

**CORREPENDENCE WITH INDIANA DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT FOR RULE 5 PERMIT
APPROVAL**

(RULE 5 PERMIT NOTICE OF INTENT TO BE INSERTED
HERE ONCE SUBMITTED TO IDEM)

Clark County Soil and Water Conservation District
9608 HWY 62
Charlestown, IN 47111
812-256-2330



*"Inspiring community involvement through teaching, leading and providing technical assistance
to keep our natural resources abundant, fertile and clean"*

8/27/2012

Redwing Ecological
Attn: Brad Anderson
1139 South Fourth Street
Louisville, KY 40203

Mr. Anderson:

Enclosed is your copy of the Construction/Storm Water Pollution Prevention Plan
Technical Review and Comment Form.

Please feel free to contact me at the Clark County Soil & Water Conservation District office
at 812-256-2330, x-109 with questions and assistance with conservation activities on this site.

Sincerely,

A handwritten signature in red ink, appearing to read 'M. Bell', with a long horizontal flourish extending to the right.

Matt Bell
Urban Conservation Resource Specialist
Clark County Soil & Water Conservation District

Cc: Tom Clevidence (email)

Construction/Stormwater Pollution Prevention Plan Technical Review and Comment (Form 1) Town of Clarksville

Project Information	Project Name: Clarksville Wastewater Effluent Discharge Line County: CLARK
	Plan Submittal Date: 8/13/2012 Hydrologic Unit Code: #051401011120020
	Project Location Description: Southwest of Clarksville's Wastewater Treatment Plant located on Leuthart Dr.
	Latitude and Longitude: 38.29.49N 85.77.60W
	Civil Township: _____ Quarter: _____ Section: _____ Township: _____ Range: _____
	Project Owner Name: Town of Clarksville
	Contact: Tom Clevidence
	Address: 125 East Harrison Avenue
	City: Clarksville State: IN Zip: 47129
	Phone: 812-283-8233 FAX: 812-284-5797 E-Mail: tclevidence@townofclarksville.com
Plan Preparer Name: Redwing Ecological (Brad Anderson)	
Affiliation: Design/Engineer	
Address: 1139 South Fourth Street	
City: Louisville State: KY Zip: 40203	
Phone: 502-625-3009 FAX: 502-625-3077 E-Mail: banderson@redwingeco.com	

Plan Review	Review Date: 08/20/12
	Principal Plan Reviewer: MATT BELL
	Agency: CLARK COUNTY SOIL & WATER CONSERVATION DISTRICT
	Address: 9608 HIGHWAY 62, SUITE 2
	City: CHARLESTOWN State: IN Zip: 47111
	Phone: 812-256-2330 ext 109 FAX: 812-256-0362 E-Mail: matt.bell@in.nacdnet.net
Assisted By: _____	

PLAN IS ADEQUATE: A comprehensive plan review has been completed and it has been determined that the plan satisfies the minimum requirements and intent of ORDINANCE NO.

Please refer to additional information included on the following page(s).

Submit Notice of Intent (NOI): Attach a copy of this cover page when submitting the NOI to the Indiana Department of Environmental Management. Construction activities may begin 48 hours following the submittal of the NOI. A copy of the NOI must also be sent to the Reviewing Authority (e.g. SWCD, DNR).

A preliminary plan review has been completed; a comprehensive review will not be completed within the 28-day review period. The reviewing authority reserves the right to perform a comprehensive review at a later date and revisions to the plan may be required at that time to address deficiencies.

Please refer to additional information included on the following page(s).

Submit Notice of Intent (NOI): Attach a copy of this cover page when submitting the NOI to the Indiana Department of Environmental Management. Construction activities may begin 48 hours following the submittal of the NOI. A copy of the NOI must also be sent to the Reviewing Authority (e.g. SWCD, DNR).

PLAN IS DEFICIENT: Significant deficiencies were identified during the plan review.

Please refer to additional information included on the following page(s).

DO NOT file a Notice of Intent for this project.

