



# **Situational Control**

## Inland Oil Spill Response Framework



*U. S. Environmental Protection Agency*



## Today's Agenda

- Welcome, Introductions
  - Hosts: NOSDRA; DG Musa & Yusuf Rigasa
  - U.S. Department of State, Consulate General Lagos
    - Briana Olson, Mayowa Obilade, Kene Onyeke
- Presenter
  - David Morrison, U.S. EPA, Region 5
  - U.S Environmental Protection Agency
- Overview of U.S. Oil Spill Response Framework
- ICS, the IAP and Critical Objectives
- Basic Response Tactics and Factors
- Incorporating Natural Resource Officials into the response structure.

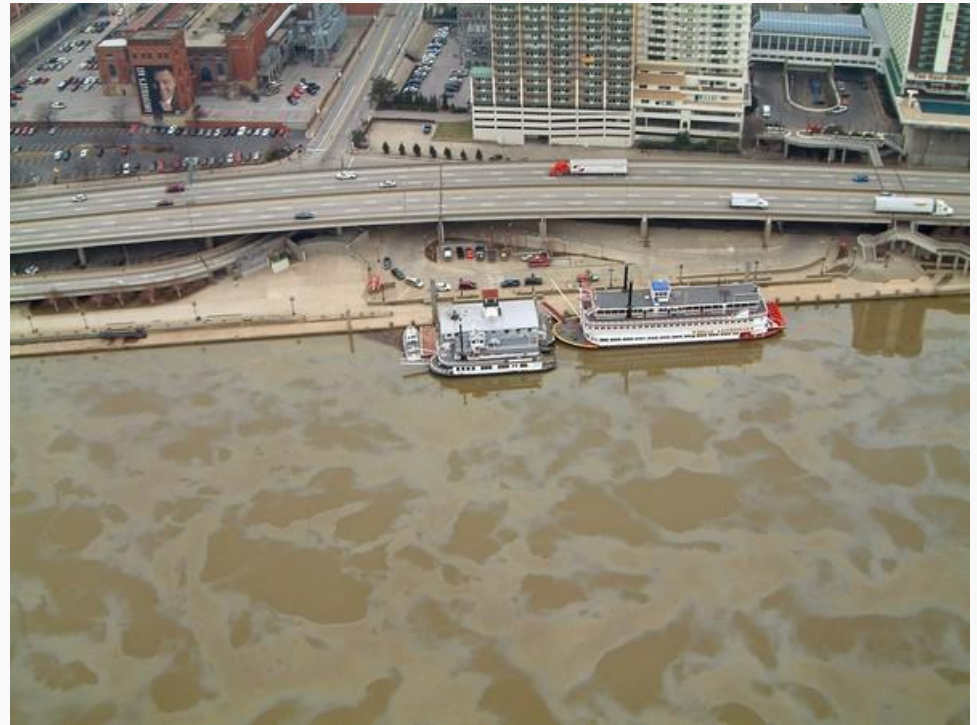


## Today's Team's Meeting

- Format for Teams meeting:
  - Please keep yourself on mute unless speaking.
  - Please turn your camera off to save on bandwidth, but please turn it on when having discussions.
  - Feel free to put a note in the chat function if something needs clarification.
  - We will stop periodically to check the Chat entries and try to answer questions.



# Inland Oil Spills, When things go wrong !





# Incident Management:



- Helps establish the multi-jurisdictional oil spill response framework.
- Sets clear objectives
- Describes the critical tasks pertaining to initial site management and control.
- Identifies the subordinate command and general staff positions that might be utilized for large incident.
- Describes how to manage complex incidents with federal, State and Local partners along with a Responsible Party.
- Protects people, their welfare, and the environment.



In the USA National Incident Management System, There is a transition in every large incident from a single Incident Commander (IC), to a Unified Command (UC), and then to a Responsible Party Cleanup with Regulatory oversight.

## Public Safety Phase

Incident Commander (Do or Delegate !)	
Name:	_____
(Fire / Police)	_____
Phone #	_____
Radio Talk Group:	_____
Deputy (s):	_____
(Trained to same level as Commander)	_____

Briefing  
201

## Unified Command Phase

Unified Command (Federal-FOSC, State-SOSC, Local-LOSC)	
Names (Org.):	Phone #
_____	_____
_____	_____
_____	_____
_____	_____
Radio Talk group:	_____
Deputies:	_____
(Example: MPCA, DPS, MDH, MDA, DNR, USCG, CAER, Public Works, etc.)	_____

Briefing  
201

## Environmental Phase "Cleanup"

Responsible Party Lead (Cleanup Phase)	
Company	_____
Lead Representative	_____
Phone #	_____
On-Site Coordinator:	_____
Phone #	_____
FEDERAL or STATE On Scene Coordinator:	
_____	_____
Phone #:	_____
State Deputy On Scene Coordinator	
_____	_____
Phone #:	_____

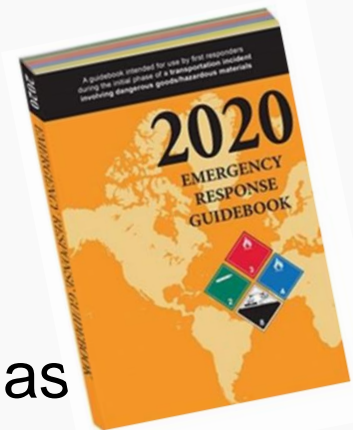
*This is also referred to as an ICS evolution plan.*

# Incident Management Principles



Initial site command and control is by local public officials, Typically Fire and/or Police Departments.

Emergency Responder follow guidance in the North American Emergency Response Guidebook (ERG) as developed by the U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA).



<https://www.phmsa.dot.gov/hazmat/erg/erg2020-mobileapp>

*The ERG provides guidance on Isolation and Protective Actions.*

# Incident Management Principles



## The Transition to a Unified Command.



U.S. EPA and U.S. Coast Guard Federal On-Scene Coordinators (FOSCs) have the authority to lead oil and hazardous substance response. FOSCs provide technical and contract support to local ICs in an incident.

**Early Transition** to a unified command can help organize the myriad of organizations that respond to an incident and more directly guide Responsible Party response actions.

# A major component of the Framework



The Incident Command System (ICS)  
And the Incident Action Plan (IAP).  
- *Achieving the Response Objectives.*





Incident Name:

\_\_\_\_\_

2. Operational Period to be covered by IAP (Date/Time)

From: DISCOVERY

\_\_\_\_\_

To: OPERATIONAL PERIOD #1

\_\_\_\_\_

IAP COVER SHEET

Big/Bad Oil Spill



## INITIAL INCIDENT ACTION PLAN

The items below are included in this Incident Action Plan

- [ICS 202](#) Response Objectives
- [ICS 234](#) Work Analysis Matrix Objectives/strategies and tactics/tasks
- [ICS 207](#) Organization Chart
- [ICS 204](#) Assignment Lists
- [ICS 205](#) Incident Communications Plan
- [ICS 206](#) Medical Plan
- [ICS 223](#) Health and Safety Message
- [ICS 214](#) Unit Activity Log

### Other Attachments

The following attachments are not included in the IAP template. Please check and include any additional forms or attachments to be added to this IAP.

☐ [ICS 208 Site Safety and Control Plan\(s\)](#)

(Unless otherwise specified, every organization shall respond in accordance with the safety policies and procedures of their respective organizations)

☐ [ICS 213 General Message Form](#)

(For issuing approved information releases from the IC to the JPIC. (PIO's))

☐ [ICS 225 Maps / Charts](#)

(Select and add maps, as necessary)

☐ [ICS 232 Resources at Risk Summary](#)

(Sensitive areas list of priorities. Refer to Inland Sensitivity Atlas Maps & Figures. Add tables or maps, as necessary)

☐ [Weather Forecasts / River flow – currents – conditions](#)

☐ [Insert Additional Attachment - Delete if not needed](#)

☐ [Insert Additional Attachment - Delete if not needed](#)

### General Incident Summary

Incident Information and Incident Status:

(Include Incident location, latitude/longitude, estimated quantity spilled, spill rate etc.)

Prepared By:

(Name/Title)

\_\_\_\_\_

Date/Time:

\_\_\_\_\_

Approved by:

(Name/Title)

\_\_\_\_\_

Date/Time:

\_\_\_\_\_

**Step 1**  
**Establish a**  
**Response Plan**



## Step 2 Set Objectives for the Response

### Common Objectives typically cited in IAPs.

1. Ensure the health and safety of the public and response personnel. (evacuations, air monitoring, security)
2. Conduct all the appropriate notifications, including notifications to local officials, and downstream communities.
3. Establish A Response Structure:
  - establish Incident Command / Unified Command (IC/UC)
  - establish an Incident Command Post (ICP).



4. Provide and manage necessary communications for all response personnel.
5. Control/stop the source of the spill, contain, & recover Oil.
6. Coordinate response actions with natural resource trustees.
  - Evaluate resources-at-risk
  - protect downstream sensitive resources,
  - minimize response related environmental impacts.

## ICS – 202 Incident Objectives



7. Establish a wildlife branch: Implement wildlife deterrence, reconnaissance, recovery, rehabilitation, and release procedures.
8. Inform and update the affected public, governmental officials and news media on the status and progress of response actions.
9. Obtain emergency permits (ex: working in a wetland) and landowner permissions (access agreements).
10. Other.....

