execute interagency or intra-agency reimbursable agreements in accordance with the Economy Act or other applicable authorities. The Financial Management Support Annex to the NRF contains information about this process. A Federal department or agency responding to an incident under its own authorities may also request support from the Secretary of Homeland Security in obtaining and coordinating additional Federal assistance. The Secretary of Homeland Security may activate one or more ESFs to provide the requested support.

### ***Federal Response and Assistance Under the Stafford Act***

The Federal Government may provide assistance in the form of funding, resources, and services. Federal departments and agencies respect the sovereignty and responsibilities of local, state, tribal, territorial, and insular area governments while rendering assistance that supports the affected local or state governments.

### **Robert T. Stafford Disaster Relief and Emergency Assistance Act**

Local, state, tribal, territorial, and insular area governments do not require Federal assistance to respond to most incidents; however, when an incident is of such severity and magnitude that effective response is beyond the capabilities of the state and local governments, the governor or Chief Executive of a tribe can request Federal assistance under the Stafford Act. In certain circumstances, the President may declare an emergency without a request from a governor when the primary responsibility for response rests with the United States, because the emergency involves a subject area for which, under the Constitution or laws of the United States, the United States exercises exclusive or preeminent responsibility and authority.

The Stafford Act authorizes the President to provide financial and other assistance to local, state, tribal, territorial, and insular area governments, certain private nonprofit organizations, and individuals to support response, recovery, and mitigation efforts following a Stafford Act Emergency or Major Disaster Declaration.<sup>34</sup> Most forms of Stafford Act assistance require a state cost share. While Federal assistance under the Stafford Act may only be delivered after a declaration, FEMA may pre-deploy Federal assets when a declaration is likely and imminent. The Stafford Act provides for two types of declarations:

- An **Emergency Declaration** is more limited in scope than a Major Disaster Declaration, provides fewer Federal programs, and is not normally associated with recovery programs. However, the President may issue an Emergency Declaration prior to an actual incident to lessen or avert the threat of a catastrophe. Generally, Federal assistance and funding are provided to meet specific emergency needs or to help prevent a catastrophe from occurring.
- A **Major Disaster Declaration** provides more Federal programs for response and recovery than an Emergency Declaration. Unlike an Emergency Declaration, a Major Disaster Declaration may only be issued after an incident.

### **Proactive Response to Catastrophic Incidents**

Prior to and during catastrophic incidents, especially those that occur with little or no notice, the Federal Government may mobilize and deploy assets in anticipation of a formal request from the state. Such deployments of significant Federal assets would occur in anticipation of or following catastrophic incidents involving chemical, biological, radiological, nuclear, or high-yield explosive WMD; large-magnitude earthquakes; or other incidents affecting heavily populated areas. Proactive efforts are intended to ensure that Federal resources reach the scene in time to assist in reducing disruption of normal functions of state and local governments and are done in coordination and collaboration with local and state governments, private sector entities, and NGOs when possible.

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<sup>34</sup> The President has delegated most of his authority under the Stafford Act to the Secretary of Homeland Security, who has, in turn, delegated those authorities to the FEMA Administrator.

## **Coordinating Structures and Integration**

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Coordinating structures aid preparedness and response at all levels of government and within the private sector, communities, and nongovernmental entities. The structures help organize and measure the whole community's capabilities in order to address the requirements of the Response mission area, facilitate problem solving, improve access to response resources, and foster coordination prior to and following an incident.

Scalable, flexible, and adaptable coordinating structures are essential in aligning the key roles and responsibilities to deliver the Response mission area's core capabilities. The flexibility of such structures helps ensure that communities across the country can organize response efforts to address a variety of risks based on their unique needs, capabilities, demographics, governing structures, and non-traditional partners. The NRF is not based on a one-size-fits-all organizational construct, but instead acknowledges the concept of tiered response, which emphasizes that response to incidents should be handled at the lowest jurisdictional level capable of handling the mission. These structures can be partially or fully implemented in the context of a threat, in anticipation of a significant event, or in response to an incident. Selective implementation allows for a scaled response, delivery of the exact resources that are needed, and a level of coordination appropriate to each incident.

The following section describes the coordinating structures within the Response mission area and explains how they integrate with the coordinating structures that support other mission areas to build preparedness and enhance the Nation's resilience to all types of risks and hazards.

### ***Local Coordinating Structures***

Local jurisdictions and states employ a variety of coordinating structures to help identify risks, establish relationships, organize, and build capabilities. Due to the unique partnerships, geographic conditions, threats, and established capabilities each jurisdiction faces, the coordinating structures at these levels vary.

Examples of local response coordinating structures include local planning committees, CERTs, and chapters of national-level associations. These structures organize and integrate their capabilities and resources with neighboring jurisdictions, the state, the private sector, and NGOs.

### ***State and Territorial Coordinating Structures***

States and territories also leverage the capabilities and resources of partners across the state/territory when identifying needs and building capabilities. The coordinating structures at the state or territorial level also vary depending on factors such as geography, population, industry, and the capabilities of the local jurisdictions within the state. These structures are also designed to leverage appropriate representatives from across the whole community, some of whom may also participate in local or regional coordinating structures. Many states or territories create independent committees or councils focused on specific areas or functions as a sub-set of their emergency management agency.

### ***Tribal Coordinating Structures***

The Tribal Assistance Coordination Group, or TAC-G, is a Multiagency Coordination (MAC) group that assists federally-recognized tribes during emergencies and disasters, as well as providing information and technical assistance for tribal emergency management programs. The TAC-G is led and managed by the Bureau of Indian Affairs Emergency Management (BIA EM) Program. The TAC-G consists of partners from all levels of government (local, county, state, tribal, Federal, etc.) as



well as non-profit aid organizations and the private sector. This coordinating body is instrumental in executing the responsibilities of the Tribal Coordination Support Annex (TCSA).

## *Private Sector Coordinating Structures*

Business EOCs, industry trade groups, and private sector information and intelligence centers serve as coordinating structures for the private sector. These organizations, composed of multiple businesses and entities brought together by shared geography or common function (e.g., banking, supply chain management, transportation, venue management), support the collaboration, communication, and sharing of information within the private sector. Such organizations can coordinate with and support NGOs, and in many cases they serve as a conduit to local and state government coordinating structures.

## *Federal Coordinating Structures*

### **National Security Council**

The National Security Council (NSC) is the principal policy body for consideration of national security policy issues requiring Presidential determination. The NSC advises and assists the President in integrating all aspects of national security policy as it affects the United States—domestic, foreign, military, intelligence, and economic (in conjunction with the National Economic Council). Along with its subordinate committees, the NSC is the President’s principal means for coordinating Executive Branch departments and agencies in the development and implementation of national security policy.

### **Emergency Support Functions**

The Federal Government and many state governments organize their response resources and capabilities under the ESF construct. ESFs have proven to be an effective way to bundle and manage resources to deliver core capabilities. The Federal ESFs are the primary, but not exclusive, Federal coordinating structures for building, sustaining, and delivering the response core capabilities. Most Federal ESFs support a number of the response core capabilities. In addition, there are responsibilities and actions associated with Federal ESFs that extend beyond the core capabilities and support other response activities, as well as department and agency responsibilities.

The Federal ESFs bring together the capabilities of Federal departments and agencies and other national-level assets. ESFs are not based on the capabilities of a single department or agency, and the functions for which they are responsible cannot be accomplished by any single department or agency. Instead, Federal ESFs are groups of organizations that work together to deliver core capabilities and support an effective response.

As noted above, many local, state, and tribal jurisdictions have adopted and tailored the ESF construct. Because state and local jurisdictions establish ESFs based on their specific risks and requirements, there is no mandatory or direct linkage to the Federal ESFs. Local and state governments are encouraged to engage members of the whole community as part of whatever coordinating processes they use.

Table 4 summarizes the Federal ESFs and indicates the response core capabilities each ESF most directly supports. All ESFs support the common core capabilities—Planning, Public Information and Warning, and Operational Coordination—and many ESFs support more than those that are listed.

Table 4: Emergency Support Functions and ESF Coordinators

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|--|
| <b>ESF #1—Transportation</b>   |
| <b>ESF Coordinator: Department of Transportation</b>   |
| Key Response Core Capability: Critical Transportation  |
| Coordinates the support of management of transportation systems and infrastructure, the regulation of transportation, management of the Nation's airspace, and ensuring the safety and security of the national transportation system. Functions include but are not limited to: <ul style="list-style-type: none"> <li>▪ Transportation modes management and control</li> <li>▪ Transportation safety</li> <li>▪ Stabilization and reestablishment of transportation infrastructure</li> <li>▪ Movement restrictions</li> <li>▪ Damage and impact assessment.</li> </ul>  |
| <b>ESF #2—Communications</b>   |
| <b>ESF Coordinator: DHS/Cybersecurity and Communications</b>   |
| Key Response Core Capability: Operational Communications, Infrastructure Systems   |
| Coordinates government and industry efforts for the reestablishment and provision of critical communications infrastructure, facilitates the stabilization of systems and applications from malicious cyber activity, and coordinates communications support to response efforts. Functions include but are not limited to: <ul style="list-style-type: none"> <li>▪ Coordination with telecommunications and information technology industries</li> <li>▪ Coordination of the reestablishment and provision of critical communications infrastructure</li> <li>▪ Protection, reestablishment, and sustainment of national cyber and information technology resources</li> <li>▪ Oversight of communications within the Federal response structures</li> <li>▪ Facilitation of the stabilization of systems and applications from cyber events.</li> </ul> |
| <b>ESF #3—Public Works and Engineering</b>   |
| <b>ESF Coordinator: DOD/U.S. Army Corps of Engineers</b>   |
| Key Response Core Capabilities: Infrastructure Systems, Critical Transportation, Logistics and Supply Chain Management, Environmental Response/Health and Safety, Fatality Management, Mass Care Services, Mass Search and Rescue Operations   |
| Coordinates the capabilities and resources to facilitate the delivery of services, technical assistance, engineering expertise, construction management, and other support to prepare for, respond to, and/or recover from a disaster or an incident. Functions include but are not limited to: <ul style="list-style-type: none"> <li>▪ Infrastructure protection and emergency repair</li> <li>▪ Critical infrastructure reestablishment</li> <li>▪ Engineering services and construction management</li> <li>▪ Emergency contracting support for lifesaving and life-sustaining services.</li> </ul>  |
| <b>ESF #4—Firefighting</b>   |
| <b>ESF Coordinator: USDA/U.S. Forest Service and DHS/FEMA/U.S. Fire Administration</b>   |
| Key Response Core Capabilities: Operational Communications Logistics and Supply Chain Management, Infrastructure Systems On-Scene Security, Protection, and Law Enforcement Public Health, Healthcare, and Emergency Medical Services, Fire Management and Suppression, Situational Assessment   |
| Coordinates the support for the detection and suppression of fires. Functions include but are not limited to: <ul style="list-style-type: none"> <li>▪ Support to wildland, rural, and urban firefighting operations.</li> </ul>   |



**ESF #5—Information and Planning****ESF Coordinator: DHS/FEMA**

Key Response Core Capabilities: Situational Assessment, Planning, Public Information and Warning

Supports and facilitates multiagency planning and coordination for operations involving incidents requiring Federal coordination. Functions include but are not limited to:

- Incident action planning
- Information collection, analysis, and dissemination.

**ESF #6—Mass Care, Emergency Assistance, Temporary Housing, and Human Services****ESF Coordinator: DHS/FEMA**

Key Response Core Capabilities: Mass Care Services, Logistics and Supply Chain Management, Public Health, Healthcare, and Emergency Medical Services, Critical Transportation, Fatality Management Services

Coordinates the delivery of mass care and emergency assistance. Functions include but are not limited to:

- Mass care
- Emergency assistance
- Temporary housing
- Human services.

**ESF #7—Logistics****ESF Coordinator: General Services Administration and DHS/FEMA**

Key Response Core Capabilities: Logistics and Supply Chain Management, Mass Care Services, Critical Transportation, Infrastructure Systems, Operational Communications

Coordinates comprehensive incident resource planning, management, and sustainment capability to meet the needs of disaster survivors and responders. Functions include but are not limited to:

- Comprehensive, national incident logistics planning, management, and sustainment capability
- Resource support (e.g., facility space, office equipment and supplies, contracting services).

**ESF #8—Public Health and Medical Services****ESF Coordinator: Department of Health and Human Services**

Key Response Core Capabilities: Public Health, Healthcare, and Emergency Medical Services, Fatality Management Services, Mass Care Services, Critical Transportation, Public Information and Warning, Environmental Response/Health and Safety, Logistics and Supply Chain Management

Coordinates the mechanisms for assistance in response to an actual or potential public health and medical disaster or incident. Functions include but are not limited to:

- Public health
- Medical surge support including patient movement
- Behavioral health services
- Mass fatality management.

**ESF #9—Search and Rescue****ESF Coordinator: DHS/FEMA**

Key Response Core Capability: Mass Search and Rescue Operations

Coordinates the rapid deployment of search and rescue resources to provide specialized lifesaving assistance. Functions include but are not limited to:

- Structural collapse (urban) search and rescue
- Maritime/coastal/waterborne search and rescue
- Land search and rescue.

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| <p><b>ESF #10—Oil and Hazardous Materials Response</b><br/> <b>ESF Coordinator: Environmental Protection Agency</b></p>   |
| <p>Key Response Core Capabilities: Environmental Response/Health and Safety, Critical Transportation, Infrastructure Systems, Public Information and Warning</p>  |
| <p>Coordinates support in response to an actual or potential discharge and/or release of oil or hazardous materials. Functions include but are not limited to:</p> <ul style="list-style-type: none"> <li>▪ Environmental assessment of the nature and extent of oil and hazardous materials contamination</li> <li>▪ Environmental decontamination and cleanup, including buildings/structures and management of contaminated waste.</li> </ul>  |
| <p><b>ESF #11—Agriculture and Natural Resources</b><br/> <b>ESF Coordinator: Department of Agriculture</b></p>  |
| <p>Key Response Core Capabilities: Mass Care Services, Critical Transportation, Logistics and Supply Chain Management</p>   |
| <p>Coordinates a variety of functions designed to protect the Nation's food supply, respond to plant and animal pest and disease outbreaks, and protect natural and cultural resources. Functions include but are not limited to:</p> <ul style="list-style-type: none"> <li>▪ Nutrition assistance</li> <li>▪ Animal and agricultural health issue response</li> <li>▪ Technical expertise, coordination, and support of animal and agricultural emergency management</li> <li>▪ Meat, poultry, and processed egg products safety and defense</li> <li>▪ Natural and cultural resources and historic properties protection.</li> </ul> |
| <p><b>ESF #12—Energy</b><br/> <b>ESF Coordinator: Department of Energy</b></p>  |
| <p>Key Response Core Capabilities: Infrastructure Systems, Logistics and Supply Chain Management, Situational Assessment</p>  |
| <p>Facilitates the reestablishment of damaged energy systems and components and provides technical expertise during an incident involving radiological/nuclear materials. Functions include but are not limited to:</p> <ul style="list-style-type: none"> <li>▪ Energy infrastructure assessment, repair, and reestablishment</li> <li>▪ Energy industry utilities coordination</li> <li>▪ Energy forecast.</li> </ul>   |
| <p><b>ESF #13—Public Safety and Security</b><br/> <b>ESF Coordinator: Department of Justice/Bureau of Alcohol, Tobacco, Firearms, and Explosives</b></p>  |
| <p>Key Response Core Capability: On-Scene Security, Protection, and Law Enforcement</p>   |
| <p>Coordinates the integration of public safety and security capabilities and resources to support the full range of incident management activities. Functions include but are not limited to:</p> <ul style="list-style-type: none"> <li>▪ Facility and resource security</li> <li>▪ Security planning and technical resource assistance</li> <li>▪ Public safety and security support</li> <li>▪ Support to access, traffic, and crowd control.</li> </ul>  |

**ESF #14—Superseded by National Disaster Recovery Framework****ESF #15—External Affairs****ESF Coordinator: DHS****Key Response Core Capability: Public Information and Warning**

Coordinates the release of accurate, coordinated, timely, and accessible public information to affected audiences, including the government, media, NGOs, and the private sector. Works closely with state and local officials to ensure outreach to the whole community. Functions include, but are not limited to:

- Public affairs and the Joint Information Center
- Intergovernmental (local, state, tribal, and territorial) affairs
- Congressional affairs
- Private sector outreach
- All Hazards Emergency Response Operations Tribal.

***ESF Member Roles and Responsibilities***

ESFs are not solely attributed to any one organization, nor are they mechanisms for executing an agency's statutory authorities. Each ESF is composed of a department or agency that has been designated as the ESF coordinator along with a number of primary and support agencies. Primary agencies are designated on the basis of their authorities, resources, and capabilities. Support agencies are assigned based on resources or capabilities in a given functional area. To the extent possible, resources provided by the ESFs are identified consistently with NIMS resource typing categories.

- **ESF Coordinators.** ESF coordinators oversee the preparedness activities for a particular ESF and coordinate with its primary and support agencies. Responsibilities of the ESF coordinator include:
  - Maintaining contact with ESF primary and support agencies through conference calls, meetings, training activities, and exercises.
  - Monitoring the ESF's progress in meeting the core capabilities it supports.
  - Coordinating efforts with corresponding private sector, NGO, and Federal partners.
  - Ensuring the ESF is engaged in appropriate planning and preparedness activities.
- **Primary Agencies.** ESF primary agencies have significant authorities, roles, resources, and capabilities for a particular function within an ESF. Primary agencies are responsible for:
  - Orchestrating support within their functional area for the appropriate response core capabilities and other ESF missions.
  - Notifying and requesting assistance from support agencies.
  - Managing mission assignments (in Stafford Act incidents) and coordinating with support agencies, as well as appropriate state officials, operations centers, and other stakeholders.
  - Coordinating resources resulting from mission assignments.
  - Working with all types of organizations to maximize the use of all available resources.
  - Monitoring progress in achieving core capability and other ESF missions and providing that information as part of situational and periodic readiness or preparedness assessments.
  - Planning for incident management, short-term recovery operations, and long-term recovery.

- Maintaining trained personnel to support interagency emergency response and support teams
  - Identifying new equipment or capabilities required to prevent or respond to new or emerging threats and hazards or to validate and improve capabilities to address changing risks.
  - Promoting physical accessibility, programmatic inclusion, and effective communication for the whole community, including individuals with disabilities.
- **Support Agencies.** ESF support agencies have specific capabilities or resources that support primary agencies in executing the mission of the ESF. The activities of support agencies typically include:
- Participating in planning for incident management, short-term recovery operations, long-term-recovery, and the development of supporting operational plans, standard operating procedures, checklists, or other job aids.
  - Providing input to periodic readiness assessments.
  - Maintaining trained personnel to support interagency emergency response and support teams.
  - Identifying new equipment or capabilities required to respond to new or emerging threats and hazards, or to improve the ability to address existing threats.
  - Coordinating resources resulting from response mission assignments.
- **Emergency Support Function Leaders Group (ESFLG).** The ESFLG comprises the Federal departments and agencies that are designated as coordinators for ESFs or coordinating agencies for other NRF annexes. FEMA leads the ESFLG and is responsible for calling meetings and other administrative functions. The ESFLG provides a forum for departments and agencies with roles in Federal incident response to jointly address topics such as policies, preparedness, and training.

### ***ESF Activation***

Departments and agencies supporting Federal ESFs may be selectively activated by FEMA or as directed by the Secretary of Homeland Security to support response activities for incidents. Not all incidents requiring Federal support result in the activation of ESFs.

When departments and agencies supporting Federal ESFs are activated, they may assign staff at headquarters, regional, and incident levels. Through the Stafford Act and in accordance with 6 U.S. Code Sections 741(4) and 753(c), FEMA may issue mission assignments at all levels to obtain resources and services from Federal departments and agencies across the ESFs.

ESFs are the primary, but not exclusive, response coordinating structures at the Federal level. Communities, states, regions, and other Federal departments and agencies may use the ESF construct, or they may employ other coordinating structures or partners appropriate to their location, threats, or authorities. Whatever structures are used, they are encouraged to work closely with Federal ESFs at the incident, regional, or headquarters levels if they are activated.

### ***Non-Stafford Act Coordinating Structures***

ESFs may not always be the most appropriate response coordinating structures for non-Stafford Act incidents. For incidents in which there is no Stafford declaration, the department or agency with primary legal authority or the presidentially designated lead Federal agency may activate the coordinating structures as they see fit. These structures are generally organized consistently with NIMS concepts and principles. In addition to their own structures, departments or agencies

responding under their own legal authorities may request the Secretary of Homeland Security to activate relevant ESFs. The Secretary of Homeland Security coordinates with the head of the department or agency with primary legal authority, but retains the authority to activate ESFs or other coordinating structures, as appropriate.

### ***NRF Support Annexes***

The NRF Support Annexes describe other mechanisms by which support is organized among private sector, NGO, and Federal partners. Federal departments and agencies designated as coordinating and cooperating agencies in NRF support annexes conduct a variety of activities to include managing specific functions and missions and providing Federal support within their functional areas. The Support Annexes include:

- Critical Infrastructure
- Financial Management
- International Coordination
- Private Sector Coordination
- Tribal Coordination
- Volunteer and Donations Management
- Worker Safety and Health.

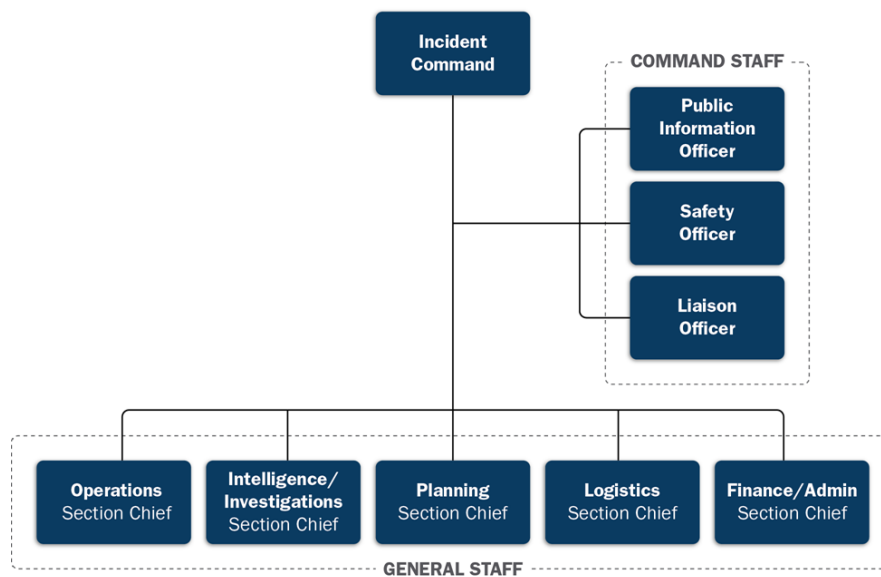
### ***Operational Coordination***

Response operations involve multiple partners and stakeholders. Operational coordination occurs at all government levels and consists of actions and activities that enable decision makers to determine appropriate courses of action and provide oversight for complex homeland security operations to achieve unity of effort and effective outcomes.

### **Local Response Operational Structures**

Emergency responders at all levels of government use ICS command and coordinating structures to manage response operations (see Figure 2). ICS is a management system designed to integrate facilities, equipment, personnel, procedures, and communications within a common organizational structure.

At the local level, coordinating structures are usually composed of entities within a specific functional area such as public works, law enforcement, emergency medical services, and fire departments. Integration among these structures occurs at an ICP, which provides on-scene incident command and management.



**Figure 2: ICS Command and General Staff**

ICS is widely used by all levels of government, as well as by private sector organizations and NGOs to organize field-level operations for a broad spectrum of incidents. ICS is a flexible organization which is structured to facilitate activities in six areas: command, operations, intelligence/investigation, planning, logistics, and finance/administration.

If the local incident commander determines that additional resources or capabilities are needed, he or she contacts the local EOC and relays requirements to the local emergency manager. Local EOC personnel facilitate multiagency coordination, help form a common operating picture of the incident, relieve on-scene command of the burden of external coordination, and secure additional resources to help meet response requirements.

EOCs at all levels of government may also encourage participation by the private sector, NGOs, academia, associations, racial and ethnic organizations, and access and functional needs subject matter experts. These members of the whole community, in turn, often maintain their own structures, such as nongovernmental or private sector EOCs.

Incident management may also involve Multiagency Coordination Groups (MAC Groups). A MAC Group is composed of senior officials, such as agency administrators, executives, or their designees, who are authorized to represent or commit agency resources and funds in support of incident activities. A MAC Group acts as an executive- or policy-level body during incidents, supporting resource prioritization and allocation, and enabling decision-making among elected and appointed officials and those responsible for managing the incident (i.e. the Incident Commander). In some communities and jurisdictions, MAC Groups are located at or near EOCs in order to authorize additional resources, approve emergency authorities, and provide guidance on emerging issues.

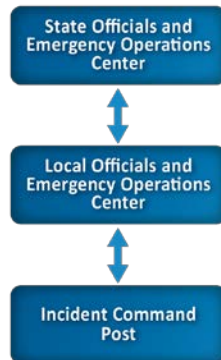
## State Response Operational Structures

The local incident command structure directs on-scene incident management activities and maintains command and control of on-scene incident operations. State EOCs are activated as necessary to support local EOCs and to ensure that responders have the resources they need to conduct response

activities. This is achieved through integration of state-level coordinating structures working with local coordinating structures or the local incident command structure.

### ***State Emergency Operations Center***

State EOCs provide a common location for interagency coordination and support to local EOCs and/or incident personnel. Every state maintains an EOC to manage incidents requiring state-level assistance (see Figure 3). Some states have additional EOCs for coordinating information and resources within a region or area.



**Figure 3: State and Local Response Structure**

Many states involve their tribal counterparts within the EOC to ensure that tribal coordinating structures are integrated into the delivery of capabilities and tribal needs are addressed.

## **Federal Response Operational Structures**

When an incident occurs that exceeds, or is anticipated to exceed, local or state resources—or when an incident is managed by Federal departments or agencies acting under their own authorities—the Federal Government may use the management structures described within the NRF. Additionally, the Federal Government may use supplementary or complementary plans to involve all necessary department and agency resources to organize the Federal response and ensure coordination among all response partners.

All Federal departments and agencies may play significant roles in response activities depending on the nature and size of an incident. Many of the arrangements by which departments and agencies participate are defined in the ESF Annexes, coordinated through pre-scripted mission assignments in a Stafford Act response, formalized in interagency agreements, or described in NRF supplementary plans.

The following sections describe Federal support operations at the incident, regional, and headquarters levels.

## **Federal Incident-level Operations**

To help deliver Federal support or response at the incident level, coordinating structures are aligned to incident-level structures.



### ***Unified Coordination***

Unified Coordination is the term used to describe the primary state/tribal/Federal incident management activities conducted at the incident level. Unified Coordination is typically directed from a Joint Field Office (JFO), a temporary Federal facility that provides a central location for coordination of response efforts by the private sector, NGOs, and all levels of government. Unified Coordination is organized, staffed, and managed in a manner consistent with NIMS principles using an ICS structure. The Unified Coordination Group (UCG) is composed of senior leaders representing state, tribal, and Federal interests and, in certain circumstances, local jurisdictions and the private sector. UCG members must have significant jurisdictional responsibility and authority. The composition of the UCG varies from incident to incident depending on the scope and nature of the disaster. The UCG leads the unified coordination staff. Personnel from state, tribal, and Federal departments and agencies, other jurisdictional entities, the private sector, and NGOs may be assigned to the unified coordination staff at various incident facilities (e.g., JFO, staging areas, and other field offices). The UCG determines staffing of the unified coordination staff based on incident requirements.

Although Unified Coordination is based on the ICS structure, it does not manage on-scene operations. Instead, it focuses on providing support to on-scene response efforts and conducting broader support operations that may extend beyond the incident site. Unified Coordination must include robust operations, planning, public information, and logistics capabilities that integrate local, state, and Federal—as well as tribal, territorial, and insular area governments—personnel when appropriate, so that all levels of government work together to achieve unity of effort.

When incidents affect multiple localities and states or the entire Nation, multiple UCGs with associated unified coordination staff may be established. In these situations, coordination occurs according to the principles of area command as described in NIMS.

As the primary field entity for Federal response, Unified Coordination integrates diverse Federal authorities and capabilities and coordinates Federal response and recovery operations. Figure 4 depicts a Unified Coordination organization that might be assembled to deal with a major incident, such as a terrorist attack, that includes a law enforcement dimension. Federal agencies that conduct on-scene, tactical-level activities may also establish incident and area command structures, generally in conjunction with their counterpart local, state, tribal, territorial and/or insular area government agencies, to manage that work.



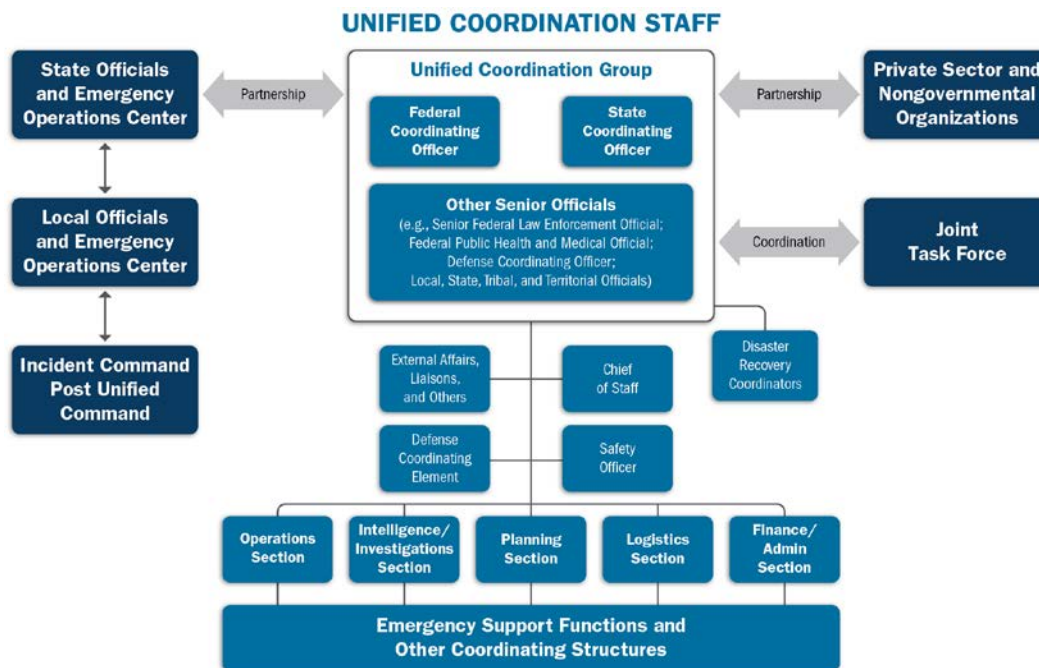


Figure 4: Unified Coordination

### Federal Incident-level Operations for Non-Stafford Act Incidents

For non-Stafford Act incidents, the department or agency with primary legal jurisdiction activates the response structures appropriate to its authorities; these structures are generally organized based on NIMS concepts and principles. When coordinating according to Presidential directive, the Secretary of Homeland Security coordinates with the head of the department or agency with primary legal jurisdiction but retains the authority to activate the additional response structures the Secretary determines appropriate. In non-Stafford Act incidents, Federal agencies who have responsibility for on-scene, tactical-level operations may establish incident command and area command structures, or coordinate with state, tribal and local agencies to form unified incident command and unified area command structures.

### Federal Regional Operational Support

Coordinating structures can be assembled and organized at the regional level to address incidents that cross state borders or have broad geographic or system-wide implications or to manage competing requirements for response assets among multiple incidents.

#### *Federal Regional Facilities*

Most Federal departments and agencies have regional or field offices that may participate with state and local governments in planning for incidents and provide response assets when an incident occurs in their jurisdiction. Some Federal departments and agencies share the same standard Federal regional structure as FEMA. In larger-scale incidents, these regional and field offices may provide the initial response assets with additional support being provided from other department and agency offices across the Nation. Some Federal regional and field offices have their own EOCs to support deployments of their assets.

- **FEMA Regional Response Coordination Center (RRCC).** FEMA has 10 regional offices, each headed by a Regional Administrator. Each of FEMA's regional offices maintains an RRCC.

When activated, RRCCs are multi-agency coordination centers generally staffed by ESFs in anticipation of or immediately following an incident. Operating under the direction of the FEMA Regional Administrator, the staff within the RRCCs coordinates Federal regional response efforts and maintains connectivity with FEMA Headquarters and with state EOCs, state and major urban area fusion centers, Federal Executive Boards, Tribal governments and other Federal, tribal, and state operations and coordination centers that potentially contribute to the development of situational awareness. The UCG assumes responsibility for coordinating Federal response activities at the incident level once Unified Coordination is established, freeing the RRCC to deal with new incidents should they occur.

## **Federal Headquarters Operational Support**

Coordinating structures are assembled and organized at the headquarters level, particularly to address incidents that cross regional borders or have broad geographic or system-wide implications.

### ***Federal Operations Centers***

Most Cabinet-level departments and agencies have at least one headquarters-level operations center. A wide range of such centers maintain situational awareness within their functional areas and provide relevant information to the DHS National Operations Center (NOC)<sup>35</sup> during an incident. These operations centers may also coordinate ESF activities, communicate with other Federal operations centers, and communicate with their local, state, tribal, territorial, and insular area government counterparts. Examples of Federal Operations Centers include:

- **National Operations Center (NOC).** In the event of an act of terrorism, natural disaster, or other emergency, the National Operations Center (NOC),<sup>36</sup> as the principal operations center for the Department of Homeland Security, coordinates and integrates information from NOC components to provide situational awareness and a common operating picture for the entire Federal Government, as well as for local, tribal, and state governments, as appropriate, to ensure that accurate and critical terrorism and disaster-related information reaches government decision makers in a timely manner. Additionally, the NOC serves as the national fusion center, collecting and synthesizing all-source information, including information from state and major urban area fusion centers, for all threats and hazards across the entire integrated national preparedness system.
- **National Response Coordination Center (NRCC).** When activated, the NRCC is a multiagency coordination center located at FEMA Headquarters. Its staff coordinates the overall Federal support for major disasters and emergencies, including catastrophic incidents and emergency management program implementation. FEMA maintains the NRCC as a functional component of the NOC for incident support operations.
- **National Military Command Center (NMCC).** DOD's NMCC is the Nation's focal point for continuous monitoring and coordination of worldwide military operations. It directly supports combatant commanders, the Chairman of the Joint Chiefs of Staff, the Secretary of Defense, and the President in the command of U.S. Armed Forces in peacetime contingencies and war. The NMCC participates in a wide variety of activities, ranging from missile warning and attack assessment to management of peacetime operations such as Defense Support of Civil Authorities during national emergencies.

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<sup>35</sup> The NOC is composed of the NOC Watch, Intelligence Watch, FEMA National Watch Center, and National Response Coordination Center, and the National Infrastructure Coordination Center.

- **Strategic Information and Operations Center (SIOC).** The SIOC acts as the FBI's worldwide EOC. The SIOC maintains situational awareness of criminal or terrorist threats, critical incidents and crises, both foreign and domestic, regardless of cause or origin, and provides FBI headquarters executives, domestic field offices, and overseas legal attachés with timely notification and the dissemination of strategic information. The SIOC shares information and intelligence with other EOCs at all levels of government. Maintaining a constant state of readiness to support any crisis or major event, the SIOC provides a secure venue to support crisis management, special event monitoring, and significant operations. It provides command, control, communications connectivity, and a common operating picture for managing FBI operational responses and assets anywhere in the world on behalf of FBI Headquarters divisions, field offices, and legal attachés. In the event of a crisis, the SIOC establishes the headquarters command post and develops connectivity to field command posts and Joint Operations Centers.
- **Joint Operations Center (JOC).** In response to significant threats or incidents involving Federal crimes under the criminal jurisdiction of the United States, the FBI may establish a JOC, a regional multijurisdictional interagency investigative, intelligence, and operations center to lead and coordinate the law enforcement response, investigative operations and related intelligence activities. The JOC is led by an FBI On-Scene Commander and is supported by a federal, state, local, territorial, and tribal Command Group and a Consequence Management Group, as appropriate. The JOC is the place from which the FBI leads and coordinates the law enforcement operational response, on-scene law enforcement, and related investigative and intelligence activities. In response to terrorist threats, FBI will establish a Joint Operations Center for the purpose of managing the investigation and coordinating the law enforcement response to resolve terrorist threats or incidents. If the threat involves potential attacks in or threats spanning multiple geographic areas, then multiple JOCs may be established. The JOC is established by the FBI under the operational control of the Operations Section Chief (OSC), and acts as the focal point for the strategic management and direction of on-site activities, identification of State and local requirements and priorities, and coordination of the Federal counterterrorism response. Additionally, the JOC will be augmented by outside agencies, including representatives from the Domestic Emergency Support Team (DEST) (if deployed), who provide interagency technical expertise. The JOC is established to ensure inter-incident coordination and to organize multiple agencies and jurisdictions within an overall command and coordination structure. Representation within the JOC includes officials from local, State and Federal agencies with specific roles in counterterrorism and consequence management.

The specific structures that are activated for any given incident depend on the levels of government involved, as well as the legal authorities under which the response is being conducted.

## Integration

Effective emergency response requires the ability for the response coordinating structures to link to and share information with the coordinating structures in the other mission areas. For example, in the wake of a terrorist attack that results in the need for a coordinated Federal response, Response mission area coordinating structures must work closely with those in the Prevention, Protection, Mitigation, and Recovery mission areas. Effective mitigation efforts directly reduce the required scale of response operations. Prevention and protection activities continue after an attack to prevent and protect from follow-on attacks. This requires close coordination of prevention and protection activities with response and recovery efforts. Integration of response mission activities with protection efforts may also occur in the context of a credible threat. Following determination of such a threat, Protection mission area organizations may switch to an enhanced steady-state posture. At

that time, Response mission area assets may need to be positioned to respond quickly should protection, mitigation, and prevention efforts fail. Establishing close working relationships, lines of communication, and coordination protocols between protection, prevention, response, and recovery organizations facilitate this process.

Examples of Response mission area coordinating structures cooperating with other mission area assets include:

- Coordinating with Prevention and Protection mission area structures to share information.
- Coordinating with Protection mission area structures in the wake of an incident to ensure that communities and emergency responders have the protection needed to perform their jobs.
- Coordinating anticipatory Response mission area activities with the Mitigation and Recovery mission activities. Although they are generally considered to be prevention or protection focused organizations, the various state and major urban area fusion centers are examples of coordinating structures whose utility spans mission areas. The collection, analysis, and dissemination of information by the fusion centers can inform response activities through information sharing and operational coordination efforts.

Because of the natural relationship between response and recovery efforts and the fact that response and recovery activities often occur simultaneously, the responsibilities of some ESFs correspond with or transition to the responsibilities of Recovery Support Functions (RSF), the Recovery mission area coordinating structures defined in the National Disaster Recovery Framework. The RSFs frequently build on the ESF capabilities and short-term recovery efforts applied by the ESFs to meet basic human needs to integrate short-term recovery efforts with intermediate and long-term recovery needs. The relationships and integration between the ESFs and the coordinating structures of other mission areas are detailed in the FIOPs.

### ***Science and Technology***

Science and technology (S&T) capabilities and investments are essential for enabling the delivery and continuous improvement of National Preparedness. The whole community should design, conduct, and improve operations based on the best, most rigorous scientific data, methods, and science-based understandings available. Commitments and investments that ensure global leadership in science and technology will yield leading-edge technology and scientific understanding to guide National Preparedness actions. In addition, coordination across the whole community, including scientific researchers, will ensure that scientific efforts are relevant to National Preparedness.

Science and technology-based capabilities and assets are essential to the response mission area. When natural disasters strike, leading edge scientific assets are deployed via satellite and aerial platforms to provide fast, high resolution information about conditions on the ground. When technological accidents occur, such as chemical spills or releases, embedded or rapidly deployed scientific and technological experts employ the most relevant, best-available scientific analyses and assessment methods to diagnose conditions and protect public health and safety. Effective decision making in a rapidly changing disaster situation requires timely and relevant information for situational awareness and technologies that enable communication across platforms and teams. Further, integrating science and technology breakthroughs into emergency response teams' tools and training ensures the most up-to-date and effective treatment of victims.

Ensuring long-term S&T investments to advance the ability to respond to ever-evolving hazards, and sustaining a healthy science and technology workforce, supports the response mission area core

capabilities for years into the future. Coordination between those with response mission responsibilities and U.S. science and technology communities and institutions will be necessary to ensure that scientific efforts, education, and investments are relevant to response.

## Relationship to Other Mission Areas

All five mission areas integrate with each other through interdependencies, shared assets, and overlapping objectives. These overlapping areas are identified through comprehensive planning with the whole community to ensure that they are addressed during response to an incident.

The Response mission area integrates with the other four mission areas in the following manner:

- **Prevention.** Response organizations coordinate with those responsible for preventing imminent acts of terrorism to understand potential and specific threats and to prepare accordingly by planning for general threats and through crisis action planning for credible threats. Response mission area capabilities must be available in case efforts to prevent terrorist attacks fail or credible threats are identified. Coordinating with prevention officials aids response officials in understanding the extraordinary response capabilities that terrorist attacks may require. When response activities are occurring, whether due to a terrorist attack or another type of incident, prevention activities continue.
- **Protection.** Efforts to protect people and communities, as well as vital facilities, systems, and resources, are inextricably linked to response efforts. Responders that support the Protection and Recovery mission areas include many of the same people and organizations. Protection activities occur before, during, and after incidents. In the aftermath of an incident, a physically secure environment should be established before Response mission area organizations can deliver essential response capabilities.
- **Mitigation.** Reducing risk through hazard mitigation reduces requirements for response capabilities. Mitigation organizations often have special insight into risks and hazards that can be shared with response personnel to improve response planning and execution.
- **Recovery.** Communities should build recovery plans before an incident occurs. After an incident, recovery efforts must begin as soon as possible, often while response capabilities are still being applied.

## Operational Planning

Planning across the full range of homeland security operations is an inherent responsibility of every level of government. This NRF fosters unity of effort for emergency operations planning by providing common doctrine and purpose.

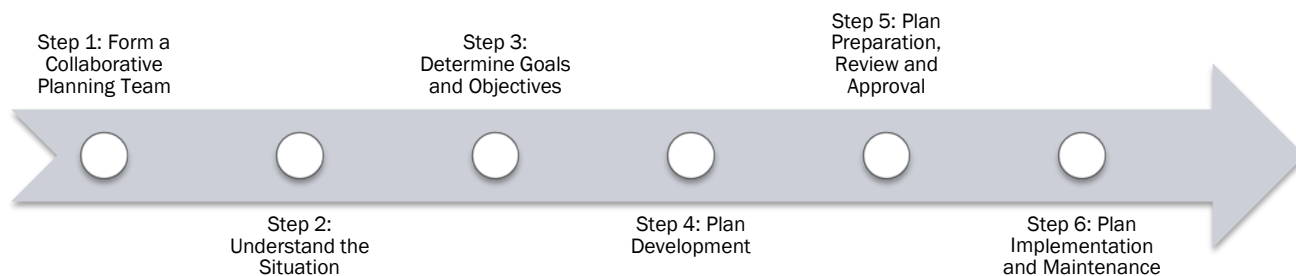
A plan is a continuous, evolving instrument of anticipated actions that maximizes opportunities and guides response operations. Since planning is an ongoing process, a plan is a product based on information and understanding at the moment and is subject to revision.

Operational planning is conducted across the whole community, including the private sector, NGOs, and all levels of government. Comprehensive Preparedness Guide (CPG) 101 provides further information on the various types of plans and guidance on the fundamentals of planning.

From the Federal perspective, integrated planning helps explain how Federal departments and agencies and other national-level whole community partners provide the right resources at the right time to support local, state, tribal, territorial, and insular area government response operations. From

their perspectives, integrated planning provides answers to questions about which traditional and non-traditional partners can provide the necessary resources.

Federal plans for incidents are developed using a six-step process, as shown below, in alignment with the steps described in CPG 101.



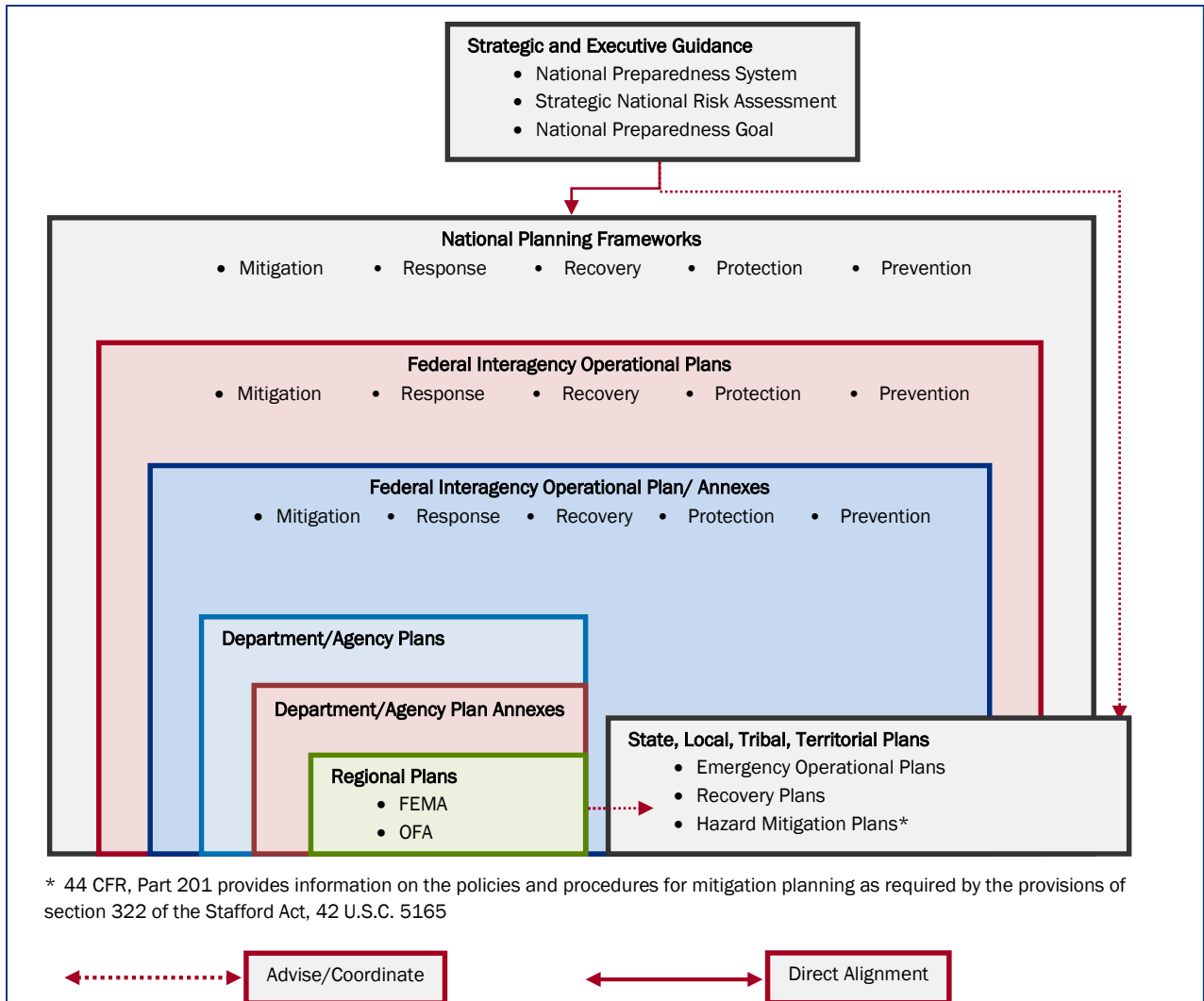
**Figure 5: The Six-Step Planning Process**

The following section outlines how operational planning is applied within the Response mission area and provides guidance for the development of the Response FIOP.

### *Response Operational Planning*

Figure 6 below provides an overview of how Federal incident operational planning efforts are aligned under the National Preparedness System and are mutually supportive in their development, coordination, and use.





**Figure 6: Alignment of Planning Efforts with PPD 8 – National Preparedness**

## Federal Planning

At the Federal level, the NRF is supported by the Response FIOP for all hazards. Incident Annexes to the FIOP address unique concepts of operations or capabilities for risks that are not otherwise addressed by the FIOP. The concepts in the NRF and NIMS guide Federal operational response planning the Response FIOP, which provides further information regarding roles and responsibilities, identifies the critical tasks an entity takes in executing core capabilities, and identifies resourcing and sourcing requirements.

The Response FIOP further defines the concepts, principles, structures, and actions introduced in this Framework with a specific focus on these elements at the Federal level. It addresses interdependencies and integration with the other mission areas throughout the plan's concept of operations. It also describes the management of concurrent actions and coordination points with the areas of prevention, protection, mitigation, and recovery.

The Response FIOP takes an all-hazards approach to preparedness, highlights key areas of interoperability across the five mission areas, and addresses the whole community to optimize resources. The concept of operations in the Response FIOP is based on a no-notice catastrophic

incident that spans multiple regions and states and assumes hundreds of thousands of casualties, severe damage to critical infrastructure, and limited ingress and egress due to massive damage to transportation systems. Such an incident would have significant ramifications on the political, economic, social, environmental, logistical, technical, legal, and administrative structures and would overwhelm local, state, tribal, territorial, and insular area government response capabilities.

While the planning factors used for the Response FIOP suggest an incident that will result in a Stafford Act declaration, the plan also addresses the responsibility of certain Federal departments and agencies to lead elements of a response under their own authorities in response to a non-Stafford Act incident.

The Response FIOP contains:

- A detailed concept of operations.
- A description of critical tasks and responsibilities.
- Detailed resourcing, personnel, and sourcing requirements.
- Specific provisions for the rapid integration of resources and personnel to incidents caused by any of the hazards/threats to which the whole community is particularly vulnerable.
- Functional and incident-specific annexes as necessary.

It does not contain detailed descriptions of specific department or agency functions as such information is located in department- or agency-level operational plans.

The NRF is based on the concept of tiered response with an understanding that most incidents start at the local and tribal level, and as needs exceed resources and capabilities, additional local, state, tribal, and Federal assets are applied. The Response FIOP, therefore, is intended to align with other local, state, tribal, territorial, insular area government, and Federal plans to ensure that all response partners share a common operational focus. Similarly, integration occurs at the Federal level among the departments, agencies, and nongovernmental partners that compose the respective mission area through the frameworks, FIOPs, and departmental and agency operations plans.

In developing the Response FIOP, the following planning needs are taken into account:

- Food and water.
- Physically accessible evacuation and sheltering.
- Accessible transportation.
- Medical surge, medical countermeasures, and treatment capability.
- General and medical supplies that include, but are not limited to, durable medical equipment, consumable medical supplies, accessible cots, and services such as personal assistance services.
- Emotional, behavioral, and mental health needs.
- Reunification and safety of unaccompanied minors.
- Guardianship.
- All communication efforts are distributed at the same time and are provided in multiple formats to account for the access and functional needs of individuals who are deaf or hard-of-hearing, individuals with limited English proficiency, individuals from diverse cultural backgrounds, individuals with cognitive limitations, and individuals who do not use traditional media.



- Animal emergency management needs.

## *Planning Assumptions*

The detailed planning factors for the Response FIOP focus on the impacts associated with a large-scale emergency or disaster that could occur anywhere within the United States, its territories, or insular area governments and results in a substantial number of fatalities and injuries, widespread property loss, and disruption of essential services across a large geographic area. Such an occurrence has significant ramifications on the political, economic, social, environmental, logistical, technical, legal, and administrative structures within the impacted area and may overwhelm governmental response capabilities.

The plan addresses the potential, unique requirements and needs of all members of the whole community. While the Response FIOP contains assumptions for each of the response core capabilities, some of the overarching assumptions include the following:

- Multiple catastrophic incidents or attacks will occur with little or no warning.
- Incidents are typically managed at the lowest possible geographic, organizational, and jurisdictional level.
- Incident management activities will be initiated and conducted using the principles contained in NIMS.
- The combined expertise and capabilities of government at all levels, the private sector, and NGOs will be required to respond to a catastrophic incident.

## *Framework Application*

Implementation of the concepts within the NRF and Response FIOP is mandatory for Federal departments and agencies. While the NRF does not direct the actions of other response elements, the guidance contained in the NRF and the Response FIOP is intended to inform local, state, tribal, territorial, and insular area governments, as well as NGOs and the private sector, regarding how the Federal Government responds to incidents. These partners can use this information to inform their planning and ensure that assumptions regarding Federal assistance and response and the manner in which Federal support will be provided are accurate.

## **Supporting Resources**

To assist NRF users, FEMA will maintain an online repository that contains electronic versions of the current NRF documents—base document, ESF annexes, and support annexes—as well as other supporting materials. This Resource Center will provide information, training materials, and other tools, such as an overview of the main Stafford Act provisions, a guide to authorities and references, and an abbreviation list to assist response partners in understanding and executing their roles under the NRF.

Resource Center materials will be regularly evaluated, updated, and augmented as necessary. Additional content may be added or modified at the request of Response mission area partners and other users.

## Conclusion

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The environment in which the Nation operates grows ever more complex and unpredictable. In implementing the NRF to build national preparedness, partners are encouraged to develop a shared understanding of broad-level strategic implications as they make critical decisions in building future capacity and capability. The whole community should be engaged in examining and implementing the strategy and doctrine contained in this Framework, considering both current and future requirements in the process. This means that this Framework is a living document, and it will be regularly reviewed to evaluate consistency with existing and new policies, evolving conditions, and the experience gained from its use. Reviews will be conducted in order to evaluate the effectiveness of the Framework on a quadrennial basis.

DHS will coordinate and oversee the review and maintenance process for the NRF. The revision process includes developing or updating any documents necessary to carry out capabilities. Significant updates to the Framework will be vetted through a Federal senior-level interagency review process. This Framework will be reviewed in order to accomplish the following:

- Assess and update information on the core capabilities in support of Response goals and objectives.
- Ensure that it adequately reflects the organization of responsible entities.
- Ensure that it is consistent with the other four mission areas.
- Update processes based on changes in the national threat/hazard environment.
- Incorporate lessons learned and effective practices from day-to-day operations, exercises, and actual incidents and alerts.
- Reflect progress in the Nation's Response mission activities, the need to execute new laws, executive orders, and Presidential directives, as well as strategic changes to national priorities and guidance, critical tasks, or national capabilities.

The implementation and review of this Framework will consider effective practices and lessons learned from exercises and operations, as well as pertinent new processes and technologies. Effective practices include continuity planning, which ensures that the capabilities contained in this Framework can continue to be executed regardless of the threat or hazard. Pertinent new processes and technologies should enable the Nation to adapt efficiently to the evolving risk environment and use data relating to location, context, and interdependencies that allow for effective integration across all missions using a standards-based approach. Updates to the NRF Annexes may occur independently from reviews of the base document.

America's security and resilience work is never finished. While the Nation is safer, stronger, and better prepared than it was a decade ago, the commitment to safeguard the Nation against its greatest risks, now and for decades to come, remains resolute. By bringing the whole community together now to address future needs, the Nation will continue to improve its preparedness to face whatever challenges unfold.

## Emergency Support Function #10 – Oil and Hazardous Materials Response Annex

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### ESF Coordinator:

Environmental Protection Agency

### Primary Agencies:

Environmental Protection Agency  
Department of Homeland Security/  
U.S. Coast Guard

### Support Agencies:

Department of Agriculture  
Department of Commerce  
Department of Defense  
Department of Energy  
Department of Health and Human Services  
Department of Homeland Security  
Department of the Interior  
Department of Justice  
Department of Labor  
Department of State  
Department of Transportation  
General Services Administration  
Nuclear Regulatory Commission

## INTRODUCTION

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### Purpose

Emergency Support Function (ESF) #10 – Oil and Hazardous Materials Response provides Federal support in response to an actual or potential discharge and/or release of oil or hazardous materials when activated.

### Scope

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ESF #10 may be activated as described in the National Response Framework (NRF) for a Stafford Act response, at the Secretary of Homeland Security's discretion, and/or in response to a request for Federal-to-Federal support. Federal response to oil or hazardous materials incidents may also be carried out under another key Federal response authority called the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), which is a regulation with the force of law found at 40 CFR Part 300. The NCP serves as an operational supplement to the NRF and may be used in conjunction with, or independent from, the Stafford Act. This annex provides an overview of both ESF #10 and NCP responses.

The scope of ESF #10 includes the appropriate actions to prepare for and respond to a threat to public health, welfare, or the environment caused by actual or potential oil and hazardous materials incidents. For purposes of this annex, "hazardous materials" is a general term intended to mean hazardous substances, pollutants, and contaminants as defined in the NCP.<sup>1</sup> Hazardous materials include chemical, biological, radiological, and nuclear substances, whether accidentally or intentionally released. When responding under the Stafford Act, however, ESF #10 may be used to take actions and respond to environmental contamination beyond what is covered by the NCP.

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<sup>1</sup> NCP provisions are summarized in this annex for purposes of brevity. The references in this annex to NCP provisions are not intended to change NCP requirements or interpretations. Nothing in the NRF alters or impedes the ability or authorities of designated Federal officials to carry out their duties under the NCP or to coordinate directly with their agency in execution of these duties.

## **Emergency Support Function #10 – Oil and Hazardous Materials Response Annex**

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Appropriate general actions under ESF #10 can include, but are not limited to:

- Actions to prevent, minimize, or mitigate a release.
- Efforts to detect and assess the extent of environmental contamination, including environmental monitoring; and sampling and analysis of contaminated media such as air, water, soils, sediments, debris, buildings, and structures.
- Provision of environmental technical expertise to support development of Federal recommendations for public protective actions.
- Actions to stabilize the release and prevent the spread of contamination.
- Analysis of options for environmental cleanup and waste disposition, including options for cleanup and disposal of debris that is contaminated by oil discharges and hazardous materials releases.
- Implementation of environmental cleanup efforts, including but not limited to:
  - Collection of orphaned oil and hazardous materials containers.
  - Collection of household hazardous waste.
  - Removal of contaminated soil.
  - Decontamination of buildings and structures.
  - Disposition of animal carcasses contaminated by oil or hazardous materials.
  - Storage, treatment, and disposal of oil and hazardous materials, including contaminated debris.
  - Actions to protect natural resources.
  - Monitoring debris disposal.

Two key areas where the scope of ESF #10 intersects with the scope of other ESFs are described below:

- 1) The Nuclear/Radiological Incident Annex (NRIA) to the Response and Recovery Federal Interagency Operational Plans (FIOPs) describes the role of the Federal Radiological Monitoring and Assessment Center (FRMAC) when coordinating Federal radiological environmental monitoring, sampling, and assessment activities. When a FRMAC is activated for a radiological or nuclear incident response under the Stafford Act, the Environmental Protection Agency (EPA) provides FRMAC assets under ESF #10. The Department of Energy (DOE) provides FRMAC assets under ESF #12. If the radiological/nuclear incident also involves the release of oil or other hazardous materials, ESF #10 would coordinate environmental monitoring, sampling, and assessment activities for those other contaminants.
- 2) Under a September 7, 2010 Memorandum of Understanding (MOU) between the EPA, U.S. Army Corps of Engineers (USACE), and Federal Emergency Management Agency (FEMA), during a Stafford Act response to a blast/explosion incident involving

## **Emergency Support Function #10 – Oil and Hazardous Materials Response Annex**

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chemical, biological, radiological or nuclear (CBRN) threat agents, USACE conducts certain contaminated debris and environmental cleanup activities under ESF #3, and in consultation with ESF #10. These activities include: initial emergency debris route clearance; stabilization of contaminated buildings/structures, as needed; and demolition of contaminated structures. ESF #10 conducts the remaining contaminated debris and environmental cleanup activities, including building/structure decontamination, contaminated water/wastewater management, and final waste (including contaminated debris) disposition. For Stafford Act responses to CBRN threat agent incidents that do not involve blasts/explosions, ESF #10 conducts all environmental cleanup activities, including all contaminated debris activities, building/structure decontamination/demolition, and contaminated water/wastewater management.

### **National Oil and Hazardous Substances Pollution Contingency Plan**

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The NCP is authorized by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 311 of the Clean Water Act (CWA), and the Oil Pollution Act of 1990 (OPA). The NCP provides an organizational structure and procedures for preparing for and responding to discharges and substantial threats of discharges of oil and releases; and substantial threats of releases of hazardous substances, pollutants, and contaminants.<sup>2</sup> The NCP addresses Federal authorities for both “removal” and “remedial” responses. Because the NRF generally addresses oil and hazardous materials incidents that are considered “removal” responses, the remainder of this discussion focuses on how the NCP operates for “removal” responses.

Federal NCP “removal” authorities differ from Stafford Act authorities in important ways, as described further below:

- 1) The Federal Government makes an independent evaluation of the need for Federal response rather than waiting for a local, state, tribal, territorial, or insular area government request.
- 2) The Federal Government may, and in some circumstances must, lead the response.
- 3) The Federal Government has tactical, on-scene command authorities.
- 4) The Federal Government has enforcement authorities over the parties responsible for oil discharges and hazardous substance releases.
- 5) Requests for Federal assistance from local, state, and tribal governments do not have to be made from the level of the governor.

While these differences in authority result in some differences in how NCP responses are conducted compared to Stafford Act responses, NCP emergency removal responses are conducted in accordance with the National Incident Management System and the Incident Command System (ICS), which are the common incident response management systems underlying the NRF.

NCP actions are carried out through the National Response System (NRS), which is an organized network of agencies, programs, and resources with authorities and

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<sup>2</sup> This annex refers to discharges and substantial threats of discharges as “discharges,” and releases and substantial threats of releases as “releases.”

## **Emergency Support Function #10 – Oil and Hazardous Materials Response Annex**

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responsibilities in oil and hazardous materials preparedness and response at the local, state, tribal, territorial, insular area, and Federal levels. Key Federal response components of the NRS include the National Response Center, Federal On-Scene Coordinators (OSCs), 13 Regional Response Teams (RRTs), and the National Response Team (NRT).

The NCP requires that oil discharges and reportable quantities of hazardous substance releases be reported to the National Response Center. The Center forwards these notifications to pre-designated OSCs from the EPA and Department of Homeland Security/U.S. Coast Guard (DHS/USCG). In general, the EPA provides the Federal OSC for incidents in the inland zone, and the DHS/USCG provides the Federal OSC for incidents in the coastal zone.<sup>3</sup>

EPA and DHS/USCG OSCs conduct an independent evaluation of the need for a Federal response to such incidents and may take action in accordance with existing delegations of authority without a request from local, state, tribal, territorial, and insular area governments. Typically, however, the OSC coordinates with local, state, tribal, territorial and insular governments on the need for Federal response and may work with local, state, tribal, territorial, or insular area responders under a Unified Command. EPA and DHS/USCG OSCs respond at the tactical, on-scene Incident Command Post (ICP) level and carry out responsibilities under the NCP to coordinate, integrate, and manage overall oil and hazardous materials response efforts. EPA and DHS/USCG OSCs may conduct and lead Federal response actions using Federal and contractor resources; provide technical assistance; or provide oversight of local, state, tribal, territorial, insular area, or responsible party responses. In some cases involving substantial threats to public health and welfare, the Federal OSC is required to direct the response.

When overseeing a response by a responsible party, that party is generally included in the incident command structure, although the EPA or DHS/USCG OSC maintains final decision-making authority over the response effort.

The RRTs and NRT are key regional- and national-level multiagency coordination groups led by EPA and DHS/USCG that provide support to the Federal OSC as needed during incidents, including interagency technical assistance and resource support. The RRTs and NRT include representatives from 13 additional Federal agencies that provide oil and hazardous materials expertise and support, and some have specific responsibilities for natural resource protection. (These 13 agencies are also ESF #10 support agencies.) For responses requiring extraordinary Federal interagency support in terms of the extent or type of resources, requests may be made to the Secretary of Homeland Security for Federal-to-Federal support or elevated to other senior executive branch officials. Further, the Secretary of Homeland Security may coordinate a response, pursuant to Presidential directive.

The NCP provides that EPA or DHS/USCG may classify an oil discharge as a Spill of National Significance (SONS). For a SONS classification, EPA may name a Senior Agency Official who assists the EPA OSC with certain functions (e.g., communicating with affected parties and public, coordinating resources at the national level), and DHS/USCG may name a National Incident Commander who assumes these functions of the

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<sup>3</sup> The DOE and Department of Defense (DOD) are generally responsible for hazardous substance emergencies involving their facilities, vessels, materials, and weapons, including transportation-related incidents. Under 40 CFR 300.120, the DOE and DOD OSCs are responsible for taking all response actions to such incidents (both onsite and offsite). Other Federal agencies provide OSCs for hazardous substance removal actions that are not emergencies. For oil discharges, however, the agency providing the Federal OSC is either EPA or DHS/USCG.

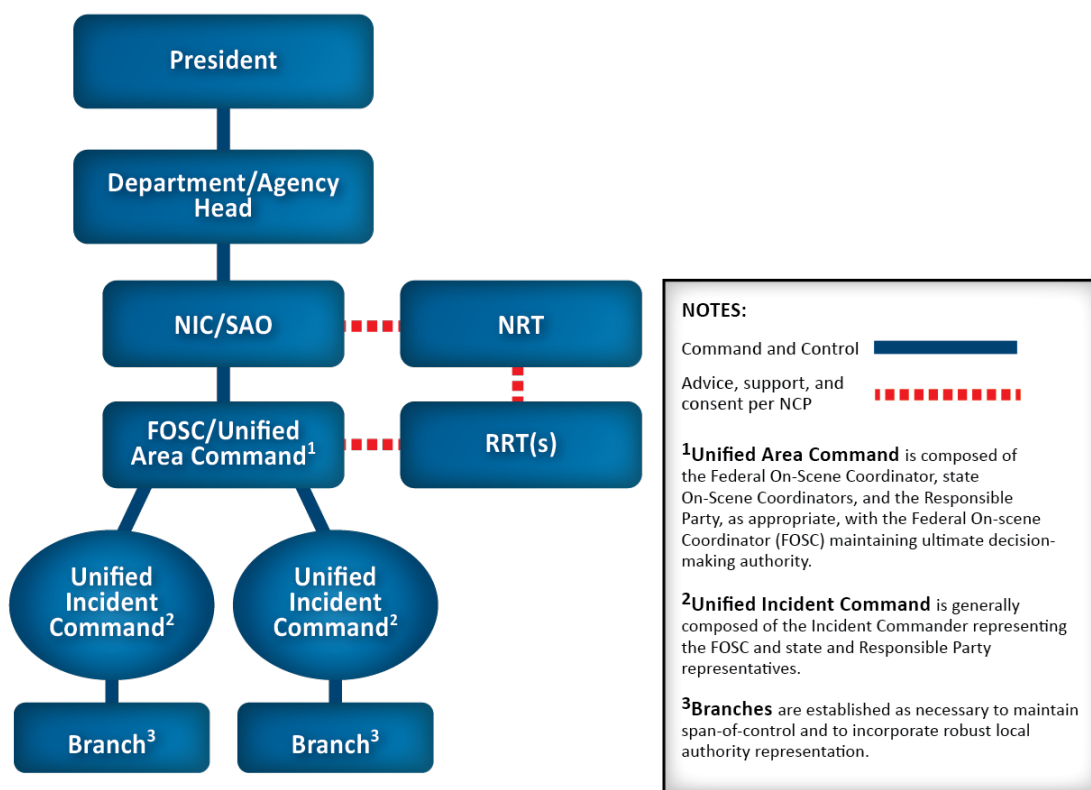
## **Emergency Support Function #10 – Oil and Hazardous Materials Response Annex**

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DHS/USCG OSC. Under the NRF, EPA and DHS/USCG maintain authority for classifying a discharge as a SONS for purposes of the NCP as well as maintain OSC authorities and responsibilities. (DHS/USCG coordinates the decision for a SONS designation with the Secretary of Homeland Security as appropriate.) The Secretary of Homeland Security may or may not decide to coordinate the Federal response to a SONS, pursuant to Presidential directive. If not, EPA or DHS/USCG lead the Federal response.

NCP emergency removal responses are conducted using the ICS structures that correspond to NCP authorities. Figure 1 presents an example of how an NCP response structure may be stood up for a SONS that impacts two states and requires multiple ICPs. State and local government coordination mechanisms may include the following:

- States would be requested to deploy a state OSC to the Unified Area Command and Unified Incident Commands.
- The Unified Incident Commands would establish branches, as appropriate, that take local political subdivisions into consideration and include local government representatives.
- The Unified Incident Commands would assign Liaison Officers to local and state elected officials as appropriate.
- The EPA Senior Agency Official or DHS/USCG National Incident Commander would conduct regular calls with affected governors and include state OSCs in the call invitations.
- The RRT(s) would support the Federal OSC in the Unified Area Command and may also provide support to the Unified Incident Commands within their region(s), coordinating through the Federal OSC.



**Figure 1: Spill of National Significance Response Organization**

Most NCP oil and hazardous materials incidents are not as large as a SONS and are managed by the Federal OSC working in Unified Command with local and state responders at the ICP level.

Federal funding of NCP response actions is provided through:

**The CERCLA (Superfund) Trust Fund.** For hazardous materials releases as defined by CERCLA. The Superfund Trust Fund is administered by EPA and may be accessed by EPA and DHS/USCG OSCs to fund Federal responses, enforcement actions, and cost recovery actions to recover response costs from responsible parties. CERCLA states that Federal “removal” responses may not exceed \$2 million in cost or 12 months in duration unless certain findings can be made. EPA issued Local Government Reimbursement regulations that also allow first responders to seek cost reimbursement for up to \$25,000 per response to help lighten financial burdens related to emergency response to hazardous materials. This reimbursement does not replace funding that local governments normally provide for emergency response.

**The Oil Spill Liability Trust Fund (Fund).** For oil discharges as defined by CWA/OPA. The Fund is administered in part by the DHS/USCG National Pollution Funds Center (NPFC). Certain amounts administered by NPFC may be accessed by EPA and DHS/USCG OSCs to pay the cost of Federal activities to remove the discharge of oil to protected waters and shorelines under CWA Section 311(c). The Fund is also available for NPFC payment of certain claims for removal costs and damages resulting from an oil discharge to waters and shorelines as described in OPA and NPFC regulations. In general, claimants must first present their claims to a responsible party under OPA before



## **Emergency Support Function #10 – Oil and Hazardous Materials Response Annex**

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presenting their claim to the NPFC. States, however, may present claims for oil removal costs consistent with the NCP directly to the NPFC. Fund payments, including payments for Federal oil-related activities under CWA Section 311(c) and claims payments, are limited to \$1 billion per incident of which no more than \$500 million may be expended for natural resource damage assessments and claims.

### **RELATIONSHIP TO WHOLE COMMUNITY**

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This section describes how ESF #10 relates to other elements of the whole community.

#### **Local, State, Tribal, Territorial, and Insular Area Governments**

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Local and tribal government fire departments generally provide the first response to oil and hazardous materials incidents. State and territorial governments may have environmental response programs that supplement local governments for larger-scale or more complex responses.

Each of the 13 RRTs includes a representative of each state and territory within the region covered by the RRT. Tribes may also provide a representative to RRTs.

When activated to respond to a Stafford Act incident, the primary agencies for ESF #10 develop work priorities in coordination with local, state, tribal, territorial, and/or insular area governments. Activities are coordinated, as appropriate, at the ICP, Joint Field Office (JFO), and local/state EOCs.

#### **Private Sector/Nongovernmental Organizations (NGO)**

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The private sector owns many of the facilities that manufacture, use, and manage oil and hazardous materials. Under the NCP, the parties responsible for oil discharges and hazardous substance releases must clean them up or reimburse the government for the response. (The CERCLA and CWA/OPA provide certain defenses to liability.)

EPA and DHS/USCG OSCs employ private contractor resources to assist in conducting Federal response actions. Other parties responsible for cleaning up releases may also hire private contractors to perform the work.

EPA and DHS/USCG prepare regional and area contingency plans that include participation by representatives from relevant NGO partners and the oil and chemical sector.

Area contingency plans include procedures for volunteer management. Due to the hazardous nature of the work, public volunteers are not normally used in oil and hazardous materials response. However, in extraordinary situations, they may be used to assist in less hazardous support functions. Some NGOs may also contribute specific skills such as wildlife recovery and rehabilitation.

#### **Federal Government**

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Federal actions in support of the whole community are described below.

## Emergency Support Function #10 – Oil and Hazardous Materials Response Annex

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### CORE CAPABILITIES AND ACTIONS

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ESF #10 provides for a coordinated Federal response to actual or potential oil and hazardous materials incidents when activated for Stafford Act incidents or Federal-to-Federal support. ESF #10 responses to oil and hazardous materials incidents are generally carried out in accordance with the NCP. NCP response structures and coordination mechanisms remain in place but coordinate with NRF mechanisms. EPA and DHS/USCG OSCs respond at the on-site tactical level, and RRTs and the NRT may be activated to coordinate ESF #10 interagency actions and provide support to the OSC. EPA and DHS/USCG also provide representatives as appropriate to the JFO, Regional Response Coordination Centers (RRCCs), and National Response Coordination Center (NRCC). Some procedures in the NCP may be streamlined or may not apply. FEMA Public Assistance Policy 9523.8 applies to funding for ESF #10 activities. During Stafford Act responses, EPA and DHS/USCG OSCs retain their authority to take action under the NCP if necessary.

EPA serves as the primary agency for ESF #10 actions in the inland zone, and DHS/USCG serves as the primary agency for ESF #10 actions in the coastal zone (as defined in Regional and Area Contingency Plans). For incidents affecting both, EPA is the primary agency and DHS/USCG serves as the deputy.