DO NOT commence land disturbing activities until all deficiencies are adequately addressed, the plan re-submitted, and notification has been received that the minimum requirements have been satisfied.

Plan Revisions Deficient Items should be mailed or delivered to the Principal Plan Reviewer identified in the Plan Review Section above.

Construction/Stormwater Pollution Prevention Plan - Technical Review and Comment (Form 1)

Project Name: Clarksville Wastewater Effluent Discharge Line
Date Reviewed: 8/20/2012

The technical review and comments are intended to evaluate the completeness of the Construction/Stormwater Pollution Prevention Plan for the project. The Plan submitted was not reviewed for the adequacy of the engineering design. All measures included in the plan, as well as those recommended in the comments should be evaluated as to their feasibility by a qualified individual with structural measures designed by a qualified engineer. The Plan has not been reviewed for other local, state, or federal permits that may be required to proceed with this project. Additional information, including design calculations may be requested to further evaluate the Plan.

All proposed stormwater pollution prevention measures and those referenced in this review must meet the design criteria and standards set forth in the "Indiana Stormwater Quality Manual" from the Indiana Department of Natural Resources, Division of Soil Conservation or similar Guidance Documents.

Please direct questions and/or comments regarding this plan review to:

Matt Bell, Clark County Soil & Water Conservation District

Please refer to the address and contact information identified in the Plan Review Section on page 1.

Assessment of Construction Plan Elements (Section A)

The Construction Plan Elements are adequately represented to complete a plan review:

Yes **No**

The items checked below are adequate. Those left unmarked represent deficiencies and require submittal to meet the requirements of the rule.

A		A	
<input checked="" type="checkbox"/>	1	Index showing locations of required Plan Elements	<input checked="" type="checkbox"/> 2 11 by 17 inch plat showing building lot numbers/boundaries and road layout/names
<input checked="" type="checkbox"/>	3	Narrative describing the nature and purpose of the project	<input checked="" type="checkbox"/> 4 Vicinity map showing project location
<input checked="" type="checkbox"/>	5	Legal Description of the Project Site (Include Latitude and Longitude - NOI Requirement)	<input checked="" type="checkbox"/> 6 Location of all lots and proposed site improvements (roads, utilities, structures, etc.)
<input checked="" type="checkbox"/>	7	Hydrologic unit code (14 Digit)	<input checked="" type="checkbox"/> 8 Notation of any State or Federal water quality permits
<input checked="" type="checkbox"/>	9	Specific points where stormwater discharge will leave the site	<input checked="" type="checkbox"/> 10 Location and name of all wetlands, lakes and water courses on and adjacent to the site
<input checked="" type="checkbox"/>	11	Identification of all receiving waters	<input checked="" type="checkbox"/> 12 Identification of potential discharges to ground water (abandoned wells, sinkholes, etc.)
<input checked="" type="checkbox"/>	13	100 year floodplains, floodways, and floodway fringes	<input checked="" type="checkbox"/> 14 Pre-construction and post construction estimate of Peak Discharge (10 Year storm event)
<input checked="" type="checkbox"/>	15	Adjacent landuse, including upstream watershed	<input checked="" type="checkbox"/> 16 Locations and approximate boundaries of all disturbed areas (Construction Limits)
<input checked="" type="checkbox"/>	17	Identification of existing vegetative cover	<input checked="" type="checkbox"/> 18 Soils map including soil descriptions and limitations
<input checked="" type="checkbox"/>	19	Locations, size and dimensions of proposed stormwater systems (e.g. pipes, swales and channels)	<input checked="" type="checkbox"/> 20 Plans for any off-site construction activities associated with this project (sewer/water tie-ins)
<input checked="" type="checkbox"/>	21	Locations of proposed soil stockpiles and/or borrow/disposal areas	<input checked="" type="checkbox"/> 22 Existing site topography at an interval appropriate to indicate drainage patterns
<input checked="" type="checkbox"/>	23	Proposed final topography at an interval appropriate to indicate drainage patterns	

