2015

Lockport Prairie Section 206 Aquatic Ecosystem Restoration Study

Appendix G – Compliance, Coordination & Information

Chicago District
US Army Corps of Engineers
05/13/2015

Table of Contents

A1 – SECTION 404(B)(1) EVALUATION

I. Project Description

a. Location

Detailed description of the study area may be found in the Feasibility Study, 1.4 – Study Background. The Lockport Prairie study area is located in Lockport Township, Will County, Illinois along the lower Des Plaines River (***Figure 1***). The project includes Lockport Prairie Nature Preserve (LPNP), located between Route 53 and the Des Plaines River, and Prairie Bluff Preserve (PBP), located to the east of LPNP along Route 53 (***Figure 2***).

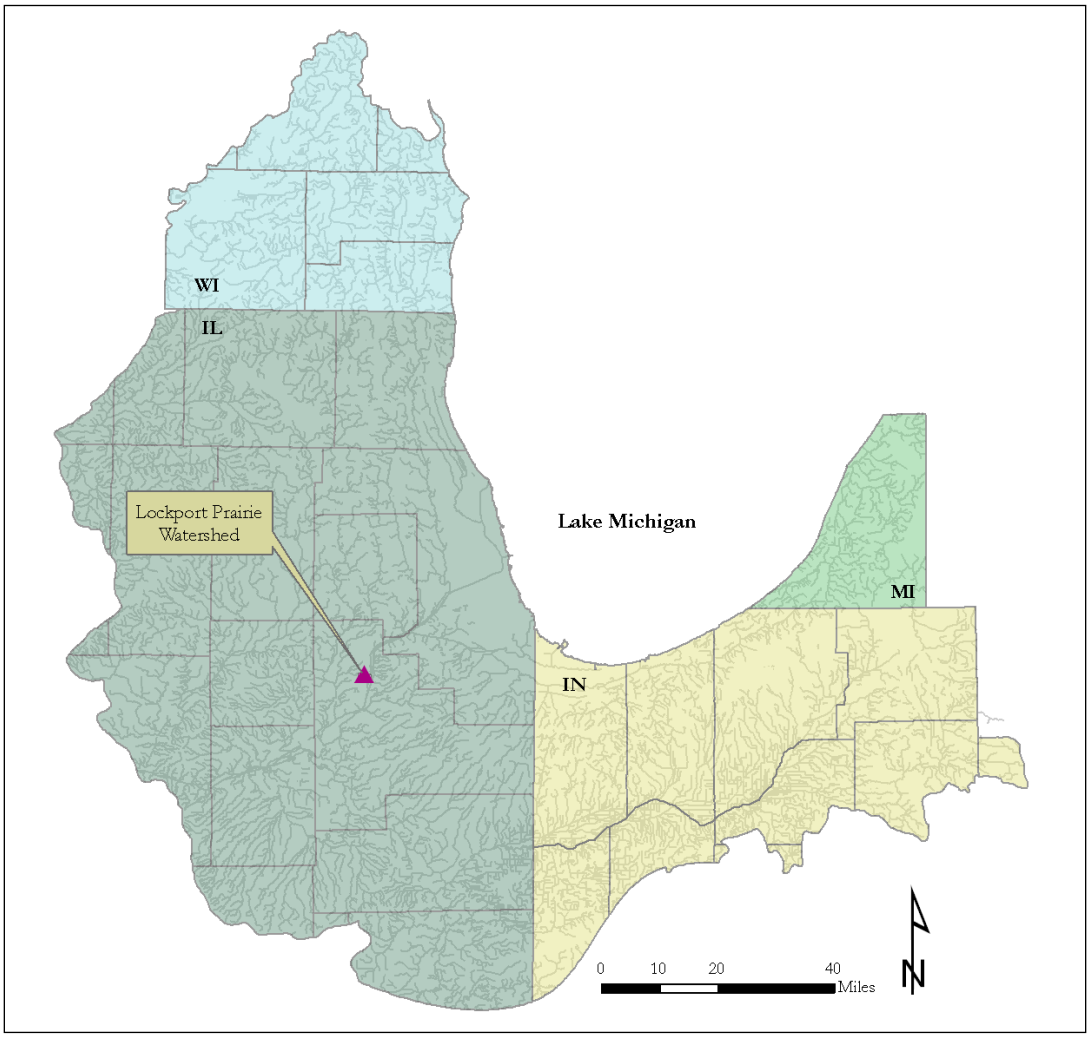

Figure 1. Location of Lockport Prairie within the Chicago Region.

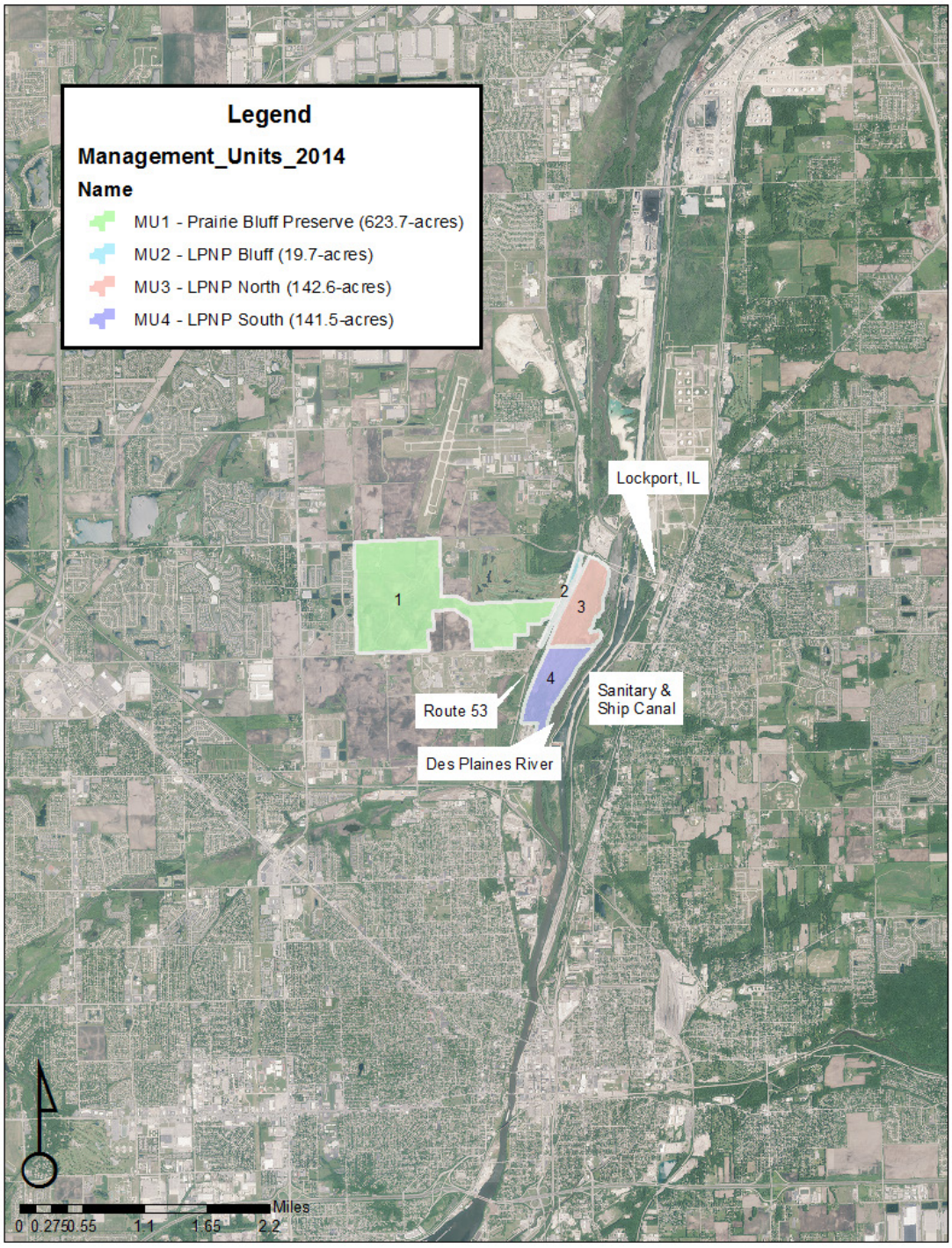

Figure 2. Location of the study area and specific management units.

b. General Description

The Preferred Plan, the National Ecosystem Restoration (NER) Plan, includes the following proposed measures:

- Full hydrologic restoration through drainage tile disablement and erosion control

- Full invasive species removal through the selective clearing of woody species, herbicide application to woody and herbaceous species, prescribed burning, and selective mowing
- Full native plant restoration at PBP and LPNP

With implementation of the Preferred Plan, naturally functioning hydrology would be restored to PBP along with a native plant community that would improve the infiltration of water to the bedrock within the LPNP groundwater recharge zone. The restoration of hydrology is critical to sustain the federally endangered Hine's Emerald Dragonfly. In addition, the native plant restoration would vastly improve the quality of the habitat for native wildlife species. The removal of invasive species within LPNP would improve the quality of the rare plant communities, also, protect the habitat of federally listed species from being overgrown with invasive species. The removal of selected woody species and replacing them with the appropriate native species along the poor quality bluff areas would greatly enhance not only the floristic quality for the area, but would also help improve the area erosion as a result of surface water runoff from Route 53. Surface water runoff would also be improved by removing invasive shrubs and planting native herbaceous species, which will slow down the water and allow sediments to fall out, coupled with the filtering of pollutants by native plant species, would result in less sediment entering LPNP.

c. Authority and Purpose

This study is authorized under the Water Resources Development Act (WRDA) of 1996, Section 206, Aquatic Ecosystem Restoration. Authority is given to plan, design, and construct projects to restore the ecosystem and quality of the environment and is in the public interest. Projects are justified by ecosystem benefits alone, while considering affects to the human environment including public health, safety, economic benefits, recreational or any combination of these.