### ESF Roles Aligned to Core Capabilities

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The following table lists the response core capabilities that ESF #10 most directly supports, along with the particular ESF #10 roles related to these core capabilities. In addition, all ESFs, including ESF #10, support the following core capabilities: Planning Operational Coordination, and Public Information and Warning.

| Core Capability                                 | ESF #10 – Oil and Hazardous Materials Response   |
|---|--|
| <b>Environmental Response/Health and Safety</b> | <ul style="list-style-type: none"><li>• Conducts actions to detect and assess the nature and extent of oil and hazardous materials releases.</li><li>• Takes appropriate actions to stabilize the release and prevent the spread of contamination; conducts environmental cleanup actions; and decontaminates buildings and structures; and manages wastes.</li><li>• Follows applicable health and safety requirements for ESF #10 responders and coordinates, as needed, with Worker Health and Safety Support Annex response activities.</li></ul>  |
| <b>Critical Transportation</b>                  | <p><b>For incidents where transportation infrastructure or routes are contaminated by oil or hazardous materials:</b></p> <ul style="list-style-type: none"><li>• Helps to identify safe evacuation and ingress routes; assesses the nature and extent of contamination; and cleans up and/or decontaminates infrastructure and routes.</li></ul> <p><b>For incidents involving a blast or explosion associated with a CBRN threat agent resulting in a contaminated debris field:</b></p> <ul style="list-style-type: none"><li>• ESF #3 leads Federal actions to clear critical transportation routes of CBRN-contaminated debris during the emergency phase, in consultation with ESF #10. ESF #10 assumes leadership for management of CBRN-contaminated debris after the emergency phase is over.</li></ul> |

## Emergency Support Function #10 – Oil and Hazardous Materials Response Annex

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| Core Capability                       | ESF #10 – Oil and Hazardous Materials Response   |
|---------------------------------------|--|
| <b>Infrastructure Systems</b>         | <b>For incidents where infrastructure is contaminated by oil or hazardous materials:</b> <ul style="list-style-type: none"><li>Assesses the nature and extent of contamination and cleans up and/or decontaminates infrastructure.</li></ul>   |
| <b>Public Information and Warning</b> | <ul style="list-style-type: none"><li>Provides the technical expertise to support the preparation of Federal public information related to the environmental response in support of ESF #15.<ul style="list-style-type: none"><li>It is recognized, however, that in some cases it may be necessary for responding EPA and DHS/USCG OSCs to communicate with the media/public on tactical operations and matters affecting public health and safety directly from the scene, particularly during the early stages of the emergency response.</li></ul></li></ul> |

## Emergency Support Function #10 – Oil and Hazardous Materials Response Annex

### Agency Actions

| Primary Agency                  | Actions  |
|---------------------------------|--|
| Environmental Protection Agency | <p><b>For incidents for which EPA is the primary agency:</b></p> <ul style="list-style-type: none"><li>• Maintains close coordination, as appropriate, between EPA headquarters and the affected regional office(s), DHS/USCG, the NRCC, other ESFs and Support Annexes, and the NRT.</li><li>• Provides damage reports, assessments, and situation reports to support ESF #5.</li><li>• Facilitates resolution of conflicting demands for oil and hazardous materials response resources and ensures coordination between NRT, RRT, and Unified Coordination activities, as appropriate. For national-level incidents coordinates through EPA headquarters the provision of backup support from other regions to the affected area.</li><li>• Provides technical, coordination, and administrative support; and personnel, facilities, and communications for ESF #10.</li><li>• Coordinates, integrates, and manages the overall Federal effort to detect, identify, contain, decontaminate, clean up, dispose of, or minimize discharges of oil or releases of hazardous materials; or to prevent, mitigate, or minimize the threat of potential releases.<ul style="list-style-type: none"><li>– Provides OSCs for incidents within its jurisdiction.</li></ul></li></ul> <p><b>In general:</b></p> <ul style="list-style-type: none"><li>• Provides expertise on the environmental effects of oil discharges or releases of hazardous materials and environmental pollution control techniques.</li><li>• Provides Chair for NRT and Co-Chairs for RRTs.</li><li>• Manages EPA special teams under the NCP, including the Environmental Response Team, CBRN Consequence Management Advisory Team, and Radiological Emergency Response Team, which provide specialized technical advice and assistance to responders.</li><li>• Coordinates, integrates, and provides investigative support, intelligence analysis, and legal expertise on environmental statutes related to oil and hazardous materials incidents, including regards to criminal cases, in support of responders.</li><li>• Manages the National Criminal Enforcement Response Team that is composed of investigative and scientific personnel to provide investigative, scientific, and forensic technical advice, assistance, and other threat assessment needs in support of responders.</li><li>• Provides expertise and assistance for waste management from oil discharges and hazardous materials releases, including: reviewing waste management plans and proposed waste management facilities and temporary storage and staging sites; conducting independent sampling and analysis of waste streams; monitoring or visiting waste management facilities and temporary storage and staging sites; and reporting and posting waste sampling results on an appropriate incident website.</li><li>• Provides personnel and equipment to support the FRMAC, when activated. Augments the DOE-led FRMAC during the initial response then assumes FRMAC leadership from DOE at a mutually agreed upon time based on criteria listed in the NRA.</li></ul> |

## Emergency Support Function #10 – Oil and Hazardous Materials Response Annex

| Primary Agency                               | Actions   |
|--|---|
| <b>Department of Homeland Security (DHS)</b> | <p><b>U.S. Coast Guard (USCG)</b></p> <p><b>For incidents for which DHS/USCG is the primary agency:</b></p> <ul style="list-style-type: none"> <li>• Maintains close coordination, as appropriate, between DHS/USCG headquarters and the affected Area and District office(s), the EPA, the NRCC, other ESFs and Support Annexes, and the NRT.</li> <li>• Provides damage reports, assessments, and situation reports to support ESF #5.</li> <li>• Facilitates resolution of any conflicting demands for oil and hazardous materials response resources and ensures coordination between NRT, RRT, and Unified Coordination activities, as appropriate. Coordinates through DHS/USCG headquarters the provision of personnel and logistical support from other districts to the affected area.</li> <li>• Provides technical, coordination; administrative support; and personnel, facilities, and communications for ESF #10.</li> <li>• Coordinates, integrates, and manages the overall Federal effort to detect, identify, contain, clean up, dispose of, or minimize releases of oil or hazardous materials; or to prevent, mitigate, or minimize the threat of potential releases.</li> <li>• Provides OSCs for incidents within its jurisdiction, including for the coastal zone response for incidents in which EPA is the primary agency but where the incident affects both the inland and coastal zone.</li> </ul> <p><b>In general:</b></p> <ul style="list-style-type: none"> <li>• Provides expertise on environmental effects of oil discharges or releases of hazardous materials and environmental pollution control techniques.</li> <li>• Assists in planning and preparedness efforts as Vice Chair of the NRT and Co-Chairs for RRTs.</li> <li>• Maintains the National Response Center.</li> <li>• Manages the Coast Guard Incident Management Assistance Team (CG-IMAT), Public Information Assist Team (PIAT), and the National Strike Force, which is composed of the National Strike Force Coordination Center and three strike teams located on the Pacific, Atlantic, and Gulf coasts. <ul style="list-style-type: none"> <li>– Provides response capabilities, technical advice, documentation and support assistance, communications, and incident management support for response activities.</li> </ul> </li> <li>• Offers expertise in domestic and international port safety and security, maritime law enforcement, ship navigation, and the manning, operation, and safety of vessels and marine facilities.</li> <li>• Maintains continuously staffed facilities that can be used for command, control, and surveillance of oil discharges and hazardous materials releases occurring within its jurisdiction.</li> </ul> |

## Emergency Support Function #10 – Oil and Hazardous Materials Response Annex

| Support Agency                          | Actions   |
|---|---|
| <b>Department of Agriculture (USDA)</b> | <ul style="list-style-type: none"> <li>Measures, evaluates, and monitors the impact of the emergency incident on agricultural systems, National Forest System land, and natural resources under USDA's jurisdiction.</li> <li>Assists in developing protective measures and damage assessments.</li> <li>Provides technical assistance in the disposition of livestock, poultry, pets, and other animals contaminated with hazardous materials. <ul style="list-style-type: none"> <li>USDA/Animal and Plant Health Inspection Service maintains the lead for animal health emergencies that impact agricultural production (e.g., avian influenza, naturally occurring anthrax, foot-and-mouth disease), including the disposition of diseased livestock and poultry.</li> </ul> </li> <li>If available, provides technical assistance, including laboratory analysis, aerial photography interpretation, mapping, and Incident Management Teams. Other USDA agency support is obtained through either ESF #4 or ESF #11.</li> <li>Through ESF #4, coordinates fire management and suppression activities in the event fires involve oil or hazardous materials.</li> </ul>  |
| <b>Department of Commerce (DOC)</b>     | <p><b>National Oceanic and Atmospheric Administration (NOAA)</b></p> <ul style="list-style-type: none"> <li>Provides operational weather data and prepares forecasts tailored to support the response.</li> <li>Provides expertise on natural resources and coastal habitat; the environmental effects of oil and hazardous materials; emergency consultations for protected resources; best management practices; and appropriate cleanup and stabilization alternatives.</li> <li>Provides a Scientific Support Coordinator (SSC) to the OSC for responses in coastal and marine areas. The SSC serves as the principal advisor for addressing scientific issues and communicating with the scientific community. When requested, may provide this scientific coordination support for responses in the inland zone.</li> <li>Predicts pollutant fate, effects, and transport as a function of time. For atmospheric releases, coordinates through the Interagency Modeling and Atmospheric Assessment Center (IMAAC), when activated.</li> <li>Provides information on meteorological, hydrological, ice, and oceanographic conditions for marine, coastal, and inland waters. This includes satellite surveillance, remote sensing, and aerial photogrammetry.</li> <li>Provides charts and maps for coastal and territorial waters and the Great Lakes.</li> <li>Conducts emergency hydrographic surveys, search and recovery, and obstruction location to assist safe vessel movement.</li> <li>Manages fisheries in Federal waters. Develops and conducts seafood safety sampling and fisheries reopening protocols in conjunction with the Food and Drug Administration and local authorities.</li> </ul> |

## Emergency Support Function #10 – Oil and Hazardous Materials Response Annex

| Support Agency                                 | Actions   |
|--|---|
| <b>Department of Defense (DOD)</b>             | <ul style="list-style-type: none"> <li>Provides an OSC and directs response actions for releases of hazardous materials from its vessels, facilities, vehicles, munitions, and weapons.</li> <li>Provides Defense Support of Civil Authorities (DSCA) in response to requests for assistance during domestic incidents. With the exception of support provided under Immediate Response Authority, and by USACE and Navy Supervisor of Salvage as described below, the obligation of DOD resources to support requests for assistance is subject to the approval of the Secretary of Defense.</li> </ul> <p><b>U.S. Army Corps of Engineers</b></p> <ul style="list-style-type: none"> <li>Provides response assistance for incidents involving contaminated debris, including CBRN contamination. The scope of actions may include waste sampling, classification, packaging, transportation, treatment, demolition, storm water management, and disposal. (These services are available independent of the DSCA process through an ESF #10 subtask to USACE.)</li> </ul> <p><b>Navy Supervisor of Salvage</b></p> <ul style="list-style-type: none"> <li>In accordance with its statutory authorities, provides technical, operational, and emergency support in the ocean engineering disciplines of marine salvage, pollution abatement, and diving services. (These services are available independent of the DSCA process through MOUs with DHS/USCG and USACE.)</li> </ul> |
| <b>Department of Energy (DOE)</b>              | <ul style="list-style-type: none"> <li>Provides an OSC and directs response actions for releases of hazardous materials from its vessels, facilities, and vehicles.</li> <li>Provides advice in identifying the source and extent of radioactive releases relevant to the NCP; and in the removal and disposal of radioactive contamination.</li> <li>Provides additional assistance for radiological incidents pursuant to, or in coordination with, ESF #8 activities.</li> <li>Under ESF #12, provides personnel and equipment to deploy the FRMAC for coordination of Federal radiological environmental monitoring, when activated. DOE establishes and leads the FRMAC for the initial response, then transitions FRMAC leadership to EPA at a mutually agreed upon time based on criteria listed in the NRIA.</li> <li>Provides radiological support to local, state, and other Federal agencies through the DOE/National Nuclear Security Administration (NNSA). Response to releases from its own facilities or of its own materials may be provided by DOE/NNSA or another DOE component.</li> </ul>  |
| <b>Department of Health and Human Services</b> | <p><b>Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry</b></p> <ul style="list-style-type: none"> <li>Provides assistance on all matters related to the assessment of health hazards at a response and protection of response workers and the public health.</li> <li>Determines whether illnesses, diseases, or complaints may be attributable to exposure to a hazardous material.</li> <li>Establishes disease/exposure registries and conducts appropriate clinical testing.</li> <li>Develops, maintains, and provides information on the health effects of toxic substances.</li> </ul> <p><b>Food and Drug Administration</b></p> <ul style="list-style-type: none"> <li>Works in cooperation with EPA and USDA to ensure the proper disposal of contaminated food or animal feed.</li> </ul>   |

## Emergency Support Function #10 – Oil and Hazardous Materials Response Annex

| Support Agency                               | Actions   |
|--|---|
| <b>Department of Homeland Security (DHS)</b> | <p><b>Customs and Border Protection (CBP)</b></p> <ul style="list-style-type: none"> <li>Where hazardous materials are transported by persons, cargo, mail, or conveyances arriving from outside the United States, provides extensive analytical and targeting capabilities through its National Targeting Center, full examination capabilities by trained CBP officers equipped with radiation detection and nonintrusive inspection technology, and nationwide rapid technical response capabilities through its Laboratory and Scientific Services Division.</li> </ul> <p><b>Federal Emergency Management Agency</b></p> <ul style="list-style-type: none"> <li>Provides coordination support during ESF activations, as well as recovery and mitigation assistance during Federally-declared major disasters or emergencies under the Stafford Act.</li> <li>Under ESF #5, leads the IMAAC to coordinate, produce, and disseminate atmospheric dispersion modeling and hazard prediction products that represent the Federal position during an actual or potential incident to aid emergency responders in protecting the public and environment.</li> </ul> <p><b>Office of Infrastructure Protection</b></p> <ul style="list-style-type: none"> <li>Designates an Infrastructure Liaison to address issues regarding the protection and stabilization of critical infrastructure affected by a release of oil or hazardous materials.</li> <li>Maintains access to a database of sites with hazardous materials; provides detailed knowledge of various hazardous material sites as a result of site visits and vulnerability assessments; and assists in the reduction of vulnerabilities and risks associated with certain hazardous material sites.</li> <li>Conducts routine inspections of high-risk chemical facilities with 24-hours notice and conducts inspections with less than 24-hours advance notice if warranted by exigent circumstances or if any delay in conducting an inspection might be seriously detrimental to security.</li> </ul> |
| <b>Department of the Interior (DOI)</b>      | <ul style="list-style-type: none"> <li>Provides scientific/technical advice, information, and assistance to help prevent or minimize injury to natural and cultural resources and historic properties, such as public lands; units of the National Park System; National wildlife refuges and fish hatcheries; Alaska Native allotments and town sites; wildlife and associated habitats, including threatened and endangered species and migratory birds; and National monuments.</li> <li>Provides scientific expertise and assistance in mapping, biological resources, geology, and hydrology; earthquakes and other natural hazards; minerals; and identification of hazards.</li> <li>Provides expertise in and information on offshore drilling; production practices and facilities; and offshore minerals.</li> <li>Maintains computer models for oil spill trajectory analysis and calculation of pipeline oil discharge volumes.</li> <li>Provides information from response research.</li> <li>For spills involving Outer Continental Shelf facilities, assists in source identification, oversees spill abatement as provided in the April 3, 2012, Memorandum of Agreement between USCG and DOI/Bureau of Safety and Environmental Enforcement, and approves resumption of operations.</li> </ul>   |



## Emergency Support Function #10 – Oil and Hazardous Materials Response Annex

| Support Agency                   | Actions   |
|----------------------------------|---|
| <b>Department of Justice</b>     | <ul style="list-style-type: none"> <li>Provides expert advice on complex legal issues, including potential criminal cases as well as potential affirmative and defensive civil litigation issues.</li> </ul> <p><b>The Attorney General</b></p> <ul style="list-style-type: none"> <li>Leads responsibility for criminal investigations of terrorist acts or terrorist threats by individuals or groups inside the United States or directed at U.S. citizens or institutions abroad where such acts are within the Federal criminal jurisdiction of the United States.</li> <li>Generally acting through the FBI, the Attorney General, in cooperation with other Federal departments and agencies engaged in activities to protect national security, shall also coordinate the activities of the other members of the law enforcement community to detect, prevent, preempt, and disrupt terrorist attacks against the United States.</li> <li>Represents the United States in affirmative and defensive civil litigation and has other legal responsibilities, including resolving legal disputes between Federal agencies.</li> </ul>  |
| <b>Department of Labor (DOL)</b> | <p><b>Mine Safety and Health Administration</b></p> <ul style="list-style-type: none"> <li>Provides mobile laboratory equipment and technical expertise for gas sampling and analysis.</li> </ul> <p><b>Occupational Safety and Health Administration (OSHA)</b></p> <ul style="list-style-type: none"> <li>Serves as the Coordinating Agency for the NRF Worker Safety and Health Support Annex; and provides technical assistance and support to EPA, DHS/USCG, and other NRT/RRT agencies, as well as to the OSC, concerning the health and safety of response and recovery workers.</li> <li>DOL/OSHA may provide technical assistance with: <ul style="list-style-type: none"> <li>Risk assessment and risk management.</li> <li>Identification, assessment, and control of health and safety hazards.</li> <li>Development and oversight of site health and safety plans.</li> <li>Site safety monitoring.</li> <li>Worker exposure monitoring, sampling, and analysis.</li> <li>Personal protective equipment selection, including respirator fit testing.</li> <li>Incident-specific worker safety and health training.</li> <li>Emergency worker decontamination.</li> </ul> </li> </ul> <p><b>The Worker Safety and Health Support Annex</b></p> <ul style="list-style-type: none"> <li>Provides additional information on worker safety and health technical assistance. DOL/OSHA support is also directly available to NRT agencies under the NCP and under ESF #10 through a request by the primary agency.</li> </ul> |
| <b>Department of State</b>       | <ul style="list-style-type: none"> <li>Facilitates an integrated response between nations when a discharge or release crosses or threatens to cross international boundaries or involves foreign flag vessels.</li> <li>Coordinates the solicitation of assistance and response to offers of assistance from foreign sources.</li> </ul>  |

## Emergency Support Function #10 – Oil and Hazardous Materials Response Annex

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| Support Agency                               | Actions  |
|--|--|
| <b>Department of Transportation</b>          | <ul style="list-style-type: none"><li>• Provides expertise on all modes of transporting oil and hazardous materials, including information on the requirements for packaging, handling, and transporting regulated hazardous materials.</li><li>• Issues special permits to facilitate movement of hazardous materials, hazardous waste, and hazardous debris in support of response efforts.</li></ul>  |
| <b>General Services Administration (GSA)</b> | <ul style="list-style-type: none"><li>• Supports local, state, tribal, territorial, insular area, and Federal governments in the direct purchase and assisted acquisition of supplies, services, and equipment utilizing the GSA Schedules. Additionally, GSA provides leasing services for facilities and real property.</li></ul>  |
| <b>Nuclear Regulatory Commission (NRC)</b>   | <ul style="list-style-type: none"><li>• Coordinates the Federal response activities for a radiological incident involving a facility licensed by the NRC or an Agreement State; shipment of NRC- or Agreement State-licensed materials; or radioactive materials licensed under the Atomic Energy Act.</li><li>• Provides support to DHS as the coordinating agency for incidents requiring a coordinated Federal response, in accordance with the NRIA. The NRC and EPA coordinate their responses to an emergency involving both a radiological and chemical release in accordance with joint NRC/EPA implementing procedures.</li></ul> |

## **APPENDIX I**

# **REGION 7 REGIONAL INTEGRATED CONTINGENCY PLAN RECORD OF CHANGE**

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## RECORD OF CHANGE

The most current copy of this document, including any changed pages, is available through EPA Region 7's website at [response.epa.gov/R7RRT](https://response.epa.gov/R7RRT). All changes will be made in conjunction with the United States Guard, Eighth District, Hale Boggs Federal Building, 500 Poydras Street, Room 1330, New Orleans, LA 70130-3319.

The following table describes revisions from 2012 through the most recent year of this plan's publication.

| Change Number | Change Description   | Section Number Found   | Change Date   |
|---------------|--|--|---------------|
| 1             | Emergency Spill Contacts for Region VII States added                                   | Introduction, pg. iii  | December 2012 |
| 2             | Record of Change Table added   | Introduction, pg. viii                                       | December 2012 |
| 3             | Section header added   | 300.4 Geographic Description and Jurisdictional Guidance     | December 2012 |
| 4             | Abbreviation substituted for term  | 300.4 Geographic Description and Jurisdictional Guidance     | December 2012 |
| 5             | Description of EPA Regions 4, 5, 6, 7, and 8 Regional Plans and Responsibilities added | 300.4 Geographic Description and Jurisdictional Guidance     | December 2012 |
| 6             | Description of U.S. Coast Guard, Eighth District (USCG D8) responsibilities outlined   | 300.4 Geographic Description and Jurisdictional Guidance     | December 2012 |
| 7             | Header numeration change   | 300.5 Abbreviations  | December 2012 |
| 8             | Header numeration change   | 300.6 Definitions  | December 2012 |
| 9             | Plan Maintenance Section and defining content added                                    | 300.7 Plan Maintenance                                       | December 2012 |
| 10            | Content on planning process documentation  | 300.105 Incident Command System/ Unified Command System      | December 2012 |
| 11            | Term replaced by LEPC abbreviation   | 300.125 Notification and Communications                      | December 2012 |
| 12            | Abbreviation of RP replaced with full term   | 300.135 Responsible Party Policy                             | December 2012 |
| 13            | Affected EPA Regions listed out in content   | 300.140 Multi-Area Responsibilities                          | December 2012 |
| 14            | Use of RICP and limitation of activation included                                      | 300.140 Multi-Area Responsibilities                          | December 2012 |
| 15            | Correction to Appendix Sub-Section   | 300.145 Special Terms and Other Assistance Available to OSCs | December 2012 |
| 16            | Definition of use and direction to included Information Collection Plan added          | 300.155 Public Information and Community Relations           | December 2012 |
| 17            | Use of volunteers and their suggested duties added                                     | 300.185 Non-governmental Participation                       | December 2012 |
| 18            | Header to Table I changed  | 300.210 Federal Contingency and Response Plans               | December 2012 |
| 19            | Sub-area Contingency Plans section added   | 300.215 Sub-area Contingency Plans                           | December 2012 |
| 20            | State-level Response Plans section added   | 300.220 State-level Response Plans                           | December 2012 |
| 21            | Header numeration added  | 300.225 Fish and Wildlife Response Plan                      | December 2012 |

| Change Number | Change Description   | Section Number Found  | Change Date   |
|---------------|--|---|---------------|
| 22            | Header numeration changed  | 300.230 Facility Response Plans   | December 2012 |
| 23            | Definition of FRPs added   | 300.230 Facility Response Plans   | December 2012 |
| 24            | Location of listed FRPs within plan added                                  | 300.230 Facility Response Plans   | December 2012 |
| 25            | Risk Management Plan section added   | 300.235 Risk Management Plan  | December 2012 |
| 26            | Header numeration changed  | 300.240 Area Response Drills  | December 2012 |
| 27            | Header numeration changed  | 300.255 EPCRA Local Emergency Response Plans  | December 2012 |
| 28            | Definition of plan development and range of EPCRA planning added           | 300.255 EPCRA Local Emergency Response Plans  | December 2012 |
| 29            | Cultural Sites section added   | 300.250 Cultural Sites  | December 2012 |
| 30            | Responsibilities of the Spiller added                                      | 300.300 Discovery and Notification  | December 2012 |
| 31            | Full term for SONS added   | 300.323 Spills of National Significance   | December 2012 |
| 32            | Training and Qualifications section added                                  | 300.415 Training and Qualifications   | December 2012 |
| 33            | Header numeration changed  | 300.415 Removal Site Evaluation   | December 2012 |
| 34            | Header numeration changed  | 300.420 Removal Actions   | December 2012 |
| 35            | Updated Appendix B1  | Regulated facilities  | December 2012 |
| 36            | Updated Appendix C3  | EPA Response Teams and Equipment  | December 2012 |
| 37            | Updated Appendix D3  | List of RRT Members   | December 2012 |
| 38            | Annex IV   | New content in February 2012  | December 2012 |
| 39            | Annex III  | Changed name of Annex to NIMS/ICS   | December 2012 |
| 40            | New content  | Added example habitat fact sheet to Appendix A2   | December 2012 |
| 41            | Updated Annex VII  | Replaced former memoranda of understanding (MOU) with current MOUs for EPA Region 5, 6, and 7         | December 2012 |
| 42            | New Annex  | Created Annex VIII to include MOU with Corporation for National and Community Services, USCG, and EPA | December 2012 |
| 43            | Updated contact information  | Appendix A.1, Subsections 6.3 and 8.0   | December 2013 |
| 44            | Updated lists of federal or endangered species for all states and counties | Appendix A.4  | December 2013 |
| 45            | Added link to public version of the Kansas Response Plan                   | Subpart C, Subsection 300.220   | December 2013 |
| 46            | Updated KDEM first alternate to RRT  | Appendix D.3, Subsection 16.2.3   | December 2013 |
| 47            | Revised KDHE contact number and relocated KDEM number on the pg.           | Main Plan, pg. 3  | December 2013 |
| 48            | Updated KDHE contact number  | Appendix D.4, Subsection 1.1  | December 2013 |

| Change Number | Change Description  | Section Number Found  | Change Date   |
|---------------|---|---|---------------|
| 49            | Updated USCG alternate to RRT and USCG sector contact information   | Appendix D.3, Section 3.0   | December 2013 |
| 50            | Updated MDC contact number  | Appendix A.1, Subsection 6.3  | December 2013 |
| 51            | New content: MO laws governing wildlife rescue and rehabilitation   | Appendix A.1, Subsection 6.3  | December 2013 |
| 52            | Updated IA SERC contact information   | Appendix D.1  | December 2013 |
| 53            | Revised IDNR contact information for RRT  | Appendix D.3, Subsection 16.1   | December 2013 |
| 54            | Updated list of response contractors  | Appendix C.2  | December 2013 |
| 55            | Corrected Radiological Emergency Response Team (RERT) name  | Appendix C.3  | December 2013 |
| 56            | Inserted links to 2013 versions of the NRF and Emergency Support Function (ESF)-10; and replaced old versions with new  | Appendix H  | December 2013 |
| 57            | Formatted table and added table notes   | See Table A.1.1   | December 2013 |
| 58            | Replaced NPFC presentation with updated NPFC/NRDA requirements for spill response   | Appendix E  | December 2013 |
| 59            | Updated Iowa HSEMD representative to RRT  | Appendix D.3, Subsection 16.1   | December 2013 |
| 60            | Updated NPFC contact numbers  | Appendix D.4, Subsection 1.2  | December 2013 |
| 61            | Revised Record of Change Table to include “Change Date” column and added dates  | Main plan, Preface  | December 2013 |
| 62            | Added reference to OSCs listed in Appendix D.3  | Main plan, Section 300.120  | December 2013 |
| 63            | Removed plan revision date in all pg. footers (retained on cover pg. only)  | All sections  | December 2013 |
| 64            | Updated FRP site list with 2013 database  | Appendix B.1  | December 2013 |
| 65            | Updated USCG 24-hour spill number   | Preface   | December 2013 |
| 66            | Added new letter of promulgation (original letter remains)  | Preface   | December 2013 |
| 67            | Added Clean Water Act (CWA) delegation notice   | Preface   | December 2013 |
| 68            | Added Record of Change to TOC   | Preface/TOC   | December 2013 |
| 69            | Replaced Janice Kroone with Eric Nold as RRT Coordinator and RICP point of contact  | Correction and Update Form, main text Section 300.7, Appendix D.3, and Appendix D.4 | May 2015      |
| 70            | Added EPA spill number as an emergency means of requesting restricted information; and replaced Janice Kroone with “RRT Coordinator” as the non-emergency point of contact for restricted information | Appendix A.3.a, Appendix A.3.b, and Appendix B.2                                    | May 2015      |
| 71            | Updated T&E species and sensitive areas geospatial information guide for each state; and added contact information for sources of GIS data  | Appendix A.7  | May 2015      |
| 72            | Added up-to-date RICP promulgation letter   | Main plan   | May 2015      |
| 73            | Updated MO SERC contact information   | Appendix D.1  | May 2015      |
| 74            | Updated RRT Members contact information, including information for new EPA OSCs   | Appendix D.3 and D.4  | May 2015      |
| 75            | Updated NPFC requirements   | Appendix E  | May 2015      |

| Change Number | Change Description   | Section Number Found  | Change Date    |
|---------------|--|---|----------------|
| 76            | Updated FRP and RMP tables using 2014 databases; and added reference to Region 7 flex viewer with web link to request access               | Appendix B.1  | May 2015       |
| 77            | Updated list of Missouri's conservation areas with data provided by MDC and MDNR   | Appendix A.2  | May 2015       |
| 78            | Updated federally-listed endangered and threatened species with data provided by DOI   | Appendix A.4  | May 2015       |
| 79            | Added disclaimer that plan-listed sensitive environments should not be considered comprehensive or definitive                              | Appendix A.1, Subsection 2.0;<br>Appendix A.2, Subsection 1.0<br>Appendix A.4, all subsections (pg. footer) | May 2015       |
| 80            | Reformatted bulleted list of natural resource trustees   | Appendix A.1, Subsection 4.2  | May 2015       |
| 81            | Added USDA/APHIS as source of technical expertise and assistance   | Appendix A.1, Subsection 6.1  | May 2015       |
| 82            | Added USDA/APHIS office locations  | Appendix A.1, Subsection 6.3  | May 2015       |
| 83            | Changed "Department" to "Office" concerning USFWS's Office of Law Enforcement (OLE)  | Appendix A.1, Subsection 6.5  | May 2015       |
| 84            | Added APHIS and OLE to the list of federal abbreviations   | Main plan, Section 300.005  | May 2015       |
| 85            | Updated NRC's web address  | Appendix F  | May 2015       |
| 86            | Updated OSRO contact list using current USCG RRI to include COTP Zones Lincoln (NE), Lower Mississippi, Ohio Valley, and Upper Mississippi | Appendix C.1  | May 2015       |
| 87            | Added list of MTRs and 24-hour contact phone numbers for facilities on Mississippi River along Region 7 states                             | Appendix B.1  | May 2015       |
| 88            | Added MOU between Regions 4 and 7  | Annex VII   | May 2015       |
| 89            | Renamed Annex VII to clearly indicate separate MOUs are in place between Region 7 and other regions  | Annex VII   | May 2015       |
| 90            | Added USCG, EPA, USDA APHIS-WS MOU   | Annex IX  | May 2015       |
| 91            | Updated links to each state's LEPC list  | Appendix D.2  | May 2015       |
| 92            | Updated Iowa's emergency response 24-hour phone number (IDNR spill line)   | Main Plan, Appendix D.3, and<br>Appendix D.4  | July 2015      |
| 93            | Updated FRP tables using 2015 database   | Appendix B.1  | August 2015    |
| 94            | Updated USCG contact information   | Appendix D.3  | August 2015    |
| 95            | Editorial (capitalization) and punctuation corrections   | Main Plan, Subpart B,<br>Subsection 300.115   | August 2015    |
| 96            | Revised cover by removing EPA references and adding RRT member agency logos  | Cover   | September 2015 |
| 97            | Moved USCG under DHS in list of agencies   | Main Plan, Subpart A,<br>Subsection 300.5<br>(Abbreviations)  | September 2015 |
| 98            | Generalized the department in which the USCG operates for the coastal zone   | Main Plan, Subpart B,<br>Subsection 300.100   | September 2015 |
| 99            | Corrected citation describing the reporting frequency to the NRT by the RRT  | Main Plan, Subpart B,<br>Subsection 300.115   | September 2015 |
| 100           | Replaced OSC with OSC/FOSC   | Main Plan, Subpart B,<br>Subsection 300.120   | September 2015 |



| Change Number | Change Description   | Section Number Found                                       | Change Date    |
|---------------|--|--|----------------|
| 101           | Added “Department of Homeland Security” in front of USCG and FEMA  | Main Plan, Subpart B, Subsection 300.175                   | September 2015 |
| 102           | Added “(API)” after American Petroleum Institute   | Main Plan, Subpart B, Subsection 300.185                   | September 2015 |
| 103           | Corrected use of MSU (marine safety unit) and removed citation of the number of FRPs   | Main Plan, Subpart B, Subsection 300.230                   | September 2015 |
| 104           | Updated USCG contact information   | Appendix D.3   | September 2015 |
| 105           | Updated Gulf Strike Team phone number  | Appendix D.4   | September 2015 |
| 106           | Reorganized columns in FRP table   | Appendix B.1   | September 2015 |
| 107           | Updated USCG, DOE, FEMA, and NOAA contact information  | Appendix D.3   | November 2015  |
| 108           | Replaced various incorrect references to the Regional Emergency Operations Center  | Main Plan, all subsections                                 | March 2017     |
| 109           | Added reference to Appendix D.5, Tribal Emergency Contacts List  | Main Plan, Preface, To Report a Spill or Release           | March 2017     |
| 110           | Replaced EPA previous web address for posted plans with <a href="http://www.epaosc.org/R7RRT">www.epaosc.org/R7RRT</a>                           | Main Plan, Preface and Subsection 300.215                  | March 2017     |
| 111           | Revised lists of abbreviations   | Main Plan, Subsection 300.5                                | March 2017     |
| 112           | Additional language describing responsibilities to notify state/federal natural resources trustees and tribes of spills/discharges               | Main Plan, Subsection 300.125, pg. 13, paragraphs 2 and 3. | March 2017     |
| 113           | Added reference to EPA/USCG MOA in Annex I   | Main Plan, Subsection 300.125, pg. 13, paragraph 4         | March 2017     |
| 114           | Additional language describing FOSC coordination activities  | Main Plan, Subsection 300.125, pg. 13, paragraph 5         | March 2017     |
| 115           | Added “As stated in Section 300.125,”  | Main Plan, Subsection 300.135, pg. 15, paragraph 3         | March 2017     |
| 116           | Added language describing inter-regional coordination and related notifications  | Main Plan, Subsection 300.135, pg. 16, paragraph 4         | March 2017     |
| 117           | Added first paragraph under “Responsible Party Policy” describing notifications to NRC   | Main Plan, Subsection 300.135, pg. 18                      | March 2017     |
| 118           | Additional language describing multi-area responses  | Main Plan, Subsection 300.140, pg. 20, last two paragraphs | March 2017     |
| 119           | Added “Contingency” to plan names and updated website address for plan posting location  | Main Plan, Subsection 300.215, pg. 35                      | March 2017     |
| 120           | Updated links to state-level response plans  | Main Plan, Subsection 300.220, pg. 35                      | March 2017     |
| 121           | Added language indicating notification to tribes and drinking water intakes will also be ensured; and referenced Appendix D.5 (Tribal contacts). | Main Plan, Subsection 300.300, pg. 29                      | March 2017     |
| 122           | Added “Tribal Governments” to notification responsibilities of OSCs  | Main Plan, Subpart G, pg. 50, first bullet                 | March 2017     |
| 123           | Updated tables of federally-listed endangered and threatened species   | Appendix A.4   | March 2017     |
| 124           | Updated web address of R7 Atlas (Flex Viewer)  | Appendix A.7, pg. 3  | March 2017     |
| 125           | Updated tables of FRP sites and RMP sites; and removed table of marine transport-related sites   | Appendix B.1   | March 2017     |
| 126           | Updated Missouri SERC contact information  | Appendix D.1   | March 2017     |
| 127           | Updated RRT member contact list  | Appendix D.3   | March 2017     |

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| 128           | Added new appendix of tribal emergency contacts and EPA notification protocols  | Appendix D.5  | March 2017  |
| 129           | Added links to current version of National Response Framework (NRF), 2016 NRF, and ESF-10 Annex to the 2016 NRF.  | Appendix H  | March 2017  |
| 130           | Added 2016 EPA/USCG MOA describing predesignation of FOSCs  | Annex I   | March 2017  |
| 131           | Removed references to “COSTAs” and replaced term with chemical and bioremediation countermeasures (CBC); added links to current NCP Product Schedule and related reference sources; reorganized the CBC decision process; and removed Appendix IV.G (COSTA Fact Sheets) | Appendix IV, Section 3.0 and Appendix IV.G                      | March 2017  |
| 132           | Added MOU with new addendum containing updated contact information for the Corporation for National & Community Service (Note: actual MOU is unchanged)   | Annex VIII  | March 2017  |
| 133           | Corrected reference to CWA 33 U.S.C. 1321(d)  | Main Plan, Subsection 300.2, pg. 1                              | March 2017  |
| 134           | Replaced “8th Coast Guard District” with U.S. Coast Guard, Eighth District (USCG D8)  | Main Plan, numerous subsections; and Annex I                    | March 2017  |
| 135           | Replaced “MOU” with “MOA” in reference to EPA/USCG agreement for providing FOSCs  | Main Plan, several subsections                                  | March 2017  |
| 136           | Added “discharge” where “release” is also used to describe oil releases/discharges  | Main Plan, several subsections                                  | March 2017  |
| 137           | Removed the term “Marine Safety Office”; moved USFWS under DOI; removed “Unified Command System” and added “Unified Command”; added FRP; removed “CO” (Coordinating Officer) from main text; added “CBC”, and added Incident Management Assistance Team (IMAT)          | Main Plan, Subsection 300.5 (abbreviations) and throughout text | March 2017  |
| 138           | Re-formatted list of agencies/organizations   | Main Plan, Subsection 300.175                                   | March 2017  |
| 139           | Revised language to indicate USCG “will” response per EPA/USCG MOA  | Main Plan, Subsection 300.135                                   | March 2017  |
| 140           | Added two paragraphs describing USCG IMAT and Public Information Assistance Team (PIAT)   | Main Plan, Subsection 300.145                                   | March 2017  |
| 141           | Replaced all instances of “worst case” with “worst-case”  | Main Plan, several subsections                                  | March 2017  |
| 142           | Replaced all instances of “Sub-Area” with “Sub-area”  | Main Plan, several subsections                                  | March 2017  |
| 143           | Corrected TOC reference to OSRO to use “Removal” in the term  | Main Plan, TOC (Appendix C.1 already corrected)                 | March 2017  |
| 144           | Clarified USCG’s process for review and approval of FRPs and Vessel Response Plans (VRP)  | Main Plan, Subsection 300.230                                   | March 2017  |
| 145           | Added statements concerning CWA 404 permit requirements under Nationwide Permit 20  | Main Plan, Subsection 300.310                                   | March 2017  |
| 146           | Added references to Annex IV (CBCs)   | Main Plan, Subsection 300.320                                   | March 2017  |

| Change Number | Change Description   | Section Number Found   | Change Date |
|---------------|--|--|-------------|
| 147           | Updated link to Ceiling and Number Assignment Processing System (CANAPS)   | Main Plan, Subsection 300.335                                | March 2017  |
| 148           | Added “available” to read, “...to include the most up-to-date emergency contacts list available for Tribal Governments.”   | Main Plan, Subsection 300.610                                | March 2017  |
| 149           | Removed “promote” and inserted “does not allow”; and added reference to Annex IV to identify exceptions to RRT’s CBC policy  | Main Plan, Subpart J, paragraph 3                            | March 2017  |
| 150           | Added references to Annex IV and links to the NCP Product Schedule and Technical Notebook  | Main Plan, Subpart J   | March 2017  |
| 151           | Corrected reference to EPA OSC Contacts List   | Main Plan, Subsection 300.120                                | March 2017  |
| 152           | Replaced references to “Unified Command System” with “Unified Command” and “Unified Command structure”; and revised Figure III-2 to include the RP   | Main Plan, Subsection 300.105 and Annex III, all subsections | March 2017  |
| 153           | Replace “does not promote” with “does not allow” concerning the use of CBCs.   | Annex IV, Subsection 3.1                                     | March 2017  |
| 154           | Replaced “8th Coast Guard District” with U.S. Coast Guard, Eighth District   | Annex I, Title Page  | March 2017  |
| 155           | Replaced EPA previous web address for posted plans with response.epa.gov/R7RRT   | Main Plan, Preface and Subsection 300.215                    | April 2017  |
| 156           | Replaced “Federal OSC” and “OSC” (where appropriate) with “FOSC”   | All sections, appendices, and annexes                        | April 2017  |
| 157           | Updated abbreviation lists to include only terms used in the RICP’s Main Plan  | Section 300.5  | April 2017  |
| 158           | Capitalized all instances of “Federal”, “State”, and “Tribe/Tribal”  | All sections, appendices, and annexes                        | May 2017    |
| 159           | Added new image of Federal agency logos based on NRT website logos   | Cover  | May 2017    |
| 160           | Revised format of citations for Federal laws   | Main Plan, all sections                                      | May 2017    |
| 161           | Update Tribal Emergency Contacts using EPA list dated 4/20/17  | Appendix D.5   | May 2017    |
| 162           | Numbered tables describing historical worst-case discharges and updated data   | Main Plan, Subsection 300.210                                | May 2017    |
| 163           | Added USCG Sector phone numbers to emergency phone list  | Preface  | May 2017    |
| 164           | Changed RICP revision date to January 31st   | Preface and Section 300.7                                    | May 2017    |
| 165           | Corrected name of ESF #10 to “Oil and Hazardous Materials Response”  | Section 300.1  | May 2017    |
| 166           | Removed “Standard Federal” from reference to Region 7  | Section 300.2  | May 2017    |
| 167           | Removed reference to “exclusive economic zone”   | Section 300.3, first bullet                                  | May 2017    |
| 168           | Combined Sections 300.3 ( <i>Geographic Description and Jurisdictional Guidance</i> ) and 300.4 ( <i>Scope</i> ) to better align RICP section numbering with NCP sections; and updated TOC | Sections 300.3 and 300.4                                     | May 2017    |

| Change Number | Change Description  | Section Number Found                          | Change Date |
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| 169           | Moved <i>Plan Integration</i> to Section 300.2; replaced "...expand requirements set forth in the NCP..." with "...further detail requirements set forth in the NCP ..." and changed "All Federal contingency plans are to be coordinated..." to "All Federal contingency plans should be coordinated..." | Sections 300.4/300.2                          | May 2017    |
| 170           | Revised language to indicate the intended schedule and scope of plan revisions and added sentence indicating RRT Co-Chairs will approve and sign-off on major plan updates occurring every five years.  | Section 300.7, third paragraph                | May 2017    |
| 171           | Hyper-linked Executive Order text; substituted "sub-area" for "Area"; and added figure showing EPA FOSC sub-area assignments  | Section 300.100                               | May 2017    |
| 172           | Added "Tribes" to list of coordinating entities Section 300.105   | Section 300.105, first paragraph              | May 2017    |
| 173           | Added "Tribes" to entities listed to encourage improved preparedness  | Section 300.115, eighth bullet                | May 2017    |
| 174           | Added sentence indicating there are seven designated sub-areas with assigned EPA FOSCs  | Section 300.115, following bulleted list      | May 2017    |
| 175           | Revised "Request..." to "Verbal request..."   | Section 300.115, <i>Incident-Specific RRT</i> | May 2017    |
| 176           | Added "Tribal" to listed cooperating entities   | Section 300.120                               | May 2017    |
| 177           | Added "Command Center" as an emergency operations location  | Section 300.125, fourth paragraph             | May 2017    |
| 178           | Replaced "Principal Federal Official" with "Federal Coordinating Officer"   | Several sections                              | May 2017    |
| 179           | Deleted sentence, "The REOC will be at the appropriate USCG district office when...."   | Section 300.135, second paragraph             | May 2017    |
| 180           | Revised responding USCG entity to be COPTs  | Section 300.135, fourth paragraph             | May 2017    |
| 181           | Added "...consistent with NCP parts 300.120 and 300.125..."   | Section 300.135, fifth paragraph              | May 2017    |
| 182           | Changed "private response agencies" to "private response entities"  | Section 300.135, seventh paragraph            | May 2017    |
| 183           | Added USCG D8 to regions/districts to be notified   | Section 300.135, eighth paragraph             | May 2017    |
| 184           | Changed "health and safety problems" to "health and safety issues"  | Section 300.135, eleventh paragraph           | May 2017    |
| 185           | Specified "FOSC/SOSC" will contact natural resource trustees  | Section 300.135, twelfth paragraph            | May 2017    |
| 186           | Added Tribal Historic Preservation Office (THPO) as entity to be consulted by FOSC  | Section 300.135, fifteenth paragraph          | May 2017    |
| 187           | Spelled out Emergency Response Division (ERD) and removed "ERD" from abbreviation list  | Subpart J, <i>NCP Product Schedule</i>        | May 2017    |
| 188           | Added "Relationship of Plans" graphic   | Section 300.210                               | May 2017    |
| 189           | Updated TOC   | TOC   | May 2017    |
| 190           | Removed references to Emergency Response Notification System (ERNS) and added link to EPA's Enforcement and Compliance History Online (ECHO) database   | Main Plan and Appendix F                      | May 2017    |

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|---------------|--|--------------------------|---------------|
| 191           | Replaced link to NCP with link to 2015 version   | Appendix G               | May 2017      |
| 192           | Replace “Wildlife and Parks Department” with “Kansas Department of Wildlife Parks and Tourism”                                       | Appendix A1, page 5      | May 2017      |
| 193           | Replace “water fowl” with “waterfowl”  | Appendix A1, page 5      | May 2017      |
| 194           | Added phone number for USFWS Law Enforcement Division (Kansas)   | Appendix A1, page 18     | May 2017      |
| 195           | Added neosho madtom, rabbitsfoot mussel, and neosho mucket mussel critical habitats to several Kansas counties                       | Appendix A2, Table A.2.3 | May 2017      |
| 196           | Revised “Natural Resources Commission” to “Department of Natural Resources” and removed Department of Water Resources under Nebraska | Appendix A1, page 5      | May 2017      |
| 197           | Corrected name of Bald and Golden Eagle Protection Act of 1940   | Appendix A1, page 16     | May 2017      |
| 198           | Corrected office addresses under Nebraska  | Appendix A1, page 18     | May 2017      |
| 199           | Spelled out “Nebraska” in address  | Appendix A1, page 18     | May 2017      |
| 200           | Updated link to USFWS Best Practices for Migratory Bird Care During Oil Spill Response   | Appendix A1, page 20     | May 2017      |
| 201           | Changed Material Safety Data Sheet to Safety Data Sheet  | Appendix A1, page 22     | May 2017      |
| 202           | Corrected address for NDEQ Director  | Appendix A1, page 28     | May 2017      |
| 203           | Removed listings of piping plover critical habitats in Nebraska  | Appendix A2, Table A.2.5 | May 2017      |
| 204           | Revised county locations of USFW wildlife refuges  | Appendix A2, Table A.2.5 | May 2017      |
| 205           | Added critical habitats in Nebraska for salt creek tiger beetle  | Appendix A2, Table A.2.5 | May 2017      |
| 206           | Added wildlife management area to several Nebraska counties  | Appendix A2, Table A.2.5 | May 2017      |
| 207           | Corrected location of several Nebraska RMP facilities  | Appendix B1              | May 2017      |
| 208           | Updated state and federal natural resource trustee contacts  | Appendix A1              | December 2017 |
| 209           | Updated state/county lists of T&E species  | Appendix A4              | December 2017 |
| 210           | Updated EPA’s GIS contact for Sensitivity Atlas access   | Appendix A7              | December 2017 |
| 211           | Updated FRP and RMP lists of regulated facilities  | Appendix B1              | December 2017 |
| 212           | Updated OSRO contact information and changed “Response” to “Removal” in reference to OSROs   | Appendix C1              | December 2017 |
| 213           | Updated SERC and LEPC information  | Appendices D1 and D2     | December 2017 |
| 214           | Updated RRT representative contacts list   | Appendix D3              | December 2017 |
| 215           | Updated Tribal emergency contacts list   | Appendix D5              | December 2017 |
| 216           | Updated MTR list of regulated facilities   | Appendix B1              | January 2018  |
| 217           | Moved comprehensive Record of Change to new Appendix I and retained current year’s changes in Preface                                | Appendix I and Preface   | March 2018    |

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## **ANNEX I**

# **MEMORANDUM OF AGREEMENT BETWEEN U. S. ENVIRONMENTAL PROTECTION AGENCY, REGION 7, AND U. S. COAST GUARD, EIGHTH DISTRICT**

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**MEMORANDUM OF AGREEMENT  
BETWEEN  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 7  
AND  
UNITED STATES COAST GUARD  
REGARDING RESPONSE BOUNDARIES FOR  
OIL AND HAZARDOUS SUBSTANCES POLLUTION INCIDENTS AND  
FEDERAL ON-SCENE COORDINATOR RESPONSIBILITIES**

**Section 1: PARTIES**

The Parties to this Memorandum of Agreement (MOA) are the United States Environmental Protection Agency (EPA), Region 7 and the United States Coast Guard, Eighth District ("USCG D8").

**Section 2: PURPOSE AND AUTHORITIES**

- A. The intent of this MOA is to delineate the Region 7 inland zone geographical boundaries establishing responsibility for the predesignation of Federal On-Scene Coordinators (FOSCs) for pollution response, pursuant to the Federal Water Pollution Control Act, as amended, also known as the Clean Water Act (CWA), 33 U.S.C. §§ 1251 – 1387; and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. § 300.120.
- B. This agreement is established under the provisions of 33 U.S.C. §§ 1251 – 1387, 14 U.S.C. § 93(a)(20), 14 U.S.C. § 141, 40 C.F.R. § 300.120, and EPA Delegation R7-1-011.

**Section 3: DEFINITION**

Except where otherwise specifically defined in the context of its use herein, or where specifically set forth below, terms used in this MOA shall have the meaning set forth in federal law. The definition supplied below is meant to enhance and supplement the understanding of those terms, as used in federal law, and is not meant to usurp or alter their meaning under federal law.

- **Commercial Vessels.** “Commercial vessels” are vessels in commercial service that conduct any type of trade or business involving the transportation of goods or individuals, except combatant vessels. This definition includes tank vessels (ships and barges); freight vessels and inspected and uninspected barges; commercial fishing vessels; inspected passenger vessels; and uninspected towing vessels. This definition excludes recreational vessels, permanently moored structures, and cranes, generators, and temporary storage devices not an integral part of an uninspected barge, which, while they may appear to be vessels or part of the vessel are not inspected by the Coast Guard, e.g., an uninspected deck barge that experiences a ruptured hydraulic line from non-integral crane would be an EPA-led response.

#### **Section 4: ENTITIES WITHIN THE GEOGRAPHICAL ZONE**

- A. The EPA Region 7 geographical zone includes the area that covers Iowa, Kansas, Missouri, and Nebraska within U.S. Coast Guard Eighth District.
- B. The following USCG D8 commands fall within the geographical zone under this MOA:
  1. Sector Upper Mississippi River: The Sector Upper Mississippi River Captain of the Port (COTP) area of responsibility (AOR) is detailed within 33 C.F.R. § 3.40-40.
  2. Sector Ohio Valley: The Sector Ohio Valley Captain of the Port (COTP) area of responsibility (AOR) is detailed within 33 C.F.R. § 3.40-65.
  3. Sector Lower Mississippi River: The Sector Lower Mississippi River Captain of the Port (COTP) area of responsibility (AOR) is detailed within 33 C.F.R. § 3.40-60.

#### **Section 5: INLAND ZONE BOUNDARY DESIGNATIONS**

- A. EPA Region 7 designation:
  1. EPA Region 7 provides the predesignated FOSC for pollution response in the inland zone, as defined in the NCP, 40 C.F.R. § 300.5. All discharges or releases, or a substantial threat of such a discharge or release of oil or hazardous substances originating within the inland zone will be the responsibility of the EPA. Included are discharges and releases from the unknown sources or those classified as “mystery spills.”
  2. The EPA FOSC is the predesignated FOSC for all areas or pollution incidents within Region 7 with exception of Section 5.B and the general response provisions delineated below. Responsibilities regarding inland waterways between EPA Regions (i.e., Ohio River and the Mississippi River) are delineated in a separate Memorandum of Understanding (MOU) between the EPA Regions.

**B. USCG D8 COTP FOSC Predesignation:**

1. The EPA Region 7 predesignates the relevant USCG D8 COTP as the FOSC in response to an incident in the inland zone when it:
  - (a) Involves either: (1) a commercial vessel, (2) a commercial vessel transfer operation, or (3) it is within or originating from the USCG regulated portion of a facility; and
  - (b) Results in a discharge or substantial threat of a discharge of oil or release or substantial threat of a release of a hazardous substance into or on the navigable waters of the United States or adjoining shorelines.
2. For the purposes of this MOA, the USCG regulated portion of a facility extends from the facility transfer system's connection with the vessel to the first valve inside the secondary containment surrounding tanks in the non-transportation-related portion of the facility or, in the absence of secondary containment, to the valve or manifold adjacent to the tanks comprising the non-transportation-related portion of the facility, unless another location has otherwise been agreed to by the COTP and the appropriate federal official.

**Section 6: GENERAL RESPONSE PROVISIONS**

- A. These provisions apply to all EPA FOSCs and USCG COTP/FOSCs serving EPA Region 7.
- B. The USCG and EPA Region 7 will assist each other consistent with agency responsibilities and authorities through the cognizant COTP and the inland zone predesignated EPA FOSC.
- C. These provisions do not preclude mutual assistance between the two agencies. In addition to 40 C.F.R. § 300.135(b), in this EPA Region, the EPA and the USCG will carry out agency and specific pollution response responsibilities under the NCP, the Regional Integrated Contingency Plan (RICP), and the applicable Subarea Area Contingency Plan, and will assist each other to the fullest extent possible to prevent or minimize the impacts of a discharge of oil, or substantial threat of a discharge of oil, or release, or a substantial threat of release of a hazardous substance where each respective agency has jurisdiction.
- D. Such mutual assistance will be provided based on notification and mutual consent that the assistance is requested and necessary to respond to: (i) a discharge of oil, or substantial threat of a discharge of oil, (ii) a release, or substantial threat of a release of a hazardous substance, (iii) a release or substantial threat of a release of pollutants or contaminants which may present an imminent and substantial endangerment to the public health or welfare. Notification will be provided by the COTP to the EPA FOSC, or by the EPA FOSC to the COTP, whenever a spill is discovered that appears to warrant the provision of mutual assistance. When it is mutually agreed that the provision of such assistance is beneficial, an FOSC from either organization may serve in the following capacities:
  1. As the FOSC for that incident;
  2. As the Federal On-Scene Coordinator's Representative (FOSCR) for the predesignated OSC; or,
  3. Perform duties as first federal official as outlined in 40 C.F.R. § 300.135(b).

- E. Regardless of any agreements within this MOA, it is the responsibility of the EPA and the USCG to ensure that the other agency has properly taken over FOSC responsibilities in its zone prior to relieving itself of any FOSC responsibility. Any verbal agreement to transfer FOSC responsibilities shall be followed up in writing and/or documented in a Situation Report (SITREP) or Pollution Report (POLREP).
- F. When the COTP is not notified via the National Response Center, the EPA shall notify the COTP immediately for all commercial vessel and USCG regulated facility spills or releases in the inland zone.
- G. The USCG COTP shall inform the EPA Region 7 duty officer immediately when the reported discharge or release is an actual or potential medium or major discharge or release. Additionally, the COTP shall provide verbal report or a SITREP/POLREP for all other response actions.
- H. The USCG D8 COTP in each zone shall provide, annually, a list of fixed USCG regulated facilities (33 C.F.R. Parts 126, 127, and 154) located in the inland zone of their area of responsibility to the Co-Chairs of the Regional Response Team.
- I. In addition, EPA Region 7 will notify the COTP and the Eighth Coast Guard District of any Regional Integrated Contingency Plan (RICP) or Subarea Area Contingency Plan meetings for the participation of Coast Guard units in the regional contingency planning process.

## **Section 7: OTHER PROVISIONS**

- A. Nothing in this Agreement is intended to conflict with current law or regulation or the directives of the United States Coast Guard or the Environmental Protection Agency, or any department in which these parties may be operating, nor any such laws, regulations or directives that may be promulgated hereafter. If a term of this Agreement is inconsistent with such authority, then that term shall be invalid, but the remaining terms and conditions of this Agreement shall remain in full force and effect.
- B. Notwithstanding any terms of this Agreement, nothing herein shall be construed to diminish or supersede any rights or authorities available to the parties. This MOA neither amends nor repeals any other requirement or authority conferred by any other provision of law. Nothing in this MOA shall limit, deny, amend, modify, or repeal any other requirements or authorities of agencies of the United States.
- C. This MOA does not create any right or benefit, substantive or procedural, enforceable by law or equity, by persons who are not party to this Agreement, against the EPA or USCG, their officers or employees, or any other person. This MOA does not direct or apply to any person outside of the EPA or USCG.
- D. Each party agrees that should a third party claim arise under the terms and conditions or the Federal Tort Claims Act (FTCA), Title 28, U.S.C. §§ 1346 and 2671 et seq., or of the laws of any state based on negligence or a wrongful act or omission, the party whose employee(s)' conduct gave rise to the claim shall be responsible for the investigation and disposition of said claim. For claims involving conduct of employees of more than one party arising out of a joint

activity conducted pursuant to this MOA, the parties agree to work cooperatively to determine which entity will be primarily responsible for the investigation and disposition of the claim.

- E. As required by the Anti-Deficiency Act, 31 U.S.C. §§ 1341 and 1342, all commitments made by the EPA and USCG in this MOA are subject to the availability of appropriated funds and budget priorities. Nothing in this MOA, in and of itself, obligates either party to expend appropriations or to enter into any contract, assistance agreement, interagency agreement or incur other financial obligations. Any transaction involving transfers of funds between the parties to this MOA will be handled in accordance with applicable laws, regulations and procedures under separate written agreements. This MOA will be incorporated by reference or included as an enclosure to any reimbursable agreement between the USCG and EPA resulting from this MOA.

#### **Section 8: EFFECTIVE DATE, MODIFICATION, AND TERMINATION**

This Agreement will become effective upon the signature of both parties. The Agreement will be subject to review and amendment coincident with each periodic review of the Regional, Area and other applicable contingency plans and at any other time at the request of either of the parties. It may be terminated by either party, effective 30 calendar days after providing written notice to the other. It will remain in effect until modified by mutual agreement or terminated.

#### **Section 9: POINTS OF CONTACT**

Points of Contact for the coordination, support, and implementation of this Agreement are as follows:

- A. EPA Region 7 – Mr. Kenneth S. Buchholz, Chief, Assessment, Emergency Response and Removal Branch, Lenexa, KS at (913) 551-7473; EPA's 24 hour number: (913) 281-0991.
- B. Eighth Coast Guard District – Captain Jose Jimenez, Chief, Response Division, New Orleans, LA at (504) 671-2229; USCG D8's 24 hour number: (504) 589-6225.

## **Section 10: SUPERSEDING POWER**

Regional and Area Contingency Plans of the signatory agencies will be amended to reflect the geographical boundaries and agreements contained herein. This MOA supersedes other MOU/MOAs previously in effect concerning the FOSC boundaries for purposes of pollution response within EPA Region 7.

Agreed to and entered into by the undersigned.

For U.S. EPA Region 7:



Date: 10/19/2016

Mark Hague  
Regional Administrator  
U.S. EPA Region 7  
11201 Renner Blvd.  
Lenexa, KS

For USCG D8:



Date: 11/2/16

David R. Callahan  
Rear Admiral, U.S. Coast Guard  
Commander, Eighth Coast Guard District  
New Orleans, LA

## **ANNEX II**

# **NUCLEAR/RADIOLOGICAL INCIDENT ANNEX TO THE NATIONAL RESPONSE FRAMEWORK**

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### Coordinating Agency:

Department of Defense  
Department of Defense  
Department of Energy  
Department of Homeland Security  
Environmental Protection Agency  
National Aeronautics and Space  
Administration  
Nuclear Regulatory Commission

### Cooperating Agencies:

Department of Agriculture  
Department of Commerce  
Department of Defense  
Department of Energy  
Department of Health and Human Services  
Department of Homeland Security  
Department of the Interior  
Department of Justice  
Department of Labor  
Department of State  
Department of Transportation  
Department of Veterans Affairs  
Environmental Protection Agency  
Nuclear Regulatory Commission

## INTRODUCTION

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### Purpose

The Nuclear/Radiological Incident Annex (NRIA) to the *National Response Framework (NRF)* describes the policies, situations, concepts of operations, and responsibilities of the Federal departments and agencies governing the immediate response and short-term recovery activities for incidents involving release of radioactive materials to address the consequences of the event. These incidents may occur on Federal-owned or -licensed facilities, privately owned property, urban centers, or other areas and may vary in severity from the small to the catastrophic. The incidents may result from inadvertent or deliberate acts. The NRIA applies to incidents where the nature and scope of the incident requires a Federal response to supplement the State, tribal, or local incident response.

The purpose of this annex is to:

- Define the roles and responsibilities of Federal agencies in responding to the unique characteristics of different categories of nuclear/radiological incidents.
- Discuss the specific authorities, capabilities, and assets the Federal Government has for responding to nuclear/radiological incidents that are not otherwise described in the NRF.
- Discuss the integration of the concept of operations with other elements of the NRF, including the unique organization, notification, and activation processes and specialized incident-related actions.
- Provide guidelines for notification, coordination, and leadership of Federal activities.

Because there are several categories of potential incidents and impacted entities, this annex identifies different Federal agencies as "coordinating agencies" and "cooperating agencies" and associated strategic concepts of operations based on the authorities, responsibilities, and capabilities of those departments or agencies. In addition, this annex describes how other Federal departments and agencies support the Department of Homeland Security (DHS) when DHS leads a large-scale multiagency Federal response.

### Scope

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This annex applies to two categories of nuclear and radiological incidents: (1) inadvertent or otherwise accidental releases and (2) releases related to deliberate acts. These incidents may also include potential release of radioactive material that poses an actual or perceived hazard to public health, safety, national security, and/or the environment. The category covering inadvertent releases includes: two categories of nuclear facilities (commercial or weapons production facilities), lost radioactive material sources, transportation accidents involving nuclear/radioactive material, domestic nuclear weapons accidents, and foreign accidents involving nuclear or radioactive material that impact the United States or its territories, possessions, or territorial waters. The second category includes, but is not limited to, response to the effects of deliberate attacks perpetrated with radiological dispersal devices (RDDs), nuclear weapons, or improvised nuclear devices (INDs).

This annex applies whenever a Federal response is undertaken unilaterally pursuant to Federal authorities, or when an incident exceeds or is anticipated to exceed State, tribal, or local resources. The level of Federal response to a specific incident is based on numerous factors, including, the ability of State, tribal, and local officials to respond; the type, amount, and custody of (or authority over) radioactive material involved; the extent of the impact or potential impact on the public and environment; and the size of the affected area.

If any agency or government entity becomes aware of an overt threat or act involving nuclear/radiological material/device or indications the event is not inadvertent or otherwise accidental, the Department of Justice (DOJ) should be notified through the Federal Bureau of Investigation (FBI). The Attorney General has lead responsibility for criminal investigations of terrorist acts or terrorist threats by individuals or groups inside the United States, or directed at United States citizens or institutions abroad, where such acts are within the Federal criminal jurisdiction of the United States. Generally acting through the FBI, the Attorney General, in cooperation with other Federal departments and agencies engaged in activities to protect our national security, shall also coordinate the activities of the other members of the law enforcement community to detect, prevent, preempt, and disrupt terrorist attacks against the United States. For investigations pertaining to nuclear/radiological incidents, the coordinating agencies and cooperating agencies perform the functions delineated in this annex and provide technical support and assistance to the FBI in the performance of its law enforcement and criminal investigative mission. Further details regarding the FBI response are outlined in the Terrorism Incident Law Enforcement and Investigation Annex.

In situations resulting from a deliberate act, NRIA response actions will be coordinated with the *NRF* and the Terrorism Incident Law Enforcement and Investigation Annex and the Catastrophic Incident Annex, as appropriate.

### Policies

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Authorities applicable to this annex include Homeland Security Presidential Directive (HSPD) 5 ("Management of Domestic Incidents"), the National Strategy to Combat Weapons of Mass Destruction, the Homeland Security Act of 2002, the Post-Katrina Emergency Management Reform Act of 2006 (PKEMRA), and the National Strategy for Homeland Security.

The coordinating agencies may take appropriate independent emergency actions within the limits of their own statutory authority to protect the public, mitigate immediate hazards, and gather information concerning the emergency to avoid delay. Key authorities used by the coordinating agencies in carrying out their responsibilities are described in the bullets below. Some of these authorities apply to multiple coordinating agencies.

- **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** – CERCLA gives the Federal Government the authority to respond to releases or threatened releases of hazardous substances (including radionuclides) that may endanger public health or the environment. CERCLA also gives the Federal Government the authority to compel responsible parties to respond to releases of hazardous substances.<sup>1</sup> CERCLA is implemented through the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), a regulation found in 40 Code of Federal Regulation (CFR) Part 300. At the on-scene level, this response authority is implemented by Federal On-Scene Coordinators (OSCs). OSCs may assist State and local governments in responding to releases, but also have the authority to direct the response when needed to ensure protection of public health and the environment. Typical response actions include, but are not limited to: air monitoring, assessment of the extent of the contamination, stabilization of the release, decontamination, and waste treatment, storage, and disposal. Four Federal agencies have OSC authority for hazardous substance emergencies: the Environmental Protection Agency (EPA), DHS/U.S. Coast Guard (USCG), the Department of Defense (DOD), and the Department of Energy (DOE).
- **Atomic Energy Act (AEA) of 1954 (as amended)** – The AEA provides DOD and DOE responsibilities for protection of certain nuclear materials, facilities, information, and nuclear weapons under their control. The AEA (42 U.S.C. §§ 2011–2297 (2003)) and the Energy Reorganization Act of 1974 (5 U.S.C. §§ 5313–5316, 42 U.S.C. §§ 5801–5891 (2002)) provide the statutory authority for both DOE and the Nuclear Regulatory Commission (NRC), and the foundation for NRC regulation of the Nation’s civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment. For incidents involving NRC- or Agreement State-regulated facilities, activities, or material, the NRC has the authority to perform an independent assessment of the safety of the facility or material; evaluate licensee protective action recommendations; perform oversight of the licensee (monitoring, advising, assisting, and/or directing); and report information, as appropriate, to media and public entities. The AEA also charges EPA with additional responsibilities regarding radiation matters that directly or indirectly affect public health.
- **Executive Order 12656 of November 18, 1988** – This Executive order directs the Secretary of Energy to “manage all emergency planning and response activities pertaining to Department of Energy nuclear facilities.”
- **Title 50, U.S. Code, War and National Defense** – Title 50, U.S.C. § 797 makes it a crime to willfully violate a regulation or order promulgated by the Secretary of Defense, or by a military commander designated by the Secretary of Defense, for the protection or security of military equipment or other property or places subject to the jurisdiction, administration, or custody of DOD. As it applies to nuclear/radiological accidents or incidents, this statute provides a military commander the authority to establish a temporary National Defense Area (NDA) around an accident/incident site to protect nuclear weapons and materials in DOD custody. This statute is executed within the Department by DOD Instruction 5200.08, “Security of DOD Installations and Resources.” DODI 5200.08 is the natural, legal extension of statutory authority found in 50 U.S.C. § 797.
- **Public Health Service Act (PHSA)** – The PHSA directs EPA to support State and local authorities in their preparedness and response activities regarding public health emergencies. This support could include providing training, technical advice, and direct assistance. The PHSA created the Environmental Health Service, whose mission included radiological health. This mission was carried out by the Bureau of Radiological Health

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<sup>1</sup> The definition of “release” under CERCLA excludes releases of source, byproduct, or special nuclear material from a nuclear incident at certain facilities licensed by the Nuclear Regulatory Commission.

(BRH). Reorganization Plan Number 3 of 1970, which created EPA, transferred certain radiological health functions of the BRH to the EPA.

The *NRF*, like its predecessor, the *National Response Plan (NRP)*, supersedes the *Federal Radiological Emergency Response Plan (FRERP)* dated May 1, 1996.

DHS/Federal Emergency Management Agency (FEMA) is responsible for maintaining and updating this annex. DHS/FEMA accomplishes this responsibility through the Federal Radiological Preparedness Coordinating Committee (FRPCC).

When DHS initiates the response mechanisms of the *NRF*, including the Emergency Support Functions (ESFs), appropriate *NRF* Support Annexes, and this annex, existing interagency plans that address nuclear/radiological incident management (e.g., the National Oil and Hazardous Substances Pollution Contingency Plan (NCP)) are incorporated as supporting plans and/or operational supplements to the *NRF*.

For incidents not led by DHS, other Federal agency response plans provide the primary Federal response protocols. In these cases, the Federal agency that is coordinating the Federal response may use the procedures outlined in the *NRF* and in appropriate *NRF* annexes to coordinate the delivery of Federal resources to State, tribal, and local governments, and to coordinate assistance among Federal agencies for incidents requiring Federal coordination.

Certain Federal agencies are authorized to respond directly to specific nuclear/radiological incidents. Nothing in this annex alters or impedes the ability of Federal departments and agencies to carry out their specific authorities and perform their responsibilities under law. This annex does not create any new authorities nor change any existing ones.

Federal response actions will be carried out commensurate with the appropriate health and safety laws and guidelines. For example, if the area is contaminated by radioactive material, and appropriate personal protective equipment and capabilities are not available, response actions may be delayed until the material has dissipated to a safe level for emergency response personnel or until appropriate personal protective equipment and capabilities arrive.

The Federal Government has established protective action guidance (PAGs) for radiological incidents. Specific PAGs have also been established for RDD/INDs.

Federal coordination centers and agency teams provide their own logistical support consistent with agreed-upon interagency execution plans. State, tribal, and local governments are encouraged to coordinate their efforts with the Federal effort, but maintain their own logistical support, consistent with applicable authorities and requirements.

The Federal response to any nuclear/radiological incident shall be coordinated with the State, tribal, and local government or the Federal agencies having jurisdiction over the area affected by the incident. Response to nuclear/radiological incidents affecting land owned by the Federal Government is coordinated with the agency responsible for managing that land to ensure that incident management activities are consistent with Federal statutes governing use and occupancy. In the case of tribal lands, tribal governments have a special relationship with the U.S. Government, and Federal, State, and local governments may have limited or no authority on specific tribal reservations. Further guidance is provided in the Tribal Relations Support Annex.

## **Headquarters Planning and Preparedness**

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Under existing regulations, the FRPCC provides a national-level forum for the development and coordination of radiological planning and preparedness policies and procedures. It also provides policy guidance for Federal radiological incident management activities in support of State, tribal, and local government radiological emergency planning and preparedness activities. The FRPCC is an interagency body consisting of the coordinating and cooperating agencies discussed in this annex, chaired by DHS/FEMA.

The FRPCC also coordinates research-study efforts of its member agencies related to State, tribal, and local government radiological emergency preparedness to ensure minimum duplication and maximum benefits to State and local governments. The FRPCC coordinates planning and validating requirements of each agency, reviewing integration requirements and incorporating agency-specific plans, procedures, and equipment into the response system.

As part of their preparedness for nuclear/radiological emergencies, Federal agencies participate in exercises to test and evaluate response plans.

## **Regional Planning and Preparedness**

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Coordinating agencies may have regional offices or field structures that provide a forum for information-sharing, consultation, and coordination of Federal agency regional awareness, prevention, preparedness, response, and recovery activities for radiological incidents. These regional offices may also assist in providing technical assistance to State and local governments and evaluating radiological plans and exercises.

Regional Assistance Committees (RACs) in the DHS/FEMA regions serve as the primary coordinating structures at the Federal regional level. RAC membership mirrors that of the FRPCC, and RACs are chaired by a DHS/FEMA regional representative. Additionally, States send representatives to RAC meetings and participate in regional exercise and training activities. The RACs provide a forum for information-sharing, consultation, and coordination of Federal regional awareness, prevention, preparedness, response, and recovery activities. The RACs also assist in providing technical assistance to State and local governments in evaluating radiological plans and exercises.

## **SITUATION**

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A nuclear/radiological incident may result from a deliberate act, an accident, or general mismanagement, and may center around different materials or industrial practices, including:

- Commercial nuclear facilities.
- Federal nuclear weapons facilities.
- Radioactive material sources, industrial uses, or technologically enhanced, naturally occurring radioactive material.
- Transportation incidents involving nuclear/radioactive material.
- Domestic nuclear weapons accidents.
- Foreign incidents involving nuclear or radioactive materials.

- Terrorism involving facilities or nuclear/radiological materials, including use of RDDs or INDs.

The most common nuclear/radiological incidents have to do with the loss, theft, or mismanagement of relatively small radioactive material sources, or technologically enhanced, naturally occurring radioactive material, where some exposure of individuals or dispersal into the environment occurs. These are handled at the local level with occasional Federal assistance. Generally, greater regulatory control, safeguards, and security accompany larger quantities of radioactive materials, which pose a greater potential threat to human health and the environment.

Virtually any facility or industrial practice (including transportation of materials) may be vulnerable to a deliberate act, such as terrorism, or an accident of some sort that could release radioactive material, including a fire. Major fixed facilities, such as Federal nuclear weapons facilities, commercial nuclear fuel cycle facilities (uranium enrichment, fuel fabrication, power reactors, and disposal), and some non-fuel cycle industries (such as radiation source and radiopharmaceutical manufacturers) pose a risk of accidents and could also be breached in a deliberate act, such as terrorism.

A radiological dispersal device is any device used to spread radioactive material into the environment with malicious intent. The harm caused by an RDD is principally contamination, and denial of use of the contaminated area, perhaps for many years. The costs to the Nation associated with an effective RDD could be very significant. Of greatest concern to U.S. security is the potential for a terrorist attack using a nuclear weapon. A nuclear device could originate directly from a nuclear state, be modified from preexisting weapons components, or be fashioned by terrorists from the basic fissile nuclear materials (uranium-235 or plutonium-239). Even a small nuclear detonation in an urban area could result in over 100,000 fatalities (and many more injured), massive infrastructure damage, and thousands of square kilometers of contaminated land.

## PLANNING ASSUMPTIONS

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Radiological incidents may not be immediately recognized as such until the radioactive material is detected or the health effects of radiation exposure are manifested in the population and identified by the public health community.

An act of nuclear or radiological terrorism, particularly an act directed against a large population center within the United States, can have major consequences that can overwhelm the capabilities of many local, tribal, and/or State governments to respond, and may seriously challenge existing Federal response capabilities.