Construction/Stormwater Pollution Prevention Plan - Technical Review and Comment (Form 1)

Project Name: Clarksville Wastewater Effluent Discharge Line
Date Reviewed: 8/20/2012

Assessment of Stormwater Pollution Prevention Plan (Sections B & C)

Stormwater Pollution Prevention Plan - Construction Component (Section B)

	Adequate	Deficient	Not Applicable			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B		<p><i>The construction component of the Stormwater Pollution Prevention Plan includes stormwater quality measures to address erosion, sedimentation, and other pollutants associated with land disturbance and construction activities. Proper implementation of the plan and inspections of the construction site are necessary to minimize the discharge of pollutants. The Project Site Owner should be aware that unforeseen construction activities and weather conditions may affect the performance of a practice or the effectiveness of the plan. The plan must be a flexible document, with provisions to modify or substitute practices as necessary.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		1	Description of potential pollutant sources associated with construction activities
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2	Sequence describing stormwater quality measure implementation relative to land disturbing activities
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3	Stable construction entrance locations and specifications (at all points of ingress and egress)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		4	Sediment control measures for sheet flow areas
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5	Sediment control measures for concentrated flow areas
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		6	Storm sewer inlet protection measure locations and specifications
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		7	Runoff control measures (e.g. diversions, rock check dams, slope drains, etc.)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		8	Storm water outlet protection specifications
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		9	Grade stabilization structure locations and specifications
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		10	Location, dimensions, specifications, and construction details of each stormwater quality measure
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		11	Temporary surface stabilization methods appropriate for each season (include sequencing)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		12	Permanent surface stabilization specifications (include sequencing)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		13	Material handling and spill prevention plan
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		14	Monitoring and maintenance guidelines for each proposed stormwater quality measure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		15	Erosion & sediment control specifications for individual building lots

Stormwater Pollution Prevention Plan - Post Construction Component (Section C)

	Adequate	Deficient	Not Applicable			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C		<p><i>The post construction component of the Stormwater Pollution Prevention Plan includes the implementation of stormwater quality measures to address pollutants that will be associated with the final landuse. Post construction stormwater quality measures should be functional upon completion of the project. Long term functionality of the measures are critical to their performance and should be monitored and maintained.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		1	Description of pollutants and their sources associated with the proposed land use
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2	Sequence describing stormwater quality measure implementation
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3	Description of proposed post construction stormwater quality measures (Include a written description of how these measures will reduce discharge of expected pollutants)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		4	Location, dimensions, specifications, and construction details of each stormwater quality measure
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5	Description of maintenance guidelines for post construction stormwater quality measures

Construction/Stormwater Pollution Prevention Plan - Technical Review and Comment

Project Name: Clarksville Wastewater Effluent Discharge Line

Date Reviewed: 8/20/2012

PLEASE FILE FOR A NOTICE OF INTENT AT LEAST 48 HOURS PRIOR TO THE DISTURBANCE OF LAND.

A PERIMETER CONTROL INSPECTION IS REQUIRED AFTER THOSE MEASURES HAVE BEEN IMPLEMENTED AND PRIOR TO ANY FURTHER SITE DISTURBANCE.

THIS REVIEW DOES NOT RELIEVE THE OWNER FROM THE POSSIBILITY OF OBTAINING OTHER PERMITS FOR THE CONSTRUCTION PHASES FROM OTHER STATE AND/OR FEDERAL AGENCIES.



August 9, 2012

Mr. Matt Bell
Clark County Soil and Water Conservation District
9608 Highway 62, Suite 2
Charlestown, Indiana 47111

**Subject: Construction Plan and Storm Water Pollution Prevention Plan
Clarksville WWTP Effluent Line Replacement Project
Clark County, Indiana
Redwing Project 11-097**

Dear Mr. Bell:

Redwing Ecological Services, Inc. (Redwing) is pleased to submit this Construction Plan and Storm Water Pollution Prevention Plan in support of the Clarksville Waste Water Treatment Plant Effluent Line Replacement Project in Clark County, Indiana. The plan has been developed following guidance provided by the Indiana Department of Environmental Management for Rule 5 Stormwater Permitting.

