



**160 WEST CARMEL DRIVE
SUITE 240
CARMEL, INDIANA 46032**

July 31, 2015

Marissa Reed
Wildlife Biologist
U.S. Fish & Wildlife Service
Ecological Services Field Office
620 S. Walker Street
Bloomington, IN 47403

Dear Ms. Reed:

Subject: Indiana Bat/Northern Long-eared Bat Habitat Assessment Report
SESCO Group
Dixon Road Site
Kokomo, Howard County, Indiana
CSG Project SGL001

On behalf of our client, SESCO Group (SESCO), Civil Site Group, Inc. (CSG) has prepared this letter report documenting the results of our federally-listed endangered species and proposed endangered species habitat assessment within the Dixon Road Site and the Kokomo Dump Site (the Project area), where an environmental remediation is planned. The Project area is located on the west side of Kokomo, Howard County, Indiana, at 1110½-1112, 1114 and 1130 South Dixon Road or the NW¼, Section 2, T23N, R3E (Figure 1). The purpose of the project is environmental remediation and soil removal within the Project area. Opinions presented in this letter report were developed based upon site observations made on July 24, 2015, and available information.

1.0 BACKGROUND

CSG was retained by SESCO to review available information and conduct an endangered species and proposed endangered species habitat assessment within the approximate 14.64-acre study area (Figure 1), in order to demonstrate compliance with the Endangered Species Act, as part of the permitting process. The study area includes the properties located at 1110½ - 1114 South Dixon Road, Kokomo, Indiana and includes the former Kokomo Dump Site. Prior to conducting the site visit, CSG reviewed the U.S. Fish and Wildlife Service (USFWS) Ecological Services Field Office website to determine which federally-listed threatened, endangered, and proposed endangered

species are known to occur, or potentially occur, in Howard County. CSG also reviewed the relevant U.S. Geological Survey (USGS) topographic map quadrangle for Kokomo West, Indiana (Figure 1). Additionally, CSG sent the Indiana Department of Natural Resources (IDNR) Indiana Natural Heritage Data Center a database search request and project map via email on July 27, 2015, in order to obtain information on known occurrences of federally-listed threatened and endangered, proposed endangered, and state-listed threatened and endangered species within an approximate 1-mile radius of the Project area.

2.0 SITE OBSERVATIONS AND RESULTS OF DOCUMENT REVIEW

The USFWS listed the following federally-listed endangered and proposed endangered species as occurring, or potentially occurring, in Howard County: Indiana bat (*Myotis sodalis*, endangered) and northern long-eared bat (*Myotis septentrionalis*, proposed endangered).

The IDNR responded to CSG's critical habitat data request letter on July 31, 2015, stating that no federally-listed or proposed endangered species have been documented within a 0.5-mile radius of the Project area.

The Project area was evaluated by CSG biologist/botanist Greg Gerke on July 24, 2015, to document existing vegetation communities and aquatic habitats. Each type of habitat identified within the Project study area was qualitatively evaluated for its potential to be suitable habitat for the Indiana bat and northern long-eared bat. Additionally, pedestrian surveys were completed for potential roost trees for the Indiana bat and northern long-eared bat.

Potential Indiana bat/northern long-eared bat roost trees were identified and the approximate locations of the trees were recorded using a handheld Trimble GeoXT global positioning system (GPS) unit (Figure 2). Each potential bat roost tree was assigned a unique number and was marked with pink plastic flagging tape bearing the unique number. Information about each potential bat roost tree was recorded, such as the amount of exfoliating bark, presence of cavities or crevices, sunlight exposure, understory density, etc. Table 1, attached, contains information about each of the potential bat roost trees identified by CSG during the site visit.

The Project study area consists of urban development, weedy abandoned industrial areas and mixed early successional/second growth forest (Figure 2). The Project Area borders the southern boundary of Wildcat Creek, though no work would be performed within the floodway or floodplain of the creek, as shown on Figure 2.