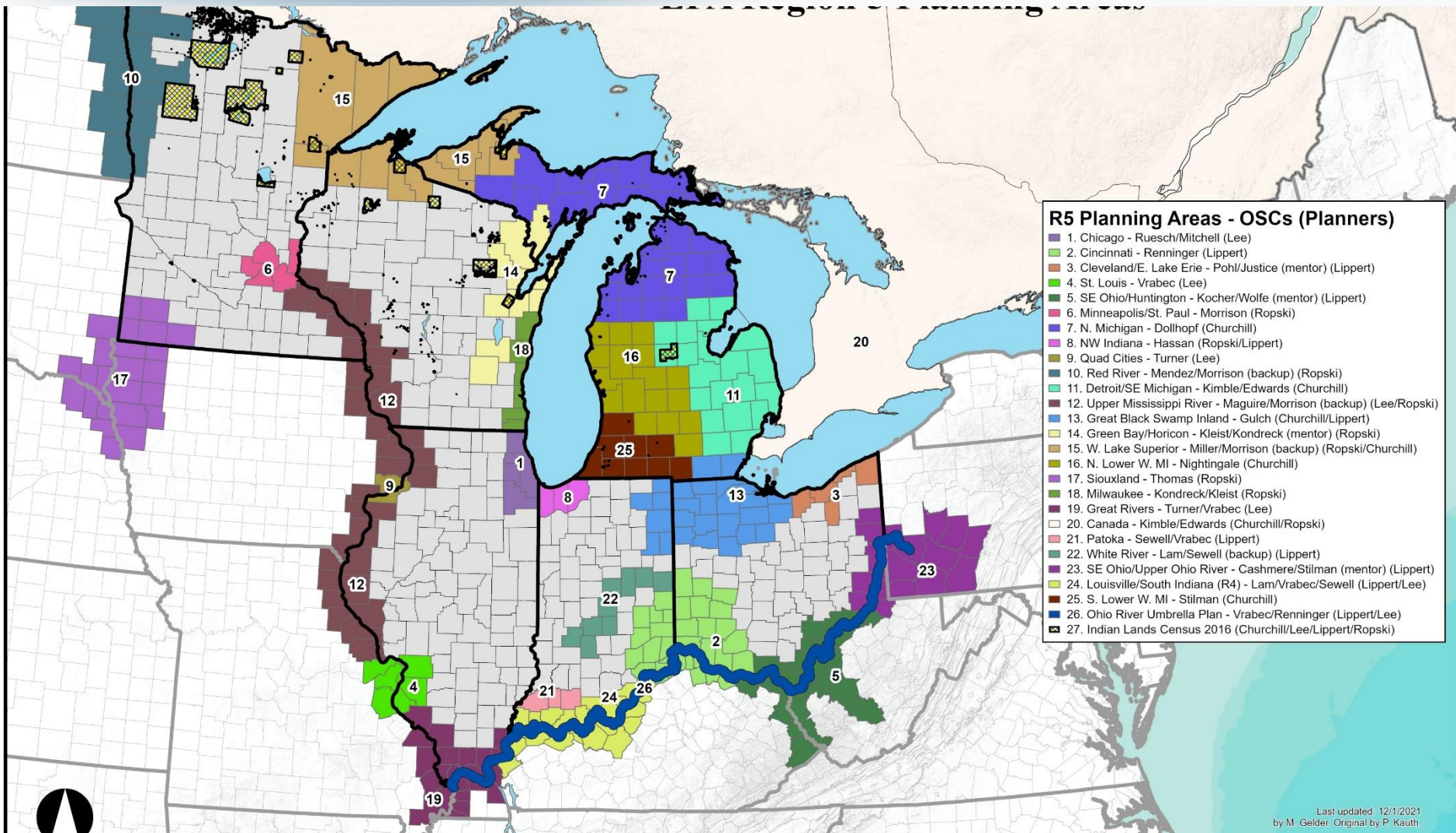


At EPA, Region 5, an initial action plan had been developed and is a part of all sub-area plans.

Area Planning is major function of the USA National Oil and Hazardous Substances Pollution Contingency Plan (NCP).



# Area Contingency Planning under the NCP



Last updated: 12/1/2021  
by M. Gelder. Original by P. Kauth.

## Sub-Area Plans for EPA Region 5, USCG Districts 8 & 9.



Questions or Discussion Points ?

# Management by Objectives



## The Importance of Management by Objectives:

- What needs to get done, not how it is to be done.
- Good Objectives need to be Specific, Measurable, Action Oriented, Realistic, Time Sensitive (SMART).



Incidents Great and Small



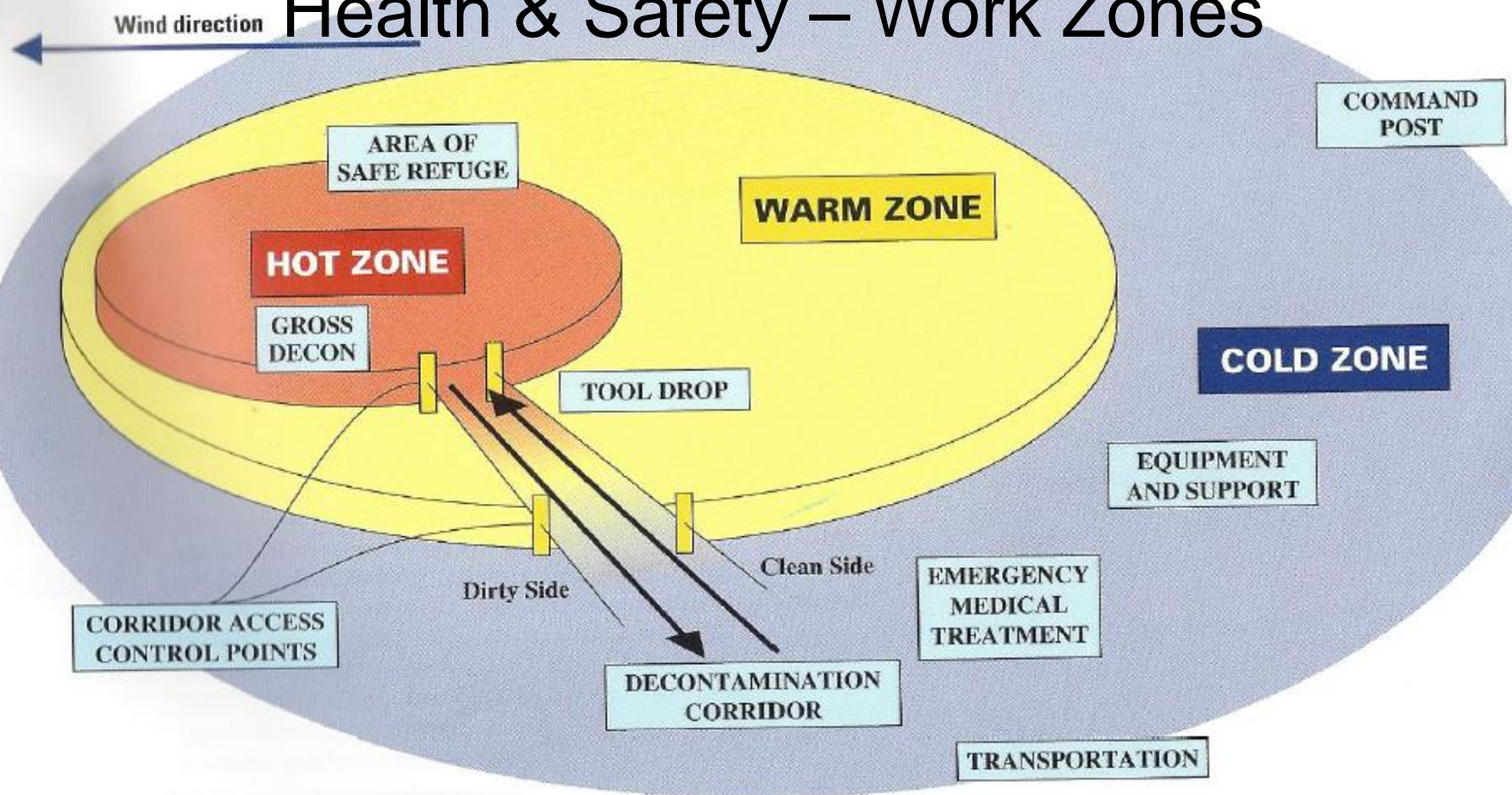


# Objective 1: Health & Safety for the Responders and the Public.

- Evacuations Control Zones
- Air Monitoring
  - Flammable vs. toxic
- Personal Protective Equipment (PPE) Selection
- Slip and Fall
- Water Response – Steep banks, current speed
- Heat Stress
- Confined Space



# Health & Safety – Work Zones





# Health & Safety – Air Monitoring

- Air Monitoring and Respiratory Protection
  - Flammable vs. toxic
  - Benzene is often used as a key decision point.



# Health & Safety



Those involved in managing the incident need to ensure that each organization responding has developed a health and safety plan (HASP).

Job Hazard analyses should provide the list of Appropriate PPE.



Inner and Outer Gloves.





# Typical HASP elements:



Safety  
Glasses



Level C PPE with Coated  
Protective splash suit and  
APR respirators



1/2 face  
APR



Personal Flotation  
Device (PFD)



Disposable booties



Oil-Resistant  
Footwear



# Health & Safety

- Traffic injuries & high visibility clothing requirements

Physical safety





# Health & Safety – Water Response

- Water Response – Steep banks, current speed





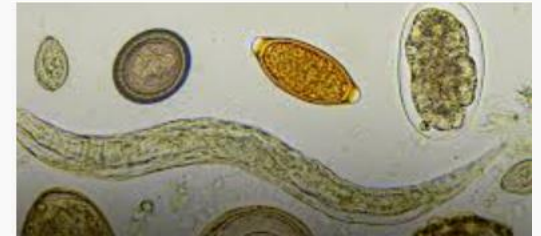
# HASP Components cont.



## Insect, Animal, and Plant Hazards



## Freshwater Parasites



Responder travel/deployment vaccination requirements.  
- Viral and bacterial vectors.