An act or threat of nuclear or radiological terrorism will trigger concurrent activation of the Terrorism Law Enforcement and Investigation Annex.

A nuclear or radiological incident may require concurrent implementation of the NCP to address radiological, as well as chemical or biological, releases into the environment.

An incident involving the potential release of radioactivity may require implementation of protective measures, such as evacuation and shelter-in-place. State, tribal, and local governments have primary responsibility for implementing protective measures for the public.

An expeditious Federal response is required to mitigate the consequences of a nuclear/radiological incident. The Federal Government response to nuclear or radiological terrorist threats/incidents includes, but is not limited to, the following assumptions:

- The response to a radiological threat or actual incident requires an integrated Federal Government response.
- In the case of a nuclear terrorist attack, the plume may be dispersed over a large area over time, requiring response operations to be conducted over a multijurisdictional and/or multistate region.
- A terrorist attack may involve multiple incidents, and each location may require an incident response and a crime scene investigation simultaneously.

## RESPONSIBILITIES

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### General

Incidents will be managed at the lowest possible level; as incidents change in size, scope, and complexity, the response will adapt to meet requirements, as described in the *NRF*. In accordance with HSPD--5, "the Secretary of Homeland Security is the principal Federal official for domestic incident management. The Secretary is responsible for coordinating Federal operations within the United States to prepare for, respond to, and recover from terrorist attacks, major disasters, and other emergencies. The Secretary shall coordinate the Federal Government's resources utilized in response to or recovery from terrorist attacks, major disasters, or other emergencies . . ." Domestic incident management includes preventing, preparing for, responding to, and recovering from terrorist attacks (except for those law enforcement coordination activities assigned to the Attorney General and generally delegated to the Director of the FBI set forth in HSPD-5, paragraph 8. When exercising this role, the Secretary is supported by other coordinating agencies and cooperating agencies. For incidents wherein the Secretary is not fulfilling domestic incident management responsibilities, the coordinating agency will be the responsible agency for domestic incident management as defined by their authorities. Such incidents include, but are not limited to, loss of radiography sources, discovery of orphan radiological sources, and incidents/emergencies at nuclear facilities below the classification of General Emergency, as defined by the cognizant coordinating agency.

- For this annex, coordinating agencies provide the leadership, expertise, and authorities to implement critical and specific nuclear/radiological aspects of the response, and facilitate nuclear/radiological aspects of the response in accordance with those authorities and capabilities. The coordinating agencies are those Federal agencies that own, have custody of, authorize, regulate, or are otherwise assigned responsibility for the nuclear/radioactive material, facility, or activity involved in the incident. These Federal agencies have nuclear/radiological authorities, technical expertise, and/or assets for responding to the unique characteristics of nuclear/radiological incidents that are not otherwise described in the *NRF*. Coordinating agencies are listed in Table 1. The specific role of each coordinating agency will be determined by the scope of their particular authorities over relevant aspects of the incident, as described in more detail in this annex.
- Cooperating agencies include other Federal agencies that provide additional technical and resource support specific to nuclear/radiological incidents to DHS and the coordinating agencies. The capabilities provided by cooperating agencies are described in Table 5 at the end of this annex.
- Other Federal agencies may also provide support to DHS and the coordinating agency in accordance with the ESF and Support Annexes.

### Coordinating Agencies

For nuclear/radiological incidents, the coordinating agencies include the following Federal agencies:

- Department of Defense (DOD) or Department of Energy (DOE), as appropriate, for incidents involving nuclear/radiological materials or facilities owned or operated by DOD or DOE.
- DOD or DOE, as appropriate, for incidents involving a nuclear weapon, special nuclear material, and/or classified components under DOD or DOE custody.
- National Aeronautics and Space Administration (NASA) for nuclear material under NASA custody.
- The NRC, for incidents involving materials or facilities licensed by the NRC or Agreement States.
- DHS, generally through Customs and Border Protection (CBP), for incidents involving the inadvertent import of radioactive materials as well as any other incidents where radioactive material is detected at borders.
- EPA or DHS/USCG, as appropriate, for environmental response and cleanup for incidents not otherwise covered above.
- DHS for all deliberate attacks involving nuclear/radiological facilities or materials, including RDDs and INDs.

Table 1 provides an overview of the coordinating agencies and the types of nuclear/radiological incidents in which they will be involved. The specific responsibilities of coordinating agencies are further described in Table 2.



**Table 1: Coordinating Agencies for Nuclear/Radiological Incidents**

**NOTE:** When exercising domestic incident management responsibilities, the Secretary of Homeland Security is supported by other coordinating agencies and cooperating agencies. For incidents wherein the Secretary is not fulfilling domestic incident management responsibilities, the coordinating agency will be the responsible agency for domestic incident management as defined by their authorities.

| <b>Nuclear/Radiological Facilities or Materials Involved in Incident</b>   | <b>Coordinating Agency</b>                           |
|--|--|
| <b>Nuclear facilities:</b><br>(1) Owned or operated by DOD or DOE<br>(2) Licensed by NRC or Agreement State<br>(3) Not licensed, owned, or operated by a Federal agency or an Agreement State, or currently or formerly licensed facilities for which the owner/operator is not financially viable or is otherwise unable to respond   | (1) DOD or DOE<br>(2) NRC<br>(3) EPA                 |
| <b>Radioactive materials being transported:</b><br>(1) Materials shipped by or for DOD or DOE <sup>2</sup><br>(2) Shipment of NRC or Agreement State-licensed materials<br>(3) Shipment of materials in certain areas of the coastal zone that are not licensed or owned by a Federal agency or Agreement State (see DHS/USCG list of responsibilities for further explanation of "certain areas")<br>(4) All others | (1) DOD or DOE<br>(2) NRC<br>(3) DHS/USCG<br>(4) EPA |
| <b>Radioactive materials in space vehicles impacting within the United States:</b><br>(1) Managed by NASA or DOD<br>(2) Not managed by DOD or NASA and impacting certain areas of the coastal zone<br>(3) All others   | (1) NASA or DOD<br>(2) DHS/USCG<br>(3) EPA           |
| <b>Foreign, unknown, or unlicensed material:</b> <sup>3</sup><br>(1) Incidents involving inadvertent import of radioactive materials<br>(2) Incidents involving foreign or unknown sources of radioactive material in certain areas of the coastal zone<br>(3) All others  | (1) DHS/CBP<br>(2) DHS/USCG<br>(3) EPA               |
| <b>Nuclear weapons</b>   | DOD or DOE (based on custody at time of incident)    |
| <b>All deliberate attacks involving nuclear/radiological facilities or materials, including RDDs or INDs</b> <sup>4,5</sup>  | DHS  |

<sup>2</sup> The coordinating agency is either DOD or DOE, depending on which of these agencies has custody of the material at the time of the incident.

<sup>3</sup> The DHS Domestic Nuclear Detection Office (DNDO) coordinates the adjudication of unresolved radiation detection alarms (see Table 5 for additional information).

<sup>4</sup> For deliberate attacks, DHS assumes its domestic incident management responsibilities under HSPD-5, paragraph 4, and is also the coordinating agency for implementing the activities in this annex with respect to deliberate attacks.

<sup>5</sup> For deliberate attacks, DOJ assumes those law enforcement coordination activities under HSPD-5, paragraph 8.

Table 2 below presents the specific responsibilities of each coordinating agency, as specified by statutory authorities or other mandating doctrine.

**Table 2: Coordinating Agency-Specific Key Responsibilities for a Nuclear/Radiological Incident**

| Agency                       | Description  |
|------------------------------|--|
| <b>Department of Defense</b> | <p>As indicated in Table 1, DOD is the coordinating agency for Federal actions related to radiological incidents involving: nuclear weapons in DOD custody; DOD facilities, including U.S. nuclear-powered ships; or material otherwise under DOD jurisdiction (e.g., transportation of material shipped by or for DOD).</p> <p>Under CERCLA, Executive Order 12580, and the NCP, DOD is responsible for hazardous substance responses to releases on or from DOD facilities or vessels under the jurisdiction, custody, or control of DOD, including transportation-related incidents. For responses under these circumstances, DOD provides a Federal OSC responsible for taking all CERCLA response actions, which includes on-site and off-site response actions (40 CFR 300.120(c) and 40 CFR 300.175(b)(4)).</p> <p>For incidents where the incident is on, or where the sole source of the nuclear/radiological release is from, any facility or vessel under DOD jurisdiction, custody, or control, DOD is responsible for:</p> <ul style="list-style-type: none"> <li>• Mitigating the consequences of an incident.</li> <li>• Providing notification and appropriate protective action recommendations to State, tribal, and/or local government officials.</li> <li>• Minimizing the radiological hazard to the public.</li> </ul> <p>For radiological incidents involving a nuclear weapon, special nuclear material, and/or classified components that are in DOD custody, DOD may establish a National Defense Area. DOD will coordinate with State and local officials to ensure appropriate public health and safety actions are taken outside the NDA. DOD will lead the overall response to safeguard national security information and/or restricted data, or equipment and material. DOD may also include lands normally not under DOD control as part of the established NDA for the duration of the incident.</p> <p>DOD coordinates the Federal response for incidents involving the release of nuclear/radioactive materials from DOD space vehicles or joint space vehicles with significant DOD involvement. A joint venture is an activity in which the U.S. Government has provided extensive design/financial input; has provided and maintains ownership of instruments, spacecraft, or the launch vehicle; or is intimately involved in mission operations. A joint venture with a foreign nation is not created by simply selling or supplying material to a foreign country for use in its spacecraft.</p> <p>In the event that DHS assumes overall management of the Federal response under HSPD-5 to an accidental or inadvertent incident involving DOD facilities or materials, DOD will support DHS under the <i>NRF</i> and the <i>National Incident Management System (NIMS)</i>, including acting as the coordinating agency for this annex. DOD will manage the response within the boundaries of the DOD facility or NDA.</p> |

| Agency                      | Description   |
|-----------------------------|---|
| <b>Department of Energy</b> | <p>As indicated in Table 1, DOE is the coordinating agency for the Federal response to a nuclear/radiological release at a DOE facility or involving DOE materials (e.g., during the use, storage, and shipment of a variety of radioactive materials; the shipment of spent reactor fuel; the production, assembly, and shipment of nuclear weapons and special nuclear materials; the production and shipment of radioactive sources for space ventures; and the storage and shipment of radioactive and mixed waste).</p> <p>Under CERCLA, Executive Order 12580, and the NCP, DOE is responsible for hazardous substance responses to releases on or from DOE facilities or vessels under the jurisdiction, custody, or control of DOE, including transportation-related incidents. For responses under these circumstances, DOE provides a Federal OSC responsible for taking all CERCLA response actions, which includes on-site and off-site response actions (40 CFR 300.120(c) and 40 CFR 300.175(b)(5)).</p> <p>For incidents at nuclear/radiological facilities that it owns or operates, or incidents involving transportation of DOE nuclear/radiological materials, DOE is responsible for:</p> <ul style="list-style-type: none"> <li>• Mitigating the consequences of an incident.</li> <li>• Providing notification and appropriate protective action recommendations to State, tribal, and/or local government officials.</li> <li>• Minimizing the radiological hazard to the public.</li> </ul> <p>For radiological incidents involving a nuclear weapon, special nuclear material, and/or classified components that are in DOE custody, DOE may establish a National Security Area (NSA). DOE will coordinate with State and local officials to ensure appropriate public health and safety actions are taken outside the NSA. DOE will lead the overall response to safeguard national security information and/or restricted data, or equipment and material. DOE may also include lands normally not under DOE control as part of the established NSA for the duration of the incident.</p> <p>DOE Accident Response Group (ARG) teams will deploy to mitigate the consequences of a nuclear weapon accident in conjunction with specialized assets from DOD, regardless of whether DOE or DOD has custody of the weapon or special nuclear material.</p> <p>In the event that DHS assumes overall management of the Federal response under HSPD-5 to an accidental or inadvertent incident involving DOE facilities or materials, DOE will support DHS under the <i>NRF</i> and <i>NIMS</i>, including acting as the coordinating agency for this annex. DOE will manage the response within the boundaries of the DOE facility or NSA.</p> |

| Agency                                 | Description  |
|--|--|
| <b>Department of Homeland Security</b> | <p>The Secretary of Homeland Security is the principal Federal official for domestic incident management. Domestic incident management includes preventing, preparing for, responding to, and recovering from terrorist attacks (except for those law enforcement coordination activities assigned to the Attorney General and generally delegated to the Director of the FBI), major disasters, or other emergencies.</p> <p>For deliberate attacks, DHS assumes its domestic incident management responsibilities under HSPD-5, paragraph 4, and is also the coordinating agency for implementing the activities in this annex with respect to deliberate attacks.</p> <p>Under the Homeland Security Act, DHS has control of the Nuclear Incident Response Team (NIRT).</p> <p>DHS/CBP coordinates the Federal response for incidents involving the inadvertent import of radioactive material.</p> <p>For incidents at the border, DHS/CBP maintains radiation detection equipment and nonintrusive inspection technology at ports of entry and Border Patrol checkpoints to detect the presence of radiological substances transported by persons, cargo, mail, or conveyance arriving from foreign countries.</p>  |
| <b>DHS/U.S. Coast Guard</b>            | <p>As indicated in Table 1, DHS/USCG is the coordinating agency for the Federal response to incidents involving the release of nuclear/radioactive materials that occur in certain areas of the coastal zone, including:</p> <ul style="list-style-type: none"> <li>• Release from transportation incidents involving the release of nuclear/radioactive materials that are not licensed or owned by a Federal agency or Agreement State.</li> <li>• Incidents involving space vehicles not managed by DOD or NASA that impact certain areas of the coastal zone.</li> <li>• Incidents involving foreign or unknown sources of radioactive material.</li> </ul> <p>“Certain areas” of the coastal zone, for the purposes of this document, means the following areas of the coastal zone (“coastal zone” as defined by the NCP):</p> <ul style="list-style-type: none"> <li>• Vessels, as defined in 33 CFR 160.</li> <li>• Areas seaward of the shoreline to the outer edge of the Economic Exclusion Zone.</li> <li>• Within the boundaries of the following waterfront facilities subject to the jurisdiction of DHS/USCG: those regulated by 33 CFR 126 (Dangerous cargo handling), 127 (LPG/LNG), 128 (Passenger terminals), 140 (Outer continental shelf activities), 154-156 (Waterfront portions of oil and hazmat bulk transfer facilities – delineated as per the NCP), 105 (Maritime security – facilities).</li> </ul> <p>For incidents that have cross-boundary impacts, there will be only one OSC during the course of a response incident and the agencies involved should reference the NCP [40 CFR 300.140(b)] to determine which agency will assume the lead. DHS/USCG will give prime consideration to the area vulnerable to the greatest threat in determining whether to transition to another coordinating agency.</p> <p>DHS/USCG coordinates agency response for these incidents during the prevention and emergency response phase, and transfers responsibility for later response phases to the appropriate agency.</p> |

| Agency   | Description   |
|--|---|
| <b>Environmental Protection Agency</b>               | <p>As indicated in Table 1, EPA is the coordinating agency for the Federal environmental response to incidents that occur at facilities not licensed, owned, or operated by a Federal agency or an Agreement State, or currently or formerly licensed facilities for which the owner/operator is not financially viable or is otherwise unable to respond.</p> <p>EPA is also the coordinating agency for the Federal environmental response to incidents involving the release of nuclear/radioactive materials that occur in the inland zone and in areas of the coastal zone not addressed by DHS/USCG, including:</p> <ul style="list-style-type: none"> <li>• Transportation incidents involving the release of nuclear/radioactive materials that are not licensed or owned by a Federal agency or Agreement State.</li> <li>• Incidents involving space vehicles not managed by DOD or NASA or addressed by DHS/USCG.</li> <li>• Incidents involving foreign, unknown, or unlicensed radiological sources that have actual, potential, or perceived radiological consequences in the United States or its territories, possessions, or territorial waters, and that are not addressed by DHS/CBP or DHS/USCG.</li> </ul> <p>When acting as the coordinating agency, EPA coordinates the Federal environmental response. For a DHS-led Federal response, EPA will generally be providing that response coordination support to DHS through this annex and ESF #10 – Oil and Hazardous Materials Response. For an EPA-led Federal response, EPA will generally be responding under the NCP (which is an operational supplement to the <i>NRF</i>). For some incidents, EPA may also be relying upon its Public Health Service Act authorities.</p> |
| <b>National Aeronautics and Space Administration</b> | <p>As indicated in Table 1, NASA is the coordinating agency for the Federal response to incidents involving the release of nuclear/radioactive materials from NASA space vehicles or joint space vehicles with significant NASA involvement. For radiological incidents involving nuclear material in NASA custody, NASA may establish an NSA, and will coordinate with State and local officials to ensure appropriate public health and safety actions are taken outside the NSA.</p> <p>In the event that DHS assumes overall management of the Federal response under HSPD-5 to an accidental or inadvertent incident involving NASA space vehicles, NASA will support DHS under the <i>NRF</i> and <i>NIMS</i>, including acting as the coordinating agency for this annex. NASA will manage the response within the boundaries of the NSA.</p>  |

| Agency                               | Description   |
|--------------------------------------|---|
| <b>Nuclear Regulatory Commission</b> | <p>As indicated in Table 1, the NRC is the coordinating agency for incidents at or caused by a facility or an activity that is licensed by the NRC or an Agreement State. These facilities include, but are not limited to, commercial nuclear power plants, fuel cycle facilities, DOE-owned gaseous diffusion facilities operating under NRC regulatory oversight, independent spent fuel storage installations, radiopharmaceutical manufacturers, and research reactors.</p> <p>The NRC licensee primarily is responsible for taking action to mitigate the consequences of an incident and providing appropriate protective action recommendations to State, local, and/or tribal government officials.</p> <p>The NRC:</p> <ul style="list-style-type: none"> <li>• Performs an independent assessment of the incident and potential off-site consequences and, as appropriate, provides recommendations concerning any protective measures.</li> <li>• Performs oversight of the licensee, to include monitoring, evaluation of protective action recommendations, advice, assistance, and, as appropriate, direction.</li> <li>• Dispatches, if appropriate, an NRC site team of technical experts to the licensee's facility.</li> </ul> <p>Under certain extraordinary situations involving public health/safety or national defense/security, the NRC may order the transfer of special nuclear materials and/or the operation of certain facilities regulated by the NRC.</p> <p>The NRC closely coordinates its actions with State and local government officials during an incident by providing advice, guidance, and support as needed.</p> <p>In the event that DHS assumes overall management of the Federal response under HSPD-5 to an accidental or inadvertent incident involving an NRC-regulated facility, the NRC will support DHS under the <i>NRF</i> and <i>NIMS</i>, including acting as the coordinating agency for this annex.</p> |

## KEY FEDERAL RADIOLOGICAL RESOURCES/ASSETS

In carrying out their responsibilities, DHS and the coordinating agencies may request specialized assets for nuclear/radiological response. Some of the assets are provided by individual cooperating agencies (through ESF activations or their own authorities), while others may be interagency. Key specialized Federal nuclear/radiological assets and teams are described below, while the procedures for activating these resources are described in the Concept of Operations section of this annex.

- **Federal Radiological Monitoring and Assessment Center (FRMAC)** – The FRMAC is responsible for coordinating all environmental radiological monitoring, sampling, and assessment activities for the response. The FRMAC is a DOE-led interagency asset that is available on request to respond to nuclear/radiological incidents. DOE leads the FRMAC for the initial response, then transitions FRMAC leadership to EPA for site cleanup. The FRMAC is established at or near the incident location in coordination with DHS, the coordinating agency, other Federal agencies, and State, tribal, and local authorities.

A FRMAC normally includes representation from DOE, EPA, the Department of Commerce, the DHS National Communications System, the U.S. Army Corps of Engineers (USACE), and other Federal agencies as needed. Regardless of who is designated as the coordinating agency, when the FRMAC is activated, DOE, through the FRMAC or DOE Consequence Management Home Team (CMHT), coordinates all Federal environmental and agricultural

radiological monitoring and assessment activities for the initial phases of the response. When the FRMAC is transferred to EPA, EPA assumes responsibility for coordination of radiological monitoring and assessment activities. (See the Recovery section of this annex for information on the FRMAC transfer.)

Some participating Federal agencies have radiological planning and emergency responsibilities as part of their statutory authority. The monitoring and assessment activity coordinated by the FRMAC does not alter these responsibilities but complements them by providing for coordination of the Federal radiological monitoring and assessment response activities.

- **DOE Aerial Measuring System (AMS)** – The DOE AMS characterizes ground-deposited radiation from aerial platforms. These platforms include fixed-wing and rotary-wing aircraft with radiological measuring equipment, computer analysis of aerial measurements, and equipment to locate lost radioactive sources, conduct aerial surveys, or map large areas of contamination.
- **DOE Accident Response Group (ARG)** – The DOE ARG response element comprises scientists, technical specialists, crisis managers, and equipment ready to respond to the scene of a U.S. nuclear weapon accident to make the weapon safe for shipment.
- **DOE National Atmospheric Release Advisory Center (NARAC)** – The DOE NARAC provides a computer-based emergency preparedness and response predictive modeling capability. The NARAC is an off-site resource that supports the incident response remotely. NARAC provides real-time computer predictions of the atmospheric transport of material from radioactive releases and of the downwind effects on health and safety. When measurement data become available, they are used to improve model predictions.
- **DOE Radiation Emergency Assistance Center/Training Site (REAC/TS)** – The DOE REAC/TS provides medical advice, specialized training, and on-site assistance for the treatment of all types of radiation exposure accidents. Additionally, through the Cytogenetic Biodosimetry Laboratory (CBL), REAC/TS provides for postexposure evaluation of radiation dose received.
- **DOE Radiological Assistance Program (RAP) Team** – DOE RAP teams are located at various DOE Operations Offices, Site Offices, and National Laboratories. They can be dispatched to a radiological incident from Regional DOE Offices in response to a radiological incident. RAP teams provide first-responder radiological assistance to protect the health and safety of the general public, responders, and the environment and to assist in the detection, identification and analysis, and response to events involving radiological/nuclear material. Deployed RAP teams provide traditional field monitoring and assessment support as well as a search capability.
- **Nuclear Incident Response Team (NIRT)** – The NIRT consists of (1) the DOE resources described above and (2) EPA entities that perform such support functions (including radiological emergency response functions) and related functions. Under the Homeland Security Act of 2002, DHS has the authority to activate NIRT assets. When activated, the NIRT operates under DHS direction, authority, and control. When not operating as part of the NIRT, these assets remain under the control of the parent agency.
- **The Interagency Modeling and Atmospheric Assessment Center (IMAAC)** – The IMAAC is an interagency center responsible for production, coordination, and dissemination of the Federal consequence predictions for an airborne hazardous material release. Through a partnership of the Departments of Homeland Security, Energy, Defense, and Commerce (through the National Oceanic and Atmospheric Administration (NOAA)), EPA, NASA, and

NRC, the IMAAC provides the single Federal atmospheric prediction of hazardous material concentration to all levels of the Incident Command. The IMAAC is an off-site resource that supports the incident response remotely. The NARAC is the interim IMAAC.

- **Advisory Team for Environment, Food, and Health** – The Advisory Team includes representatives from EPA, the Department of Agriculture (USDA), the Food and Drug Administration (FDA), the Centers for Disease Control and Prevention (CDC), and other Federal agencies. The Advisory Team develops coordinated advice and recommendations on environmental, food, health, and animal health matters for the Incident Command/Unified Command (IC/UC), DHS, the Joint Federal Office (JFO) Unified Coordination Group, the coordinating agency, and/or State, tribal, and local governments, as appropriate. The Advisory Team uses information provided by the IMAAC, FRMAC, and other relevant sources. The Advisory Team provides Federal advice in matters related to the following:
  - Environmental assessments (field monitoring) required for developing recommendations with advice from State, tribal, and local governments and/or the FRMAC.
  - Protective Action Guides (PAGs) and their application to the emergency.
  - Protective Action Recommendations (PARs) using data and assessment from the FRMAC.
  - Protective actions to prevent or minimize contamination of milk, food, and water, and to prevent or minimize exposure through ingestion.
  - Recommendations for minimizing losses of agricultural resources from radiation effects.
  - Availability of food, animal feed, and water supply inspection programs to ensure wholesomeness.
  - Relocation, reentry, and other radiation protection measures prior to recovery.
  - Recommendations for recovery, return, and cleanup issues.
  - Health and safety advice or information for the public and for workers.
  - Estimated effects of radioactive releases on human health and the environment.
  - Other matters, as requested by the IC or coordinating agency.
- **EPA Radiological Emergency Response Team (RERT)** – The EPA RERT provides resources, including personnel, specialized equipment, technical expertise, and laboratory services to aid coordinating and cooperating agencies and State, tribal, and local response organizations in protecting the public and the environment from unnecessary exposure to ionizing radiation from radiological incidents. The RERT is a designated Special Team under the NCP. It may become part of the FRMAC if one is established. The RERT provides the following:
  - Monitoring, sampling, laboratory analyses, and data assessments using field emergency response assets.
  - Technical advice and assistance for containment, cleanup, restoration, and recovery following a radiological incident.
  - Assistance in the development and implementation of a long-term monitoring plan and long-term recovery plans.
  - Coordination with fixed laboratory assets for indepth analysis and evaluation of large numbers of site-specific emergency response samples.
- **EPA RadNet** – The EPA RadNet comprises a system of fixed and deployable radiation monitoring stations. The RadNet fixed monitoring stations provide a nationwide environmental monitoring network for assessment of nationwide impacts from a radiological incident. The deployable component can provide site-specific emergency monitoring for further assessment of localized impacts during radiological emergencies.

Although there are other assets that are capable of being used in nuclear/radiological incidents, their primary function is addressed elsewhere in the *NRF* or the annexes.



## **CONCEPT OF OPERATIONS**

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This concept of operations is applicable to potential and actual radiological/nuclear incidents requiring Federal coordination as delineated in this annex.

### **General**

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The owner/operator of a nuclear/radiological facility or materials (e.g., DOE, DOD, or NRC licensee) primarily is responsible for mitigating the consequences of an incident; providing notification and appropriate protective action recommendations to State, local, and/or tribal government officials; and minimizing the radiological hazard to the public. For incidents involving fixed facilities, the owner/operator has primary responsibility for actions within the facility boundary and may also have responsibilities for response and recovery activities outside the facility boundary under applicable legal obligations (e.g., contractual; licensee; CERCLA). For areas surrounding a nuclear/radiological incident location, State, tribal, and local governments have primary responsibility for protecting life, property, and the environment. This does not, however, relieve nuclear/radiological facility or material owners/operators from applicable legal obligations.

State, tribal, and local governments and owners/operators of nuclear/radiological facilities or activities should request assistance through established regulatory communication and response protocols. However, they may request assistance directly from DHS, other Federal agencies, and/or State governments with which they have preexisting arrangements or relationships, providing that the agency with regulatory authority is also notified.

State, tribal, and local governments are encouraged to integrate their radiological monitoring and assessment activities with the FRMAC.

### **Notification**

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The owner/operator of a nuclear/radiological facility or owner/transporter of nuclear/radiological material is generally the first to become aware of an incident and notifies State, tribal, and local authorities and the coordinating agency.

Federal, State, tribal, and local governments that become aware of a radiological incident should notify the coordinating agency and the DHS National Operations Center (NOC) at 202-282-8101 and comply with other appropriate statutory requirements for notification. For example, releases of reportable quantities of any listed hazardous materials as described within 40 CFR Part 302 must be reported to the National Response Center at 1-800-424-8802. Further, State, tribal, and local law enforcement agencies should continue to contact the local FBI/Joint Terrorism Task Force regarding ongoing terrorist activities, events, instances, or investigations. The coordinating agency provides notification of a radiological incident to the NOC and other Federal agencies, as appropriate. If a State requests radiological assistance directly from a Federal agency for a nuclear/radiological incident that falls under the jurisdiction of another coordinating agency, that Federal agency shall notify the coordinating agency of the request.

### **Activation**

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Once notified, the coordinating agency initiates response in accordance with its authorities. DHS reviews the situation and determines whether to assume Federal leadership for the overall response in accordance with the *NRF*.

Coordinating agencies and cooperating agencies provide representatives to the *NRF* elements (e.g., JFO, NOC, etc.) when appropriate. For Stafford Act incidents, DHS/FEMA may issue mission assignments to Federal agencies to support such activities.

If DHS does not assume Federal leadership for the response, a coordinating agency may request that DHS activate *NRF* elements to support the response. The coordinating agency may request assistance from other Federal agencies.

The coordinating agency also will be represented in appropriate positions within the Command Staff in the IC/UC structure (as defined by *NIMS*), and coordinates Federal radiological response activities at appropriate field facilities.<sup>6</sup> Coordinating agencies and cooperating agencies provide personnel to other sections of the IC/UC as needed.

For any nuclear/radiological incident, the coordinating and cooperating agencies may establish a field facility; assist State, tribal, and local response organizations; monitor and support owner/operator activities (when there is an owner or operator); provide technical support to the owner/operator, if requested; and serve as a Federal source of information about incident conditions.

Table 3 below summarizes the activation process for some of the key Federal radiological/nuclear assets.

**Table 3: Activation of Key Assets for Nuclear/Radiological Incidents**

| <b>Asset</b>   | <b>Activation Process</b>  |
|--|--|
| <b>IMAAC</b>   | DHS, coordinating agencies, and the authorized IMAAC requestors (as designated in the IMAAC Standard Operating Procedures) may request IMAAC activation directly from the IMAAC or from the NOC Watch at 202-282-8101.<br><br>The NOC Watch ensures that Federal agencies are notified when the IMAAC has been activated for the purpose of generating the single and interagency coordinated Federal prediction of atmospheric dispersions and their consequences.  |
| <b>Advisory Team</b>   | DHS, coordinating agencies, and State, tribal, and local governments may request support from the Advisory Team by contacting the CDC Director's Emergency Operations Center (EOC) at 770-488-7100.<br><br>DOE will request activation of the Advisory Team whenever the FRMAC is activated.   |
| <b>FRMAC and DOE Assets</b><br>(AMS, ARG, RAP, REAC/TS, NARAC, CMHT) | Coordinating agencies and State, tribal, and local governments may request a FRMAC or other support from DOE or DHS. The FRMAC and all other DOE National Nuclear Security Administration (NNSA) assets may be requested through the DOE 24-hour Watch Office at 202-586-8100.<br><br>Requests for RAP teams may also be directed to the appropriate Regional DOE Office.<br><br>DOE may respond to a request for assistance by initially dispatching a RAP team. If the situation requires more assistance than a RAP team can provide, DOE alerts or activates additional resources. |
| <b>NIRT</b>  | The NIRT is activated when DHS, in consultation with EPA and DOE, determines that the severity of an incident warrants the NIRT assets. The NOC will notify EPA and DOE when the NIRT is activated.  |
| <b>RERT</b>  | DHS and coordinating agencies may request support from the EPA RERT by contacting the National Response Center at 1-800-424-8802.  |

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<sup>6</sup> Appropriate field facilities may include an Incident/Area Command Post, Emergency Operations Center, Emergency Operations Facility, Emergency Control Center, etc.

### ICS Implementation

The initial response to domestic incidents is typically handled at the local level. Local responders are responsible for implementing an Incident Command System (ICS) to manage the incident response. Federal agencies will integrate into the Incident Command (IC) in support of the local jurisdictions. Most incidents under this annex will be multiagency/multijurisdictional responses and the ICS Command function will be managed by a Unified Command (UC).

The coordinating agency is expected to participate in the IC/UC at the highest level (e.g., at the Area Command level if established). Other agencies may also participate in the IC/UC when consistent with ICS principles.

The key Federal radiological assets will integrate into the IC/UC as appropriate. Specifically, the RAP team incorporates into the Operations Section of the IC/UC.

Because the primary function of the FRMAC is to provide information for planning incident response operations, planning for FRMAC activities is expected to incorporate into IC/UC in the Planning Section, consistent with ICS principles. FRMAC personnel will work within the ICS to develop the Monitoring and Sampling Plan and ensure that it is reflected in and consistent with the Incident Action Plan (IAP). The AMS normally reports to the FRMAC and operates in accordance with the IAP. The FRMAC structure will remain flexible and will be tailored to specific incident requirements.

During the initial phases of the incident, when DOE is responsible for the FRMAC, it will be established organizationally as a discrete unit within the IC/UC structure to coordinate all radiological monitoring and assessment activities in support of State, tribal, and local authorities, the coordinating agency, and DHS.

The Advisory Team is expected to integrate into the Planning Section to provide technical expertise to the IC/UC and coordinating agency. The Advisory Team may also provide liaisons to and/or coordinate with the JFO and State, tribal, and local government EOCs, as needed.

### RESPONSE ACTIVITIES

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Table 4 presents the specific capabilities and responsibilities carried out by coordinating agencies and cooperating agencies to support State, tribal, and local activities during the response.

Table 4: Nuclear/Radiological Incident Response Activities

| Response Activity                      | Federal Agency Capabilities/Responsibilities  |
|--|---|
| <b>Incident Security</b>               | <ul style="list-style-type: none"> <li>• DOD, DOE, or NASA may establish NDAs or NSAs for special nuclear materials under their control, to safeguard classified information and/or restricted data, or equipment and material, and place non-Federal lands under Federal control for the duration of the incident. DOD, DOE, or NASA, as appropriate, coordinates security in and around these locations, as necessary.</li> <li>• For incidents at other Federal or private facilities, the owner/operator provides security within the facility boundaries. If a release of radioactive material occurs beyond the facility boundaries, State, tribal, or local governments provide security for the release area.</li> <li>• State, tribal, and local governments provide security for radiological incidents occurring on public lands (e.g., a transportation incident) other than within NDAs or NSAs.</li> <li>• ESF #13 – Public Safety and Security may be activated to provide additional security resources and capabilities (e.g., for an RDD/IND).</li> </ul> |
| <b>Unknown Material Identification</b> | <p>The DHS Domestic Nuclear Detection Office (DNDO) Joint Analysis Center (JAC) may respond to a State, tribal, local, or coordinating agency request for assistance in identifying an unknown nuclear/radiological material. The DNDO coordinates the technical adjudication of a radiation detection alarm and recommends technical Federal asset responses as required.</p>  |
| <b>Atmospheric Plume Modeling</b>      | <ul style="list-style-type: none"> <li>• When DHS coordinates the overall Federal response, the IMAAC generates the single and interagency coordinated Federal prediction of atmospheric dispersions and their consequences. The IMAAC predictions are used for risk management decisions, public information, and operational response. The IMAAC may also generate predictions for other incidents requiring Federal coordination.</li> <li>• Plume models are initially generated using default assumptions and then are refined over time as actual data from on-scene responders become available.</li> <li>• The coordinating agency is responsible for ensuring the outputs from the IMAAC are shared with all appropriate response organizations.</li> </ul>  |

| Response Activity   | Federal Agency Capabilities/Responsibilities   |
|---|--|
| <b>Environmental Monitoring and Sampling for Characterization and Reentry</b> | <ul style="list-style-type: none"> <li>• Federal responders may provide radiological monitoring and assessment data directly to State, tribal, and local governments as requested in support of protective action decisionmaking.</li> <li>• If the FRMAC is not stood up, the coordinating agency assumes responsibility for coordinating the Federal monitoring and assessment activities with State, tribal, and local governments. Support may be provided to the coordinating agency by ESF #10 when appropriate.</li> <li>• When a FRMAC is established, the FRMAC assumes responsibility for coordinating Federal monitoring and assessment activities. DOE will provide a mechanism for transmitting data to and from the FRMAC within NIMS/ICS protocols. Until the FRMAC is operational, Federal first responders continue to provide data directly to State, tribal, and local governments, and coordinate radiological monitoring and assessment data with the DOE Consequence Management Home Team (CMHT) or the Consequence Management Response Team (CMRT).</li> <li>• When requested, DOE and other Federal agencies may provide radiation safety support for reentry to critical infrastructure and for other critical activities.</li> <li>• The coordinating agency is responsible for ensuring that all outputs from the FRMAC are shared with all appropriate response organizations.</li> <li>• DOE initially has the FRMAC lead, but the FRMAC lead will transition to EPA for recovery/remediation.</li> <li>• For incidents involving terrorism, any participating Federal agency may raise issues regarding the sharing of sensitive data for responder and public safety that cannot be resolved at the Incident Command level to the Unified Coordination Group for resolution.</li> </ul> |
| <b>Emergency Worker Monitoring</b>  | <ul style="list-style-type: none"> <li>• Each response agency has the responsibility to monitor the safety of its own workers.</li> <li>• The Occupational Safety and Health Administration provides support and regulatory oversight, as necessary, through the Worker Safety and Health Support Annex.</li> </ul>  |
| <b>Protective Action Recommendations</b>                                      | <ul style="list-style-type: none"> <li>• Federal PARs may include advice and assistance on measures to avoid or reduce exposure of the public to radiation from a release of radioactive material. This includes advice on emergency actions such as sheltering, evacuation, prophylactic use of potassium iodide, and administration of other pharmaceutical countermeasures. It also includes advice on long-term measures, such as food restrictions, temporary relocation, or permanent resettlement, to avoid or minimize exposure to residual radiation or exposure through the ingestion pathway.</li> <li>• Data in support of health and safety will be shared among response agencies prior to development of formal PARs. Incident-specific Federal PARs are developed by the Advisory Team and are largely based on EPA's PAGs for radiological incidents.</li> <li>• Federal PARs are coordinated through the IC/UC (which includes the coordinating agency) and multiagency coordination groups. The coordinating agency is responsible for ensuring that all outputs from the Advisory Team are shared with appropriate response organizations.</li> <li>• State, tribal, and local governments are responsible for implementing protective actions as they deem appropriate.</li> </ul>  |

| Response Activity   | Federal Agency Capabilities/Responsibilities   |
|---|--|
| <b>Population Monitoring</b>  | <ul style="list-style-type: none"> <li>The Department of Health and Human Services (HHS), through ESF #8 – Public Health and Medical Services and in consultation with the coordinating agency, coordinates Federal support for external monitoring of people.</li> <li>HHS assists local and State health departments in establishing a registry of potentially exposed individuals, performing dose reconstruction, and conducting long-term monitoring of this population for potential long-term health effects.</li> </ul>  |
| <b>Laboratory Analysis</b>  | Federal agencies provide laboratory capabilities for certain types of analyses. Examples of capabilities include FDA (HHS) for food and agriculture analysis; CDC (HHS) for bioassays; and EPA and DOE for environmental samples.  |
| <b>Environmental Monitoring and Sampling for Cleanup Verification</b> | <ul style="list-style-type: none"> <li>Responsibility for this activity is defined by applicable laws and regulations, and is typically the responsibility of nuclear/radiological facility and material owners and operators.</li> <li>EPA may provide support under ESF #10 when appropriate.</li> </ul>   |
| <b>Release of Public Information</b>                                  | For incidents in which DHS leads the overall Federal response (under HSPD-5), DHS/ESF #15 – External Affairs coordinates the release of Federal public information regarding the incident. Otherwise, the coordinating agency is responsible for the release of Federal public information.  |
| <b>Population Decontamination</b>                                     | <ul style="list-style-type: none"> <li>Decontamination of possibly affected victims is accomplished locally and is the responsibility of State, tribal, and local governments.</li> <li>Federal resources are provided at the request of, and in support of, the affected State(s). HHS, through ESF #8 and in consultation with the coordinating agency, coordinates Federal support for population decontamination.</li> <li>HHS assists and supports State, tribal, and local governments in performing monitoring for internal contamination and administering available pharmaceuticals for internal decontamination, as deemed necessary by State health officials.</li> </ul> |
| <b>Emergency Worker Decontamination</b>                               | <ul style="list-style-type: none"> <li>The FRMAC provides support for decontamination of Federal, State, and local emergency responders integrating into the FRMAC.</li> <li>Agencies are responsible for decontamination of their own workers not integrated in the FRMAC.</li> </ul>   |
| <b>Response Equipment Decontamination</b>                             | <ul style="list-style-type: none"> <li>The FRMAC provides support for decontamination of Federal, State, and local equipment integrating into the FRMAC.</li> <li>Agencies are responsible for decontamination of their own equipment that is not integrated in the FRMAC.</li> </ul>  |
| <b>Fatality Management</b>  | Fatality management is primarily a State responsibility. HHS coordinates the Federal support to the States.  |
| <b>Contaminated Animal Management</b>                                 | <ul style="list-style-type: none"> <li>USDA provides support for assessment, control, and decontamination of contaminated animals, including companion animals, livestock, poultry, and wildlife.</li> <li>USDA provides support for stabilization and disposition of contaminated animal carcasses, with additional support from ESF #3 – Public Works and Engineering and ESF #10.</li> </ul>  |

| <b>Response Activity</b>                            | <b>Federal Agency Capabilities/Responsibilities</b>  |
|---|--|
| <b>Contaminated Agricultural Product Management</b> | USDA provides support under ESF #11 – Agriculture and Natural Resources, with additional support from ESF #3 and ESF #10 for the assessment, stabilization, and disposal of contaminated animal products and plant materials including food, feed, fiber, and crops.   |
| <b>Radioactive Waste Storage and Disposal</b>       | <ul style="list-style-type: none"><li>• Responsibility for this activity is defined by applicable laws and regulations, and is typically the responsibility of nuclear/radiological facility and material owners and operators.</li><li>• EPA may provide support under ESF #10 when appropriate.</li><li>• DOD/USACE and other Federal agencies may provide additional support as needed for RDD/IND incidents.</li></ul> |
| <b>Contaminated Debris Removal</b>                  | <ul style="list-style-type: none"><li>• Responsibility for this activity is defined by applicable laws and regulations, and is typically the responsibility of nuclear/radiological facility and material owners and operators.</li><li>• Support is provided as a joint effort between ESF #3 (DOD/USACE) and ESF #10 (EPA).</li></ul>  |
| <b>Environmental Remediation</b>                    | <ul style="list-style-type: none"><li>• Responsibility for this activity is defined by applicable laws and regulations, and is typically the responsibility of nuclear/radiological facility and material owners and operators.</li><li>• EPA may provide support under ESF #10 when appropriate.</li><li>• DOD/USACE and other Federal agencies may provide additional support as needed for RDD/IND incidents.</li></ul> |

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## **RECOVERY**

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When DHS is coordinating the Federal response, it coordinates, in concert with cognizant State, tribal, and local governments, overall Federal recovery pursuant to the *NRF*. The coordinating agency maintains responsibility for managing the Federal technical radiological cleanup activities in accordance with its statutory authorities, responsibilities and *NRF* mechanisms.

For all other radiological incidents, the coordinating agency coordinates environmental remediation/cleanup in concert with cognizant State, tribal, and local governments, and owners/operators, as applicable. While retaining technical lead for these activities, the coordinating agency may request support from a cooperating agency that has cleanup/recovery experience and capabilities (e.g., EPA, USACE).

State, tribal, and local governments primarily are responsible for planning the recovery of the affected area. (The term “recovery,” as used here, encompasses any action dedicated to the continued protection of the public and resumption of normal activities in the affected area.) Recovery planning generally does not take place until the initiating conditions of the incident have stabilized and immediate actions to protect public health, safety, and property are accomplished. Upon request, the Federal Government assists State, tribal, and local governments with developing and executing recovery plans.

Private owners/operators have primary responsibility for recovery planning activities and eventual cleanup within their facility boundaries and may have responsibilities for recovery activities outside their facility under applicable legal obligations (e.g., contractual, licensee, CERCLA).

The DOE FRMAC Director works closely with the FRMAC’s Senior EPA representative to facilitate a smooth transition of the Federal radiological monitoring and assessment coordination

responsibility to EPA at a mutually agreeable time, and after consultation with DHS, the Unified Coordination Group, and State, tribal, and local governments. The following conditions are intended to be met prior to transfer:

- The immediate emergency condition is stabilized;
- Off-site releases of radioactive material have ceased, and there is little or no potential for further unintentional off-site releases;
- The off-site radiological conditions are evaluated and the immediate consequences are assessed;
- An initial long-range monitoring plan has been developed in conjunction with the affected State, tribal, and local governments and appropriate Federal agencies; and
- EPA has received adequate assurances from the other Federal agencies that they are committing the required resources, personnel, and funds for the duration of the Federal response.

Radiological monitoring and assessment activities are normally terminated when the coordinating agency, in consultation with other participating agencies and State, tribal, and local governments, determines that:

- There is no longer a threat to public health and safety or the environment;
- State, tribal, and local resources are adequate for the situation; and
- There is mutual agreement among the agencies involved to terminate monitoring and assessment.

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**FEDERAL CAPABILITIES AND ASSETS**

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In addition to leading specific portions of a response, coordinating agencies, along with other Federal agencies, may bring specific expertise pertinent to nuclear/radiological incidents. Table 5 below identifies the specific support that these agencies may provide.

**Table 5: Additional Federal Agency Capabilities for a Nuclear/Radiological Incident**

| Agency                    | Capabilities   |
|---------------------------|--|
| Department of Agriculture | <p>(See the ESF #11 Annex and the Food and Agriculture Incident Annex for additional USDA responsibilities.)</p> <ul style="list-style-type: none"><li>• Assists in the planning and collection of agricultural samples within the Ingestion Exposure Pathway Emergency Planning Zone.</li><li>• Assesses damage to crops, soil, livestock, poultry, and processing facilities and incorporates the findings in a damage assessment report.</li><li>• Assists in the evaluation and assessment of data to determine the impact of the incident on agriculture.</li><li>• Provides support and advice on screening and decontamination of pets and farm animals that may have been exposed to radiation or contaminated with radioactive materials.</li></ul> |



| Agency  | Capabilities   |
|---|--|
| <b>Department of Agriculture</b><br>(Continued) | <ul style="list-style-type: none"> <li>Assists in the planning and operational aspects of animal carcasses disposal.</li> <li>Inspects and assists in the collection of samples of crops, meat and meat products, poultry and poultry products, and egg products to ensure that they are safe for human consumption.</li> <li>Assists, in conjunction with HHS, in monitoring the production, processing, storage, and distribution of food through the wholesale level to eliminate contaminated product and to ensure that the levels of contamination in the product are safe and below the derived intervention levels (DILs).</li> </ul>  |
| <b>Department of Commerce</b>                   | <ul style="list-style-type: none"> <li>Provides near or on-scene weather observations upon request.</li> <li>Prepares forecasts tailored to support emergency incident management activities.</li> <li>Participates in the IMAAC by providing atmospheric transport and dispersion (plume) modeling assessment and forecasts, surface weather observations, and weather forecasts to the IMAAC, when activated.</li> <li>When the IMAAC is not activated, provides atmospheric transport and dispersion (plume) modeling assessment and forecasts to the coordinating agency, in accordance with established procedures.</li> <li>Maintains and further develops the HYSPLIT transport and dispersion model.</li> <li>Archives, as a special collection, the meteorological data from national observing and numerical weather analysis and prediction systems applicable to the monitoring and assessment of the response.</li> <li>Provides assistance and reference material for calibrating radiological instruments.</li> <li>Provides support in the testing and evaluation of radiation shielding materials.</li> <li>In the event of materials potentially crossing international boundaries, provides atmospheric transport and dispersion products to international hydrometeorological services and associated agencies through the mechanisms afforded by the World Meteorological Organization.</li> <li>Provides radioanalytical measurement support and instrumentation.</li> <li>Provides assistance for collection and monitoring for marine and estuary contamination assessment.</li> <li>Advises and provides assistance on building operations (e.g., HVAC) for contamination control and decontamination processes.</li> <li>Provides laboratory support for analysis of materials and environmental samples.</li> </ul> |

| Agency                       | Capabilities  |
|------------------------------|---|
| <b>Department of Defense</b> | <ul style="list-style-type: none"> <li>Provides Defense Support of Civil Authorities (DSCA) in response to requests for assistance during domestic incidents. With the exception of support provided under Immediate Response Authority, the obligation of DOD resources to support requests for assistance is subject to the approval of the Secretary of Defense. Under certain critical circumstances, the President or Secretary of Defense may direct DSCA activities without a specific request. Details regarding DSCA and immediate response are provided in the <i>NRF</i> Core Document.</li> <li>Provides Defense Support of Civil Authorities (DSCA) in response to requests for assistance during domestic incidents. With the exception of support provided under Immediate Response Authority, the obligation of DOD resources to support requests for assistance is subject to the approval of the Secretary of Defense. Under certain critical circumstances, the President or Secretary of Defense may direct DSCA activities without a specific request. Details regarding DSCA and immediate response are provided in the <i>NRF</i> Core Document.</li> <li>May provide DOD and DOD-funded assets for the response to radiological incidents, to include: <ul style="list-style-type: none"> <li>Weapons of Mass Destruction Civil Support Teams (WMD CSTs) – National Guard teams that assess a suspected WMD attack, advise civilian responders on appropriate actions through on-site testing and expert reachback, and facilitate the arrival of additional State and Federal military forces. Each team consists of 22 personnel and is equipped with personal protective equipment for operating in unknown hazardous environments, NBC (nuclear, biological, and chemical) detectors, sampling/analytical systems, a decontamination system, and communications equipment used to reach back to experts via satellite. These are State assets that can be federalized. There is nominally one CST per State, as well as one each in Guam, Puerto Rico, the Virgin Islands, and the District of Columbia.</li> <li>CBRN (chemical, biological, radiological, and nuclear) Enhanced Response Force Packages (CERFPs) – National Guard elements that provide an immediate response capability to a Governor. The CERFPs are capable of searching an incident site (including damaged buildings), rescuing any casualties, decontaminating them, and performing medical triage and initial treatment to stabilize them for transport to a medical facility. This includes extracting anyone trapped in the rubble. The CERFP is composed of four elements staffed by personnel from already established National Guard units. The elements are search and extraction, decontamination, medical, and security. The CERFP command and control team directs the overall activities of the CERFP and coordinates with the Joint Task Force – State and the Incident Commander. There is at least one CERFP in each FEMA region.</li> <li>CBRNE (chemical, biological, radiological, nuclear, and high-yield explosive) Consequence Management Response Forces (CCMRF) – Multiservice (active and reserve component military) follow-on assets designed to augment the CSTs and CERFPs, if necessary. Specific CCMRF capabilities include, but are not limited to, robust command and control, technical search and rescue, explosive ordnance disposal, aviation evacuation, specialized medical response teams, and enhanced chemical, biological, and nuclear detection/decontamination.</li> </ul> </li> </ul> |

| Agency  | Capabilities  |
|---|---|
| <b>Department of Defense</b> (Continued)                  | <ul style="list-style-type: none"> <li>• DOD advisory teams – Various teams that may deploy, either independently or as part of the CCMRFs, that provide guidance and advice to the Incident Commander on potential health hazards, radiation injury treatment, survey data evaluations, population monitoring, etc. These include the Consequence Management Advisory Team (CMAT), U.S. Air Force Radiation Assessment Team (AFRAT), the U.S. Army's Radiological Advisory Medical Team (RAMT), and the Armed Forces Radiobiology Research Institute's Medical Radiobiological Advisory Team (MRAT).</li> <li>• Provides immediate assistance under Immediate Response Authority for any civil emergency that may require immediate action to save lives, prevent human suffering, or mitigate great property damage. When such conditions exist and time does not permit prior approval from higher headquarters, local military commanders and responsible officials from DOD components and agencies are authorized by DOD directive, subject to any supplemental direction that may be provided by their DOD component, to take necessary action to respond to requests of civil authorities. All such necessary action is referred to as "Immediate Response."</li> </ul> |
| <b>Department of Defense/U.S. Army Corps of Engineers</b> | <p>(See the ESF #3 – Public Works and Engineering Annex for additional information.)</p> <ul style="list-style-type: none"> <li>• For RDD/IND incidents, provides response and cleanup support as a cooperating agency.</li> <li>• Integrates and coordinates with other agencies, as requested, to perform any or all of the following:               <ul style="list-style-type: none"> <li>• Radiological survey functions.</li> <li>• Gross decontamination.</li> <li>• Site characterization.</li> <li>• Contaminated water and debris management.</li> <li>• Site remediation.</li> </ul> </li> </ul>   |
| <b>Department of Energy</b>                               | <ul style="list-style-type: none"> <li>• Develops and maintains FRMAC policies and procedures, determines FRMAC composition, and maintains FRMAC operational readiness.</li> <li>• Coordinates Federal radiological environmental monitoring and assessment activities as lead technical organization in the FRMAC (emergency phase), regardless of who is designated the coordinating agency.</li> <li>• Maintains technical liaison with State and local agencies with monitoring and assessment responsibilities.</li> <li>• Maintains a common set of all radiological monitoring data in an accountable, secure, and retrievable form and ensures the technical integrity of FRMAC data.</li> <li>• Provides monitoring data and interpretations, including exposure rate contours, dose projections, and any other requested radiological assessments, to the coordinating agency and to the States.</li> <li>• Provides, in cooperation with other Federal agencies, the personnel and equipment to perform radiological monitoring and assessment activities, and provides on-scene analytical capability supporting assessments.</li> <li>• Requests supplemental assistance and technical support from other Federal agencies as needed.</li> </ul>                   |

| Agency                                  | Capabilities   |
|---|--|
| <b>Department of Energy</b> (Continued) | <ul style="list-style-type: none"> <li>• Arranges consultation and support services through appropriate Federal agencies to all other entities (e.g., private contractors) with radiological monitoring functions and capabilities and technical and medical expertise for handling radiological contamination and population monitoring.</li> <li>• Works closely with the Senior EPA representative to facilitate a smooth transition of the Federal radiological monitoring and assessment coordination responsibility to EPA at a mutually agreeable time and after consultation with the States and coordinating agency.</li> <li>• Provides, in cooperation with other Federal and State agencies, personnel and equipment, including portal monitors, to support initial external screening and provides advice and assistance to State and local personnel conducting screening/decontamination of persons leaving a contaminated zone.</li> <li>• Provides plume trajectories and deposition projections from NARAC for emergency response.</li> <li>• Provides source term estimates to the IMAAC and/or coordinating agency when limited or no information is available, based on DOE's unique experience in developing source terms for INDs and RDDs.</li> <li>• Upgrades, maintains, coordinates, and publishes documentation needed for the administration, implementation, operation, and standardization of the FRMAC.</li> <li>• Maintains and improves the ability to provide wide-area radiation monitoring now resident in the AMS.</li> <li>• Maintains and improves the ability to provide medical assistance, advisory teams, and training related to nuclear/radiological accidents and incidents now resident in the REAC/TS.</li> <li>• Maintains and improves the ability to provide predictive modeling of airborne hazards and to correct modeled results through integration of actual radiation measurements obtained from both airborne and ground sources, resident in the FRMAC. The NARAC maintains and improves their ability to model the direct results (blast, thermal, radiation, EMP) of a nuclear detonation.</li> <li>• Maintains and improves the first-response ability to assess an emergency situation and to advise decisionmakers on what further steps can be taken to evaluate and minimize the hazards of a radiological emergency resident in the RAP.</li> <li>• Maintains and improves the ability to respond to an emergency involving U.S. nuclear weapons resident in the ARG.</li> <li>• Maintains and improves the ability of CMHTs and CMRTs to provide initial planning, coordination, and data collection and assessment prior to or in lieu of establishment of a FRMAC.</li> <li>• Maintains and improves the ability of the DOE Nuclear/Radiological Advisory Team to provide advice and limited technical assistance, including search, diagnostics, and effects prediction, as part of a Domestic Emergency Support Team.</li> <li>• Maintains and improves the ability of Radiological Triage to determine, through remote analysis of nuclear spectra collected on-scene, if a radioactive object contains special nuclear materials.</li> <li>• Assigns a Senior Energy Official (SEO) for any response involving the deployment of the DOE/NNSA emergency response assets. The SEO will integrate into an appropriate position in the IC/UC and is responsible for the coordination and employment of these assets at the scene of a radiological event. The deployed assets will work in support of and under the direction of the SEO.</li> </ul> |

| Agency  | Capabilities   |
|---|--|
| <b>Department of Health and Human Services</b>                                  | <p>(See the ESF #8 Annex for additional information.)</p> <ul style="list-style-type: none"> <li>• Conducts epidemiological surveillance and provides guidance on methods to detect symptoms consistent with exposure to radioactive materials.</li> <li>• Collects samples of agricultural products to monitor and assess the extent of contamination as a basis for recommending or implementing protective actions (through the FRMAC).</li> <li>• Provides advice on proper medical treatment of the general population and response workers exposed to or contaminated by radioactive materials.</li> <li>• Provides available medical countermeasures through deployment of the Strategic National Stockpile.</li> <li>• Provides assessment and treatment teams for those exposed to or contaminated by radiation.</li> <li>• Provides advice and guidance in assessing the impact of the effects of radiological incidents on the health of persons in the affected area.</li> <li>• Manages long-term public monitoring and supports follow-on personal data collection, collecting and processing of blood samples and bodily fluids/matter samples, and advice concerning medical assessment and triage of victims. Tracks patient treatment and long-term health effects.</li> </ul> |
| <b>Department of Homeland Security/Customs and Border Protection</b>            | <ul style="list-style-type: none"> <li>• For incidents at the border, maintains radiation detection equipment and nonintrusive inspection technology at ports of entry and Border Patrol checkpoints to detect the presence of radiological substances transported by persons, cargo, mail, or conveyance arriving from foreign countries.</li> <li>• Through its National Targeting Center, provides extensive analytical and targeting capabilities to identify and interdict suspect nuclear/radiological materials.</li> <li>• Through the CBP Weapons of Mass Destruction Teleforensic Center, provides 24/7 support to DHS/CBP and other Federal law enforcement personnel in the identification of interdicted suspect hazardous material as well as providing a link for coordination with and triage to other Federal agencies as appropriate for the type of incident.</li> <li>• Through the CBP Laboratories and Scientific Services (LSS), staffs WMD Response Teams in strategic locations nationwide to screen and identify potential radiological threat materials as well as reduce the hazards that may exist by establishing temporary containment parameters.</li> </ul>   |
| <b>Department of Homeland Security/Domestic Nuclear Detection Office (DNDO)</b> | <ul style="list-style-type: none"> <li>• Supports the deployment of an enhanced global nuclear detection system to detect and report on attempts to import, possess, store, transport, develop, or use an unauthorized nuclear explosive device, fissile material, or radiological material in the United States.</li> <li>• Through the DNDO Joint Analysis Center, provides a coordinated technical adjudication of a nuclear/radiation detection alarm, and recommends technical Federal asset responses as required.</li> </ul>  |
| <b>Department of Homeland Security/Federal Emergency Management Agency</b>      | Serves as the annex coordinator for this annex.  |

| Agency   | Capabilities   |
|--|--|
| <b>Department of Homeland Security/U.S. Coast Guard</b>                  | <ul style="list-style-type: none"> <li>Because of its unique maritime jurisdiction and capabilities, is prepared to provide appropriate security, command and control, transportation, and support to other agencies that need to operate in the maritime domain.</li> <li>Maintains the National Response Center, which is staffed by Coast Guard personnel who maintain a 24-hour-a-day, 365-day-a-year telephone watch.</li> </ul>  |
| <b>Department of the Interior (DOI)</b>                                  | <ul style="list-style-type: none"> <li>Provides resources, including personnel, equipment, and laboratory support, to advise and assist in evaluating processes affecting radioisotopes in soils.</li> <li>Provides resources, including personnel and equipment, to advise and assist in the development of geographic information systems databases to be used in the analysis and assessment of contaminated areas.</li> <li>Provides liaison between federally recognized tribal governments and Federal, State, and local agencies for coordination of response activities. Additionally, DOI advises and assists DHS on economic, social, and political matters in the U.S. insular areas should a radiological incident occur in these areas.</li> </ul>  |
| <b>Department of Justice/Federal Bureau of Investigation</b>             | <ul style="list-style-type: none"> <li>Has lead responsibility for criminal investigations of terrorist acts or terrorist threats by individuals or groups inside the United States, or directed at U.S. citizens or institutions abroad, where such acts are within the Federal criminal jurisdiction of the United States.</li> <li>Manages, leads, and coordinates all law enforcement and investigative activities with regard to the response to terrorist acts or threats, including tactical operations, crime scene investigation, crisis negotiation, and intelligence gathering and dissemination.</li> <li>Coordinates the activities of the law enforcement community to detect, prevent, preempt, and disrupt terrorist attacks against the United States.</li> </ul> <p>Further details regarding the FBI response are outlined in the Terrorism Incident Law Enforcement and Investigation Annex.</p> |
| <b>Department of Labor/Occupational Safety and Health Administration</b> | <ul style="list-style-type: none"> <li>Provides advice and technical assistance to DHS, the coordinating agency, and State, tribal, and local governments concerning the health and safety of response workers implementing the policies and concepts in this annex.</li> <li>Provides assistance with developing site health and safety plans.</li> <li>Provides monitoring for emergency response workers through the Worker Safety and Health Support Annex.</li> <li>Provides technical assistance with emergency worker decontamination.</li> </ul>   |
| <b>Department of State</b>   | <ul style="list-style-type: none"> <li>Serves as the U.S. Government lead in notification of the International Atomic Energy Agency (IAEA) in accordance with the Convention on Early Notification of a Nuclear Accident.</li> <li>Serves as the U.S. Government lead in notification to foreign governments. Will immediately notify Canada and Mexico to negotiate cooperative and collaborative cross-border activities.</li> <li>Serves as the U.S. Government lead in requesting or accepting assistance in accordance with the IAEA Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency.</li> </ul>   |
| <b>Department of Transportation</b>                                      | <p>(See the ESF #1 – Transportation Annex for further information.)</p> <p>Provides technical advice and assistance on the transportation of radiological materials and the impact of the incident on the transportation infrastructure.</p>   |

| Agency   | Capabilities   |
|--|--|
| <b>Department of Veterans Affairs</b>                | Provides medical assistance using the Medical Emergency Radiological Response Team, which provides direct patient treatment, assists and trains local health care providers in managing, handling, and treatment of radiation-exposed and -contaminated casualties, assesses the impact on human health, and provides consultation and technical advice to local, State, and Federal authorities.  |
| <b>Environmental Protection Agency</b>               | <p>(See the ESF #10 Annex for additional information.)</p> <ul style="list-style-type: none"> <li>• Provides resources, including personnel, equipment, and laboratory support (including mobile laboratories) to assist DOE in monitoring radioactivity levels in the environment.</li> <li>• Assists in the development and implementation of a long-term monitoring plan and long-term recovery plan.</li> <li>• Provides nationwide environmental monitoring data from the RadNet for assessing the national impact of the incident.</li> <li>• Develops PAG manuals in coordination with the FRPCC.</li> <li>• Recommends acceptable emergency levels of radioactivity and radiation in the environment.</li> <li>• Prepares health and safety advice and information for the public.</li> <li>• Estimates effects of radioactive releases on human health and the environment.</li> <li>• Provides, in cooperation with other Federal agencies, the law enforcement personnel and equipment to conduct law enforcement operations and investigations for nuclear/radiological incidents involving criminal activity that are not terrorism related.</li> </ul> |
| <b>National Aeronautics and Space Administration</b> | <ul style="list-style-type: none"> <li>• Partners with DOE when preparing for the launch of spacecraft involving significant quantities of DOE-owned nuclear material by providing additional specialized radiological monitoring equipment and radiological accident response personnel. However, NASA Centers maintain limited quantities of radiological monitoring equipment that could be utilized in response to radiological incidents.</li> <li>• In conjunction with EPA and NOAA, may task certain NASA orbiting assets to provide supplemental data to monitor incidents occurring in Earth's atmosphere.</li> </ul>  |
| <b>Nuclear Regulatory Commission</b>                 | <ul style="list-style-type: none"> <li>• Provides technical assistance to include source term estimation, plume dispersion, and dose assessment calculations.</li> <li>• Provides assistance in Federal radiological monitoring and assessment activities.</li> </ul>  |

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## **ANNEX III**

# **THE NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS) INCIDENT COMMAND SYSTEM (ICS)**

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**THE NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS)  
INCIDENT COMMAND SYSTEM (ICS)  
ANNEX III TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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## **1.0 NIMS IMPLEMENTATION PROTOCOL ADDRESSING STATE AND FEDERAL RESPONDERS**

The National Incident Management System (NIMS) and Incident Command System (ICS) shall be used as an “all-hazards” model for managing and responding to incidents. The most qualified on-scene authority shall assume the role of the Incident Commander (IC). If the incident expands or requires the implementation of a Unified Command (UC), organizations that should be included should have one or more of the following:

- Jurisdictional Authority,
- The incident impacts the organization’s Area of Responsibility (AOR),
- The organization has specific responsibility,
- or have Resources.

The ICS should be based on the organization, terminology, and procedures recommended by NIMS and applied in a broad sense to include all hazard control and mitigation response organizations including the Responsible Party (RP), private responders; and Local, State, and Federal agencies. All such entities participating in a response are required by Federal law to implement ICS and integrate it with the overall ICS (29 CFR 1910.120 or 40 CFR 311).

The ICS established will have as the IC the most senior on-scene official with the expertise, capability and determination to be the commander. The IC can be from a local unit of government or from a County, State or Federal agency, as long as he/she has the expertise, capability, determination and authority. This protocol recognizes that typically, but not necessarily, the IC will change as the incident progresses from being primarily a public safety problem, with the local fire chief as IC, to an environmental incident, with a State or Federal person as the IC. The following procedures specify a determinate yet flexible means of establishing the role of Federal and State responders in an ICS.

To document the incident planning process, jurisdictions should develop an Incident Action Plan based on ICS forms. The IC can use locally developed ICS forms or those made available by other agencies such as the US Coast Guard. A list of the EPA’s modified ICS forms can be downloaded at [response.epa.gov/ICS\\_FORMS](https://response.epa.gov/ICS_FORMS).

### **1.1 SINGLE JURISDICTIONAL AREA AFFECTED**

When the incident involves and affects only a single local geographical jurisdiction, the organizational structure of the ICS will be determined by the established local contingency plan. This may involve single

or multiple agency involvement. In all situations, one person shall act as either an IC in sole charge or, when functioning as an Operations Chief, will implement the action plan through a UC structure.

In such instances, responding State and Federal officials who might otherwise be considered the senior competent emergency response official at the site, shall either:

- Identify themselves to the IC and integrate themselves into the established ICS per the IC's direction, usually as a technical specialist to an operations group supervisor or as an operations group supervisor; or
- Join an existing UC or request the IC to establish UC; or
- Assume the IC role when required by Federal or State law, or when an existing IC agrees to such a transition, or when no ICS has been established. The ICS transfer of command or initial assumption of command protocols shall be used.

## **1.2 MULTIPLE JURISDICTIONAL AREAS AFFECTED**

When the incident involves and affects multiple local geographical jurisdictions or areas not covered by local emergency response organizations, the State or Federal competent senior official at the site shall either:

- Preferably join an existing IC/UC; or
- Establish a UC for an encompassing ICS if none exists; or
- Assume command and establish an ICS incorporating existing local efforts as operations section branches or otherwise as appropriate.

## **1.3 LOCAL, STATE, FEDERAL INTERACTION**

When not specifically prescribed, a UC consisting of Local, State and Federal senior competent emergency response officials at the site shall be the preferred approach to integrating several levels of government into an ICS. Where State law specifies IC/UC assignment, it shall take precedence over this protocol with respect to those State and local organizations to which it applies. Federal jurisdiction specified in CERCLA, OPA, or RICP shall take precedence over this protocol.

## **1.4 SENIORITY**

Seniority, as discussed in 29 CFR 1910.120 (q)(3)(I), is ranked according to competency and breadth of responsibility for purposes of this plan.

Competency will be determined by meeting the requirements of 29 CFR 1910.120 (q)(6)(v). All officials meeting the competency criteria are senior to those who do not, unless specifically charged with overriding authority applicable to the specific incident situation by State or Federal law.

Breadth of responsibility will be considered to increase from most local to State to Federal. However, this protocol encourages the establishment of the ICS at the most local level practicable to assure the earliest implementation of a unified response strategy.

## **1.5 POST-EMERGENCY OPERATIONS**

This protocol is intended only to apply during the emergency phase of a response to which 29 CFR 1910.120 (q) applies. However, use of an ICS throughout a response and cleanup is encouraged.

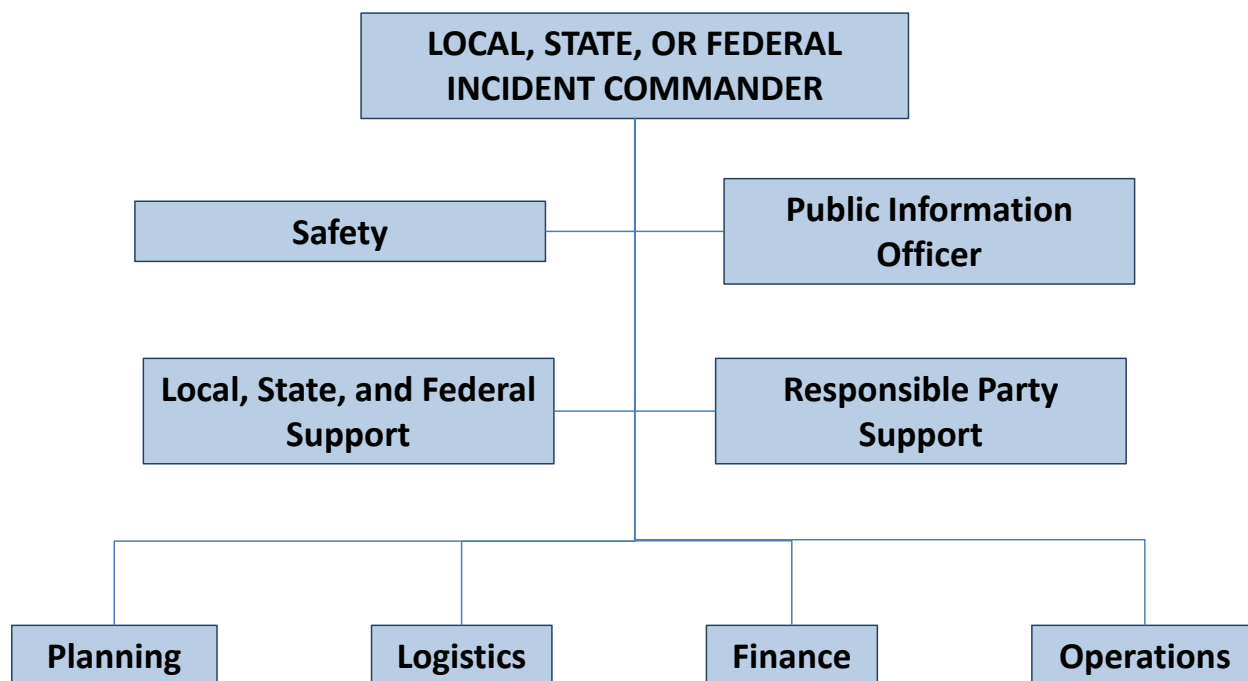
## **2.0 TRANSITION OF COMMAND**

### **2.1 SINGLE INCIDENT COMMANDER**

Because oil and hazardous materials incidents involve many players and changes through time, it is important that the leadership, responsibilities and roles during a dynamic response action be established. Some responders serve as support players, while others have a command role. Rarely is one person or organization solely responsible for all aspects of a response to an incident involving oil or hazardous materials. An organizational chart reflecting such a circumstance is shown in Figure III-1.

**FIGURE III-1**

**ICS WITH A SINGLE INCIDENT COMMANDER**



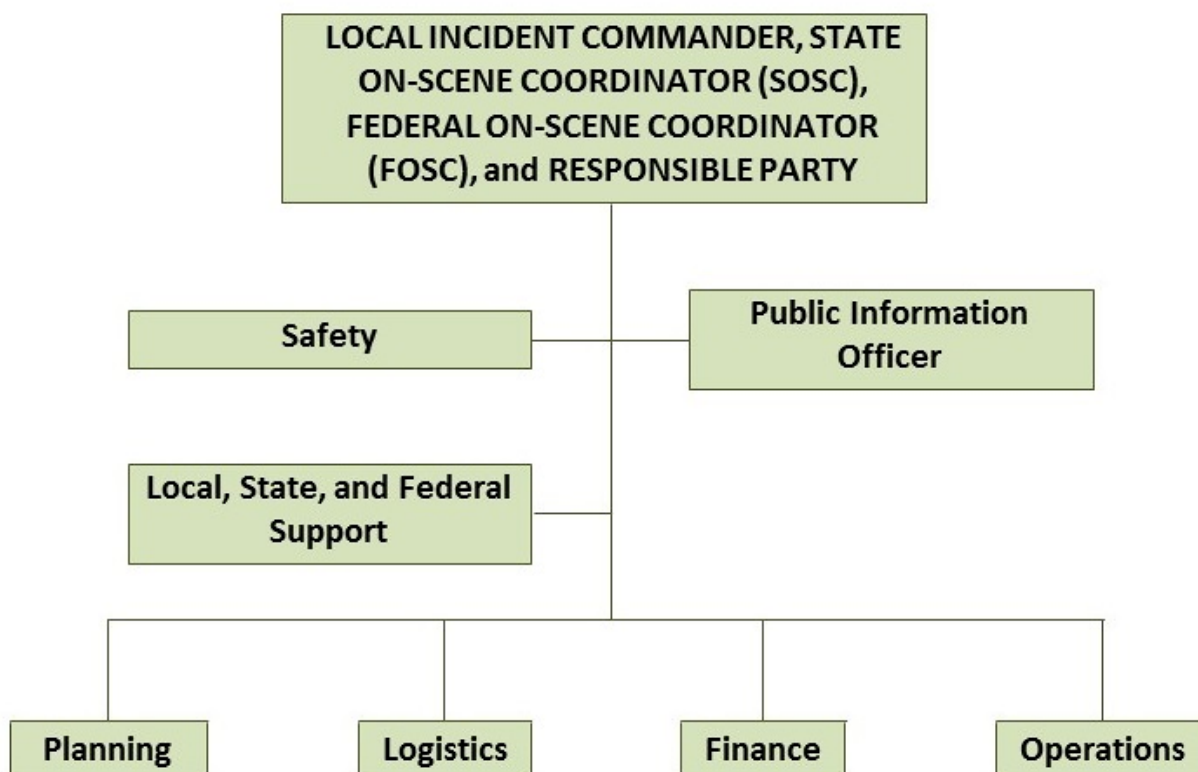
A very large incident involving oil or hazardous substances might include responders from many different organizations, each responding according to their responsibilities and authorities. If the incident affects a wide geographic area, or if several functions need to be performed by agencies with distinctly different capabilities, a transition may occur from a single IC to a UC structure. The local IC, or a State or Federal OSC, may recommend the formation of a UC structure.