Please call Brad Anderson or Michael Rich at (502) 625-3009 with any questions regarding this project.

Sincerely,

J. Michael Rich, EIT
Engineer

Bradley M. Anderson, PE
Senior Engineer

File: P:\2011 Projects\11-097\Reports\Rule 5 Permit\Clark County SWCD submittal letter.doc

cc: Ms. Brittany Montgomery – Town of Clarksville
Mr. Gary Boblitt, PE – HDR (electronic copy only)

**CORRESPONDENCE WITH INDIANA DEPARTMENT OF
NATURAL RESOURCES FOR FLOODWAY
CONSTRUCTION APPROVAL**



TRANSMITTAL COVER SHEET

Brad Anderson, PE

1139 South Fourth Street
Louisville, KY 40203

Phone: 502.625.3009
Fax: 502.625.3077

Email: banderson@redwingeco.com

Date: August 20, 2012

Attention: Ms. Becky Davis
Division of Water
Indiana Department of Natural Resources
402 West Washington Street
Room W264
Indianapolis, IN 46204-2641

Ms. Davis,

As required by Indiana Code 14-11-4, please find enclosed the completed Adjacent Property Owners Listing (Form N4) in support of the Clarksville Wastewater Treatment Plant Expansion and Effluent Line Replacement Project in Clark County, Indiana. The IDNR application number is FW-26828.

Please let us know if you have any questions or comments or if you need additional information.

Thanks,

Brad

Enclosures: Adjacent Property Owners Listing (Form N4)

From: Water Inquiry [water_inquiry@dnr.IN.gov]

Sent: Tuesday, July 24, 2012 2:09 PM

To: bamontgomery@townofclarksville.com

Cc: banderson@redwingeco.com

Subject: FW: Acknowledgement of Application: FW-26828-Mill Creek-Clark County (Clarksville WWTP Expansion and Effluent Line Project)

Attachments: Special announcement notice.pdf; FW-26828.pdf

Subject: Acknowledgement of Application: FW-26828-Mill Creek-Clark County (Clarksville WWTP Expansion and Effluent Line Project)

This is to acknowledge receipt of your application that was received at the Division of Water. Attached to this email is an Application Receipt Acknowledgement Notice. Please reference the application number shown on the upper left hand corner of the Application Receipt Acknowledgement Notice for submitting any additional documentation.

Due to a new practice of providing Application Receipt Acknowledgement Notices by email, you will not receive a copy of this notice by regular U.S. postal mail. Please refer to the attached Special Email Announcement for details about this new notification procedure. If you can not open the attachments, please contact the Division of Water by email at water_inquiry@dnr.in.gov or by telephone at toll free 1-877-928-3755 or 1-317-232-4160 and select 5 from the main menu to speak to a staff person in the Administrative Section.

Public Notice Information

You are required by IC 14-11-4 and 312 IAC 2-3-3 to provide public notice to any adjacent landowners. You can access the necessary forms and instructions on our website at the following links:

Public Notice Requirements and Instructions - <http://www.in.gov/dnr/water/4948.htm>

Public Notice form - <http://www.in.gov/dnr/water/2450.htm>, select form # 50354

Adjacent Property Owners Listing form # 52086 - digital version is <http://www.in.gov/dnr/water/files/52086.doc> or <http://www.in.gov/icpr/webfile/formsdiv/52086.pdf>

Public notice can not be provided to adjacent landowners until the application is received at the Division of Water. Therefore, if you have provided public notice prior to the Division receiving your application, you will be required to complete the public notice process again. More information concerning this administrative ruling can be found on our website at <http://www.in.gov/dnr/water/files/pn2005changes.pdf>

If you have any questions about Public Notice, please contact our Technical Services at (317) 232-4160 or toll free at (877) 928-3755 and select 1 from the main menu to speak to a staff person in the Technical Services Section.