Mixed early successional/second growth forest was present within the Project study area along the eastern and northern portion of the Project study area with isolated trees located throughout the property boundary. The forested areas are mainly confined to the areas along the rail road and the riparian area along Wildcat Creek, where the environmental remediation would not occur. The overstory within this habitat was dominated by tree of heaven (*Ailanthus altissima*), box elder (*Acer negundo*), American sycamore (*Platanus occidentalis*), catalpa (*Catalpa speciosa*), black walnut (*Juglans nigra*), black cherry (*Prunus serotina*), red mulberry (*Morus rubra*), eastern cottonwood (*Populus deltoides*), common hackberry (*Celtis occidentalis*), sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), honey locust (*Gleditsia triacanthos*) and green ash (*Fraxinus pennsylvanica*). Much of the forest within the Project area contained a light understory of Amur honeysuckle (*Lonicera mackii*), staghorn sumac (*Rhus typhina*) and multiflora rose (*Rosa multiflora*). Additionally, grasses and herbaceous forbs within this habitat consisted of giant ragweed (*Ambrosia trifida*), poison ivy, Virginia creeper (*Parthenocissus quinquefolia*), Aster (*Symphyotrichum* sp.), black snakeroot (*Sanicula canadensis*), American pokeweed (*Phytolacca americana*), honewort (*Cryptotaenia canadensis*), sweet clover (*melolotus officinalis*), tall goldenrod (*solidago altissima*) and wintercreeper (*Euonymus fortunei*). One (1) potential bat roost tree was identified within the mixed early successional/second growth forest habitat in the Project study area, specifically the Dixon Road Site (Figure 2). Representative photographs of this habitat and potential bat roost trees within it can be found in Attachment B.

3.0 THREATENED AND ENDANGERED SPECIES DOCUMENT REVIEW AND HABITAT ASSESSMENT

3.1 Indiana Bat

The Indiana bat is a medium-sized, monotypic species within the genus *Myotis*. This species closely resembles the little brown bat (*Myotis lucifugus*) and the northern long-eared bat (*Myotis septentrionalis*). The Indiana bat typically has a distinctly keeled calcar, whereas little brown bats and northern long-eared bats do not. In addition, the hind feet of Indiana bats tend to be small and delicate with fewer, shorter hairs that do not extend beyond the toenails, as compared to the hind feet of little brown bats and northern long-eared bats (NatureServe 2014; USFWS 2007b; Whitaker 1980).

The Indiana bat is a migratory species whose range includes the Midwest and eastern United States, from the western edge of the Ozark region in Oklahoma, to southern Wisconsin, east to Vermont

and New Hampshire, and south to northern Florida. In summer months, this species is apparently absent south of Tennessee (NatureServe 2014; USFWS 2007b). During winter, Indiana bats are restricted to suitable hibernacula, which are primarily located in the karst regions of the east-central U.S. These hibernacula are usually located in caves, although abandoned mines and a tunnel in a hydroelectric dam are also known to be utilized by this species as hibernacula (Whitaker 1980; USFWS 2007b). Indiana bats require specific roost sites in caves or mines that attain appropriate temperatures to hibernate. Hibernating Indiana bats choose caves or mines that remain cold, but have a low risk of freezing (USFWS 2007b).

Limited observations indicate that birth and development occur in very small, widely scattered colonies consisting of approximately 25 to 100 females and their young. Birth usually takes place during June with each female bearing a single offspring (Harvey et al. 1999; USFWS 2006). About 25 to 37 days are required for development to the flying stage and the beginning of independent feeding. Male Indiana bats may be found throughout the entire range of the species during the summer months and appear to roost singly or in small groups, except during brief summer visits to hibernacula (USFWS 2007b).

This species typically breeds from late August to early October on the ceilings of large rooms near cave or other hibernacula entrances. Limited mating may also occur in the spring before the hibernating colonies disperse (NatureServe 2014; USFWS 2007b). Hibernating colonies disperse in late March and most of the bats migrate to more northern habitat for the summer. However, migrations have been documented as occurring in a southerly direction as well and some males remain in the hibernating area during this period, forming active bands which wander from cave to cave (USFWS 2007b).

Migration to the wintering caves usually begins in August and reserves of fat depleted during migration are replenished in large part during the month of September (Harvey et al. 1999; USFWS 2007b). Feeding activities continue at a diminishing rate in the fall. By late November, populations of this species have entered a definite state of hibernation (USFWS 2007b).

The Indiana bat's diet consists of insects, with females and juveniles foraging in the airspace near the foliage of riparian and floodplain trees and males foraging in the densely wooded area at tree top height (NatureServe 2014; USFWS 2006).