This Section 206 Aquatic Ecosystem Restoration study was requested by the Forest Preserve District of Will County (FPDWC) to evaluate the feasibility and environmental impacts of restoring and protecting the hydrology of the Lockport watershed and the important diverse and unique plant communities. The scope of this study addressed the issues of endangered species, altered hydrology, degraded wetland areas, invasive species, wet grassland bird nesting structure, native species richness and encouragement of public education. The feasibility study assessed and identified problems and opportunities, identified and evaluated measures, and recommended the most cost effective solution to the ecological problems that have the potential to extirpate the globally important ecosystem and three endangered species from this area.

Prairie communities characterized by shallow soil over dolomite bedrock in Northeastern Illinois are recognized as globally unique and very rare. Wet and wet-mesic dolomite prairies are among the most critically imperiled natural communities on earth, with a global rank of G1, in great danger of extinction, and currently are found only in the lower Des Plaines River active floodplain in Illinois. Around 42 acres of dolomite prairie (at different levels of quality) remain in Illinois. At this time, there are approximately 19-acres of dolomite prairie at LPNP.

In addition to the vulnerable ecosystem, LPNP supports 3 Federally-listed species: the Leafy Prairie Clover (*Dalea foliosa*) and Hine's Emerald Dragonfly (*Somatochlora hineana*), and the Lakeside Daisy (*Actinea herbacea*). In the last 10 years there has been a significant decline in the reproductive output of the Hine's Emerald Dragonfly at Lockport. One concern is the change in the quantity and quality of groundwater discharging into the wetland areas that support the rivulet dependent larvae of the Hine's Emerald Dragonfly. High quality groundwater discharges from along the bluffs forming slow flowing seeps, called rivulets. Another result from the change in groundwater discharge has been a decline in the population of Leafy Prairie Clover, another

vulnerable hydrophytic species inhabiting the wet and wet-mesic prairie. Other threats to federally protected species include invasive species, surface water runoff and development of the watershed.

While the prairie is managed by qualified personal and legally protected, a change in land use and installment of recent wells have changed the hydrology of the site's watershed. A critical factor sustaining the integrity of the wet prairie and the federally listed species is water quality and quantity in terms of the groundwater discharging from the seeps and surface water runoff. Without proper restoration and protection of the site's water sources almost all other management actions would have little effect in stopping or reversing the decline in the quality of the prairie and the populations of the federally protected species.

d. General Description of Fill Material

1) General Characteristics of Material

There is no fill proposed as part of the Preferred Plan. Disablement of drain tiles would occur through small shallow excavations in specific areas along the drain tiles and a small water control valve would be placed and backfilled with surrounding soil. No material would be taken off site.

2) Quantity of Material

There is no quantity of material that would be placed on the site, since there is no fill proposed under the Preferred Plan.

3) Source of Material

There is no source for material since there is no fill proposed under the Preferred Plan.

e. Description of Proposed Discharge Site(s)

1) Location

There is no fill proposed as part of the Preferred Plan. Disablement of drain tiles would occur through small shallow excavations in specific areas along the drain tiles and a small water control valve would be placed and backfilled with surrounding soil. No material would be taken off site.

2) Size

There is no fill proposed as part of the Preferred Plan; therefore, there is no proposed discharge site.

3) Type of Site

There is no fill proposed as part of the Preferred Plan; therefore, there is no proposed discharge site.

4) Type(s) of Habitat

There is no fill proposed as part of the Preferred Plan; therefore, there is no proposed discharge site.

5) Timing and Duration of Discharge

There is no fill proposed as part of the Preferred Plan; therefore, there is no proposed discharge site.

f. Description of Placement Method

There is no fill proposed as part of the Preferred Plan. Disablement of drain tiles would occur through small shallow excavations in specific areas along the drain tiles and a small water control valve would be placed and backfilled with surrounding soil. No material would be taken off site.

II. Factual Determinations

a. Physical Substrate Determinations

1) Substrate Elevation and Slope

Elevation of the substrates is between 575 and 670 NVGD. PBP is a gently rolling area that then encounters a bluff along Route 53 which descends sharply into the very flat LPNP.

2) Sediment Type

Based on the U. S. Department of Agriculture National Conservation Service (NRSC) soil map for the LPNP, the soils are predominantly Romeo, an alluvial soil shallow to bedrock. Soils within PBP are underlain with fractured dolomitic limestone bedrock.

3) Fill Material Movement

There would be no significant movement of material during the disablement of drain tiles. Material disturbed would be restricted to localized excavations and replacement of disturbed materials after installation of water control valves. All bare soil will be planted with a cover crop and deep rooted native plants.

4) Physical Effects on Benthos

Disturbance to existing benthos within wetland areas within areas to be treated for invasive species will be kept to a minimum, with the herbicide application being EPA aquatic approved and by hand held devices that will minimize disturbance to substrate.

5) Other Effects

There would be no other significant substrate impacts.

6) Actions Taken to Minimize Impacts

Special measures would be taken to minimize the temporary impacts on physical substrates associated with the proposed activity since this project is both beneficial to ecology and water quality. These include soil erosion and sediment control measures including, but not limited to placement of biodegradable erosion control fabric and quick germinating cover crops.

b. Water Circulation, Fluctuation, and Salinity Determinations

1) Water

Overall, the proposed activities would have no significant adverse effects to water chemistry, water clarity, color, odor, taste, dissolved gas levels, nutrients, or increased eutrophication as a result. Improvements in water clarity, color, dissolved oxygen levels, and levels of eutrophication will be noted in the long-term after introducing native aquatic plant species to PBP and the reduced erosion within the oak savanna in LPNP.

Salinity – No adverse effects to salinity are expected with implementation of the Preferred Plan. The proposed project is occurring within a freshwater environment; therefore, no significant impacts to salinity are expected.

Water Chemistry – No adverse effects to water chemistry are expected with implementation of the Preferred Plan.

Clarity – No adverse effects to water clarity are expected with implementation of the Preferred Plan. The planting of native plants throughout the project area as well as in highly eroded areas could slow runoff and allow precipitation to percolate more slowly through the soils. This could potentially improve water clarity by reducing turbidity over the long-term.

Color – No adverse effects to water color are expected with implementation of the Preferred Plan. The planting of native plants throughout the project area as well as in highly eroded areas could slow runoff and allow precipitation to percolate more slowly through the soils. This could potentially improve water color over the long-term.

Odor – No adverse effects to water odor are expected with implementation of the Preferred Plan.

Taste – The study area is not used as a source of drinking water; therefore, no adverse effects are expected.

Dissolved Gas Levels – No change to dissolved gas levels in the short-term or long-term is expected with implementation of the Preferred Plan.

Nutrients – No negative change to nutrients is expected with implementation of the Preferred Plan. The planting of native plants throughout the project area as well as in highly eroded areas could slow runoff and allow precipitation to percolate more slowly through the soils. This could potentially reduce nutrient loading over the long-term.

Eutrophication – The implementation of the Preferred Plan is not expected to have any adverse effects that would induce eutrophication. The planting of native plants throughout the project area as well as in highly eroded areas could slow runoff and allow precipitation to percolate more slowly through the soils. This could potentially reduce eutrophication over the long-term.

Other Impacts – The implementation of the Preferred Plan is not expected to have any adverse effects to other system components not specifically defined above.

2) Current Patterns and Circulation

Overall, groundwater discharges seasonally into the rivulets in LPNP, flowing generally in an easterly direction, although flows are usually hard to detect since this is a flat and slow moving system. Studies have indicated that by restoring the hydrology and native plant communities of PBP this should improve the stability of groundwater discharge at LPNP and overall habitat quality of the rivulets where the Federally endangered Hine's Emerald Dragonfly may be found.

Current Patterns and Flow – The implementation of the Preferred Plan is not expected to have any adverse effects to current patterns and flow.

Velocity – The implementation of the Preferred Plan is not expected to have any adverse effects to velocity.

Stratification – The implementation of the Preferred Plan is not expected to have any adverse effects to stratification. The project is being implemented in a dynamic system not a static system where stratification might be expected.

Hydrologic Regime – The implementation of the Preferred Plan is not expected to have any adverse effects to the hydrologic regime.

3) Normal Water Level Fluctuations

The proposed activities would have a beneficial impact on normal water level fluctuations of PBP and LPNP. More water will be retained within PBP, decreasing water flowing downstream in flood events.

4) Salinity Gradients

Not applicable to freshwater environments.

5) Actions Taken to Minimize Impacts

Since the change in water levels is a restoration objective, no special measures will be taken to minimize the retention of water within PBP.

c. Suspended Particulate/Turbidity Determinations

1) Expected Changes in Suspended Particulates and Turbidity in Vicinity of Fill

There would be no increases in suspended particulates and turbidity levels during construction.

2) Effects on Chemical and Physical Properties of Water Column

There would be no effects to light penetration or dissolved oxygen levels during construction.

Light Penetration – The implementation of the Preferred Plan is not expected to have any adverse effects to light penetration. The planting of native plants throughout the project area as well as in highly eroded areas could slow runoff and allow precipitation to percolate more slowly through the soils. This could potentially decrease turbidity which would in turn improve light penetration.

Dissolved Oxygen – The implementation of the Preferred Plan is not expected to have any adverse effects to dissolved oxygen levels.

Toxic Metals and Organics – The implementation of the Preferred Plan is not expected to introduce any toxic metals or organics to the project area.

Pathogens – The implementation of the Preferred Plan is not expected to introduce any pathogens into the project area.

Aesthetics – The implementation of the Preferred Plan is not expected to have any adverse effects to aesthetics. During construction aesthetics could be affected with the presence of construction equipment; however, these impacts are expected to be temporary in duration. Overall, aesthetic value is expected to improve over the long-term with the restoration of PBP and LPNP.

Other – No additional adverse effects to system components not listed above are expected as a result of implementation of the Preferred Plan.

3) Effects on Biota

Only beneficial effects on aquatic biota are expected to result from the restoration activities.

Primary production, Photosynthesis – The implementation of the Preferred Plan is not expected to have any adverse effects to primary production or photosynthesis. The planting of native plants throughout the project area as well as in highly eroded areas could slow runoff and allow precipitation to percolate more slowly through the soils. This could potentially decrease turbidity which would in turn improve light penetration for primary production and photosynthesis.