Indiana Department of Natural Resources / Division of Water

Application Receipt Acknowledgement

Division of Water
Room W264
402 West Washington Street
Indianapolis, IN 46204

Notice Date : July 23, 2012
Toll Free # : (877) 928-3755
Telephone # : (317) 232-4160
FAX# : (317) 233-4579

Application # : FW-26828
Stream : Mill Creek

Type : Construction in a floodway

Applicant:

Town of Clarksville
Brittany Montgomery
2000 Broadway Street
Clarksville, IN 47129

Agent:

Redwing Ecological Services
Incorporated
Bradley M Anderson, PE
1139 South Fourth Street
Louisville, KY 40203-3155

Dear Applicant:

On July 23, 2012, the Division of Water received your permit application under the Flood Control Act, IC 14-28-1, with the associated Flood Hazard Area Rule, 312 IAC 10. Your application has been logged into our database under the application # listed above. Department staff will review your application to determine if additional administrative, technical, or environmental information is required. If additional information is needed to complete our assessments, you will be notified by mail at a later date.

You can monitor the progress of your application on the Division of Water's web page at <http://www.in.gov/dnr/water/>. If you have any questions regarding the status of your application, please contact us at the address shown above or at one of the following telephone numbers. Refer to application # FW-26828 in all correspondence with the Department.

<u>Responsibility</u>	<u>Staff</u>	<u>Telephone and Fax #</u>
Assigned to	TSC South Basin	(317) 232-4160, 233-4579

In addition to a permit from the Department of Natural Resources, you may also be required to obtain a permit from, or coordinate with, the following agencies. Contact with these agencies is your responsibility.

<u>Agency</u>	<u>Telephone #</u>
Indiana Department of Environmental Management Local city or county planning or zoning commission	(317) 233-8488 or (800) 451-6027

Be advised that this notice is not a permit nor an authorization to proceed with the project. It should not be construed as a waiver of the provisions or requirements of any other state, federal, or local regulatory activity.



REDWING
ECOLOGICAL SERVICES, INC.

1139 South Fourth Street • Louisville, KY 40203 • Phone 502.625.3009 • Fax 502.625.3077

July 20, 2012

Ms. Becky Davis
Division of Water
Indiana Department of Natural Resources
402 West Washington Street
Room W264
Indianapolis, IN 46204-2641

Subject: **Permit Application for Construction
Clarksville WWTP Expansion and Effluent Line Replacement Project
Clark County, Indiana
Redwing Projects 11-096 and 11-096-01**

Dear Ms. Davis:

Redwing Ecological Services, Inc. (Redwing), on behalf of the Town of Clarksville (Town), respectfully submits this Permit Application for Construction in support of the proposed Clarksville Waste Water Treatment Plant (WWTP) Expansion and Effluent Line Replacement Project (Project) in Clark County, Indiana (Figure 1). The purpose of the Project is to expand the existing Clarksville WWTP that is nearing capacity and to replace an existing, aging effluent line that is undersized and damaged.

The Project consists of two distinct study areas, the WWTP expansion study area and the effluent line replacement study area. The WWTP expansion study area is approximately 7.5 acres in size and is located adjacent to the existing WWTP. The WWTP expansion study area consists of a former town park with picnic and athletic facilities including an athletic field and walking track (Figure 2). Habitat found here is typical of a park setting and includes maintained lawn with scattered trees ranging in age from young to mature. This area is located outside of the floodway and no jurisdictional waters are located within the proposed WWTP expansion study area.

The effluent line replacement study area is a linear project that begins at the existing WWTP and extends south approximately 1,550 feet, within a varying-width corridor that terminates at Mill Creek. The effluent line replacement study area is dominated by young to mature wooded habitat with smaller areas of herbaceous and scrub/shrub habitat (Figure 2). Jurisdictional waters within the effluent line replacement study area include approximately 284 feet (0.014 acre) of ephemeral stream, 359 feet (0.021 acre) of degraded, urbanized intermittent stream, 520 feet (0.24 acre) of perennial stream (Mill Creek), and 1.31 acres of emergent and forested wetland (Figure 3). The southern approximately 550 feet of the effluent line replacement corridor study area are located within the floodway (Figure 4).