Summer Indiana bat roosting and foraging habitat consists primarily of floodplain and riparian forests, though recently it has been found that upland forests are also used by Indiana bats for

roosting. Upland forests, old fields, and pastures with scattered trees have also been documented to provide foraging habitat. Indiana bats typically use dead and dying trees as summer roost sites, although large trees with bark that is naturally shaggy or peeling away from the tree, such as shagbark hickory (*Carya ovata*) and white oak (*Quercus alba*), are also used and may be important as protection from severe weather (NatureServe 2014; USFWS 2007b). The suitability of any tree as a roost site is determined by: its condition (dead or alive); the quantity of loose bark it has; the solar exposure and its location in relation to other trees; and its distance to and spatial relationship with water sources and foraging areas (USFWS 2007b).

The most important characteristics of trees that provide roosts are structure-related and include exfoliating bark with space for bats to roost between the bark and the bole of the tree. Tree cavities, hollow portions of tree boles and limbs, crevices in the top of a lightning struck trees, and splits below splintered, broken tree tops have also been used as roosts. It has been found that Indiana bat maternity colonies use multiple roosts, in both living and dead trees, and that exposure of roost trees to sunlight and location relative to other trees are important factors in their suitability and use (USFWS 2007b). Indiana bats have also been, less commonly, found to utilize utility poles with crevices and/or plastic wraps as roosts, as well as bat boxes (Brack et al. 2010; Salyers et al. 1996; Stone and Battle 2004)

Indiana bats are thought to have historically been a savannah species because they prefer large trees in the open or at edges of forests, fragmented forest landscapes, open canopies, and forests with an open understory (USFWS 2007b).

In central Indiana, Indiana bats are currently known to inhabit caves and a limited number of abandoned mines during the winter months. In the summer months, Indiana bats are found in both the glaciated and unglaciated portions of the state (USFWS 2007b). According to the USFWS, summer occurrences of Indiana bats and maternity colonies have been documented in Howard County. No records of Indiana bat hibernacula are currently known from Howard County. The nearest Indiana bat hibernacula to Howard County are located in Monroe County, Indiana (USFWS 2007b).

CSG biologist Greg Gerke conducted a habitat assessment and pedestrian survey of potentially suitable Indiana bat habitat within the Project area during the site visit conducted on July 24, 2015. As stated, the Project area primarily consists of urban area, riparian floodplain, and mixed early successional/second growth forest. The forested area the northern and eastern portion of the Project area has a light-to-moderately dense understory throughout its boundaries, much of which is

dominated by weedy vegetation such as amur honeysuckle and multiflora rose. One potential Indiana bat roost tree was identified within the Project study area, which appears to be within the proposed limits of disturbance. Remediation plans for the Kokomo Dump Site include soil removal and proposed activities on the Dixon Road Site include subsurface investigation work of potentially contaminated soil on selected wooded or partially-wooded areas within the Project area, which would result in the likely clearing of potential roost trees.

Any tree clearing for the proposed Project will occur during the seasonal tree clearing period from October 1 to March 31. Therefore, it is determined that this Project may affect, but is not likely to adversely affect, the Indiana bat or its habitat.

3.3 Northern Long-Eared Bat

The USFWS proposed the northern long-eared bat for listing as endangered on October 2, 2013, largely due to rapid population declines caused by the disease, white-nose syndrome (WNS). Northern-long eared bat populations have declined by 99 percent in the northeastern United States since symptoms of WNS were first observed in New York in 2006 (USFWS 2014b). Reduced population sizes within areas of the bats range, caused by WNS, may increase the bats vulnerability to other stressors that they may have previously had the ability to withstand. Individuals with WNS may be less likely to survive other stressors, and northern long-eared bat populations impacted by WNS may be less able to recover from other stressors because of smaller population sizes and reduced fitness among individuals.

The northern long-eared bat is a medium-sized, monotypic species within the genus *Myotis*. This species closely resembles the little brown bat and the Indiana bat, and can be characterized by its long ears when compared to other *Myotis* bats. Additionally, the long, sharply pointed tragus of the northern long-eared bat distinguishes this bat from the Indiana bat and little brown bat, which have a shorter, rounder tragus. The northern long-eared bat has a slightly keeled calcar and the fur is typically medium to dark brown on the back and grayish to pale-brown on the underside (USFWS 2013).