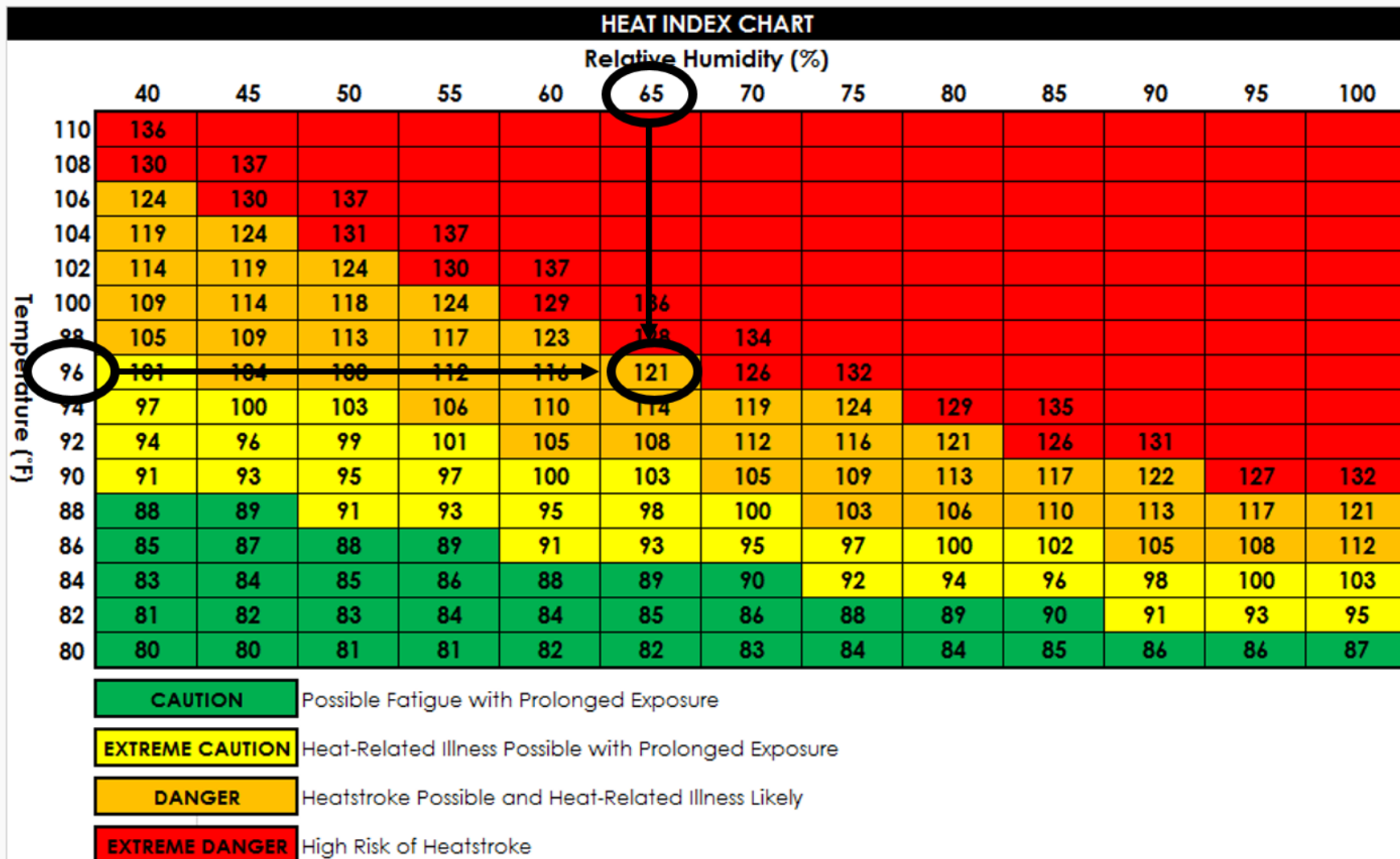
# Security and Night-work Hazards



- HASP should contain an Annex or Separate Chapter for Site Security.
- HASP Should address Night- time Operations (or work suspensions).
- HASP should address Boating safety.



# Heat and Sun Safety





# Crude Oil - Public Safety Management

- *Placeholder, to be discussed Separately.*



## Objective 2: Ensuring Notifications are made.

### Absolutely Critical Element of a Response.

- Stakeholders are counting on notifications by official established processes.
- Non-Emergency stakeholders, such as Natural Resource experts, are often not in a formal notification program so a specific effort needs to be made to include them in the response.





# Initial Reporting/Preliminary Assessment

- Oil companies should have template spill reporting forms with basic expected information.
- Initial assessment should give consideration to all hazards associated with incidents.
  - Is there a Safety Data Sheet
  - What are the weather conditions
    - How will conditions affect the material
    - What are safety concerns for the responding personnel
    - Do personnel have the right Personnel Protective Equipment



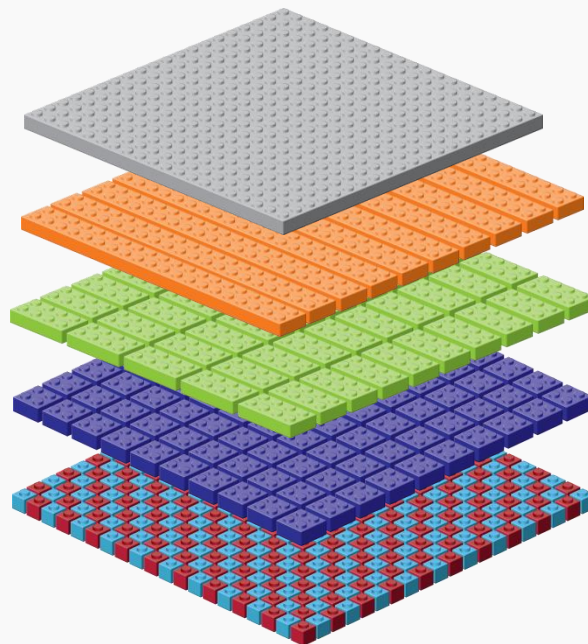


Rapid Notification allows for the activation of existing plans.

*Everyone has a plan !*

## PLANS

- National Contingency Plan
- Regional Contingency Plans
- Area Contingency Plans
- State Contingency Plans
- Local Emergency Operations Plans
- Industry Plans



## PLANNING GROUPS

- National Response Team
- Regional Response Teams
- Area Committees
- States Environmental Programs
- Local All Hazard Planning
- Industry trade groups

Example of U.S. Planning Layers

# USA Planning Examples:



- State Emergency Operations Plan
  - coordinating state government response to a major emergency or disaster.
- Municipal Drinking Water Source Protection Plans,
- Municipal Stormwater Pollution Prevention Programs (SWPPP)
  - Local Watershed protection programs.
- County All-Hazard Plans
  - cooperative interoperability among the municipal governments and the county.
- Chemical Emergency Response Plans
  - Local Emergency Planning Committees
- City Emergency Operations Plans (EOPs)
  - Standard Operating Procedures for State Hazardous Materials Teams.

Many organizations have placed equipment caches in strategic deployment areas



# USA Examples more plans:



## - Required Private Sector Plans.

- Federal Spill Prevention, Control, and Countermeasure Plans (SPCC)
- EPA regulated- Facility Response Plans (FRPs) for large oil facilities,
  - Required Emergency Response Action Plans (ERAPs).
- USCG regulated- Vessel and Facility Response plans,
  - Natl. Preparedness for Response Exercise Program (PREP) drill requirements.
- State Statutory-required Oil spill prevention and response plans
- State Hazardous Waste Generator's Emergency Contingency Plans
- State Agricultural Chemical Incident Response Plans
- Department of Transportation (DOT), Pipeline Hazardous Materials Safety Administration (PHMSA) Pipeline Oil Spill Response Plans
- DOT/PHMSA Comprehensive Oil Spill Response Plan for Railroads
  - High-Hazard Flammable Trains Response Plans.



Ensure Notifications, Bring consistency and transparency to the response.



# Objective 3: Establish a Response Structure







# Single Vs Unified Command

## Single Incident Commander

The Incident Commander is:

- Solely responsible (within the confines of his or her authority) for establishing incident objectives and strategies.
- Directly responsible for ensuring that all functional area activities are directed toward accomplishment of the strategy.

## Unified Command

The individuals designated by their jurisdictional or organizational authorities work together to:

- Determine objectives, strategies, plans, resource allocations, and priorities.
- Execute integrated incident operations and maximize the use of assigned resources.

# Unified command



Unified Command offers the following advantages:

- A shared understanding of priorities and restrictions

- A single set of incident objectives

- Collaborative strategies

- Improved internal and external information flow

- Less duplication of effort

- Better resource utilization





*Reminder:* move toward **Early Transition** to a Unified Command.

A Unified Command Typically Consists of:

- Federal Oil Spill Lead (FOSC),
- State Oil Spill or Environmental Lead,
- A Responsible Party Qualified Individual or Representative,
- Local Fire Chief  
(often starts and then steps down after a couple of days)
- Local County Sheriff or Police

Note: A spill affecting Tribal lands will include a Tribal Official.





# The Importance of integrating the oil industry (responsible parties).

Most oil companies have trained responders and are prepared to operate within ICS.

- The Responsible Parties will provide resources.
- A unified command places public officials in a direct position to help direct the response.

Engage with Companies during planning and preparedness phase to understand capabilities.

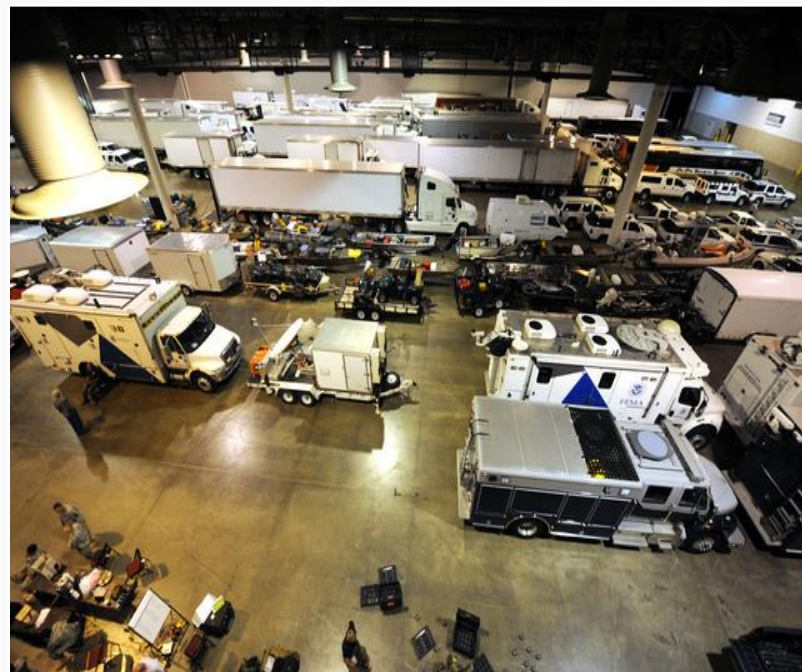




# Incident Management Teams

Federal, State and Regional Incident Management Teams (IMTs) provide planning, logistics and incident management support to the IC/UC.