Proposed project activities include:

- The existing WWTP facility will be expanded to the southeast within the former town park property. No impacts to jurisdictional waters are proposed within the WWTP expansion site.
- The new effluent line will be installed and will discharge into a flow/energy dissipation feature prior to flowing into Mill Creek.
- The flow/energy dissipation feature will be constructed and will include an approximately 0.5-acre dissipation basin, followed by approximately 150 feet of a step-pool channel.
- The project will not involve any impacts to wetlands or intermittent streams.
- There will be temporary impacts to one ephemeral stream, Ephemeral 2. An aerial pipe crossing of Ephemeral 2 will be established (Figure 5). The aerial section of pipe will be approximately 60 feet long with the bottom of the pipe being approximately three feet above the thalweg of Ephemeral 2. During the effluent line installation activities, a temporary stream crossing will be established across Ephemeral 2 within the temporary construction limits, as shown on Sheet C-3 in Appendix A. Upon completion of the effluent line installation activities, the temporary stream crossing will be removed, and Ephemeral 2 will be restored to pre-construction contours and stabilized with native seed, clean straw mulch, and erosion control matting (Sheets C-10 and C-11 in Appendix A). The disturbed areas along the stream will then be planted with one to three-gallon containerized native trees and shrubs at a rate of 60 trees and shrubs per acre (Sheet C-11 in Appendix A).
- Approximately 60 feet of streambank along Mill Creek will be regraded to establish the step-pool channel as shown on Figure 5 and Sheet C-8 in Appendix A. A longitudinal profile, cross sections, and details of the proposed step-pool channel are provided as Sheets C-9 and C-10 in Appendix A. As part of the construction of the step-pool channel, two boulder toe sections will be constructed along the right bank of Mill Creek, immediately upstream and downstream of the confluence of the step-pool channel and Mill Creek to ensure bank stability (Figure 5 and Sheet C-8 in Appendix A). A detail of the proposed boulder toe is provided on Sheet C-10 in Appendix A. Upon completion of the step-pool channel, the disturbed streambanks and step-pool channel banks will be seeded with a native seed mix, covered with clean straw mulch, and protected with erosion control matting (Sheets C-10 and C-11 in Appendix A).
- To complete the effluent line installation and flow/energy dissipation feature, approximately 1.5 acre of area within the floodway will be cleared and disturbed. The disturbance will involve approximately 415 cubic yard of fill to be placed in the floodway to construct the flow dissipation basin berm and the boulder hidden outfall. However, approximately 460 cubic yards of soil will be cut and removed from the floodway to establish the boulder-step effluent channel connection to Mill Creek. The proposed planform, longitudinal profile, sections, and details are provided on Sheets C-8 through C-10 in Appendix A. Since the soil cut volume in the floodway for establishing the effluent channel exceeds the fill volume in the floodway, the proposed project will not affect the overall conveyance volume in the floodway.
- Tree clearing within the project boundary will be limited to the few scattered trees within the WWTP expansion study area and those within the temporary effluent line construction easement. As stated above, approximately 1.5 acres of area within the floodway will be cleared/disturbed as part of the project. Based upon conversations with IDNR in a meeting on June 5, 2012, the Town proposes to re-establish 1.5 acres of forested non-wetland habitat. In accordance with IDNR's guidelines the Town proposes to replant 435 containerized trees and shrubs within the 1.5 acres. The disturbed area within floodway will be revegetated in accordance with the Planting Plan provided as Sheet C-11 in Appendix A.

A copy of the Construction Drawings and Details for the project is provided as Appendix A. A completed *Permit Application for Construction* form is provided as Appendix B, and as required in the Permit Application Form, a list of adjoining property owners and the application fee payment are provided as Appendices C and D, respectively.