Suspension/Filter Feeders – The implementation of the Preferred Plan is not expected to have any adverse effects to suspension or filter feeders. The planting of native plants throughout the project area as well as in highly eroded areas could slow runoff and allow precipitation to percolate more slowly through the soils. This could potentially decrease fine particulates which in turn would improve habitat for suspension and filter feeders by decreasing turbidity.

Sight Feeders – The implementation of the Preferred Plan is not expected to have any sadverse effects to sight feeders. The planting of native plants throughout the project area as well as in highly eroded areas could slow runoff and allow precipitation to percolate more slowly through the soils. This could potentially decrease particulates which in turn would improve habitat for sight feeders by decreasing turbidity.

4) Actions Taken to Minimize Impacts

No changes to particulates or turbidity expected with construction.

d. Contaminant Determination

The no proposed fill material.

e. Aquatic Ecosystem and Organism Determinations

1) Effects on Plankton

No affects to planktonic organisms.

2) Effects on Benthos

Existing benthos within wetlands to be treated for invasive species may be slightly disturbed by workers walking through areas to be treated. These would be temporary and the effects would reverse once workers leave the area. These minor impacts are necessary to create improved

conditions for benthic invertebrates over the long-term. Overall, there are no significant adverse effects expected.

3) Effects on Nekton

Fish eggs and larvae are not expected to be impacted by implementation of the Preferred Plan. Fish and other free-swimming organisms will tend to avoid the construction area; the construction area would be used again by these organisms soon after construction is complete.

4) Effects on Aquatic Food Web

Beneficial improvements to the food web are expected due to the beneficial effects the overall project will have on the macroinvertebrate richness and abundance.

5) Effects on Aquatic Sites

a) Sanctuaries and Refuges – No sanctuaries or refuges have been identified within the study area; therefore, the implementation of the Preferred Plan is not expected to have any adverse effects on these aquatic sites.

b) Wetlands – The Preferred Plan includes the planting of native wetland vegetation; therefore, an increase in hydrophytic vegetation is expected.

c) Mud Flats – No mud flats have been identified within the study area; therefore, the implementation of the Preferred Plan is not expected to have any adverse effects impact on these aquatic sites.

d) Vegetated Shallows – The Preferred Plan includes the planting of native wetland vegetation; therefore, an increase in submergent aquatic macrophytes is expected.

e) Coral Reefs – There are no coral reefs within the project area; therefore, no adverse effects are expected.

f) Riffle and Pool Complexes – The project does not occur within a stream; therefore, no adverse effects are expected to riffle and pool complexes.

6) Threatened and Endangered Species

The County Distribution of Federally-listed Threatened, Endangered, Proposed and Candidate Species was reviewed for Will County by the Chicago District. The following federally listed species and their critical habitats are identified by the USFWS as occurring within Will County:

- Piping plover (*Charadrius melodus*) – Endangered – Wide, open, sandy beaches with very little grass or other vegetation

- Eastern massasauga (*Sistrurus catenatus*) – Candidate – Graminoid dominated plant communities (fens, sedge meadows, peat lands, wet prairies, open woodlands, and shrublands)

- Hine's emerald dragonfly (*Somatochlora hineana*) – Endangered – Spring fed wetlands, wet meadows, and marshes

- Eastern prairie fringed orchid (*Platanthaera leucophaea*) – Threatened – Moderate to high quality wetlands, sedge meadow, marsh, and mesic to wet prairie

- Leafy-prairie clover (*Dalea foliosa*) – Endangered – Prairie remnants on this soil over limestone

- Mead's milkweed (*Asclepias meadii*) – Threatened – Late successional tallgrass prairie, tallgrass prairie converted to hay meadow, and glades or barrens with thin soil

- Prairie bush clover (*Lespedeza leptostachya*) – Threatened – Dry to mesic prairies with gravelly soil

- Lakeside Daisy (*Actinea herbacea)* – Endangered – Dry dolomite prairies

The Federally endangered species known to inhabit the study area are the Hine's emerald dragonfly, Leafy-prairie clover and Lakeside daisy. Coordination with the USFWS was initiated with a project Scoping Letter dated 21 December 2007. The USACE has concluded in this report that the project is "not likely to adversely affect federal species", which precludes the need for further consultation for this project. It is expected that the USFWS will provide a letter of "No Objection" in response to the public/agency release of the NEPA document.

Occurrences of Illinois State listed endangered and threatened species:

Scientific Name	Common Name	Type	IL Status
Circus cyaneus	Northern Harrier	Bird	E
Clemmys guttata	Spotted turtle	Reptile	E
Clonophis kirtlandi	Kirtland's snake	Reptile	T
Emydoidea blandingii	Blanding's turtle	Reptile	T
Gallinula chloropus	Common Moorhen	Bird	T
Grus canadensis	Sandhill Crane	Bird	T
Ixobrychus exillis	Least Bittern	Bird	T
Nycticorax nycticorax	Black-Crowned Night-Heron	Bird	E
Pandion haliaetus	Osprey	Bird	E
Rallus elegans	King Rail	Bird	E
Arenaria patula	Stiff Sandwort	Plant	T
Thamnophis sauritus	Eastern Ribbon snake	Reptile	T

While all of these State listed species have been recorded within the project footprint, the Kirtland's Snake and Eastern Ribbon snake have only been sighted infrequently and not since 1994. The Blanding's turtle is known to forage and overwinter within the wetland areas of LPNP. The state listed birds are known to use the site for foraging, but there are no known breeding populations at the site.

7) Other Wildlife

No other wildlife would be significantly impacted by the proposed activity.

8) Actions Taken to Minimize Impacts

General construction scheduling and sequencing would minimize impacts to reproducing macroinvertebrates and birds. Erosion control fabric and native plantings would be implemented to minimize the temporary impacts associated with the proposed activity.

f. Proposed Discharge Site Determinations

1) Mixing Zone Determination

A mixing zone is not applicable to this project as no violation of applicable water quality standards is expected during construction.

2) Determination of Compliance with Applicable Water Quality Standards

The proposed activity would not cause significant or long-term degradation of water quality within the project site or any associated waterways within or adjacent to project area and would comply with all applicable water quality standards. Water quality would ultimately improve via the removal of retention of water within PBP and the reestablishment of aquatic macrophytes where there currently are none.

3) Potential Effects on Human use Characteristics

Overall, no significant impacts to municipal and private water supplies, water-related recreation, aesthetics, recreational, or commercial fisheries are expected.

Municipal and Private Water Supply – The implementation of the Preferred Plan is not expected to have any adverse effects to municipal and private water supplies. The area is not used as a source of drinking water.

Recreational and Commercial Fisheries – The implementation of the Preferred Plan is not expected to have any adverse effects to recreational or commercial fisheries.

Water Related Recreation – The implementation of the Preferred Plan is not expected to have any adverse effects to water related recreation.

Aesthetics – The implementation of the Preferred Plan is not expected to have any long-term adverse effects to aesthetics. During construction aesthetics could be affected with the presence of construction equipment; however, these impacts are expected to be temporary in duration. Overall, aesthetic value is expected to improve over the long-term with the restoration of PBP and LPNP.

Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves – None are present within the project location.

g. Determination of Cumulative Effects on the Aquatic Ecosystem

The proposed project would restore aquatic habitat structure and function. There are no significant adverse effects expected.

h. Determination of Secondary Effects on the Aquatic Ecosystem

No significant impacts on the Lockport Prairie ecosystem are expected as a result of the proposed activity.

III. Findings of Compliance with Restrictions on Discharge

a. No adaptation of the Section 404(b)(1) guidelines was made for this evaluation.

b. No practical alternatives are available that produce fewer adverse aquatic impacts than the proposed plan.

c. The proposed project would comply with applicable water quality standards.

d. The project is in compliance with applicable Toxic Effluent Standards under Section 307 of the Clean Water Act; with the Endangered Species Act of 1973; with the National Historic Preservation Act of 1966; and with the Marine Protection, Research, and Sanctuaries Act of 1972.

e. The proposed fill activity would have no significant adverse impact on human health or welfare, including municipal and private water supplies, recreational and commercial fisheries, plankton, fish, shellfish, or wildlife communities (including community diversity, productivity, and stability), special aquatic sites, or recreational, aesthetic, and economic values.

f. Typical erosion control measures would be taken to minimize construction impacts other than selection of the least environmentally damaging construction alternative.

g. On the basis of the Guidelines, the proposed site for the discharge of fill material is specified as complying with the requirements of these guidelines with the inclusion of appropriate and practical conditions to minimize pollution or adverse impacts to the aquatic ecosystem.

A2 – Agency Coordination

SEE DISTRIBUTION

Dear _____:

The Chicago District would appreciate your agency's comments on proposed ecosystem restoration measures at Lockport Prairie and Prairie Bluff Preserve, on forest preserve land near Lockport in Will County, Illinois. The purpose of the project is to improve hydrology and vegetation; a map of the parcels is attached. The selected plan would involve

- removing invasive plants (herbiciding) and planting desirable species at Lockport Prairie;
- disabling drainage tile and planting desirable species at Prairie Bluff Preserve;
- installing infiltration trench sections on east shoulder of Rt. 53;
- installing water-level controls on five culverts under railroad tracks;
- installing new culvert under Division Street, between bluff and railroad tracks; and
- removing and disposing of sediment and debris from culverts under railroad tracks.

The Lockport Prairie lies in the floodway of the Des Plaines River and is generally covered in wetland vegetation. The Prairie Bluff Preserve is an agricultural field with drainage tiles. The disposal area is a county park in downtown Joliet containing foundations of steel mills and blast furnaces.

The project would involve ground disturbance only in low, wet areas (hydric souls), or in areas already disturbed by excavation or filling. No impacts to archaeological or historic properties are expected; the Illinois SHPO has been consulted, and is expected to concur with this determination.