Reiterating!  
Oil Company IMTs must  
accommodate and support a  
Unified Command.





## Objective 4: Provide for Communications

Immediate Emergency Response is typically a radio-based communications structure with Law Enforcement, Fire Department, EMS and emergency dispatch. Private companies also rely heavily on local VHF or encrypted radio.

Upside: Immediate Public Health and safety is addressed.

Downside: Federal and State Oil Spill Officials can be left out of this communications Process.

# Interoperability



Interoperability is essential for Police, Fire and Emergency Medical Services (EMS).

- Radio encryption can be a problem if trying to share radio communications with mutual aid or outside groups coming to help.

For the Oil Spill Response,

- Interoperability should be practiced in oil spill and chemical release exercises.



# Identify Communication Needs

- External Communication
  - What resources are available for assistance
  - What stakeholders are available
- Internal Communication
  - Identify internal hierarchy of information flow
  - Who needs to know
  - What do they need to know
  - Periodic updates





A response structure must provide communication needs on longer time-scales.

(Multi-day / Weeks / Months)

## On Many Platforms

- Responders will need Radio channel Information, work (or personal) mobile phone numbers.
- Agencies may need internal-facing websites or share point file sharing, citizen call-in numbers established.
- Public Information officers will need external-facing websites, social media messaging.
- Responsible Parties will need published call-in numbers for claims.

## Questions or Discussion Points ?





## Objective 5: Stop the source, contain and recover discharged oil.





## Required Response planning times are established by Rule for Significant Oil Facilities

Operating Area	Geographical Scope	Specified Response Time Interval*
Higher Volume Port Areas	Boston, MA; New York, NY; Delaware Bay and River to Philadelphia, PA; St. Croix, VI; Pascagoula, MS; Mississippi River from Southwest Pass, LA to Baton Rouge, LA; Louisiana Offshore Oil Port (LOOP), LA; Lake Charles, LA; Sabine-Neches River, TX; Galveston Bay and Houston Ship Channel, TX; Corpus Christi, TX; Los Angeles/Long Beach Harbor, CA; San Francisco Bay, San Pablo Bay, Carquinez Strait, and Suisun Bay to Antioch, CA; Straits of Juan de Fuca from Fort Angeles, WA to and including Puget Sound, WA; Prince William Sound, AK; and Others as specified by the EPA RA for any EPA Region.	12hr arrival time + 3hr deployment time = <b>15 hours</b>
Great Lakes	Lakes Superior, Michigan, Huron, Erie, and Ontario, their connecting and tributary waters, the Saint Lawrence River as far as Saint Regis, and adjacent port areas.	24hr arrival time + 3hr deployment time = <b>27 hours</b>
All other rivers and canals, inland, and nearshore areas		24hr arrival time + 3hr deployment time = <b>27 hours</b>

*\*Specified time interval includes 3 hours for deployment of response resources.*





## Oil Type, Behavior, and Risks

- Crude Oils (high and low sulfur types)
- Refined Petroleum oils
  - Diesel, gasoline, fuel oils, kerosene, mineral oils
- Natural gas condensate
  - “Natural gasoline” or “drip oil”
- Produced water and oil/water mixtures
- Asphalt and heavy oils (neutral buoyancy or sinking oils)
- Synthetic oils
  - Heat transfer fluids, engine fluids, hydraulic and transmission fluids, metalworking fluids, dielectric fluids, compressor lubricants, and turbine lubricants
- Non-petroleum oils
  - Coal tar, creosote, silicon fluids, pine oil, turpentine, and tall oils
- Biofuels and Vegetable Oils



## Requesting and Deploying with the Right Equipment.



*Early Mobilization of the Right Equipment is critically important.*



# Containment & Recovery Considerations



- Key Logistical issues:
- Access for personnel and equipment
  - Temporary roads ?
- Staging Areas
- Staging Waste Areas



# Containment & Recovery Considerations



Ensuring Orderly deployment of Trained Personnel.



Responder Proficiency  
and Oversight.





# Response Tactics



- Recover spilled material
  - Manual
  - Mechanical
  - Sorbents
  - Skimmers
  - Vacuum Trucks





# Skimmers

- Efficiently removes oil layer from the top of the water surface
- Skimmer spins and uses surface tension of oil to stick to the barrel
- A squeegee scrapes the oil off into tray, which is then vacuumed to a truck
- Disadvantage: Won't pick up sheen.