The northern long-eared bat is a migratory species whose range includes the eastern and north central United States, from Maine to North Carolina on the Atlantic Coast, westward to eastern Oklahoma, and north through the Dakotas, extending southward to parts of southern states from Georgia to Louisiana, even reaching into eastern Montana and Wyoming (USFWS 2014b). In Canada, which has been considered the core of this species range, it is found from the Atlantic

Coast westward to the southern Yukon Territory and eastern British Columbia (USFWS 2014b). During winter, northern long-eared bats hibernate in caves and mines. The hibernacula are typically large in size, with large passages with significant cracks and crevices for roosting, as well as relatively constant temperatures and high humidity with no air currents (USFWS 2014b). These hibernacula are usually located in caves or mines, although railroad tunnels, storm sewers, a well, and bunkers are also known to be utilized by this species as hibernacula (USFWS 2014b).

Limited observations indicate that birth and development occur in very small, widely scattered colonies consisting typically of approximately 30 to 60 females and their young (USFWS 2013). Birth usually occurs between mid-May and mid-July, with each female bearing a single offspring (USFWS 2014b). About 18 to 21 days are required for development to the flying stage and the beginning of independent feeding (USFWS 2013).

This species typically breeds from mid-August to mid-November during fall swarming. Limited mating may also occur in the spring before the hibernating colonies disperse (NatureServe 2014). Hibernating colonies may disperse as early as March, but generally migrate from early April to mid-May (USFWS 2014b).

Migration to the wintering caves usually begins in August and reserves of fat depleted during migration are replenished in large part during the month of September (USFWS 2014b). Feeding activities continue at a diminishing rate in the fall. By late November, populations of this species have entered a definite state of hibernation (USFWS 2014b).

The northern long-eared bat's diet consists of insects. This species typically forages in upland forested habitats, on forested hillsides and ridges, and is likely to spend more time closer to the ground than Indiana bats, gleaning insects from vegetation (USFWS 2013; USFWS 2014b). Occasionally, this species will forage over forest clearings, water, and along roads (NatureServe 2014; USFWS 2014b).

Northern long-eared bats typically roost in live trees and/or snags, in cracks and crevices, and under peeling bark (USFWS 2014b). They are more likely to roost in crevices or cavities than Indiana bats, have been found to use artificial roosts more frequently than Indiana bats, generally appear to roost in trees with more canopy cover than Indiana bats, more variability than Indiana bats in stem diameter of roost trees, and have been found to have more variability than Indiana bats in height of roosts above ground (USFWS 2014b). Although differences have been observed

in roosts between Indiana bats and northern long-eared bats, there may be some overlap of roost selection between the two species.

Limited maternity colony information is known about the northern long-eared bat. Limited data suggests that summer range (roosting/foraging area) fidelity is similar to the Indiana bat, but the northern long-eared bat may have less fidelity to individual roosts (USFWS 2014b).

CSG biologist Greg Gerke conducted a habitat assessment and pedestrian survey of potentially suitable Indiana bat habitat within the Project area during the site visit conducted on July 24, 2015. As stated, the Project area primarily consists of urban area, riparian floodplain, and mixed early successional/second growth forest. The forested area the northern and eastern portion of the Project area has a light-to-moderately dense understory throughout its boundaries, much of which is dominated by weedy vegetation such as amur honeysuckle and multiflora rose. One potential Indiana bat roost tree was identified within the Project study area, which appears to be within the proposed limits of disturbance. Remediation plans for the Kokomo Dump Site include soil removal and proposed activities on the Dixon Road Site include subsurface investigation work of potentially contaminated soil on selected wooded or partially-wooded areas within the Project area, which would result in the likely clearing of potential roost trees.

Any tree clearing for the proposed Project will occur during the seasonal tree clearing period from October 1 to March 31. Therefore, it is determined that this Project may affect, but is not likely to adversely affect, the northern long-eared bat or its habitat.