Upon agreement, the qualified individuals assume command roles. UC is not command by committee, but rather is a mechanism for coordination, cooperation, and communication, under which each party is allowed to operate in its appropriate sphere of command. Each organization shares the same command responsibilities within an ICS. An example of a UC organizational structure is shown in Figure III-2.



**FIGURE III-2**

**ICS WITH A UNIFIED COMMAND**



When a UC is implemented, the local IC and the State and/or Federal OSC(s) meet and take the following measures:

- Agree to act in concert, or at least coordinate efforts,
- Agree on objectives, priorities and strategies,
- Recognize each other's authorities, capabilities, limitations, responsibilities, and roles, and
- Establish lines and methods of communication.

Any single organization's command influence typically grows or shrinks as the incident continues, and as its area of responsibility and expertise come into or go out of play. The UC group may appoint a single person to carry out the command decisions. The rest of the response functions (planning, operations, logistics and finance) usually will also be "unified" by commingling responders of the various organizations.

The UC and response generally continue until the response is terminated, or the roles of all but one level of government have diminished to the point when the primary level of government provides a single IC.

The transition to a single IC will again be made through the mutual agreement of the members of the UC. The agency that provides the IC will then be responsible for implementing procedures for termination of the response.

## **2.2 OVERSIGHT COMMAND**

The single IC and UC models were originally designed to facilitate the coordination and communication within one organization, or among several organizations. Organizations that share a UC cooperatively respond to an incident as equal partners with different capabilities. A company or person responsible for a spill must plan, propose, organize, and pay for response to the spill. Government's role is to oversee the RP's response, to order changes if a response is insufficient, and ultimately to approve the adequacy of the RP's response. The integration of the government's regulatory relationship to an RP into the ICS requires the concept of oversight command.

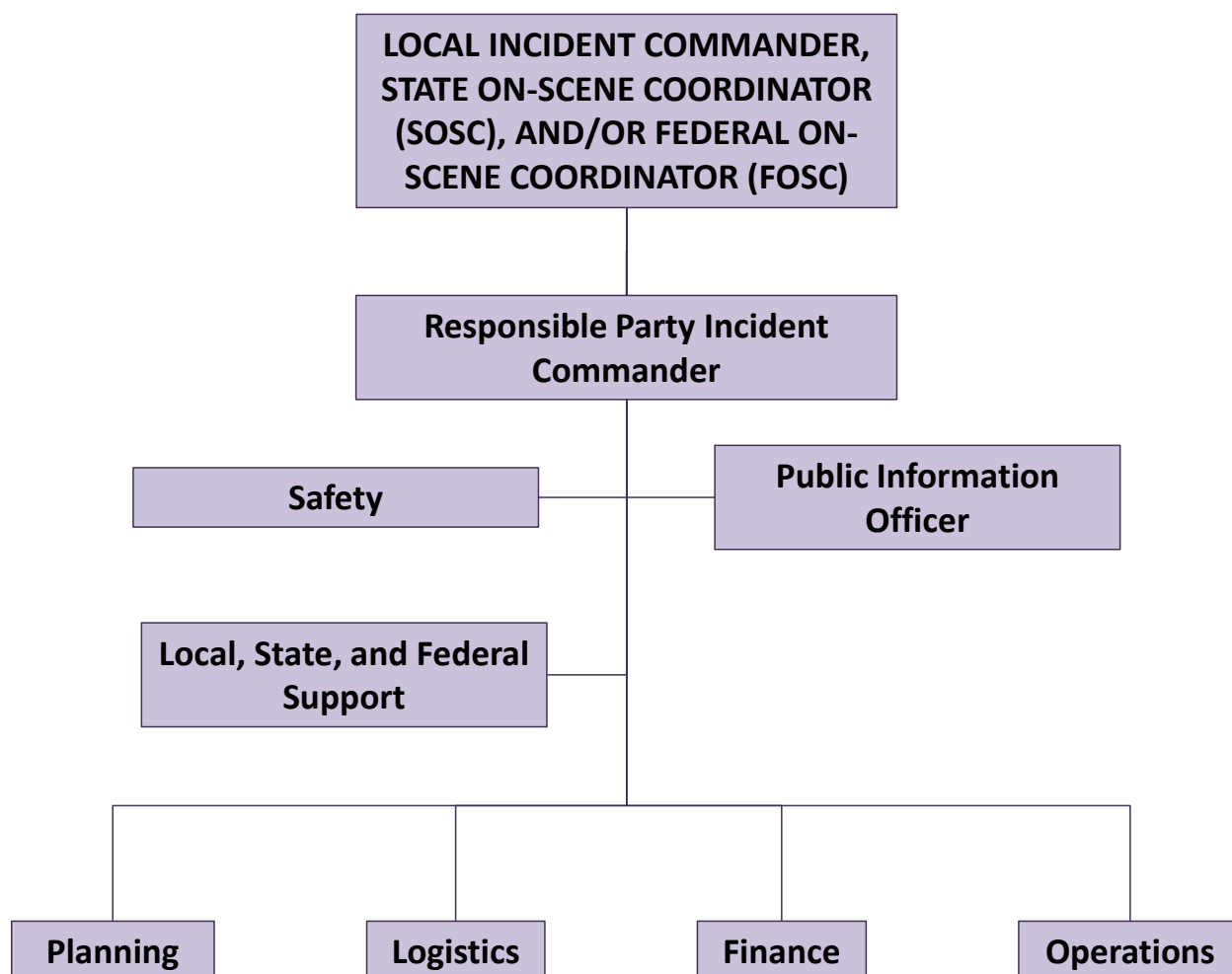
When a responsible party is incapable or unwilling to provide an adequate response to a release, or where there is a threat to the public health or safety, the IC/UC structure is implemented by government agencies in the manner described previously. However, when an RP is capable and willing to respond, and the release represents more of a threat to the environment than to the general public, the government agencies support and oversee the efforts of the RP. The governmental agencies accomplish these tasks by establishing parallel single or a UC structure.

The governments overseeing the RP's response will have a person or persons in charge of that oversight. If more than one government agency is conducting oversight, responders will coordinate that oversight according to the principles of UC. Depending upon the circumstances of the incident, the governmental agencies might have contractors assisting the Oversight Commander(s).

The RP's IC and the government's Oversight Commander(s) will meet and agree on cleanup response objectives and priorities. The government's Oversight Commander(s) will typically determine the cleanup target and schedule. The two (or more if unified) commanders meet frequently to update each other on cleanup progress and to revise objectives and schedules. Significant problems identified within the ranks of either the RP's or governmental organizations are discussed and resolved. Requests for formal approvals for such actions as mitigation, decontamination, and disposal are made from the RP's IC to the Oversight Commander(s). Figure III-3 demonstrates an organizational chart for an oversight command.

**FIGURE III-3**

**ICS WITH OVERSIGHT COMMAND**



## 2.3 FEDERAL PREEMPTION

The NCP gives an FOSC the authority to direct all response efforts at the scene of a discharge or release. Typically, an FOSC will support the actions of local and State government. Even an FOSC who is part of a UC might focus Federal efforts on a specific part of the response.

In some cases, however, the FOSC might determine that he or she must use preemptive authority to direct all efforts at the scene. Such a determination would be appropriate under the following circumstances:

- A discharge of oil is classified as “major” (over 10,000 gallons).

- A release of a hazardous substance is classified as “major” (a release that poses a substantial threat to public health or welfare of the United States or the environment or results in significant public concern).
- The discharge or release is a “spill of national significance” (a spill that due to its severity, size, location, actual or potential impact on the public health or welfare or the environment, or the necessary response effort, is so complex that it requires extraordinary coordination of Federal, State, local and RP resources to contain and clean up the discharge).
- Because of the RP’s inability or unwillingness to respond, the FOSC decides to pay for the response with funds from CERCLA or OPA (“federalize” the response).
- Actions taken by the RP, or local, or State responders are inappropriate or ill-advised.
- Lack of cooperation among the RP and local and State responders is impeding prompt and effective response.

An FOSC who decides to direct all response actions must notify the RP’s IC, the local government’s IC and the State’s OSC of these intentions. Such notification ensures that all of the lead organizations are aware of the change of status. An FOSC who exercises this authority becomes the IC for the entire incident, and must assure compliance with OSHA’s 1910.120 regulations regarding response to releases.

## **ANNEX IV**

# **POLICY AND GUIDELINES ON USE OF ISB AND CHEMICAL & BIOREMEDIATION COUNTER MEASURES**

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**POLICY AND GUIDELINES ON USE OF ISB AND CHEMICAL & BIOREMEDIATION  
COUNTERMEASURES**

**ANNEX IV TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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## 1.0 OIL SPILL COUNTERMEASURES POLICIES FOR REGION 7

This policy is applicable to the navigable waters of Region 7, including backwaters, except for those areas that are covered by a Sub-area Contingency Plan (SACP) and Chemical & Bioremediation Countermeasures (CBC) policy. Sub-area Planning Committees may develop specific policies for ISB (ISB) and other countermeasures, as long as they are consistent with local, State, and Federal regulations.

Oil spill responders have a limited number of techniques available to them that will minimize environmental impacts and facilitate effective cleanups. These include mechanical methods, the use of certain CBCs, and ISB. All four States, local authorities, and Federal agencies with jurisdiction in Region 7 advocate the use of mechanical containment and cleanup as primary spill response methods. These methods include the use of absorbent pads, containment boom, skimmers, and similar equipment. **In general, the use of dispersants is not allowed within the boundaries of authority by the Region 7 Regional Response Team (RRT).**

### 1.1 GENERAL POLICY

The Federal On-scene Coordinator (FOSC) has the authority to utilize, or approve, any actions necessary to prevent, or substantially reduce, the threat to human life. This includes, but is not limited to, the use of CBCs and ISB (see 40 CFR 300.910(d)). The FOSC will inform the affected RRTs as well as the RRT representatives of any affected States of these actions. Other interested parties, such as natural resource trustees, should be informed as appropriate.

When there is no longer an immediate threat to human health and welfare, the use of CBCs, and/or ISB will be evaluated on a case by case basis, and is to be conducted in accordance with the remainder of this policy.

#### 1.1.1 CBC Procedure

For CBCs the approving authority is the FOSC when the FOSC has obtained the concurrence of both the RRT's EPA co-chair and the affected State's representative, and, to the maximum extent practicable, consulted with the Federal natural resource trustees' representatives on the RRT (40 CFR 300.305(e)).

#### 1.1.2 ISB Procedure

ISB, for the purposes of this guidance, is defined as the intentional ignition of spilled oil that will burn due to its intrinsic properties, and does not include the adding of a separate burning agent to initiate or

sustain the burn. The addition of burning agents requires the CBC procedure approval because such agents are considered to be in the same category as CBCs. ISB can be performed on the open water and near or on shore.

The use of ISB in these guidelines is not for disposal purposes; rather, it is a response technique to be employed when an oil slick has the potential to spread and contaminate additional areas. It is also considered as a cleanup technique for oiled shoreline habitats such as wetlands, where it is used in conjunction with other cleanup methods.

For ISBs in Region 7, the approving authority designated by this policy is the local Incident Commander (or Unified Command as applicable) and the State On-scene Coordinator (SOSC) (with the appropriate State permit).

- If the proposed burn is on a local, State, Tribal, or Federally-owned or managed natural resource area, the concurrence of the landowner/manager must be obtained.
- Because State- or Federally-listed threatened or endangered species, migratory birds, managed natural resource areas, or other natural resources could be affected, all responders and trustees share interest in timely and effective removal of spilled oil in ways that protect natural resources and the public's safety. Local incident commanders, SOSCs, and FOSCs shall consider the size, nature, and location of a spill, and the type and proximity of resources, and shall, to the maximum extent practicable, consult with State and Federal, and, as appropriate, Tribal, trustees before deciding to conduct ISB. It is the expectation of the members of the Region 7 RRT that, except in extraordinary cases, a local incident commander or State or FOSC shall contact appropriate trustees and allow at least three hours for trustees to advise before proceeding with any proposed in-situ burn.

In addition, whenever time permits, the views of the FOSC should be sought and considered.

Because the timeframe for making decisions regarding ISB is often very short, guidelines are included in Section 2.0 to assure that the most significant issues are considered. This decision-making methodology for burning has been approved by the Region 7 RRT.

## **1.2 SPECIAL POLICY FOR FOSC DIRECTED BURNS**

Region 7 burns are governed by the National Contingency Plan (NCP) and State and local regulations.

It is the Region 7 policy that all burns in Region 7 must comply with local, State, and Federal regulations.

The FOSC is authorized to use any countermeasure without requesting permission if he or she believes its use is necessary to prevent or substantially reduce a hazard to human life (40 CFR 300.910 (d)). SOSCs may have similar authority under applicable State laws and regulations.

## **2.0 ISB**

### **2.1 POTENTIAL EFFECTIVENESS OF ISB**

Although ISB is a relatively simple technique, its effectiveness can be limited by spill circumstances. Whether and how oil burns is the result of the interplay among a number of physical factors related to the oil itself and the extent to which the oil has been exposed to the environment. Critical factors such as oil thickness, degree of weathering, and extent of emulsification generally change with the passage of time, and the changes that occur make it more difficult to burn the oil. As a consequence, ISB is most easily and effectively implemented during the early stages of a spill.

The efficiency of ISB is highly dependent on a number of physical factors. Test burns and actual spill situations suggest it can be very effective in removing large quantities of oil from the water. Burn efficiencies of 50 to 90 percent can be expected, making this response method more efficient than other methods. In comparison, mechanical removal (such as skimming) typically has an efficiency of 10 to 20 percent.

ISB has most often been considered and tested with crude oil spills. However, its feasibility with other types of refined oil products (e.g., diesel and Bunker C fuel oil) also has been demonstrated. Difficulties with establishing and maintaining necessary slick thicknesses (in the case of lighter oils) and ignition (for heavier oils) make ISB a slightly less viable alternative for those materials than for crude oils.

### **2.2 RELATIONSHIP TO MECHANICAL AND OTHER RESPONSE METHODS**

Spill prevention is the first line of defense in spill response planning, however, acceptance of the probability that a spill can and will occur is essential to successful preparedness. Burning will be considered as a possible response option only when mechanical containment and recovery response methods are incapable of controlling the spill alone.

While physical containment and mechanical removal of spilled oil is the primary objective of any response, prudent planning dictates the consideration of alternative countermeasures.

#### **2.2.1 Summary of Potential Tradeoffs Relevant to ISB**

As is the case with all response methods, the environmental tradeoffs associated with ISB are situation dependent and cannot be considered independently from operational tradeoffs. ISB can offer important advantages over other response methods in specific cases, and may not be advisable in others depending on the overall mix of circumstances.

### **2.2.2 Advantages**

- In certain areas where other techniques may not be possible or advisable due to the physical environment (e.g., ice conditions or wetlands) or the remoteness of the region, burning may represent one of the few viable response choices besides no action.
- ISB may prevent or significantly reduce the extent of shoreline impacts, including exposure of sensitive biological resources, and wildlife habitats, and the oiling of high-value recreational or commercial beaches.
- The magnitude of a spill may overwhelm the containment and storage equipment deployed or available for a region, necessitating the consideration of other methods in an overall response strategy.
- Burning can rapidly remove a large volume of oil from the surface of the water, reducing the magnitude of subsequent environmental impacts of stranded oil.

### **2.2.3 Disadvantages**

- Large quantities of highly visible black smoke are generated that may adversely affect human and other exposed biological populations downwind.
- There may be the potential for mortalities and other adverse biological impacts from localized temperature elevations at the water surface. Although this would be expected to occur in a relatively small area, in specific bodies of water at specific times of the year, affected populations may be large enough or important enough to represent reasons for not considering burning as a cleanup technique. Adverse impacts from temperature elevation should be considered relative to the toxic effects of the spill if burning is not employed.
- The longer term effects of burn residues on exposed biological populations has not been investigated. It is not known whether these materials represent a significant source of toxicity.
- ISB must be carefully controlled in order to maintain worker safety and to prevent unintended environmental impacts.
- There is a relatively short window of opportunity to use burning after a spill occurs prior to the oil weathering and losing its flammable characteristics.

## **2.3 ISB DECISION PROCESS**

The following checklist will assist FOSCs at any level to ensure that reasonable decisions are made on the use of ISB in Region 7.

### **2.3.1 Step 1: Site Conditions and Desirability**

- Access routes to the scene?
- Locational information, including: river mile or latitude/longitude or other precise geographical description?
- Proximity to public, biological populations, transportation routes, and valuable property?
- Material, type, amount, area, age, phases, condition of the spill?

- Environmental conditions: air temperature, wind speed, lake/river current speed, wave heights, waters temperature, ice conditions?
- Will the use of ISB prevent or reduce further damage by the spill?
- Are mechanical containment and recovery adequate? If so, explain why burning is being considered.
- Ecological factors such as environmentally sensitive areas? See Appendix IV-D for Ecological Considerations.

### **2.3.2 Step 2: Feasibility**

- Can worker, public, and property safety be reasonably assured? Responders risk exposure to airborne toxic agents. See Appendix IV-E for more information.
- Can the fire be contained?
- Are environmental conditions favorable? Wind speeds less than 20 knots (23 miles per hour [mph], 34 feet per second [feet/sec]), currents less than 3/4 of a knot (0.9 mph, 1.3 feet/sec), and waves less than 3 feet?
- Will the smoke plume lower the visibility enough to adversely impact transportation via air, water, or land?
- Are atmospheric conditions very stable (i.e., winds are light, and fog or low stratus clouds are present)? Then, the smoke plume will likely be more difficult to disperse, and you might not want to burn unless there will be no human impact.
- Is the oil burnable? Recommended thicknesses are 2 to 3 millimeters (mm) for fresh crude oil, 3 to 5 mm for diesel and weathered crude, and 5 to 10 mm for emulsions and bunker C fuel oil. Water in oil emulsions containing more than 30 to 50 percent water are difficult to ignite and support combustion. Most oils readily burn if the water content is less than 25 percent. Most crude oils require an evaporative loss of less than 30 percent to burn.
- Residues: The removal of burn residues should be considered since the potential exists for undefined levels of environmental impacts even with a successful burn. See final pages of Appendix IV-F for additional information.
- Is the product ignitable without adding a burning agent? CBC procedure approval is required for use of burning agents. The term “burning agents” means those additives that, through physical or chemical means, improve the combustibility of the materials to which they are applied. It is recommended that, when addition of a burning agent is being evaluated, first consideration be given to the more environmentally friendly products such as kerosene or jet fuel “A” before considering more environmentally hostile products such as gasoline or diesel. Also, if the latter materials are used, considerations must include the toxicity of additives such as methyl tert-butyl ether (MTBE), gasoline with ethanol, etc. and the adverse environmental impacts this will cause.
- Is the product gasoline or other light petroleum product? If so, both mechanical techniques and ISB are viable options. However, due to the greater flammable hazard, uncontrolled sources of ignition should be removed from the area, only intrinsically safe equipment should be used on the site, and combustible gas indicators should be used to monitor for flammable vapors.
- Is the area forested or are conditions very dry? If so, then it may not be safe to burn.

- If in a marsh or wetlands area, see Appendix IV-A.
- Are adequate fire boom, towboats, and igniters available?
- Is adequate helicopter/monitoring equipment available?
- Can notices to mariners, aircraft, and populations be issued in time?
- Can personnel and equipment be mobilized in time?
- Can authorization be secured in time?
- Is a source for extinguishing the fire available such as fire trucks, water pumps, etc.?

See Appendix IV-F for information on operational considerations: open water burning, inland environment burning, ice conditions, fire boom, ignition, oil thickness, weathering, emulsification, and burn residues.

### **2.3.3 Step 3: Acceptability**

- Distance between burn and human population?
- Will ambient levels of airborne particulate matter (PM) less than 10 microns in diameter (PM-10), averaged over 1 hour near humans, be above 150 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) or will ambient levels of PM with diameter less than 2.5 microns (PM-2.5), averaged over 24 hours, near humans, be above 35  $\mu\text{g}/\text{m}^3$ ? If so, evacuate or shield them, or do not conduct the burn.
- Are air monitoring capabilities available?

Generally, burning should not be conducted if human population centers exist within 6 miles downwind of the burn or 3 miles in other directions. These distances are only a rule of thumb; they may be longer or shorter depending on the circumstances of the case. In general, a safety margin of 45 degrees of arc on either side of the wind vector should be allowed to account for wind shifts. This means that burning is not recommended if there is a human population center within 6 miles from the burn measured along the wind direction and expanded 45 degrees on either side of the wind direction. A 3-mile safety margin is recommended in other directions.

Other considerations include:

- Does the landowner concur with the decision to burn? Are there cultural, historical, or archaeological resources that could be affected by the burn? If so, probably should not burn.
- Does the proposed burn area contain State or Federal threatened or endangered species populations or their critical habitats? If so, and the proposed burn appears likely to result in greater overall injury to those species or habitats than other response actions, including “no action,” the State and Federal natural resource trustees will likely object to it.

#### **2.3.4 Step 4: Authorization and Conditions**

- Are forecasted weather conditions favorable?
- The Site Safety Plan should be reviewed to ensure that ISB is adequately addressed.
- Unified Command authorities to start, proceed, limit, or halt the burn must be recognized.
- Conduct trial burns to evaluate smoke plume drift and dispersion.
- Are burn extinguishing measures available?
- Public notification. See Appendix IV-C for guidelines on Public Notification.
- A written description of the incident and burn plan should be provided to the FOSC and other pertinent players.
- Public Information Officer (PIO) involvement – for example, messaging press releases (PR), fact sheets (FS). See Appendix IV-C.

#### **2.3.5 Step 5: Monitoring**

The primary operational purpose in monitoring the burning of spilled oil is to determine if burning requirements and objectives are met. Because the current body of knowledge about burning is limited, the secondary purpose in monitoring is to provide an opportunity to gather further information. Operational monitoring should occur during a response involving the use of ISB and should be accompanied by a detailed monitoring plan.

Operational monitoring should include such parameters as:

- Type and amount of oil spilled;
- Weather and water conditions;
- Trajectory of the slick and smoke plume;
- Estimated volume of oil to be burned;
- Estimated volume of oil actually burned and remaining;
- Effectiveness of residual material collection;
- Adverse effects to natural resources both pre- and post-burn (e.g., number of dead organisms);
- Effects on human health (see appendix IV-B for air monitoring guidelines).

In an effort to gather more data about ISB, research possibilities involving a broad range of physical, biological, and chemical issues, are encouraged. Research monitoring might involve:

- Collection of oil samples prior to burning for analysis;
- Observations of residual material's behavior and fate;



- Collection of residual material for analysis;
- Upwind and downwind air sampling;
- Documentation of number and location of sampling stations;
- Determination of contaminant compounds (e.g., polycyclic aromatic hydrocarbons [PAH] or particulates) to be monitored;
- Documentation of Species and numbers of biota (e.g., waterfowl, aquatic organisms, vegetation) in the area.

### **2.3.6 Step 6: Reports**

- A lessons learned report should be submitted by the Unified Command to the FOSC (and thence to the RRT), SOSC, State and Federal natural resource trustees, and local incident commander. The feedback from these reports will help in evaluating policies and procedures and improving them as needed, especially since burning is a relatively new countermeasure in Region 7.
- Post-burn monitoring of the site should be considered, including biota recovery, residual oil remaining, etc.

## **2.4 ISB REFERENCE SOURCES**

- Region 5, Regional Contingency Plan – Appendix VII, November 2009.
- National Response Team Science & Technology Committee, Guidance on Burning Spilled Oil In Situ, December 1995.
- National Contingency Plan, 40 CFR Parts 300 to 399.
- API/NOAA, “Options for Minimizing Environmental Impacts of Freshwater Spill Response, September 1994”, also known as the Freshwater Manual.
- Region 5, In Situ Burn Guidelines, adopted in June 1996.
- Alternative Response Tool Evaluation System (ARTES), adopted by RRT 5 in June 1996.
- NOAA, HAZMAT ISB Planning Guidelines, June 1996.
- Alaska Regional Response Team, In Situ Burn Guidelines for Alaska, May 1994.
- S.L. Ross Environmental Research Ltd., Alaska Clean Seas, Alaska Department of Environmental Conservation, ISB: A Valuable Tool for Oil Spill Response, April 1995.
- Regional Response Team 2, ISB Decision Flow Chart, November 1996.
- Regional Response Team 6, In Situ Burn Decision Tree.

### 3.0 CHEMICAL & BIOREMEDIATION COUNTERMEASURES (CBC)

#### 3.1 WHAT A RESPONDER NEEDS TO KNOW TO CONSIDER USE OF A CBC

Except for specific circumstances (i.e., to prevent or substantially reduce a hazard to human life in accordance with 40 CFR 300.910 (c)) the use of CBCs will be considered on a case by case basis. Oil spill treating agents include dispersants, herding agents, emulsion treating agents, solidifiers, elasticity modifiers, shoreline cleaning agents, shoreline pre-treatment agents, oxidation agents, and bioremediation agents. Descriptions and guidelines for each follows.

**In general, RRT policy does not allow the use of CBCs on inland waterways as they not work in fresh water.**

Region 7 has no preapprovals in place for any CBCs. In general, the incident-specific conditions can vary too widely on inland spills to allow for preapprovals.

Consistent with the NCP, in situations when a human hazard is not present, the FOSC must receive the concurrence of EPA RRT representative(s), and the RRT representative(s) of the affected State(s) to use any chemical product. The FOSC must also consult with the Department of Interior (DOI) and Department of Commerce (DOC) natural resource trustees, where practicable, before authorizing the use of a chemical product. Any FOSC or responders must comply with applicable local, State, and Federal regulations.

Note that the FOSC is authorized to use any chemical product without requesting permission if he or she believes its use is necessary to prevent or substantially reduce a hazard to human life (40 CFR 300.910 (c)). If a chemical or bioremediation product is used under these circumstances, the FOSC must notify the EPA RRT representative and the State(s) RRT representative of its use as soon as possible. This policy should be applicable to any OSC, whether local, State, or Federal.

General CBC showstoppers:

- Is the product on the NPC Product Schedule at: <https://www.epa.gov/emergency-response/ncp-product-schedule-products-available-use-oil-spills>? If not, then it should not be used except as noted in 40 CFR 300.910 (c).
- Will the CBC be used in accordance with product-specific recommended application procedures described in the NCP Product Schedule Technical Notebook at: <https://www.epa.gov/emergency-response/ncp-product-schedule-technical-notebook>? If not, then it should not be used except as noted in 40 CFR 300.910 (c).

- Are all players in agreement on its use? If not, then it should not be used. These players shall include the local incident commander, FOSC, SOSC, and the State and Federal natural resource trustees.
- CBCs require RRT approval.

### **3.2 CBC DECISION PROCESS**

#### **3.2.1 Step 1: Site Conditions and Desirability**

- Can worker safety be reasonably assured?
- Are environmental conditions favorable?
- Access routes to the scene?
- Locational information, including: river mile or latitude/longitude or other precise geographical description?
- Material type, amount, area, age, phases, condition of the spill?
- Proximity to public, biological populations, transportation routes, or valuable property?
- Will the use of CBCs prevent or reduce further damage by the spill?
- Are mechanical containment and recovery adequate? If so, explain why CBCs are being considered.
- Ecological factors such as environmentally sensitive areas?

#### **3.2.2 Step 2: Feasibility**

- Will the use of a CBC be effective and produce the desired result? The listing of a product on the NCP Product Schedule does NOT mean that EPA approves, recommends, licenses, certifies, or authorizes the use of the product on an oil discharge. The listing means only that data have been submitted to EPA as required by Subpart J of the NCP, Section 300.915.
- Has impact of floating oil been determined to be greater than impacts resulting from mixing of oil into the water column?
- Are recovered oil storage capacities very limited, or has the formation of emulsified oil resulted in skimmer inefficiencies?
- Does the efficiency of skimmers need to be further increased?
- Are sensitive resources such as wetlands at risk, and is equipment readily available early in the spill?
- Is immobilization of the oil necessary for the prevention of refloating, substrate penetration, or further spreading?
- Is the oil projected to impact shorelines which have high recreational or aesthetic value?
- Are medium weight or diesel-type oils resisting other removal methods?

## **APPENDIX IV.A PROPOSED GUIDELINES FOR ISB IN MARSHES**

Based on the available data on effectiveness and effects of burning on oiled marshes, the following guidelines are proposed:

- Make sure that it is possible to contain and control the fire; it is not as easy to put out a fire in vegetation as it is with oil contained on water using a fireproof boom.
- Impacts to marsh vegetation are likely to be lower if there is a water layer between the oil and the substrate.
- A standing water layer of just a few inches may get hot enough to kill shallow roots, however, little information is available regarding this effect.
- Burning of oiled woody wetland vegetation (compared to grasses and sedges) should not be conducted.
- Not enough is known about seasonal effects on the ability of burned, oiled vegetation to recover, yet burning in late fall to early spring, when the vegetation is dormant and before production of new growth, seems to be the best time.
- If it can be done with minimal impacts, heavy accumulations of oil should be removed using other methods to reduce the amount of burn residues, which may cause long-term impacts to both vegetation and animals returning to the habitat.
- Light fuel oils and crudes burn more efficiently and generate less residues, which should reduce the potential for long-term impacts.
- Burning of oil trapped in ice appears to have the least environmental impacts because the burn area is contained, plants are dormant, and aboveground vegetation is also dormant.
- There is some concern that burning of muddy substrates could alter their physical properties (i.e., make them hard), thus degrading their biological productivity.
- Every wetland is different in terms of its type, the species present, condition (optimal or marginal for species use), and known or estimated tolerances of that type of system to physical and chemical disturbances. Biologists or botanists should be consulted prior to the use of burning as a cleanup technique in a wetland.
- Mechanical or manual alternatives to ISB may compact oil into sediments, where it persists longer. Therefore, the relative damages from different response options should be weighed carefully.

### **IV.A.1 ISB IN WETLAND HABITATS**

There are few studies on the relative effects of burning oiled wetlands compared to other techniques or natural recovery, and most of the experience is derived from estuarine habitats. However, ISB in wetlands can be effective, because it can remove a large quantity of oil with a minimum of physical disturbance. The type of wetland vegetation and the season of the year, along with many other factors, will dictate whether burning is feasible in a particular wetland.

Refuge managers have historically conducted prescribed burns to rejuvenate wetlands that have accumulated high litter loads, generate green vegetation or open spaces to attract wildlife, release nutrients for recycling, and restore habitats in areas that were historically subject to frequent wildfires to their natural conditions. The presence of oil in a wetland may have two important effects: the high energy content (measured in British thermal units [BTU]) of the oil may increase the temperature and heat penetration of the burn, and there is often an oil residue which can be toxic to the environment. The experiences of fire ecologists and practitioners can greatly contribute to the development of guidelines for burning wetlands as a spill response strategy. Guidance has been developed for specific types of wetlands such as:

- Wooded swamps
- Fresh to brackish impoundment marshes
- For Region 7 marshes (lock and dam pools)
- Riparian wetlands
- Inland freshwater marshes
- Potholes

Based on discussions with refuge staff with fire management duties, the following general considerations for burning were developed:

#### **IV.A.2 PROS**

- Where access is limited or mechanical/manual removal has the potential to cause more damage by equipment and trampling, burning can rapidly remove oil from sensitive areas.
- It provides a response option when no others are acceptable, or where likely oil residues will be unacceptably high with other options, including natural recovery.
- It rapidly removes oil from the habitat when there is a time-critical element, such as a short-term change in the physical conditions which will likely cause loss of containment and further spreading, or a seasonal increase in wildlife use, such as arrival of large numbers of migratory waterfowl.

#### **IV.A.3 CONS**

- Burning can cause substantial initial plant damage, because the aboveground vegetation is removed.
- Burning can cause long-term impacts to vegetation, especially if the fire is so hot that the submerged plant parts are killed.

- There is a potential for burning to increase oil penetration into the substrate, when there is no standing water.
- Any animals present and unable to escape (such as gastropods on clean vegetation above the oiled area) will be killed.

## **APPENDIX IV.B**

### **AIR MONITORING GUIDELINES FOR HUMAN HEALTH IMPACTS OF ISB**

ISB may affect two groups of people: the workers conducting the burn (the responders), a fairly homogeneous group of young, healthy adults, and the general public, which is much more heterogeneous and includes individuals who are more susceptible to toxic agents. The basic premises and possible monitoring options for each group are discussed below.<sup>1</sup>

#### **IV.B.1 MONITORING FOR RESPONDERS**

The responders, i.e., the workers assigned to conduct the ISB, are likely to be healthy and physically fit adults. Responders' locations will vary with the nature of the burn and the stage at which it is conducted. Most of the time they are expected to be upwind of the slick and the smoke plume. However, at times they may be downwind of the evaporating slick and therefore potentially exposed to volatile organic compounds (VOC). Responding crews may also be downwind and near the burning oil, where they can be exposed to combustion products.

Responders may be exposed to VOCs from the evaporating slick, similar to what is expected during skimming operations, and to combustion by-products from the burning oil: carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulates, and other combustion products. Air concentrations of those substances depend on many variables, and substantial variability can be expected. Responders may be exposed to levels of gases and particulates above the permissible occupational exposure limits, and should therefore be provided with personal protective equipment (PPE) and be trained in its proper use. In reality, responders' exposure is likely to be intermittent, and will vary greatly depending on location, weather conditions, and assigned tasks. Overall exposure duration is expected to vary from minutes to several hours.

##### **IV.B.1.1 Sampling Purpose**

Sampling the responders' exposure levels should serve several purposes, among them:

- Characterize exposures and hazards associated with the operation to provide better protection;
- Ensure compliance with Occupational Safety and Health Administration (OSHA) requirements, per 29 CFR 1910.134 b.(8)1 and 29 CFR 1910.120.q.3.(ii)2;

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<sup>1</sup> See also the National Response Team's "GUIDANCE ON BURNING SPILLED OIL IN SITU", 1995 ([http://response.restoration.noaa.gov/book\\_shelf/651\\_PM10guid.pdf](http://response.restoration.noaa.gov/book_shelf/651_PM10guid.pdf)) for a discussion on the recommended limits for short-term human exposure to PM-10 during ISB.

- Provide data collection for scientific purposes;
- Enable decisions regarding appropriate PPE (e.g., respirators or protective coveralls).

Air sampling should not substitute for workers' protection and safe work practices. Responders should be protected from overexposure regardless of monitoring and air sampling results.

#### IV.B.1.2 Exposure Limits

Exposure limits for responding personnel should be based on occupational exposure guidelines (see Table IV-1) such as OSHA's Permissible Exposure Limits (PEL) or applicable State standards. Exposure to the general public should not exceed the National Ambient Air Quality Standards (NAAQS).

**TABLE IV-1**

**OCCUPATIONAL EXPOSURE LIMITS AND NATIONAL AMBIENT AIR QUALITY STANDARDS FOR THE MOST SIGNIFICANT PRODUCTS OF IN SITU BURNING**

| COMPOUND                                 | OSHA PEL            | ACGIH TLV           | NAAQS   |
|--|---------------------|---------------------|---|
| Benzene (in volatile organic compounds)) | 1 ppm (5 ppm)       | 0.5 ppm (2.5 ppm)   | N/A   |
| Nitrogen dioxide                         | (5 ppm)             | 3 ppm (5 ppm)       | 0.053 ppm annual average<br>(0.1 ppm 1-hour average)                                |
| Sulfur dioxide                           | 5 ppm               | (0.25 ppm)          | 0.5 ppm 3-hour average<br>(0.075 ppm 1-hour average)                                |
| Carbon monoxide                          | 50 ppm              | 25 ppm              | 9 ppm 8-hour average<br>(35 ppm 1-hour average)                                     |
| Polycyclic aromatic hydrocarbons (PAH)   | Not applicable      | Not applicable      | Not applicable  |
| Particulate matter, 2.5-micron (PM-2.5)  | Not applicable      | Not applicable      | 0.015 mg/m <sup>3</sup> annual average<br>(0.035 mg/m <sup>3</sup> 24-hour average) |
| Particulate matter, 10-micron (PM-10)    | 5 mg/m <sup>3</sup> | 3 mg/m <sup>3</sup> | 0.15 mg/m <sup>3</sup> 24 hour average  |

Notes:

Numbers in parentheses indicate short-term exposure limits (STEL)

|                   |  |
|-------------------|--|
| ACGIH TLV         | American Conference of Industrial Hygienists Threshold Limit Values (1993. Threshold Limit Values for Chemical Substances and Physical Agents, 1993-1994. Cincinnati, OH). |
| mg/m <sup>3</sup> | milligrams per cubic meter   |
| NAAQS             | National Ambient Air Quality Standards (U.S. GPO, 1993. 40 CFR 50.4 to 50.11).   |
| OSHA PEL          | Occupational Safety and Health Administration Permissible Exposure Limits (U.S. GPO, 1993. 29 CFR 1910.1000, Table 2).   |
| ppm               | Parts per million  |

#### IV.B.1.3 When To Sample

Sampling should be done as long as there is a potential for exposure.



#### **IV.B.1.4 Sampling Methods**

Industrial hygiene equipment and methods may be used. This may include personal sampling pumps, passive dosimeters, and real-time instruments. In general, the sampling should:

- Follow sound industrial hygiene practices and procedures, including taking blank samples, proper sample packaging, etc.;
- Include a combination of area sampling (e.g., instruments placed on boom-towing boats) and personal sampling on the workers themselves;
- Include both short-term peak exposure and time-weighted averages, for the total duration of exposure;
- Be done for all substances of concern, making VOCs and particulates the top priority;
- Determine background levels before and after the burn; and
- Avoid erroneous readings caused by sources of smoke or fuel on the vessels (e.g., exhaust fumes or fuel vapors).

#### **IV.B.1.5 Protection**

Responders should use safe operating procedures such as staying upwind of the burn and the slick as much as possible and keeping safe distances from the fire. Responders should use respiratory protection and protective clothing as needed. It should be emphasized that safety risks such as heat and cold stress, falling overboard, or vessel collisions are just as real as chemical exposure, and more acutely dangerous. Responders should receive safety training that should include description of the hazards involved, precautions to be taken, and proper use of safety equipment.

### **IV.B.2 MONITORING FOR GENERAL PUBLIC**

The general public usually includes people of all ages. It also includes individuals with allergies and with respiratory, cardiovascular, and other diseases. The vulnerability of these individuals to combustion by-products may be much greater than posed to the responders. The distance between the general public and the burning site may vary greatly, depending on the specifics of the burn. The operational guidelines suggest 6 miles when the wind blows toward shore. However, burns may be conducted closer than 6 miles if conditions permit. Similarly, a burn may be inappropriate at 6 miles or a greater distance, if conditions are unfavorable.

Several miles downwind of the burn, levels of vapors evaporating from the slick and gaseous by-products of the fire are expected to be near background levels. Particulate level is the main concern. Based on data from experimental burns and from computer models, the level of total particulates in the center of the

plume 3 miles downwind of the burn is expected to be around 150 milligrams per meter ( $\text{mg}/\text{m}^3$ ) (McGrattan et al. 1993). If the burning is conducted according to the operational guidelines suggested above, PM-10 levels 6 miles away from the burn should be significantly lower than  $150 \text{ mg}/\text{m}^3$  in the center of the plume, and much lower than that at ground level. Concentrations at any one location will depend on specific atmospheric conditions at the time of the burn.

#### **IV.B.2.1 Visual Observations**

Visual observations should be conducted to track plume direction and height, and to verify that the smoke behaves as predicted by the weather reports. Observations from ships and aircraft should continue as long as the burning takes place.

#### **IV.B.2.2 Monitoring Considerations**

There are legitimate concerns about exposure to the smoke plume by the general public and environment. In order to make decisions concerning the continuation of an ISB, it is advisable to collect information concerning concentrations PM-10 or smaller PM in smoke or PM-2.5 or finer particles in smoke. Monitoring should be established when there is reason to believe that the weather conditions and/or location of the burn could produce a situation in which the general public or sensitive environments could be affected by fallout from the smoke plume. Depending on circumstances, the burn may be monitored by qualitative assessment (i.e., visual observation) and/or by quantitative methods that employ air monitoring and sampling.

#### **IV.B.2.3 Exposure Limits**

Exposure limits for the general public should be based on the National Ambient Air Quality Standards, which are used by EPA for air quality control. The standards for PM-10 and PM-2.5 are shown in Table IV-1. To err on the side of safety, this Region 7 policy adopts an action level of  $150 \text{ mg}/\text{m}^3$ , averaged over 1 hour. Concentrations above this level should result in operational measures to control the rate of burn/smoke formation.

#### **IV.B.2.4 Sampling Limitations**

In general, air sampling should not be regarded as a requirement for conducting ISB but as an option if the situation warrants. Sampling should not be used as the means to determine whether the public is adequately protected: the public should be protected regardless of air sampling. We believe that such protection may be achieved by adhering to operational guidelines. Sampling, however, may be valuable

by providing feedback information to the FOSC, by increasing the comfort level of both those conducting the burn and those potentially exposed to it, and by collecting data that may be of value for future ISB. Trends are more important than a single number. The readings of a real-time particulate monitor may fluctuate widely, depending on nearby activities such as passing cars or smoke from fireplaces in nearby houses. Therefore, a single reading may be misleading. Averaging the readings over a period of time (e.g., 15 minutes) should provide an indication of the trend, that is, whether the concentration goes up or remains steady. Visual observations, coupled with real-time data that should be useful in ascertaining the effect of the burn on exposure of the general population to particulates.

It is also important to state clearly the limitations and shortcomings of sampling data. These data should be interpreted correctly, and the concentrations should be presented with the associated uncertainty and possible interferences and inaccuracies. Otherwise, the values may not mean much, or worse yet, be misleading.

#### **IV.B.2.5 Sampling Rationale**

Sampling may be conducted for several reasons:

- To assess exposure levels at different points, in order to provide immediate feedback to the FOSC, and to verify visual observations of plume behavior;
- To validate air dispersion models;
- To satisfy other scientific or historical data collection needs.

Based on previous experience, the concentration of gases in the plume would likely drop to below the exposure limit within several hundred yards of the burn. However, particulate concentrations in the center of the plume may remain above the level of concern for several miles downwind. Sampling particulates should therefore be the main effort.

#### **IV.B.2.6 When To Sample**

Sampling is an option that may be exercised anytime during the burn. It may be desirable when there is a potential for exposure (even if contaminant levels are expected to be below exposure limits). Therefore, sampling may be done when the plume drifts over a populated area, over natural resources, or for scientific data collection, at various locations downwind of the burning site. Since the purpose of this sampling is to monitor ISB effects on sensitive populations, there is no need to require it when there is no reason to believe that a sensitive population will be affected. If the smoke plume is expected to be carried away from population centers or sensitive areas, sampling should not be required.

#### **IV.B.2.7 Sampling Equipment**

Sampling equipment should be:

- Portable, easily deployable, and available when needed;
- Sensitive, accurate, and precise enough to provide meaningful data;
- If possible, provide real-time readings for immediate feedback, and have the capability to log readings over several hours, to get the average concentration over an extended period of time.

Real-time particulate samplers are commercially available from several manufacturers.

In addition, sampling pumps with attached filter cassettes may be deployed at various locations for laboratory analysis. Their data, which are not real-time, may be used for exposure assessment, model validation, and to provide information for future ISB.

#### **IV.B.2.8 Recommended Air Monitoring Equipment for ISB**

The primary health concern for ISB is the evolution of particulates from the burning of crude oil, fuel products, or other hydrocarbons. Secondly, within the first several hours of the burn, the generation of VOCs and PAHs could be additional health and safety concerns in the immediate area. Air monitoring is an important tool in communicating risks to the public during an emergency response. If it is determined that a burn will be conducted and there is risk of exposure to a human population center, then air monitoring should be completed. The Responsible Party (RP) may conduct air monitoring in conjunction with a burn, either independently or with government oversight. The air monitoring results should be immediately reviewed and assessed to determine the burn effectiveness and to address any public health concerns.

The EPA Region 7 Emergency Response Program and its contractors, along with the U.S. EPA Environmental Response Teams (ERT) and U.S. Coast Guard (USCG) Strike Teams, are often called in emergencies to conduct perimeter and on-scene air monitoring. The U.S. EPA Regional Offices maintain a 24-hour readiness, along with contractor support, to provide air monitoring equipment at an emergency response. Equipment arrival time would depend on the mobilization time to the scene from the Regional Office or EPA satellite office. For a spill on the upper Mississippi River this would translate to 3 to 10 hours. The FOSC can mobilize additional air monitoring resources from ERT or from the USCG Strike Teams. The State Emergency Response Coordinator or local HAZMAT team can also mobilize air monitoring resources during an emergency.

The ERTs in Edison, New Jersey and in Las Vegas, Nevada, are on call 24 hours per day and are equipped and specialized to support FOSCs in conducting air monitoring. The ERT can mobilize to the site within 12 to 24 hours after being requested by a FOSC to support air monitoring activities. The USCG Strike Teams also are equipped and trained to provide air monitoring, safety monitoring, and other assistance to the FOSC as needed. The Strike Teams can mobilize to a site in 12 to 24 hours to provide air monitoring assistance.

During an incident when ISB is being evaluated, and humans could be exposed to the smoke plume, it is recommended that the Incident Commander plan to have air monitoring set up prior to and during the burn event. EPA and its contractors could immediately mobilize staff and equipment to monitor for particulates using Real-time Aerosol Monitors (RAM). In addition, carbon monoxide, carbon dioxide, and VOCs could be monitored directly at the burn location. EPA Region 7 office and its contractors maintain air monitoring equipment to support these operations.

It is recommended that direct-reading instrumentation be used to monitor the effectiveness and potential health concerns during a burn. The data should be evaluated, assessed, and communicated to the workers and to the public as soon as the results become available. RAMs, Mini RAMs, or equivalent, can serve as valuable tools to assess the levels of particulates in a plume that could impact humans during an ISB. These instruments can be fitted with size-selection attachments to obtain readings for PM-10 or PM-2.5, if desired. The current guidelines for safe levels of particulates are a PM-10 or PM-2.5 concentration of less than 150  $\mu\text{g}/\text{m}^3$ . Further Clean Air Act amendments may change the particulate matter (PM-10 and PM-2.5) standards. The RAM and Mini RAM instruments directly read a measure of the airborne particulates. The instruments can be used to screen residential and work areas during an ISB, so that risk to the public and on-site workers may be assessed. The RAMs and Mini RAMs have been used successfully at tire fires, train derailments involving flaring of hydrocarbons, and other chemical fires where an observable plume is seen.

In addition to the above instruments, EPA also could mobilize photoionization detectors, flame ionization detectors, multi-gas meters, colorimetric tubes, fixed sampling pumps, and portable gas chromatographs to monitor contaminants, including VOCs, PAHs, particulates, carbon monoxide, and carbon dioxide during an ISB.

The air monitoring equipment described in the following table can be mobilized to an emergency by calling the PA Regional Office or the National Response Center.

|   |                |
|---|----------------|
| U.S. EPA Region 7 (24-hour Spill Line)                            | (913) 281-0991 |
| National Response Center  | (800) 242-8802 |
| (Manned by USCG, can tie into EPA Regional Office or USCG Office) |                |

The State Emergency Response Program or local HAZMAT team can also mobilize air monitoring equipment to the scene. Both can be contacted through the State Emergency Response telephone numbers found in the Notification Section of the Region 7 Integrated Contingency Plan.

Another resource for air monitoring equipment can be vendors, such as industrial hygiene subcontractors, who rent air monitoring equipment. These vendors can make equipment available within 24 hours of an incident.

The National Oceanic and Atmospheric Administration (NOAA) Scientific Support Team can also provide air monitoring resources from its field office at Louisiana State University. The District 8 Scientific Support Coordinator (SSC) is:

Vacant, NOAA SSC, CDR Eighth Coast District (M-SSC),  
Hale Boggs Federal Building, Suite 1341  
500 Poydras Street  
New Orleans, LA 70130  
Office: (504) 589-4414

Table IV-2 shows the current inventory of air monitoring capabilities for ISB in EPA Region 7.

**TABLE IV-2**  
**EPA REGION 7 AIR-MONITORING CAPABILITIES FOR ISB**

| ITEM NAME   | CATEGORY                  | TARGET COMPOUNDS  | EPA KC | EPA ST. L | START KC | START ST. L |
|---|---------------------------|---|--------|-----------|----------|-------------|
| RAE Systems ppbRAE Plus   | PID                       | VOCs (low level)  | 2      | 0         | 0        | 0           |
| MSA Passport PID  | PID                       | VOCs  | 1      | 1         | 0        | 0           |
| Thermo Environmental TVA 1000B                                    | PID and FID               | VOCs  | 2      | 1         | 1        | 1           |
| MSA Passport Five Star Personal Alarm                             | Multi-Gas Detector        | LEL, CO, SO <sub>2</sub> , H <sub>2</sub> S, and O <sub>2</sub>   | 1      | 0         | 0        | 0           |
| MSA Passport Personal Alarm                                       | Multi-Gas Detector        | LEL, CO, SO <sub>2</sub> , H <sub>2</sub> S, and O <sub>2</sub>   | 1      | 0         | 0        | 0           |
| MSA Orion   | Multi-Gas Detector        | LEL, CO, H <sub>2</sub> S, and O <sub>2</sub>   | 1      | 1         | 0        | 0           |
| Dräger Multiwarn II   | Multi-Gas Detector        | LEL, CO <sub>2</sub> , and O <sub>2</sub> ; one also contains a HCN sensor and one has a Cl <sub>2</sub> sensor | 2      | 2         | 0        | 0           |
| RAE Systems MultiRAE Plus   | Multi-Gas Detector w/ PID | VOCs, LEL, CO, H <sub>2</sub> S, and O <sub>2</sub>   | 2      | 1         | 1        | 1           |
| Dräger X-AM 7000  | Multi-Gas Detector w/ PID | VOCs, LEL, CO, H <sub>2</sub> S, and O <sub>2</sub>   | 2      | 1         | 0        | 0           |
| RAE Systems AreaRAE   | Multi-Gas Detector w/ PID | VOCs, LEL, CO, H <sub>2</sub> S, NH <sub>3</sub> , and O <sub>2</sub> ; four with gamma detectors               | 10     | 0         | 0        | 0           |
| MSA MiniCO  | Single-Gas Detector       | CO  | 0      | 0         | 3        | 0           |
| RAE Systems ToxiRAE Plus  | Single-Gas Detector       | CO  | 2      | 1         | 0        | 0           |
| Dräger Chip Measurement System                                    | Chemical-Specific Monitor | H <sub>2</sub> S, CO, CO <sub>2</sub> , TPH, SO <sub>2</sub> , benzene, toluene, xylenes, and other analytes    | 3      | 0         | 1        | 0           |
| Thermo Electron Miran SapphIRe Infrared Analyzer                  | Chemical-Specific Monitor | VOCs and some inorganic compounds   | 1      | 0         | 1        | 0           |
| Thermo Electron DataRAM   | Particulate Monitor       | PM; size-selective attachments for PM-10 and PM-2.5   | 4      | 1         | 1        | 1           |
| Met One E-BAM   | Particulate Monitor       | PM  | 2      | 0         | 0        | 0           |
| Gilian GilAir-5 Low-Volume Air Sampling Pumps (set of five pumps) | Air Sampling              | PM, metals, SVOCs/PAHs, and other analytes  | 2      | 0         | 1        | 1           |
| Gilian AirCon2 High-Volume Air Sampling Pump                      | Air Sampling              | PM, metals, SVOCs/PAHs, and other analytes  | 6      | 0         | 0        | 0           |

**TABLE IV-2**

**EPA REGION 7 AIR-MONITORING CAPABILITIES FOR ISB**

| ITEM NAME  | CATEGORY     | TARGET COMPOUNDS               | EPA KC | EPA ST. L | START KC | START ST. L |
|--|--------------|--------------------------------|--------|-----------|----------|-------------|
| General Metal Works High Volume Air Sampler (filter paper & PUF collection media)                                | Air Sampling | PM, SVOCs/PAHs, dioxins/furans | 38     | 0         | 0        | 0           |
| General Metal Works High-Volume Air Sampler (filter paper & PUF collection media); modified for rapid deployment | Air Sampling | PM, SVOCs/PAHs, dioxins/furans | 8      | 0         | 0        | 0           |
| General Metal Works High-Volume Air Sampler (filter paper collection media)                                      | Air Sampling | Total suspended PM             | 12     | 0         | 0        | 0           |
| RADeCo H-810 High-Volume Air Sampler (filter paper collection media)   | Air Sampling | Total suspended PM             | 4      | 0         | 0        | 0           |
| General Metal Works High-Volume Air Sampler w/ PM-10 inlet head (filter paper collection media)                  | Air Sampling | PM-10                          | 6      | 0         | 0        | 0           |

**Notes:**

|                  |  |
|------------------|--|
| Cl <sub>2</sub>  | Chlorine   |
| CO               | Carbon monoxide                                      |
| CO <sub>2</sub>  | Carbon dioxide                                       |
| EPA              | U.S. Environmental Protection Agency                 |
| FID              | Flame ionization detector                            |
| HCN              | Hydrogen cyanide                                     |
| H <sub>2</sub> S | Hydrogen sulfide                                     |
| KC               | Kansas City (Missouri)                               |
| LEL              | Lower explosive limit                                |
| NH <sub>3</sub>  | Ammonia  |
| O <sub>2</sub>   | Oxygen   |
| PAH              | Polynuclear aromatic hydrocarbon                     |
| PID              | Photoionization detector                             |
| PM               | Particulate matter                                   |
| PM-2.5           | Particulate matter less than 2.5 microns in diameter |
| PM-10            | Particulate matter less than 10 microns in diameter  |
| SO <sub>2</sub>  | Sulfur dioxide                                       |
| START            | Superfund Technical Assessment and Response Team     |
| St. L            | St. Louis (Missouri)                                 |
| SVOC             | Semivolatile organic compound                        |
| TPH              | Total petroleum hydrocarbons                         |
| VOC              | Volatile organic compound                            |



#### **IV.B.2.9 Sampling Locations**

Sampling locations should be based on priority concerns, with the first priority given to population centers downwind of the burn. For scientific data collection, for example, model validation, it is recommended that samplers be placed at different distances from the burn to collect particulate concentration data at ground level. These data would be extremely valuable for future burns.

If it is determined that sampling is needed, real-time particulate samplers (PM-10) should be positioned as follows:

- On the shoreline, at the expected centerline of the plume;
- At the population center of concern;
- In several locations in the vicinity of the population downwind of the burn.

PM-10 samplers should be operated for more than 8 hours:

- Before the burn commences to gather background data;
- During the actual burn to assess the burn effect;
- If possible, after the burn is over to collect post-burn readings.

Sampling results should be relayed to the FOSC. If it is established that the readings exceed the level of concern, the FOSC will be so advised.

#### **IV.B.2.10 Other Sampling Considerations**

- Area background readings should be taken before and after the burn to determine baseline levels.
- EPA and regional air monitoring stations may be able to assist by providing historical data, and by conducting air sampling during the burn itself.

(<http://www.epa.gov/airdata/> and <http://airnow.gov/> )

#### **APPENDIX IV.C PUBLIC NOTIFICATION FOR ISB**

Notification of the public of an impending burn is critical to the overall success of an ISB effort. The notification, coordinated through the joint information center, should focus on conveying the following messages:

- Burning is a simple, well understood, and controlled practice.
- Strict health and environmental criteria are being used in deciding whether or not to burn.
- Burning is being conducted because it presents the opportunity for greater health and environmental protection than could be achieved by other spill response methods or no response.
- Health and environmental precautions will accompany burning.
- The burn will be carried out by specially trained personnel and will be closely monitored.
- The public will be notified of each burn before or as it begins.

Public notification can be initiated through radio/TV broadcasts. If necessary, local government and State emergency service personnel with access to established public warning systems and authority to use them can facilitate this notification.

Materials to educate the public and media about burning, its risks, and tradeoffs with other countermeasures should be developed ahead of time and available for dissemination during the burn. This material should cover the trade-offs involved in choosing response countermeasures, and relate the risks of ISB to better known risks (e.g. forest fires). Distribution of this information can be through the agencies' public affairs offices prior to a spill and through a joint information center established during a spill.

A suggested public notice for ISB might look like:

*At (time) on (date), a release of oil occurred at (location). Following an evaluation of the situation, local, State, and Federal officials have determined that burning the oil in place is the safest and most effective way to protect the public health and environment. The burn will be conducted under controlled conditions to ensure that the fire will be a minimum threat to the public, property, or environment.*

*The decision to burn was made after considering strict health and environmental criteria.*

*Officials have determined that the burning will present an opportunity for greater health and environmental protection than can be achieved by using other spill response methods, including not responding. Health and environmental precautions will accompany the burning.*

*The burn will be carried out by specially trained personnel and will be closely monitored. The burn will begin at approximately (time), and the public will be advised when the burn is complete. Questions should be directed to (person or organization) at (telephone number).*

## **APPENDIX IV.D ECOLOGICAL CONSIDERATIONS FOR ISB**

### **IV.D.1 OPEN WATER ISB**

Potential ecological impacts of open water ISB have not been extensively discussed or studied. Conclusions are based on documented physical effects observed in the laboratory and at limited test burns.

The surface area affected by ISB is likely to be small relative to the total surface area and depth of a given body of water. This does not necessarily preclude adverse ecological impacts, particularly if rare or sensitive species use the waters in question. Organisms that may be affected by ISB include those that use the uppermost layers of the water column, those that might come into contact with residual material, and possibly some benthic (bottom dwelling) plants and animals.

### **IV.D.2 DIRECT TEMPERATURE EFFECTS**

Burning oil on the surface of the water could adversely affect those organisms at or near the interface between oil and water, although the area affected would presumably be relatively small. Observations during large-scale burns using towed containment boom did not indicate a temperature impact on surface waters. Thermocouple probes in the water during a Newfoundland burn showed no increase in water temperatures during the burn (NOBE Facts, January 1994). It appears that the length of time the burning layer resides over a given water surface may be too brief to change the temperature, due to the fact the ambient-temperature water is continually being supplied below the oil layer as the boom is towed.

### **IV.D.3 SURFACE MICROLAYER**

#### **IV.D.3.1 Role And Importance of the Surface Microlayer**

The surface of the water represents a unique ecological niche called the “surface microlayer,” which has been the subject of many recent biological and chemical studies. Although most studies of the microlayer have been conducted in the marine environment, the results can also be applied to the freshwater environment. The microlayer, variously defined but often considered to be the upper millimeter or less of the water surface, is a habitat for many sensitive life stages of aquatic organisms, including eggs and larval stages of fish and crustaceans, and reproductive stages of other plants and animals. The microlayer also is a substrate for microorganisms and, as such, is often an area of elevated microbial population levels and metabolic activity.

#### **IV.D.3.2 Potential Effects of Burning on the Surface Microlayer**

The ecological importance of the surface microlayer and the potential impacts to it from burning activities have been discussed in the different, but related, context of ocean incineration. The Office of Technology Assessment (1986) noted in an evaluation of the technique, given the intermittent nature of ocean incineration, the relatively small size of the affected area, and the high renewal rate of the surface microlayer resulting from new growth and replenishment from adjacent areas, the long-term net loss of biomass would probably be small or non-existent.

Despite the obvious differences between shipboard incineration of hazardous wastes and surface burning of spilled oil, the above rationale is applicable to ISB. Accordingly, potential impacts to the ecologically important surface microlayer are, to some extent, offset by the presumably short-lived nature of the burn and its associated residual material.

#### **IV.D.4 ENVIRONMENTAL TOXICOLOGICAL CONSIDERATIONS**

Although many studies to define the physical and chemical characteristics that result from ISB have been performed, there has been little research on potential ecological effects. To address some of these information shortfalls, Environment Canada coordinated a series of studies to determine if ISB resulted in water column toxicity beyond that attributable to allowing the slick to remain on the surface of the water. While these studies centered on the Newfoundland ISB field trials conducted in August 1993, they also included laboratory tests to investigate potential effects in a more controlled environment.

Toxic effects were evaluated using three standard marine test organisms: sand dollars, oysters, and fish. In both the laboratory and the field experiments, sensitive toxic endpoints in these organisms were studied in the three situations of no oil, no burning; oil on water, no burning; and oil on water, burned. Results from the laboratory and field studies indicated that although toxicity increased in water samples collected below burning oil on water, this increase was generally no greater than that caused by the presence of an unburned oil slick on water. Chemical analyses performed in conjunction with the biological tests reflected low hydrocarbon levels in the water samples. In addition to water column samples, the residues remaining after the laboratory and Newfoundland field burns were subjected to aquatic toxicity testing.

Beyond the direct impacts caused by high temperatures, the by-products of ISB may be toxicologically significant. Although analysis of water samples collected from the upper 20 centimeters (cm) of the water column immediately following a burn of crude oil yielded relatively low concentrations of total petroleum hydrocarbons (1.5 parts per million [ppm]), compounds that have low water solubility or that associate

with floatable particulate material tend to concentrate at the air-water interface (EPA 1986). Strand and Andren (1980) noted that aromatic hydrocarbons in aerosols originate from combustion associated with human activities, and that these compounds accumulate in the surface microlayer until absorption and sedimentation remove them.

Burn residues could be ingested by fish, birds, mammals, and other organisms, and may also be a source for fouling of gills, feathers, and fur. However, these impacts would be expected to be much less severe than those manifested through exposure to a large, uncontained oil spill.

Contamination is likely to be local in scale affecting certain unique populations and organisms that use surface layers of the water column at certain times to spawn or feed. In crafting an effective and protective response strategy, these effects should be weighed against effects resulting from alternative actions.

## APPENDIX IV.E SAFETY AND HEALTH CONSIDERATIONS AND BY-PRODUCTS OF ISB

### IV.E.1 SAFETY OF RESPONSE PERSONNEL

The safety of personnel during both ignition and burn phases of large amounts of combustible liquids on the surface of the water presents some unique safety concerns for workers and response personnel. Many of these concerns are addressed in greater detail in operationally oriented references and include, but are not limited, to the following:

- **Fire Hazard.** Care must be taken that the burn be controlled at all times to ensure the safety of personnel and property. This precludes burning near sources such as tankers, barges, pipelines, or tank farms unless means are taken to ensure that the flames cannot propagate from the burn location to the source.
- **Ignition Hazard.** Personnel and equipment involved in ignition of the oil slick must be well coordinated. Weather and water conditions need to be kept in mind and adequate safety distances be kept at all times. Specialized ignition equipment, unknown fire behavior, and uncertain flash points introduce safety risks.
- **Vessel Safety.** Burning on waterways may involve the use of several vessels operating in close proximity, perhaps at night or in conditions of poor visibility. These conditions are hazardous by nature and generally require training and close coordination. Maneuverability while towing boom or positioning other containment equipment will require skilled personnel.
- **Training.** Training of personnel to operate equipment for ISB should be developed to minimize the risk of injury and accident. Training should meet all applicable OSHA regulations and guidelines.

Response personnel working in close proximity to the burn may be exposed to levels of gases and particulates that may require the use of PPE. Training for burn personnel should include proper use of use of PPE, which may be used to minimize inhalation of, and skin contact with, combustion by-products. Exposure limits such as OSHA's PELs are applicable to this group of typically healthy adults.

Other hazards can include the exposure of personnel to extreme heat conditions, smoke, and fumes; working under time constraints for extended periods of time. Personnel involved with burning operations must be well briefed on the plan of operations, with safety stressed, and must be notified of all changes from the approved burn plan. The need for burning must be constantly evaluated and should be reconsidered if conditions (e.g., weather, operations, equipment) pose a threat or danger to human health and safety, or facilities. As more knowledge is gained from burning, it is most likely that additional safety concerns will be identified.

#### IV.E.2 GENERAL PUBLIC HEALTH CONSIDERATIONS

Burning oil produces a visible smoke plume containing smoke particulates, combustion gases, unburned hydrocarbons, residue left at the burn site, and other products of combustion. It also results in the evaporation and release of volatile compounds from the oil. Public health concerns may relate to the chemical content of the smoke plume and the downwind deposition of particulates. It should be noted that not burning an oil spill also introduces its own air quality concerns. Analysis of the physical behavior of spilled oil has shown that 50 percent of a light crude oil spill can evaporate fairly readily, and it is the acutely toxic lighter fractions of a crude oil mix that quickly move into the atmosphere.

Results of recent burn tests indicate that ISB does not yield significant emissions above that expected for similar types of combustion such as forest fires. Many human health experts feel that the most significant human health risk resulting from ISB is inhalation of fine particulate material, which is a major constituent of smoke produced. An early assessment of health concerns attributable to the Kuwaiti oil fires identified PM-10 as representing the greatest health hazard in that situation. The extent to which these particles present a health risk during an ISB depends on the concentration and duration of exposure. It is important to remember that these particulates are so small that they do not settle readily. They will be carried by the prevailing wind over large distances, over which their concentrations will rapidly decline.

PAHs are a group of hydrocarbons produced during ISB. They are found in oil and oil smoke, where their relative concentrations in the latter tend to be higher than in the oil itself. Possible carcinogenicity of some members make this group a serious health concern, although it is generally long-term exposure to the higher molecular weight PAHs that is the basis for concern. SO<sub>2</sub> and NO<sub>2</sub> are eye and respiratory tract irritants that are produced by oil combustion. Concentrations of PAHs decline downwind as smoke from the fire is diluted by clean air. The concentrations of other by-products of burning oil (i.e., combustible gases) also decline downwind.

Burning should not be allowed if downwind human populations are at risk. The downwind extent of human risk has not been empirically determined, although it is an area of very active research. There are no exposure standards for respirable particles generated by a burn that could be applied directly to determine safe downwind distances. Atmospheric dispersion models, if available for the specific area, could be utilized to help refine potential downwind exposures. If models are not available, whenever possible, a small pilot burn could be conducted before a larger burn in order to gauge the effectiveness of the ambient conditions to disperse the smoke and gasses resultant from the burned material. Because wind direction meanders under most circumstances, no population should be within a 45 degree arc to either



side of the wind direction. Local wind and weather events (e.g., air stability class, lake breezes, and frontal passages) must be considered when determining downwind directions.

#### **IV.E.3 BY-PRODUCTS**

By-products of ISB exist because no combustion process is completely efficient in oxidizing a given source material. Besides the normal results of burning, CO<sub>2</sub>, water vapor, and an assortment of sulfur and nitrogen residues, a wide range of intermediate combustion products are generated. Although the exact mix of burn residues varies, by-products can be categorized into three groups: unburned oil, airborne components, and combustion residues.

## **APPENDIX IV.F OPERATIONAL CONSIDERATIONS FOR CONDUCTING ISB**

### **IV.F.1 OPEN WATER BURNING**

An open water ISB technique most likely to be used would involve the use of boats towing fire resistant booms that could be used to contain the spilled oil and keep it from spreading. The boom, attached to the boats by towing lines, would be towed such that it forms a U shape. The open end of the U is maneuvered through the oil slick, and a “boomfull” of oil is collected. The boom is towed away from the main slick and the oil is ignited. During the burning, the boom is pulled in such a way as to slowly advance ahead to ensure that the oil is concentrated at the back end of the boom and to maintain maximum thickness. A burn can be terminated by letting the oil layer thin out by releasing one end of the boom. After the oil is consumed, the process is repeated. Other techniques may include containing oil continuously spilling from a burning oil rig, or placing fire boom around a vessel or facility that caught fire.

### **IV.F.2 BURNING IN OTHER INLAND ENVIRONMENTS**

Although it is widely held that ISB does take place in the inland zone, little technical information exists on techniques and impacts of burning in environments other than open water. In most cases, these involve burning in ice conditions, and in wetlands and the results are varied and anecdotal.

### **IV.F.3 BURNING IN ICE/WINTER CONDITIONS**

Containment is almost always required to maintain the minimum 2 to 3 mm thickness necessary to burn oil. Ice edges can act as natural barriers, and as long as the oil is of sufficient thickness, combustion is possible. However, wind and/or low currents may be necessary to herd the oil into sufficient thickness along the edge. Oil trapped under the ice may also accumulate in sufficient thicknesses along leads in broken ice, resulting in favorable conditions for burning. Test burns in a 1986 Esso wave basin showed burning efficiencies of up to 90 percent, where moderate winds herded the oil into long narrow leads. Burning in other lead geometries and along brash ice resulted in less efficient burns. Arctic studies have also shown it is possible to ignite and burn fresh, weathered, and emulsified oil at temperatures as low as 35°C. It is important to note that an ISB in broken ice is not easily extinguished once ignited.

Burning oil in snow conditions is similar to burning oil on water, because as the snow melts during the burn, it can form a meltwater pool upon which the oil continues to burn. Certain conditions such as wind, snow properties, and concentration of the oil in the snow all can impact the success of the burn. Burn efficiencies of 90 to 99 percent have been shown during field studies and actual spills. Oil/snow mixtures

of up to 75 percent can be ignited with a diesel or gasoline soaked rag. [This section was from Detection of Oil in Ice and Burning Oil Spills in Winter Conditions, PROSCARAC, Inc., March 1992].

#### **IV.F.4 FIRE RESISTANT BOOM**

The application of ISB requires the physical collection and containment of oil to maximize the efficiency of the burning process and to provide a means to control the burn. Generally, this is accomplished by the use of a fire boom or some type of fire resistant containment. If fire boom or other fire containment device is not available, and/or the equipment to deploy the boom is unavailable or inadequate, approval for use of ISB may be denied.

#### **IV.F.5 IGNITION**

Heavy oils require longer heating times and a hotter flame to ignite compared to lighter oils. Many ignition sources can supply sufficient heat. These include pyrotechnic igniters, laser ignition systems, and aerial ignition systems. Pyrotechnic devices have been successfully used to ignite floating oil slicks under a range of environmental conditions. Disadvantages to their use are associated with safety, shelf life, availability, speed of deployment, and cost (Spiltec, 1987). Laser ignition, while a promising technique, remains experimental in nature, with drawbacks associated with difficulties in beam focusing from the air, wind effects during oil preheating, energy requirements, and cost. Aerial ignition systems using gelled gasoline dropped from helicopters appear to be a more viable technique applicable in a range of environmental conditions. Whichever method is used, considerations of safety and efficiency must enter into the decision process.

#### **IV.F.6 OIL THICKNESS**

In general, oil slicks can be effectively burned if they are consistently 2 to 3 mm thick. This number can vary with oil viscosity and degree of weathering, with more viscous and more weathered oils requiring a considerably thicker layer of oil (estimated to be nearly 10 mm). Also, burn efficiencies increase as thickness of the slick increases. This consideration, therefore, implies that spilled oil must be contained by some means (fire resistant boom, ice, etc.) in order to prevent oil spreading and the resultant thinning of surface layers.

#### **IV.F.7 EFFECTS OF WEATHERING**

Weathered oil requires a longer ignition time and higher ignition temperatures. However, igniting weathered oil is generally not a problem with most ignition sources, because they have sufficient

temperature and burn time to ignite most oils. Weathering, as it affects the ability to burn oil, is currently under study in laboratory and field experiments.

#### **IV.F.8 EFFECTS OF EMULSIFICATION**

The effect of water content on oil ignition is thought to be similar to that of weathering, in that it decreases ignitability and combustibility. However, oil containing some water can be ignited and burned. The controlling factor in the combustion of emulsions is the removal of water, which is accomplished either through boiling of the water out of the emulsion, or by breaking the emulsion thermally or chemically. The effect of emulsions on the ability to burn oil is currently under study in laboratory and field experiments.

#### **IV.F.9 UNBURNED OIL AND SOLID BURN RESIDUES**

Although ISB has the potential for removing a large proportion of the mass of an oil spill from the water surface, some of the source material will not be consumed and will remain as a concern. Similarly, combustion residues, described as stiff, taffy-like material, will remain after the burn. Provisions for the removal of these materials must be made, as the potential exists for undefined levels of shoreline impacts even with a successful burn.

Although sinking of burn residues has seldom been observed in test burns, a slight increase in density relative to the original oil has been observed. In the 1991 explosion and burning of the tanker Haven off Genoa, Italy, burn residues were thought to have sunk. Reliable estimates of the amount of oil actually burned were not possible, but the tanker was laden with 141,000 tons of Iranian heavy crude, and very little remained in the wreck following the accident and fire. It was reported that several surveys during 1991 confirmed that there was sunken oil offshore and along the coast. The sunken oil is now thought to have resulted from the extraordinary heating of the contained product inside the cargo holds of the vessel. This oil basically underwent a crude distillation, in which lighter components were driven off and a denser, heavier-than-seawater material remained.

It should be emphasized that the circumstances specific to this situation should not be used as the basis for generalization in all burning scenarios. Items to consider include:

- Regulations concerning respiratory protection
- Regulations concerning Hazardous Waste Operations and Emergency Response (HAZWOPER)

## **ANNEX V**

# **INTER-AGENCY MEMORANDUM OF AGREEMENT REGARDING OIL SPILL PLANNING AND RESPONSE ACTIVITIES UNDER THE FEDERAL WATER POLLUTION CONTROL ACT'S NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN AND THE ENDANGERED SPECIES ACT**

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**Inter-agency Memorandum of Agreement Regarding Oil Spill Planning and  
Response Activities Under the Federal Water Pollution Control Act's  
National Oil and Hazardous Substances Pollution Contingency Plan and the  
Endangered Species Act**

**I. INTRODUCTION**

- A. Parties. The Parties to this agreement are the U.S. Coast Guard (USCG), the U.S. Environmental Protection Agency (USEPA), the Department of the Interior (DOI) Office of Environmental Policy and Compliance, the U.S. Fish and Wildlife Service (USFWS), and the National Oceanic and Atmospheric Administration's (NOAA's) - National Marine Fisheries Service (NMFS) and National Ocean Service (NOS).
- B. The Parties have conducted a review of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and associated oil spill response activities to coordinate their actions under Section 1321(d) of the Clean Water Act and Section 7(a)(1) of the Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*) (ESA). Section 1321(d) of the Clean Water Act establishes the NCP and assigns responsibilities to Federal agencies in mitigating damage from oil and hazardous materials spills, including the conservation of fish and wildlife. Section 7(a)(1) of the ESA requires all Federal agencies, in consultation with and with the assistance of the Secretaries of the Interior or Commerce, as appropriate, to review their programs and utilize their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of listed species. As a result of this review, recommended procedures have been developed that will achieve better conservation of listed species and critical habitat during implementation of oil spill response activities.
- C. This agreement provides a general framework for cooperation and participation among the Parties in the exercise of their oil spill planning and response responsibilities. Following the recommended procedures presented in this agreement will better provide for the conservation of listed species, improve the oil spill planning and response procedures delineated in the NCP, and ultimately streamline the process required by Section 7(a)(2) of the ESA.