# Response Tactics



## Excavation of perimeter trench



## Recovery Trench





# Response Tactics



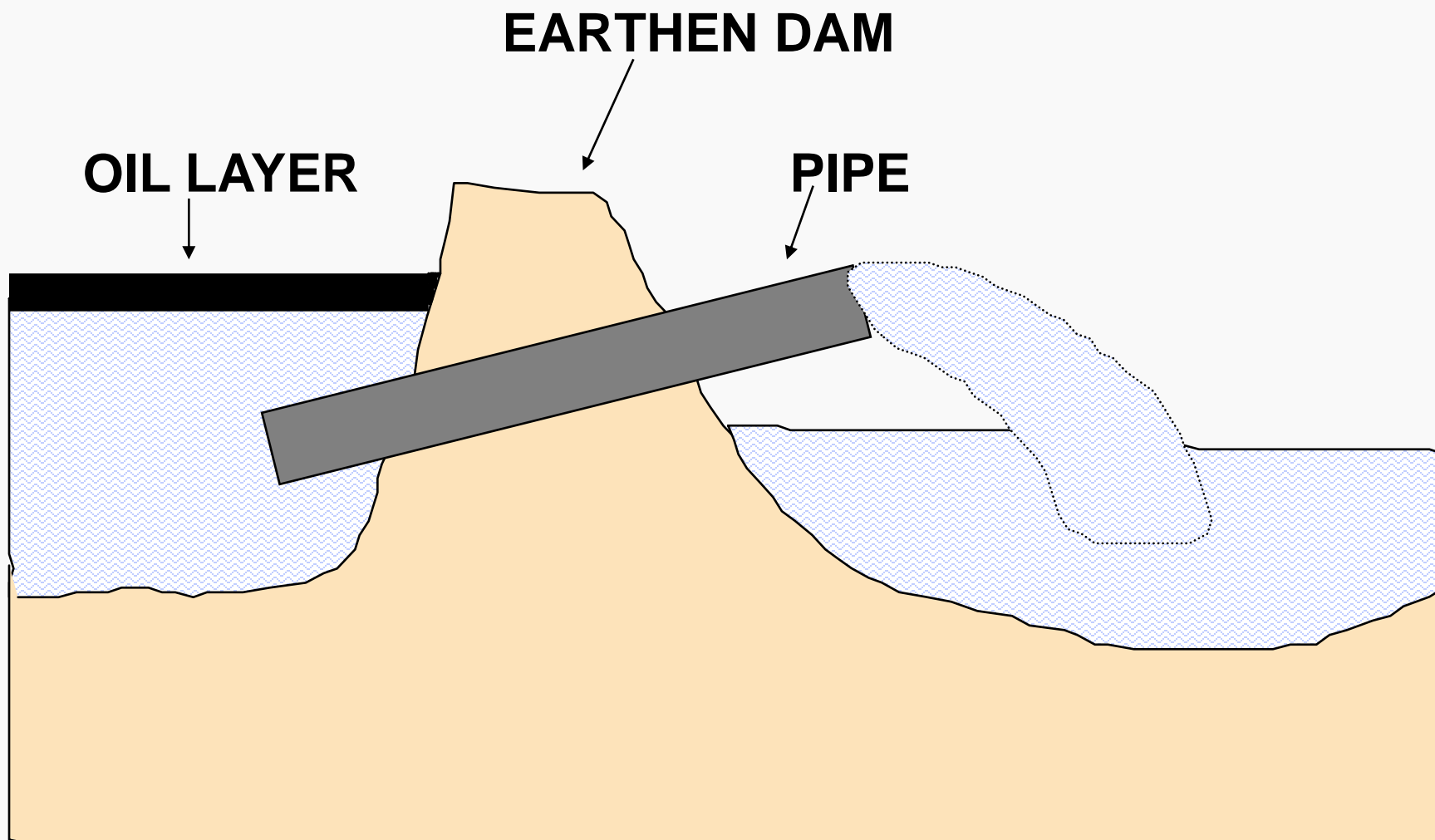
## Dam – Dike - Berm



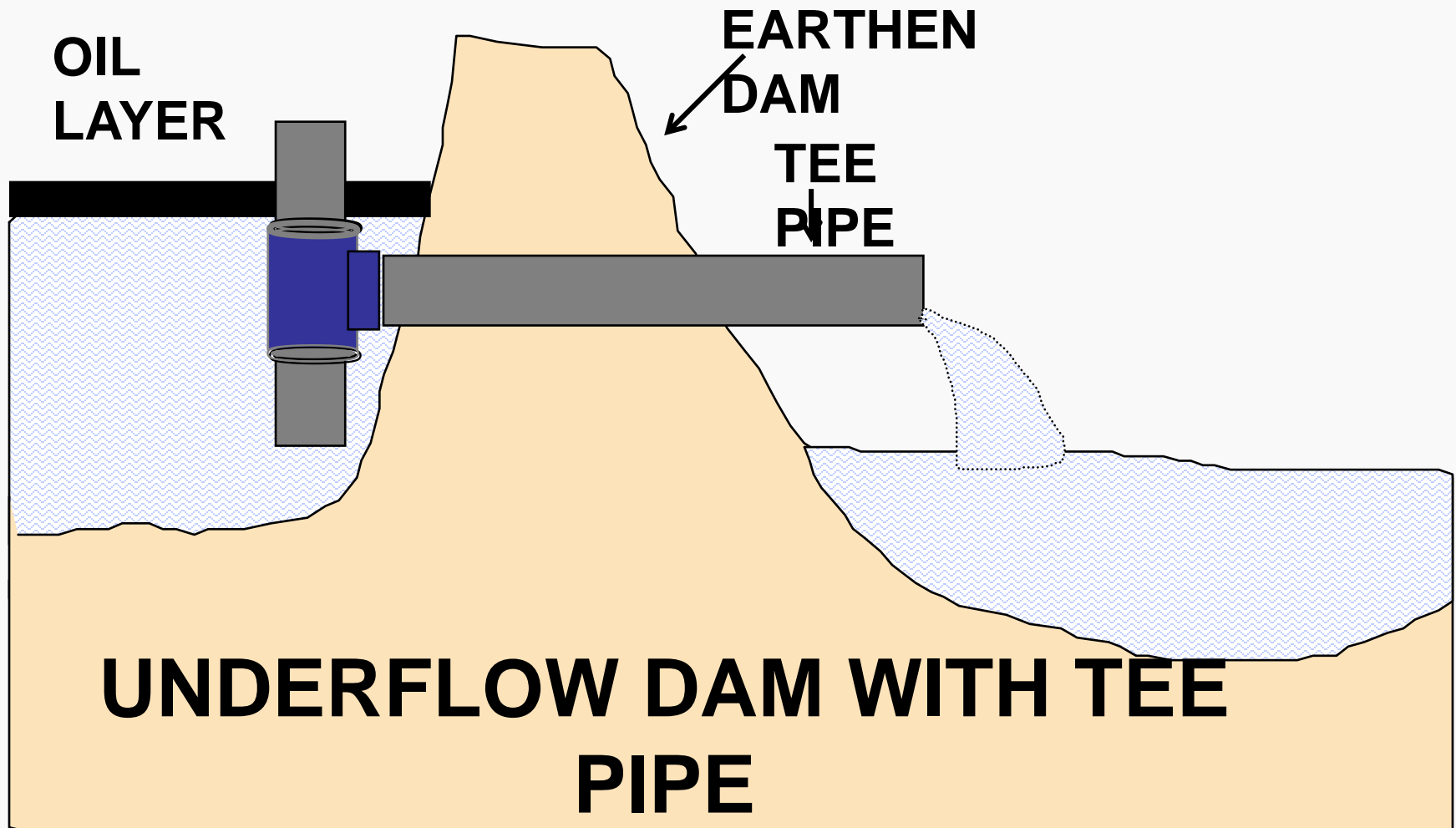
Swamp Mats for temporary roads



# Underflow Dam



# Underflow Dam



# Underflow Dams











# Gabion Basket

*for in-stream collection*





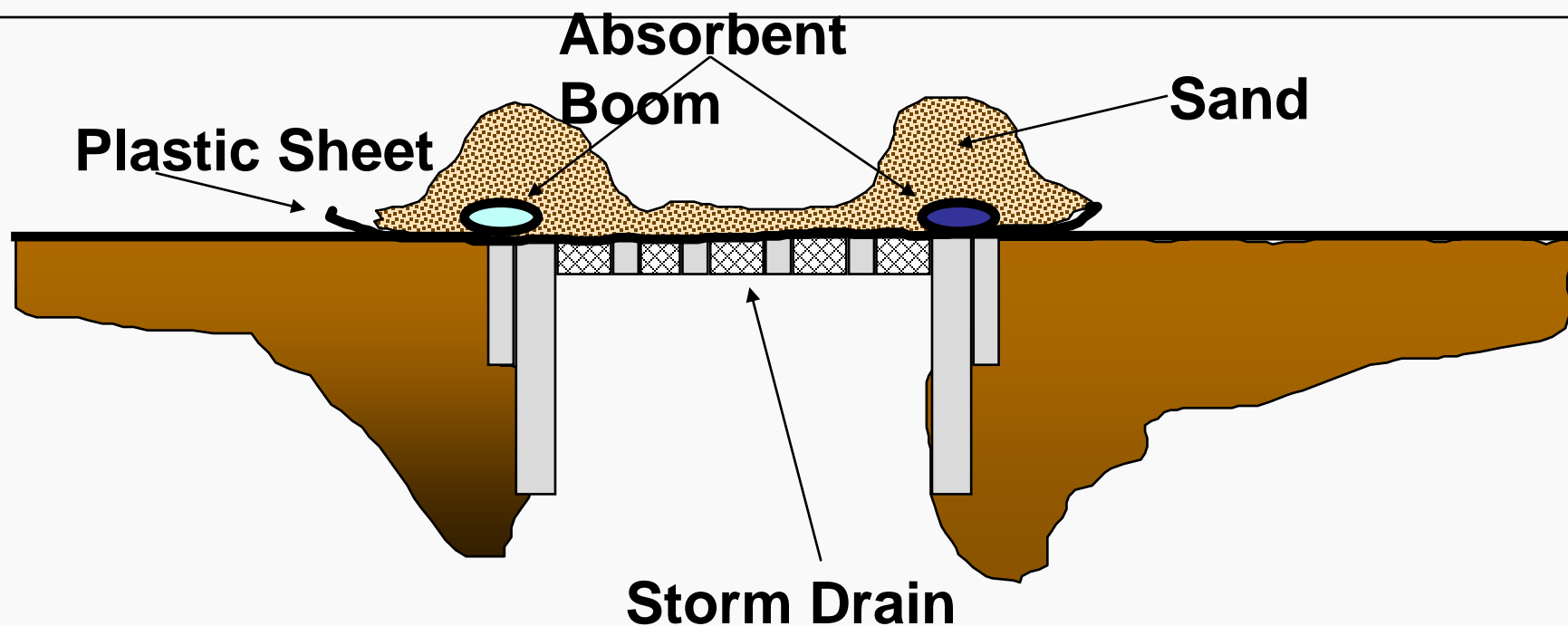
# Response Tactics Cont.



- Aeration (air curtain or dissolved oxygen refuge area)
- In-Situ Burn
- Natural Attenuation
- Shoreline Cleaning



## Cross-Sectional View of Covered Drain



# Absorbent Materials



- Boom / Pads
- Used to remove small quantities of oil from the River
- Absorb ~ 45 liters each
- Disadvantage: increasing waste generation.





## Booming Types

- **Containment booming** is used to contain oil for recovery
- **Exclusionary booming** is used to exclude the oil from entering sensitive and other areas, including structures
- **Diversiónary booming** is used to divert oil from sensitive areas or to suitable collection areas.





# Oil Boom Deployment Considerations

- Narrow Points accelerate flow
- Shallow areas accelerate flow
- River bends/Curves
  - Flow outside of bend is faster and deeper;
  - Flow inside of bend is slower and shallower
- Upstream Debris
- Weather conditions
- Anchor points must hold boom, current forces, oil and debris





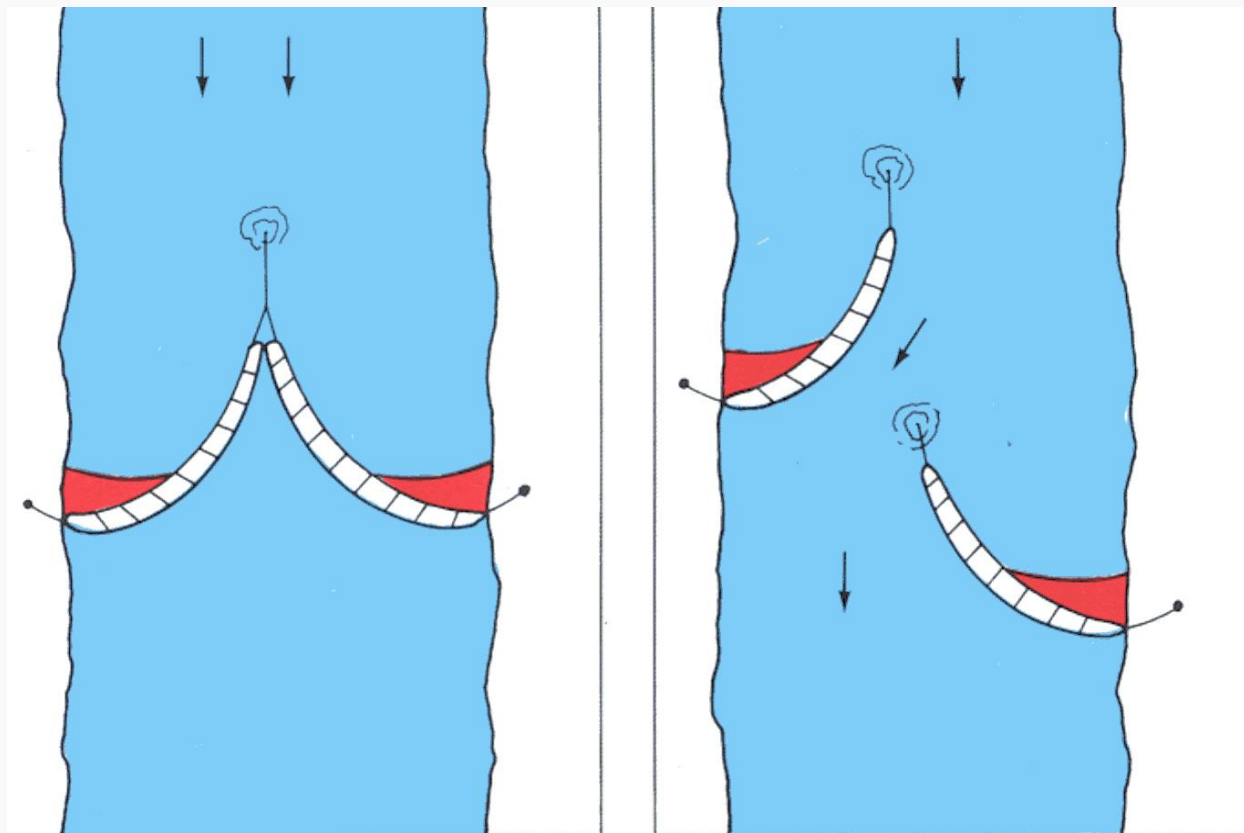
## Boom Types

- Calm water: 6 – 24 inch boom skirt depth
- Calm water, with current: 8 – 24 inch boom skirt depth
- Fast water: Utilize 6-inch skirted boom
- Open water: 36 – 90+ inches boom height



# Boom Configurations

- Continuous Boom
- Cascade
- Open Chevron
- Closed Chevron
- J-Configuration
- Encirclement





## When Good Boom is Deployed Poorly

- Entrainment Failure: Loss of oil when pulled under boom by a strong current.
- Drainage Failure: As large volumes of oil collect behind the boom increasing the depth, the oil “drains” under the boom curtain
- Splashover Failure: Caused by choppy seas; oil splashes over the top of the boom
- Submergence Failure: When boom is deployed in fast currents or when being towed. Boom buoyancy exceed by the force up on the boom.