This documentation is provided in accordance with the requirements of the National Historic Preservation Act and 36 CFR 800. Copies of the environmental assessment will available from this office in the near future. Comments or questions should be directed to Keith Ryder at 312/846-5587 or keith.g.ryder@usace.army.mil. Thank you for your assistance.

Sincerely,

Susanne J. Davis, P.E.
Chief of Planning Branch

Attachment

DISTRIBUTION

Kickapoo of Oklahoma Bus. Committee
P.O. Box 70
McCloud, OK 74851
ATTN: Mr. Tony Salazar, Chairman

Kickapoo of Kansas Tribal Council
P.O. Box 271
Horton, KS 66439
ATTN: Ms. Bobbi Darnell, Chairperson

Kickapoo Traditional Tribe of Texas
Box HC 1 9700
Eagle Pass, TX 78853
ATTN: Mr. Juan Garza, Chairman

Miami Nation in Indiana
P.O. Box 41
Peru, IN 46970
ATTN: John Dunnagan

Miami Tribe of Oklahoma
P.O. Box 1326
Miami, OK 74355
ATTN: Ms. Julie Olds

Midwest SOARRING Foundation
3013 S. Wolf Rd. #192
Westchester, IL 60154
ATTN: Joseph Standing Bear

Citizen Potawatomi Nation
1901 S. Gordon Cooper Dr.
Shawnee, OK 74801
ATTN: Jeremy Finch

Forest County Potawatomi Exec. Council
P.O. Box 340
Crandon, WI 54520
ATTN: Vince Leppart

Huron Potawatomi Tribal Office
2221 One-and-a-half Mile Rd.
Fulton, MI 49052
ATTN: Laura Spur, Director

Hannahville Potawatomi Comm. Council
N 14911 Hannahville B1 Rd.
Wilson, MI 49896-9728
ATTN: Mr. Kenneth Meshiguad, Chairman

Prairie Band Potawatomi Nation
16281 Q Rd.
Mayetta, KS 66509
ATTN: Jim Potter

Pokagon Band of Potawatomi Indians
P.O. Box 180
Dowagiac, MI 49047
ATTN: Mark Parrish

Illinois Historic Preservation Agency
1 Old State Capitol Plaza
Springfield, Illinois 62701
ATTN: Anne Haaker

Dear Ms. Haaker:

The Chicago District would appreciate your agency's comments on proposed ecosystem restoration measures at the Lockport Prairie and Prairie Bluff Preserve, near Lockport in Will County, Illinois. A map of the parcels is attached; the selected plan would involve

- removing invasive plants (herbiciding) and planting desirable species at Lockport Prairie;
- disabling drainage tile and planting desirable species at Prairie Bluff Preserve;
- installing infiltration trench sections on east shoulder of Rt. 53;
- installing water-level controls on five culverts under railroad tracks;
- installing new culvert under Division Street, between bluff and railroad tracks; and
- removing and disposing of sediment and debris from culverts under railroad tracks.

The Lockport Prairie has been disturbed by construction of roads and railroads, by dumping, and by limestone quarrying; the prairie lies in the Des Plaines River floodway and would not have been an attractive site for aboriginal occupation. The project area is immediately adjacent to the Division Street (16th Street) bridge, a historically significant structure built in the 1890s.

The Prairie Bluff Preserve is an agricultural field, disturbed by installation of drainage tiles.

The disposal area lies in the Joliet Iron Works Historic Site, a county park in Joliet containing foundations of steel mills and blast furnaces (active 1869-1932, razed 1936-1937); sediment removed from railroad culverts at Lockport Prairie would be placed as part of a new picnic area.

The project would involve ground disturbance only in low, wet areas (hydric soils), or in areas already disturbed by excavation or filling. It is my staff's opinion that the project would not affect the Division Street bridge; foundations in the county park; or the structures or visual setting of the I&M Canal Heritage Corridor, San-Ship Canal, San-Ship Canal Historic District, or Illinois Waterway.

Please mark your reply to the attention of Keith Ryder; questions may be directed to Mr. Ryder at 312/846-5587 or keith.g.ryder@usace.army.mil . Thank you for your assistance.

Sincerely,

Susanne J. Davis, P.E.
Chief of Planning Branch

Attachments

U.S. Fish and Wildlife Service
1250 South Grove Ave. Suite 103
Barrington, IL 60010
ATTN: John Rogner

Dear Mr. Rogner:

The Chicago District will require a Fish and Wildlife Coordination Act report for the Lockport Prairie feasibility study. The study will examine measures to restore and enhance the natural communities, endangered and threatened species habitat, and wildlife habitat at the Lockport Prairie Nature Preserve by stabilizing and improving hydrology, or by other measures as deemed necessary. An environmental assessment will be prepared during 2004-2005; a map of the study area is attached.

I would appreciate an estimate of funds needed by your staff for preparation of draft and final FWCA reports; funds can then be transferred to your office.

Please mark your reply to the attention of Keith Ryder; questions should be directed to Mr. Ryder at 312/846-5587 or at keith.g.ryder@usace.army.mil. Thank you for your assistance.

Sincerely,

Philip R. Bernstein
Chief of Planning Branch

Attachment

Ryder/5587
PM-PL-E
PM-PL

SEE DISTRIBUTION

Dear _____:

The Chicago District would appreciate your agency's comments on proposed ecosystem restoration measures at the Lockport Prairie and Prairie Bluff Preserve, on forest preserve land near Lockport in Will County, Illinois. The project would improve hydrology and vegetation***;*** a map of the parcels is attached. The selected plan would involve

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- disabling drainage tile and planting desirable species at Prairie Bluff Preserve;
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- removing and disposing of sediment and debris from culverts under railroad tracks.

The Lockport Prairie lies in the floodway of the Des Plaines River and is generally covered in wetland vegetation. The Prairie Bluff Preserve is an agricultural field with drainage tiles. The disposal area is a county park in downtown Joliet containing foundations of steel mills and blast furnaces.

Please mark your reply to the attention of Keith Ryder; questions may be directed to Mr. Ryder at 312/846-5587. Thank you for your assistance.

Sincerely,

Susanne J. Davis, P.E.
Chief of Planning Section

Attachment

DISTRIBUTION

U.S. Fish and Wildlife Service
1250 South Grove Ave. Suite 103
Barrington, IL 60010
ATTN: John Rogner

Illinois State Geological Survey
615 E. Peabody Dr.
Champaign, IL 61820
ATTN: Jim Miner

Illinois Dept. of Natural Resources
One Natural Resource Way
Springfield, IL 62702-1271
ATTN: Bob Schanzle

Illinois Dept. of Natural Resources
One Natural Resource Way
Springfield, IL 62702-1271
ATTN: Todd Rettig

Illinois Nature Preserves Commission
Tri-County State Park
2050 W. Stearns Rd.
Bartlett, IL 60103
ATTN: Kim Roman

CorLands
25 E. Washington St. Suite 1650
Chicago, IL 60602-1708
ATTN: Joe Roth

Forest Preserve District of Will Co.
P.O. Box 1609
Joliet, IL 60434-1609
ATTN: Floyd Catchpole

Illinois Natural History Survey
607 E. Peabody Dr.
Champaign, IL 61820
ATTN: Dr. Daniel Soluk

Forest Preserve District of Will Co.
P.O. Box 1609
Joliet, IL 60434-1609
ATTN: Marcella DeMauro

Morton Arboretum
4100 Illinois Rt. 53
Lisle, IL 60532-1293
ATTN: Craig Johnson

Environmental Formulation Section
SEE DISTRIBUTION

Dear _____:

The Chicago District requests your comments for a feasibility study on proposed ecosystem restoration measures at Lockport Prairie, near Lockport in Will County, Illinois, as part of the scoping process within the National Environmental Policy Act. The Corps of Engineers feasibility study will identify problems and examine measures to restore and enhance the natural communities, endangered and threatened species habitat, and wildlife habitat at the Lockport Prairie Nature Preserve by stabilizing and improving hydrology, or by other measures as deemed necessary. An environmental assessment will be prepared during 2004-2005; a map of the study area is attached.

Resources in and near Lockport Prairie include Federal-listed and state-listed threatened and endangered species, rare plant communities, wetlands, a unique dolomite prairie, and a historic bridge. I am particularly interested in your comments regarding problems and issues associated with those resources.

Your comments will assist the Chicago District in completing the feasibility study for the project. Please mark your reply to the attention of Keith Ryder; questions should be directed to Mr. Ryder at 312/846-5587 or at keith.g.ryder@usace.army.mil. Thank you for your assistance.

Sincerely,

Susanne J. Davis, P.E.
Chief of Planning Branch

Attachment

DISTRIBUTION

U.S. Fish and Wildlife Service
1250 South Grove Ave. Suite 103
Barrington, IL 60010
ATTN: John Rogner

Illinois State Geological Survey
615 E. Peabody Dr.
Champaign, IL 61820
ATTN: Jim Miner

Illinois Dept. of Natural Resources
Natural Resource Way
62702-1271
ATTN: Bob Schanzle

Illinois Dept. of Natural Resources One
One Natural Resource Way Springfield, IL
Springfield, IL 62702-1271
ATTN: Steve Davis

Illinois Nature Preserves Commission
Tri-County State Park
2050 W. Stearns Rd.
Bartlett, IL 60103
ATTN: Kim Roman

CorLands
25 E. Washington St., Suite 1650
Chicago, IL 60602-1708
ATTN: Joe Roth

Forest Preserve District of Will Co.
Box 1609
Joliet, IL 60434-1609
ATTN: Floyd Catchpole

Illinois Natural History Survey P.O.
607 E. Peabody Dr.
Champaign, IL 61820
ATTN: Dr. Daniel Soluk

Forest Preserve District of Will Co.
P.O. Box 1609
Joliet, IL 60434-1609
ATTN: Marcella DeMauro

Morton Arboretum
4100 Illinois Rt. 53
Lisle, IL 60532-1293
ATTN: Craig Johnson

Illinois Historic Preservation Agency
1 Old State Capitol Plaza
Springfield, IL 62701
ATTN: Anne Haaker

I&M Canal Natl. Her. Corridor Commission
201 W. 10th St. #1-SE
Lockport, IL 6041
ATTN: Phyllis Ellin

U.S. Fish and Wildlife Service Section 7 Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Services Field Office
1250 South Grove Avenue, Suite 103
Barrington, Illinois 60010
Phone: (847) 381-2253 Fax: (847) 381-2285

IN REPLY REFER TO:
FWS/AES-CIFO

February 11, 2015

Col. Frederic A. Drummond, District Engineer
US Army Corps of Engineers
Chicago District
231 S. LaSalle Street, Suite 1500
Chicago, IL 60604

Attention: Ms. Susanne J. Davis

Re: Fish and Wildlife Coordination Act Report for Lockport Prairie Ecosystem Restoration Section 206 Aquatic Ecosystem Restoration, Feasibility Study and Integrated Environmental Assessment

Dear Col. Drummond:

This letter constitutes our Fish and Wildlife Coordination Act Report for Lockport Prairie Ecosystem Restoration Section 206 Aquatic Ecosystem Restoration, Feasibility Study and Integrated Environmental Assessment. It has been prepared under the authority of and in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat.401, as amended; 16 U.S.C. 661 *et seq.);* the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 703 *et seq.);* and in accordance with the U.S. Fish and Wildlife Service's Mitigation Policy. This report constitutes the report of the Secretary of lnterior as required by Section 2(b) of the Fish and Wildlife Coordination Act (FWCA).