**II. PURPOSE**

- A. This agreement is intended to be used at the area committee level primarily to identify and incorporate plans and procedures to protect listed species and designated critical habitat during spill planning and response activities. Proactive regional planning may also take into consideration concerns for proposed and candidate species, as well as listed species' habitat not yet designated as critical.<sup>1</sup>

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<sup>1</sup> Adverse effects on non-designated critical habitat used by listed species has a potential for having an adverse affect on these listed species. Therefore, planners should consider these areas if information is available.

- B. This agreement coordinates the consultation requirements specified in the ESA regulations, 50 CFR 402, with the pollution response responsibilities outlined in the NCP, 40 CFR 300. It addresses three areas of oil spill response activities: pre-spill planning activities, spill response event activities, and post-spill activities. The agreement identifies the roles and responsibilities of each agency under each activity. By working proactively before a spill to identify potential effects of oil spill response activities on listed species and critical habitat, and jointly developing response plans and countermeasures (response strategies) to minimize or avoid adverse effects, impacts to listed species and critical habitat should be reduced or avoided completely. Should a spill occur, response plans and countermeasures will be used to implement response actions to minimize damage from oil discharges in a manner that reduces or eliminates impacts to listed species and critical habitat. In the event that oil spill response actions may result in effects on listed species or critical habitat, the agreement provides guidance on how to conduct emergency consultation under the ESA. It also describes the steps for completing formal consultation, if necessary, after the case is closed, if listed species or critical habitat have been adversely affected.
- C. The goal of this agreement is to engage in informal consultation wherever possible during planning and response. With adequate planning and ongoing, active involvement by all participants, impacts to listed species and critical habitat and the resulting need to conduct subsequent ESA Section 7(a)(2) consultations will be minimized or obviated.

### **III. LEGAL AUTHORITIES**

- A. The Federal Water Pollution Control Act (FWPCA), 33 U.S.C. § 1321., requires that when a spill occurs, the President take such action as necessary to ensure effective and immediate removal of a discharge, and mitigation or prevention of a substantial risk of a discharge of oil into the waters of the United States. The National Contingency Plan (NCP), 40 CFR Part 300, prepared in accordance with the FWPCA, assigns duties to Federal agencies to protect the public health and welfare, including fish, wildlife, natural resources and the public. The NCP designates the Federal On Scene Coordinator (FOSC) as the person responsible for coordinating an oil spill response. (The abbreviation OSC is used in the NCP, while the abbreviation for Federal On Scene Coordinator is FOSC in this agreement.) Nothing in this agreement limits the authority of the Federal On Scene Coordinator as defined in the NCP.
- B. The Endangered Species Act of 1973 (ESA), as amended, 16 U.S.C. §1531 et seq., provides a means to protect threatened and endangered species and the ecosystems upon which they depend. The ESA requires that Federal agencies insure that the actions they authorize, fund, or carry out do not jeopardize listed species or adversely modify their designated critical habitat. Regulations for conducting Section 7 consultation are set forth in 50 CFR Part 402.



#### IV. DEFINITIONS

The following definitions apply to this agreement and are taken from the definitions contained in either the NCP or the March 1998 USFWS & NMFS Endangered Species Consultation Handbook. For definitions of terms not listed below, refer to the USFWS & NMFS Endangered Species Consultation Handbook and the NCP as appropriate.

*Area Committee* - the entity appointed by the President consisting of members from qualified personnel of Federal, state, and local agencies with responsibilities that include preparing an area contingency plan for an area designated by the President. The chairs of the Area Committee are the USCG for coastal and Great Lakes plans, and the USEPA for inland plans. In some instances the Regional Response Team (RRT) may act as the Area Committee. In this MOA, the term Area Committee also includes the RRT acting as the Area Committee.

*Area Contingency Plan (ACP)* - the plan prepared by an Area Committee (or the RRT acting as the Area Committee) that is developed to be implemented in conjunction with the NCP and Regional Contingency Plan (RCP), in part to address removal of a worst case discharge and to mitigate or prevent a substantial threat of such a discharge from a vessel, offshore facility, or onshore facility operating in or near an area designated by the President. A detailed annex containing a Fish and Wildlife and Sensitive Environments Plan prepared in consultation with the USFWS, NOAA, and other interested natural resource management agencies should be incorporated into each ACP. In this MOA, the term ACP also includes sub-area ACP's, sub-area contingency plans, geographic response plans and geographic response strategies as per 40 CFR 300.210.

*Biological Assessment* - information prepared by or under the direction of the Federal action agency (USCG or USEPA) regarding: 1) listed and proposed species and designated critical habitat that may be affected by proposed actions; and, (2) the evaluation of potential effects of the proposed actions on such species and habitat.

*Biological Opinion* - document which includes: (1) the opinion of the USFWS or NMFS as to whether or not a Federal action is likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of designated critical habitat; (2) a summary of the information on which the opinion is based; and (3) a detailed discussion of the effects of the action on listed species or designated critical habitat. This document will also contain an incidental take statement, that, if appropriate, exempts the Federal actions from the ESA Section 9 take prohibitions.

*Candidate species* – plant and animal taxa considered for possible addition to the List of Threatened and Endangered Species.

*Case is Closed* – When removal operations are complete in accordance with 40 CFR 300.320(b).

*Critical habitat* - areas designated by the USFWS and NMFS pursuant to Section 4 of the ESA for the purposes of identifying areas essential for the conservation of a threatened or endangered species and which may require special management considerations.

*Emergency Consultation* – an expedited consultation process that takes place during an emergency (natural disaster or other calamity) (50 CFR 402.05). The Services have determined that oil spill response activities qualify as an emergency action. The consultation may be initiated informally. The emergency continues to exist until the removal operations are completed and the case is closed in accordance with 40 CFR 300.320(b). The FOSC will continue to conduct emergency consultations, if needed, until the emergency is over and the case is closed. Formal, or informal, consultation is initiated after the emergency is over, at which time the USFWS and/or NMFS evaluates the nature of the emergency actions, the justification for the expedited consultation, and any impacts to listed species and their habitats.

*Federal On Scene Coordinator (FOSC)* - the Federal official predesignated by USEPA or the USCG to coordinate and direct responses under the FWPCA as defined in the NCP.

*Formal Consultation*<sup>2</sup> - a process between USFWS or NMFS and the Federal action agency (USCG or USEPA) that: (1) determines whether a proposed Federal action is likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat; (2) begins with a Federal agency's written request and submission of a complete Section 7 consultation initiation package; and (3) concludes with the issuance of a biological opinion and incidental take statement, as appropriate, by either of the Services. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat. See informal consultation).

*Incidental Take* - take of listed fish or wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or applicant.

*Informal Consultation* - an optional process that includes all discussions and correspondence between the USFWS or NMFS and the Federal agency (USCG or USEPA) or designated non-Federal representative, prior to formal consultation, to determine whether a proposed Federal action may affect listed species or critical habitat. This process allows the Federal agency to utilize the Services' expertise to evaluate the agency's assessment of potential effects or to suggest possible modifications to the proposed action, which could avoid potential adverse effects. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat).

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<sup>2</sup> Formal consultation can occur during planning or after the conclusion of emergency consultation if listed species or critical habitat have been affected.

*Listed Species* – for the purposes of this MOA, any species of fish, wildlife or plant, which has been determined to be endangered or threatened under Section 4 of the ESA.

*National Contingency Plan (NCP)* – National Oil and Hazardous Substances Pollution Contingency Plan. The NCP is a national plan that provides the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants and contaminants. The NCP is set forth in 40 CFR 300.

*National Response Team (NRT)* - a national team, defined under the NCP, responsible for national planning, policy, and coordination for hazardous substance and oil spill preparedness and response, consisting of representatives from agencies named in 40 CFR 300.175(b).

*Regional Response Team (RRT)* - a regional team of agency representatives that acts in two modes: the standing RRT and incident specific RRT. The Co-chairs are the USCG and USEPA. The standing team is comprised of designated representatives from each participating Federal agency, state governments and local governments (as agreed upon by the states). Incident-specific teams are formed from the standing team when activated for a response. The role of the standing RRT includes establishing regional communications and procedures, planning, coordination, training, evaluation, preparedness and related matters on a region-wide basis. It also includes assisting Area Committees in coordinating these functions in areas within their specific regions. The role and composition of the incident-specific team is determined by the operational requirements of the response. During an incident, it is chaired by the agency providing the FOSC.

*Services* – Term used to refer to both the USFWS and NMFS.

## **V. PROCEDURES**

Oil spill planning and response procedures are set forth in the NCP. This agreement is intended to facilitate compliance with the ESA without degrading the quality of the response conducted by the FOSC, to improve the oil spill planning and response process, and ensure continued inter-agency cooperation to protect, where possible, listed species and critical habitat.

### **A. PRE-SPILL PLANNING**

- (1) While drafting Area Contingency Plans themselves may not result in effects to listed species, actions implemented under the plans may. It is essential that the Area Committee engage USFWS and NMFS during the ACP planning process while developing or modifying the ACP and response strategies. This informal consultation can be used to determine the presence of listed species or critical habitat, and the effects of countermeasures, and to ensure that measures to reduce or avoid impacts to listed species and critical habitats during oil spill response activities are developed. By consulting on the anticipated effects prior to implementing response actions, decisions can be made rapidly during the spill, harm from response actions can be

minimized, and implementation of response strategies specifically designed to protect listed species and critical habitat can be achieved.

- (2) The pre-spill planning process is shown as a flow chart in Appendix A. The Area Committee Chair will request, in writing, that endangered species expertise and a species list be provided by the Services.<sup>3</sup> The request should also describe the area and include a general description of the countermeasures being considered and the planning process to be used (e.g., a workgroup). In order to document the request for consultation and planning involvement, the request shall be sent to both NOAA and USFWS. To obtain NMFS assistance, a request should be sent to the Department of Commerce (DOC) RRT representative, with a copy to the NOAA Scientific Support Coordinator (SSC) and the NMFS Regional Field Office. For USFWS support, a request should be sent to the local USFWS field office(s), with a copy to the USFWS Regional Response Coordinator (RRC) at the appropriate USFWS Regional Office(s) and the DOI RRT representative. It is the responsibility of the USFWS RRC, acting through the Ecological Services Assistant Regional Director, and the NOAA SSC to act as a liaison between the respective Service and the Area Committee. USFWS and NMFS will orally respond to the request within 30 days of receipt and provide a written response within 60 days. The response should include designation of a listed species expert to assist the Area Committee.
- (3) If listed species or critical habitat are present in the planning area being considered the Area Committee should use a planning process that ensures engagement of Service experts.<sup>4</sup> This process shall ensure that the appropriate participants jointly gather and analyze the information needed to complete the Planning Template in Appendix C. This planning process constitutes informal consultation.<sup>5</sup> The goals of this planning process are to identify the potential for oil spill response activities to adversely affect listed species and critical habitat and to identify for inclusion in the ACP information on sensitive areas, emergency response notification contacts, and any other information needed. Methods should be developed to minimize identified adverse effects and, where necessary, the plan should be modified accordingly. If specific sources of potential adverse effects are identified and removed, the Services will provide a concurrence letter and Section 7(a)(2) requirements will be deemed to have been met.<sup>6</sup>
- (4) If, after the process in Appendix C has been followed, it cannot be determined that adverse effects will not occur during a response action, the USCG or USEPA, as appropriate, will initiate formal consultation using the information gathered in Appendix C; this information will be used by the Services to complete formal

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<sup>3</sup> 40 CFR 300.170(a).

<sup>4</sup> Process options include using an informal workgroup; formal workgroup, Environmental Risk Assessment process, or other process based on Area Committee needs.

<sup>5</sup> This process does not negate any regional consultations that have already occurred, nor alter the strategies/procedures in the ACP until the ACP is officially modified in consultation with USFWS or NMFS.

<sup>6</sup> Letter is required for the administrative record. See Appendix E.

consultation.<sup>7</sup> This will be a programmatic consultation that generally addresses oil spill response activities at issue in the plan area. At times when specific information is available about certain oil spill response methods and listed species and critical habitat, it may be possible to pre-approve particular activities that may be implemented in the event there is insufficient time to initiate emergency consultation before the need to take action.<sup>8</sup>

- (5) All parties recognize that development and modification of the ACP is an ongoing process. Changes, including modifications to response actions or changes to the species list, should be addressed regularly through a dynamic planning process. The Services should contact the Area Committee or workgroup if they become aware of newly listed species that may be affected by planned response activities. The Area Committee should likewise notify the Services of changes to planned response activities. The Area Committee or workgroup should evaluate any changes and assess the need for additional consultation as needed.

## **B. OIL SPILL RESPONSE**

During an oil spill event which may affect listed species and/or critical habitat, emergency consultations under the ESA are implemented (50 CFR 402.05) for oil spill response actions.<sup>9</sup> Emergency consultation may be conducted informally through the procedures that follow (See Appendix A). Emergency consultation procedures allow the FOSC to incorporate listed species concerns into response actions during an emergency. “Response” is defined in this agreement as the actions taken by the FOSC in accordance with the NCP. The FOSC conducts response operations in accordance with the NCP and agreement established in the ACP.

- (1) As per the NCP and ACP, the FOSC will notify the RRT representatives of DOI and DOC through the established notification process regardless of whether listed species or critical habitat is present. Upon notification, the DOC and DOI representatives shall contact the NOAA SSC and RRC, respectively, and other appropriate Service contacts as provided in internal DOC or DOI plans, guidance, or other documents. If established in the ACP, the FOSC may also contact the Service regional or field offices directly (see Section V(A)(3) above). If listed species and/or critical habitat are present or could be present, the FOSC shall initiate emergency consultation by contacting the Services. The NOAA SSC and RRC shall coordinate appropriate listed species expertise. This may require timely on-scene expertise from the Services’ local field offices. These Service representatives may, as appropriate, be asked by the FOSC to participate within the FOSC’s Incident Command System and provide information to the FOSC.<sup>10</sup>

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<sup>7</sup> Letter is required for the administrative record. See Appendix E.

<sup>8</sup> Due to time constraints associated with spill response, this does not mean that immediate spill response actions cannot occur to meet the requirements of 40 CFR 300.317. However, planning should address specific procedures for initiating emergency consultation for activities that are pre-approved and for those that have not been pre-approved.

<sup>9</sup> Based on pre-spill planning or discovered during the response.

<sup>10</sup> 40 CFR 300.175(b)(7) & (b)(9); 40 CFR 300.305(e).

- (2) The ACP, including any agreed upon references cited in the ACP, should form the basis for immediate information on response actions. As part of emergency consultation, the Services shall provide the FOSC with any timely recommendations to avoid and/or minimize impacts to listed species and critical habitat.<sup>11</sup> The NOAA SSC should also be involved in these communications as appropriate. If incidental take is anticipated, and if no means of reducing or avoiding this take are apparent, the FOSC should also be advised and the incidental take documented. If available, the FOSC should consider this information in conjunction with the national response priorities established in the NCP.<sup>12</sup> The FOSC makes the final determination of appropriate actions.
- (3) It is the responsibility of both the FOSC and the Services' listed species representatives to maintain a record of written and oral communications during the oil spill response. The checklist contained in Appendix B is information required to initiate a formal consultation in those instances where listed species and/or critical habitat have been adversely affected by response actions.<sup>13</sup> If it is anticipated that listed species and/or critical habitat may be affected, the FOSC may request that the USFWS and/or NMFS representative to the Incident Command System oversee and be responsible for the gathering of the required information in Appendix B while the response is still ongoing.<sup>14</sup> The FOSC may also choose to designate another individual to be responsible for collecting the information.<sup>15</sup> Although in some instances the drafting of information for Appendix B may be completed after field removal operations have ceased, it is anticipated that collection of the information should be complete before the case is officially closed and that no further studies will be necessary.
- (4) It is the responsibility of the FOSC to notify the Services' representatives in the Incident Command System of changes in response operations due to weather, extended operations, or some other circumstance. It is the responsibility of the Services to notify the FOSC of seasonal variances (e.g., bird migration), or other natural occurrences affecting the resource. If there is no Service representative in the Incident Command System, the FOSC will ensure that the NOAA SSC and/or DOI representative to the RRT remains apprised of the situation. The Services will continue to offer recommendations, taking into account any changes, to avoid jeopardizing the continued existence of listed species or adversely modifying critical habitat, and to minimize the take of listed species associated with spill response activities.

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<sup>11</sup> See Section 8.1 of the USFWS & NMFS Endangered Species Consultation Handbook (<http://endangered.fws.gov/consultations/s7hndbk/s7hndbk.htm>).

<sup>12</sup> 40 CFR 300.317 National Response Priorities.

<sup>13</sup> See Section 8.2(B) of the USFWS & NMFS Endangered Species Consultation Handbook.

<sup>14</sup> If requested by the FOSC, the NOAA Scientific Support Coordinator (SSC) may coordinate this data collection.

<sup>15</sup> See Appendix D for example Pollution Removal Funding Authorization (PRFA) Statement of Work language.

### **C. POST RESPONSE**

If listed species or critical habitat have been adversely affected by oil spill response activities, a formal consultation is required, as appropriate.<sup>16</sup> Informal emergency consultation shall remain active until the case is closed. The FOSC will initiate consultation on the effect of oil spill response activities (not the spill itself) after the case is closed. Every effort shall be made to ensure that relevant information generated as part of the consultation process is made available for use in the Natural Resource Damage Assessment (NRDA) process. (Note: NRDA activities are separate from this consultation.)

- (1) After the FOSC determines that removal operations are complete in accordance with 40 CFR 300.320(b), the impacts of the response activities on listed species and critical habitat will be jointly evaluated by the FOSC and the Services.
- (2) If listed species or critical habitat were adversely affected by oil spill response activities, the FOSC will follow the procedural requirements of 50 CFR 402.05(b) (see Appendix A). The document developed by following Appendix B, information required to initiate a formal consultation following an emergency, should be included with a cover letter to the Services requesting consultation and signed by the FOSC. The FOSC will work with the Services and the NOAA SSC, as appropriate, to ensure that Appendix B is complete.<sup>17</sup> This document comprises the FOSC's formal request for consultation.
- (3) The Services normally issue a biological opinion within 135 days of receipt of the Section 7 consultation request (50 CFR 402.14). When a longer period is necessary, and all agencies agree, the consultation period may be extended. The final biological opinion will be prepared by the Services and provided to the FOSC, USFWS RRC, NOAA SSC, DOI and DOC RRT members, and the Area Committee Chair so that recommendations can be reviewed by the Area Committee, and where appropriate, implemented to minimize and/or avoid effects to listed species and critical habitat from future oil spill response actions.<sup>18</sup> The result of the consultation should be considered by the FOSC for inclusion in a lessons learned system so changes can be made to the ACP, as necessary, for the benefit of future oil spill response actions. If such changes to the ACP modify the anticipated effects to listed species or critical habitat, the Services should appropriately document the anticipated changes in future effects and complete any appropriate administrative steps.

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<sup>16</sup> If only proposed species or proposed critical habitat have been adversely affected, a formal consultation is not required; however, ESA conference procedures should be followed as appropriate. See the USFWS & NMFS Endangered Species Consultation Handbook for conference information.

<sup>17</sup> The NOAA SSC may also assist.

<sup>18</sup> Recommendations may also be provided for addressing effects caused by spill response actions. This information should be provided to the NRDA process as appropriate.

**VI. Points of Contact.** The following are the points of contact for each Party:

USCG: Chief, Office of Response, Coast Guard Headquarters (G-MOR), (202) 267-0516.

USEPA: Oil Program Center, U.S. Environmental Protection Agency, (703) 603-8823.

NOAA - NMFS: Section 7 Coordinator, Endangered Species Division, Office of Protected Resources, (301) 713-1401.

USFWS: National Spill Response Coordinator, U.S. Fish and Wildlife Service, Division of Environmental Quality, (703) 358-2148.

NOAA - NOS: Director, Office of Response and Restoration, (301) 713-2989 x101.

DOI: Office of Environmental Policy and Compliance, (202) 208-6304.

**VII. Funding and Resources.** This agreement is not a fiscal or funds obligation document. Nothing in this agreement shall be construed as obligating any of the Parties to the expenditure of funds in excess of appropriations authorized by law or otherwise commit any of the Parties to actions for which it lacks statutory authority. It is understood that the level of resources to be expended under this agreement will be consistent with the level of resources available to the Parties to support such efforts. Any activities involving reimbursement or contribution of funds between the Parties to this agreement will be handled in accordance with applicable laws, regulations and procedures. Such activities will be documented in separate agreements with specific projects between the Parties spelled out. The separate agreements will reference this general agreement.

**VIII. Effective Date.** The terms of this agreement are effective upon signature by all Parties.

**IX. Modification.** This agreement may be modified upon the mutual written consent of the Parties.

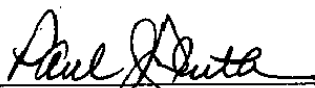
**X. Termination.** The terms of this agreement, as modified, with the consent of all Parties, will remain in effect until terminated. Any Party upon 60 days written notice to the other Parties may terminate their involvement in this agreement.



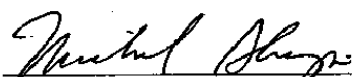
**Inter-agency Memorandum of Agreement Regarding Oil Spill Planning and  
Response Activities Under the Federal Water Pollution Control Act's  
National Oil and Hazardous Substances Pollution Contingency Plan and the  
Endangered Species Act**

**Approved By:**

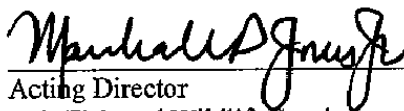
**Date:**

  
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and Environmental Protection  
U.S. Coast Guard

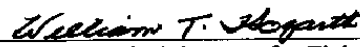
5/25/01

  
Acting Assistant Administrator  
Office of Solid Waste and Emergency Response  
U.S. Environmental Protection Agency

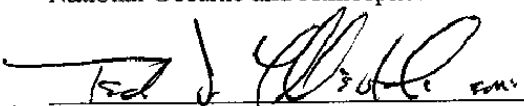
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Acting Director  
U.S. Fish and Wildlife Service

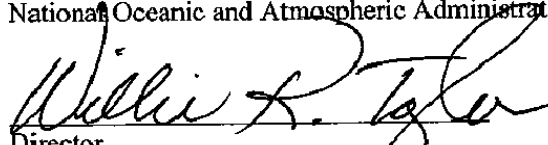
8 June 2001

  
Acting Assistant Administrator for Fisheries  
National Marine Fisheries Service  
National Oceanic and Atmospheric Administration

5/15/01

  
for Assistant Administrator  
National Ocean Service  
National Oceanic and Atmospheric Administration

5/30/01

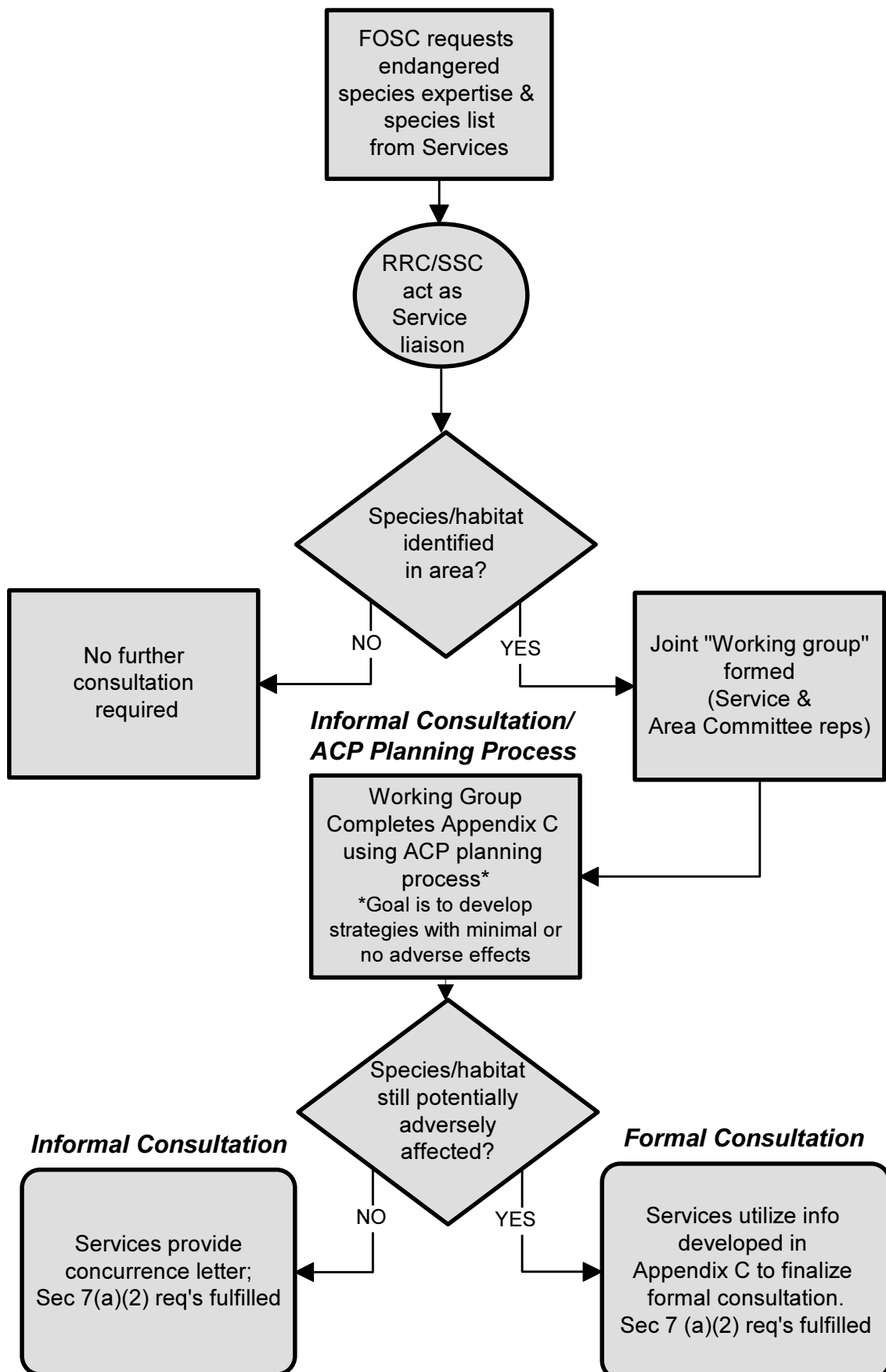
  
Director  
Office of Environmental Policy and Compliance  
Department of the Interior

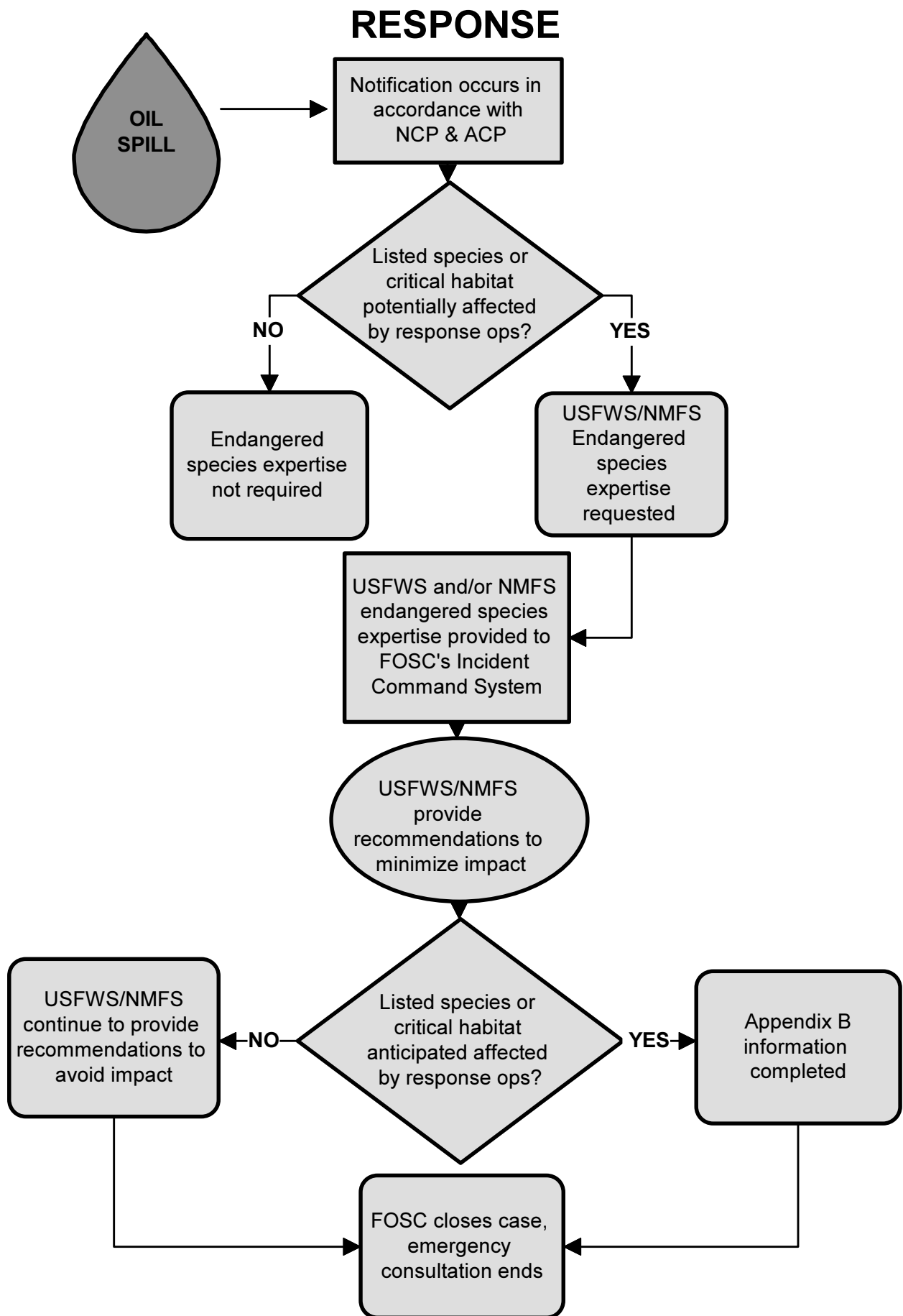
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**APPENDIX A**

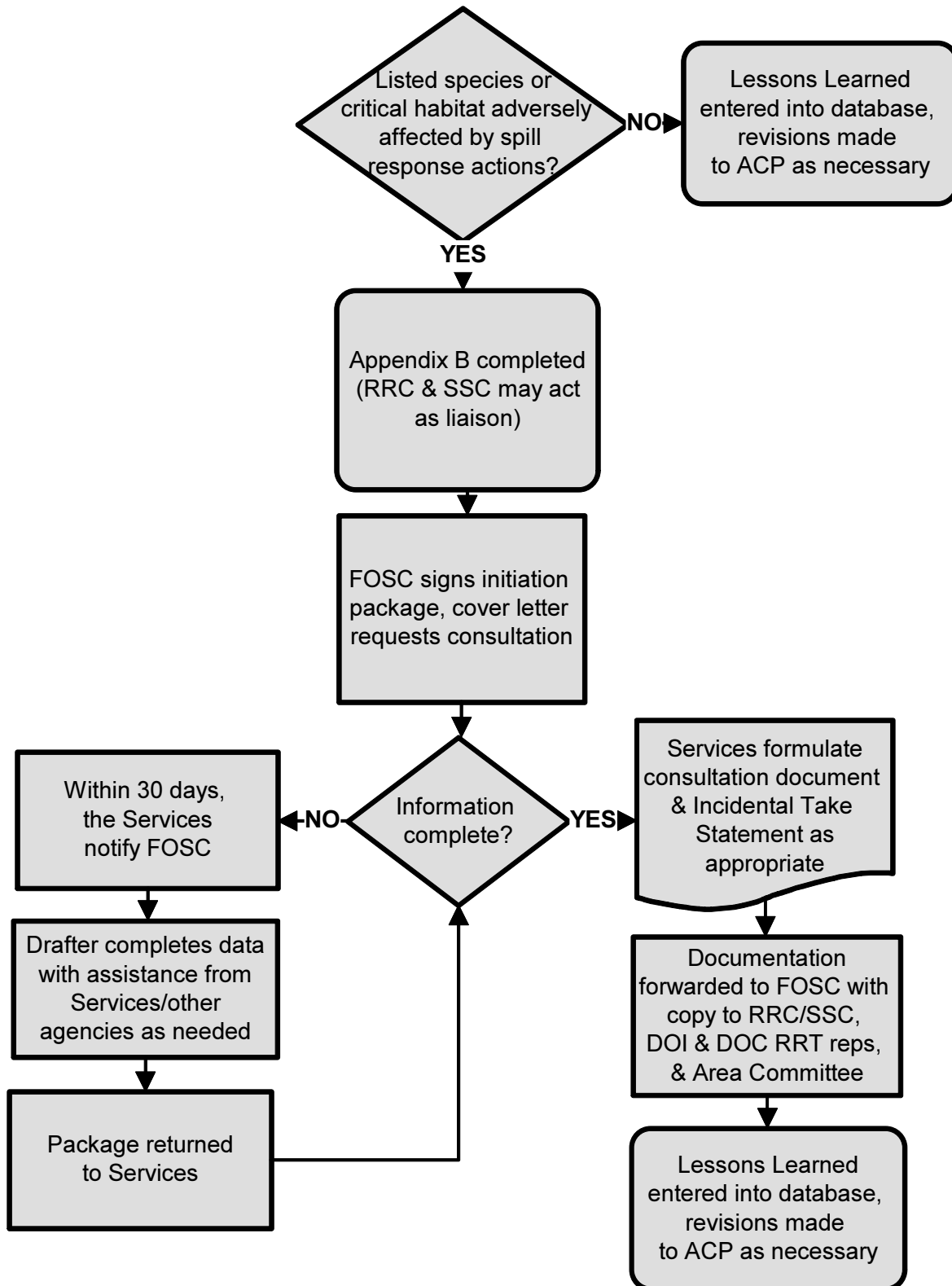
**OIL SPILL RESPONSE PROCESSES**

# PRE-SPILL PLANNING





## POST RESPONSE



## APPENDIX B

### **EMERGENCY CONSULTATION** **INFORMATION CHECKLIST IN ANTICIPATION OF FOLLOW-UP FORMAL** **CONSULTATION (50 CFR 402.05)**

As soon as practicable after the emergency is under control, which occurs when the case is closed, the FOSC initiates consultation (either formal or informal, as appropriate) with the Services if listed species and/or critical habitat have been affected. The FOSC should ensure that the following checklist is completed before the case is closed. After the case is closed, this information along with a cover letter requesting consultation will be sent to the Services.

1. Provide a description of the emergency (the oil spill response).
2. Provide an evaluation of the emergency response actions and their impacts on listed species and their habitats, including documentation of how the Services' recommendations were implemented, and the results of implementation in minimizing take.
3. Provide a comparison of the emergency response actions as described in #2 above with the pre-planned countermeasures and information in the ACP.

## APPENDIX C

### **PLANNING TEMPLATE**

One of the goals of the Area Contingency Plan (ACP) planning process is to develop strategies or actions that reduce the potential for planned oil spill response activities to adversely affect listed species and designated critical habitat. The planning process may also develop strategies that purposefully protect these resources. The following template is recommended for use by a working group of both Service and Area Committee representatives to develop a document that 1) is used to complete consultation pursuant to Section 7 (a)(2) of the Endangered Species Act of 1973, as amended, and 2) produces information to be included in the appropriate sections of the ACP. To streamline the consultation process, the various sections of this document could be drafted during the planning process and used to develop or modify the ACP.<sup>19</sup> This development process will assist all parties in gaining a thorough understanding of the actions under review and provide opportunities for any Section 7 consultation related issues to be raised and addressed in the planning process, rather than during the oil spill response action.

This template is intended to guide the thought process of creating consultation documents and incorporates content requirements set forth in 50 CFR 402.12 as well as information pertinent to the National Contingency Plan requirements under the Fish and Wildlife Annex; not every item will be applicable to every situation.<sup>20</sup>

#### **Introduction**

This section generally should be completed in one, or possibly two paragraphs.

- General overview of the response strategy including: (1) a brief description - one to two sentences; (2) background, history, etc. as appropriate; (3) purpose of the response strategy; (4) identification of the species and designated critical habitat that may be affected (for consultations that will address large numbers of species, it may be desirable to present this list in the form of a table either attached or presented in another section. Also, if species that may potentially occur in the area are not included in this document, explain why).

*This should be developed jointly by the action agency and the Services.*

#### **Description of the Proposed Response Strategy**

- Provide a description of the response strategy being considered. This is likely to be a detailed description taken substantially from the ACP. It should include how the

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<sup>19</sup> It is not required that this planning template be formally written or completed during informal consultation, especially if no modifications to the strategy are required. However, it can be very useful in documenting the [team's] thought process for the administrative record, serving as a guide, or providing additional documentation as needed.

<sup>20</sup> The guide on "Developing Consensus Ecological Risk Assessments" provides procedures which may be helpful in exploring and analyzing these issues. Copies can be obtained from USCG Headquarters (G-MOR-2).

response action will be implemented, including equipment and methods. Examples include use of dispersants to avoid shoreline impacts, and deployment of booms to protect sensitive areas. Include all known aspects of the action, such as time frames, why the action is appropriate, indirect effects, etc. An example of an indirect effect may be hauling boom on, or driving vehicles through, a sensitive dune area to gain access to a spill site.

*This should be developed by the action agency with the assistance of the Services.*

- Provide a description of specific area that may be affected by the response strategy (i.e. Sample Bay, 100-mile section of outer coastline, etc.). Include some measure of the area potentially impacted (i.e., “This plan addresses oil spill response activities that may be conducted out two miles from the coast throughout the 100 mile coastline area encompassed by this ACP”). If different activities are being proposed in different areas, identify this. The team should discuss the appropriateness of presenting this information in terms of the activities that will be conducted within each area, or the areas where each activity will be conducted. For example, “Dispersants may be applied throughout the 10 mile coastline length of Area A and the 25 mile coastline length of Area B.” Maps may be useful.

*This should be developed mainly by the action agency; however, modifications may be made with the assistance of the Services and subject to the approval process for chemical countermeasures in the NCP as appropriate.*

- Identify how to quickly obtain species/habitat information during a spill (i.e. first refer to ACP and site summary sheet, call State FWS, check website, etc.).
- Identify emergency response points of contact to be notified during a spill. Establish spill parameters for notification as necessary. These should be included in emergency notification numbers as well as on any site summary sheets, in geographic response plans, etc.

*This should be developed jointly by the action agency and the Services.*

### **Description of the Affected Environment**

- Describe the listed species and designated critical habitat areas that may be affected by the action in terms of overall range and population status. Include the number and location of known subpopulations within and adjacent to the action area (i.e., identify the areas known to be used by the species and, if appropriate, identify the specific times periods of use, such as February - April). Discuss the action area in relation to the distribution of the entire population (e.g., edge of the range, center of population abundance, key reproductive area, etc.). Present views of Service recognized experts on the species, if appropriate.

*This should be provided by the Services.*



- Ensure that these sensitive areas are referenced in the ACP (i.e. via ESI maps, specially generated GIS maps, site summary sheets, or other digitized format, etc.).  
*This should be completed by the action agency.*
- Provide biological data on listed species: historical use, presence, and potential use of habitat areas within the action area. Literature and other documents containing such information may be incorporated by reference. Provide species observation information, and recent results of species surveys, including, if appropriate, a description of methods, time of year surveys were performed, level of effort, and confidence intervals. Again, literature and other documents containing such information may be incorporated by reference. Maps may be useful to depict this information.  
*The Services should assist in developing this information. In many instances the Services will be able to supply this information from their records.*
- Identify other designated sensitive areas, both adjacent to and within the proposed action area. These include National Wildlife Refuges, National Marine Sanctuaries, etc.  
*This should be developed jointly by the action agency and the Services.*

#### **Analysis of the Effects of the Action**

- Describe all effects of the response strategy relative to the listed species of concern and its habitat, including designated critical habitat. This should include direct, indirect, beneficial, and cumulative effects as well as effects from interrelated and interdependent actions, if any.  
*This should be developed jointly by the action agency and the Services.*
- Describe any measures that may avoid or lessen adverse effects as well as any measures that will enhance the species' present condition. If appropriate, delineate the locations of such measures. A discussion of environmental "tradeoffs" (including no action) may be appropriate. For example, "Dispersants may be toxic to the listed aquatic species when used in concentrations above 70%; however, oil coming ashore and smothering the listed species in tidal marshes is of greater concern due to the extremely poor conservation status of this species." Reference any already completed relevant reports, studies, biological assessments, etc.  
*This should be developed jointly by the action agency and the Services.*

#### **Modification to Strategy (as needed)**

If necessary, after joint analysis of the information, the action or strategy may be modified.

- Describe the new strategy or action. For example, "Dispersants will not be used in

concentrations above X% or in areas less than three feet deep. They may be used in Area A and Area B. A Service representative from Regional field office B will be contacted during an oil spill response during the months of February - April in Area B.”

*This should be developed jointly by the action agency and the Services.*

### **Documentation**

This template is a guide to help you through the planning process, however, when sections are written out as the process is completed, the final document serves the same purpose as a biological assessment. It may be used to complete consultation pursuant to Section 7 of the ESA.

- The document should be maintained on file by the Services and may be referred to during an oil spill response.
- The Area Committee will ensure that this document becomes part of the ACP as appropriate such as:
  - Included as an appendix to the Dispersant or In Situ Burn Operations Plan;
  - Included as a reference document in the appropriate section of the ACP;
  - Include relevant information in sections of the ACP such as Notifications, Site Summary Sheets, Geographic Response Plans, GIS maps, etc.
- The document should include points of contact from both the action agency and the Services.

## APPENDIX D

### **SAMPLE POLLUTION REMOVAL FUND AUTHORIZATION (PRFA)** **LANGUAGE\***

This Statement of Work (SOW) language is intended as sample language only. The language can be tailored to ensure that the FOSC is provided with the resources needed to meet the desired activities or functions required. Accordingly, more precise or succinct language may be used.

PRFA SOW additional/optional work elements to meet the FOSC's ESA mandated activities associated with removal actions:

.....

To arrange for, and as appropriate coordinate with, the resources needed to meet the conference and consultation requirements of the ESA.

Specific activities anticipated under this requirement include:

- (a) Providing the expertise needed to make sensitive removal decisions which could potentially impact on listed species or critical habitats associated with this incident;
- (b) Gathering and documenting the information needed to provide input into the aforementioned decisions and to document the resulting impact of removal actions; and
- (c) As required, preparing the consultations required of the FOSC for the Service(s).

Funding under this agreement is provided for:

- (a) Salaries, travel and per diem;
- (b) Appropriate charges for use of equipment or facilities;
- (c) Any actual expenses for goods and/or services reasonably obtained in order to provide the agreed upon support to the FOSC removal activities (including contracts.)

\* Developed by the National Pollution Funds Center

## APPENDIX E

### **SAMPLE LETTERS FOR REQUESTING CONCURRENCE OR FORMAL CONSULTATION**

These sample letters have been developed to assist the Parties to this agreement in documenting the requirements of the Endangered Species Act. This is suggested wording only and may be used to complete the administrative record as needed. The request for concurrence can be used after the planning process for a particular area or countermeasure when it has been determined that no adverse effects will occur. The Services will provide a concurrence letter, as appropriate, for documentation. Alternatively, the request for formal consultation can be used after planning results indicate that adverse effects may still occur. If this is the case, the Services will evaluate the information developed jointly by the workgroup and issue a biological opinion.

#### **Request for Concurrence Letter:**

Mr./Ms. xxx  
U.S. Fish and Wildlife Service/National Marine Fisheries Service  
Division of Endangered Species

Dear Mr./Ms. xxx:

In accordance with the requirements of Section 7 of the Endangered Species Act, I am seeking your concurrence that the [Coast Guard's/EPA's] implementation of the [name of plan] is not likely to adversely affect the [identify the listed species and designated critical habitat that may be affected. Note, in cases where many listed species or critical habitat designations may be involved, it may be appropriate to refer to an attached list]. This [name of plan] has been developed with the assistance of [name of Service staff] of the U.S. Fish and Wildlife Service/National Marine Fisheries Service and in accordance with the procedures identified at 40 CFR Part 300, the National Contingency Plan. To assist in completing informal consultation, please find attached the Biological Evaluation that has been produced through the planning process described in the Inter-agency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities Under the Federal Water Pollution Control Act's National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act using the Planning Template contained in Appendix C of that Agreement.

Thank you for your efforts in this matter. If you require additional information, please contact [provide a contact with a telephone number].

Sincerely,

**Request for formal consultation:**

Mr./Ms. xxx:  
U.S. Fish and Wildlife Service/National Marine Fisheries Service  
Division of Endangered Species

Dear Mr./Ms. xxx:

In accordance with the requirements of Section 7 of the Endangered Species Act, I am requesting the initiation of Formal Consultation on the effects of the [Coast Guard's/EPA's] implementation of the [name of plan]. Through informal consultation with your staff [or identify the appropriate Service office(s)], we have determined that implementation of spill response activities in accordance with the subject [name of plan] is likely to result in adverse effects to [identify the listed species and designated critical habitat that may be affected. Note, in cases where many listed species or critical habitat designations may be involved, it may be appropriate to refer to an attached list]. This [name of plan] has been developed with the assistance of [name of Service staff] of the U.S. Fish and Wildlife Service/National Marine Fisheries Service and in accordance with the procedures identified at 40 CFR Part 300, the National Contingency Plan. While these actions may result in short-term adverse effects, it is our belief that the species [and designated critical habitat areas] will ultimately benefit from them. To assist in completing Formal Consultation, please find attached the Biological Evaluation that has been produced through the planning process described in the Inter-agency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities Under the Federal Water Pollution Control Act's National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act using the Planning Template contained in Appendix C of that Agreement.

Thank you for your efforts in this matter. If you require additional information, please contact [provide a contact with a telephone number].

Sincerely,

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## **ANNEX VI**

# **PROGRAMMATIC AGREEMENT ON PROTECTION OF HISTORIC PROPERTIES DURING EMERGENCY RESPONSE UNDER THE NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN**

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**PROGRAMMATIC AGREEMENT ON PROTECTION OF HISTORIC PROPERTIES DURING  
EMERGENCY RESPONSE UNDER THE NATIONAL OIL AND HAZARDOUS SUBSTANCES  
POLLUTION CONTINGENCY PLAN**

**ANNEX VI TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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## **I. PURPOSE**

- A. The signatory Federal Departments and Agencies enter into this Programmatic Agreement (PA) to ensure that historic properties are taken into account in their planning for and conduct of the emergency response under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Section Part 300. The National Conference of State Historic Preservation Officers (NCSHPO) is also a signatory, on behalf of State Historic Preservation Officers (SHPOs), to facilitate Federal agency ability to develop and execute a uniform nationwide approach for considering and treating historic properties before and during emergency response. In the event an individual SHPO is unable to respond, the Agency or Department may contact the NCSHPO or the Advisory Council on Historic Preservation (ACHP) to consider alternatives and receive assistance. The signatories agree that their Departments/Agencies will follow this PA or, to meet regional needs, develop regional PAs that are not inconsistent with this PA and the National Historic Preservation Act of 1966, as amended (NHPA), P.L. 89-665, 16 U.S.C. Section 470 et seq., and the regulations promulgated thereto.
- B. The NCP does not provide specific guidance for taking historic properties into account during emergency response to an actual or threatened release of a hazardous substance, pollutant or contaminant or the discharge of oil or other pollutants (hereinafter, a release or spill). Also, emergency provisions contained in the regulations implementing Section 106 of the NHPA do not directly address requirements for such emergency responses. Accordingly, for the purpose of this PA, an “emergency” shall be deemed to exist whenever circumstances dictate that a response action to a release or spill must be taken so expeditiously that normal consideration of the Section 106 process is not reasonably practicable.
- C. The purpose of this PA is to provide an alternative process to ensure appropriate consideration of historic properties within the meaning of the NHPA during emergency response to a release or spill. This PA does not address the consultation procedures under Section 106 of the NHPA once that phase of the response action has ended.
- D. In carrying out duties under the NCP, including the priorities of protecting public health and safety, the Federal On-Scene Coordinator (FOSC) may have to make emergency response decisions that adversely affect historic properties. By following this PA, however, the FOSC will be making an informed decision that takes historic property information into account prior to authorizing actions that might affect such property.

- E. The responsibility of the FOSC in protecting public health and safety is paramount. That mission is a difficult one involving problems that cannot be anticipated and calling for judgment on the part of the FOSC. Nothing in this PA changes the national response priorities, nor does it change the effect of existing law.
- F. 36 CFR Section 800.13 provides, inter alia, that:

*An Agency Official may elect to fulfill an agency's Section 106 responsibilities for a particular program, a large or complex project, or a class of undertakings...through a Programmatic Agreement.*

36 CFR Section 800.13(e) provides that:

*An approved Programmatic Agreement satisfies the Agency's Section 106 responsibilities for all individual undertakings carried out in accordance with the agreement until it expires or is terminated.*

During such time as the ACHP and the NCSHPO are signatories, compliance with this PA by a FOSC will be deemed to constitute compliance with Section 106 of the NHPA during pre-incident planning and emergency response activities.

## **II. LEGAL AUTHORITIES PROTECTING HISTORIC PROPERTIES**

### **A. National Historic Preservation Act**

1. In 1966, Congress instituted a policy to preserve the Nation's cultural and historic heritage by enacting the NHPA. The NHPA implementing regulations most pertinent to actual or threatened releases of hazardous substances, pollutants or contaminants or oil spills are those of: 1) the ACHP, an independent Federal agency that administers Section 106 of the NHPA through procedures specified in 36 CFR Part 800, "Protection of Historic Properties," and 2) the Department of the Interior (DOI) regulations at 36 CFR Part 60, National Register of Historic Places.
2. Section 106 of the NHPA provides that Federal agencies are to take into account the effects of "Federal or federally assisted undertakings" on historic properties that are listed

in or eligible for inclusion in the National Register of Historic Places. It further affords the ACHP an opportunity to comment on the undertaking.<sup>1</sup>

- B. This PA does not address other Federal laws defining and protecting historic properties, such as:
1. The Archaeological Resources Protection Act (ARPA), 16 U.S.C. Section 470aa et seq., which provides for the protection of archeological sites and other resources. ARPA establishes criminal and civil penalties for actual or attempted illegal excavation or removal of or damage to archeological resources; illegal trafficking in archeological resources; and knowingly causing another to commit an ARPA violation;
  2. The Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. Section 3001 et seq., which provides for the protection of Native American human remains and other defined classes of cultural items. NAGPRA also establishes criminal penalties for illegal trafficking in these cultural items. 18 U.S.C. Section 1170;
  3. The Antiquities Act of 1906, 16 U.S.C. Section 433 et seq., which establishes criminal penalties for non-permitted appropriation, excavation, injury, or destruction of any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Federal Government; and
  4. The National Marine Sanctuaries Act (also known as Title III of the Marine Protection, Research and Sanctuaries Act, 16 U.S.C. Section 1431, et seq., which establishes civil penalties for destruction of, loss of, or injury to a sanctuary resource, including historic properties. In addition to fines, parties can also be held responsible for response costs; damages including replacement cost, restoration cost, or acquisition of an equivalent sanctuary resource, and lost-use value of that resource and interest.
- C. Many States also have laws defining and protecting historic properties. Regional PAs may consider State laws relevant to the historic properties in the region, to the extent they are not inconsistent with Federal law.

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<sup>1</sup> Section 106 of the NHPA provides, inter alia, as follows:

Effect of Federal undertakings upon property listed in National Register; comments by Advisory Council on Historic Preservation. The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation ... a reasonable opportunity to comment with regard to such undertaking.

### **III. DEFINITION OF “HISTORIC PROPERTY”**

- A. The term “historic property” is defined in the NHPA as: “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register”; such term includes artifacts, records, and remains which are related to such district, site, building, structure, or object. 16 U.S.C. Section 470(w)(5).
- B. Criteria for listing a property in the National Register of Historic Places are found at 36 CFR Part 60. The statutory definition of historic properties and the established criteria determine whether a historic property needs to be considered during emergency response. A historic property need not be formally listed on the National Register to receive NHPA protection, it need only meet the National Register criteria (i.e., be eligible for listing in the National Register). Section VI.C.2, below, discusses determining the National Register eligibility of historic properties during emergency response.

### **IV. RESPONSIBILITY FOR HISTORIC PROPERTIES CONSIDERATION**

- A. For the purpose of this PA, the FOSC, as the Federal official designated to coordinate and direct response actions, is responsible for ensuring that historic properties are appropriately considered in planning and during emergency response.
- B. Planning Support/Coordination
  - 1. The NCP, at 40 CFR Section 300.210(c), provides that Area Contingency Plans (ACPs) are to be developed under the direction of a FOSC. The FOSC shall ensure that ACPs include the information on consideration of historic properties and are developed in consultation with the parties specified in Section V of this agreement.
  - 2. Federal agencies with expertise in protection of historic properties available to assist the FOSC during preparedness planning include the Department of the Interior,<sup>2</sup> the ACHP, and other Federal land-managing agencies for properties on their lands. The primary source of information on historic properties in an area, particularly properties not on Federal lands, is the SHPO, who is the official appointed by the Governor as part of the

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<sup>2</sup> 40 CFR Section 300.175(b)(9) reads, in pertinent part, as follows:

DOI may be contacted through Regional Environmental Officers (REOs), who are the designated members of RRTs.... [B]ureaus and offices have relevant expertise as follows:

...(viii) National Park Service: General biological, natural, and cultural resource managers to evaluate, measure, monitor and contain threats to park system lands and resources; archaeological and historical expertise in protection, preservation, evaluation, impact mitigation, and restoration of cultural resources...

State's participation in NHPA programs. Other parties that may assist are listed in V.A. of this PA.

3. The National Program Center (NPC) of the National Park Service, consistent with its authority and responsibilities, will provide coordination of appropriate expertise to Area Committees and Regional Response Teams (RRTs) for pre-incident planning activities through the United States Coast Guard (Coast Guard) and the United States Environmental Protection Agency (EPA). The NPC will coordinate through the Commandant of the Coast Guard and the Office of Emergency and Remedial Response of EPA.
4. Prior to finalizing or subsequently revising ACPs, the FOSC will provide a draft of sections addressing historic properties identification and protection to the parties identified in Section V.A. of this PA. Each party shall have 30 calendar days from receipt to review the draft and provide comments to the FOSC. Should any reviewing party file a timely objection to the draft or any portion thereof, the FOSC will consult with the objecting party to resolve the objection. If the objection cannot be resolved, the FOSC will provide documentation of the dispute to the ACHP and request their comments. The ACHP comments will be taken into account by the FOSC in finalizing or revising ACPs.

C. Emergency Response Support/Coordination

1. To ensure historic properties are considered during emergency response, the FOSC must have access to reliable and timely expertise and support in order to make timely and informed decisions about historic properties.
2. A FOSC may obtain historic properties expertise and support in any one of several ways. These include implementing an agreement with State or Federal agencies that have historic properties specialists on staff (see IV.B.2), executing a contract with experts identified in ACPs or hiring historic properties specialists on staff. Historic properties specialists made available under contract or hired must:
  - a. Meet the qualifications listed in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, 8 Federal Register 44738-39 (September 29, 1983); see Appendix II; and
  - b. Be available to assist the FOSC whenever needed.

## **V. PRE-INCIDENT PLANNING**

A. As part of pre-incident planning activities, FOSCs (or the OSC's management) shall consult with the SHPO, Federal land-managing agencies, appropriate Indian tribes and appropriate Native Hawaiian organizations, as defined in Section 301 of the NHPA, and the other interested parties identified during pre-incident planning, as described in Section IV.B of this PA, to:

1. Identify historic properties.
  - a. Identify: 1) historic properties that have been listed in or determined eligible for inclusion in the National Register of Historic Places that might be affected by response to a release or spill; and 2) unsurveyed areas where there is a high potential for the presence of historic properties.
  - b. Identify exclusions. These may be specific geographic areas or types of areas where, should a release or spill occur, historic properties are unlikely to be affected. This includes the specifics listed in Appendix I and any additional exclusions agreed on by the signatories to this or a regional PA. Incidents in areas covered by exclusions would not require consideration for protection of historic properties, except as provided in Section VI.A.1.<sup>(3)</sup>
2. Develop a list of parties that are to be notified in the event of an incident in a non-excluded area. This list should include the SHPO for the State in which the incident occurred, Federal and Indian tribal land owners or land managers and Hawaiian Native organizations in the area where the incident occurred, if any.
3. Develop emergency response strategies that can be reasonably anticipated to protect historic properties. The FOSC shall ensure that response strategies, including personnel and equipment needed, are developed to protect or help protect historic properties at risk. This includes consideration of the sensitivity of historic properties to emergency response measures proposed in ACPs or other response plans, including chemical countermeasures and in situ burning.

B. The FOSC shall ensure that historic properties protection strategies can be carried out by:

1. Identifying who will be responsible for providing expertise on historic properties matters to the FOSC during emergency response. Depending on the size and complexity of the incident, a FOSC historic properties specialist or a historic properties technical advisory group convened by the specialist may be the most effective mechanism;

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<sup>3</sup> Response to spills or releases that involve non-excluded areas should be considered to have the potential to adversely affect historic properties that are listed in or eligible for inclusion in the National Register.



2. Providing information on availability of appropriate training for historic property specialists to participate in emergency response, ~g., Hazardous Waste Operations and Emergency Response (HAZWOPER) training, familiarity with all relevant contingency plans and response management systems, etc.; and
3. Working with the parties listed in section V.A. to obtain information for response personnel on laws protecting and activities that may potentially affect historic properties.

## **VI. FEDERAL LEAD EMERGENCY RESPONSE**

- A. The FOSC shall determine whether the exclusions described in section V.A.1.b. apply.
  1. If the incident affects only excluded areas, no further actions are necessary under this PA, unless:
    - a. Previously unidentified historic properties are discovered during emergency response; or
    - b. The SHPO (or appropriate Federal, Indian, or Hawaiian Native organizations) notifies the FOSC that a categorically excluded release or spill may have the potential to affect a significant historic property.
  2. If the area where a release or spill occurs has not been excluded, in the cases specified in Section VI.A. 1 .a or b, if the FOSC is unsure whether an exclusion applies, or if the specifics of the incident change so that it no longer fits into one of the exclusions, the remaining steps in this Section shall be followed.
- B. Activate the agreed-upon mechanism for addressing historic properties, including notification of the parties identified pursuant to Section V.A.2., and consultation with these parties concerning the identification of historic properties that may be affected, assessing the potential effects of the emergency response, and developing and implementing emergency response activities. These requirements for notification and consultation shall be satisfied if the FOSC makes reasonable and timely efforts to notify and consult the parties listed in this Section. Thereafter there shall be additional consultation to the extent practicable.
- C. Verify identification of historic properties.
  1. Consult with the SHPO, land owners and/or land managers, appropriate Indian tribes and Native Hawaiian organizations, and other interested parties identified in pre-incident planning to verify the location of historic properties identified during the planning process and determine if other historic properties exist in areas identified in V .A. 1 .a.2. that might be affected by the incident or the emergency response. If newly discovered or

unanticipated potential historic properties are encountered during emergency response actions, the FOSC shall either: 1) consult with the SHPO (or appropriate Federal, Indian, or Hawaiian Native organizations) to determine if the properties are eligible for inclusion in the National Register, or 2) treat the properties as eligible.

D. Assess potential effects of emergency response strategies on historic properties. Such assessment shall be done in consultation with the parties listed in Section V A.

1. The potential adverse effects of releases or spills and of emergency response on historic properties may include, but are not limited to:
  - a. Physical destruction, damage, or alteration of all or part of the historic property;
  - b. Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register; and
  - c. Introduction of visual, audible, or atmospheric conditions that are out of character with the property or alter its setting.
2. Emergency response actions that may have adverse effects on historic properties include, but are not limited to:
  - a. The placement of physical barriers to deter the spread of released or spilled substances and the excavation of trenches to stop the spread of the released or spilled substances; and
  - b. Establishing camps for personnel, constructing materials storage and staging yards, excavating borrow pits for fill materials, and constructing alignments for road access.
3. Direct physical contact of historic properties with released or spilled substances may result in one or more of the following: 1) inability to radiocarbon date the contaminated resources; 2) acceleration of deterioration of an object or structure; or 3) prevention of identification of historic properties in the field. As a result, important scientific, historic, and cultural information may be lost.

E. Make and implement decisions about appropriate actions. The FOSC shall take into account professional comments received from the parties listed in Section V.A. in making decisions that might affect historic properties.

1. Emergency response strategies delineated in plans may need to be reviewed based on information available at the time of an actual incident. The purpose of this review is to evaluate whether implementation of the strategies in the plan might, for the emergency

- response action that is underway, adversely affect historic properties and, if so, how such effects might be avoided or reduced.
2. Make arrangements for suspected artifact theft to be reported to the SHPO, law enforcement officials, and the land owner/manager.
  3. Arrange for disposition of records and collected materials.
  4. Ensure the confidentiality of historic property site location information, consistent with applicable laws, so as to minimize opportunities for vandalism or theft.
- F. Whenever the FOSC determines the requirements of this Section cannot be satisfied concurrently with the paramount requirement of protecting public health and safety, the determination shall be documented in a writing including the name and title of the person who made the determination; the date of determination; and a brief description of the competing values between public health and safety and carrying on the provisions of this Section. Notwithstanding such a determination, if conditions subsequently permit, the FOSC shall endeavor to comply with the requirements of this Section to the extent reasonably practicable.

## **VII. REGIONAL PAs**

- A. Regional PAs may be developed as provided in I.A. as an alternative to this national PA. Regional PAs are to include the provisions of this PA and may include appropriate additional provisions responsive to regional concerns.
- B. A regional PA should be signed by appropriate regional-level Federal officials, State agencies, tribal officials and the ACHP.
- C. Either this PA or a PA developed at a regional level may be adopted by the RRT and incorporated or referenced in Regional Contingency Plans (RCPs), 36 CFR Section 300.210(b), and ACPs in the region.

## **VIII. AUTHORITY, EFFECTIVE DATE, WITHDRAWAL, AMENDMENT**

- A. The signatories below are authorized to sign the PA on behalf of their respective Department, Agency or organization. This PA may be signed in counterparts.
- B. In order to allow sufficient time for pre-incident planning and other preparedness activities, this PA shall not become effective with respect to a signatory Department or Agency until ninety (90) days after it has been signed on the Department's or Agency's behalf.
- C. Any signatory may withdraw from this PA by sending, through an official authorized to act in this matter, written notice to all current signatories at least thirty (30) days in advance of the

effective date of withdrawal. The requirements contained in this PA will remain in full force and effect with respect to remaining signatories.

D. Nothing herein prevents the signatories from agreeing to amend this PA.

## **SIGNATORIES**

### **Advisory Council on Historic Preservation**

Chairman

June 4, 1997

### **National Conference of State Historic Preservation Officers**

President

May 13, 1997

### **U.S. Environmental Protection Agency**

Acting Deputy Director, Office of Emergency and Remedial Response

May 23, 1997

### **U.S. Department of the Interior**

Director, Office of Environmental Policy and Compliance

June 4, 1997

### **U.S. Department of Transportation, Coast Guard**

Assistant Commandant for Marine Safety and Environmental Protection

May 13, 1997

### **National Park Service**

Acting Deputy Director

August 7, 1997

### **U.S. Department of Commerce, National Oceanic and Atmospheric Administration**

Assistant Administrator for Ocean Services and Coastal Zone Management

July 3, 1997

### **U.S. Department of Energy**

Deputy Director

November 7, 1997

### **U.S. Department of Defense**

Deputy Under Secretary of Defense (Environmental Security)

November 3, 1997

### **U.S. Department of Agriculture**

Under Secretary of Defense for Natural Resources and Environment

August 28, 1998

## ENDNOTES

[Endnotes in original have been converted to footnotes.]

## **APPENDIX I - CATEGORICAL EXCLUSION LIST**

Releases or Spills Categorically Excluded from Additional National Historic Preservation Act Section 106 Compliance.

### **Releases/Spills onto (which stay on):**

- Gravel pads
- Roads (gravel or paved, not including the undeveloped right-of-way)
- Parking areas (graded or paved)
- Dock staging areas less than 50 years old
- Gravel causeways and artificial gravel islands
- Drilling mats, pads, and/or berms
- Airport runways (improved gravel strips and/or paved runways)

### **Releases/Spills into (that stay in):**

- Lined pits; e.g., drilling mud pits and reserve pits
- Water bodies where the release/spill will not: 1) reach land/submerged land; and 2) include emergency response activities with land/submerged land-disturbing components
- Borrow pits
- Concrete containment areas

### **Releases/Spills of:**

- Gases (e.g., chlorine gas)

IMPORTANT NOTE TO FOSC:

1. IF YOU ARE NOT SURE WHETHER A RELEASE OR SPILL FITS INTO ONE OF THE CATEGORIES LISTED ABOVE;
2. IF AT ANY TIME, THE SPECIFICS OF A RELEASE OR SPILL CHANGE SO IT NO LONGER FITS INTO ONE OF THE CATEGORIES LISTED ABOVE;
3. IF THE SPILL IS GREATER THAN 100,000 GALLONS; AND/OR
4. IF THE STATE HISTORIC PRESERVATION OFFICER NOTIFIES YOU THAT A CATEGORICALLY EXCLUDED RELEASE OR SPILL MAY HAVE THE POTENTIAL TO AFFECT A HISTORIC PROPERTY

YOU OR YOUR REPRESENTATIVE MUST FOLLOW THE SECTION VI OF THIS PA.

## **APPENDIX II - SECRETARY OF THE INTERIOR'S STANDARDS FOR ARCHEOLOGY AND HISTORIC PRESERVATION**

*48 Federal Register 44738-39 (September 29, 1983)*

### **Professional Qualifications Standards**

The following requirements are those used by the National Park Service and have been previously published in the Code of Federal Regulations 36 CFR Part 61. The qualifications define minimum education and experience required to perform identification, evaluation, registration, and treatment activities. In some cases, additional areas or levels of expertise may be needed depending on the complexity of the task and the nature of the historic properties involved. In the following definitions, a year of full-time professional experience need not consist of a continuous year of full-time work but may be made up of discontinuous periods of full-time or part-time work adding up to the equivalent of a year of full-time experience.

### **History**

The minimum professional qualifications in history are a graduate degree in history or closely related field; or a bachelor's degree in history or closely related field plus one of the following:

- At least two years of full time experience in research, writing, teaching, interpretation, or the demonstrable professional activity with an academic institution, historic organization or agency, museum, or other professional institution; or
- Substantial contribution through research and publication to the body of scholarly knowledge in the field of history.

### **Archeology**

The minimum professional qualifications in archeology are a graduate degree in archeology, anthropology, or closely related field plus:

- At least one year of full-time professional experience or equivalent specialized training in archeological research, administration or management;
- At least four months of supervised field and analytic experience in general North American archeology; and
- Demonstrated ability to carry research to completion.



In addition to these minimum qualifications, a professional in prehistoric archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the prehistoric period. A professional in historic archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the historic period.

### **Architectural History**

The minimum professional qualifications in architectural history are a graduate degree in architectural history, art history, historic preservation, or closely related field, with course work in American architectural history; or a bachelor's degree in architectural history, art history, historic preservation or closely related field plus one of the following:

- At least two year of full-time experience in research, writing, or teaching in American architectural history or restoration architecture with an academic institution, historical organization or agency, museum. or other professional institution; or
- Substantial contribution through research and publication to the body of scholarly knowledge in the field of American architectural history.

### **Architecture**

The minimum professional qualifications in architecture are a professional degree in architecture plus at least two years of full-time experience in architecture; or State license to practice architecture.

### **Historic Architecture**

The minimum professional qualifications historic in architecture are a professional degree in architecture or a State license to practice architecture, plus one of the following:

- At least one year of graduate study in architectural preservation, American architectural history, preservation planning, or closely related field; or
- At least one year of full-time professional experience on historic preservation projects.

Such graduate study or experience shall include detailed investigations of historic structures, preparation of historic structure research reports, and preparation of plans and specifications for preservation projects.

Updated April 30, 2002

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## **ANNEX VII**

# **MEMORANDA OF UNDERSTANDING BETWEEN EMERGENCY RESPONSE PROGRAMS OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY REGIONS 4 & 7, REGIONS 5 & 7, AND REGIONS 6 & 7**

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**MEMORANDUM OF UNDERSTANDING  
CROSS-BOUNDARY EMERGENCY RESPONSE AND REMOVAL SUPPORT  
REGIONS 5 AND 7  
U.S. ENVIRONMENTAL PROTECTION AGENCY**

**ANNEX VII TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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**MEMORANDUM OF UNDERSTANDING  
BETWEEN THE  
U.S. ENVIRONMENTAL PROTECTION AGENCY REGIONS 6 AND 7**

**ANNEX VII TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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**MEMORANDUM OF UNDERSTANDING  
BETWEEN THE  
U.S. ENVIRONMENTAL PROTECTION AGENCY REGIONS 4 AND 7  
ANNEX VII TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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**MEMORANDUM OF UNDERSTANDING  
CROSS-BOUNDARY EMERGENCY RESPONSE AND REMOVAL SUPPORT  
REGIONS 5 AND 7  
U.S. ENVIRONMENTAL PROTECTION AGENCY**

The purpose of this memorandum is to establish a mutual aid agreement for cross-regional emergency and removal response activities between U.S. Environmental Protection Agency (EPA) Regions 5 and 7.

**I. AUTHORITIES**

The mutual aid provided under this agreement will enhance the Agency's response to releases of oil, hazardous substances, pollutants, and contaminants; and, which is done pursuant to the authorities vested in EPA under the Clean Water Act, as amended by the Oil Pollution Act of 1990 (OPA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) and further defined in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) 40 CFR 300 et. seq. This agreement also encompasses responses which the Regions may undertake pursuant to the Stafford Disaster Relief Act and amendments, and as further defined in the Federal Response Plan.

**II. PRE-DESIGNATION AND LOCATION OF OSCS**

Pursuant to 40 CFR 300.120(a), each EPA Regional Administrator has predesignated On-Scene Coordinators (OSCs) for the Inland Zone. The names of the predesignated OSCs are available through the respective region's duty phone officer or removal manager.

Region 5 predesignated OSCs are presently duty-stationed in the following locations:

- Chicago, Illinois
- Carterville, Illinois
- Grosse Ile, Michigan
- Westlake, Ohio
- Cincinnati, Ohio

Region 7 predesignated OSCs are presently duty-stationed in the following locations:

- St. Louis, Missouri
- Kansas City, Kansas

The distribution of OSCs among these duty-stations facilitates timely response activities on the part of EPA throughout the two Regions. Each OSC is able to perform response activities outside of the proximity of his/her immediate duty-station area, and by virtue of this agreement, across EPA regional boundaries should circumstances warrant such involvement. Examples of such circumstances are described subsequently in this agreement. It is anticipated that Regions 5 and 7 will be able to respond in a more timely fashion along the Mississippi River boundary between our two respective regions with the implementation of this Memorandum of Understanding (MOU). This MOU would not preclude either Region from asking for assistance beyond the flood plain area of the Mississippi and could include tributaries to, or areas apart from the Mississippi River.

### **III. ON-SCENE COORDINATOR RESPONSE ACTIVITIES**

Under CERCLA/SARA and OPA, pre-designated OSCs perform emergency and removal response activities where: (a) there is a release or substantial threat of release of hazardous substances; (b) there is a release or substantial threat of release into the environment of any pollutant, or contaminant which may present an imminent and substantial danger to public health or welfare; and (c) there is a discharge or substantial threat of a discharge of oil to the waters or to the adjoining shorelines of waters of the United States. These responses can be determined necessary in response to a variety of situations including but not limited to accidental spills, transportation accidents, facility explosions, dumping, criminal actions, terrorism, hurricanes, earthquakes, floods, or other forms of natural disasters.

Pre-designated OSCs can also perform response activities under the direction of other federal agencies, including:

- Stafford Act Federal Disaster Declarations, which would allow EPA to support FEMA performing the Emergency Support Function #10 (ESF - 10) to address hazardous materials
- Counter-Terrorism Responses per Presidential Decision Directive 39 (PDD -39)

### **IV. MUTUAL AID CROSS-REGIONAL RESPONSE ACTIVITIES**

It is hereby agreed by the signatories that the two EPA regional offices represented in this agreement will upon request endeavor to assist each other in cross-regional response activities. A cross-boundary response can be performed where the closest OSC is from another region, and where the magnitude of the response is such that assistance is warranted. In accordance with 40 CFR 300.135(b), the OSC providing a cross-boundary response can serve as the First Federal Official (FFO) on scene. As FFO, the OSC providing the cross-boundary response, shall initiate and carry out all OSC responsibilities, in



consultation with the lead region's predesignated OSC. The FFO would carry out actions until a predesignated OSC from the lead region arrives on scene, or until the incident no longer warrants a federal response action.

## **V. BUDGET AND CONTRACTS**

The signatory regions recognize the benefits of the OSC in an emergency, utilizing all means possible to conduct a successful response and utilize the available resources to protect human health and the environment. Contract crossovers can be utilized if they are determined to be in the best interest of the Government. It is expected that issues of utilizing contracting mechanisms available to other regions will be evaluated as a result of this MOU and if necessary, specific protocols will be established to expedite response actions.

The lead region is responsible for funding the response action and furnishing, as appropriate, the regional and site-specific accounting and appropriation data to the OSC from the supporting region who is serving as either FFO or OSC representative. When the OSC providing the cross-boundary response is requested by the lead region to assume the role of designated OSC, the lead region shall establish, as necessary, appropriate authority and/or procedures to enable the OSC providing the cross-boundary response to utilize the lead region's contract resources for the duration of their involvement in the incident.