Worthless.....Ask them to reset the boom straight and direct the oil to a stream bank collection point.





This deployment has gaps and bulges.....fail!!!





This one is pretty obvious.....





## Questions or Discussion Points ?







## Objective 6: Incorporating Natural Resource Trustees into the response.





1. Notify Natural Resource Trustees
  - *designate someone to make those calls.*
2. **Stand-up** (or establish) **an Environmental Unit** within the response structure.
3. High Priority - Identifying Resources at Risk

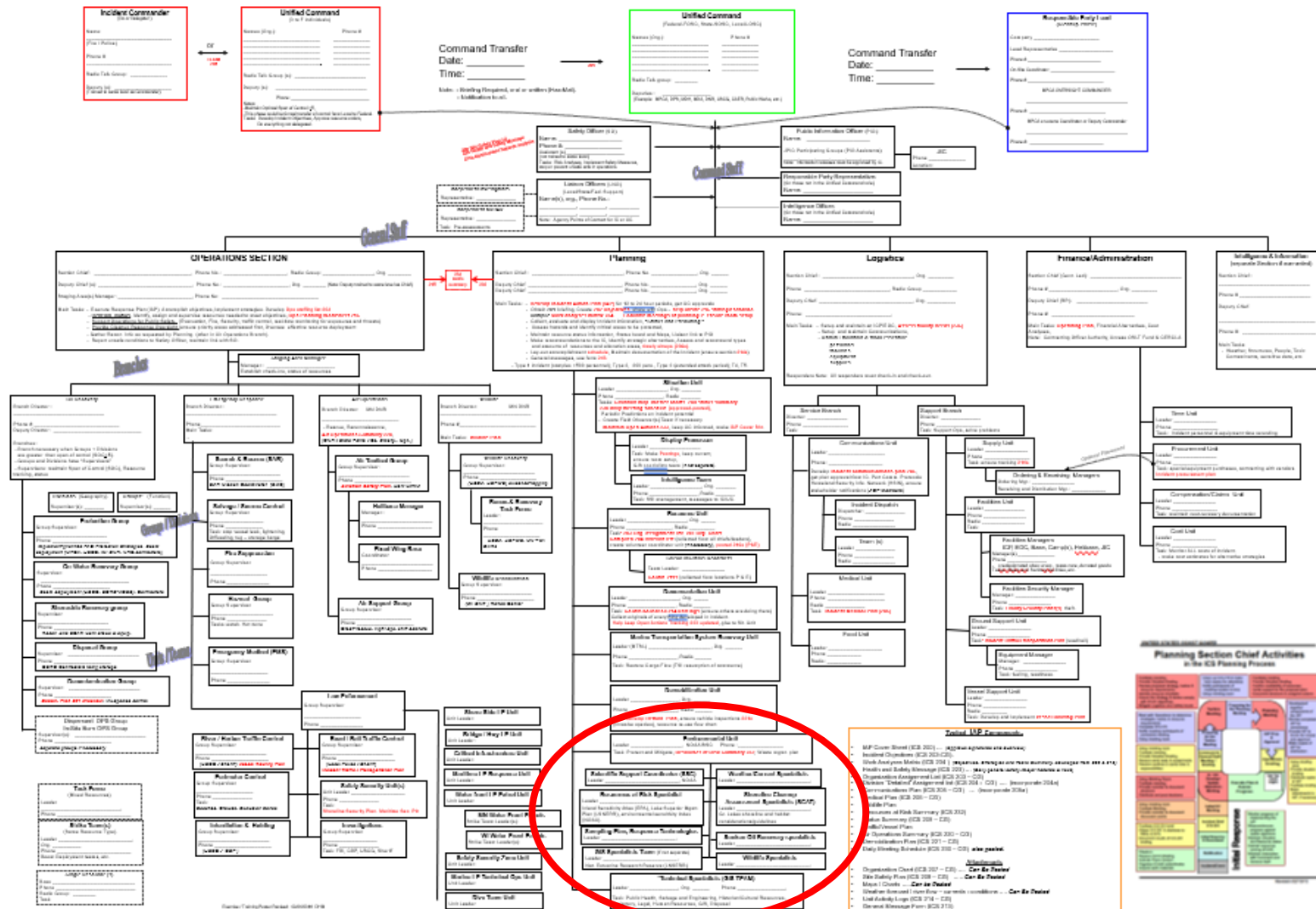
# Incident Command Structure – ICS Evolution Plan (Federal Lead)

Planning JobAid Only  
Not for public posting  
Not official OGC content

## Public Safety Phase

## Step-Down Phase

## Environmental Phase "Cleanup"



Deep in the heart of a complicated response is the driving force:  
**"The environmental unit"**

# Common Environmental Unit Structure



## Environmental Unit Leader (ENVL)

Leader \_\_\_\_\_, (NOAA/SSC or EPA/State OSCs) Phone : \_\_\_\_\_

Tasks: Protect and Mitigate, Support IAP development,  
**Provide timely recommendations to UC/Operations**

## Scientific Support Coordinator (SSC) or Deputy ENVL

Leader \_\_\_\_\_, (NOAA/USCG)

Environmental model development

## Weather/Current Specialists

Leader \_\_\_\_\_

## Sampling Plan Team

Leader \_\_\_\_\_

**Provide SAP/Environmental Data Packages**

(PIO/SITL support)

Environmental & Human Health

Assessment/Monitoring

Data Interpretation/analysis/summaries

Support NRDA

Lab coordination and QA

## Shoreline Cleanup Assessment Specialists (SCAT)

Leader \_\_\_\_\_

**shoreline and habitat considerations/guidelines**

## GIS Specialists Team (if not separate)

Leader \_\_\_\_\_

ex: Nat. Estuarine Research Reserve (LNSERR)

## Air Monitoring-Long Term

Leader \_\_\_\_\_

**Provide Human Health Data Packages**

(short-term air monitoring in Ops Unit/safety plan)

## Resources at Risk Specialist

Leader \_\_\_\_\_

**Resources at Risk Summary 232**

Inland Sensitivity Atlas (EPA), NPS Hazard Analyses-  
Response/strategies Plan, environmental sensitivity  
Index (NOAA), Area Plan

## Wildlife Specialists

Leader \_\_\_\_\_

## Tribal Environmental Knowledge

Leader \_\_\_\_\_

## Response Technologies Evaluation Team

Leader \_\_\_\_\_

**Provide cleanup recommendations**

Cleanup strategy/methods/goals

Waste Management Plan

Decontamination plan (if not covered in OPS)

## Endangered Species Act (ESA) Consultation

Leader \_\_\_\_\_

## Historical/Cultural Resources Consultation (NHPA: SHPO/THPO/HPS)

Leader \_\_\_\_\_

## Sunken Oil Recovery specialists

Leader \_\_\_\_\_



Bring in experts for the types of aquatic systems effected.





# Determining the Resources at Risk

- Identify the natural resources that are present in the potential impact area
- Develop a mental model of how the oil is likely to behave = pathways of exposure to the resources
- Identify the most sensitive areas/priorities for protection to include in the ICS 232:
  - Threatened & Endangered species
  - Concentration areas / rookeries
  - Early life stages





# Threatened and Endangered Species

- Identification of International/global, Federal and/or State threatened and endangered species in the potential spill area is a critical component to addressing resources at risk.
- Tips for Resources at Risk reporting:
  - Contact agency experts for detailed spatial and temporal information on T/E species in the area.
  - T/E species will likely be brought to the forefront of any discussions on resources at risk and therefore should be prioritized.