This Lockport Prairie Ecosystem Restoration Section 206 Aquatic Ecosystem Restoration was authorized by Water Resource Development Act, 1996 P.L. 104-303.SEC. 206. As amended. 33 US Code§ 2330 AQUATIC ECOSYSTEM RESTORATION). The study authorization directs the United States Army Corps of Engineers (Corps) to identifY methods to restore and protect aquatic ecosystems. Description of the project area and proposed plan components are posted by the Corps at the following URL: http://www.lrc.usace.army.mil/Missions/CivilWorksProjects/LockpottPrairieNaturePreserve.aspx.

The Chicago Ecological Services Field Office of the U.S. Fish and Wildlife Service (USFWS)

participated in the early project planning from 2006 through 2014. The USFWS worked with the Corps and other partners in development of baseline field data collection in relation to the current hydrology of the Lockport Prairie Nature Preserve (LPNP). The USFWS also assisted in the development of the proposed restoration measures to address environmental problems within LPNP and Prairie Bluff Preserve (PBP). More recently, we have reviewed the revised plan focusing on the proposed measures to address habitat for the federally endangered Hine's emerald dragonfly *(Somatochlora hineana,* HED), the federally endangered leafy prairie clover *(Daleafoliosa),* the federally threatened Lakeside daisy *(Hymenoxys acaulis* var. *glabra),* and migrating bird habitat. We reviewed these sections of the report to identify whether any significant impacts to high quality fish and wildlife habitats and species of conservation concern would be likely to result from implementation of the selected restoration measures, and have incorporated recommendations to conserve and improve those resources into this Report.

It is our understanding that coordination with the Illinois Department of Natural Resources and Illinois Nature Preserve is occurring separately; therefore, this report does not represent the opinion of the State on this project. State of Illinois threatened and endangered species occur in the project area which includes a dedicated Illinois Nature Preserve.

FISH AND WILDLIFE RESOURCES AND RECOMMENDATIONS

Lockport Prairie Nature Preserve and Prairie Bluff Preserve:

The proposed restoration measures for this area of the project would include removal of invasive shrub and herbaceous plant species through mechanical and chemical means, installation of native plant material, hydrologic restoration and drainage tile disablement and erosion control at Prairie Bluff.

Implementation of this project in accordance with the conservation measures below will greatly benefit the conservation of the only population of the HED in Illinois; an essential population to the rangewide recovery of this endangered species. The LPNP and its groundwater contribution area, including PBP, are located within the landscape of the Lower Des Plaines River Valley. In addition, LPNP is only one of seven critical habitat units that contains breeding habitat for the species and is the western most site in Illinois.

Management and Restoration Activities to be Implemented as Conservation Measures:

We recommend measures that have been developed as pa1t of the Hine's Emerald Dragonfly Habitat Management and Restoration in Illinois, Intra-Service Section 7 Biological Evaluation (USFWS 2014). The management and restoration activities described below have been adapted from traditional methods in order to avoid and minimize impacts to HED, its critical habitat primary constituent elements, and to the leafy prairie clover and the Lakeside daisy. These actions will be implemented according to current and future Service guidance and technical assistance. The following actions have been considered under this consultation:

- access by foot or operational vehicles along existing trails and access paths;
- access by operational vehicles on matting in wetland areas;

- access on foot (no vehicles) within a 65 foot (20 meter) buffer of HED larval habitat year round as mapped unless agreed upon by land managers and the Service;
- delivery and staging of heavy equipment in upland areas outside of rapid recharge areas;
- installation and removal of matting in wetland areas;
- crossing HED larval rivulets on foot or with bridge constructed from composite matting;
- crossing wetlands and HED larval rivulets with trucks/tractors on matting in situations where access paths are not available;
- crossing wetlands without HED breeding habitat with low ground pressure vehicles (5 pounds per square inch);
- restoring PBP to native vegetation and implementation of various storm water BMPs in this groundwater contribution area to increase groundwater infiltration;
- removing woody vegetation on foot in uplands and wetlands, using hand equipment such as brush cutters and chainsaws;
- mowing woody vegetation in uplands;
- utilizing brush hogs or similar equipment in upland areas and wetlands not containing larval))habitat;
- stockpiling and/or burning piles of cut vegetation in upland areas;
- staging and filling of fuel, herbicides and other chemicals in upland areas that are not up gradient to HED larval habitat or within rapid recharge areas;
- hand wicking herbicides within a 65 foot buffer of HED larval habitat with aquatic approved herbicides;
- herbicide application by foliar spraying invasive vegetation will only be conducted outside of the 65 foot buffer around Hine's emerald dragonfly larval habitat and with a USFWS aquatic approved herbicide and surfactant;
- implement hydrological and structural/morphological restoration to rivulets in cooperation with USFWS technical assistance.

The federally threatened eastern prairie fringed orchid *(Platanthera leucophaea)* has not been verified to occur at LPNP, however seeds of this species have been planted there in the past I0 years. We recommend that a survey for this species occur prior to and during construction activities to ensure that if prairie orchids are present they are not impacted. Surveys should be performed during its bloom period (typically, the last week of June through the first two weeks in July, more precise dates each year can be coordinated with our office). Some activities described may temporarily affect the orchid if present, and a conservation plan should be developed to avoid harm to this species.

To determine the benefit of restoration and to avoid impacts during restoration we recommend that groundwater levels be monitored within LPNP. In addition, we recommend that prior to and during restoration that the HED larvae be monitored in known breeding habitat locations within LPNP. Further guidance on these recommendations can be provided upon request.

SUMMARY OF FINDINGS

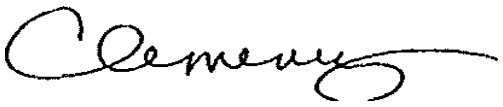
We strongly support the removal of invasive plant species and hydrological restoration for the important habitat within LPNP and provided by PBP. We encourage the consideration of the

above mentioned recommendations. If changes or modifications to the plan occur during design, these should be provided to our office for review and comment.

We support the proposed ecological restoration of LPNP and PBP including the above measures to identify and protect the HED, leafy prairie clover, Lakeside daisy, and the eastern prairie fringed orchid.

We appreciate the ongoing coordination on this project and look forward to working more closely with you on subsequent phases of project planning. If you have any questions, please contact me (847/381-2253, ext. 11) or my staff contact Mr. Kristopher Lah (847/366-2347).

Sincerely,



Louise Clemency
Field Supervisor

cc: Ralph Schultz, Forest Preserve District of Will County
Jennifer Skufca, Illinois Department of Natural Resources
Valerie Njapa, Illinois Nature Preserve Commission
Kelly Neal, Illinois Nature Preserve Commission

A3 – DRAFT FONSI

Finding of No Significant Impact
Lockport Prairie Ecosystem Restoration

Background

The non-Federal sponsor, the Forest Preserve District of Will County, has requested that the Chicago District, USACE initiate a study under Section 206 Aquatic Ecosystem Restoration to ascertain the feasibility of restoration features to restore the ecological integrity of the Lockport Prairie project area. This study evaluates the feasibility and environmental effects of restoring marsh, sedge meadow, prairie, oak savanna and floodplain forest areas. The scope of this study addresses the issues of altered hydrology, native plant community preservation, invasive species, connectivity, rare wetland communities, native species richness and encourages public education. This Feasibility Report and Integrated Environmental Assessment will assess and identify problems and opportunities, identify and evaluate measures, and recommend and design the most cost effective and feasible solution to the ecological problems currently existing within the area of study

One crucial component that is important to ecosystem integrity and integrates both aquatic and riparian or buffer habitat, is wetlands. Historically, northeastern Illinois was lush with vast expanses of wetlands. Restoring wetlands and other aquatic habitat will provide critical habitat for a number of organisms. These wetlands and buffering plant communities would serve as an important refuge for migrant and resident bird species, as well as a variety of aquatic organisms (fish, amphibians, aquatic insects, etc.). The main problems at Lockport Prairie are as follows:

- Increased coverage of aggressive and invasive plant species
- Fragmentation of local habitat patches by agricultural practices
- Altered hydrological processes
- Lack of large contiguous open grasslands
- Increased coverage by non-native shrubs
- Degradation of rare native plant communities

Brief Summary of Findings

Seven (7) measures, including the No Action measure, were input into the IWR-Planning Suite in terms of costs and benefits. These measures that were processed through the IWR Planning Suite program to generate cost effective plans. The cost effective and incremental cost analysis takes implementation and real estate costs and ecosystem outputs into consideration. Ecosystem outputs were measured via the Floristic Quality Index (FQA). Five (5) alternative plans, including the No Action Plan, were deemed best case scenarios for project implementation. Alternative 5 was selected as the National Ecosystem Restoration (NER) Plan, which for the purposes of this Environmental Assessment is termed the Preferred Plan. Rationale for selecting the NER/Preferred Plan is presented in Section 4.6 and 4.7.