4.0 CONCLUSIONS

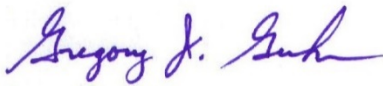
No occurrences of federally-listed endangered or proposed endangered species are known from the Project area (Attachment A). The forested habitats within the Project area consist of mixed early successional/second growth forest and have a lightly to moderately dense understory of Amur honeysuckle, multiflora rose and staghorn sumac. Tree clearing within these forested habitats will likely be required for the anticipated remediation activities. Tree clearing that is required will take place during the USFWS recommended seasonal tree clearing period, from October 1 through March 31. No other threatened or endangered species individuals or populations were identified within the Project area in database searches or during species-specific surveys completed on July 24, 2015. The proposed remediation activities within the Project area may affect, but are not likely to adversely affect, the Indiana bat, or the northern long-eared bat.

5.0 CLOSING

On behalf of our client, SESCO Group, we respectfully request your concurrence with the above effect determinations for federally-listed endangered and proposed endangered species. If you have any questions or require additional information, please contact the undersigned at 317-810-1677.

Sincerely,

CIVIL SITE GROUP, INC.



Gregory J. Gerke, PWS
Senior Ecologist



Brian S. Cross, P.E.
Principal

Attachments: Figure 1 – Site Location Map
Figure 2 – Habitat Assessment Map
Table 1 – Potential Bat Roost Tree Information
Attachment A – Indiana Natural Heritage Data Center Search Results
Attachment B – Site Photographs