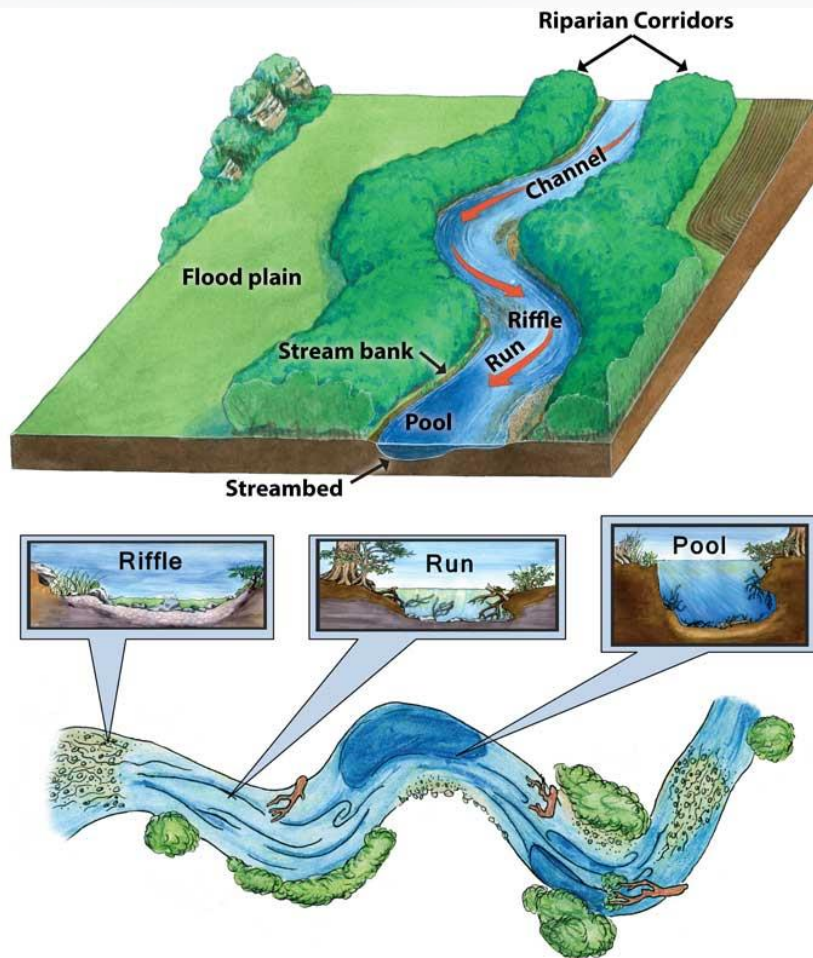


# Flowing Freshwater Ecosystems: Streams

- **Substrate/particle-size and arrangement on stream bed: very important**
  - Helps determine occurrence of benthic fauna: large, stable boulders and cobbles support higher diversity and productivity than sand and mud
  - Riffles with complex mixture of coarse particles provide richest habitat for aquatic insects
  - Particle size often decreases downstream (typically more sand, silt, and clay)







Stream  
Geomorphology  
dictates oil behavior  
and species habitat  
risks.



## Turbulence: A Key Driver of Oil Behavior in Aquatic Ecosystems

- **Lower turbulence:** oil will mostly remain on the surface, affecting animals/plants on the water surface, upper water column, and along the shoreline
- **Higher turbulence:** oil can also mix into the water column, attach to sediments, accumulate in bottom sediments, and persist for longer periods
- Refined products (diesel, fuel oil, kerosene, gasoline) can mix into the water column more readily impacting bottom biota.





## Smaller Rivers, Streams, and Creeks: Some Potential Oil Behavior.

- Oil entering a small river or stream may mix into the water column and move down river as a “slug”.
- Impacts to biota:
  - Fish kills: refined products tend to be more toxic, PAH concentrations vary by oil type, Oil can flow into gravel sediments when fish are spawning or eggs are maturing
  - Eggs, larvae, and juveniles tend to be the most vulnerable to oil effects due to: little to no ability to avoid the oil, and chronic exposure/persistence of oil within certain substrates



## Larger Rivers: Potential Oil Behavior

- Larger rivers have many microhabitats, and more than one of the impacts above may occur in different locations





# Fish and Wildlife and Environmentally Sensitive Areas (continued)



- Examples
  - Sensitive ecosystems, e.g., wetlands
  - National and state forests and parks
  - Critical habitats for threatened and endangered species
  - Wilderness and natural resource areas
  - Marine sanctuaries and estuarine reserves
  - Conservation areas and preserves
  - Wildlife areas and refuges
  - Wild and scenic rivers
  - Recreational areas
  - Historical and archeological sites and parks
  - Heritage program areas
  - Federal and state lands that are national research areas



# Sensitive Areas Continued..

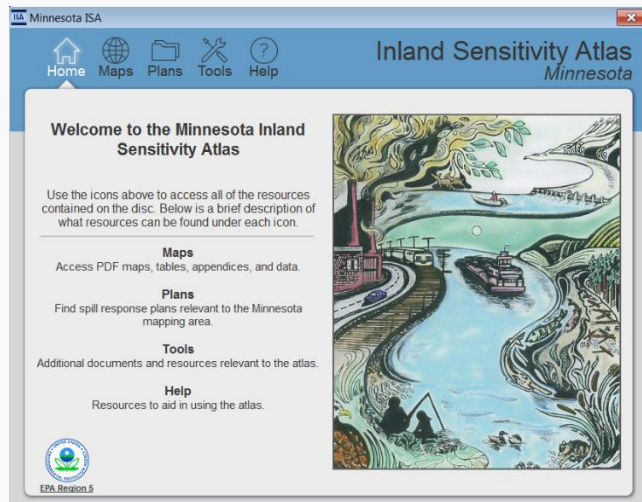


- The U.S. National Oceanic and Atmospheric Administration (NOAA) provides Guidance on “Environmentally Sensitive Areas”.
  - Data located in the Environmental Response Management Application (ERMA).
  - Location of sensitive biological resources, such as seabird colonies and marine mammal hauling grounds...everything you can think of.
- The U.S. EPA has developed Inland Environmental Sensitivity Index maps (*also referred to as the inland sensitivity atlas (ISA)*).
  - Shorelines ranked based on physical and biological character, and color-coded to indicate their sensitivity to oiling
  - Sensitive human-use resources, such as water intakes, marinas, and swimming beaches



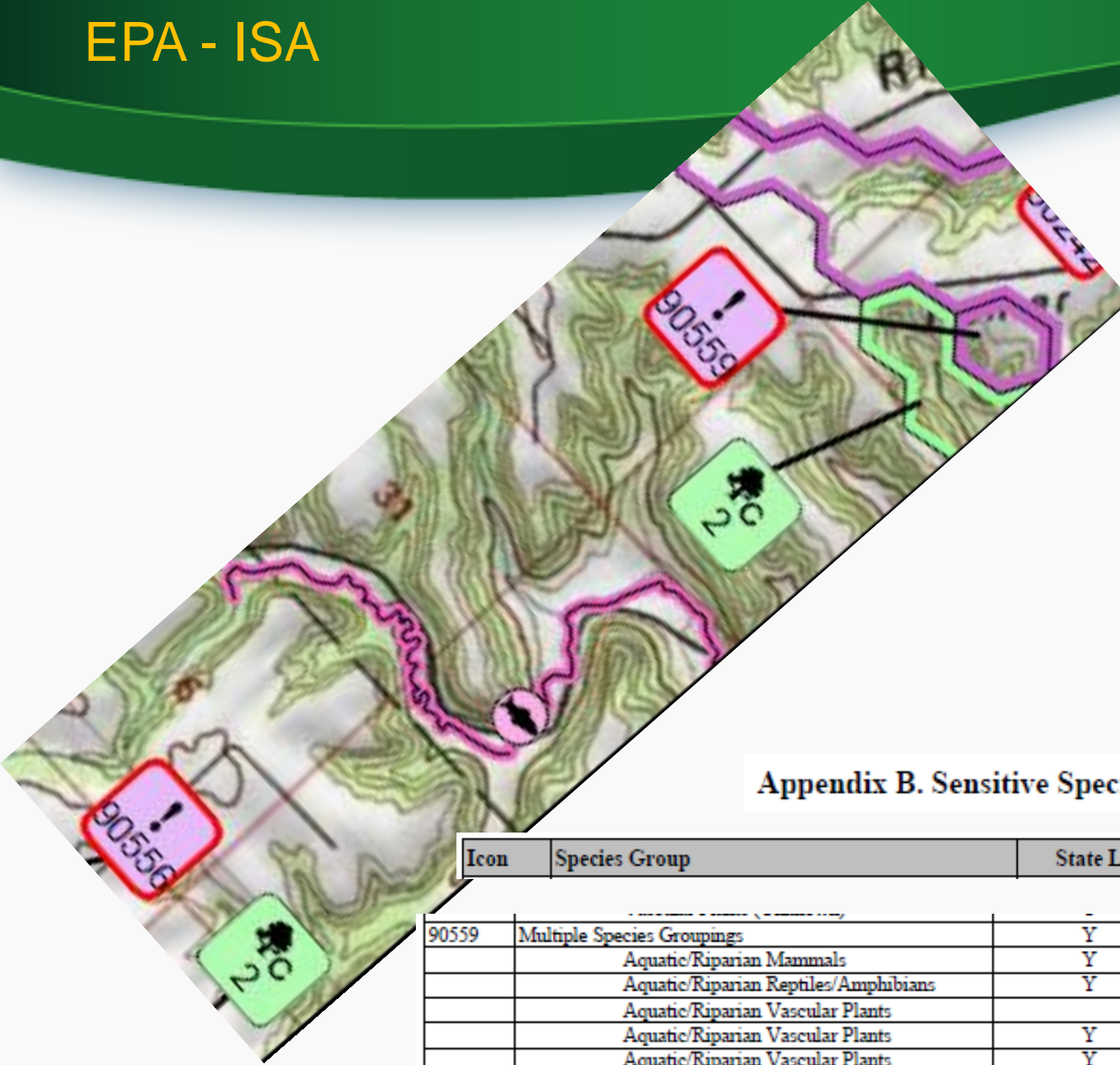


The U.S. EPA “Inland Sensitivity Atlas” is a stand-alone executable set of maps and tables that can be used off-line.