- Alternative Plan 1: (No Action Plan Future) Without-Project Conditions (see Section 2.5.2)
- Alternative Plan 2: MU-1: Full restoration of hydrology through disablement of drain tiles, invasive species removal, prescription burning and native plant installation
- Alternative Plan 3: MU-1: Full restoration of hydrology through disablement of drain tiles, invasive species removal, prescription burning and native plant installation& MU-3: Full restoration by removal of invasive herbaceous and shrub, prescription burning and native plant installation

- Alternative Plan 4: MU-1: Full restoration of hydrology through disablement of drain tiles, invasive species removal, prescription burning and native plant installation & both MU-2 & MU-3: Full restoration by removal of invasive herbaceous and shrub, prescription burning and native plant installation
- Alternative Plan 5: MU-1 : Full restoration of hydrology through disablement of drain tiles, invasive species removal, prescription burning and native plant installation & all MU-2 & MU-3 & MU-4: Full restoration by removal of invasive herbaceous and shrub, prescription burning and native plant installation

The NER/Preferred Plan

The plan that reasonably maximizes net National Ecosystem Restoration benefits and is consistent with the Federal objective, authorities and policies, is identified as the NER plan. This NER Plan is considered as the Preferred Plan for direct, indirect and cumulative effects assessment under NEPA in the following Chapter. The NER/Preferred Plan was determined to be Alternative 5. Alternative 5 would restore over 1,000 acres of habitat within Saganashkee Slough project area which includes hydrogeomorphic and native plant community restoration.

The Preferred Plan presented in this integrated Environmental Assessment are in compliance with appropriate statutes, executive orders and memoranda including the Natural Historic Preservation Act of 1966; the Endangered Species Act of 1973; the Fish and Wildlife Coordination Act; Executive Order 12898 (environmental justice); Executive Order 11990 (protection of wetlands); Executive Order 11988 (floodplain management); and the Rivers and Harbors Act of 1899. The potential project is in compliance with the Clean Air Act; the Clean Water Act, and the National Environmental Policy Act of 1969.

Major Compliance Items

Environmental Justice

The Preferred Plan would not cause adverse human health effects or adverse environmental effects on minority populations or low-income populations. Executive Order 12898 (environmental justice) requires that, to the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.

A database search of the EPA EJView mapping tool (Accessed 27 October 2014), revealed that within the greater Lockport, Illinois area in which the Lockport Prairie study area occurs, there are not Environmental Justice issues to be concerned with. Since the overall project is considered ecosystem restoration and will only benefit the surrounding environment and communities, no adverse effects to any low income populations and/or minority populations are expected.

Clean Air Act

The local air quality in Lockport, Will County, IL is considered 'non-attainment' under the Clean Air Act for ozone, 8-hour ozone and sulfur dioxide. The project is within the non-attainment zone. Once implemented, the project itself will be neutral in terms of air quality, with no features that either emit or sequester air pollutants to a large degree. During the project construction, heavy equipment would cause minor, temporary air quality impacts, however all equipment will be in compliance with current air quality

control requirements for diesel exhaust, fuels, and similar requirements. A general conformity analysis was not conducted due to the short and temporary nature of any air quality impacts.

Section 401 of the Clean Water Act

A Section 404(b)(1) analysis was completed for the preferred plan. Features addressed by the 404 include the disablement of drain tiles to create wetland habitat. No long-term, adverse effects were determined. Since project activities under the jurisdiction of Section 401 are minimal, restorative of habitat and water quality in nature, an individual permit for Section 401 Water Certification will not be sought.

USFWS Coordination

Coordination with between the Chicago District and Region 3 US Fish & Wildlife Services began in 2002 with informal meetings discussing problems on the site and potential restoration actions. Our coordination has been completed for this phase of the project. The U S. Fish and Wildlife has completed their review of the proposed project and supports the proposed restoration measures. The following is the summary of their findings from their February 11, 2015 letter: We strongly support the removal of invasive plant species and hydrological restoration for the important habitat within LPNP and provided by PBP. We encourage the consideration of the above mentioned recommendations. If changes or modifications to the plan occur during design, these should be provided to our office for review and comment. We support the proposed ecological restoration of LPNP and PBP including the above measures to identify and protect the HED, leafy prairie clover, Lakeside daisy, and the eastern prairie fringed orchid.

State of Illinois Historic Preservation Act

Coordination with the Illinois Historic Preservation Agency (IHPA) commenced with a project scoping letter dated 21 December 2006. In a letter 09 January 2007, the IHPA informed USACE that if any cultural or archaeological material is discovered during earthwork in already disturbed area, activities should cease and the SHPO would be notified.

Public Interest

An Environmental Assessment (EA) was prepared for the project and sent to Federal, State and local agencies along with the general public for review. A 30-day Public Review period will be held for the Environmental Assessment. Significant comments from the Federal, State or local agencies or the public were addressed and are attached to this FONSI. All comments and correspondence are attached to this FONSI.

Conclusion

An Environmental Assessment was completed for the proposed habitat restoration within the Lockport Prairie study area near Lockport, Illinois. The Environmental Assessment has found that there would be no adverse affects resulting from implementation of the Preferred Plan/NER Plan. A 30-day Public Review period will be held from __ _____ 2015 to __ ____ 2015, and any comments received would be incorporated document if necessary. The NEPA document and supporting appendices were placed on the Chicago District's Civil Works webpage for maximum distribution.

Christopher T. Drew Date: _____
Colonel, U.S. Army
District Commander

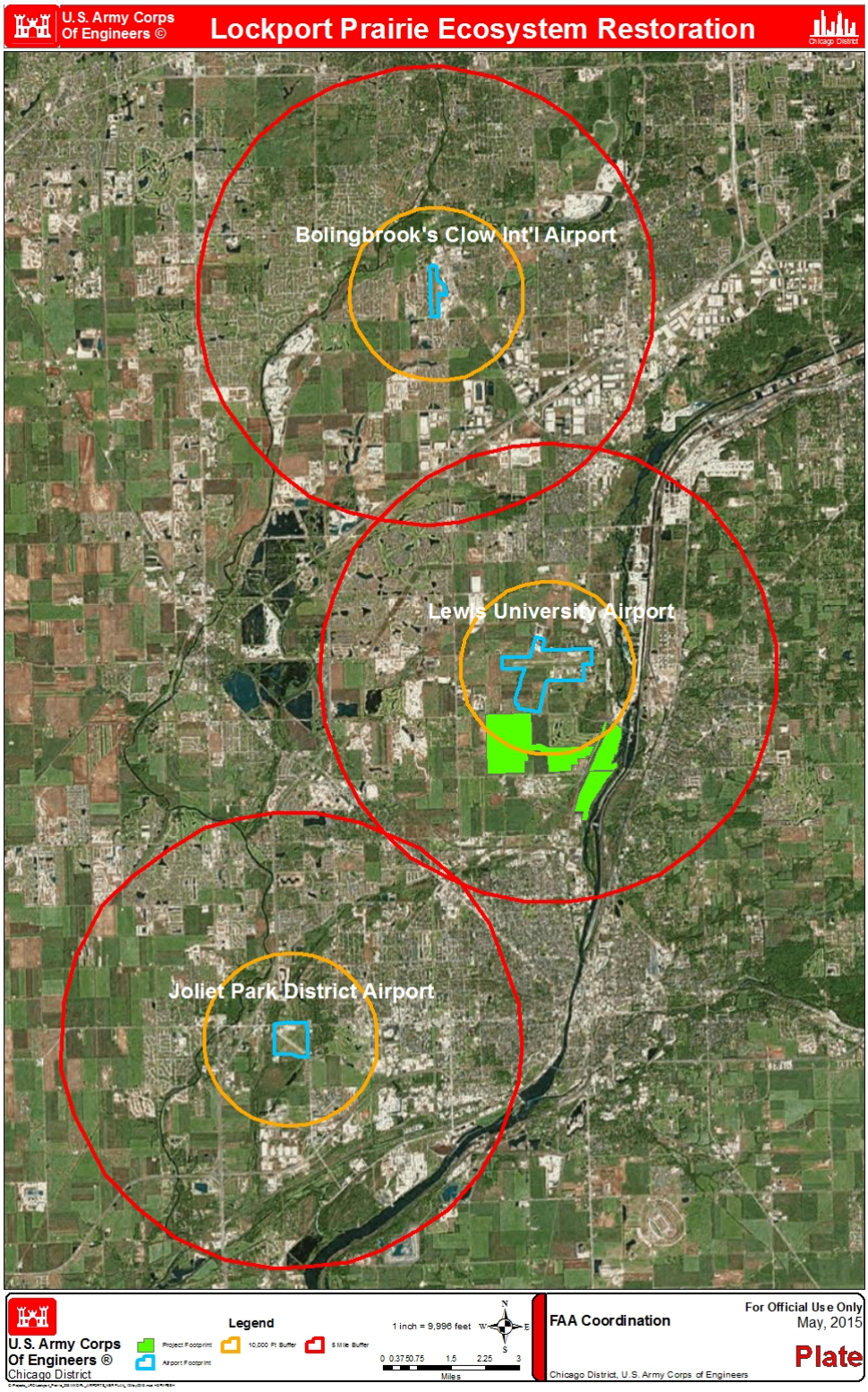
A4 – Planning Information

Summary of FWOP and FWP Conditions Environmental Benefits Calculations

The following table is a truncated table that was used to average the Mean Coefficient of Conservatism (Mean C) over the 50 year period of analysis in order to calculate future without project and future with project conditions. The Mean C is a measure of plant community quality that is calculated from a list plant species that are currently present or are predicted to occur within each plant community type over time. The Mean C is then converted to a standard Habitat Suitability Index (0 to 1) that is then used in combination with acres to calculate Habitat Units (HU). For a full list of plant species per plant community type per current conditions are compiled in Appendix I and FWOP and FWP plant species lists are in Appendix J.