cc: Bill Pickard, SESCO

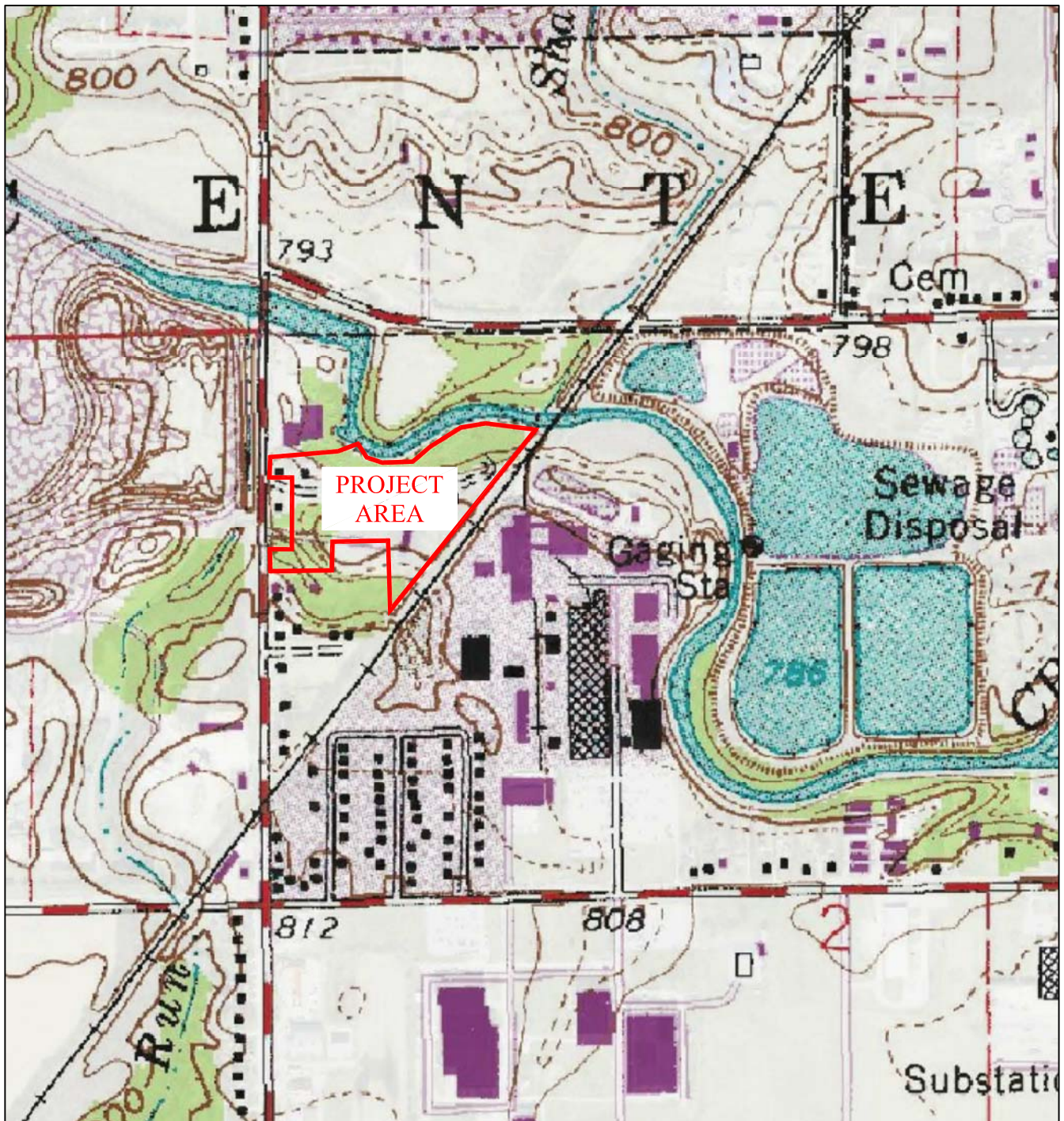
6.0 REFERENCES

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FIGURES

PROJECT LOCATION MAP



SESCO GROUP
 13.3-ACRE DIXON ROAD SITE
 HABITAT ASSESSMENT
 KOKOMO, HOWARD COUNTY, INDIANA

PROJECT LOCATION



CSG PROJECT NUMBER
FIGURE 1

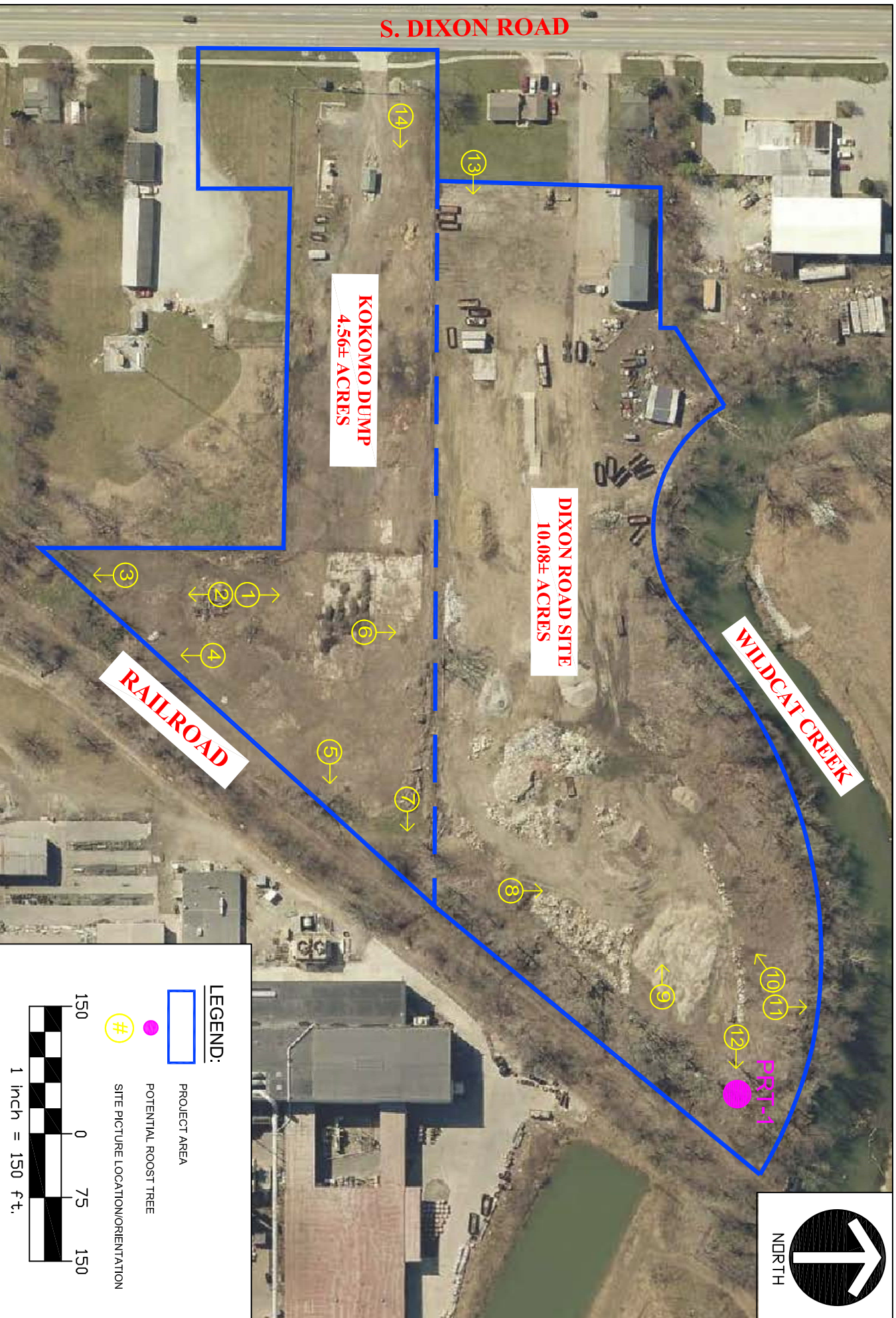
DATE: 07/28/15
 DWN. BY: KPB
 CHKD. BY: GJG
 SCALE: NTS