## **VI. PROCESS FOR ACTIVATING CROSS-REGIONAL SUPPORT UNDER THIS AGREEMENT**

- Requests for cross-boundary support response to an emergency incident should be made to the phone duty officer. In requesting the support the lead region should specify the type of support required, presence of a FFO, or other such information as deemed appropriate at the time of the response. In implementing this MOU, each Region shall develop and apply procedures, as appropriate, that authorize and provide for the immediate dispatch of an OSC by the duty officer in support of the lead region. The phone duty officers from each respective Region are expected to notify and brief their management concerning actions taken pursuant to the request.
- Requests for site coverage support and/or support during an ESF #10 activation should generally be made during business hours, initiated by the lead Region, and by contact between the respective Removal Managers or their designees. In the event that the Removal Managers are not available and/or the support becomes apparent as an immediate need during non-business hours, the respective duty officers will discuss the request and make the decision. Any procedures needed to implement this provision of the MOU will be included with those required above.
- 24 Hour Contact Numbers are as follows:  
  
Region 5: 312-353-2318 (telephone) 312-353-9176 (fax)  
Region 7: 913-281-0991 (telephone) 913-551-7151 (fax)

## VII. EFFECTIVE DATE

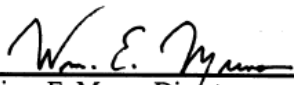
This agreement will be effective upon signature by all the parties, and shall remain in effect until termination by any of the parties. Any party may terminate this agreement upon 90 days written notice to the other parties. The provisions may be reviewed, amended, or supplemented upon agreement of all the parties.

## VIII. DISTRIBUTION

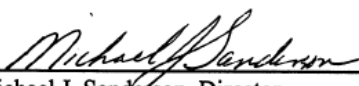
Final signed copies of this agreement shall be distributed as follows:

Removal Managers, Regions 5 and 7  
OSCs, Regions 5 and 7  
USCG Districts  
USCG - National Pollution Fund Center  
Regional Contracting Officer(s), Regions 5 and 7  
Regional Project Officer(s), Regions 5 and 7  
EPA Headquarters, OSWER/OERR Regional Centers 5 and 7  
Regional Contingency Plan (RCP), Regions 5 and 7

## IX. SIGNATURES

  
\_\_\_\_\_  
William E. Muno, Director  
Superfund Division, Region 5, USEPA

Date: 1/31/01

  
\_\_\_\_\_  
Michael J. Sanderson, Director  
Superfund Division, Region 7, USEPA

Date: 2/05/01

**MEMORANDUM OF UNDERSTANDING  
BETWEEN THE  
U.S. ENVIRONMENTAL PROTECTION AGENCY REGIONS 6 AND 7**

**I. Purpose**

The purpose of this Memorandum of Understanding (MOU) is to establish policy and procedures for a general working agreement between Regions 6 and 7 to create an inter-regional backup system for response support.

**II. Background**

The National Response Framework (NRF) lays out the structure for how the federal government is organized to support States and communities in catastrophic incidents. The NRF builds upon the National Incident Management System (NIMS), which provides a consistent national template for managing incidents. The Environmental Protection Agency (EPA) established the EPA National Approach to Response (NAR) in June 2003 to complement the government-wide National Response Plan (which later became the NRF) and NIMS. The NAR is a multi-faceted approach to help ensure the efficient and effective use of EPA's resources. An important facet of the NAR is the acknowledgment that an effective response requires participation from the entire Agency, not just those offices traditionally responsible for emergency response activities and that an effective response to nationally significant incidents will require readily available national resources to assist a given Region. This MOU establishes an agreement for backup cross-programmatic support between Regions 6 and 7. In addition, this MOU establishes the agreement for backup emergency response support between Regions 6 and 7 to meet the Core ER standard.

**III. Agreement**

It is agreed by the signatories of this MOU that, upon request of the other Region, the backup Region will endeavor to assist the requesting Region in cross-regional support. This MOU will be activated during times of resource shortfalls or as deemed necessary and appropriate under the exigencies of a particular response event or situation.

Under this agreement, the signatory Regions can request support in the form of additional staff, cleanup and technical support contractors, and/or EPA owned equipment. This MOU in no way restricts the undersigned Regions from participating in similar activities or arrangements with other Regions, however it is understood that Regions 6 and 7 will give each other priority status for backup purposes.

In addition, Regions 6 and 7 agree to participate in cross-training and exercises during non-emergency situations. Attached is a copy of the current Region 6 and 7 Preparedness Workplan.

**IV. Procedure**

Response undertaken under this agreement shall be conducted using the principles of the National Incident Management System (NIMS) and shall incorporate incident command system principles. Any Standard Operating Guides (SOG) developed for implementing this agreement shall incorporate NIMS terminology and concepts as appropriate.



The requesting Region shall be responsible for defining the capability requirements for personnel and/or resources, for example: Health and Safety requirements such as Level A capabilities, warranted OSCs, purchase card holders, or certified Incident Management Team positions. The requesting Region will be responsible for providing responding personnel with deployment information such as mobilization points, response structure and contact information.

### **Emergency Conditions:**

Initial notification and requests for cross-regional support should utilize a one-call notification process. Initial notifications will be received via each Region's respective 24-hour regional response line, manned by a phone duty officer, or through the National Response Center (NRC):

|           |                |
|-----------|----------------|
| Region 6: | 1-866-372-7745 |
| Region 7: | 1-913-281-0991 |
| NRC:      | 1-800-424-8802 |

Initial notification may be from the requesting Region or from other sources such as the Headquarters Emergency Operations Center (HQ EOC) at the Region's request.

### **Superfund Response Personnel:**

Regional Superfund Division Directors have the ultimate authority to approve the use of regional emergency response resources beyond their regional boundaries. The Regional response program supervisor (Removal Manager) or the designated "acting" supervisor has the authority to dispatch emergency response and removal support resources (staff and/or contract resources) in response to a request for cross-regional support.

### **Non-Superfund Response Personnel:**

Superfund Division Directors shall request other resources through the Regional Administrator and the Regional Incident Coordination Team (RICT). Other resources may include resources outside the direct control of the Superfund Division Director and may include assets such as Response Support Corps, water systems response expertise, etc. The Superfund Division Director will notify his respective Regional Administrator whenever a request for such resources has been made.

### **Non-Emergency Conditions:**

Requests for removal site coverage support, participation in cross-training and exercises or other routine or non-emergency situation, generally should be made during business hours between the respective Removal Managers or their designated "acting" supervisors. Each region's respective Removal Manager is responsible for coordinating training and exercises with other regional programs.

## **V. Programming, Budgeting, Funding, and Reimbursement Arrangements**

In mobilizing response resources, contract crossovers may be used if they are determined to be in the best interest of the Government. Any Standard Operating Guides (SOGs) which are developed for cross-over contracting procedures shall be agreed upon by the Regions for use under this MOU.

This MOU is neither a fiscal nor a funding obligation document. However, any endeavor involving contribution of funds will generally be borne by the Region requesting assistance

The Office of Acquisition Management has issued a memorandum (copy attached) which clarifies OSC warrant authority when OSCs are exercising their delegated authority outside of their home Region.

#### VI. Authorities

Emergency response and removal support under this MOU is undertaken pursuant to the responsibilities vested in the EPA under the following statutory authorities, regulations, and Presidential Directives:

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Re-authorization Act of 1986 (SARA);

The Federal Water Pollution Control Act of 1970 (Clean Water Act), as amended by the Oil Pollution Act of 1990;

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300;

Section 9003 (h) of the Solid Waste Disposal Act (SWDA);

The United States-Mexico Joint Contingency Plan (JCP);

The Homeland Security Act of 2002 and Homeland Security Presidential Directive (HSPD) 5, which established the National Response Plan (NRP) and requires the use of the National Incident Management System for responses governed by the NRP;

The Stafford Disaster Relief Act and amendments, and as further defined in the National Response Plan (NRP) Emergency Support Function Annexes;

Presidential Decision Directive (PDD) 39, "US Policy of Counter-terrorism," and PDD 62, "Combating Terrorism";

as well as any other acts, plans or regulation not listed here under which the authority exists for response activities.

Under Section 104 of CERCLA, the EPA has the authority to respond to a release or threatened release of a hazardous substance, pollutant, or contaminant. Under delegation 14-2 the Regional Administrators may re-delegate to designated On Scene Coordinators the authority to determine the need for emergency response and to approve and initiate removal actions costing up to \$250,000 where site conditions constitute an emergency and up to \$50,000 where site conditions do not constitute an emergency. Regions 6 and 7 have redelegated this authority to their designated OSCs through an appropriate delegation (see attached regional delegations). Similarly, pursuant to Section 311(c) of the Clean Water Act, designated OSCs have been delegated the authority to conduct specific response actions involving the discharge or substantial threat of a discharge of oil. Under this MOU, the signatory Regions agree that the OSCs' delegated authority extends to cross-regional emergency responses involving oil and/or CERCLA hazardous substances, pollutants or contaminants.




VII. Effective Date

This MOU will become effective upon signature by the parties and shall remain in effect until termination by any party hereto. Any party may terminate this MOU upon 90 days written notice to the other party. Its provisions and SOGs will be reviewed annually and amended or supplemented as may be agreed upon mutually.

VIII. Other MOUs

This MOU supersedes the original MOU dated February 8, 2001, and the most current dated 2006, for establishing inter-regional backups. This MOU has no effect on any other MOUs under other Agency programs between the undersigned Regions.

IX. Signatories

  
\_\_\_\_\_  
Samuel Coleman, Director, Superfund Division  
EPA Region 6

12/23/08  
Date

  
\_\_\_\_\_  
Cecilia Tapia, Director, Superfund Division  
EPA Region 7

12/19/08  
Date

Attachments:

- Attachment 1: Regions 6 and 7 Preparedness Workplan
- Attachment 2: OAM Memorandum clarifying OSC warrant authority
- Attachment 3: Regional Delegations Manual, R6-14-2 TN-296 (Region 6)
- Attachment 4: Regional Delegations Manual, R7-14-002 (Region 7)

MEMORANDUM OF UNDERSTANDING  
BETWEEN  
THE U. S. ENVIRONMENTAL PROTECTION AGENCY REGION IV  
AND  
THE U. S. ENVIRONMENTAL PROTECTION AGENCY REGION VII

The purpose of this memorandum is to establish the geographical areas and limits of responsibility of the predesignated On-Scene Coordinator (OSC) for pollution responses. Responses include oil and hazardous substances pursuant to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and the Oil Pollution Act of 1990.

The common regional boundary is the center line of the Lower Mississippi River (LMSRV). For the purpose of emergency response, the boundary is described as:

The boundary is delineated by the LMSRV and mileage markers published by the U. S. Army Corps of Engineers (USACE). Beginning at Mile 953.8 (confluence of the LMSRV, Ohio River, and the Upper Mississippi River), hence southerly to Mile 828 (intersection of the regional boundary of Environmental Protection Agency (EPA) Regions VI and VII, and the LMSRV).

U. S. Environmental Protection Agency, Region IV:

EPA Region IV is responsible for discharges or releases, or the substantial threat of discharges or releases of a pollutant from a source originating from EPA Region IV into the LMSRV. Responsibility begins at the water line or levee on the Right Descending Bank (RDB), extending to the east. Included are discharges or releases from unknown sources or those classified as "mystery spills".

U. S. Environmental Protection Agency, Region VII:

EPA Region VII is responsible for discharges or releases, or a substantial threat of discharges or releases of a pollutant from a source originating from EPA Region VII into the LMSRV. Responsibility begins at the water line or levee on the RDB, extending to the west. If a discharge or release enters the water, EPA Region VII will be responsible for the response effort.

General: a. Both regions have additional responsibilities when performing duties as the OSC. Included are:

- 1) Notification of:
  - a) Downstream water users.
  - b) U. S. Coast Guard Second District.
  - c) USACE.

2) Notification of each other when a response event has occurred or is anticipated.

b. Either Region, when requested by the other, may assume the functional OSC role for a particular incident. The decision to accept will rest with the Region being requested, on an incident specific basis.

c. When a Region is notified of a discharge or release, or a substantial threat of a discharge or release of a pollutant not in its area of responsibility, it will notify the responsible Region. The reporting Region should assist in assessing the situation and to determine the need for a Federal response.

d. When a representative of either Region is the first Federal official arriving on-scene of a discharge or release not in the area of response responsibility, the representative will notify the responsible Region. The representative will accomplish duties detailed in the NCP pending arrival of the predesignated OSC.

e. Boundary lines do not preclude mutual assistance between the two agencies.

f. Previous Memorandums of Understanding or agreements are replaced by this document. Regional and Area Contingency Plans of the signatory agencies will be amended to reflect the response boundary.

g. This agreement is subject to review and amendment at any time, by request of either party. It will remain in effect until modified or terminated by mutual agreement.

John H. Hankinson for

Date: 3-9-94

JOHN H. HANKINSON, JR.  
Regional Administrator  
U. S. Environmental Protection  
Agency, Region IV  
Atlanta, Georgia

Dennis Grams

Date: 3-21-94

DENNIS GRAMS, P.E.  
Regional Administrator  
U. S. Environmental Protection  
Agency, Region VII  
Kansas City, Kansas



## **ANNEX VIII**

# **MEMORANDUM OF UNDERSTANDING BETWEEN THE CORPORATION FOR NATIONAL AND COMMUNITY SERVICE, UNITED STATES COAST GUARD AND U.S. ENVIRONMENTAL PROTECTION AGENCY**

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**MEMORANDUM OF UNDERSTANDING  
BETWEEN  
U.S. COAST GUARD, U.S. ENVIRONMENTAL PROTECTION  
AGENCY,  
AND  
CORPORATION FOR NATIONAL AND COMMUNITY SERVICE**

**1. PARTIES**

The Parties to this Memorandum of Understanding (MOU) are the United States Coast Guard (USCG), the United States Environmental Protection Agency (EPA) and the Corporation for National and Community Service (CNCS).

CNCS, a wholly-owned United States Government Corporation and executive federal agency of the United States, supports service and volunteering at the national, state and local levels, overseeing three major initiatives: AmeriCorps (including State/National, Volunteers in Service to America (VISTA), and National Civilian Community Corps (NCCC)), Learn and Serve America, and Senior Corps. CNCS programs provide vital support, especially human capital, to the national, state, and local voluntary organizations and public agencies that lead response, relief, and recovery efforts when an incident occurs. In addition, CNCS has specific responsibilities as a support agency within the National Response Framework (NRF). Pursuant to the Stafford Act and other legal authorities cited below, CNCS and its grantees have a record of collaborating with state and local agencies and organizations to support response and recovery efforts.

USCG and EPA provide federal On-Scene Coordinators (OSCs) to respond to discharges of oil and releases of hazardous substances, pollutants and contaminants under Section 311 of the Clean Water Act (CWA) as amended by the Oil Pollution Act of 1990 (OPA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The EPA provides OSCs for responses in the inland zone, and the USCG provides OSCs for responses in the coastal zone. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) found in 40 CFR Part 300, contains some of the regulations that implement Section 311 of the CWA and CERCLA, and describes OSC authorities and responsibilities in detail.

**2. AUTHORITY**

The USCG, EPA, and CNCS, enter into this MOU pursuant to 14 U.S.C. § 141; 10 U.S.C. § 1588; 14 U.S.C. § 93(a)(20); 31 U.S.C. § 1342; NCP, 40 CFR Part 300.110; CWA, 33 U.S.C. § 1321; CERCLA, 42 U.S.C. § 9601; Homeland Security Act of 2002, Public Law 107-296; Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5121-5206; the Department of Homeland Security Appropriations Act, 2007, Public Law 109-295; the National and Community Service Act of 1990, 42 U.S.C. § 12651g(b); Executive Order 12148, as amended; and 44 CFR Part 206. Any transfer of funds necessary to carry out this agreement will be under the Economy Act or other appropriate authority.

### **3. PURPOSE**

This MOU between the USCG, EPA, and CNCS describes the major responsibilities of each Party in developing and supporting an unaffiliated volunteer management program to be implemented following an oil or hazardous substance pollution incident as requested by the USCG/EPA OSC.

### **4. RESPONSIBILITIES**

A. USCG and EPA, in fulfilling their mission of coordinating emergency preparedness and response to oil and hazardous substance pollution incidents plan to, as appropriate, include CNCS in ongoing efforts to improve and implement the NCP and NRF procedures related to the use of volunteers, and to assist in educating and training CNCS personnel at the local, state and national levels to provide needed unaffiliated volunteer management assistance for response operations. Specifically, USCG and EPA resolve to:

- 1) Identify appropriate and necessary training and exercises for CNCS staff, program staff, and national service participants to assist CNCS in providing volunteer management assistance for response operations;
- 2) Notify CNCS as soon as possible of requested assistance following an incident. Notification information should include:
  - a. A thorough description of the anticipated volunteer management capabilities necessary to support incident response, and,
  - b. The minimum incident-specific training requirements for responding CNCS assets;
- 3) Subject to Section 7 below, pay the costs, as may be legally appropriate and necessary, through the OSLTF or Interagency Agreements, of transportation, lodging, and meals incurred by CNCS staff, CNCS program staff, and national service participants, salary costs for program staff, and living allowances for national service participants explicitly supporting USCG and EPA response volunteer management operations;
- 4) Pay the costs, as may be appropriate and necessary, through the OSLTF or Interagency Agreements, of necessary tools, equipment, and other supplies for CNCS to perform assigned volunteer management functions during the response; and
- 5) Provide work space and appropriate support for CNCS staff, CNCS program staff, and national service participants temporarily assigned to response volunteer management operations.

B. CNCS, to carry out its role in support of USCG/EPA, plans to engage in planning, coordinating, supporting, and/or assisting in the following preparedness and response activities:

- 1) Provide for coordination and management of unaffiliated volunteers as requested by the USCG/EPS OSC;
- 2) Provide outreach to established voluntary organizations to provide coordination and support services as requested by the USCG/EPA OSC;
- 3) Disseminate information to affected populations in coordination with the Unified Command Joint Information Center;
- 4) Assign appropriate CNCS staff, program staff, and national service participants to support USCG/EPA OSC operations;
- 5) Ensure that all personnel assigned by CNCS to provide services under this MOU are covered by either the Federal Tort Claims Act and the Federal Employees

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Compensation Act, or when CNCS grantees are responding on behalf of CNCS in accordance with the terms and conditions of a CNCS grant or cooperative agreement, that they are covered by liability insurance and occupational accident insurance.

- 6) Develop and provide to the USCG/EPA OSC a specific response plan and budget, including proposed human resources, upon being provided the incident needs by the USCG/EPA OSC [Sect 4.A.2];
- 7) Ensure participation by CNCS staff and national service participants in appropriate Hazardous Waste Operations and Emergency Response (HAZWOPER) training identified by USCG and EPA as necessary to support the volunteer management mission;
- 8) Participate, as available, in preparedness and planning activities such as planning document development; and
- 9) Develop CNCS standard operating procedures (SOP) for response to incidents at the request of the USCG/EPA.

## **5. COMPLIANCE, REPORTING AND DOCUMENTATION**

CNCS will comply with fiscal management and performance requirements and provide USCG/EPA with appropriate supporting expenditure and program management documentation related to fiscal compliance and program performance management in a format and on a schedule mutually established:

- A. For Pollution Removal Funding Authorization (PRFA) supported oil spill incident deployments, CNCS will:
  1. Provide good faith estimates of the total anticipated costs, as needed, with a line item breakdown of the principal expense categories. This need not be more than a single page, and can be provided as an attachment to the PRFA;
  2. Secure advance approval from the USCG/EPA OSC for proposed response costs to be incurred by CNCS when deploying to incident areas. CNCS shall identify individuals who will respond on its behalf; however, the federal OSC maintains the right to refuse services;
  3. Maintain appropriate financial records and supporting documentation to support expenses, and submit final reimbursement claims to USCG or EPA in accordance with the Technical Operating Procedures (TOPs) for resource documentation under OPA 90;
  4. Provide regular reports to the USCG and EPA on activities and accomplishments of deployed national service participants, including a final report on activities and accomplishments at the conclusion of each such deployment; and
  5. Maintain any applicable training, medical surveillance, and/or exposure records pursuant to this MOU and any associated response activities.
- B. CNCS will provide regular reports to USCG and EPA on outcomes of preparedness operations, including training and exercises. Reports will identify specific accomplishments, number of people trained per activity, and outcomes of exercises.
- C. CNCS will ensure that all activities performed under this MOU are in compliance with U.S. Government statutes and regulations, in particular, but not limited to, the Privacy Act, 5 U.S.C. 552a.

## **6. POINTS OF CONTACT:**

### **1. USCG:**

Commandant (CG-5332)  
Office of Incident Management & Preparedness  
U.S. Coast Guard  
2100 Second Street SW, Stop 7363  
Washington, DC 20593-7363  
202-372-2251

### **2. EPA:**

Director, Office of Emergency Management  
Office of Solid Waste and Emergency Response  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
202-564-8600

### **3. CNCS:**

NCCC Deputy Director for Projects & Partnerships  
1201 New York Ave, NW  
Washington, DC 20525  
cdavenport@cns.gov  
202-606-7516

## **7. OTHER PROVISIONS**

Nothing in this memorandum is intended to conflict with current law or regulation or the directives under which USCG, EPA, and CNCS operate. If a term of this memorandum is inconsistent with such authority, then that term shall be invalid, but the remaining terms and conditions of this memorandum shall remain in full force and effect.

- 1) This MOU does not mandate USCG, EPA or CNCS to undertake any specific level of activity.
- 2) The USCG or the EPA intend to initiate and approve all volunteer management and coordination requests issued to CNCS. When deployed to support a response, participants will operate under the ultimate direction of the USCG's or EPA's federal OSC.
- 3) It is understood that Parties may need to make operational changes quickly during a response and notice to the other Party of such changes may be delayed; however, such notice shall be provided at the earliest possible time and in the most time efficient manner.
- 4) This MOU is not intended to, and does not, create any right, benefit or trust responsibility, substantive or procedural, enforceable at law or equity, by a Party against the United States, its agencies, its officers or any person.
- 5) Nothing in this MOU is intended to restrict the authority of any Party to act as provided by law, statute or regulation.
- 6) Nothing in this MOU requires or implies that USCG, EPA, or CNCS will provide liability or workers' compensation coverage or other accident insurance for volunteers who may engage in response operations.
- 7) Each Party plans to participate in an open exchange of relevant information, as permitted by law (including funding opportunities) which furthers the mission of each organization.

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- 8) This MOU is not a fiscal or funds obligation document, nor is it an agreement to pay any expenses or costs of CNCS. All commitments made by the parties to this MOU are subject to the availability of appropriated funds. Volunteer management support carried out by CNCS that may be eligible for reimbursement from USCG or EPA will require the execution of a separate financial instrument in order to pay any such expenses.
- 9) Each Party to this MOU is separate and independent from one another. As such, each organization will retain its own identity in providing services, and each organization is responsible for establishing its own policies.
- 10) While it is the intent of the Parties to cooperate in accordance with this understanding, no Party shall be liable to the other for failure to comply in any way with the provisions and agreements contained in this document.
- 11) Annually, or more often at the request of any Party, representatives of CNCS, USCG, and EPA intend to meet to assess progress in the implementation of the MOU and to make revisions as deemed necessary.
- 12) In the event the EPA or USCG wants to request CNCS volunteer management support for an oil or hazardous substance pollution incident which has occurred as part of a declared major disaster or emergency under the Stafford Act, the EPA or USCG may request CNCS support through FEMA via the following: (1) a Mission Assignment from FEMA to CNCS under the National Response Framework Volunteer and Donations Management Support Annex, developed in consultation with EPA and/or USCG; (2) a Mission Assignment from FEMA to CNCS under Emergency Support Function (ESF) #10, developed in consultation with EPA and/or USCG; or (3) a Mission Assignment subtask from EPA or USCG to CNCS under ESF #10.

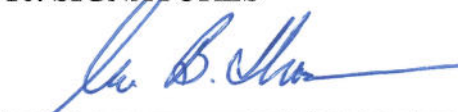
#### 8. EFFECTIVE DATE

This MOU shall be effective from the date it has been signed by representatives of all organizations and shall remain in effect until modified or terminated as below.

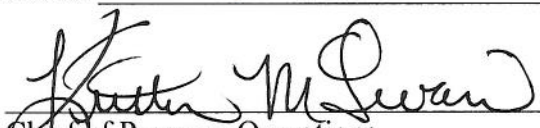
#### 9. MODIFICATION/TERMINATION

This MOU may be modified upon the mutual written consent of the parties. Any Party may terminate its participation in this agreement upon 60 days written notice to the other parties.


#### 10. SIGNATURES

  
\_\_\_\_\_  
Director for Response Policy  
USCG

Dated: 18 November 2010

  
\_\_\_\_\_  
Chief of Program Operations  
Corporation for National and Community Service

Dated: 7/15/2010

  
\_\_\_\_\_  
EPA Assistant Administrator  
Office of Solid Waste and Emergency  
Management Response

Dated: 1/25/11

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## GLOSSARY

### **Administrative support**

Administrative support is cost associated with processing the deployment and reimbursement of assigned incident response activities.

### **AmeriCorps member**

An AmeriCorps member is an individual serving on a full-time or part-time basis in an approved AmeriCorps program and who is eligible to receive an education award or alternative post "Member" service benefit.

### **AmeriCorps\*NCCC (National Civilian Community Corps)**

AmeriCorps\*NCCC is a 10-month, full-time residential AmeriCorps program which combines the best practices of civilian service with the best practices of military service, including leadership development and team-building. NCCC is team-based program for young women and men between the ages of 18 - 24.

### **AmeriCorps\*State and National**

An AmeriCorps program operated by local and national non-profits, local and state government entities, Indian tribes, territories, and institutions of higher education supported by grant funds and providing local service opportunities for AmeriCorps Members.

### **AmeriCorps\*VISTA (Volunteers in Service to America)**

An AmeriCorps program focused on eradicating poverty. Members serve full-time at community-based organizations. Members of AmeriCorps\*VISTA serve full-time with community-based organizations, work and live in the communities they serve, and create or expand programs that can continue after they complete their service.

### **Clean Water Act (CWA)**

The Clean Water Act is the principal federal statute protecting navigable waters and adjoining shorelines from pollution. Section 311 of the CWA addresses pollution from oil and hazardous substance releases, providing EPA and the U.S. Coast Guard with the authority to establish a program for preventing, preparing for, and responding to oil spills that occur in navigable waters of the United States.

### **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**

CERCLA is one of the statutes that provides the federal government with authorities to respond to the release or threat of release of hazardous substances, pollutants, or contaminants into the environment.

### **Corporation for National and Community Service (CNCS)**

CNCS is a federal agency established under section 191 of the National and Community Service Act (42 U.S.C. 12651).

### **CNCS program staff**

Employees of CNCS grantees and CNCS supported programs that provide direct oversight and support to national service participants deployed to an incident.

### **CNCS staff**

The permanent, and temporary staff of CNCS, not to include State Commissions, grantees, sub-grantees or their staff.

### **Hazardous Waste Operations in Emergency Response (HAZWOPER)**

HAZWOPER is an occupational safety and health standard regarding waste operations planning and training per 29 CFR 1910.120.

### **Incident**

A natural or manmade occurrence or event that requires a response to protect life or property. Incidents can, for example, include major disasters, emergencies, terrorist attacks, terrorist



threats, civil unrest, wild land and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, tsunamis, war-related disasters, public health and medical emergencies, and other occurrences requiring an emergency response.

**Learn and Serve America**

Learn and Serve America supports and encourages service-learning throughout the United States, and enables over one million students to make meaningful contributions to their community while building their academic and civic skills by providing direct and indirect support to community groups and higher education institutions. Adult volunteers from Colleges and Universities have participated in incident response and long-term recovery projects across the country.

**Living allowance**

A living allowance is a regular payment, not characterized as “wage” or “salary”, which may be provided to AmeriCorps members enrolled and active in an AmeriCorps program.

**National service participant**

An individual who is enrolled in a program funded by CNCS. This includes AmeriCorps members, Senior Corps and Learn and Serve participants.

**Oil Pollution Act (OPA) of 1990**

This legislation addresses a wide range of issues associated with preventing, responding to, and paying for oil pollution. Title 1 of OPA established oil spill liability and compensation requirements, including the Oil Spill Liability Trust Fund to help facilitate cleanup activities and compensate for damages from oil spills. In 1991, the United States Coast Guard created the National Pollution Funds Center (NPFC) to implement Title 1 of OPA, administer the OSLTF, and ensure effective response and recovery.

**Oil Spill Liability Trust Fund (OSLTF)**

OSLTF was created by Congress in 1986 and allows the federal government to collect industry revenue (via a tax) and place it in a fund available to OSCs and federal trustees to ensure rapid, effective response to oil spills. Specific uses of the fund include: removal costs & activities, natural resource damage assessments & restorations, claims for uncompensated removal costs & damages, and research & development. The Energy Policy Act of 2005 increased the maximum size of the Fund from \$1 billion to \$2.7 billion.

**On-scene Coordinator (OSC)**

For purposes of this MOU, the OSC is the federal official designated by the USCG or EPA to coordinate and direct response under Subpart D or E of the NCP.

**Pollution Removal Funding Authorization (PFRA)**

This is a tool available to FOSCs to quickly obtain needed services and assistance from federal, state, local, and tribal government agencies in oil spill and hazardous materials response actions. There are two types of forms (one for federal and one for non-federal agencies). The PFRA commits the OSLTF to payment by reimbursement of costs incurred in pollution response activities undertaken by another government agency working for the FOSC.

**Senior Corps**

Senior Corps taps the skills, talents, and experience of nearly 500,000 Americans age 55 and older to meet a wide range of community challenges through three main programs: RSVP, the Foster Grandparent Program, and the Senior Companion Program.

**Technical Operating Procedures (TOPs)**

TOPs serve as Coast Guard guidance for various Fund users. They provide formatting, forms, and instructions for compiling and submitting documentation efficiently and effectively.

Examples include Response Guidance, State Access Guidance, and Claims Guidance. Each topic has individual PDF available online in the NPFC User Reference Guide.

**Unaffiliated volunteer**

An individual who comes forward following an incident or disaster to assist a governmental agency or non-Governmental Organization (NGO) with response activities during the response or recovery phase without pay or other consideration. By definition, unaffiliated volunteers are not yet associated with a response or relief agency involved in the incident. (Also known as “convergent” or “spontaneous” volunteers.)

**Volunteer**

An individual who offers to support communities affected by an incident without receiving financial reward or remuneration. Volunteers can either be affiliated with other organizations involved in supporting communities affected by an incident or be unaffiliated volunteers. Volunteers are distinct from national service participants in that national service participants receive financial support and direct coordination from CNCS.

## **Addendum 1**

*The following information was noted when the MOU was distributed on March 22, 2011 to the NRT Members and Alternates and RRT Co-Chairs and Coordinators.*

Below are points of contact for CNCS for requests for presentations, planning, or response assistance. Please note also that the CNCS "Point of Contact" information in Section 6.0 of the MOU is out of date because CNCS reorganized after signing it. Please substitute the name of Kelly DeGraff as the MOU Section 6.0 point of contact for CNCS.

CNCS points of contact during regular business hours:

Primary:

Kelly DeGraff, Senior Advisor and Director of Disaster Services  
202-606-6697 (work)  
202-535-2014 (cell)  
[kdegraff@cns.gov](mailto:kdegraff@cns.gov)

Backup:

Phil Shaw, Disaster Service Specialist  
202-606-6697 (work)  
202-491-2305 (cell)  
[pshaw@cns.gov](mailto:pshaw@cns.gov)

# USE OF VOLUNTEERS GUIDELINES FOR OIL SPILLS

*September 27, 2012*



**Chair**



**Vice Chair**



**Member Agencies**



## Acknowledgements

The National Response Team (NRT) acknowledges the NRT member agencies, the state and federal agencies participating on the Regional Response Teams (RRTs), and the Corporation for National and Community Service (CNCS) for their contributions in preparing this document. We invite comments or concerns on the usefulness of this document in planning for oil spill responses. Please send comments to:

**U.S. National Response Team**  
*NRT Preparedness Committee*  
U.S. Environmental Protection Agency  
(Mail Code 5104A)  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

### U.S. National Response Team Member Agencies:

**Chair:** U.S. Environmental Protection Agency

**Vice Chair:** U.S. Coast Guard

U.S. Department of Agriculture

U.S. Department of Commerce

U.S. Department of Defense

U.S. Department of Energy

U.S. Department of Health and Human Services

U.S. Department of the Interior

U.S. Department of Justice

U.S. Department of Labor

U.S. Department of State

U.S. Department of Homeland Security


U.S. Federal Emergency Management Agency

U.S. General Services Administration

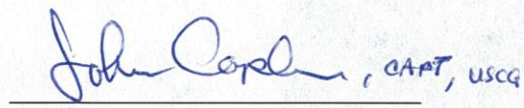
U.S. Nuclear Regulatory Commission

U.S. Department of Transportation

For more information on the NRT, please visit [www.nrt.org](http://www.nrt.org).



Larry Stanton, NRT Chair



CAPT John Caplis, NRT Vice Chair

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# Executive Summary

This National Response Team (NRT) document provides guidance for federal On Scene Coordinators (OSCs) and Area Committees (ACs) using or considering using volunteers during an oil spill incident. It was developed in response to incident lessons learned and contains information, examples, and tools to help with everything from coordination and outreach, to organization and oversight, and also includes tips on avoiding some of the potential issues associated with utilizing a volunteer workforce. Though this document is comprehensive in nature, it is a guidance document and was not designed to preclude any existing laws or agency-specific policies. This document will be evaluated and updated periodically by the NRT in an effort to incorporate future lessons learned and maintain relevance in the field.

## 1.0 Definitions

The following are several key terms related to volunteer management. Response personnel should have a clear understanding of their implications prior to an incident:

***Volunteer*** – Defined in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) § 300.5, a volunteer is “any individual accepted to perform services by the lead agency, which has authority to accept volunteer services.” A volunteer is subject to the provisions of the authorizing statute and the NCP.

Please note that the definition of a “volunteer” in 40 CFR § 300.5 applies only to the implementation and interpretation of NCP provisions related to volunteers. This definition does not, for example, apply to the implementation and interpretation of the liability laws discussed in Section 10.0 of this guidance.

The Volunteer Protection Act (42 U.S.C. § 14505) defines “volunteer” as “an individual performing services for a nonprofit organization or a governmental entity who does not receive – (A) compensation (other than reasonable reimbursement or allowance for expenses actually incurred); or (B) any other thing of value in lieu of compensation, in excess of \$500 per year, and such term includes a volunteer serving as a director, officer, trustee, or direct service volunteer.”

Section 4.0 describes the authorities of the U.S. Environmental Protection Agency (EPA), U.S. Coast Guard (USCG), and other NRT member agencies to accept volunteer services.

***Affiliated volunteer*** – For the purposes of this guidance, an affiliated volunteer is an individual who comes forward following an incident or disaster to assist with response activities during the response or recovery phase without pay or other consideration and has a pre-existing formal or informal arrangement with either a governmental agency or non-governmental organization (NGO) or Community Based Organization (CBO) and who has been trained for a specific role or function in incident response or disaster relief during the preparedness phase. Affiliated volunteers may also have benefited from pre-deployment rostering, credentialing, and health screening. An affiliated volunteer’s organization may have established ties to the local response structure (e.g., Volunteer Organizations Active in Disasters (VOADs)).

Examples of affiliated volunteer groups include Tri-State Bird Rescue and Research, Inc. and the UC Davis, Oiled Wildlife Care Network (see Section 12.0 for additional information).

***Unaffiliated volunteer*** – For the purpose of this guidance, an unaffiliated volunteer is an individual who comes forward following an incident or disaster to assist a governmental agency, NGO, or CBO with response activities without pay or other compensatory consideration. By definition, unaffiliated volunteers are not initially affiliated with a response or relief agency or pre-registered with an accredited disaster council. Unaffiliated volunteers may not have benefited from pre-deployment training, credentialing, and health screening.

*Note:* Unaffiliated volunteers are also sometimes referred to as “convergent,” “emergent,” or “spontaneous” volunteers within the emergency management community. For standardization purposes in this document, these volunteers will be referred to as “unaffiliated.”

***Employee*** - The definition of “employee” is relevant to several sections of this guidance and varies depending on which specific legal requirements are being addressed. The definition of “employee” is described for each agency in specific laws and regulations and can vary across agencies. These requirements may also specify to what extent an agency may accept volunteer services and to what extent volunteers may be considered “employees” of that agency for specific purposes, such as work hours and compensation for injuries. They may also define the types of incidental expenses that an agency may pay for when using volunteers. As noted in Section 4.0, for any specific incident, OSCs should work with their counsel’s office to understand how these requirements affect a given agency’s authority to accept volunteer services, as well as how they may affect the application of the liability laws discussed in Section 10.0 and payment of incidental expenses for volunteer use.

Under the Federal Tort Claims Act (FTCA) an “employee of the government” includes (1) officers or employees of any federal agency, members of the military or naval forces of the United States, members of the National Guard while engaged in training or duty under section 115, 316, 502, 503, 504, or 505 of title 32, and persons acting on behalf of a federal agency in an official capacity, temporarily or permanently in the service of the United States, whether with or without compensation, and (2) any officer or employee of a Federal public defender organization, except when such officer or employee performs professional services in the course of providing representation under section 3006A of title 18 (28 U.S.C. § 2671).

For purposes of the liability laws, the determination of whether a given individual is an “employee” of a federal agency is generally determined by the facts of a specific case, looking closely at the degree of day-to-day government supervision over individuals, among other factors.

Section 8.0 describes the health and safety requirements and guidance that apply to volunteers. For this section, the definition of “employee” under the Occupational Safety and Health Act (OSH Act) would apply, as a matter of law, to a determination of whether the OSH Act safety and health requirements apply to volunteers (to determine whether a volunteer falls under the definition of “employee” or not). The OSH Act states that “employee” means “an employee of an employer who is employed in a business of his employer which affects commerce.” (29 U.S.C. 652) (The OSH Act does not have a definition of “volunteer.”) The definition of “employee” under the NCP, 40 CFR § 311, is the one that would apply, as a matter of law, to a



determination of whether the EPA hazardous waste operations and emergency response (HAZWOPER) requirements apply to volunteers (again, to determine whether a volunteer falls under the definition of “employee” or not). Section 311.2 of these EPA regulations states that “employee” means “a compensated or non-compensated worker who is controlled directly by State or local government, as contrasted to an independent contractor.”

This guidance does not specifically address individuals who were initially volunteers and later become employees.

*The following table is intended to summarize the definitions provided above by identifying how the definitions apply to different sections of, and the authorities discussed in, this guidance:*

|            |   | Statutes and Authorities   |                                    |                           |  |   |
|------------|---|--|------------------------------------|---------------------------|--|---|
|            |   | NRT Use of Volunteers Guidelines                                   | 40 CFR § 300 and 40 CFR § 311      | OSH Act                   | Liability Laws                               | Agency Authorities to Use Volunteers  |
| Definition | Volunteer   | Applies to discussions about NCP requirements                      | 40 CFR § 300.5                     | N/A                       | 42 U.S.C. § 14505 (Volunteer Protection Act) | Definition in this Guidance does not apply to agencies’ authorities; however, individual agencies’ statutes may contain a definition of “volunteer” |
|            | Affiliated Volunteer  | Defined by this guidance for use in this guidance                  | No definition                      | No definition             | No definition                                | No definition   |
|            | Unaffiliated Volunteer (A.K.A., convergent, emergent, or spontaneous) | Defined by this guidance for use in this guidance                  | No definition                      | No definition             | No definition                                | No definition   |
|            | Employee  | Different definitions apply to different sections of this guidance | 40 CFR § 311.2 (worker protection) | 29 U.S.C. § 652 (OSH Act) | 28 U.S.C.A. § 2671 (Federal Tort Claims Act) | Agency specific   |

## 2.0 Purpose and Scope

This document is a product of the NRT, which is the organization of 15 federal agencies responsible for national planning and coordination of oil and hazardous substance emergency preparedness and response under the NCP (40 CFR Part 300). It was developed by a Volunteer Workgroup established under the NRT Preparedness Committee. For additional information on the National Response System (NRS) and federal response authorities, visit [www.nrt.org](http://www.nrt.org).

This document is intended solely as guidance and to provide technical assistance to the federal OSCs on the use of unaffiliated and affiliated volunteers during responses to oil spills. This document was prepared by the NRT in part, based on the outcome of the USCG Incident Specific Preparedness Review (ISPR) of the M/V *Cosco Busan* incident of 2007. The ISPR analyzed the preparedness planning requirements and the actual response operations conducted in response to the M/V *Cosco Busan* collision with the San Francisco-Oakland Bay Bridge and subsequent spill of approximately 53,000 gallons of heavy fuel oil into San Francisco Bay. The ISPR recommended that the NRT develop generic guidance for ACs to assist them in the utilization of unaffiliated volunteers and to update sections in their Area Contingency Plans (ACPs). The ISPR also noted that “a lack of planning for unaffiliated volunteer program, and a general lack of attention to unaffiliated volunteers (specific to non-wildlife), resulted in long and frustrating delays that impacted the response overall...”

The use of volunteers, including the need for planning for volunteer use in ACPs, is addressed in the NCP at 40 CFR § 300.185 and § 300.210:

§ 300.185(c): “ACPs shall establish procedures to allow for well organized, worthwhile, and safe use of volunteers, including compliance with § 300.150 regarding worker health and safety. ACPs should provide for the direction of volunteers by the OSC/RPM [On-Scene Coordinator/Remedial Project Manager] or by other federal, state, or local officials knowledgeable in contingency operations and capable of providing leadership. ACPs also should identify specific areas in which volunteers can be used, such as non-oiled beach surveillance, logistical support, and bird and wildlife treatment. Unless specifically requested by the OSC/RPM, volunteers generally should not be used for physical removal or remedial activities. If, in the judgment of the OSC/ RPM, dangerous conditions exist, volunteers shall be restricted from on-scene operations.”

§ 300.210(c)(4)(ii)(H): [Each ACP shall incorporate an annex that shall] “Identify and secure the means for providing, if needed, the minimum required OSHA and EPA training for volunteers, including those who assist with injured wildlife.”

This document is designed to primarily address oil spill responses conducted under the NCP in which the federal OSC is the Incident Commander or part of the Unified Command. It is also possible that some oil spill responses involving volunteers may occur as part of a broader federal response coordinated by the U.S. Department of Homeland Security (DHS) under the National Response Framework (NRF) (e.g., oil spill occurs as a result of a major earthquake or

hurricane). In such a case, volunteers for the overall federal response, including the oil spill, may be managed by Federal Emergency Management Agency (FEMA) in accordance with the NRF Volunteer and Donations Management Support Annex procedures, and the authorities underlying the federal response to that particular incident (e.g., Robert T. Stafford Disaster Relief and Emergency Assistance Act). In addition, the NRF provides that the Secretary of Homeland Security may activate specific NRF mechanisms to provide support to federal agencies that are leading responses under their own authorities. It is possible, therefore, that EPA or USCG may request that DHS activate the NRF Volunteer and Donations Management Support Annex to assist with volunteer management during an oil spill conducted under the NCP, although this may only occur in exceptional circumstances.

In addition to their NCP authorities, NRT member agencies have differing authorities for the use of volunteers and volunteer management. As a reference for the Incident Command or Unified Command, each of the pertinent authorities will be outlined in this document. (See Section 4.0 and Appendix A.)

### **3.0 Policy Statement**

EPA and USCG federal OSCs may use the services of volunteers in oil spill responses in accordance with their statutory authorities and other applicable laws. The Incident Command/Unified Command should make that decision on a case-by-case basis, weighing the interests of the local volunteer community and benefits of volunteer efforts against health and safety concerns, resources needed for volunteer supervision and training, liability concerns, and other relevant issues.

As noted in the NCP, volunteers generally should not be used for physical removal of oil contaminated materials. Typically, volunteers should be used for minimal risk activities; however, in certain circumstances, volunteers may be used for higher risk activities such as certain oiled wildlife cleaning activities if they have received appropriate training and Personal Protective Equipment (PPE), as contemplated by the NCP volunteer requirements. A list of potential volunteer activities is provided later in this document, but each AC should evaluate the specific needs and resources of its area to develop a list that is relevant to the local area. This Guidance should serve as a catalyst for Area Contingency Plan (ACP) revitalization, to include stakeholder outreach and increased volunteer management planning efforts at the local, state, and regional levels.

#### **Affiliated vs. Unaffiliated Volunteers**

When volunteer use is determined to be appropriate, the use of affiliated volunteers is preferred over the use of unaffiliated volunteers. Interested unaffiliated volunteers may be encouraged to join affiliated volunteer organizations, although as discussed in Section 6.2, the federal government may not endorse one organization over another. Federal OSCs should plan for the potential use of experienced volunteer management organizations should they be needed to manage unaffiliated volunteers. ACPs should address state and local government, non-government and community based volunteer management capabilities, as well as key federal resources, such as the Corporation for National and Community Service (CNCS). The Incident Command/Unified Command should also be aware of the potential federal volunteer management assets that can provide assistance. Section 11.0 describes potential resources

available to assist ACs in planning for the use of volunteers and to assist federal OSCs with managing volunteers during an actual incident.

This document is intended solely as guidance and was designed to provide technical assistance from the NRT on the use of volunteers during oil spill responses. This document does not impose any legal obligations or duties on any party. This document does not supersede the NCP (40 CFR § 300) or any regulations issued by federal agencies.

## **4.0 NRT Member Agency Authorities**

Federal agencies are generally prohibited from accepting voluntary services pursuant to 31 U.S.C § 1342, which states in relevant part that:

An officer or employee of the United States Government or of the District of Columbia government may not accept voluntary services for either government or employ personal services exceeding that authorized by law except for emergencies involving the safety of human life or the protection of property.

The principal purposes of this prohibition are to preclude claims for payment for such services against the Government and thereby create a coercive deficiency and prevent agencies from coercing employees into “volunteering” additional services (e.g. unpaid overtime) to avoid deficiency when appropriated funds were used up prior to receiving more appropriated funds

There is a distinction between “voluntary services” and “gratuitous services”. Voluntary services are defined as services furnished on the initiative of the party rendering the same without request from, or agreement with, the United States. Voluntary services are generally prohibited by 31 U.S.C § 1342 unless Congress has otherwise authorized acceptance of voluntary services.

Gratuitous services, on the other hand, are defined as “uncompensated services rendered by an individual through an advance agreement or contract in which the individual agrees to serve without compensation. There is no provision of law that purports to prevent the acceptance of gratuitous services, if otherwise lawful.

Upon this backdrop of prohibition, subsequent legislation permits the use of volunteers, but only for specific, enumerated purposes. Appendix A includes detailed agency-specific information describing the authorities of select NRT member agencies to use volunteers. It is important to note that EPA and USCG have different authorities to use volunteers. Therefore, depending on whether EPA or USCG is providing the federal OSC for a specific incident, the relevant agency’s authorities to use volunteers would apply and should be considered by the Incident Command/Unified Command. The roles and authorities of supporting agencies may also need to be considered if they are involved in providing or managing volunteers. Federal

OSCs should consult with their agency's counsel when considering use of volunteers in a response.

## **5.0 Area Contingency Plans and Other Plans for Use of Volunteers**

Each AC should review its ACP and ensure incorporation of information pertinent to the use of volunteers. This information should address local and regional resources and concerns. ACs and federal OSCs should thoroughly research all available affiliated volunteer capabilities and resources within their areas that may support oil spill responses. ACPs should, at a minimum, include a contact list of local government and other affiliated volunteer organizations in their area.<sup>1</sup> This should be a proactive, not a reactive process. When local, state, and regional government, as well as NGO or CBO capabilities to manage volunteers have been exhausted, federal OSCs should consider enlisting the aid of the CNCS, or, if available, other federal agencies. CNCS, and other potential resources to support planning for volunteer use, are described in more detail in Section 12.0.

ACPs should also describe how the Incident Command/Unified Command should integrate or coordinate with volunteer organizations, including identification and description of potential volunteer duties. Section 6.0 discusses volunteer management within an Incident Command System (ICS) structure in more detail. When identifying potential affiliated volunteer organizations, ACs should determine whether those organizations are familiar with and trained in the National Incident Management System (NIMS) ICS. If they are not trained in NIMS ICS, consideration should be given to how best to prepare for the potential involvement of these organizations in an oil spill response.

ACPs should address the training and coordination of both affiliated and unaffiliated volunteers, including health and safety training. Federal OSCs should coordinate with local and regional affiliated volunteer organizations to determine their capability to absorb and train unaffiliated volunteers. Once this resource capability is addressed, the federal OSC should incorporate affiliated volunteer organizations into the regular exercise and training cycles when possible. The NCP requires that the annex to the ACP "Identify and secure the means for providing, if needed, the minimum required OSHA and EPA training for volunteers, including those who assist with injured wildlife" (40 C.F.R. 300.210(c)(4)(ii)(H)).

Regional Contingency Plans (RCPs) may also contain information on planning for volunteer use; however, more detailed planning generally occurs at the ACP level.

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<sup>1</sup> An example of an affiliated volunteer organization is the Oiled Wildlife Care Network (OWCN), which is a statewide collective of trained wildlife care providers, regulatory agencies, academic institutions and wildlife organizations working to rescue and rehabilitate oiled wildlife in California. Established in 1994 by the Department of Fish and Game's Office of Spill Prevention and Response (OSPR) as a result of the *Exxon Valdez* in Alaska and the *American Trader* in Huntington Beach, the OWCN is administered by the UC Davis Wildlife Health Center in the School of Veterinary Medicine. Additional information can be found at [www.owcn.org](http://www.owcn.org).

### **Area Committees and Volunteer Organizations**

ACs should determine if members of affiliated NGOs and CBOs should be incorporated into their memberships or supporting workgroups. For example, if a port area is likely to have a large influx of volunteers during a response, those affiliated NGOs and CBOs likely to be involved during a response should be included in AC membership. If an AC decides not to include these organizations in its membership, they should still be invited to participate in exercises. Exercising with these organizations provides federal OSCs an opportunity to better understand their capabilities and allows federal OSCs and organizations to test their mechanisms for coordination during incidents. Exercise experience should also help federal OSCs determine the appropriate use of volunteers during actual incidents.

### **Volunteer Health and Safety Training**

Federal OSCs should be aware of the federal and state Occupational Safety and Health Administration (OSHA) requirements for HAZWOPER and emergency HAZWOPER training. The federal OSC should develop a relationship with the local OSHA representative and maintain an awareness of training requirements and events that may be available to volunteers and volunteer organizations. While the NRT is not recommending active recruitment of volunteers, a comprehensive Just-In-Time training program should be developed for use in the event that a large number of volunteers must be trained in a short amount of time. It is important to identify the applicable safety and health training requirements that apply to volunteers on a state-by-state basis. The Volunteer Safety and Health Training section (Section 8.0) discusses training requirements in greater depth.

To ensure that workers can meet the challenges of spill responses, every effort must be made to protect them from the safety and health risks inherent in their work. Additional preparedness and response guidance to assist the Incident Command and voluntary organizations active in disaster response activities is contained in the NRT Technical Assistance Document (TAD) referred to as the "Emergency Responder Health Monitoring and Surveillance (ERHMS) system." The ERHMS TAD includes specific recommendations and tools for all phases of a response, including the pre-deployment, during-deployment, and post-deployment phases. This document can be found at [www.erhms.nrt.org](http://www.erhms.nrt.org).

Federal OSCs should also plan ahead for activities that may be appropriate for unaffiliated volunteers in case they cannot be referred to affiliated organizations. These planned activities should take into account that most unaffiliated volunteers will lack the appropriate training to safely participate in oil removal operations. Examples of minimal risk activities for unaffiliated volunteers include pre-impact beach cleanup, temporary movement of natural debris, administrative duties and messenger tasks (with additional examples in Section 7.0).

## **6.0 Incident Command System Structure**

As explained in Section 3.0, the decision to accept volunteer services—affiliated or unaffiliated—is made by the Incident Command/Unified Command. The incidents addressed here are those in which the federal OSC is the Incident Commander or part of the Unified Command.

If the incident includes a responsible party (RP), the input of the RP regarding the use of volunteers should be given strong consideration, but ultimately, the federal OSC (along with any state or local commanders in the Incident Command/Unified Command) may make the decision to accept volunteers even if the RP objects. However, the federal OSC should consult his/her agency counsel if considering using volunteers on the RP's property in order to determine the applicability of federal liability coverage to those volunteers (see Section 10.0).

Volunteers and volunteer organizations may not always have an interest in participating in a given incident. In fact, volunteers do not participate in the majority of oil spill responses. In these cases, and during an initial response when there has been no volunteer interest expressed yet, the ICS structure may not contain any positions specifically dedicated to volunteer management. As the Incident Command/Unified Command becomes aware of individuals or organizations that are interested in providing volunteer services, or anticipates a need for the expertise that can be provided by existing affiliated volunteer organizations (e.g., wildlife rescue), the Incident Command/Unified Command should make assignments for volunteer coordination within the ICS.

### **Concept of Operations Summary**

Based on lessons learned from recent incidents and exercises involving the use of volunteers, the following incident management approaches are recommended for the coordination and management of volunteer services in the ICS. These approaches address incidents where volunteer services require minimal support and management within the overall response, and also provide an option for scaling up if volunteer management will represent a larger effort or if substantial coordination is required with and among several affiliated volunteer organizations or volunteer management (e.g., state and local governments) entities. Appendix B depicts the recommended ICS structures for small-scale and large-scale volunteer efforts, including wide-area incidents that use an Area Command structure. While these approaches are recommended, other approaches may be used depending on the specific incident.

### **Small scale volunteer efforts**

When it becomes apparent to the Incident Command/Unified Command that volunteer services may be involved in the response, the Liaison Officer (LNO) should be assigned responsibility for needs assessment and initial volunteer coordination.<sup>2</sup> In order to help the Incident Command/Unified Command decide whether or not to use volunteers, the LNO should provide information to the Incident Command/Unified Command on the interest, availability, and capabilities of existing affiliated volunteer organizations and unaffiliated volunteers to contribute to the response. Another important factor for the Incident Command/Unified Command should consider is the availability of liability insurance and workman's compensation for potential volunteers. (See Section 10.0 for further information on liability.) The LNO may obtain that information from Agency Representatives whose agencies can provide or coordinate volunteer services or from other venues (e.g., local government Emergency Operations Center [EOC], local emergency volunteer management operations, or

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<sup>2</sup>The LNO should contact the ACP coordinator for assistance, such as identifying any affiliated volunteer organizations that may have already been identified in the ACP. The ACP coordinator or other member of the AC with expertise in volunteer management may also be an appropriate person to deploy to the command to conduct volunteer assessment and coordination functions if credentialed for the position under NIMS.

Volunteer Reception Centers [VRCs]<sup>3</sup>). If unaffiliated volunteers are expressing interest directly to the Incident Command/Unified Command in volunteering for the incident, it is recommended that the LNO assign an Assistant LNO the initial responsibility of conducting the unaffiliated volunteer assessment and/or coordinating with state/local government volunteer management agencies.

When the potential exists for using affiliated or unaffiliated volunteers, the LNO (or Volunteer Coordinator, if assigned) should prepare a decision memorandum for signature by the Incident Command/Unified Command to document the decision on use of volunteers. If volunteers will be used, the decision memo should include instructions on how volunteer support resources, such as equipment, will be provided. To determine which volunteer support resources may be paid for by the Oil Spill Liability Trust Fund (OSLTF), the LNO/Assistant LNO should consult the National Pollution Funds Center (NPFC) ([www.uscg.mil/npfc](http://www.uscg.mil/npfc)), and agency counsel. If the RP agrees to pay during the response for volunteer support costs, that agreement should be documented separately and attached to the memorandum. Once signed, the decision memorandum should be filed with the Documentation Unit.

If the Incident Command/Unified Command decides to use *affiliated* volunteer organizations, such organizations may be assigned directly to an appropriate unit in the Operations Section (e.g., Wildlife Unit), Planning Section (e.g., Situation Unit Field Observer), or other appropriate section of the ICS depending on the type of support needed and/or being provided.

If a decision is made to accept the services of *unaffiliated* volunteers, the Incident Command/Unified Command should obtain the assistance of local government volunteer management mechanisms and/or other experienced volunteer management organizations to provide coordination and management services for the unaffiliated volunteers if possible. In general, state/local government organizations should be contacted first for such assistance. If state/local assistance is not available, CNCS, other federal agencies, NGO or CBOs may be contacted. (Section 12.0 provides more information on CNCS, as well as information on other volunteer coordination resources.)

The LNO/Assistant LNO should work with the Finance Section to make arrangements to enlist the services of CNCS or other organization to provide a Volunteer Coordinator to help coordinate and manage unaffiliated volunteers, as discussed further below.<sup>4</sup> The Finance Section should prepare the Pollution Removal Funding Authorization (PRFA) for obtaining CNCS or potentially another federal agency's services, which should be signed by the federal OSC/Incident Commander. In addition, the PRFA Statement of Work should initially be developed by the LNO/Assistant LNO. The LNO/Assistant LNO should also obtain the necessary ICS 213 RR (Resource Request Message) Form signatures from Section Chiefs. If a local or state organization provides volunteer management services, the federal OSC/Incident Commander should determine if it is appropriate to issue a PRFA.

Once the Incident Command/Unified Command has approved the decision to accept and manage unaffiliated volunteers under the Incident Command/Unified Command structure, in

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<sup>3</sup>Note: VRCs are also sometimes referred to as "Emergency Volunteer Centers (EVCs)"; however, for standardization purposes in this document, EVCs will be referred to as "VRCs."

<sup>4</sup> Alternatively, funding may be provided by the RP, or alternative sources. See Section 11 for more information.



accordance with ICS principles, the planning for the actual management of these resources should occur under the Planning Section. The LNO should be responsible for the initial assessment of volunteer interest and capabilities and should maintain responsibility for affiliated volunteer organization outreach functions, including any coordination regarding a volunteer organization's advocacy of certain interests (such as protection of environmental resources), but the planning for management of volunteers should shift to the Planning Section.

For smaller-scale volunteer efforts, the Incident Command/Unified Command should establish a Volunteer Coordinator position under the Resource Unit of the Planning Section. The Volunteer Coordinator reports to the Resource Unit Leader. (However, if unaffiliated volunteer efforts become more significant, a separate Volunteer Unit should be established under the Planning Section, as discussed in the next subsection. If the Incident Command/Unified Command expects the volunteer efforts to be significant, the separate unit should be established from the start.) The Volunteer Coordinator may be a representative of an agency or organization providing affiliated volunteers or unaffiliated volunteer management services (e.g., state or local representative or CNCS) or the ACP coordinator.

The Volunteer Coordinator should work with the Resource Unit Leader, Planning Section Chief, and Operations Section Chief, as appropriate, to ensure volunteers are assigned to appropriate tasks (e.g., commensurate with capabilities, within volunteer authorities being used, and not inherently governmental in nature) in appropriate locations; have the appropriate training and PPE for their assignments; and are tracked within the ICS. Volunteers should only be deployed through direct written tasking from the Incident Command/Unified Command through the Incident Action Plan (IAP) process.

The Planning and Operations Section Chiefs should consult to determine if the Volunteer Coordinator should attend tactics meetings. If so, the Volunteer Coordinator should help complete ICS 204 (Assignment List) Forms for the volunteer resource assignments. If not, the Volunteer Coordinator should work with the Resource Unit Leader to determine appropriate volunteer resource assignments for ICS 204 Form gaps identified at the tactics meetings.

Specific responsibilities of the Volunteer Coordinator may include:

- Review common responsibilities.
- Coordinate with the Resource Unit (and directly with Section Chiefs, as appropriate) to determine where volunteers are needed.
- Coordinate with the Planning and Operations Section Chiefs to identify specific volunteer positions, and any necessary skills and training needs. The Volunteer Coordinator should be knowledgeable of any limitations on volunteer use associated with the specific authorities being used to provide volunteer services (see Section 4.0 and Appendix A for more on agency authorities).
- As requested by the Operations Section Chief or Resource Unit Leader, assist in completing ICS 204 Forms for volunteer resource assignments.
- Coordinate with the Joint Information Center (JIC) to advise the public of the incident particulars, such as: scheduled volunteer information sessions; where/how to register volunteer interest; whether volunteers are needed; and the specific roles for volunteers (what they can and cannot do during that specific response).

- Ensure volunteers receive necessary training through: a local emergency volunteer center (if established) and/or the Incident Command/Unified Command by activating training contractors or having other appropriately qualified Incident Command Post (ICP) staff provide training.
- Coordinate with the local emergency volunteer operations or reception center, if state/local agencies have established one for the incident.
- Coordinate with the Logistics Section on the logistical needs for volunteers and their management, as appropriate for the scope of the authorities being used to accept volunteers (see Sections 4 and 11).
- Maintain Unit/Activity Log (ICS 214 Form).
- Provide volunteer debriefings, as appropriate, and recognition of services at the conclusion of the response.
- Facilitate meetings among other federal, state, and local agencies providing volunteer leadership.
- Support development of the ICS 209 (Incident Status Summary) Form and/or the situation report (SITREP) regarding the use of volunteers. Per reporting period, define the total number of contributing organizations, total number of volunteers per organization, total number of volunteers among all contributing organizations, and total number of unaffiliated volunteers, as applicable. Summarize volunteer accomplishments per reporting period and list volunteer roles filled. A more detailed breakdown may involve the number of people who registered via a hotline or website and how many were trained.
- Assign subordinates to maintain proper span of control.
- Ensure volunteer injuries and illnesses are tracked by the Safety Officer. Ensure volunteer reception centers (VRC), or appropriate elements of the command structure, are developing health and safety messaging for volunteers.

The Volunteer Coordinator should also coordinate and communicate with the LNO on volunteer activities. The LNO should be responsible for initial interactions regarding the potential interest, and potential use, of unaffiliated volunteers and continue as the focal point for coordination with affiliated volunteer agencies and for any interactions regarding volunteer organization advocacy. It is expected that the workload for the LNO would decrease, however, as the Volunteer Coordinator takes responsibility for ensuring that unaffiliated volunteers are appropriately trained, assigned, and incorporated into the response and affiliated organizations are folded into appropriate ICS locations.

#### **Large scale and wide area incident volunteer efforts**

For incidents when it becomes apparent to the Incident Command/Unified Command that significant volunteer services may be involved in the response, the LNO should be assigned responsibility for a needs assessment and initial volunteer coordination, and the LNO may assign this responsibility to an Assistant LNO. The LNO should prepare a decision memo for the Incident Command/Unified Command to sign documenting their decision regarding the use of volunteers, as described above. If a decision is made to accept the services of unaffiliated volunteers and the number of such volunteers is large and requires substantial ICS support to manage them, or if multiple organizations are involved in providing volunteer services, requiring significant coordination efforts, the Incident Command/Unified Command should establish a separate Volunteer Unit in the Planning Section. More resources may be needed to manage and track the volunteers within the ICS, warranting establishment of a separate

Volunteer Unit to maintain appropriate span of control over the volunteers. The Volunteer Unit Leader reports to the Planning Section Chief. If needed, the Planning Section Chief may establish a Deputy Planning Chief position to establish divisions under the Planning Section and to maintain appropriate span of control over Planning Section Units.

If the Incident Command/Unified Command establishes a Volunteer Unit, the LNO and Volunteer Unit Leader should communicate with each other to ensure their efforts are coordinated. As with small-scale efforts, the LNO should focus on external outreach to affiliated volunteer organizations and initial interactions regarding the potential interest and potential use of unaffiliated volunteers, as well as any interactions regarding volunteer organization advocacy. The Volunteer Unit should focus on internal assignment and management of unaffiliated volunteers. It is expected that the LNO role would decrease over time.

If a Unified Area Command (UAC) is established to coordinate the response to a wide-area incident, and volunteers are involved in multiple ICPs, the UAC may assign the UAC LNO to coordinate volunteer needs assessment activities across the ICPs and establish a Volunteer Coordinator position in the UAC Planning Section Resource Unit to coordinate volunteer management activities among the command posts. Volunteer interest, availability, and potential volunteer tasks may vary across the impacted areas of a wide-area incident. Therefore, while the Unified Area Commanders should make the decision on volunteer use for the incident, respective Incident Command/Unified Commands may make different recommendations to the UAC regarding the use of volunteers for their particular ICP operations. The UAC also may wish to develop overarching supplemental strategic guidance for the ICPs to address volunteer issues that warrant consistency among the ICPs. The UAC LNO may also serve as the primary liaison with national-level affiliated volunteer organizations and/or other volunteer organizations that are supporting multiple ICPs.

### **Establishment of VRCs**

In some incidents, state and local governments or NGOs or CBOs may be prepared to establish a VRC to be the focal point for unaffiliated and/or affiliated volunteer recruitment, registration, orientation, and training. The Volunteer Coordinator/Volunteer Unit should be responsible for coordinating with a VRC established by another organization. If the response includes significant numbers of unaffiliated volunteers but state and/or local government agencies do not have this capability, it may be advisable for the Incident Command/Unified Command to have the Volunteer Coordinator/Volunteer Unit work with Logistics to establish a temporary federal VRC for these purposes. This center would provide a location separate from the ICP for volunteers to converge and prepare to deploy. If a center is established by the Incident Command/Unified Command, the Volunteer Coordinator/ Volunteer Unit should work with the Resource Unit to have appropriate personnel and resources assigned to manage and staff the VRC. The Incident Command/Unified Command should assign a Volunteer Manager to manage the VRC.

Note: Appendix B includes an example of a volunteer management structure and process, developed by the San Francisco Bay and Delta AC, which incorporates an emergency VRC managed by a local government.

## **6.1 Public Affairs Guidance**

Effective public outreach and communications will be an important component of a response that draws significant volunteer interest, particularly from unaffiliated volunteers. Federal OSCs should be aware that additional Public Information Officer (PIO) staffing may be needed in the ICS for such incidents. USCG's National Strike Force Public Information Assist Team (PIAT), for example, is one resource that federal OSCs can draw upon for public affairs surge capability.

Federal OSCs should also ensure that PIOs receive adequate training and information on volunteer issues, particularly issues related to the use of unaffiliated volunteers. In addition to other required PIO training, PIOs should be encouraged to review this guidance, particularly Appendix C and ACP provisions related to volunteer use.

While it is expected that the use of volunteers will be relatively infrequent, federal OSCs and PIOs can work together to pre-plan activities to identify appropriate tools for educating and updating the public during an incident with significant volunteer interest. For example, social media tools such as blogs, web pages, social networks, and podcasts may provide effective public outreach mechanisms. The National Oceanic and Atmospheric Administration's (NOAA) [www.incidentnews.gov](http://www.incidentnews.gov) website is one option for posting information for the public, while the JIC's incident-specific response website (if one is established) is another. A hotline/call center may also be established for potentially interested unaffiliated volunteers to call for information on current volunteer opportunities, location of VRC, etc. Affiliated volunteer organizations can also play a pivotal role in this effort, as they often have websites where public information can be posted. Information packets or templates can also be prepared ahead of time.

PIOs should be encouraged to engage with their local, regional, and federal counterparts, in addition to the USCG PIAT, on approaches for public outreach for incidents involving volunteers and on lessons learned from PIOs who have had that experience.

Another critical lesson learned from M/V *Cosco Busan* is that timely overall public outreach regarding the response effort in general, particularly in areas with an actively engaged community, can have an impact on volunteerism (e.g., whether the community believes the response is being adequately managed without the need for members of the public to volunteer).

## **6.2 Public Information**

Federal OSCs' public affairs posture should be proactive in areas where volunteerism, affiliated or unaffiliated, is expected to become an issue. Federal OSCs, working with ACs, can often identify areas that are likely to have significant volunteer interest. Community outreach to volunteer organizations in such areas should begin before an incident occurs. ACP efforts should include identifying potential affiliated volunteer organizations that can assist during a spill. The state network of affiliated volunteer organizations can assist in these pre-incident public outreach efforts.

In the event of a spill, federal OSCs should distribute citizen education packets for media and community stakeholders as soon as possible. Much of this information can be prepared ahead of time and could include frequently asked questions addressing oiled wildlife issues, the purpose of the Incident Command/Unified Command, the Oil Pollution Act of 1990, OSLTF, purpose of Oil Spill Response Organizations (OSROs), health and safety information, and basic hazardous waste operations training requirements. Examples of these documents are posted on [www.homeport.uscg.mil](http://www.homeport.uscg.mil) in the outreach programs section under the environmental tab and should be adapted to address local concerns.

Press releases including general information—who, what, when, where, actions being taken—should be released in a timely manner. It is important that the public be made aware of the status of cleanup activities and expected next steps. Unconfirmed information should not be distributed via press releases. If the Incident Command/Unified Command decides to accept volunteer services, volunteer information and health and safety notices should also be passed to the public via press releases to educate potentially interested volunteers and direct them to appropriate points of contact for additional information about volunteering and how to register. Press releases also provide a good opportunity to direct unaffiliated volunteers to affiliated volunteer organizations identified in the ACP and can also be used to minimize volunteer direct action, such as oil removal and oiled wildlife capture.

However, when directing the public or unaffiliated volunteers to affiliated volunteer organizations, it is important that federal employees not endorse one particular organization over another. Therefore, during both planning and response, if the federal government is providing the public or unaffiliated volunteers with a list of potential affiliated organizations they can join, this list should include the following disclaimer:

This list is provided for informational purposes only. [EPA or USCG] and the United States Government do not endorse any of the organizations on this list. Inclusion on this list is voluntary. Any organization that wishes to be included should contact [provide name of contact].

## **7.0 Uses of Volunteers**

Section 300.185(c) of the NCP outlines the general policy regarding use of volunteers:

“ACPs should identify specific areas in which volunteers can be used, such as beach cleanup surveillance, non-oiled logistical support, and bird and wildlife treatment. Unless specifically requested by the federal OSC/RPM, volunteers generally should not be used for physical removal or remedial activities. If, in the judgment of the federal OSC/RPM, dangerous conditions exist, volunteers shall be restricted from on-scene operations.”

Human health and safety is the first priority in decisions regarding how to use volunteers. Volunteers should normally only be used in very low risk activities and only after receiving appropriate safety training. For example, assistance in the command post, logistics, staging areas and check-in require relatively little training and are minimal risk activities. In certain

circumstances, volunteers may be used for higher risk activities such as oiled wildlife cleaning. These activities, however, require specialized training and, in some cases, licensing. It is preferable to use affiliated volunteer organizations that already have trained volunteers or established volunteer training programs for such activities. Volunteers with documented specialized training should be given higher priority for use.

The following is a list of potential roles for volunteers during an oil spill response:

#### Oiled Wildlife Rehabilitation

- Wildlife Reconnaissance\*
- Wildlife Recovery and Transport\*
- Wildlife Care and Processing - tasks include:
  - Animal washing/drying\*
  - Food preparation\*
  - Light construction (cage building)\*
  - Facility cleaning\*
  - Laundry\*
  - In-take station processing for recovered wildlife (both alive and deceased)\*

#### Shoreline Cleanup Support

- Volunteer field observers and data recorders\*
- Pre-impact beach cleanup, including temporary movement of natural debris above the water line\*
- Local guides for beach access\*
- Displaced boom surveys\*
- Data entry

#### Public Relations and Community Liaison

- Guide visitors and media
- Identify lodging for responders
- VRC support
- Phone answering, dispatching, messaging
- Information center staffing
- Beach closure information point of contact (POC)

#### Community Liaison Social Services

- Job placement (for unemployed)
- Public health information distribution
- Evacuation support\*
- Shelters\*
- Peer Counseling\* (similar to Critical Incident Stress Management (CISM)) (only professionally certified counselors)

#### Logistics

- Inventory Control
- Procurement

- Distribution of PPE
- Cleaning of PPE\*
- Construction of temporary structures\*
- Medical Unit assistant\* (appropriately qualified/certified medical professional)

#### Transportation

- Scheduling
- Dispatching
- Road building

#### Medical

- Dispatching
- First aid attendants\*

#### Personnel Support Services

- Lodging attendants
- Message center
- Laundry service\*
- Food preparation and distribution\* (certain minimum food handling criteria may need to be met as required by state and local regulations)

#### Natural Resource Damage Assessment Support

- Field observers\*
- Rapid assessment for marine and estuarine habitats\*

#### Boat Operations (boat owners who volunteer)

- Area safety (informing and directing other vessels away from contaminated areas while allowing work vessels in)
- Transporting assessment teams or cleanup crews\*
- Conducting on-water and near-shore field observations\*

\*Indicates person may be exposed to oil and may require specific training in addition to hazard training. Additionally, these tasks may require unique Health and Safety Plans (HASPs), per other federal regulations (such as HAZWOPER), and dedicated health monitoring and surveillance.

## **8.0 Volunteer Safety and Health Training**

When the services of volunteers are used during an oil spill response, a primary objective is to conduct all activities in a safe and healthy manner. This section addresses safety and health training for volunteers. This guidance applies to volunteers only—private or public sector employees on the scene must be apprised of and conform to applicable safety and health requirements as deemed necessary by the federal OSC. The applicability of OSHA regulations to state and local employees will vary depending on the state (see discussion below).

In order to determine the applicability and requirements of various laws and regulations pertaining to the safety and health of personnel, it is important for the federal OSC and response agencies/organizations to appropriately categorize individual response and cleanup workers as “employees” or “volunteers”.

The NCP (40 CFR § 300.5) defines a “volunteer” as “any individual accepted to perform services by the lead agency which has authority to accept volunteer services (examples: See 16 U.S.C. 742f(c)). A volunteer is subject to the provisions of the authorizing statute and the NCP.”

The OSH Act applies to workplaces in a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, Guam, the Northern Mariana Islands, Wake Island, Outer Continental Shelf Lands defined in the Outer Continental Shelf Lands Act, and Johnston Island. The OSH Act defines an “employer” as “a person engaged in a business affecting commerce who has employees, but does not include the United States (not including the United States Postal Service) or any State or political subdivision of a State.” Under the OSH Act, an “employee” means “an employee of an employer who is employed in a business of employment which affects commerce.” The OSH Act does not cover workers who are not compensated in any way (e.g., volunteers), the self-employed, or employees of state or local governments. However, some states have their own occupational safety and health plans that cover local and state employees and, in some cases, volunteers. The OSH Act does not apply to working conditions over which other federal agencies have exercised statutory authority.