		Year									
Measures	**Plant Community**	**0**	**1**	**2**	**3**	**4**	**5**	**48**	**49**	**50**	**AVE**
MU1-Full	Mesic Prairie	0	0	1.5	2.5	3.5	4.5	5.74	5.74	5.74	5.28
	Wet Mesic Prairie	0	0	1.5	2.5	3.5	4	4.66	4.66	4.66	4.33
	Wet Prairie	0	0	1.5	2.5	3.5	4.5	5.3	5.3	5.3	4.91
	Marsh	0	0	1.5	2.5	3.5	4	5.52	5.52	5.52	5.06
MU2-Shrubs	Oak Savanna	1.33	1.45	1.75	2	2	2	2	2	2	1.98
	Marsh	1.81	1.81	1.81	1.83	1.83	1.83	1.83	1.83	1.83	1.83
MU2-Full	Oak Savanna	1.33	1.5	2	3	3.5	4	5.01	5.01	5.01	4.71
	Marsh	1.81	1.81	2.5	3	3.5	4	4.88	4.88	4.88	4.62
MU3-Shrubs	Marsh	1.81	1.81	1.81	1.83	1.83	1.83	1.83	1.83	1.83	1.83
	Sedge Meadow	3.82	3.82	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85
	Wet Prairie	3	3	3.2	3.25	3.25	3.25	3.25	3.25	3.25	3.24
	Wet Mesic Prairie	3.33	3.33	3.4	3.45	3	3.5	3.56	3.56	3.56	3.53
	Mesic Prairie	3.22	3.22	3.4	3.5	3.53	3.53	3.53	3.53	3.53	3.51
	Dry Mesic Prairie	3.52	3.52	3.6	3.63	3.63	3.63	3.63	3.63	3.63	3.63
	Floodplain Forest	1.73	1.73	1.85	1.9	2	2.07	2.07	2.07	2.07	2.05
MU3-Full	Marsh	1.81	1.81	2.5	3	3.5	4	4.88	4.88	4.88	4.62
	Sedge Meadow	3.82	3.82	4.25	4.5	4.75	4.8	4.97	4.97	4.97	4.89
	Wet Prairie	3	3	3.5	3.7	3.74	3.74	3.74	3.74	3.74	3.71
	Wet Mesic Prairie	3.33	3.33	3.4	3.8	4	4.1	4.1	4.1	4.1	4.05
	Mesic Prairie	3.22	3.22	3.5	3.75	4	4.16	4.16	4.16	4.16	4.1
	Dry Mesic Prairie	3.52	3.52	3.7	3.9	4	4.11	4.11	4.11	4.11	4.07
	Floodplain Forest	1.73	1.73	1.9	2.1	2.7	3.5	4.09	4.09	4.09	3.87
MU4-Shrubs	Marsh	1.81	1.81	1.81	1.83	1.83	1.83	1.83	1.83	1.83	1.83
	Sedge Meadow	3.82	3.82	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85
	Wet Prairie	3	3	3.2	3.25	3.25	3.25	3.25	3.25	3.25	3.24
	Wet Mesic Prairie	3.33	3.33	3.4	3.45	3	3.5	3.56	3.56	3.56	3.53
	Mesic Prairie	3.22	3.22	3.4	3.5	3.53	3.53	3.53	3.53	3.53	3.51
	Dry Mesic Prairie	3.52	3.52	3.6	3.63	3.63	3.63	3.63	3.63	3.63	3.63
	Floodplain Forest	1.73	1.73	1.85	1.9	2	2.07	2.07	2.07	2.07	2.05
MU4-Full	Marsh	1.81	1.81	2.5	3	3.5	4	4.88	4.88	4.88	4.62
	Sedge Meadow	3.82	3.82	4.25	4.5	4.75	4.8	4.97	4.97	4.97	4.89
	Wet Prairie	3	3	3.5	3.7	3.74	3.74	3.74	3.74	3.74	3.71
	Wet Mesic Prairie	3.33	3.33	3.4	3.8	4	4.1	4.1	4.1	4.1	4.05
	Mesic Prairie	3.22	3.22	3.5	3.75	4	4.16	4.16	4.16	4.16	4.1
	Dry Mesic Prairie	3.52	3.52	3.7	3.9	4	4.11	4.11	4.11	4.11	4.07
	Floodplain Forest	1.73	1.73	1.9	2.1	2.7	3.5	4.09	4.09	4.09	3.87

FAA Wildlife Hazard Assessment and Coordination



This figure shows the distance of the Lockport Prairie Section 206 project site from three airports within 5 and 10 miles of the site.

The FAA Advisory Circular provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. It also provides a list of species derived from the FAA National Wildlife Strike Database that have the greatest concern of causing airstrikes. This list of species was used to perform the initial analysis provided.

Each species provided in Table 1 of Advisory Circular No. 150/5200-33B was addressed by Corps biologists utilizing common knowledge of habitat requirements and life history characteristics of the particular species. Based on this, conservative predictions were made on whether a certain species abundance would increase or decrease from the existing condition per the purposed ecosystem restoration plan. Current species' abundances were determined by utilizing existing information inventoried for the Feasibility Study and the Corps biologist's familiarity with the sites and the greater Des Plaines River watershed's ecology. The changes in species' abundances were predicted by considering the existing habitat, what changes would be made through restoration, and how would these species react. For example, changing secondary growth, weedy forest into a reservoir would effectively remove Deer habitat, thusly reducing the localized relative abundance within the area of consideration. Another example would be converting a forest preserve mowed grass area with a pond into prairie and emergent wetland habitat would effectively eliminate Canada Geese habitat, thusly reducing the localized relative abundance.

Species of Concern	Composite Hazard Ranking	Des Plaines River Corridor Abundance	Current Project Site	Abundance With Restoration Project
Deer	1	high	Low	neutral
Vultures	2	moderate	Low	neutral
Geese	3	high	High	Decrease
Cormorants/Pelicans	4	low	Low	neutral
Cranes	5	moderate	Low	Increase
Eagles	6	low	Low	neutral
Ducks	7	high	High	neutral
Osprey	8	low	Low	neutral
Turkey	9	absent	NA	NA
Herons	10	high	High	neutral
Hawks	11	high	Moderate	neutral
Gulls	12	high	Moderate	neutral
Rock Pigeons	13	high	High	Decrease
Owls	14	low	Low	neutral
Larks/Buntings	15	moderate	Low	neutral
Crows	16	high	High	neutral
Coyote	17	moderate	Moderate	neutral
Mourning Dove	18	high	High	Decrease
Shorebirds	19	low	Low	increase
Blackbirds/Starlings	20	high	High	neutral
American Kestrel	21	low	Low	Increase
Meadow Larks	22	low	Low	Increase
Swallows	23	moderate	Moderate	neutral
Sparrows	24	high	High	neutral
Nighthawks	25	moderate	Low	neutral

Summarizing the initial conservative analysis shows that a few species would have changes to their localized, relative abundances based on changes in habitat.

Species of Concern	Composite Hazard Ranking	Des Plaines River Corridor Abundance	Current Project Site	Abundance With Restoration Project
Geese	3	high	High	Decrease
Cranes	5	moderate	Low	Increase
Rock Pigeons	13	high	High	Decrease
Mourning Dove	18	high	High	Decrease
Shorebirds	19	low	Low	Increase
American Kestrel	21	low	Low	Increase
Meadow Larks	22	low	Low	Increase

The four groups of species (Cranes, Shorebirds, American Kestral and Meadow Larks) that are expected to respond positively to proposed restoration at Prairie Bluff Preserve and Lockport Prairie are not expected to significantly change the relative abundance of these species within the flight corridor of the identified airports. The only crane species that would be expected to respond favorably to restoration actions is the Sandhill Crane. The Sandhill Crane flies through the Des Plaines River corridor during seasonal migration times. In previous restorations of large grasslands within the Chicago Region, the sites have attracted at most one or two pairs that have rested for two to three days at a time. Large flocks are mostly attracted to large open agricultural fields, less so to newly restored grasslands. Shorebirds would be attracted to newly restored emergent wetlands in Prairie Bluff Preserve. Again, in past restorations, about 5-10 individuals are seen on any given day only during seasonal migrations. The American Kestrel is expected to be attracted to the newly restored grassland in Prairie Bluff Preserve. However, these are territorial species and two to three pairs at most would be present during the year. Meadow larks would be attracted to the newly restored grassland at Prairie Bluff Preserve. Based on previous grassland restorations within the region the total number of meadow larks that might be attracted to Prairie Bluff Preserve would be around 10-20 individuals. It is the Chicago District's opinion that based on the existing conditions of the Des Plaines River corridor, and the current condition of the site, that any changes made would be negligible in changing overall abundance and composition of FAA Species of Concern.

Coordination with USDA-FAA Regarding Wildlife Hazards in Vicinity to Prairie Bluff Preserve

Coordination was initiated in 2009 by the Local Sponsor, Forest Preserve District of Will County. A follow up meeting was held in 2010 and further information was communicated to USDA-APHIS Wildlife Services with regards to restoration of Prairie Bluff Preserve. In conclusion, the proposed restoration measures are not anticipated to increase wildlife hazards in and around Lewis University Airport. Monitoring of wildlife/waterfowl (visual assessment) use of Prairie Bluff Preserve during and post construction (please see Appendix H-Monitoring and Adaptive Management) will be conducted and measures will be taken if conditions indicate any unanticipated increases in concerning species (see above table). Side note, the information regarding storm water detention/retention galleries is related to an educational program the Local Sponsor has installed adjacent to the project site that helps to educate visitors about green infrastructure. The drain tile disablement plan and implementation that will be completed during construction will follow the recommendations set forth within the following correspondences.