SHEET **1** OF **1**

CIVIL SITE GROUP, INC.

160 W. CARMEL DRIVE, SUITE 240
 CARMEL, INDIANA 46032
 (317) 810-1677 / (Fax) 810-1679

Civil Site
 GROUP, INC.



CSG PROJECT NUMBER
FIGURE 2

SHEET **1** OF **1**

DATE: 07/28/15

DWN. BY: KPB

CHKD. BY: GJG

SCALE: 1" = 150'

HABITAT ASSESSMENT
S. DIXON ROAD SITE
KOKOMO, INDIANA

CIVIL SITE GROUP, INC.
160 W. CARMEL DRIVE, SUITE 240
CARMEL, INDIANA 46032
(317) 810-1677 / (Fax) 810-1679

Civil Site
GROUP, INC.

TABLE 1

TABLE 1
POTENTIAL BAT ROOST TREE INFORMATION
DIXON ROAD REMEDIATION PROJECT
KOKOMO, HOWARD COUNTY, INDIANA

Potential Bat Roost Tree Number	Species	Alive or Dead?	Diameter at Breast Height (in)	Estimated Understory Density	Estimated Canopy Cover	Within Limits of Tree Clearing?	Habitat Type	Comment
PRT-1	Eastern Cottonwood	Dead	30	20%	150%	Likely	Mixed Early Successional/ Second Growth Riparian Forest	Dead with some peeling bark.

ATTACHMENT A

IDNR CRITICAL HABITAT DATABASE SEARCH RESULTS



Indiana Department of Natural Resources

Michael R. Pence, Governor
Cameron F. Clark, Director

Division of Nature Preserves
402 W. Washington St., Rm W267
Indianapolis, IN 46204-2739

July 31, 2015

Gregory J. Gerke, PWS, CESSWI
Civil Site Group, Inc.
160 West Carmel Drive, Suite 240
Carmel, IN 46032

Dear Gregory Gerke:

I am responding to your request for information on the endangered, threatened, or rare (ETR) species, high quality natural communities, and natural areas documented from a project area, 1110 South Dixon Road, Kokomo, Indiana. The Indiana Natural Heritage Data Center has been checked and there are no ETR species and significant areas documented within 0.5 mile of the project area.

The information I am providing does not preclude the requirement for further consultation with the U.S. Fish and Wildlife Service as required under Section 7 of the Endangered Species Act of 1973. If you have concerns about potential Endangered Species Act issues you should contact the Service at their Bloomington, Indiana office.

U.S. Fish and Wildlife Service
620 South Walker St.
Bloomington, Indiana 47403-2121
(812) 334-4261

At some point, you may need to contact the Department of Natural Resources' Environmental Review Coordinator so that other divisions within the department have the opportunity to review your proposal. For more information, please contact:

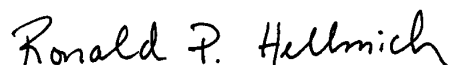
Department of Natural Resources
attn: Christie Stanifer
Environmental Coordinator
Division of Fish and Wildlife
402 W. Washington Street, Room W273
Indianapolis, IN 46204
(317) 232-8163

Please note that the Indiana Natural Heritage Data Center relies on the observations of many individuals for our data. In most cases, the information is not the result of comprehensive field surveys conducted at particular sites. Therefore, our statement that there are no documented significant natural features at a site should not be interpreted to mean that the site does not support special plants or animals.