The ISA also contains:

- Inland Response Tactics Manual
- Submerged Oil Recovery Tactics
- Habitat-specific fact sheets



## Appendix B. Sensitive Species and Natural Communities

Icon	Species Group	State Listed	Federally Listed	Global Rank
90559	Multiple Species Groupings	Y		Y
	Aquatic/Riparian Mammals	Y		
	Aquatic/Riparian Reptiles/Amphibians	Y		
	Aquatic/Riparian Vascular Plants			Y
	Aquatic/Riparian Vascular Plants	Y		Y
	Aquatic/Riparian Vascular Plants	Y		
	Unknown	Unknown	Unknown	Unknown
	Vascular Plants (Unknown)	Y		
	Vascular Plants (Unknown)	Y		Y
90560	Multiple Species Groupings	Y		Y





GIS Data



## Area Planning also had developed Pre-Identified Geographic Response Strategies (GRPs).

**GOAL:** Collect spilled product at canoe landing to protect sensitive downstream resources

Site Number	Waterbody, River Mile	Site Name	
NR14	Namekagon River 37.3 LDB	Lakeside Rd. 1	
Strategy Type <sup>a</sup>	Boom Length	Land Access	Boat Access
C&C	200	Y	N

Strategy Implementation ([Go to aerial view](#))

Anchor boom to trees along far shore to contain spilled product at canoe launch for collection. Collect with vac truck and skimmers from shore. Use strategy NR13 to assist with containment.

#### Site Access

From Trego, go east 1 mi. on US Hwy 63 to Lakeside Dr. at NPS Visitor Center. Parking lot on north side of highway has canoe launch. High bank, but good access to river.

Latitude: 45.90546  
UTM z15: 5084224.6

Longitude: -91.816388  
UTM z15: 591805.6



Looking north from landing toward site NR13



Staging area, landing at left



## Objective 7: Setting up an oiled wildlife branch





# Missions: Wildlife Hazing and Deterrence

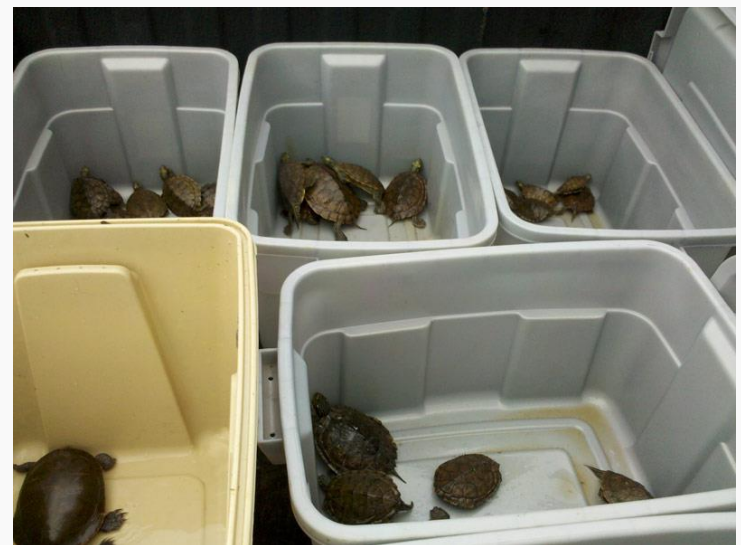
*- keeping wildlife out of harms way-*







# Missions: Reconnaissance, Recovery, and Rehabilitation Centers







## Natural Resources Damage Assessment and Restoration

- Typically established as an independent investigation with sometimes parallel efforts outside of the response structure.
- Documents Natural Resource Injuries
  - -ex. harm to populations of mussels, invertebrates, reptiles, amphibians, birds, fish, aquatic and terrestrial plants, etc.
- Assesses Damages to be sought by natural resource trustees to restore & rehabilitate injured resources
- Public involvement in assessing lost human or cultural use of the resources.



## Additional Response Consideration: Invasive species control on incoming and out-going water equipment.

### **MN DNR Invasive Species Decon Station Rice's Point**



*Oil Spill  
response  
companies  
should have a  
boat/trailer and  
equipment  
disinfection  
plan.*



Questions or Discussion Points ?





# Objective 8

## Keeping the public informed.







# Key Social Issues and Common Patterns with Large Incidents \*

Overall, there is a pervasive uncertainty for many people.

- There can be contested interpretations of events on all sides,
- There is often a sense of “Loss of control”,
- Community business-as-usual is disrupted:
  - Responsible Party’s response processes are different, (e.g., clean-up activities)
  - Boom and Bust cycles - “money spill”
  - Recovery becomes elusive
- Social vulnerability to environmental hazards is brought to the surface



# Key Social Issues and Common Patterns with Large Incidents \*

- There is often a secondary trauma from bureaucratic processes and persons including claims, settlement, and litigation processes (*compensation efforts are stressful to communities and can be decades long*).
- Disruption of interpersonal/group relationships;  
A "corrosive community" can develop  
(*protests can continue for years*)
- There can be Long-term adverse health outcomes as a result of exposure to toxic contaminants
- Lack of closure—chronic community impacts



# Managing Social Issues in a Response.

## Identify Community Stress and Trauma *(individual and community-level impacts)*

### Psychological effects

- anxiety and unhealthy behavior

### Physical Health effects

- nausea, headaches, illness

### Economic effects

- Property damage, loss of resources and revenue

### Sociological Effects

- Increased social conflict, decreased community capital,
- influx of “outsiders”

### Cultural effects

- Disruption of subsistence network sharing



Ensuring that there is an organized response structure and clear objectives helps to address many community issues related to an oil spill.

*Inland oil spills: Claims and compensation are not restoration, public messaging from the environmental agency needs to assure the public that environmental protection and restoration is a paramount priority.*







## Objective 9

### Permits and Permissions.

- Ensuring Legal Obligations are met
- Ensuring permits from federal, state and/or local stakeholders.
- Documenting landowner permissions
- Establishing claims processes

Objective 9A, 9B, 9C....

Document, Document, Document

- Data Management is critical in a large response.
- data management field tools such as Survey 123\* are widely available.

\* ArcGIS Survey 123 is a product of ESRI.



# Option 10, Other

## WASTE DISPOSAL, have a plan!





**Useful Tip**  
To help coordinate the huge number of response efforts that must occur, use an ICS form 234.

An ICS – 234 form places Objectives, Strategies, and Tasks into one trackable framework showing expectations for response by positions assigned.

Incident Name: _____		ICS – 234 WORK ANALYSIS MATRICES Big Bad Oil Spill	
Objectives <i>Desired Outcome</i>	Recommended Strategies <i>General Plan and Direction</i>	Recommended Tactics or Tasks <i>How, Who, What, <u>Where</u>, When</i>	Status <i>Operational Period #</i> 1
UNIFIED COMMAND UNIFIED COMMAND	Develop a response structure	<input type="checkbox"/> Determine viable Responsible Party <input type="checkbox"/> Integrate company into the Unified Command	<input type="checkbox"/> Determine Responsible Parties (RP) <input type="checkbox"/> Determine strategies and tactics with expected time frame with responsible party and their contractor <input type="checkbox"/> Hire a response contractor(s) if RP not adequately responding <input type="checkbox"/> Open Oil Pollution fund to conduct cleanup and oversight of RPs if needed
	Establish Unified Command and establish Incident Command Post and/or Emergency Operations Centers	<input type="checkbox"/> Integrate organizations into ICS <input type="checkbox"/> Develop the IAP	<input type="checkbox"/> Develop feasible response alternatives <input type="checkbox"/> Open the Oil Spill Liability Trust Fund (OSLTF) for Pollution Removal Fund Authorization (PRFA) <input type="checkbox"/> For technical assistance or funding, request help from Federal agencies (US EPA) <input type="checkbox"/> For technical assistance, request help from State agencies and/or Tribes <input type="checkbox"/> Review data with local, state, tribal, and federal health experts



Final note on the importance of Ensuring a Regular System of Oil Spill Exercises.

In the USA, the national standard is the “National Preparedness for Response Exercise Program (PREP).



# PREP



**NATIONAL PREPAREDNESS  
FOR  
RESPONSE EXERCISE PROGRAM  
(PREP)**

**GUIDELINES**

DEPARTMENT OF TRANSPORTATION  
U.S. Coast Guard  
Research and Special Programs Administration



ENVIRONMENTAL PROTECTION AGENCY



DEPARTMENT OF THE INTERIOR  
Minerals Management Service




August 2002



To the "Response Community":

This is the first revision since August 1994 to the Preparedness for Response Exercise Program (PREP) when we set out together to design an effective and coordinated exercise program under the Oil Pollution Act of 1990. As before, the revisions are the result of an open dialogue and the incorporation of lessons learned over the past 8 years. We considered issues identified in public meetings and in written comments received to the Department of Transportation regulatory docket (2000-7514). The PREP will evolve as the government and industry continue to meet the challenge of protecting the environment, public health and welfare. We look forward to working with all parties as we continue to improve the PREP process.

  
Captain David Westerholm  
Chief, Office of Response  
U.S. Coast Guard

  
Michael B. Cook  
Director, Office of Emergency and  
Remedial Response  
U.S. Environmental Protection Agency

  
Stacey Stafford  
Associate Administrator for  
Pipeline Safety  
Research and Special  
Programs Administration

  
Elmer P. Danenberger  
Chief, Engineering and Operations  
Division  
Minerals Management Service

PREP document is available electronically at: [http://www.au.af.mil/au/awc/awcgate/uscg/prep\\_gid.pdf](http://www.au.af.mil/au/awc/awcgate/uscg/prep_gid.pdf)

# PREP Exercise Components

Element	Frequency*	Initiating Authority	Notes
QI Notification Exercises	Quarterly	Facility owner or operator	One notification must occur off-hours.
Emergency Procedures Exercises	Quarterly	Facility owner or operator	<i>Optional: can be used by facilities as an unannounced exercise.</i>
Spill Management Team Tabletop Exercise	Annually	Facility owner or operator	At least one exercise every 3 years must involve a worst-case discharge scenario.
Equipment Deployment Exercises	Semiannually	Facility owner or operator	If OSRO-owned equipment is identified in the Plan, the OSRO equipment must also be deployed and operated. OSRO must provide documentation to facility owner or operator.
<b>Government-Initiated Unannounced Exercises</b>	<b>Triennially</b>	<b>EPA, PHMSA, USCG BSEE</b>	<b>If successfully completed, the facility can only be subject to a GIUE once every 3 years.</b>

\* At least one exercise per year must be unannounced.

# Government Initiated Unannounced Exercises (GIUEs)



Deployment within one-hour.





# Open Discussion or Questions ?

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