United States Department of Agriculture
Marketing & Regulatory Programs
Animal and Plant Health Inspection Service
Wildlife Services
2869 Via Verde Dr. Springfield, IL
62703

To: Will County Forest Preserve District

Subject: Prairie Bluff

Date: 12/16/09

Mr. Hawkins,

This letter was prepared in response to your request for USDA-Wildlife Services to evaluate the proposed Prairie Bluff Preserve Development; specifically for potential wildlife related hazards to aircraft using Lewis University Airport. The provided schematics indicate that the site is located in the approach path of Runway 2/20, and within the 10,000 foot separation distance for development of any hazardous wildlife attractants as identified by the FAA in Advisory Circular 150/5200-33B (effective 8/28/2007). Prairie Bluff Preserve will be developed in a series of phases, with the first phase occurring in the northwest corner. Currently Prairie Bluff Preserve consists of a wetland complex surrounded by agricultural crops. Wildlife Services has observed thousands of waterfowl (mainly Canada geese) foraging in the agricultural crops in the Phase 1 area of proposed development, thus posing a severe hazard to aviation. Wildlife Services has been informed by project proponents that the remaining property will be left in agriculture production until developed. To ensure that there is no net increase in wildlife hazards to Lewis University Airport as a result of the proposed Phase 1 project, Wildlife Services recommends the following:

1. It is absolutely critical that the area proposed to be developed is dry 48 hours after a rain event (no standing water).
2. Mow the temporary cover crop (annual rye grass) before it produces seed heads to reduce its attractiveness to wildlife.
3. Avoid utilizing the following species due to their attractiveness to white-tailed deer, ring-necked pheasants, and/or waterfowl:
   Bouteloua curtipendula Amorpha canescens Chamaecrista fasciculata
   Dalea spp.
   Carex spp. Scirpus spp.
   Ideally, prairie plantings in close proximity to airports would have switch grass (*Panicum virgatum*) make up 50% of the grass component.
4. Implement a wildlife monitoring program for Prairie Bluff Preserve designed to identify and properly manage wildlife posing hazards to aircraft using Lewis University Airport.

In the Advisory Circular 150/5200-33B (effective8/28/2007) it states that "At public-use airports, the FAA recommends immediately correcting, in cooperation with local, state, and Federal regulatory agencies, any wildlife hazards arising from existing wetlands located on or near airports".

5. In emergency situations, grant Lewis University Airport personnel access to Prairie Bluff Preserve to perform non-lethal wildlife harassment to mitigate immediate wildlife hazards to aviation.

Beyond the scope of Phase 1, Wildlife Services is concerned about the synergistic effects of having a wetland complex with permanent water, and waterfowl nesting cover in close proximity to each other. In addition, prior to the completion of Prairie Bluff Preserve there will be an excellent food source (agriculture crops) on site. When planning future development on Prairie Bluff Preserve it is important to minimize wildlife attractants that may create synergistic effects between future development and current conditions.

If you have questions about our findings, or need additional information about recommendations provided by USDA-WS, feel free to contact me.

Craig Bloomquist Wildlife
Biologist
USDA/APHIS/WS
773-838-0611

cc. Gary Wilson, FAA Terry Schaddel, IDOT

Chris Lawson, JRPD Ron Hudson,
Hanson
Scott Beckerman, USDA-WS Travis
Guerrant, USDA-WS

June 9, 2010

Matt Novander
Forest Preserve District of Will County
17540 West Laraway Road
Joliet, IL 60433

Re: Prairie Bluff Preserve Development

Dear Matt,

Here are responses addressing specific comments related to the April 6, 2010 meeting with USDA:

1. Revised seeding/planting plan has not been received based on the comments from the USDA, dated December 16, 2009.

The revised seeding/planting plan is included in the attached drawings (sheets 60 to 62) and the project specifications Section 02920.

2. An overall site drainage plan needs to be provided with calculations supporting your conclusion that the overall runoff at the site will decrease. This drainage plan needs include the whole site, with the exception of the drainage areas shown in the "Hey and Associates" Design Report, dated March 9, 2010, used for the tile infiltration system.

Drainage for the entire site development is shown on the attached drawings and Stormwater Management Report.

3. Please provide a map for any areas that will be holding surface water for longer than 48 hours, to included water depths.

The stormwater management system for the Priarie Bluff site was designed to prevent any surface water ponding as part of the improvements for longer than 48 hours. It is estimated that the longest time that surface water will pond in the designed stormwater management system is 13.0 hours in the bioretention areas.

Previous review comments:

1. Model that was used to perform infiltration calculations was RECARGA v.2.3 from the Wisconsin DOT. Is this model accepted and are the results acceptable

in IL? Also, the analysis only concerns the two paved parking areas. Runoff from the paved access road, and the remainder of the site, is not accounted for in any way. Also, will changes in the vegetative structure in any way change the runoff rates (CN numbers)? More information is needed before a meaningful review can be performed.

The RECARGA model was developed as a design tool for bioretention areas, raingardens, and infiltration areas. It is not exclusively used in Wisconsin and is applicable to use in Illinois. Just as when using any modeling program, the input data must be chosen carefully to create a model that is accurate for the anticipated site conditions. The RECARGA model uses methodologies that are well documented and used in the engineering field such as the Green-Ampt and TR-55 methodologies.

The RECARGA model is only used for the two bioretention areas in the center of each of the proposed parking areas. The rest of the site is analyzed by comparing the pre- and post-construction runoff curve numbers and site runoff. These calculations are included as part of the project Stormwater Management Report. Even with the addition of the entrance drive and trail system, the runoff curve number for the site is reduced as a result of the project. This is due to the vegetative changes from the current land use of row crops, to a meadow condition for the majority of the site.

2. No information was provided on the "Infiltration Gallery Structures." One of these is shown within the airport's aerial easement, which may negatively impact safe operations at the airport. More information is needed before a meaningful review can be performed.

The infiltration gallery design is now included with the engineering drawings. No surface water ponding is anticipated in any area of the infiltration gallery as all stormwater storage will be underground.

3. Is the aerial easement now considered the Forest Preserve Property? Their drawings depict the property line including the aerial easement. The airport's easement was obtained from the Illinois CMS, and we have not been notified of any transfer, which is required under the easement language between CMS and JRPD.

The aerial easement property is still owned by Illinois Department of Natural Resources.

4. The Council Ring is within the path of the flashing strobe approach lights. Will this cause a disturbance to the people that use the facility? If so, Forest Preserve District may want to consider moving it.

The site will be open from dusk to dawn. The strobe lights are not an anticipated disturbance.

5. No other information regarding the drainage has been provided other than that for the two parking areas and the associated infiltration channels. What is occurring on the rest of the site? What happens to the "extra" discharge from the L.T.P.D. ball fields? Is there any open water from this or any other locations? The road and walk path have pipe culvert crossing under them but no information is given in regards to flows, etc. Are the pipes that cross of sufficient size to handle the storm event and not cause ponding for longer than 48 hours? More information is needed before a meaningful review can be performed.

The stormwater management design for the entire site is included as part of the Stormwater Management Report. The runoff curve number and stormwater runoff volume of the site is reduced as a result of the project. This is due to the vegetative changes from the current land use of row crops, to a meadow condition for the majority of the site.

The surface water runoff from the L.T.P.D. ball fields that drains onto the Prairie Bluff Preserve will be conveyed through the site along existing drainage ways. No open water areas will be developed as part of the proposed improvements to the Prairie Bluff Preserve site. Culverts are provided crossing under the trail system and entrance drive to maintain existing drainage patterns on the site. Design details of all culverts are provided in the Stormwater Management Report.

The stormwater management system for the Priarie Bluff site was designed to prevent any surface water ponding as part of the improvements for longer than 48 hours. It is estimated that the longest time that surface water will pond in the designed stormwater management system is 13.0 hours in the bioretention areas.

Sincerely,

STRAND ASSOCIATES, INC.®

Nicholas J. Orf, P.E., CFM John K. Plut

Enclosure(s)

EcoCAT
Ecological Compliance Assessment Tool

Applicant:	U.S. Army Corps of Engineers	*IDNR Project Number:*	1509717
Contact:	Brook Herman	*Date:*	02/26/2015
Address:	231 S. LaSalle, Suite 1500 Chicago, IL 60604		

Project: Lockport Prairie Ecosystem Restoration
Address: Route 53 and Division Street, Lockport

Description: Project seeks to remove invasive shrubs and herbeceous species from Lockport Prairie Nature Preserve and restore natural hydrology and native plant communities within Prairie Bluff Preserve

Natural Resource Review Results

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Lockport Prairie Class III Groundwater Site

Lockport Prairie INAI Site

Lockport Prairie East INAI Site

Dellwood Park West Nature Preserve

Lockport Prairie Nature Preserve

Banded Killifish *(Fundulus diaphanus)*

Blanding's Turtle *(Emydoidea blandingii)*

Golden Corydalis *(Corydalis aurea)*

Hine's Emerald Dragonfly *(Somatochlora hineana)*

Hine's Emerald Dragonfly *(Somatochlora hineana)*

Lakeside Daisy *(Tetraneuris herbacea)*

Leafy Prairie Clover *(Dalea foliosa)*

Least Bittern *(Ixobrychus exilis)*

Quillwort *(Isoetes butleri)*

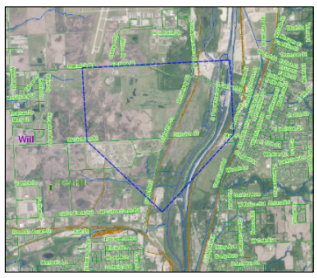
Slender Sandwort *(Minuartia patula)*

Spotted Turtle *(Clemmys guttata)*

An IDNR staff member will evaluate this information and contact you to request additional information or to terminate consultation if adverse effects are unlikely.

Location

The applicant is responsible for the accuracy of the location submitted for the project.



County: Will

Township, Range, Section:

36N, 10E, 14

36N, 10E, 15

36N, 10E, 16

36N, 10E, 17

36N, 10E, 20

36N, 10E, 21

36N, 10E, 22

36N, 10E, 23

36N, 10E, 27

36N, 10E, 28

IL Department of Natural Resources Contact
Nathan Grider
217-785-5500
Division of Ecosystems & Environment

Local or State Government Jurisdiction
U.S. Army Corps of Engineers

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

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