Due to the dynamic nature and sensitivity of the data, this information should not be used for any project other than that for which it was originally intended. It may be necessary for you to request updated material from us in order to base your planning decisions on the most current information.

Thank you for contacting the Indiana Natural Heritage Data Center. You may reach me at (317)232-8059 you have any questions or need additional information.

Sincerely,

A handwritten signature in black ink that reads "Ronald P. Hellmich". The signature is written in a cursive, slightly slanted style.

Ronald P. Hellmich
Indiana Natural Heritage Data Center

Enclosure Invoice

ATTACHMENT B

SITE PHOTOGRAPHS



Photo #1: View of abandoned industrial area on southern portion of Project Area (looking north).



Photo #2: View of abandoned industrial area on southern portion of Project Area (looking south).



Photo #3: View of abandoned industrial area on southern portion of Project Area (looking south).



Photo #4: View of abandoned industrial area on southern portion of Project Area (looking south).



Photo #5: View of typical second growth forest on eastern portion of site (looking east).



Photo #6: View of typical second growth forest on southern portion of site (looking north).



Photo #7: View of abandoned industrial area on eastern portion of Project Area (looking east).



Photo #8: View of abandoned industrial area on northern portion of Project Area (looking north).



Photo #9: View of abandoned industrial area on northern portion of Project Area (looking west).



Photo #10: View of abandoned industrial area on northern portion of Project Area (looking west).



Photo #11: View of abandoned industrial area on northern portion of Project Area (looking north towards Wildcat Creek).

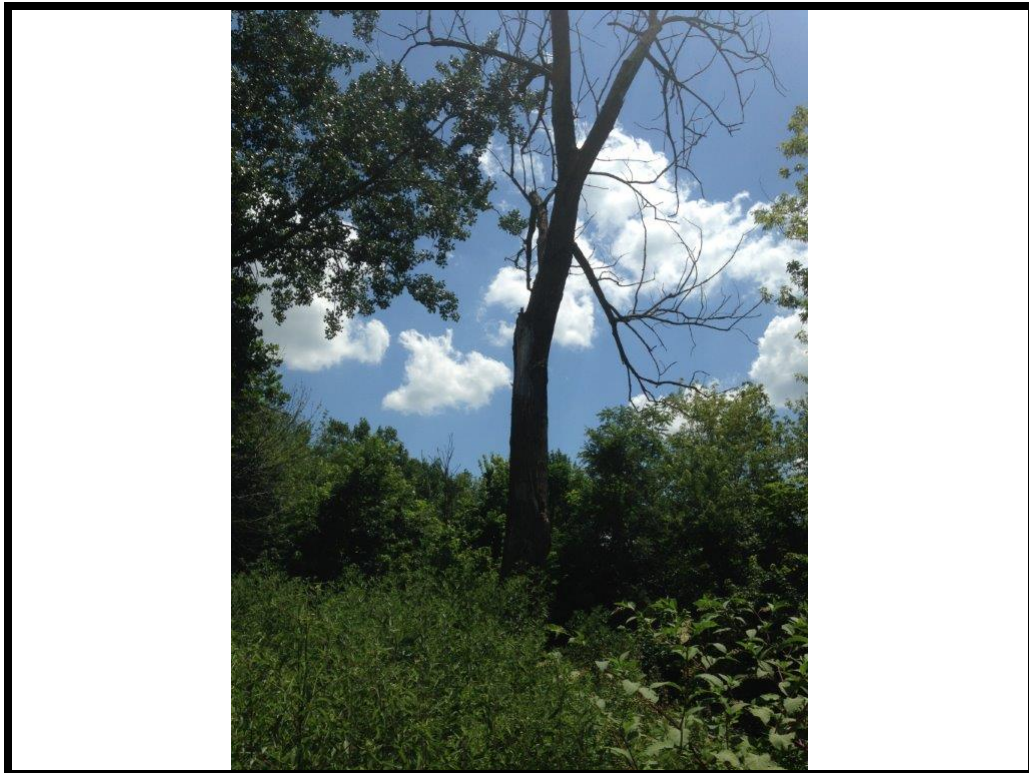


Photo #12: View of 30" dead cottonwood tree on northeastern portion of site (looking east).



Photo #13: View of typical lawn area and surrounding abandoned industrial portions of the Project Area (looking east).



Photo #14: View of southern portion of abandoned industrial area from entrance (looking east).