Helpful criteria for determining the existence of an employer-employee relationship have been discussed in court cases. The cases held that the following criteria are to be considered in determining whether there is an employer-employee relationship:

- The nature and degree of control over the manner and means by which work is accomplished
- The level of skill required to perform effectively
- Source of required instruments and tools
- Location of work
- Duration of relationship between parties
- The right of the employer to assign new projects to the individual
- The extent of the individual's control over when and how long to work
- Method of payment
- The individual's role in hiring and paying assistants
- Whether work is the regular business of the employer
- Whether the employer is in business
- The provision of employee benefits
- The tax treatment of the individual

## **8.1 Background**

### **OSHA Requirements**

Congress passed the OSH Act to assure so far as possible that every working man and woman



in the Nation has safe and healthful working conditions. OSHA conducts a wide range of programs and activities to promote workplace safety and health. OSHA issues and enforces standards and regulations (e.g., 29 CFR § 1910, § 1915, and § 1926) for a variety of workplace hazards including toxic substances, harmful physical agents, electrical hazards, fall hazards, confined spaces, and hazardous waste operations and emergency response.

Federal OSHA requirements do not apply to state and local governments. Neither do they apply where there is no employer-employee relationship. However, OSHA does encourage the application of federal OSHA requirements if they are relevant to state, local, and volunteer workers. States with OSHA-approved plans, or “State Plan States,” are required to promulgate safety and health regulations that are at least as effective as federal OSHA regulations. Some of these State Plan States apply federal requirements, including those of the HAZWOPER standard, and offer assistance to most private sector and all state and local government employers and employees, including firefighters and other emergency responders. Federal OSCs with operations in the following State Plan States should coordinate with state authorities to determine if safety and health regulations apply to some or all volunteers who have responsibilities under Incident Command/Unified Command and assist in emergency response operations (e.g., volunteer firefighters).

**State Plan States:**

|             |           |                |                |                |
|-------------|-----------|----------------|----------------|----------------|
| Alaska      | Indiana   | Nevada         | South Carolina | Wyoming        |
| Arizona     | Iowa      | New Jersey     | Tennessee      |                |
| California  | Kentucky  | New Mexico     | Utah           | Commonwealth   |
| Connecticut | Maryland  | New York       | Vermont        | Territories    |
| Hawaii      | Michigan  | North Carolina | Virginia       | Puerto Rico    |
| Illinois    | Minnesota | Oregon         | Washington     | Virgin Islands |

**The HAZWOPER Standard and NCP Response Requirements**

Hazardous waste operations and emergency responses to hazardous substances pose serious safety and health hazards to workers.<sup>5</sup> Under the OSH Act, OSHA issued its HAZWOPER standard, 29 CFR § 1910.120, to protect employees engaged in these operations and to help them handle hazardous substances safely and effectively. In addition to hazardous waste site cleanup operations, the provisions of the HAZWOPER standard protect employees conducting emergency response and cleanup operations for hazardous substance releases, which can include oil spills.

Under the HAZWOPER standard, employers must develop and implement comprehensive safety and health programs that include the following components:

- Organizational structure
- Comprehensive work plan
- Site-specific health and safety plan
- Emergency response plan
- Safety and health training program

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<sup>5</sup>Per 29 CFR §1910.120(a)(3) of HAZWOPER, emergency response is “a response effort...to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance.”

- Medical surveillance program
- Standard operating procedures
- Site characterization and analysis
- Exposure monitoring
- Engineering controls
- Safe work practices
- PPE if needed
- Handling/labeling of drums and containers
- Decontamination procedures
- And other regulated required programs

The NCP (40 CFR § 300.185(c)) specifically states that when volunteers will participate in NCP responses, procedures shall be established to allow for safe use of volunteers, including compliance with 40 CFR § 300.150 regarding worker health and safety. These plans shall be designed to ensure that response actions comply with OSHA and EPA HAZWOPER standards. Volunteers participate in oil spill responses, but uncompensated workers are not directly covered by federal OSHA standards, including the OSHA HAZWOPER standard, under the OSH Act.

Volunteers may be covered under state plan HAZWOPER requirements. State Plan States are encouraged by OSHA and EPA to cover volunteer workers engaged in hazardous waste operations, including emergency response. The state safety and health enforcement agency should be contacted to determine the applicability of state HAZWOPER requirements to volunteers at NCP sites in these states. Even where State Plan States do not cover volunteers, at a minimum, the NCP requires the safe use of volunteers during NCP operations. Additionally, the NRT recommends that any volunteer who takes part in NCP operations involving oil or hazardous substances be trained and demonstrate competence in accordance with the applicable sections of 29 CFR § 1910.120.

In states administered by federal OSHA, certain volunteers engaged in hazardous waste operations are covered by the EPA HAZWOPER standard (40 CFR § 311). The EPA HAZWOPER standard covers local and state government employees, “employee” being defined as a compensated or non-compensated worker who is controlled directly by a state or local government, such as volunteer firefighters (40 CFR § 311.2). Therefore, volunteers who fit that definition of “employee” would be covered by EPA’s standard. Other volunteers would not be covered by the EPA standard, but as explained above, the NCP minimally requires the safe use of volunteers during NCP operations. Furthermore, the NRT recommends that any volunteers who take part in NCP operations involving oil or hazardous substances be trained in accordance with the applicable sections of 29 CFR § 1910.120.

Note that activities by volunteers who are not controlled directly by a state or local government entity may need to be limited due to the extensive medical surveillance, training, and equipment necessary to participate in activities that pose increased safety and health challenges.

## 8.2 Training Guidance

Per 40 CFR § 300.150, response actions conducted under the NCP must comply with the provisions of the HAZWOPER standard (29 CFR § 1910.120). The minimum amount of training required under HAZWOPER depends on the worker's role and responsibilities during the response and cleanup. Before they begin working, all workers must be trained and demonstrate competence in the tasks they will conduct, the hazards associated with the tasks, and the precautions and protections needed to safely complete the tasks (e.g., use of engineering and work practice controls and PPE). After the training is completed, the employer must provide adequate supervision to ensure that safety protocols are followed.

OSHA's Compliance Instruction, CPL 02-02-051, provides policy guidance on training requirements under HAZWOPER for workers involved in post-emergency response operations.<sup>6</sup> For job duties and responsibilities with a low magnitude of risk, fewer than 24 hours of training may be appropriate for these post-emergency cleanup workers. For oil spill cleanup operations where, 1) the site has been fully characterized, 2) respirators are not required, and 3) minimal exposure is likely, a minimum of four hours of training should be appropriate in most situations.<sup>7</sup> Moreover, oil spills are unique in that many people who assist in the cleanup operations may not engage in this activity on a recurring basis. Supervisors and workers involved in high-hazard operations need 40 hours of training and appropriate supervised field experience. OSHA publication 3114, Hazardous Waste Operations and Emergency Response, and OSHA publication 3172, Training Marine Oil Spill Response Workers Under OSHA's Hazardous Waste Operations and Emergency Response Standard, provide guidance on HAZWOPER training requirements for various categories of workers.

When volunteers are accepted by and are being managed under the Incident Command/Unified Command during NCP responses, they should work under the direction of the federal OSC and Incident Command/Unified Command (when not being managed directly by state or local government agencies and/or volunteer organizations) and a site-specific safety and health plan. Volunteers should be provided at least the minimum number of training hours specified and training that prepares them for their job functions and responsibilities, as stated in the HAZWOPER standard and OSHA publications 3114 and 3172. When site characterization demonstrates that the area to be serviced by volunteers is free of potential exposures, or the proposed work assignments would not expose any of the work crew to hazardous substances, the activity may be carried out as a normal maintenance or construction operation with typical PPE (e.g., gloves and eye protection) and the associated training should be provided.

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<sup>6</sup> Per 29 CFR § 1910.120(a)(3) of HAZWOPER, post-emergency response is performed after the immediate threat of a release has been stabilized or eliminated and cleanup of the site has begun.

<sup>7</sup> Per OSHA's Compliance Instruction CPL 02-02-051, criteria for when fewer than 24 hours of training may be appropriate for post-emergency clean-up workers include, but are not limited to, the following: the cleanup is performed in an area that has been monitored and fully characterized by a qualified person indicating that exposures are presently and can be expected to remain under permissible exposure limits and other published exposure limits, and health risks from skin absorption are minimal. For further details, see OSHA's Compliance Instruction CPL 02-02-051 at:

[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=DIRECTIVES&p\\_id=1565](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=DIRECTIVES&p_id=1565)

### **HAZWOPER Training Requirements for Emergency Response Operations**

Per 29 CFR §1910.120(a)(3) of HAZWOPER, emergency response is “a response effort...to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance.” For oil spills, an uncontrolled release is a situation in which the oil and its associated airborne and surface contamination hazards are releasing into the environment or are in danger of releasing into the environment and posing a worker exposure hazard. On-water containment, skimming operations, and underwater oil recovery operations are considered to be emergency response activities because the oil is still in danger of being released into the environment.

The HAZWOPER standard lists seven emergency responder categories, which include the following five principal training levels: First Responder Awareness Level, First Responder Operations Level, Hazardous Materials Technician, Hazardous Materials Specialist, and On Scene Incident Commander. The remaining two categories include Skilled Support Personnel and Specialist Employees. Employees responding to emergencies at different levels in the command structure are required to have specific training that is intended to ensure that emergency responders are properly trained and equipped to perform their assigned tasks. Volunteers’ activities should be limited to those that would need training at the “skilled support personnel” or “first responder awareness” level.

### **Skilled Support Personnel Level**

The undertakings of these volunteers should be limited to low-risk activities, such as beach surveillance, logistics, transportation, personnel medical, or community liaison support. Since many of these volunteers may not have expected to help in emergency response incidents and may not have even minimal awareness training, it may only be feasible to provide safety and health training and any required protection at the scene before they participate in the incident. This can be accomplished by an on-site briefing that includes a discussion of the hazards present, any personal protective clothing and equipment to be used, how the equipment is used, the exact tasks they are expected to perform, and any other safety and health precautions. PPE provided to these volunteers should be selected in accordance with 29 CFR Part 1910 Subpart I and be sufficient for the anticipated type and level of exposure. Consult with a safety professional for the correct PPE selection during the development of the health and safety plan. The selection of PPE should be based on the volunteer’s worst-anticipated exposure to hazards.

Minimum information and training for these volunteers, and all volunteers at the site, should include:

- A description of the physical and chemical hazards present and any potential health effects and signs and symptoms of exposure.
- Adequate explanation and demonstration of the proper donning/doffing, use, care, and limitations of any personal protective clothing and equipment to be used.
- The exact tasks they are expected to perform, including safe work practices to minimize employee exposure.
- Prohibited activities and restricted areas.
- A description of the Incident Command structure/operation and emergency notification procedures.
- The procedures for follow-up medical surveillance in the event that injury or illness occurs.

- Any other safety and health precautions.

### **First Responder Awareness Level**

Volunteers who are routinely expected to perform emergency procedures as part of their responsibilities should be considered part of a hazardous materials or oil spill response team and should be trained, at a minimum, to the first responder awareness level prior to the incident. These volunteers are discouraged from activities such as physical removal or remediation, and they are restricted from on-scene operations when dangerous conditions exist. They are generally prohibited from participating in protective actions of the response, such as source control or defensive booming operations, for the purpose of protecting nearby persons, property, or the environment. Their activities must be performed from a safe distance and may include activities such as assistance with post-released birds and wildlife, beach patrol, removal of non-oiled debris and trash, and cleaning non-contaminated PPE.

In addition to the minimum training described above for all volunteers, volunteers operating at the awareness level shall have sufficient training or have had sufficient experience to objectively demonstrate competency in the following areas:

- An understanding of what hazardous substances are, and the risks associated with them in an incident.
- An understanding of the potential outcomes associated with an emergency created when hazardous substances are present.
- The ability to recognize the presence of hazardous substances in an emergency.
- The ability to identify the hazardous substances, if possible.
- An understanding of the role of the first responder awareness individual in the employer's emergency response plan, including site security and control and an understanding of the U.S. Department of Transportation's Emergency Response Guidebook.
- The ability to realize the need for additional resources, and to make appropriate notifications to the incident command structure.

### **Other Levels**

While not recommended, if volunteers respond to releases for the purpose of protecting nearby persons, property, or the environment by responding in a defensive fashion, they should be considered to be at the first responder operations level and should meet the appropriate level of HAZWOPER training and competencies. Moreover, personnel who respond aggressively to stop or control the release of hazardous substances or the discharge of oil should be considered Hazardous Materials Technicians or Hazardous Materials Specialists and should meet higher levels of training and competencies.

### **HAZWOPER Training Requirements for Post-Emergency Response Operations**

Per 29 CFR § 1910.120(a)(3) of HAZWOPER, post-emergency response is performed after the immediate threat of a release has been stabilized or eliminated and cleanup of the site has begun. Shoreline cleanup is normally considered to be a post-emergency response unless the oil is below the high tide mark or storm surge boundary can reasonably be expected to be re-released into the environment. Depending on the size of the oil spill, the emergency and post-emergency response phases may be managed differently. However, particularly for large oil spills, the emergency response and post-emergency response cleanup activities may occur at

the same time. In these cases, the boundaries between the emergency response area and the post-emergency response area should be well defined and explained to responders and cleanup workers. Under HAZWOPER, workers who participate only in post-emergency response require different levels of training than emergency response workers.

If volunteers conduct only post-emergency response operations during an oil spill, they should be considered to be under the category of general site workers, managers/supervisors, or other workers unlikely to be exposed above limits. Based on their job functions, duties, and potential exposures/hazards, they should provide proof of HAZWOPER training at the appropriate levels. These volunteers would likely be associated with a governmental agency or an NGO or CBO and their training is beyond the scope of this document. OSHA's publication 3172 entitled "Training Marine Oil Spill Response Workers Under OSHA's Hazardous Waste Operations and Emergency Response Standard" provides further guidance on training requirements for various categories of oil spill response workers.

### **8.3 Site Health and Safety Plan**

For cleanup operations, the HAZWOPER standard requires a written safety and health program with a requirement for a site specific Health and Safety Plan (HASP), which identifies site hazards and appropriate controls to protect responders' health and safety. If volunteers are used, a section should be included in the HASP specific to the use of volunteers, the scope of the work activities to be performed, the hazards, training, precautions and protections, and medical surveillance.

### **8.4 Recordkeeping**

After ensuring Privacy Act and Paperwork Reduction Act compliance,<sup>8</sup> the following recordkeeping recommendations include:

- All volunteer training should be documented. Training records should include the content of the training, the name and address of the volunteer, affiliation (if applicable), and signed acknowledgment of receipt of training.
- All unaffiliated volunteers who indicate they possess a certain level of training or competencies should provide documentation proving such training or competence before engaging in any NCP activities.
- Affiliated volunteers who are working with their assigned organization should have documented training with their appropriate training department.

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<sup>8</sup> Steps that may need to be taken to comply with the Privacy Act (5 U.S.C. 552a) include (1) establishing a System of Records for the collection of information from volunteers, which must be approved by the Office of Management and Budget (OMB) and described in a System of Records Notice published in the Federal Register for public comment; (2) providing the volunteer with a written "privacy act statement" at the time the information is collected; and (3) following safeguarding and handling instructions once the information is collected. Steps that may need to be taken to comply with the Paperwork Reduction Act (44 U.S.C. 3501) include (1) preparing an Information Collection Request that must be approved by OMB and published in the Federal Register for public comment; and (2) once approved, displaying the OMB control number on the information collection form.

- Training obtained on site should be documented and provided to the unaffiliated volunteer or to the respective training department for the affiliated volunteer.
- Volunteer responders have responsibility to follow the requirements of the site specific HASP. Acknowledgement of training regarding the HASP and agreement to comply should be received in writing.
- Injury, illness, and exposure, as well as safety and health recordkeeping and reporting in accordance with Incident Command/Unified Command plans and procedures.

## 9.0 Volunteer Registration

During an incident, a volunteer application and registration process may be used to screen volunteers and help determine appropriate assignments. The preferred method of collecting volunteer registration data is through established affiliated volunteer organizations or the state agencies involved in the response. In some cases, a responsible party may also decide to assume the responsibility for volunteer registration. At this time, federal OSCs should not attempt to collect or store this volunteer information. In the event that unaffiliated volunteers must be registered through the federal OSC, additional steps should be taken prior to registration to ensure compliance with Privacy Act and Paperwork Reduction Act requirements. Federal OSCs should consult with their respective agency counsels regarding the appropriate steps to take.<sup>9</sup>

After a federal OSC ensures compliance with Privacy Act and Paperwork Reduction Act requirements, the following information may be collected from each volunteer during the application or check-in process: name, contact information, age, identification of any current medical conditions that could impact their volunteer service, health insurance status, certified trainings completed related to their volunteer service, and a brief description of experience with oil spill response. Any medical or physical conditions that could potentially influence a volunteer's ability to safely complete their volunteer service should be documented and thoroughly considered when assigning work. These conditions may include, but are not limited to: allergies, chronic diseases, respiratory or heart problems, and/or a pregnancy. Any unaffiliated volunteers that are not U.S. citizens should be advised to ensure they have the appropriate visa classification to allow them to volunteer. The information collected during the registration process should help to determine the appropriate volunteer work assignments and, if appropriate, to identify particular skills that may be useful in the response.

Any volunteers identified during the registration process not currently covered by a health insurance policy, should be given careful consideration as there may be additional legal concerns associated with their service. Volunteers under the age of 18 should be limited to those being managed under supervision of affiliated organizations (e.g., Boy and Girl Scouts of America, American Red Cross, faith-based groups) and should not perform emergency or post-emergency response operations that could expose them to oil or other hazardous substances. Information regarding Child Labor Laws is available at <http://www.youthrules.dol.gov/> and should also be consulted prior to any use of volunteers under the age of 18.

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<sup>9</sup>See footnote 8.

To ensure that individuals who claim to be volunteers do not perform work at a response site, and later seek monetary compensation for their labor from the federal government, all volunteers should be asked to sign a waiver of compensation. Federal OSCs may obtain the following statement covering all affiliated volunteers managed under a single volunteer organization:

[Name of organization] agrees to cooperate with the [U.S. Environmental Protection Agency][U.S. Coast Guard] in responding to the discharge or release of oil or hazardous substances at [site name] and understands that it and any individuals that [name of organization] sponsors, organizes, transports, registers or otherwise is affiliated with as volunteers at the site (volunteer affiliates), will not receive, and hereby waives, any claims for compensation for services rendered to the U.S. Government. [Name of organization] agrees to communicate this restriction to its volunteer affiliates.

During a volunteer demobilization process, volunteers should complete check-out procedures, consistent with Privacy Act and Paperwork Reduction Act compliance, similar to all other responders. This includes the completion of a demobilization check-out form with the appropriate volunteer organization, the involved state/local agency or with the Incident Command. The information collected during the check-out may include: name, contact information, comments for improving volunteer services or response efforts at the incident, and a brief summary of the volunteer's current medical condition. Along with the check-out form, volunteers should receive a medical debrief as appropriate for the tasks assigned to them. This process should help to determine if any volunteers have been adversely affected by their work and to assess trends within the population of workers for the purpose of identifying potential risks to others.

## **10.0 Liability**

As noted in Section 3.0, federal OSCs should make the determination on whether to use volunteers on a case-by-case basis. Among the factors that should be considered are liability issues.

### **10.1 Affiliated Volunteers**

Affiliated volunteers are the preferred method of volunteer manpower, and best efforts should be made to direct unaffiliated individuals towards affiliated organizations. When affiliated volunteers are used, they may be covered under the umbrella of the affiliated organization's liability coverage. Beyond insurance coverage, affiliated organizations provide supervision, training, and support of their members. Unaffiliated volunteers may lack these resources. If affiliated organizations do not provide liability coverage, their volunteers may fall under the legal regime described in Section 10.2 below.



## **10.2 Unaffiliated Volunteers**

The use of unaffiliated volunteers creates the potential for additional liability to the federal government; therefore, federal responders should give their use considerable scrutiny during the decision-making process. For the purpose of determining liability coverage, if the government provides tasking, day-to-day supervision, and supplies to unaffiliated volunteers, then these individuals, if injured, may be considered employees of the government and are afforded coverage under the Federal Employee Compensation Act (FECA) (5 U.S.C. § 8101(1)(B) and FTCA (28 U.S.C. §§ 1346(b) and 2671-80). Determined on a case-by-case basis, the federal government may recover from RPs the volunteer costs it incurred under FECA.

The volunteer registration process should include an opportunity for volunteers to provide personal health care insurance information to the volunteer coordinator to be used in the case of an emergency (maintaining Privacy Act accountability). In the event a volunteer is injured in the performance of his or her Unified Command-assigned duties, the federal OSC should provide the same care that would be provided to any other Unified Command responder in need of emergency care. Care beyond immediate emergency care should be administered by an appropriate health care facility. If necessary, the volunteer should be transported to a local hospital of their choosing or one that is outlined in the IAP. Once the volunteer has been transported to the hospital, continuing care should fall under the volunteer's personal medical insurance. It is the volunteer's responsibility to contact the U.S. Department of Labor (DOL) State Workers' Compensation Board (SWCB) for an assessment of employment status and FECA benefits eligibility. Under FECA, federal employees injured in the performance of duty can receive workers' compensation benefits, including wage-loss benefits, monetary benefits, medical benefits, and vocational rehabilitation.

Information on individual SWCBs can be found at:  
<http://www.dol.gov/esa/owcp/dfec/reg/compliance/we.htm>.

If a FECA claim is approved by DOL, the Department will send payment to either the covered volunteer or the medical provider at the government agreed upon rate. If the claim is denied due to a negative finding regarding a volunteer's employee status, the volunteer is then liable for all his healthcare costs with possible reimbursement occurring later through the administrative claim process and the FTCA. Considerable forethought should be given when assigning tasks to uninsured volunteers.

## **10.3 Third Party Claims**

In the event that a volunteer injures a third party (for example, causing harm or injury to an onlooker) the Volunteer Protection Act of 1997 (VPA) (42 U.S.C. 14501-505) applies a limitation on liability only for the volunteer (insofar as he did not act willfully, criminally, recklessly or grossly negligent). The VPA offers no protection for the nonprofit organization, government entity or their employees. A resulting claim against the agency would be conducted pursuant to the FTCA or other appropriate waiver of sovereign immunity, in any.

Third party cases will be processed using the affected agency's administrative claims procedures and then potentially adjudicated by the courts under the FTCA. The crucial issue for purposes of liability is who directed and controlled the work of the volunteer. The agency will only be liable for injuries by the volunteer if the volunteer is determined to be under the direction and control of a federal employee. If the volunteer is determined to be under the direction and control of an RP, an affiliated organization, or is acting independently, the agency will not be liable for injuries caused by the volunteer. If the response is being conducted under a Unified Command that includes an RP, the determination would be made on a case-by-case basis.

## **10.4 OSC Liability**

The FTCA provides coverage for damage to property, or personal injury or death, caused by the negligent or wrongful act or omission of an employee of a federal agency, such as an OSC, while they are acting within the scope of their employment. Therefore, under the FTCA, 28 U.S.C. 2679(d), an OSC would not be subject to personal liability for claims, including claims made by volunteers (e.g., for harm or injury sustained while conducting volunteer activities), unless the OSC was acting outside the scope of employment. If a claim is made based on the actions of an OSC who was acting within the scope of employment, the United States will be substituted for the OSC as the party to the claim, and the OSC's agency will administer the claim without liability to the OSC. The scope of employment determination resides primarily with the OSC's agency and the Department of Justice. The definition of "scope of employment" may vary by judicial circuit, but is generally determined by reference to the law of the state where the event occurred.

## **11.0 Funding**

### **11.1 RP and Use of Volunteers**

An RP may provide up-front funding for volunteer management activities prior to any cost recovery litigation that may occur following the incident.

### **11.2 Oil Spill Liability Trust Fund (OSLTF or Fund)**

The National Pollution Funds Center (NPFC) provides access to the OSLTF to federal OSCs when responding to a discharge, or substantial threat of discharge, of oil under Clean Water Act Section 311(c). Amounts available from the OSLTF for this purpose, the so-called "Emergency Fund," are generally available to federal OSCs for oil removal actions, including:

- Containing and removing discharged oil from water and shorelines;
- Preventing or mitigating a substantial threat of discharge of oil to water and shorelines; and
- Other actions as may be necessary to prevent, minimize or mitigate damage to the public health and welfare.

The Emergency Fund may pay the costs of such removal actions, including the costs of:

- Contract services (e.g., cleanup contractors and administrative support to document removal actions);

- Salaries for government personnel not normally available for oil spill responses and for temporary government employees hired for the duration of the spill response;
- Materials and equipment used for removal;
- Chemical testing required to identify the type and source of oil; and
- Proper disposal of recovered oil and oily debris.

If a federal OSC uses volunteers to support removal actions, certain costs, such as training and supplies, may be paid from the Emergency Fund. If a federal OSC is using the services of other federal, state, local, and tribal government agencies, generally via a Pollution Removal Funding Authorization (PRFA), similar volunteer costs incurred by the performing agency within the scope of the PRFA may be reimbursed to the agency.

It is important for federal OSCs to contact the NPFC for case-by-case determinations as to which volunteer-related costs may be paid from the Emergency Fund.

### ***11.3 Other Federal, State, and Local Funding Sources***

Other local, state, and federal funding sources may also be available, depending on the specific incident. Examples of external funding sources could include foundations, grants, and donations. Availability of these sources may vary depending on the characteristics of the incident and factors such as size, and level of media and public interest. For large spills, federal OSCs and command structure personnel are encouraged, to the extent permitted by law, to consider using external, non-traditional funding sources when managing an oil spill response volunteer workforce. Agencies must have statutory authority to accept donations of funds and equipment from non-federal entities. Federal grants and cooperative agreements may not be used to obtain services for the direct use or benefit of the federal government in the absence of specific statutory authorization. (A list of authorities for the acceptance of volunteer services is described in Appendix A.)

## **12.0 Volunteer Planning and Management Resources**

There are a number of resources that can assist ACs in planning for volunteer use, as well as assist federal OSCs in managing unaffiliated volunteers during an actual incident.

As noted in Section 6.0, if a decision is made to accept the services of unaffiliated volunteers during an incident and the federal OSC needs assistance in managing those volunteers, state and/or local government agencies and organizations with such expertise should be contacted first. (Such organizations should be identified in the ACP.) If state/local assistance is not available, the federal OSC may contact CNCS at (202) 606-6817 or on the after-hours line: (202) 355-2014. In addition, the Department of the Interior (DOI), the United States Department of Agriculture (USDA), and NOAA may be able to provide assistance in managing unaffiliated volunteers for some incidents, depending on the incident location, availability of staff, number of volunteers, and other factors. The federal OSC can contact their DOI, USDA, or NOAA RRT representative for assistance in making this determination.

- CNCS is a federal cooperating agency under the NRF Volunteer and Donations Management Support Annex and coordinates with other federal agencies and voluntary

organizations in support of state, tribal, and local government efforts in the coordination and management of unaffiliated volunteers. CNCS can also assist ACs in planning for volunteer use and provide unaffiliated volunteer management services to federal OSCs during an oil spill response under the NCP in accordance with an MOU signed by EPA, USCG, and CNCS (a copy of this MOU is in Appendix F). ACs and federal OSCs, especially in areas where unaffiliated volunteers may be more likely to want to assist in oil spill responses, are encouraged to begin developing a working relationship with CNCS ahead of time to determine how its capabilities can be put to use in that area. For planning purposes, CNCS can be contacted at the phone number above or via email at [dsu@cns.gov](mailto:dsu@cns.gov) during business hours. There are a number of other resources available to support volunteer coordination and management planning and preparation, such as those described in the bullets below. The importance of prior relationship-building related to volunteer issues cannot be stressed enough. Because it works so closely with these entities, CNCS is willing to assist ACs in connecting with these resources to support planning efforts.

- State Service Commissions are Governor-appointed organizations, supported in part by grants from CNCS, with important responsibilities related to volunteer service in their respective states. Many of these Commissions are designated within their states to serve as the designated Spontaneous (Unaffiliated) Volunteer Coordinator for disaster response operations. CNCS expects to coordinate closely with these agencies both in preparedness efforts as well as in any incident response to a specific state. CNCS works closely with the Commissions' national body, the Association of State Service Commissions, which can help assure effective communication and coordination. Below is the link to the roster of State Service Commissions (contact information is available by clicking on the state name). [www.nationalservice.org/about/contact/statecommission.asp](http://www.nationalservice.org/about/contact/statecommission.asp)
- State Citizen Corps comprises five volunteer programs: Volunteers in Police Service (VIPS), Medical Reserve Corps, Neighborhood Watch, Community Emergency Response Teams (CERT), and Fire Corps. It is possible that volunteer organizations who work in oil spill response may reach out to these groups and train them in order to participate in a response, or at least identify them as a source of coordinated groups of volunteers, should they be needed. In at least 10 states, the State Service Commission (referred to above) also serves as the State Citizen Corps Coordinator. To locate both state and local Citizen Corps Councils, visit: [www.citizencorps.gov/councils/](http://www.citizencorps.gov/councils/)
- State Voluntary Organizations Active in Disaster (VOADs) are coalitions of faith-based and other volunteer organizations that have designated roles in disaster preparedness and response in the respective states. Organizations such as the American Red Cross, Salvation Army, and Southern Baptists have prominent roles in most states' emergency response plans, which may include oil spill response. In most disaster response operations, unaffiliated volunteers are channeled to these organizations to the extent possible, and the same could be true in oil spill response if they are incorporated into contingency planning. For a roster of state and local VOADs and member organizations, visit: <http://www.nvoad.org/>
- Volunteer Centers work with the placement of community volunteers at the local level on a regular basis. Partnering with these Centers where they are available can be critical to successful unaffiliated volunteer coordination. Volunteer Centers already have a network of volunteer organizations in place ready to accept volunteers, and have procedures established to place them. Pre-response planning with these organizations can help identify and resolve issues regarding the use of unaffiliated volunteers post-incident. To locate Volunteer Centers, visit: [www.pointsoflight.org/centers/find\\_center.cfm](http://www.pointsoflight.org/centers/find_center.cfm).

## Appendix A: Volunteers Authority Matrix

| Agency Jurisdiction | Authority/Legal Cite | Scope of that authority*                                 | Capability/Capacity/Policy Statement  | Geographic limitations |
|---------------------|----------------------|--|---|------------------------|
| USCG                | 31 U.S.C. § 1342     | Overall authority to accept voluntary service.           | <p>31 U.S.C. § 1342 prohibits USCG personnel from accepting any offer of a voluntary service (term of art) unless acceptance of that type of voluntary service is expressly permitted by statute – EXCEPT for emergencies involving the safety of human life or the protection of property. As used in this section, the term “emergencies involving the safety of human life or the protection of property” does not include ongoing, regular functions of government, the suspension of which would not imminently threaten the safety of human life or the protection of property.</p> <p>A large oil spill that threatens the U.S. coast line probably qualifies as an “emergency” that would permit USCG personnel to accept offers of voluntary services.</p> | n/a                    |
|                     | 10 U.S.C. § 1044     | Authority to accept legal assistance voluntary services. | Secretarial authority to accept legal assistance voluntary services. Authority to accept is delegated to the USCG in Section II.15 of DHS Delegation Number 0170.1.   | n/a                    |
|                     | 10 U.S.C. § 1588     | Authority to accept other types of voluntary services.   | Secretarial authority to accept many types of voluntary services. Authority to accept is delegated to the USCG in Section II.19 of DHS Delegation Number 0170.1.  | n/a                    |
|                     | 14 U.S.C. § 141(b)   | Authority to accept government voluntary services.       | USCG can directly accept voluntary services offered by federal, state, and local government entities.   | n/a                    |

| <b>Agency Jurisdiction</b> | <b>Authority/Legal Cite</b>  | <b>Scope of that authority*</b>                         | <b>Capability/Capacity/Policy Statement</b>   | <b>Geographic limitations</b> |
|----------------------------|--|---|---|-------------------------------|
|                            | 14 U.S.C. § 93(a)(12), (18), and (19):                                   | Authority to accept specific voluntary services.        | USCG can directly accept certain very specific types of voluntary services.   | n/a                           |
|                            | 14 U.S.C. §§ 826 and 827   | Authority to accept voluntary equipment.                | USCG can directly accept the use of boats, aircraft, and radios.  | n/a                           |
|                            | 33 C.F.R. § 6.04-11 and Section C of the Maritime Law Enforcement Manual | Authority to accept law enforcement voluntary services. | USCG can directly accept certain voluntary services for law enforcement purposes.   | n/a                           |
| EPA                        | 31 U.S.C. § 1342   | Overall authority to accept voluntary services.         | <p>31 U.S.C. § 1342 prohibits EPA personnel from accepting any offer of a voluntary service (term of art) unless acceptance of that type of voluntary service is expressly permitted by statute – EXCEPT for emergencies involving the safety of human life or the protection of property. As used in this section, the term “emergencies involving the safety of human life or the protection of property” does not include ongoing, regular functions of government, the suspension of which would not imminently threaten the safety of human life or the protection of property.</p> <p>A large oil spill that threatens the inland waters of the United States probably qualifies as an “emergency” that would permit EPA personnel to accept voluntary services offers.</p> | n/a                           |
|                            | 42 U.S.C. § 6981<br>33 U.S.C § 1254                                      | Authority to train volunteers.                          | Under Section 8001 of the Solid Waste Disposal Act and Section 104 of the Clean Water Act, EPA may train and provide technical assistance to individuals to eliminate adverse health and welfare effects caused by the release of solid waste (including petroleum) and prevent, reduce, and eliminate water pollution.   |                               |

| <b>Agency Jurisdiction</b>          | <b>Authority/Legal Cite</b>  | <b>Scope of that authority*</b>  | <b>Capability/Capacity/Policy Statement</b>  | <b>Geographic limitations</b>   |
|-------------------------------------|--|----------------------------------|--|---|
| DOI                                 | 43 U.S.C. § 1475b  | Volunteer Authority              | In general, the Secretary of the Interior may recruit, train, and accept, without regard to the civil service classification laws, rules, or regulations, the services of individuals, contributed without compensation as volunteers, for aiding in or facilitating the activities administered by the Secretary through the Bureau of Indian Affairs, the United States Geological Survey, the Bureau of Reclamation, and the Office of the Secretary. | DOI lands, resources, and responsibilities                              |
| DOI                                 | 301 DM 6 (DRAFT)   | Volunteer Policy                 | It is the policy of the Department of the Interior to encourage, use, and recognize volunteers, where appropriate within the terms of applicable legal authorities and commensurate with program needs to enhance the ability of its bureaus and offices to carry out mission-related activities. DOI volunteers may not be used to displace any DOI employee.   | DOI lands, resources, and responsibilities                              |
| DOI/Bureau of Indian Affairs (BIA)  | 25 U.S.C. § 2801 et seq.   | Law Enforcement                  | The Indian Law Enforcement Reform Act allows the Secretary to enter into agreements for the use of personnel or facilities of a federal, tribal, state, or other governmental agency to aid in the enforcement in Indian country of federal or tribal laws.  | BIA responsibilities to federally recognized Indian lands and resources |
| DOI/Bureau of Land Management (BLM) | Federal Land Management Policy Act (FLPMA) of 1976; part 307 (d) (Public Law 94-579 )          | Volunteer Authority              | Reiterates the general DOI Volunteer Policy stated in 43 U.S.C. § 1475b.   | BLM lands, resources and responsibilities                               |
| DOI/Bureau of Reclamation (BOR)     | Energy and Water Development Appropriations Act of 1990 (Public Law 101-101-Volunteer Program) | Acceptance of Volunteer Services | The 1990 Energy and Water Development Appropriations Act provides authority for Reclamation to accept the services of volunteers and to provide for their incidental expenses to carry out any activity of the Bureau of Reclamation.  | BOR lands, resources and responsibilities                               |

| <b>Agency Jurisdiction</b>  | <b>Authority/Legal Cite</b>                             | <b>Scope of that authority*</b>                                   | <b>Capability/Capacity/Policy Statement</b>   | <b>Geographic limitations</b>             |
|---|---|---|---|---|
| DOI/Fish and Wildlife Service (FWS)                                       | Fish and Wildlife Act of 1976 (16 U.S.C. 742a. et seq.) | Partnerships to Benefit Fish and Wildlife Resources               | The Fish and Wildlife Act of 1956 grants the Secretary broad authority to, “take such steps as may be required for the development, advancement, management, conservation, and protection of fish and wildlife resources. ...” The statute specifically authorizes the acceptance of gifts and the services of volunteers for programs and projects that benefit the mission of the FWS. Further, the Act specifically authorizes the Secretary to enter into cooperative agreements for programs and projects to benefit specific units of the National Wildlife Refuge System.  | FWS lands, resources and responsibilities |
| DOI/US Geological Survey (USGS)   | 43 U.S.C. §50c  | Payment of Costs Incidental to Services Contributed by Volunteers | Appropriations made after December 22, 1987 shall be made available for paying costs incidental to the utilization of services contributed by individuals who serve without compensation as volunteers to aid in the work of USGS. USGS may authorize either direct procurement of or reimbursement of the expenses incidental to the effective use of the volunteers such as, but not limited to, training, transportation, lodging, subsistence, equipment, and supplies. However, the provision for services or expenses must be in accord with volunteer or cooperative agreements made with such individuals.  | n/a                                       |
| DOI/Bureau of Ocean Energy Management Regulation and Enforcement (BOEMRE) | Annual Appropriations; see also 43 U.S.C. § 1475b       | Acceptance of Volunteer Services                                  | A yearly line item in the DOI appropriations acts has authorized the former Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE)/Minerals Management Service (MMS) to expend funds for the promotion of volunteer beach and marine clean-up activities. The inclusion of such a provision should be checked in the BOEMRE appropriations act for the particular year in question before relying upon this law for partnership purposes. The provision for volunteer beach and marine cleanup activities have been removed from Bureau of Safety and Environmental Enforcement (BSEE) appropriations language, as it pertains to BOEMRE. See also DOI Volunteer Authority. | n/a                                       |



| <b>Agency Jurisdiction</b>                         | <b>Authority/Legal Cite</b>                               | <b>Scope of that authority*</b>   | <b>Capability/Capacity/Policy Statement</b>   | <b>Geographic limitations</b>                 |
|--|---|-----------------------------------|---|---|
| DOI/Bureau of Safety and Environmental Enforcement | see 43 U.S.C. § 1475b                                     | see DOI Volunteer Authority       | see DOI Volunteer Authority   | n/a   |
| DOI/National Park Service (NPS)                    | 16 U.S.C. § 18g-j   | Acceptance of Volunteer Services  | The Secretary is authorized to recruit, train, and accept the services of individuals without compensation as volunteers for or in the aid of interpretive functions, or other visitor services or activities in and related to areas of the National Park System. Such volunteers may not be used for hazardous duty or law enforcement work or in policymaking processes, or to displace any employee. A special exception allows the acceptance of the services of individuals that the Secretary determines “are skilled in performing hazardous activities.” | n/a   |
| NOAA/Office of National Marine Sanctuaries         | 16 U.S.C. 1442 et seq, as amended. (Sec 3.11 )            | Acceptance of Volunteer Services. | States that NOAA (delegated down to the Office of National Marine Sanctuaries) _ “may accept donations of funds, property, and services for use in designating and administering national marine sanctuaries.”  | In or adjacent to national marine sanctuaries |
| NOAA   | Fish and Wildlife Act of 1976 (16 U.S.C. 742f. et seq.)   | Acceptance of Volunteer Services  | The Fish and Wildlife Coordination Act, 16 U.S.C. 742f, authorizes Secretaries of the Interior and Commerce to each recruit, train, and accept, without regard to the provisions of Title 5, the services of individuals without compensation as volunteers for, or in aid of programs conducted by either Secretary through the FWS or the NOAA. 16 U.S.C. 742f also authorizes provision of incidental expenses, such as transportation, lodging, awards, and subsistence to volunteers without regard to their place of residence.                             | n/a   |
| NOAA   | US Department of Commerce Administrative Order DAO 203-11 | Acceptance of Volunteer Services  | The U.S. Department of Commerce (DOC) Department Administrative Order (DAO) 202-311 sets forth laws, policies, guidelines, and procedures regarding voluntary and uncompensated services.   | n/a   |

| Agency Jurisdiction                   | Authority/Legal Cite     | Scope of that authority*  | Capability/Capacity/Policy Statement   | Geographic limitations                                      |
|---------------------------------------|--------------------------|---|--|---|
| U.S. Department of Agriculture (USDA) | 7 U.S.C. §§ 2272 - 2272a | <p>Authorizes Secretary of Agriculture to establish program to use volunteers in carrying out programs of the Department.</p> <p>Voluntary service may be accepted if it is without compensation and will not be used to displace Department employees.</p> <p>Volunteers not considered federal employees except for purposes of FECA and FTCA.</p> <p>Authorizes Secretary to provide for incidental expenses, such as transportation, uniforms, lodging, and assistance.</p> | <p>Departmental Regulation 4230-1 establishes guidelines for acceptance of volunteer services. <i>See</i> <a href="http://www.ocio.usda.gov/directives/doc/DR4230-001.html">http://www.ocio.usda.gov/directives/doc/DR4230-001.html</a>. Directs agencies and Mission Areas to develop their own guidelines for use of volunteers.</p> <p>Contains other requirements, including minimum age of 14 and prohibition on using volunteers to perform inherently governmental functions.</p> | On lands under the jurisdiction/custody/control of the USDA |

| Agency Jurisdiction | Authority/Legal Cite     | Scope of that authority*   | Capability/Capacity/Policy Statement   | Geographic limitations |
|---------------------|--------------------------|--|--|------------------------|
| USDA                | 16 U.S.C. §§ 558a - 558d | <p>Authorizes Secretary of USDA to use uncompensated volunteers for certain activities in and related to areas administered by the Forest Service.</p> <p>Volunteers are not considered federal employees except for purposes of FECA, FTCA, and claims relating to damage to personal property pursuant to 31 U.S.C. § 3721. Authorizes Secretary to provide for incidental expenses, such as transportation, uniforms, lodging, and subsistence.</p> | <p>Forest Service Manual 1800, Chapter 1830, establishes general policies for Forest Service volunteer programs. See <a href="http://www.fs.fed.us/im/directives/fsm/1800/1830.doc">http://www.fs.fed.us/im/directives/fsm/1800/1830.doc</a>. Volunteers not to be used to displace current employees, reduce current contracts, cause cancellation of existing or future contracts, or reduce duty hours of current employees or diminish or reduce current contracts. Contains other restrictions on types of duties, as well as child labor restrictions.</p> | n/a                    |

| Agency Jurisdiction  | Authority/Legal Cite                 | Scope of that authority*  | Capability/Capacity/Policy Statement  | Geographic limitations |
|--|--------------------------------------|---|---|------------------------|
| CNCS   | 42 U.S.C. § 12651g (a)(1)(A) and (B) | CNCS is authorized to solicit and accept the voluntary services of individuals to assist CNCS in carrying out its duties under the national service laws. These volunteers may be provided travel expenses and are covered under FTCA and FECA. | This authority has been limited to situations where volunteers are actually volunteering their services to the CNCS and are under the direct supervision and authority of CNCS. Therefore, this authority would not include coverage for unaffiliated volunteers. | n/a                    |
| *For scope of the authority, each agency should cite their applicable liability statutes (FTCA, FICA, etc.). |                                      |   |   |                        |

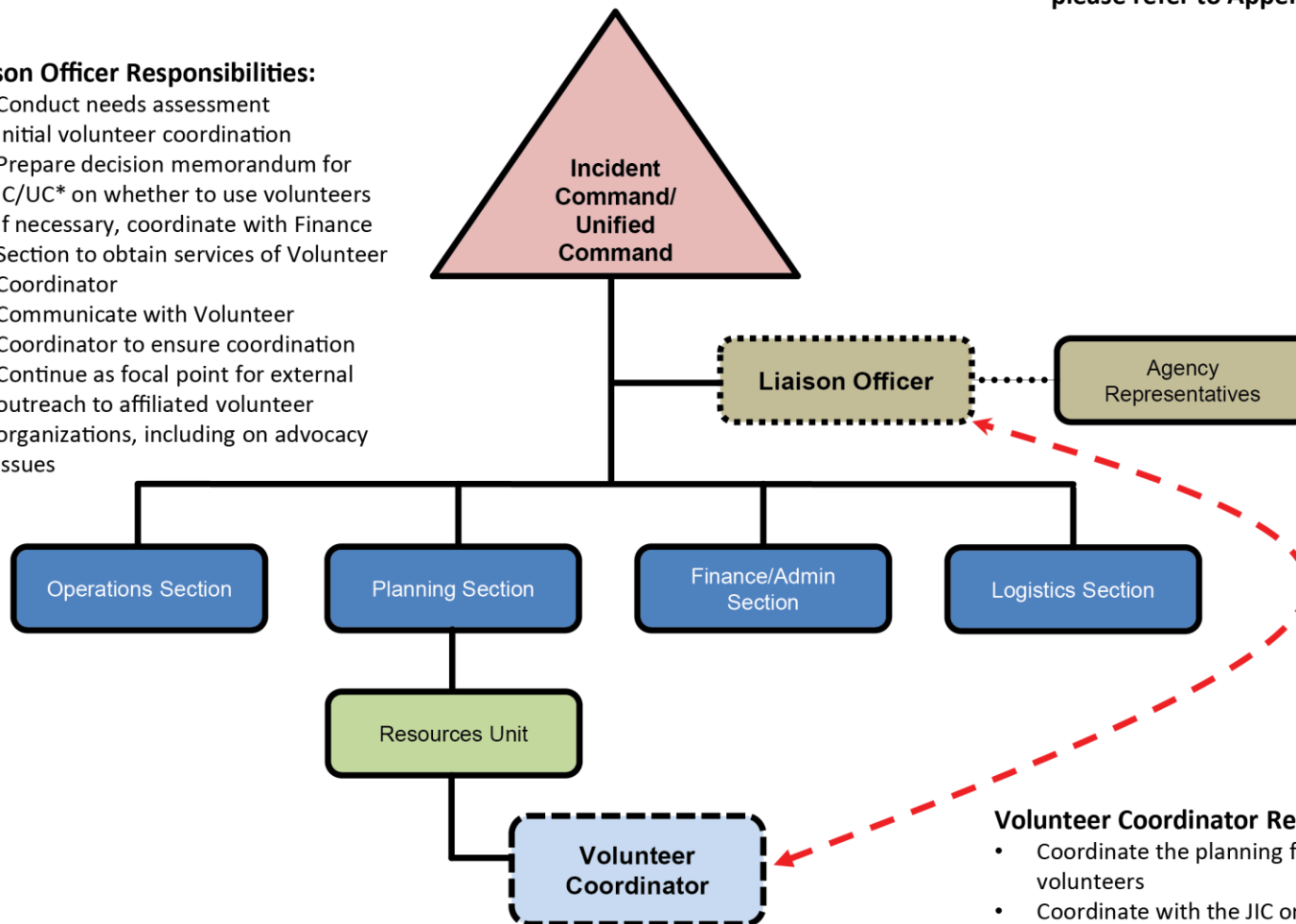
## Appendix B: Resource Flow Charts

# Small Scale ICS Response Structure

\*please refer to Appendix E for acronyms

### Liaison Officer Responsibilities:

- Conduct needs assessment
- Initial volunteer coordination
- Prepare decision memorandum for IC/UC\* on whether to use volunteers
- If necessary, coordinate with Finance Section to obtain services of Volunteer Coordinator
- Communicate with Volunteer Coordinator to ensure coordination
- Continue as focal point for external outreach to affiliated volunteer organizations, including on advocacy issues



### Volunteer Coordinator Responsibilities:

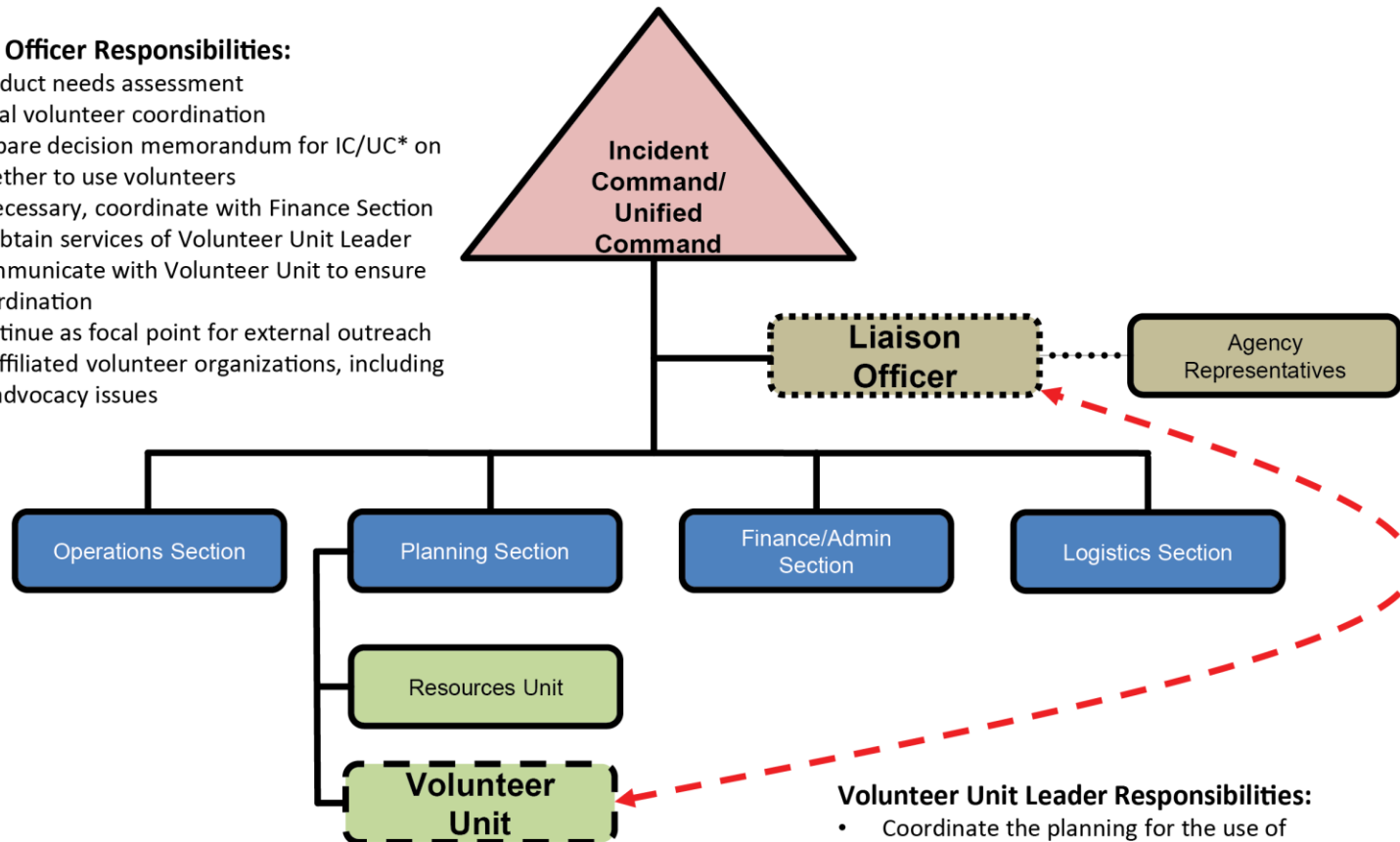
- Coordinate the planning for the use of volunteers
- Coordinate with the JIC on disseminating public information regarding volunteering for the incident
- Ensure volunteers receive necessary training
- Coordinate with VRC, if one is established

# Large Scale ICS Response Structure

\*please refer to Appendix E for acronyms

## Liaison Officer Responsibilities:

- Conduct needs assessment
- Initial volunteer coordination
- Prepare decision memorandum for IC/UC\* on whether to use volunteers
- If necessary, coordinate with Finance Section to obtain services of Volunteer Unit Leader
- Communicate with Volunteer Unit to ensure coordination
- Continue as focal point for external outreach to affiliated volunteer organizations, including on advocacy issues



## Volunteer Unit Leader Responsibilities:

- Coordinate the planning for the use of volunteers
- Coordinate with the JIC on disseminating public information regarding volunteering for the incident
- Ensure volunteers receive necessary training
- Coordinate with VRC, if one is established

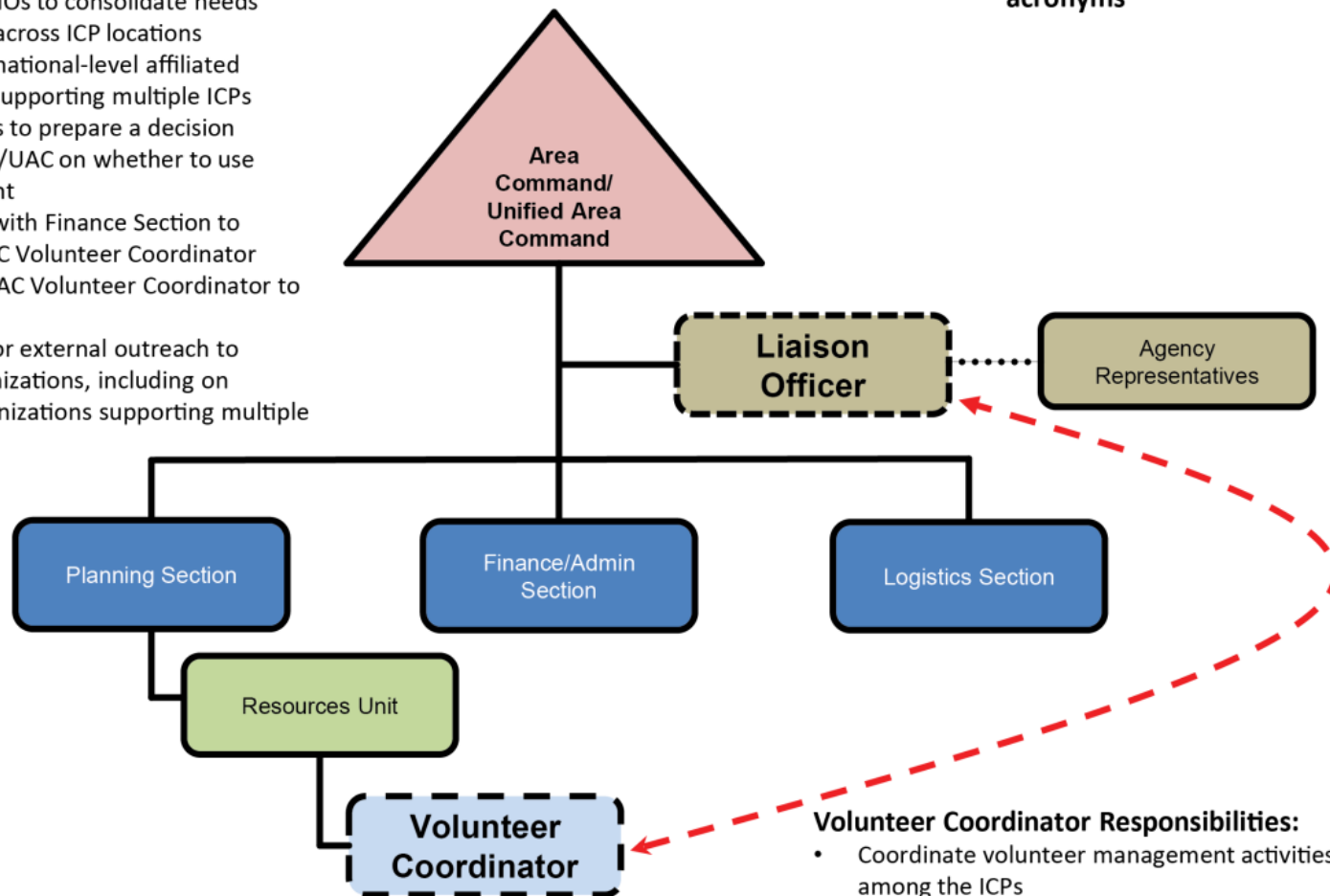
# Wide-Area ICS Response Structure

## Liaison Officer Responsibilities:

- Coordinate with ICP\*\* LNOs to consolidate needs assessment information across ICP locations
- Initial coordination with national-level affiliated volunteer organizations supporting multiple ICPs
- Coordinate with ICP LNOs to prepare a decision memorandum for the AC/UAC on whether to use volunteers for the incident
- If necessary, coordinate with Finance Section to obtain services of AC/UAC Volunteer Coordinator
- Communicate with AC/UAC Volunteer Coordinator to ensure coordination
- Continue as focal point for external outreach to affiliated volunteer organizations, including on advocacy issues, for organizations supporting multiple ICPs

\*this scenario assumes there would be multiple ICPs under the AC/UAC

\*\*please refer to Appendix E for acronyms

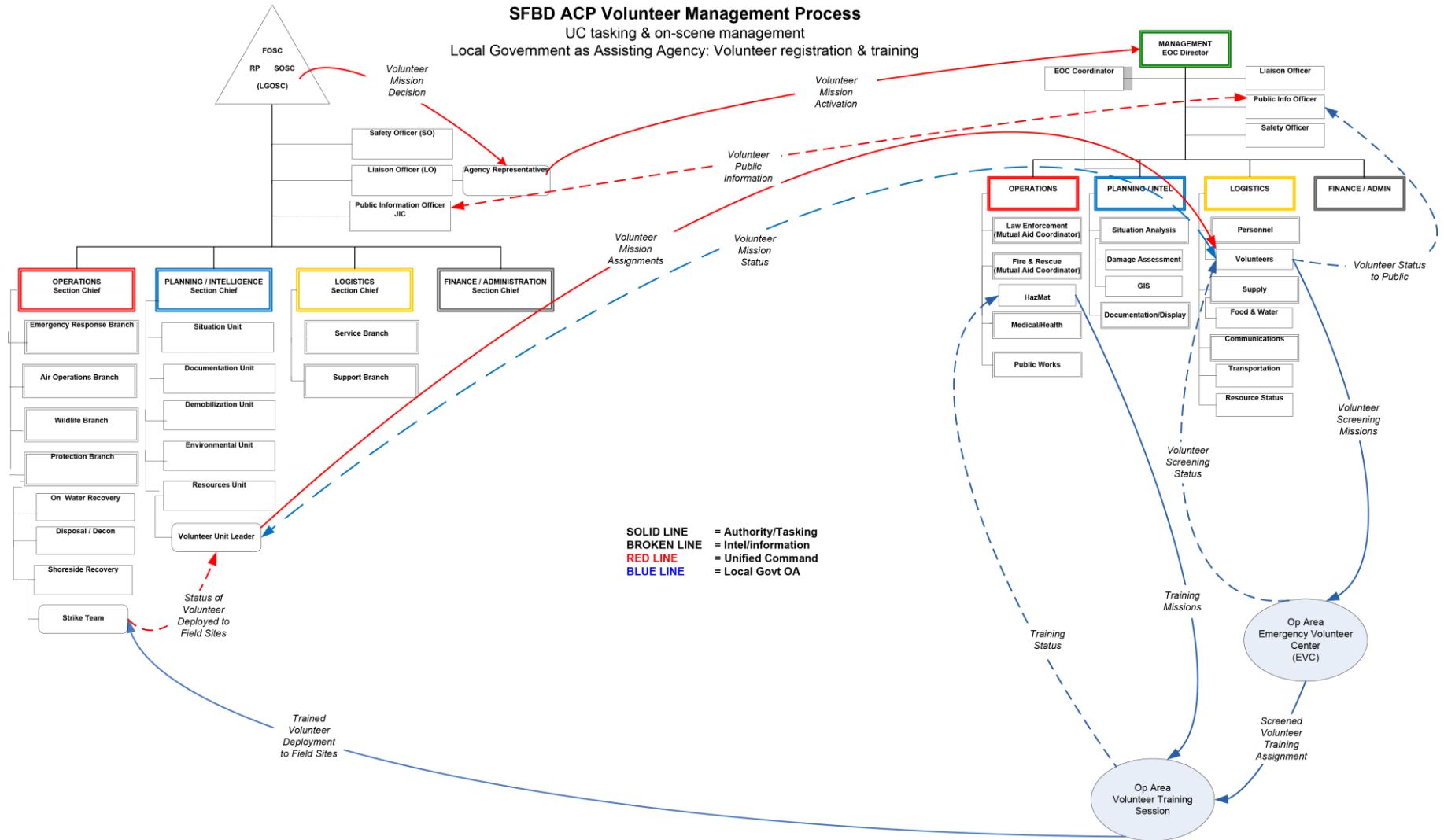


## Volunteer Coordinator Responsibilities:

- Coordinate volunteer management activities among the ICPs

# EXAMPLE: San Francisco Bay and Delta Area Committee

## Volunteer Management Diagram



January 14, 2010



## Appendix C: Case Studies

The subsequent case studies help illustrate the following points:

- The Incident Command/Unified Command should be proactive with communications to the public and use multiple media outlets. The Internet can be useful to manage information and provide direction to potential volunteers.
- Significant logistics and coordination are required to manage large numbers of volunteers.
- Federal OSCs can use affiliated regional and local volunteer organizations to assist in these efforts.
- Effective volunteer coordination is best accomplished through the Incident Command/Unified Command, as opposed to independent area efforts.
- The potential for injuries can be minimized by ensuring volunteers are properly trained and have appropriate PPE and equipment for their assigned tasks.

### ***Use of Volunteers During the T/V PRESTIGE Oil Spill, Spain, November 2002***

*As of October, 2008*

While transiting off the northwest coast of Spain on November 13, 2002, the tanker/vessel (T/V) *Prestige* encountered a storm and had one of its twelve tanks burst, spilling heavy fuel oil directly into the ocean. At the time, T/V *Prestige* was carrying a 77,000 ton cargo of two different grades of heavy fuel oil. Fearing that the ship would sink, the captain called for help from Spanish rescue workers. Expecting that his vessel would be brought into harbor, the captain steered for the coast. However, pressure from local authorities forced the captain to turn the floundering ship back out to sea; first to the northwest, then to the southwest. In the end, the Spanish, French, and Portuguese governments all refused to allow the T/V *Prestige* into their countries for 'safe harbor'. With the governments refusing to allow the ship to dock in their ports, the integrity of the single hulled oil tanker deteriorated quickly. The storm took its toll on the ship and a 40-foot section of the starboard hull broke off, releasing a substantial amount of oil into the sea.

Around 8:00 a.m. on November 19 (six days after the initial incident), the ship split in half and eventually sank that afternoon about 250 kilometers from the Spanish coast. After the sinking, the wreck continued leaking oil at approximately 125 tons (30,500 gallons) of oil a day. Eventually, the holes in the tanks were sealed to prevent further leakage and some of the remaining product was removed. In total, more than 80 percent of the tanker's 77,000 tons of fuel oil (greater than 18.7 million gallons) spilled off the northwest coast of Spain.

By the time of the sinking, the first wave of oil released on day one had reached the Spanish coast. By January, the coast of Galicia had received at least four major waves of oil. The affected coastline was not only a very important ecologically diverse region, but also supported a significant fishing industry. The heavy coastal pollution forced the region's government to suspend offshore fishing for at least six months. The spill contaminated thousands of kilometers of coastline and more than 1,000 beaches on the Spanish, Portuguese, and French coasts.

Following the oil spill, Spain and Portugal called for resources to assist in the response. Over the next month, a fleet of 16 clean-up vessels was assembled from eight nations. Operational headquarters for the T/V *Prestige* response was set up immediately at La Coruña. The shoreline cleanup operations were performed by SASEMAR, Tragsa (a Spanish company employed under contract to the Ministry of the Environment), volunteers, and the Spanish army. The technical framework was provided by SASEMAR and Tragsa, with the support of Oil Spill Response Limited (OSRL); French specialists from Cedre who were mobilized through a bilateral agreement; and subsequently German and Belgian emergency services within the context of the European cooperation. Technical advisers from the International Tanker Owners Pollution Federation, Limited (ITOPF) also were on-site from the beginning of the response.

The number of volunteers, contract workers, and soldiers used to clean up oiled shorelines progressively increased to a maximum workforce of 10,000 people every day in December. This workforce fell back to 5,800 people per day in January. The individual numbers of volunteers, soldiers, and contract workers is not known, however, volunteers comprised the majority of the initial shoreline cleanup effort. It was not until December 9th that a significant number of Spanish troops were sent to the region to replace some of the volunteers. Volunteers were mainly used to manually clean up the shoreline and to recover and care for oiled wildlife. Some made improvised oil booms from onion bags, polystyrene and cushion filling to try to keep oil off the shoreline.

The Internet played a significant role in coordinating the volunteer effort and provided information from the scene that was often in contrast to government provided information. This was the first major spill where the Internet was used so heavily to both spread information and to coordinate volunteers from Galicia, the rest of Spain, and Europe. Iberian Air even offered free flights for volunteers coming into the region.

The estimated amount of oiled materials recovered on the shore increased from 1,300 tons (320,000+ gallons) at the end of November 2002, to 69,400 tons (16.9 million gallons) by the end of June 2003.

There was strong public criticism regarding how the Spanish government handled the response. A regional socio-political movement NuncaMais (Never Again) led a number of street protests against both the regional and federal government. A prominent regional politician was forced to resign and the prime minister was severely criticized for his government's handling of the events prior to the spill and the lack of focus in the early hours of the spill. Many of the complaints focused on poor organization and communication, and volunteers not being provided with adequate protection and tools. Some cited that local fishermen were using makeshift objects, and even bare hands, to help remove the oil from the water because proper resources and equipment were lacking. Additional issues derived from poor logistical support for the waste streams generated by the cleanup in general, and limited support for the volunteers, with some camping on soccer fields.

A health study conducted on some of the T/V *Prestige* response volunteers was published in the *American Respiratory and Critical Care Medicine Journal* (07 June 2007). Chronic coughing, difficulties in breathing at night and nasal obstruction were just some of the health problems suffered by volunteers who aided in the cleanup operation. This study found that

almost 7,000 fishermen all developed respiratory damage within two years of helping with cleanup activities.

In total, thousands of volunteers were organized by the Galician and Spanish Governments, as well as various NGOs, to help clean the contaminated Spanish coastline. The massive cleaning campaign was deemed a success, recovering most portions of coastline not only from the effects of the oil spill but also from the usual accumulated debris. A year after the spill, Galicia had more beaches with awards for cleanliness than it had prior to the spill, although volunteers were still cleaning beaches in a number of areas.

### **Summary and Observations – T/V *PRESTIGE***

- In total, more than 80 percent of the tanker's 77,000 tons of fuel oil (greater than 18.7 million gallons) spilled off the northwest coast of Spain. The extensive coastal pollution forced the region's government to suspend offshore fishing for at least six months. The spill contaminated thousands of kilometers of coastline and more than 1,000 beaches on the Spanish, Portuguese, and French coasts.
- The Internet played a significant role in coordinating the volunteer effort and provided information from the scene that was often in contrast to "official" news.
- Although the exact numbers are not known, some 5,000 to 10,000 volunteers were working every day during the first two months of the spill. Incredible logistics and coordination were required to manage thousands of volunteers working daily.
- Volunteers were mainly used to manually clean up the shoreline and to recover and care for oiled wildlife. There were claims that volunteers were not provided with adequate protection. A follow up health study of some volunteers found that many developed respiratory problems within two years of their service.
- The occurrence of respiratory problems is highly significant; illustrating the need for volunteers to receive adequate training and appropriate PPE to limit their exposure.

### ***Use of Volunteers During the M/V COSCO BUSAN Oil Spill, San Francisco Bay, November 2007***

*As of December, 2011*

The container ship M/V *Cosco Busan* allided with the Bay Bridge in San Francisco Bay, CA at 08:27 PST November 7, 2007. A 140' x12' gash in the hull of the vessel resulted, and approximately 58,000 gallons of fuel oil (IFO 380) was released into the water. The allision occurred during heavy fog, which hampered response efforts for the first 8 hours. The flood tide quickly dispersed oil over a large portion of San Francisco Bay (the Bay) and out to the outer coast within hours.

Initial planning for use of unaffiliated non-wildlife volunteers started two days later on November 9<sup>th</sup>, was approved four days later on November 11<sup>th</sup>, and implementation began on day five, November 12<sup>th</sup>. Seventeen training sessions were held, 2275 unaffiliated volunteers

were trained and about 1007 deployed over the course of the response. By comparison, 1500 professional contractors responded.

According to the 2005 San Francisco Bay and Delta Area Contingency Plan (SFBD ACP), “the determination to use volunteers at an incident is the responsibility of the Unified Command (UC).” The SFBD ACP also stated “Volunteers will not be utilized to work directly in the recovery of oil.” Coast Guard’s policy regarding volunteers was in the Marine Safety Manual. It stated that volunteers were not used to clean oiled beaches. As a result, there were no initial plans to train volunteers for such work or for any work in the field. The volunteer management plan for this incident was initially declined by UC, but was later approved on the evening of November 11<sup>th</sup>. Prior to the UC’s approval to use volunteers, high numbers of potential non-wildlife volunteers overwhelmed the UC’s ability to register and train unaffiliated volunteers as quickly as the general public desired. The UC had significant concerns about liability and the health and safety of potential volunteers. Identification of training facilities, volunteer management systems, and appropriate volunteer tasks had to be developed and incorporated into the Incident Action Plan (IAP) daily. These types of basic logistics and how to functionally incorporate non-wildlife volunteers into the ICS structure had to be developed quickly as the process was not reflected in the SFBD ACP at that time.

The M/V *Cosco Busan* incident-specific non-wildlife Volunteer Plan (Plan) detailed that non-wildlife volunteers would be given four-hour HAZWOPER training. Local governments credentialed volunteers as Disaster Service Workers (DSWs) under California State law prior to conducting UC approved volunteer tasks such as oiled beach cleanup. This status entitled them to Workman’s Compensation in case of injury. Immediately following the Plan’s approval the evening of the 11th, the first training session was organized for the next morning. Initially, the general public attempted to help with no coordination with the UC, nor any understanding of what was needed or what safety considerations applied (e.g., appropriate PPE). The public responded to “calls to action” that came out via numerous sources over social media. The tech-savvy community characterized the initial response as a disaster with little to no proactive or reactive use by the UC of electronic social media tools, such as Twitter, Digg, Facebook, etc., although the UC did put up a website that could take queries. This inability of the UC to respond in a timely way via social media lent strength to many of the negative perceptions of the response and increased the energy and criticism from potential unaffiliated volunteers and the public. Social media sites in the Bay area were very active in spreading information in ways that both helped and hindered the response with stories about auditoriums full of volunteers being asked for a loyalty oath (as required by all state employees for the purpose of workers compensation) and then being told to stay home, and stories about being handcuffed and even arrested if individuals went to the beaches and initiated cleanup activities on their own. Various jurisdictions provided conflicting information on whether training would be provided and whether they were willing to support training due to liability concerns.

As is the case in large-scale responses, the UC was confronted with several challenges that consumed time and distracted them from their primary response operations. Some of those challenges came from a general lack of attention to unaffiliated volunteers, intense political interest, and pressures from local government to prioritize economic verses environmental interests in terms of which sites were protected (e.g., with protective boom) against incoming oil. Local government staff requested oil spill information, which was not provided early in the response or for volunteer deployment. Rather than adjust the Incident Command Structure to

plan for the use of unaffiliated volunteers, the UC elected to absorb the added work within Liaison, where stakeholder concerns are typically addressed. The end result was increased tension between the UC and local government representatives, which transcended the actual response and continued to result in political repercussions.

The USCG ISPR noted a series of issues associated with the intense use of the Internet and social media by the public during this response. The State of California (a member of the UC) maintained a website specific to the M/V *Cosco Busan* incident that in many instances, paralleled the official UC website put up by USCG. One example of its use included a press release posted on the website at 4:00 pm announcing an 8:00 am meeting the next day to provide information on the Department of Fish and Game, Office of Spill Prevention and Response's (OSPR) role in the oil spill response and how to volunteer, if volunteers were requested by the UC. Unfortunately, information about volunteer training was inaccurate. The following morning, approximately 500 people responded in person to be trained, when no training had been scheduled. A large number of these individuals found out about the meeting by receiving email communications from San Francisco Baykeeper, a local NGO.

During the M/V *Cosco Busan* spill, many individuals and groups hosted blogs. Some, such as Kill the Spill (<http://sfoilspill.blogspot.com>), organized and solicited volunteers for unauthorized cleanup efforts. Others such as Tree Hugger ([www.treehugger.com](http://www.treehugger.com)), even though not specifically focused on the spill, reached a wide audience, with 13,000 posts and 2,628 unique visitors per day. Multiple individuals posted videos on YouTube of unauthorized volunteers demonstrating improper cleanup techniques, cleaning up oil spills and encouraging others to continue the unproductive practice. Other videos showed authorities removing these "volunteers" from closed beaches. Many of the comments posted about the video supported the volunteers' efforts and chastised attempts by authorities to get people off the beaches. As a standard practice during an oil spill, the UC does not allow unauthorized/untrained people to enter oiled and/or closed beaches. Contributors posted information on the M/V *Cosco Busan* spill on Wikipedia.org. The page discussed criticisms (both attributed and non-attributed) of the response efforts, environmental and economic effects, volunteer training and affected areas. Internet communication continued to allow the spread of information, both accurate and inaccurate.

### **Summary and Observations – M/V COSCO BUSAN**

- Bay Area residents did not receive the continuous, real-time information through web-based services that they expected. In frustration, they used social media to negatively discuss the response. Trying to track and respond to all social media is problematic, but a UC can establish its own website and ensure that it is kept up to date. This should help provide public credibility to the response effort. The UC M/V *Cosco Busan* website was visited over a million times while it was on-line. The public was still interested in visiting this site even after it went off line three months after the incident happened.
- A lack of planning for unaffiliated volunteer programs and a general lack of attention to unaffiliated volunteers resulted in long and frustrating delays that impacted the response overall. The SFBDA ACP did address the use of two volunteer organizations: UC Davis Oiled Wildlife Care Network (per California statute) and their member organization, Gulf of the Farallones National Marine Sanctuary. Both organizations were mobilized in the

first hours of the response to provide oiled wildlife care and provide pre-SCAT data for beaches. Volunteers in both organizations undergo a significant amount of subject matter specific and health and safety training (including 24hr HAZWOPER) on a regular basis to maintain their readiness for spill response.

- Establishing a training program for volunteers during an incident is challenging and can impact the ability of the Unified Command to adequately assess available resources and conduct normal operations.
- A regional volunteer management plan can help identify and address issues regarding liability and training requirements ahead of time. Since M/V *Cosco Busan*, a regional ‘use of volunteers’ plan has been discussed but the various ACs could not agree on one policy. One cause for differences is that some counties have a robust volunteer coordination office while others do not. Where such an office does not exist, coordinating volunteers especially for an oil spill may be impractical unless it can be done through a larger entity like the state or the National Corporation for National and Community Service as outlined in the MOU in Appendix F.
- Area contingency planners should develop a uniform approach to the use of both affiliated (e.g., OWCN) and unaffiliated volunteers for oil spill response, consistent with local needs and reflective of existing programs. Integrate trained, experienced organizations into the ACP and conduct drills to assist with volunteer coordination.
- An objective in area exercises should address the use of web-based communication. Encourage response organizations to train and practice using these web tools so staff will be able to better respond to public concerns for the next incident. Include potential Internet tool options, such as the Public Information Emergency Response (PIER) system, in ACPs.
- As a result of this response, the RRT IX has supported the SFBD AC Volunteer Sub Committee in developing the Non-Wildlife Volunteer Plan (NWVP) (as found in [www.nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=16179](http://www.nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=16179)). The SFBD ACP NWVP (adopted in 2011) incorporates strong use of social media and outlines coordination with local government volunteer management systems and non-government organizations to assist with volunteer messaging for immediate public outreach and addressing public concerns.

## ***Use of Volunteers During the M/T HEBEI SPIRIT Oil Spill, South Korea, December 2007***

*As of September, 2008*

At about 7:30 am local time on December 7, 2007, a crane barge owned by Samsung Heavy Industries being towed by a tug collided with the anchored Hong Kong registered crude carrier *M/T Hebei Spirit*, which was carrying 286,000 tons (82 million gallons) of crude oil. The incident occurred near the Port of Daesan on the Yellow Sea coast of Taean County. The barge was floating free after the cable linking it to the tug snapped in the rough seas.

Government officials have called it South Korea's worst oil spill ever, surpassing a spill that took place in 1995. This oil spill was about one-third of the size of the Exxon Valdez oil spill.

Although no casualties were reported, the collision punctured three of the five tanks aboard the *M/T Hebei Spirit* and resulted in the leaking of some 11,900 tons (3.4 million gallons) of oil. The remaining oil from the damaged tanks was pumped into the undamaged tanks and the holes were sealed.

The spill impacted over 100 miles of coastline, including Mallipo Beach (in Taean County), considered one of South Korea's most beautiful and popular beaches. The region affected by the spill is home to one of Asia's largest wetland areas, consisting of huge tidal flats used by migratory birds, and also contains a national maritime park and 445 sea farms used for aquaculture.

The South Korean government declared a state of disaster in the region. The cost of cleanup has been estimated at 300 billion South Korean won (about \$330 million). The cleanup involved 13 helicopters, 17 airplanes, and 327 vessels. Hundreds of thousands of volunteers helped to clean up the beaches. As of January 4, 2008, the South Korean Navy had deployed 229 vessels and some 22,000 military personnel to help clean up the spill, in addition to civilian aid.

On January 10, 2008, 33 days after the accident occurred, the number of volunteers reached 1,037,000 people, according to the South Chungcheong provincial government. The Taean office for emergency operations reported that ordinary civilians made up the largest portion of volunteers with 580,000, followed by 127,000 soldiers and policemen, and 57,143 public officials. The emergency office reported an average of 20,000 volunteers took part in the operation during weekdays and 30,000 over the weekends.

The volunteer effort was coordinated at the federal Korean level. A website was set up for people to pre-register so the authorities could have a general idea how many people would be available to work on a given day. From the website, volunteers were directed to mustering locations near the coast. At the mustering locations, the local and county governments would partition the workforce. Once they were sent to cleanup locations, the volunteers were under the direction and jurisdiction of the local municipalities. The federal agency (Korea Coast Guard) was mainly responsible for the website and mustering location. The actual cleanup operations came under municipal jurisdiction. Protective clothing, food, and tools were obtained and distributed by the municipalities. Volunteers were responsible for their own transportation and lodging. Most volunteers arrived early and departed late, but were generally day workers, because lodging was not provided.

There were no deaths or serious injuries reported during shoreline cleanup operations. However, several months later there were reports of adverse health effects – shortness of breath, coughing, etc. – possibly from inhalation of vapors from the oil. The government did not establish a medical monitoring program for volunteers.

In addition to the individuals that volunteered to physically clean the beaches, there were corporate sponsors and individual philanthropists that contributed time, money, corporate personnel, equipment, managers, and political support towards the cleanup efforts. Supplies, such as rags and other sorbent material (old clothing, etc.), were also donated by the general public in tremendous quantities.

By January 2008, utilizing some 592,400 pounds of oil absorbents and other cleanup devices, approximately 1.1 million gallons of spilled crude oil were collected. Donations included 27.76 billion South Korean won (about \$24.5 million), as well as food and clothing. The Taejeon emergency center said more than seven billion won in donations came from about 4,200 organizations and individuals.

By mid-June 2008, Mallipo Beach, as well as other area beaches, was open to the public.

### **Summary and Observations – M/T HEBEI SPIRIT**

- The spill (3.4 million gallons of crude oil) impacted more than 100 miles of coastline, including one of Asia's largest wetland areas, consisting of huge tidal flats used by migratory birds, a national maritime park, and nearly 450 aquaculture farms.
- The occurrence of respiratory problems is highly significant. Exposure should have been prevented and reveals that volunteers were not managed properly.
- The cost of cleanup has been estimated at 300 billion South Korean won (US\$330 million).
- All levels of the Korean government (federal, county, local municipality) took some level of responsibility for managing the huge numbers of volunteers (greater than one million over the duration of the cleanup) and donations from corporate sponsors and individual philanthropists.
- PPE, food, and tools were supplied to volunteers; however, transportation and lodging were not provided.
- An Internet webpage was successfully used to inform and direct volunteers to muster locations for work and location assignments.
- Volunteers were used for cleanup operations and were in direct contact with the oil. The respiratory problems that developed later with many workers illustrates the need for adequate training, proper PPE, and possible medical monitoring.
- Incredible logistics and coordination were required to manage 20,000 to 30,000 volunteers working daily.

### ***Use of Volunteers During the Deepwater Horizon Oil Spill, Gulf of Mexico, April 2010***

*As of October, 2011*

On 20 April 2010, over four million barrels of oil began discharging into the Gulf of Mexico impacting a five state region and closing more than 80,000 square miles of federal fishery waters (ISPR, 2011). The response involved over 47,000 federal, state, and local responders who contributed to the recovery of 35 million gallons of oily water, the deployment of more than 11 million feet of boom, and the cleaning of over 900 miles of shoreline (ISPR, 2011). As the whole-of-government initiated response, a total force multiplier of approximately 25,000 volunteers mobilized to serve within numerous field-level and support functions along the Gulf



Coast from Florida to Texas. A 28-person intergovernmental and cross-sector Volunteer Coordination Team aligned disparate federal and state volunteer management policies with incident-specific policy to engage meaningfully and support the 25,000 volunteers.

This summary describes the use of volunteers during the Deepwater Horizon oil spill with particular focus surrounding efforts from ICP Mobile, Alabama. The summary will first explore the initial volunteer management structure and explain how command and control centralized. The summary will then outline how volunteer management integrated with ICP processes. Once the structural and process-based features are addressed, the summary will highlight volunteer outcomes and effects.

Strategic measures designed to address public involvement—specifically the use of volunteers—originated at the UAC. In early May, the UAC published “Mississippi Canyon 252 Volunteer Plan” informing ICPs of incident-specific policy on the use of volunteers. Prior to UAC publishing guidance and responding to early public demand for volunteer opportunities, ICP Mobile designated an initial RP-led volunteer management capability. The RP assigned its employees to build a volunteer management capability at select locations along the Gulf Coast during early stages of volunteer management. Teams of approximately two employees were assigned to ICP Mobile and State EOC in Mississippi and Florida to work as part of the Community Outreach Branch under the Liaison Officer’s staff.

Once the UAC volunteer plan was published, ICP Mobile designated a USCG Volunteer Coordinator to implement UAC’s strategic guidance. The initial volunteer management structure between ICP Mobile and State EOCs existed over a large geographic area without centralized coordination or command and control. The Volunteer Coordinator based from ICP Mobile contacted each EOC and discussed the need to consolidate volunteer efforts and centralize the structure until viable remote organizations could be established. The Volunteer Coordinator designed a leadership and management team comprising state-appointed volunteer coordinators from Florida, Alabama, and Mississippi. The newly formed team also included the original RP employees, as well as contractors and NGOs. While respecting USCG Sector jurisdictions and with aims to standardize the manner in which volunteers were engaged on an operational level, Louisiana’s appointed volunteer coordinator joined the ICP Mobile based team. Volunteer management at ICP Mobile covered the entire coastline of the Gulf of Mexico with the exception of the Texas coast.

Despite UAC’s strategic volunteer management guidance, there lacked operational-level detail on how ICP Mobile would implement UAC’s guidance. In concert with the State commissions, the Volunteer Coordinator designed a Volunteer Plan Implementation Procedure informing ICP Mobile’s Unified Command on how volunteers would be engaged, registered, tracked, trained, deployed, monitored, supported, and demobilized. The implementation procedure essentially filled an operational-level gap that did not transgress or replace existing state-level tactical volunteer plans.

Structurally, the Volunteer Management Team co-existed with the LNO’s staff as part of the Community Outreach Branch. Early into its organizational development, the Volunteer Coordination Team sought placement as part of the Planning Section, though, in light of the magnitude and complexity of Planning Section functions, the Volunteer Coordination Team elected to co-exist as part of Liaison as many volunteer coordination efforts involved coalition

building, public communications, and external support and facility development, all of which relied heavily upon community and stakeholder outreach.

Several active NGOs with large volunteer contingents and environmental protection missions integrated with the Volunteer Coordination Team. Though the NGOs added tremendous capacity and diversity of thought, advocacy roles often caused frictions within the group regarding environmental protection strategies, which the Volunteer Coordination Team had no control over. This circumstance resulted in the establishment of an Environmental Stakeholder's Outreach Group, which convened and involved nearly 50 people representing close to 20 environmental groups from the Gulf Coast to Alaska. Though the Volunteer Coordination Team established the Environmental Stakeholder's Outreach Group, the Liaison Officer took long-term management of it. The NGOs continued to serve alongside the Volunteer Coordination Team, though much of their advocacy occurred within the Environmental Stakeholder's Outreach Group.

The Volunteer Coordination Team designed a meeting schedule to coincide with the ICP's operational planning process. Formal and scheduled team meetings occurred daily and followed a set agenda. The team also participated in informal meetings and conference calls with members of the ICP throughout the course of the planning cycle. The meetings achieved crucial decision points, for example, involving team composition, internal and external reporting, information flow streams, separate management of gratuitous and compensated volunteers, health and safety training standards and requirements, public communication through web-based and traditional venues, resource requesting process, and establishment of traditional state disaster response infrastructures used specifically to manage volunteers—namely, VRCs. The latter was a strategic decision in anticipation of decentralizing some management and coordination functions required to address long-term volunteer actions and support occurring within each state.

The Volunteer Management Team developed close coordinating relationships with the Operation and Planning Section staffs and would routinely discuss opportunities and roles for volunteers. Because the ICP was relatively young in its development, Section staffs were focused on traditional objectives and unable to devote significant attention to volunteer opportunities. Despite limited field-scale volunteer needs according to the Sections, the Volunteer Coordination Team developed volunteer functions to address known field-scale limitations. For example, maintaining situational awareness along the Gulf Coast from Florida to Louisiana presented significant knowledge gaps, so the Volunteer Coordination Team operationalized the Volunteer Field Observer Program (VFOB). The VFOB program (i.e., Beach Watch or Coast Watch) bolstered the Incident Management Team's exposure to real-time and verifiable on-scene information.

The VFOB program was formalized in consultation with Operations and Planning Section staffs. The Volunteer Coordination Team developed VFOB training programs and guides, reporting formats, and schedules, and also issued field safety and communications equipment to each state. Each state created a localized version of the VFOB program without transgressing fundamental rules of safety. The VFOB program enhanced situational awareness along the Gulf Coast from Florida to Louisiana informing the Planning Section staff of field observations to include reports of new oiling, presence of tar balls, oiled wildlife, broken or malfunctioning boom, and lastly by confirming the absence of oiling, tar balls, or oiled

wildlife. The VFOB's strength was resident in the fact that volunteers with local knowledge were spread along the coast from Florida to Louisiana and most VFOB participants were residents of coastal communities or within proximity to the coast.

The Houma ICP and the UAC also worked on the development of a smart phone application (apps) that would record geo-referenced observations from members of the public or affiliated volunteer organizations. These observations included a photo, an estimation of the amount of oil, whether wildlife was present in distress or dead, impact to wetlands, status of boom etc. The elements of the tool were based on the National Marine Sanctuary Beach Watch program in San Francisco, CA. The intent was to utilize the public and VFOB area wide to pull information into the UC in a manner that would facilitate the ability of the UAC to cull and respond to reports across the region quickly and effectively. Ultimately, the UAC was unable to stand up its own app in a timely way. However, several non-UAC affiliated apps were developed, but the information collected did not flow into the UAC because there was no suitable mechanism to transfer the data from the non-affiliated public.

UAC guidance restricted volunteers from handling oil or oil-contaminated materials. Realities of the constraint led the Volunteer Coordination Team to think long-term, strategic use of volunteers serving in roles that would not present oil contamination hazards. For the states, managing volunteers during an oil spill is outside the traditional scope of volunteer management during natural disasters. This circumstance presented unique challenges and to meet each challenge, the states adapted existing volunteer management infrastructures to address an oil spill<sup>10</sup>. As the centralized coordination structure at ICP Mobile matured and volunteer management expectations, limitations, constraints, and operating procedures were formalized, the Volunteer Coordination Team shifted some command, control, and coordination activities to the state-level. This was crucial for long-term oversight and support of volunteers, especially as the ICP footprint contracted once the source of the spill was secured. Though ICP Mobile retained a Volunteer Coordinator under the Liaison Officer's staff, the function served to support the States' efforts to manage volunteers.

## **Florida**

Florida relied upon their Division of Emergency Management's Emergency Support Function (ESF) #15 "Volunteers and Donations" to serve within a variety of roles during the oil spill. ESF #15 staffed the State EOC, delivered volunteer management training to impacted communities, integrated the National Civilian Community Corps (NCCC) to address spill-related needs, and helped to develop new volunteer roles. Over 3.2 million people visited the Volunteer Florida website between 01 May and 26 August 2010. The website described valuable information on opportunities to volunteer in non-oil-related roles, addressed the economic impacts of the oil spill on Florida's economy, advertised the volunteer needs of Florida's nonprofit agencies, and explained reasons why volunteers were not directly involved in oil cleanup. Florida recorded 19,899 volunteers who registered to respond and those volunteers who served in volunteer capacities contributed 40,551 volunteer hours. To help

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<sup>10</sup> Wildlife cleaning and rehabilitation workers and volunteers had several types of occupational health concerns. Some were unique to wildlife cleaning and rehabilitation work and some were common to other types of on-shore response work. For further details, see NIOSH Health Hazard Evaluation from Deepwater Horizon event: <http://www.cdc.gov/niosh/topics/oilspillresponse/gulfspillhhe.html>

manage in-state volunteer demands, ESF #15 was aided by a grant from the RP and received support from CNCS, NCCC, and AmeriCorps NCCC.

Florida's volunteer management network established numerous diverse functions through which volunteers were utilized. To bolster state-wide volunteer management personnel power, the network hosted 14 volunteer management training session for 201 people representing 103 agencies. Training sessions included Volunteer Management Training (basic and advanced), VOC Training, grant writing, and customized volunteer management training. Of the 201 people trained, 105 were designated Volunteer Resource Managers for local agencies. AmeriCorps NCCC members and volunteers delivered public education info-sessions to 3,500 volunteers who later photographed coastal areas for a tourism promotion showcasing Florida's pristine beaches.

ESF #15 also supported numerous mental health and financial-stress awareness sessions. The Lutheran Disaster Services hosted "Camp Beyond the Horizon" for 128 children and addressed behavioral and stress-related issues stemming from the oil spill. Other faith-based organizations became involved and continue to monitor and provide behavioral health services for families impacted by the oil spill. Financial literacy workshops were organized and delivered by AmeriCorps VISTA and United Way volunteers to help families cope with spill-related financial issues.

Field-scale volunteer opportunities included pre and post oil impact activities. Volunteers pre-cleaned over 250 miles of shoreline. Florida Fish and Wildlife Commission Wildlife Paraprofessionals supported 68 volunteers who contributed 16,320 volunteer hours from May through August. The Civil Air Patrol supported 69 volunteer pilots who flew 118 sorties and contributed 4,760 volunteer hours. Volunteer Florida partnered with Visit Florida, the Florida Restaurant and Lodging Association, and the Florida Lottery to conduct the "Great VISIT FLORIDA Beach Walk", a statewide event in which every mile of Florida's 825 miles of beaches will be walked and photographed by volunteers in early November.

## **Mississippi**

Mississippi relied upon the Mississippi Commission for Volunteer Services (MCVS) to administer the volunteer response during Deepwater Horizon event. MCVS received volunteer management support from South Mississippi Volunteer Organizations Active in Disaster (SMVOAD), Hands-On South Mississippi, AmeriCorps NCCC, and United Way of South Mississippi. MCVS and their assisting organizations provided long-term support for the volunteer management program, administered the Coast Watchers program, and staffed the three Volunteer Response Centers located along the Mississippi coast. Each center was funded by a grant from the RP and managed by a staff of between 10-12 members.

The Volunteer Response Centers served as a modified VRC and vital node within the network of volunteer organizations. The modified design acknowledged the unique training requirements and limited roles within which volunteers could serve and accommodated the unique challenges and limitations of engaging and managing volunteers during an oil spill. The Volunteer Response Center served as both a physical location for affiliated and unaffiliated volunteers to be "received" as well as a virtual hub to proactively engage volunteer organizations, register volunteers, and inform them of the opportunities and limitations of

volunteering during an oil spill response. The Volunteer Response Centers were tasked to: administer a database of Mississippi volunteers; administer a web-based application for effective screening and placement of volunteers; coordinate the identification of community needs and associated volunteer activity; coordinate effective communications to keep volunteers informed of community needs and opportunities; provide staffing and technical resources to communicate volunteer needs and opportunities; provide documentation of volunteer resources; and create activity reports based on collected data.

Mississippi capitalized on the opportunities presented by the VFOB program and adapted it to meet state needs. The “Coast Watcher” volunteer program served as a volunteer-based first-alert and long term monitoring system that informed ICP Mobile of spill-related impacts. The program used locally-based volunteers to patrol coastal areas. Non-local volunteers were utilized provided they were in proximity and could commit to a minimum of one-week of patrols. Following patrol, volunteers would submit their reports by 0700 each day to ICP Mobile via a hotline. The reports were delivered to Operation and Planning Section staffs that coordinated the deployment of Shoreline Clean-up and Assessment Teams if actionable information was reported.

Mississippi organized the program around the model’s three pillars: Orientation/Training, Patrol, and Reporting. NCCC teams were trained to perform all volunteer orientation and training on policies and protocol, and perform data management and reporting to ICP Mobile, MCVS staff, and local emergency management agencies. The program was advertised on MCVS’s volunteer registration website where volunteers would contact via phone or email their respective county’s Volunteer Response Center to schedule orientation and training. Sessions were delivered twice a week where volunteers were provided health and safety training, response policy, and protocol training (i.e., what to look for and what not to do), work assignments (how to operate field equipment, take reports, and submit reports). Volunteers were also provided an MCVS identification badge, and a backpack containing field support equipment to include oil identification sheets, patrol reporting sheet, safety messages and plan, a GPS unit, digital camera, and a safety kit including sunscreen, bug spray, water bottle, hat, and sunglasses.

Coast Watcher volunteers checked-in each day to the Volunteer Response Center located within their county either in person or through virtual media. Upon check-in, volunteers received Google maps and satellite images of the stretch of coastline they intended to survey. NCCC staff compiled survey information into a common database to track areas patrolled and areas needing patrol. NCCC staff remained available to assist volunteers with logistical issues and questions and to conduct debriefings once a volunteer completed a patrol.

## **Louisiana**

Louisiana relied on the Louisiana Serve Commission (Volunteer Louisiana) and Louisiana Volunteer Organizations Active in Disaster (LAVOAD) to manage volunteers during Deepwater Horizon. The majority of volunteers contributed through conservation groups, Louisiana Serve, and LAVOAD. These coalitions of nonprofits and faith-based organizations stepped forward and adapted traditional communications models to fit the demand of communicating to and through conservation groups. Consistent communications among all involved organizations was crucial to manage expectations among a diverse spread of

volunteers. To minimize or prevent self-deployment, Louisiana Serve created a message distributed to all interested groups numbering approximately 16,692 individuals. The message, which was revised and distributed weekly, informed volunteers of volunteer limitations, opportunities, and procedures to become an oil spill volunteer. By permission, an example of Louisiana Serve's message is included below.

Thank you for your continued patience as we continue to identify areas where volunteers can be deployed. We appreciate deeply the nation's outpouring of support and the many offers of assistance as many people's lives have been impacted by this event. Because oil is a toxic substance and dangerous if handled improperly, only specially trained responders may clean it up or dispose of it. BP is paying contractors to do this work. Volunteers at this time will not be assigned to oil-touching activities.

If you have not already done so, please register at [www.volunteerlouisiana.gov](http://www.volunteerlouisiana.gov) to receive updates and information on any volunteer opportunities as they are identified. The registration form is found in the red boxed area on the homepage of our website. Please make sure you add [laserve@crt.state.la.us](mailto:laserve@crt.state.la.us) and [jpace@crt.state.la.us](mailto:jpace@crt.state.la.us) to your mailbox addresses so our updates are not returned. We do not have the staff capacity to individually respond to notices asking us to qualify ourselves.

While there are still limited environmental response activities today, we are working with conservation groups who are developing a strategy for what will be a long recovery effort. At the same time, the human services volunteer opportunities continue to grow. Visit HandsOn New Orleans to see these opportunities: <http://tinyurl.com/25b5tm6> and Catholic Charities of New Orleans: <http://www.ccano.org/?p=662>.

We continue to receive an increasing number of calls and emails from individuals and businesses wanting to donate goods or financial support to assist nonprofits responding to this event. While we are not asking you to donate, unsolicited donations may be offered in the following manner: for donations with an estimated cash value up to \$10,000, submit the offer through the National Donations Management Network at [www.aidmatrixnetwork.org](http://www.aidmatrixnetwork.org) by clicking on LA on the map. For offers that exceed an estimated cash value of \$10,000, please go to <http://labeoc.org/offer>. This public/private partnership manages large donations during all-hazards emergencies.

Depending on your locations and availability, you may also want to reach out to [www.volunteermisissipp.org](http://www.volunteermisissipp.org), [www.servealabama.gov](http://www.servealabama.gov) or [www.volunteerflorida.org](http://www.volunteerflorida.org) to see what volunteer opportunities they may have. While you await news of opportunities on the Gulf Coast, we encourage you to look within your own communities to work with organizations that could use your willing heart and passion to benefit local citizens.

## **Summary and Observations – Deepwater Horizon**

- During the Deepwater Horizon spill, over four million barrels (168 million gallons) of crude oil was discharged impacting five states and closing more than 80,000 square miles of federal fishery waters.
- This response involved over 72,000 responders including 25,000 volunteers who were mobilized to serve in various field and support positions.
- Volunteer management during Deepwater Horizon was an unparalleled domestic response initiative.
- Though volunteer management occurred within the ICS structure it did not integrate with the Planning Section, but instead remained as part of the LNO's staff.
- Even though the five States managed volunteers differently, each State already had volunteer management policies, experienced personnel, and tested infrastructures in place.
- One of the initial goals for volunteer management during this incident was to inform and align each state with DWH incident-specific policy, so each State could take control of managing volunteers consistent with UAC's strategic volunteer management guidance as well as ICP Mobile's operational-level implementation procedure.
- Although the ICP maintained oversight of volunteer coordination, transitioning volunteer management to the state level proved useful as incident management team personnel sustained periodic rotations and as the ICP transitioned to a smaller size.

## ***Use of Volunteers During the Enbridge Line 6B Pipeline Release, Michigan, July 2010***

*As of November, 2011*

On or about July 26, 2010, a 30-inch diameter pipeline owned by Enbridge Energy ruptured and discharged crude oil into a wetland adjacent to Talmadge Creek near Marshall, Michigan in Calhoun County. Enbridge estimated that the initial discharge from their Line 6B was 20,082 barrels (843,444 gallons) before the leak was detected and the valves closed on either side of the rupture. From the wetland, the oil filled Talmadge Creek, flowed approximately 2 miles through the creek and its floodplain, and then entered the Kalamazoo River, a Lake Michigan tributary. The Kalamazoo River was in flood stage at the time of the discharge. The oil covered the river and its floodplain from bank to bank for many miles. Submerged oil and sheen from the spill were eventually found as far downstream as Morrow Lake, an impoundment on the Kalamazoo River approximately 35 miles downstream from where Talmadge Creek enters the river. This stretch of the Kalamazoo River is bordered by wetlands, floodplain forest, residential properties, farm lands, and commercial properties.

The initial response efforts by Enbridge and the U.S. EPA focused on controlling the source and stopping the downstream flow of oil. Because of inhalation hazards associated with

volatile components of the tar sand crude oil that were released, spill workers wore respirators, approximately 60 homes were evacuated, and the public was advised to stay away from Talmadge Creek and the Kalamazoo River. As the response progressed, the response efforts shifted to collecting oil from the river, cleaning shoreline and floodplain areas as floodwaters receded, and addressing submerged oil. The inhalation hazards decreased in the weeks following the initial release, but as of November 2011, the river still remained closed to the public because of ongoing response activities.

Because the response was still continuing as this case study was being written, exact figures on the magnitude of the response were not available. At peak periods in the response, approximately 2,000 people were working on the spill at once, including Enbridge employees and contractors, state and federal agency employees and contractors, and volunteers. In September of 2011, Enbridge estimated that the entire cost of the spill would be approximately \$700 million. More details on the spill response are available at <http://www.epa.gov/enbridgespill/>.

The Wildlife Branch in Operations was the only place within the ICS where volunteers were used. The Wildlife Branch included staff from FWS, Michigan Department of Natural Resource and the Environment (MDNRE), USDA – Wildlife Services, Enbridge and their contractors (including Focus Wildlife and others), Binder Park Zoo and other zoos, local rehabilitators and volunteers. The Wildlife Branch peaked at approximately 120 people on site at one time organized in approximately 30 groups or teams.

By the evening of July 26, 2010, the public and MDNRE biologists had observed oiled waterfowl along the river. Immediately, FWS began working with Enbridge to prepare for wildlife recovery and rehabilitation and Enbridge mobilized Focus Wildlife, a contractor with international experience in wildlife response at oil spills. A public hotline to report oiled wildlife was established that night. By the morning of July 27, USFWS was organizing a Wildlife Branch within the Operations Section to perform wildlife reconnaissance, recovery, rehabilitation and release, and Enbridge and their contractors were creating a Wildlife Response Center in a vacant building in Marshall, Michigan. Using the hotline, press conferences, public meetings, and other outreach efforts, FWS and MDNRE urged the public to report oiled wildlife, but to not pick up oiled wildlife themselves both for their own safety and to minimize handling stress on the wildlife. Nonetheless, some members of the public did pick up wildlife and attempt to clean them in the first few days of the spill.

All members of the Wildlife Branch, including volunteers, were trained in working with hazardous materials and with wildlife. Enbridge hired a contractor to serve as an on-site Safety Officer for the branch and provided PPE for all branch members, including volunteers. The Branch Safety Officer developed a Health and Safety Plan specifically for the branch, did daily safety briefings, and monitored working conditions, use of PPE, and waste handling for the Wildlife Response Center. Important safety concerns were exposure to oil, the potential for zoonotic diseases, injuries from wildlife, slip/trip/fall hazards, overheating, dehydration, and electrical hazards (especially around water in tanks, conditioning ponds, and washing areas). No serious incidents were recorded for the Wildlife Branch.

Thousands of people volunteered to help the animals impacted by the spill. Calhoun County provided staff to take calls from volunteers and compile data on potential volunteers. In



addition to the spill information and wildlife reporting hotlines, people in the Calhoun County area were also directed to dial 211 or visit [www.handsonbc.org](http://www.handsonbc.org) to volunteer. The Wildlife Branch then used that information, as well as personal contacts with known individuals, to bring volunteers in for training and work. Within the Wildlife Branch, a Volunteer Manager position was established to screen, schedule, organize, and track volunteers. Enbridge staffed the Volunteer Manager position with a contractor. Overall, approximately 150 individual volunteers contributed over 7,000 hours of work.

FWS served as the Wildlife Branch Director through the first several months of the spill and then Enbridge assumed the duties of that position. Throughout the response, the volunteers were managed by Enbridge and their contractors. The volunteers were all adults, and were mostly women. Some volunteered as parts of groups or organizations and others were unaffiliated. A few had previous experience with oiled wildlife spill response, but most were trained on-site by Focus Wildlife. Some volunteers became contract employees. The volunteers were primarily used in supporting the rehabilitation efforts being managed by Enbridge and their contractors, and the task for which the largest number of volunteer hours was used was washing oiled turtles. A few volunteers participated in reconnaissance and capture crews for several days, but those volunteers did not return on subsequent days and this practice was discontinued.

Local wildlife rehabilitators who attempted to set up their own wildlife washing stations were encouraged by the FWS and MDNRE to turn over any wildlife already in their care to the Wildlife Response Center and were invited to sign in and be trained as volunteers within the Wildlife Branch. This was eventually successful in providing efficient, state-of-the-art wildlife care, control of animal and waste handling and tracking, and ensuring the safety of everyone working with oiled wildlife.

In addition to volunteering, members of the public and local businesses donated generous amounts of supplies like towels, cleaning supplies, boxes and crates, bottled water, and snacks. The donations threatened to overwhelm staff and space at the Wildlife Response Center, and fortunately a local church set up a donation center near the Wildlife Response Center. The church and their volunteers set up a large tent and organized supplies. The donation center operated independently of the Incident Command structure, but the volunteers there implemented suggestions from the Wildlife Branch and made it possible for Wildlife Branch personnel to very easily obtain donated materials as needed.

### **Summary and Observations – Enbridge Line 6B Pipeline Release**

- Enbridge Energy estimated that before the leak was detected and the valves closed their pipeline discharged 20,082 barrels (843,444 gallons) of a tar sand crude oil.
- The inhalation hazards associated with the volatile components of the spill required spill response workers to wear respirators, the evacuation of approximately 60 homes, and an advisory to the public advised them to stay away from Talmadge Creek and the Kalamazoo River.

- At its peak, this response included roughly 2,000 people, including Enbridge employees, contractors, state and federal agency employees, and volunteers (both affiliated and unaffiliated).
- The Wildlife Branch in Operations was the only place within the Incident Command System where volunteers were used. The Wildlife Branch also contained a Volunteer Manager position that was established to screen, schedule, organize, and track volunteers.
- The local county provided staff to manage calls from volunteers and compile data on potential volunteers. Volunteers were also directed to dial 211 or visit [www.handsonbc.org](http://www.handsonbc.org) to volunteer. Some of these volunteers ultimately became contracted employees during the response.
- A local church and their volunteers helped manage an overwhelming amount of donated supplies (towels, cleaning materials, bottled water, etc.) that threatened to cause storage and management issues within the Wildlife Response Center. This church-organized donation center operated independently of the Incident Command structure but implemented suggestions from the Wildlife Branch. This made it possible for Wildlife Branch personnel to very easily obtain donated materials as needed.

## Appendix D: Acronym and Abbreviation List

|  |   |
|--|---|
| <b>AC</b> – Area Committee   | <b>HAZWOPER</b> – Hazardous Waste Operations and Emergency Response           |
| <b>ACP</b> –Area Contingency Plan  | <b>IAP</b> – Incident Action Plan   |
| <b>BIA</b> – Bureau of Indian Affairs (DOI)  | <b>ICP</b> – Incident Command Post  |
| <b>BLM</b> – Bureau of Land Management (DOI)   | <b>ICS</b> – Incident Command System  |
| <b>BOEMRE</b> – Bureau of Ocean Energy Management, Regulation and Enforcement              | <b>IMH</b> – Incident Management Handbook                                     |
| <b>BOR</b> – Bureau of Reclamation (DOI)   | <b>IST</b> – Incident Support Team  |
| <b>BSEE</b> – Bureau of Safety and Environmental Enforcement                               | <b>ISPR</b> – Incident Specific Preparedness Review                           |
| <b>CBO</b> – Community Based Organization  | <b>ITOPF</b> – International Tanker Owners Pollution Federation, Limited      |
| <b>CERT</b> – Community Emergency Response Teams   | <b>JIC</b> – Joint Information Center   |
| <b>CFR</b> – Code of Federal Regulations   | <b>LAVOAD</b> – Louisiana Volunteer Organizations Active in Disaster          |
| <b>CISM</b> – Critical Incident Stress Management  | <b>LNO</b> – Liaison Officer  |
| <b>CNCS</b> – Corporation for National and Community Service                               | <b>MCVS</b> – Mississippi Commission for Volunteer Services                   |
| <b>DHS</b> – U.S. Department of Homeland Security  | <b>MDNRE</b> – Michigan Department of Natural Resource and the Environment    |
| <b>DOC</b> – U.S. Department of Commerce   | <b>MMS</b> – Minerals Management Service                                      |
| <b>DOD</b> – U.S. Department of Defense  | <b>MOU</b> – Memorandum of Understanding                                      |
| <b>DOE</b> – U.S. Department of Energy   | <b>M/T</b> – Motor Tanker   |
| <b>DOI</b> – U.S. Department of the Interior   | <b>M/V</b> – Motor Vessel   |
| <b>DOJ</b> – U.S. Department of Justice  | <b>NCCC</b> – AmeriCorps National Civilian Community Corps                    |
| <b>DOL</b> – U.S. Department of Labor  | <b>NCP</b> – National Oil and Hazardous Substances Pollution Contingency Plan |
| <b>DOS</b> – U.S. Department of State (State Department)                                   | <b>NGO</b> – Non-Governmental Organization                                    |
| <b>DOT</b> – U.S. Department of Transportation   | <b>NIMS</b> – National Incident Management System                             |
| <b>DSW</b> – Disaster Service Workers  | <b>NIOSH</b> – National Institute for Occupational Safety and Health          |
| <b>EOC</b> – Emergency Operations Center   | <b>NOAA</b> – National Oceanic and Atmospheric Administration                 |
| <b>EPA</b> – U.S. Environmental Protection Agency  | <b>NPFC</b> – National Pollution Funds Center                                 |
| <b>ESF</b> – Emergency Support Function (#1-15)  | <b>NRF</b> – National Response Framework                                      |
| <b>EVC</b> - Emergency Volunteer Center  | <b>NRS</b> – National Response System   |
| <b>FECA</b> – Federal Employee Compensation Act  | <b>NRT</b> – National Response Team   |
| <b>FLPMA</b> – Federal Land Management Policy Act  | <b>NSF</b> – National Strike Force  |
| <b>FTCA</b> – Federal Tort Claims Act  | <b>NWVP</b> – Non-Wildlife Volunteer Plan                                     |
| <b>FOSC</b> – Federal On Scene Coordinator (in this document referred to as “federal OSC”) | <b>OSC</b> – On Scene Coordinator   |
| <b>FWS</b> – Fish and Wildlife Service (DOI)   | <b>OSH Act 1970</b> – Occupational Safety and Health Act 1970                 |
| <b>HASP</b> – Health and Safety Plan   | <b>OSHA</b> – Occupational Safety and Health Administration                   |
|  | <b>OSLTF</b> – Oil Spill Liability Trust Fund                                 |

**OSRL** – Oil Spill Response Limited  
**OSRO** – Oil Spill Removal Organization  
**OWCN** – Oiled Wildlife Care Network  
**PIAT** – Public Information Assist Team  
**PIER** – Public Information Emergency Response  
**PIO** – Public Information Officer  
**POC** – Point of Contact  
**PPE** – Personal Protective Equipment  
**PRFA** – Pollution Removal Funding Authorization  
**RP** – Responsible Party  
**RPM** – Remedial Project Manager  
**RRT** – Regional Response Team  
**SFBD ACP** – San Francisco Bay and Delta Area Contingency Plan  
**SCAT** – Shoreline Cleanup Assessment Technique  
**SITREP** – Situation Report

**SMVOAD** – South Mississippi Volunteer Organizations Active in Disaster  
**SWCB** – State Workers’ Compensation Board  
**TAD** – Technical Assistance Document  
**T/V** – Tank Vessel  
**UAC** – Unified Area Command  
**U.S.C.** – United States Code  
**USCG** – U.S. Coast Guard  
**USDA** – U.S. Department of Agriculture  
**USGS** – U.S. Geological Survey  
**VFOB** – Volunteer Field Observer Program  
**VISTA** – Volunteers in Service to America  
**VIPS** – Volunteers in Police Service  
**VOAD** – Voluntary Organizations Active in Disaster  
**VPA** – Volunteer Protection Act  
**VRC** – Volunteer Reception Center

## Appendix E: Bibliography

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## **Appendix F: USCG-EPA-CNCS Use of Volunteers MOU**

CNCS, through its network of AmeriCorps and Senior Corp Programs, State Service Commissions, and non-profit partners, can assist, when requested, in providing support for managing unaffiliated volunteers. For example, when requested, CNCS resources plan to work with the state and local volunteer network to establish a VRC. CNCS plans to staff the VRC with an AmeriCorps or Senior Corps team who will be able to:

- establish an intake of volunteers and determine initial posture (need/role for volunteers);
- identify volunteer roles (either directly associated with the event or indirectly, e.g., food bank, or shelters);
- develop and promote the proper messaging around volunteer engagement; and
- manage and deploy volunteers to meet response needs within the parameters of the response operation.

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**MEMORANDUM OF UNDERSTANDING  
BETWEEN  
U.S. COAST GUARD, U.S. ENVIRONMENTAL PROTECTION  
AGENCY,  
AND  
CORPORATION FOR NATIONAL AND COMMUNITY SERVICE**

**1. PARTIES**

The Parties to this Memorandum of Understanding (MOU) are the United States Coast Guard (USCG), the United States Environmental Protection Agency (EPA) and the Corporation for National and Community Service (CNCS).

CNCS, a wholly-owned United States Government Corporation and executive federal agency of the United States, supports service and volunteering at the national, state and local levels, overseeing three major initiatives: AmeriCorps (including State/National, Volunteers in Service to America (VISTA), and National Civilian Community Corps (NCCC)), Learn and Serve America, and Senior Corps. CNCS programs provide vital support, especially human capital, to the national, state, and local voluntary organizations and public agencies that lead response, relief, and recovery efforts when an incident occurs. In addition, CNCS has specific responsibilities as a support agency within the National Response Framework (NRF). Pursuant to the Stafford Act and other legal authorities cited below, CNCS and its grantees have a record of collaborating with state and local agencies and organizations to support response and recovery efforts.

USCG and EPA provide federal On-Scene Coordinators (OSCs) to respond to discharges of oil and releases of hazardous substances, pollutants and contaminants under Section 311 of the Clean Water Act (CWA) as amended by the Oil Pollution Act of 1990 (OPA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The EPA provides OSCs for responses in the inland zone, and the USCG provides OSCs for responses in the coastal zone. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) found in 40 CFR Part 300, contains some of the regulations that implement Section 311 of the CWA and CERCLA, and describes OSC authorities and responsibilities in detail.

**2. AUTHORITY**

The USCG, EPA, and CNCS, enter into this MOU pursuant to 14 U.S.C. § 141; 10 U.S.C. § 1588; 14 U.S.C. § 93(a)(20); 31 U.S.C. § 1342; NCP, 40 CFR Part 300.110; CWA, 33 U.S.C. § 1321; CERCLA, 42 U.S.C. § 9601; Homeland Security Act of 2002, Public Law 107-296; Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5121-5206; the Department of Homeland Security Appropriations Act, 2007, Public Law 109-295; the National and Community Service Act of 1990, 42 U.S.C. § 12651g(b); Executive Order 12148, as amended; and 44 CFR Part 206. Any transfer of funds necessary to carry out this agreement will be under the Economy Act or other appropriate authority.

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### 3. PURPOSE

This MOU between the USCG, EPA, and CNCS describes the major responsibilities of each Party in developing and supporting an unaffiliated volunteer management program to be implemented following an oil or hazardous substance pollution incident as requested by the USCG/EPA OSC.

### 4. RESPONSIBILITIES

- A. USCG and EPA, in fulfilling their mission of coordinating emergency preparedness and response to oil and hazardous substance pollution incidents plan to, as appropriate, include CNCS in ongoing efforts to improve and implement the NCP and NRF procedures related to the use of volunteers, and to assist in educating and training CNCS personnel at the local, state and national levels to provide needed unaffiliated volunteer management assistance for response operations. Specifically, USCG and EPA resolve to:
- 1) Identify appropriate and necessary training and exercises for CNCS staff, program staff, and national service participants to assist CNCS in providing volunteer management assistance for response operations;
  - 2) Notify CNCS as soon as possible of requested assistance following an incident. Notification information should include:
    - a. A thorough description of the anticipated volunteer management capabilities necessary to support incident response, and,
    - b. The minimum incident-specific training requirements for responding CNCS assets;
  - 3) Subject to Section 7 below, pay the costs, as may be legally appropriate and necessary, through the OSLTF or Interagency Agreements, of transportation, lodging, and meals incurred by CNCS staff, CNCS program staff, and national service participants, salary costs for program staff, and living allowances for national service participants explicitly supporting USCG and EPA response volunteer management operations;
  - 4) Pay the costs, as may be appropriate and necessary, through the OSLTF or Interagency Agreements, of necessary tools, equipment, and other supplies for CNCS to perform assigned volunteer management functions during the response; and
  - 5) Provide work space and appropriate support for CNCS staff, CNCS program staff, and national service participants temporarily assigned to response volunteer management operations.
- B. CNCS, to carry out its role in support of USCG/EPA, plans to engage in planning, coordinating, supporting, and/or assisting in the following preparedness and response activities:
- 1) Provide for coordination and management of unaffiliated volunteers as requested by the USCG/EPS OSC;
  - 2) Provide outreach to established voluntary organizations to provide coordination and support services as requested by the USCG/EPA OSC;
  - 3) Disseminate information to affected populations in coordination with the Unified Command Joint Information Center;
  - 4) Assign appropriate CNCS staff, program staff, and national service participants to support USCG/EPA OSC operations;
  - 5) Ensure that all personnel assigned by CNCS to provide services under this MOU are covered by either the Federal Tort Claims Act and the Federal Employees

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Compensation Act, or when CNCS grantees are responding on behalf of CNCS in accordance with the terms and conditions of a CNCS grant or cooperative agreement, that they are covered by liability insurance and occupational accident insurance.

- 6) Develop and provide to the USCG/EPA OSC a specific response plan and budget, including proposed human resources, upon being provided the incident needs by the USCG/EPA OSC [Sect 4.A.2];
- 7) Ensure participation by CNCS staff and national service participants in appropriate Hazardous Waste Operations and Emergency Response (HAZWOPER) training identified by USCG and EPA as necessary to support the volunteer management mission;
- 8) Participate, as available, in preparedness and planning activities such as planning document development; and
- 9) Develop CNCS standard operating procedures (SOP) for response to incidents at the request of the USCG/EPA.

## **5. COMPLIANCE, REPORTING AND DOCUMENTATION**

CNCS will comply with fiscal management and performance requirements and provide USCG/EPA with appropriate supporting expenditure and program management documentation related to fiscal compliance and program performance management in a format and on a schedule mutually established:

- A. For Pollution Removal Funding Authorization (PRFA) supported oil spill incident deployments, CNCS will:
  1. Provide good faith estimates of the total anticipated costs, as needed, with a line item breakdown of the principal expense categories. This need not be more than a single page, and can be provided as an attachment to the PRFA;
  2. Secure advance approval from the USCG/EPA OSC for proposed response costs to be incurred by CNCS when deploying to incident areas. CNCS shall identify individuals who will respond on its behalf; however, the federal OSC maintains the right to refuse services;
  3. Maintain appropriate financial records and supporting documentation to support expenses, and submit final reimbursement claims to USCG or EPA in accordance with the Technical Operating Procedures (TOPs) for resource documentation under OPA 90;
  4. Provide regular reports to the USCG and EPA on activities and accomplishments of deployed national service participants, including a final report on activities and accomplishments at the conclusion of each such deployment; and
  5. Maintain any applicable training, medical surveillance, and/or exposure records pursuant to this MOU and any associated response activities.
- B. CNCS will provide regular reports to USCG and EPA on outcomes of preparedness operations, including training and exercises. Reports will identify specific accomplishments, number of people trained per activity, and outcomes of exercises.
- C. CNCS will ensure that all activities performed under this MOU are in compliance with U.S. Government statutes and regulations, in particular, but not limited to, the Privacy Act, 5 U.S.C. 552a.

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**6. POINTS OF CONTACT:**

**1. USCG:**

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Office of Incident Management & Preparedness  
U.S. Coast Guard  
2100 Second Street SW, Stop 7363  
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**2. EPA:**

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**3. CNCS:**

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Washington, DC 20525  
cdavenport@cns.gov  
202-606-7516

**7. OTHER PROVISIONS**

Nothing in this memorandum is intended to conflict with current law or regulation or the directives under which USCG, EPA, and CNCS operate. If a term of this memorandum is inconsistent with such authority, then that term shall be invalid, but the remaining terms and conditions of this memorandum shall remain in full force and effect.

- 1) This MOU does not mandate USCG, EPA or CNCS to undertake any specific level of activity.
- 2) The USCG or the EPA intend to initiate and approve all volunteer management and coordination requests issued to CNCS. When deployed to support a response, participants will operate under the ultimate direction of the USCG's or EPA's federal OSC.
- 3) It is understood that Parties may need to make operational changes quickly during a response and notice to the other Party of such changes may be delayed; however, such notice shall be provided at the earliest possible time and in the most time efficient manner.
- 4) This MOU is not intended to, and does not, create any right, benefit or trust responsibility, substantive or procedural, enforceable at law or equity, by a Party against the United States, its agencies, its officers or any person.
- 5) Nothing in this MOU is intended to restrict the authority of any Party to act as provided by law, statute or regulation.
- 6) Nothing in this MOU requires or implies that USCG, EPA, or CNCS will provide liability or workers' compensation coverage or other accident insurance for volunteers who may engage in response operations.
- 7) Each Party plans to participate in an open exchange of relevant information, as permitted by law (including funding opportunities) which furthers the mission of each organization.

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- 8) This MOU is not a fiscal or funds obligation document, nor is it an agreement to pay any expenses or costs of CNCS. All commitments made by the parties to this MOU are subject to the availability of appropriated funds. Volunteer management support carried out by CNCS that may be eligible for reimbursement from USCG or EPA will require the execution of a separate financial instrument in order to pay any such expenses.
- 9) Each Party to this MOU is separate and independent from one another. As such, each organization will retain its own identity in providing services, and each organization is responsible for establishing its own policies.
- 10) While it is the intent of the Parties to cooperate in accordance with this understanding, no Party shall be liable to the other for failure to comply in any way with the provisions and agreements contained in this document.
- 11) Annually, or more often at the request of any Party, representatives of CNCS, USCG, and EPA intend to meet to assess progress in the implementation of the MOU and to make revisions as deemed necessary.
- 12) In the event the EPA or USCG wants to request CNCS volunteer management support for an oil or hazardous substance pollution incident which has occurred as part of a declared major disaster or emergency under the Stafford Act, the EPA or USCG may request CNCS support through FEMA via the following: (1) a Mission Assignment from FEMA to CNCS under the National Response Framework Volunteer and Donations Management Support Annex, developed in consultation with EPA and/or USCG; (2) a Mission Assignment from FEMA to CNCS under Emergency Support Function (ESF) #10, developed in consultation with EPA and/or USCG; or (3) a Mission Assignment subtask from EPA or USCG to CNCS under ESF #10.

#### 8. EFFECTIVE DATE

This MOU shall be effective from the date it has been signed by representatives of all organizations and shall remain in effect until modified or terminated as below.

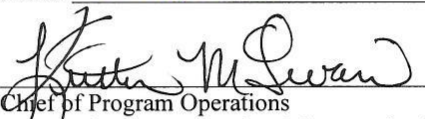
#### 9. MODIFICATION/TERMINATION

This MOU may be modified upon the mutual written consent of the parties. Any Party may terminate its participation in this agreement upon 60 days written notice to the other parties.

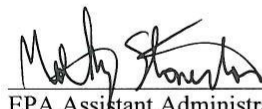
#### 10. SIGNATURES

  
\_\_\_\_\_  
Director for Response Policy  
USCG

Dated: 13 November 2010

  
\_\_\_\_\_  
Chief of Program Operations  
Corporation for National and Community Service

Dated: 7/15/2010

  
\_\_\_\_\_  
EPA Assistant Administrator  
Office of Solid Waste and Emergency  
Management Response

Dated: 1/25/11

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## GLOSSARY

### **Administrative support**

Administrative support is cost associated with processing the deployment and reimbursement of assigned incident response activities.

### **AmeriCorps member**

An AmeriCorps member is an individual serving on a full-time or part-time basis in an approved AmeriCorps program and who is eligible to receive an education award or alternative post "Member" service benefit.

### **AmeriCorps\*NCCC (National Civilian Community Corps)**

AmeriCorps\*NCCC is a 10-month, full-time residential AmeriCorps program which combines the best practices of civilian service with the best practices of military service, including leadership development and team-building. NCCC is team-based program for young women and men between the ages of 18 - 24.

### **AmeriCorps\*State and National**

An AmeriCorps program operated by local and national non-profits, local and state government entities, Indian tribes, territories, and institutions of higher education supported by grant funds and providing local service opportunities for AmeriCorps Members.

### **AmeriCorps\*VISTA (Volunteers in Service to America)**

An AmeriCorps program focused on eradicating poverty. Members serve full-time at community-based organizations. Members of AmeriCorps\*VISTA serve full-time with community-based organizations, work and live in the communities they serve, and create or expand programs that can continue after they complete their service.

### **Clean Water Act (CWA)**

The Clean Water Act is the principal federal statute protecting navigable waters and adjoining shorelines from pollution. Section 311 of the CWA addresses pollution from oil and hazardous substance releases, providing EPA and the U.S. Coast Guard with the authority to establish a program for preventing, preparing for, and responding to oil spills that occur in navigable waters of the United States.

### **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**

CERCLA is one of the statutes that provides the federal government with authorities to respond to the release or threat of release of hazardous substances, pollutants, or contaminants into the environment.

### **Corporation for National and Community Service (CNCS)**

CNCS is a federal agency established under section 191 of the National and Community Service Act (42 U.S.C. 12651).

### **CNCS program staff**

Employees of CNCS grantees and CNCS supported programs that provide direct oversight and support to national service participants deployed to an incident.

### **CNCS staff**

The permanent, and temporary staff of CNCS, not to include State Commissions, grantees, sub-grantees or their staff.

### **Hazardous Waste Operations in Emergency Response (HAZWOPER)**

HAZWOPER is an occupational safety and health standard regarding waste operations planning and training per 29 CFR 1910.120.

### **Incident**

A natural or manmade occurrence or event that requires a response to protect life or property. Incidents can, for example, include major disasters, emergencies, terrorist attacks, terrorist

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threats, civil unrest, wild land and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, tsunamis, war-related disasters, public health and medical emergencies, and other occurrences requiring an emergency response.

**Learn and Serve America**

Learn and Serve America supports and encourages service-learning throughout the United States, and enables over one million students to make meaningful contributions to their community while building their academic and civic skills by providing direct and indirect support to community groups and higher education institutions. Adult volunteers from Colleges and Universities have participated in incident response and long-term recovery projects across the country.

**Living allowance**

A living allowance is a regular payment, not characterized as “wage” or “salary”, which may be provided to AmeriCorps members enrolled and active in an AmeriCorps program.

**National service participant**

An individual who is enrolled in a program funded by CNCS. This includes AmeriCorps members, Senior Corps and Learn and Serve participants.

**Oil Pollution Act (OPA) of 1990**

This legislation addresses a wide range of issues associated with preventing, responding to, and paying for oil pollution. Title 1 of OPA established oil spill liability and compensation requirements, including the Oil Spill Liability Trust Fund to help facilitate cleanup activities and compensate for damages from oil spills. In 1991, the United States Coast Guard created the National Pollution Funds Center (NPFC) to implement Title 1 of OPA, administer the OSLTF, and ensure effective response and recovery.

**Oil Spill Liability Trust Fund (OSLTF)**

OSLTF was created by Congress in 1986 and allows the federal government to collect industry revenue (via a tax) and place it in a fund available to OSCs and federal trustees to ensure rapid, effective response to oil spills. Specific uses of the fund include: removal costs & activities, natural resource damage assessments & restorations, claims for uncompensated removal costs & damages, and research & development. The Energy Policy Act of 2005 increased the maximum size of the Fund from \$1 billion to \$2.7 billion.

**On-scene Coordinator (OSC)**

For purposes of this MOU, the OSC is the federal official designated by the USCG or EPA to coordinate and direct response under Subpart D or E of the NCP.

**Pollution Removal Funding Authorization (PFRA)**

This is a tool available to FOSCs to quickly obtain needed services and assistance from federal, state, local, and tribal government agencies in oil spill and hazardous materials response actions. There are two types of forms (one for federal and one for non-federal agencies). The PFRA commits the OSLTF to payment by reimbursement of costs incurred in pollution response activities undertaken by another government agency working for the FOSC.

**Senior Corps**

Senior Corps taps the skills, talents, and experience of nearly 500,000 Americans age 55 and older to meet a wide range of community challenges through three main programs: RSVP, the Foster Grandparent Program, and the Senior Companion Program.

**Technical Operating Procedures (TOPs)**

TOPs serve as Coast Guard guidance for various Fund users. They provide formatting, forms, and instructions for compiling and submitting documentation efficiently and effectively.

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Examples include Response Guidance, State Access Guidance, and Claims Guidance. Each topic has individual PDF available online in the NPFC User Reference Guide.

**Unaffiliated volunteer**

An individual who comes forward following an incident or disaster to assist a governmental agency or non-Governmental Organization (NGO) with response activities during the response or recovery phase without pay or other consideration. By definition, unaffiliated volunteers are not yet associated with a response or relief agency involved in the incident. (Also known as “convergent” or “spontaneous” volunteers.)

**Volunteer**

An individual who offers to support communities affected by an incident without receiving financial reward or remuneration. Volunteers can either be affiliated with other organizations involved in supporting communities affected by an incident or be unaffiliated volunteers. Volunteers are distinct from national service participants in that national service participants receive financial support and direct coordination from CNCS.

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## **Addendum 2**

*The following information was updated January 10, 2012.*

Below are points of contact for CNCS for requests for presentations, planning, or response assistance. Please note also that the CNCS "Point of Contact" information in Section 6.0 of the MOU is out of date because CNCS reorganized after signing it. Please substitute the name of Kelly DeGraff as the MOU Section 6.0 point of contact for CNCS.

CNCS points of contact during regular business hours:

**Primary:**

Kelly DeGraff, Senior Advisor and Director of Disaster Services  
202-606-6697 (work)  
202-535-2014 (cell)  
[kdegraff@cns.gov](mailto:kdegraff@cns.gov)

**Backup:**

Katrina French, Disaster Service Specialist  
202-606-3612 (work)  
202-200-0646 (cell)  
[kfrench.guest@cns.gov](mailto:kfrench.guest@cns.gov)

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## **ANNEX IX**

# **MEMORANDUM OF UNDERSTANDING BETWEEN THE U.S. COAST GUARD, U.S. ENVIRONMENTAL PROTECTION AGENCY, AND U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE – WILDLIFE SERVICES**

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**MEMORANDUM OF UNDERSTANDING BETWEEN THE U.S. COAST GUARD, U.S.  
ENVIRONMENTAL PROTECTION AGENCY, AND U.S. DEPARTMENT OF AGRICULTURE  
ANIMAL AND PLANT HEALTH INSPECTION SERVICE – WILDLIFE SERVICES**

**ANNEX IX TO REGION 7 INTEGRATED CONTINGENCY PLAN**

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**MEMORANDUM OF UNDERSTANDING  
BETWEEN  
THE DEPARTMENT OF HOMELAND SECURITY UNITED STATES COAST GUARD,  
THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,  
AND  
THE UNITED STATES DEPARTMENT OF AGRICULTURE  
ANIMAL AND PLANT HEALTH INSPECTION SERVICE WILDLIFE SERVICES  
REGARDING  
WILDLIFE RESPONSE ACTIVITIES DURING OIL OR HAZARDOUS SUBSTANCE  
POLLUTION INCIDENTS**

**ARTICLE 1  
PARTIES**

This MEMORANDUM OF UNDERSTANDING (MOU) is made and entered into by and between the UNITED STATES COAST GUARD, hereinafter referred to as the USCG, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, hereinafter referred to as the EPA, and UNITED STATES DEPARTMENT OF AGRICULTURE, ANIMAL AND PLANT HEALTH INSPECTION SERVICE-WILDLIFE SERVICES, hereinafter referred to as APHIS-WS.

**ARTICLE 2  
AUTHORITIES**

The Coast Guard enters into this agreement under the authority of: 14 U.S.C. § 93(a)(20); 14 U.S.C. § 141; Federal Water Pollution Control Act, National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300; CERCLA, 42 U.S.C. § 9601-9675, Executive Order 12580, as amended and Executive Order 12777 as amended.

EPA enters into this MOU pursuant to: the NCP, 40 CFR Part 300; CWA, 33 U.S.C. § 1321; CERCLA, 42 U.S.C. § 9601-9675; Executive Order 12580, as amended, and Executive Order 12777, as amended.

APHIS-WS, enter into this MOU pursuant to: 7 U.S.C § 426, 426(b), 426 (c); NCP, 40 CFR Part 300.110; CWA, 33 U.S.C. § 1321; CERCLA, 42 U.S.C. § 9601-9675 and 44 CFR Part 206.

In addition, this MOU is consistent with the following Acts, Executive Orders, and administrative plans:

- Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. §§ 668-668d)
- Endangered Species Act of 1973 (16 U.S.C. §§ 1531-1544)
- Federal Land Policy and Management Act of 1976 (43 U.S.C. § 1701-1785)
- Fish and Wildlife Act of 1956 (16 U.S.C. § 742a et seq.)

- Fish and Wildlife Conservation Act of 1980 (16 U.S.C. § 2901-2911)
- Migratory Bird Treaty Act of 1918 (16 U.S.C. § 703-712)
- Multiple-Use Sustained-Yield Act [of 1960] (16 U.S.C. §§ 528-531)
- National Environmental Policy Act of 1969 (42 U.S.C. § 4321-4370d)
- Responsibilities of Federal Agencies to Protect Migratory Birds, Executive Order No.13186, signed 2001, 66 Fed. Reg. 3853 (Jan. 17, 2001)
- Fish and Wildlife Coordination Act
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- National Oil and Hazardous Substances Pollution Contingency Plan (NCP)
- National Response Framework (NRF)
- National Incident Management System (NIMS)

### USCG and EPA

USCG and EPA provide federal on-scene coordinators (OSCs) to respond to discharges of oil and releases of hazardous substances, pollutants and contaminants under Section 311 of the Clean Water Act (CWA) as amended by the Oil Pollution Act of 1990 (OPA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The EPA provides federal OSCs for responses in the inland zone, and USCG provides federal OSCs for responses in the coastal zone. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) found in 40 CFR Part 300 describes federal OSC authorities and responsibilities in detail.

### APHIS-WS

APHIS-WS has statutory authority under the Act of March 2, 1931 (46 Stat.1468; 7 U.S.C. 426-426b), as amended, and the Act of December 22, 1987 (101 Stat. 1329-331, 7 U.S.C. 426c), to cooperate with States, local jurisdictions, individuals, public and private agencies, organizations, and institutions while conducting a program of wildlife damage management, involving mammal and bird species that are reservoirs for zoonotic diseases or animal species that are injurious and/or a nuisance to, among other things, agriculture, horticulture, forestry, animal husbandry, wildlife, and human health and safety. Additionally 40CFR300.175 (6) (iv) specifies APHIS can respond in emergency situations to regulate movement of diseased or infected organisms, including animals. APHIS-WS has statutory authority to assist the federal OSC during response in supporting government oversight and management of wildlife response strategies. Specifically, to address wildlife issues that threaten the Nation's agricultural and natural resources, human health and safety, and/or property. APHIS-WS also has expertise with the humane capture, handling, hazing, and transport of wildlife impacted by an oil or hazardous substance pollution incident. However, APHIS is not staffed or funded to execute this activity as part of its statutory mission. Therefore, APHIS-WS would require funding from the federal OSC to execute this activity if called upon to do so during an incident.



### ARTICLE 3 PURPOSE

The purpose of this MOU is (1) to enhance cooperation, efficiency and effectiveness of wildlife response activities during oil or hazardous substance pollution incidents; (2) to strengthen the cooperative approach to oil or hazardous substance pollution response through exchange of information and mutual program support; (3) to recognize working relationships with relevant Federal agencies; and (4) formally acknowledge that APHIS-WS, as a Federal agency, has specialized tools and procedures, along with trained staff, and can provide assistance to capture, handle, haze, and transport wildlife during incidents involving oil or hazardous substance pollution response.

### ARTICLE 4 RESPONSIBILITIES

TO IMPLEMENT THE FOREGOING, the parties intend the following when a spill requires a wildlife response:

USCG intends:

1. To fulfill its mission of coordinating emergency preparedness and response to actual, or substantial threat of, oil discharges and hazardous substance release, as appropriate, include APHIS-WS in efforts to improve and implement the NCP and NRF procedures related to wildlife response.
2. To advise all of its District Commanders, predesignated federal OSCs, and Regional Response Team (RRT) members of the terms of this MOU.
3. To request APHIS-WS when needed to support oversight and management of wildlife response strategies at one or more incident command posts during an event. In such instance the APHIS-WS personnel will be working under their own authorities and funding.
4. To issue a Statement of Work (SOW) under a Pollution Removal Funding Authorization (PRFA), when deemed appropriate by the federal OSC, utilizing the Oil Spill Liability Trust Fund (OSLTF) or other appropriate funding authority when APHIS-WS is requested to provide additional expertise in the field engaging in the humane capture, handling, hazing, transport and so forth of wildlife impacted by an oil or hazardous substance pollution incident. A PRFA specifies a definite budgetary ceiling and a definite period of performance for accomplishing the SOW. The PRFA's SOW, budget, and period of performance may only be amended upon the express authorization of the federal OSC and documented on a PRFA Amendment signed by the federal OSC. Funding may be provided for services consistent with the NCP

and requested by the federal OSC. Cost documentation must meet National Pollution Funds Center (NPFC) standards for reimbursement. Cost documentation will be submitted in accordance with the time frames specified in the PRFA.

5. To assure appropriate language as jointly agreed to and provided by APHIS-WS is included in coastal Area Contingency Plans in regards to the number of trained APHIS-WS personnel and accompanying equipment available to support responses as described in paragraphs 3 and 4 above.
6. To notify APHIS-WS of potentially relevant oil spill and hazardous substance response training and exercises at the national, state, regional and local level.
7. To notify APHIS-WS as soon as possible of requested assistance following an incident with details generally coordinated via the Wildlife Branch within the Incident Command System (ICS).

EPA intends:

1. To fulfill its mission of coordinating emergency preparedness and response to potential or actual substantial oil discharges and hazardous substance releases as appropriate, and include APHIS-WS in ongoing efforts to improve and implement the NCP and NRF procedures related to wildlife response.
2. To advise all of its predesignated federal OSCs, National Response Team (NRT) and Regional Response Team (RRT) members of the terms of this MOU.
3. To issue a Statement of Work under a Pollution Removal Funding Authorization (PRFA), when deemed appropriate by the federal OSC utilizing the Oil Spill Liability Trust Fund (OSLTF), or an Interagency Agreement (IA) utilizing CERCLA funds when deemed appropriate by the federal OSC or the EPA, when APHIS-WS is requested to provide additional expertise in the field engaging in the humane capture, handling, hazing, transport and so forth of wildlife impacted by an oil or hazardous substance pollution incident.
4. A PRFA and IA specifies a definite budgetary ceiling and a definite period of performance for accomplishing the SOW. The Statement of Work, budget, and period of performance may only be amended upon the express authorization of the federal OSC and documented on an Amendment signed by the federal OSC. Funding may be provided for services consistent with the NCP and requested by the federal OSC, or in the case of CERCLA



funded response, when requested by the federal OSC and approved by the EPA or lead agency. Cost documentation must meet National Pollution Funds Center (NPFC) standards for OSLTF reimbursement and EPA standards for CERCLA reimbursement. When requesting reimbursement from OSTLF or CERCLA, cost documentation will be submitted in accordance with the time frames specified in the PRFA or the IA, respectively.

5. To assure appropriate language is included in inland Area Contingency Plans in regards to the number of trained APHIS-WS personnel and accompanying equipment that are listed.
6. To notify APHIS-WS of potentially relevant oil spill and hazardous substance response training at the national, state, regional, and local level.
7. To notify APHIS-WS as soon as possible of requested assistance following an incident with details generally coordinated via the Wildlife Branch within the Incident Command System (ICS).

APHIS-WS intends:

1. To provide appropriate language for inclusion in Area and Regional Contingency plans in regards to the number of trained APHIS-WS personnel and accompanying equipment available to support response in accordance with the provisions of this MOA.
2. To provide or furnish USCG and EPA OSCs with technical expertise in accordance with its own authorities and funding.
3. To provide assistance via PRFA or IA request with respect to wildlife capture, handling, transport and hazing techniques to prevent wildlife from becoming oiled or contaminated by a hazardous substance in accordance with the provisions and procedures outlined in applicable Area and Regional Contingency Plans.
4. To provide assistance to the EPA via an Interagency Agreement, during a CERCLA funded response, with respect to wildlife capture, handling, transport and hazing techniques to prevent wildlife from becoming contaminated by a hazardous substance, or prevent the spread of contaminated wildlife to non-impacted areas, in accordance with the provisions and procedures outlined in the SOW as well as applicable Area and Regional Contingency Plans.

5. To meet the site-specific financial management and record keeping responsibilities by organizing and retaining in a site file documentation of costs by site and activity (e.g., vouchers, billing statements, evidence of payment, audit reports).
6. To participate in and support the Incident Command System (ICS) response organization (e.g., Operations and/or Planning Section) as determined appropriate by the federal OSC/Unified Command to provide for the coordination and management of APHIS-WS staff in accordance with the provisions and procedures outlined in applicable Area and Regional Contingency Plans and spill specific Incident Action Plans and Wildlife supplements.
7. To disseminate information as directed by the federal OSC or UC, generally via the Wildlife Branch of the ICS, in accordance with the provisions and procedures outlined in applicable Area and Regional Contingency Plans.
8. To ensure APHIS-WS staff participating in response have appropriate Hazardous Waste Operations and Emergency Response (HAZWOPER) training to support the mission.
9. To participate, as available, in preparedness and planning activities, such as, RRT meetings, area committee meetings and National, Regional, State and local exercises.
10. To notify appropriate Federal, state, local, and tribal agencies prior to conducting wildlife response activities.
11. To comply with fiscal management and performance requirements and to provide the federal OSC with supporting expenditure and program management documentation related to fiscal compliance and program performance management in a format that is acceptable to USCG or EPA.
12. To complete required documentation and reports generally via the Wildlife Branch of the ICS, in a timely manner as mutually determined for a specific spill or release response.



## ARTICLE 5 OTHER PROVISIONS

USCG, EPA and APHIS-WS mutually understand that:

1. This MOU instrument in no way restricts USCG, EPA or APHIS-WS from participating in similar activities with other public or private agencies, organizations, and individuals. Similarly, nothing in this MOU is intended to modify in any manner the present cooperative programs of each agency with States, other public agencies, or educational institutions.
2. In collaborative activities and programs, USCG, EPA and APHIS-WS should recognize cooperative efforts by endeavoring to display each other's logos in a manner that is approved by the principal contacts of each party in accordance with agency procedures.
3. As required by the Antideficiency Act, 31 U.S.C. 1341 and 1342, all commitments made by EPA and USCG and APHIS-WS in this MOU are subject to the availability of appropriated funds and budget priorities. Nothing in this MOU, in and of itself, obligates EPA, USCG, or APHIS-WS to make any specific request for services to any agency, to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or incur other financial obligations. Any transaction involving transfers of funds between the parties to this MOU will be handled in accordance with applicable laws, regulations, and procedures under separate written agreements.
4. Nothing in this MOU is intended to conflict with current law or regulation or directives under which USCG, EPA, and APHIS-WS operate. If a term of this memorandum is inconsistent with such authority, then that term shall be invalid, but the remaining terms and conditions of this MOU shall remain in full effect.
5. When APHIS-WS is deployed to support a federal response which is directed by USCG or EPA, participants will operate under the ultimate direction of the federal OSC and all wildlife oil spill or hazardous substance response activities will be coordinated with the appropriate Federal, state, local and tribal agencies.
6. Each Party plans to participate in an open exchange of relevant information, as permitted by law (including funding opportunities), which furthers the mission of each organization.

7. Each Party to this MOU is separate and independent from one another. As, such, each organization will retain its own identity in providing services, and is responsible for establishing its own policies.

## ARTICLE 6 POINTS OF CONTACT

The principal contacts for this agreement are:

USCG  
Mary E. Landry, USCG  
Commandant  
Director of Incident Management and Preparedness Policy  
U.S. Coast Guard  
2100 Second Street SW, Stop 7363  
Washington, DC 20593-7363  
Phone: 202-372-2234

EPA  
Lawrence M. Stanton  
Director, Office of Emergency Management  
Office of Solid Waste and Emergency Response  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
Phone: 202-564-8600

APHIS- WS  
William H. Clay  
Deputy Administrator  
USDA, Animal & Plant Health Inspection Service, Wildlife Services  
1400 Independence Avenue, SW  
Room 1624 South Agriculture Building  
Washington, D.C. 20250-3402  
Phone: 202-799-7095

## ARTICLE 7 STATEMENT OF NO FINANCIAL OBLIGATION

Nothing in this MOU, in and of itself, obligates the Parties to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or incur other financial obligations. The Parties agree not to submit a claim for compensation for services rendered in connection with any activities it carries out in furtherance of this MOU. Each signatory party is to use and manage its own funds in carrying out the purpose of this MOU. Transfers of funds or items of value are not authorized under this MOU.

## ARTICLE 8 LIMITATIONS OF COMMITMENT

This MOU and any continuation thereof shall be contingent upon the availability of funds appropriated by the Congress of the United States. It is understood and agreed that EPA, USCG, and APHIS-WS intend that if any monies allocated for purposes covered by this MOU that such monies be expended in accordance with its terms and the manner prescribed by the fiscal regulations and/or administrative policies of the party making the funds available. If fiscal resources are to transfer, a separate agreement must be developed by the parties.

## ARTICLE 9 CONGRESSIONAL RESTRICTION

Under 41 U.S.C. 22, no member of, or delegate to, Congress shall be admitted to any share or part of the MOU or to any benefit to arise there from.

## ARTICLE 10 LIABILITIES

APHIS-WS will hold the Parties to the Agreement harmless from any liability arising from the negligent act or omission of the APHIS-WS officer or employee acting within the scope of his or her employment to the extent compensation is available pursuant to the Federal Tort Claims Act (FTCA), 28 U.S.C. 2671 et seq., except to the extent that aforesaid liability arises from the negligent acts or omissions of the Parties to the Agreement, its employees, agents or subcontractor, and employees or agents of the subcontractor(s). Such relief shall be provided pursuant to the procedures set for in the FTCA and applicable regulations.



ARTICLE 11  
REPORTING AND DOCUMENTATION

This MOU does not require follow-up reports or documentation of actions taken.

ARTICLE 12  
AMENDMENTS

This MOU may be amended at any time by mutual agreement of the parties in writing.

ARTICLE 13  
TERMINATION

This MOU may be terminated by any signatory party upon sixty (60) days written notice to the other party.

ARTICLE 14  
NO PRIVATE RIGHT OF ACTION

This MOU does not create any right or benefit, substantive or procedural, enforceable by law or equity, by persons who are not party to this agreement, against USCG or APHIS-WS or EPA, their officers or employees, or any other person. This MOU does not direct or apply to any person outside of EPA, USCG, and APHIS-WS.

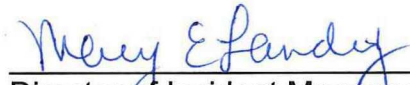
ARTICLE 15  
EFFECTIVE DATE AND DURATION

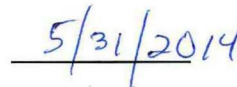
This MOU will be in effect upon date of final signature and will continue until it is terminated by written agreement of the parties. Ending date must not exceed 5 years from date of final signature. This MOU may be extended upon written request of the USCG, EPA, or APHIS-WS and the subsequent written concurrence of the other(s).

IN WITNESS WHEREOF, the parties hereto have executed this MOU as of the last written date below.

APPROVED BY:

DATE:

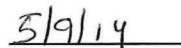
  
\_\_\_\_\_  
Director of Incident Management and  
Preparedness Policy  
(CG-5RI)  
U.S. Coast Guard

  
\_\_\_\_\_  
5/31/2014

  
\_\_\_\_\_  
Deputy Administrator  
U.S. Department of Agriculture, Animal  
and Plant Health Inspection Service,  
Wildlife Services

  
\_\_\_\_\_  
6/27/14

  
\_\_\_\_\_  
Director, Office of Emergency Management  
Office of Solid Waste and Emergency Response  
US Environmental Protection Agency

  
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5/9/14

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