We trust this application package provides you with necessary information to commence with the required permitting process. We appreciate the opportunity to work with you on this project. Please contact Brad Anderson or Michael Rich of Redwing at (502) 625-3009 with any questions during your review.

Sincerely,


J. Michael Rich
Engineer
by JER


Bradley M. Anderson, P.E.
Senior Engineer

File: 11-097/Reports/Floodway Permit/Floodway Permit Application Cover Letter.doc

cc: Ms. Brittany Montgomery – Town of Clarksville (electronic copy)
Mr. Gary Boblitt – HDR (electronic copy)

Attachments:

- Figure 1 – Site Location Map
- Figure 2 – Aerial Photograph
- Figure 3 – Water/Wetland Location Map
- Figure 4 – FEMA Floodway Map
- Figure 5 – Proposed Project Activities Photographs
- Appendix A – Construction Drawings and Details
- Appendix B – Permit Application for Construction
- Appendix C – List of Adjacent Property Owners
- Appendix D – IDNR Application Fee Payment

**CORREPENDENCE WITH INDIANA DEPARTMENT OF
NATURAL RESOURCES – DIVISION OF NATURE
PRESERVES AS PART OF SECTION 401 APPROVAL
FROM IDEM**

DNR

Indiana Department of Natural Resources

Environmental Unit
402 W. Washington Street, Rm. W273
Indianapolis, IN 46204-2781

August 8, 2012

Benjamin Deetsch
Redwing Ecological Services, Inc
1139 South Fourth Street
Louisville, KY 40203

Re: ER-16467: Clarksville Waste Water Treatment Plant (WWTP) Expansion and Effluent Line Replacement Project; Clark, County
****ETR review for RGP****

Dear Mr. Deetsch:

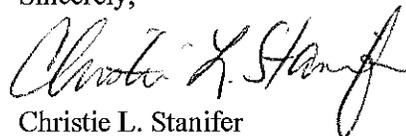
This letter is in response to your request, received on November 28, 2011, for comments from our agency regarding threatened and endangered species that may be present in the vicinity of the proposed project. This is only a preliminary review for this reason and is pursuant to the requirements of the Regional General Permit you have applied for or will be applying for.

This is not a permit or approval for the proposed project. You are responsible to make sure any other necessary permits or approvals are obtained, including those from our department, if required.

As indicated in the May 23, 2012, letter from Ronald Hellmich, Division of Nature Preserves, the state endangered black-crowned night-heron (*Nycticorax nycticorax*) was documented within ½ mile of the project in 1985. We are not aware of any nesting black-crowned night-herons in this area, although this species does nest in the Louisville area. From the photos provided, there does not appear to be very much quality foraging area (wetlands with fish and/or amphibians) for this species; therefore, we do not foresee any impacts to this species as a result of this project.

Our agency appreciates this opportunity to be of service. Please do not hesitate to contact me at (317) 232-8163 if we can be of further assistance.

Sincerely,



Christie L. Stanifer
Environmental Coordinator
Division of Fish and Wildlife

From: Benjamin Deetsch [bdeetsch@redwingeco.com]

Sent: Thursday, July 26, 2012 4:42 PM

To: environmentalreview@DNR.IN.gov

Cc: 'Brad Anderson'

Subject: ETR review

Attachments: IDNR coordination response letter.pdf; Site Location (Figure 1).pdf; Aerial (Figure 2).pdf; Site Photos.pdf

Redwing Ecological Services, Inc. (Redwing), on behalf of the Town of Clarksville (Town), is requesting additional information from the Indiana Department of Natural Resources in regard to the state endangered black-crowned night-heron (*Nycticorax nycticorax*). This information is requested in support of the proposed Clarksville Waste Water Treatment Plant (WWTP) Expansion and Effluent Line Replacement Project (Project) in Clark County, Indiana (Figure 1). The purpose of the Project is to expand the existing Clarksville WWTP that is nearing capacity and to replace an existing, aging effluent line that is undersized and damaged.

The Project consists of two distinct study areas, the WWTP expansion study area and the effluent line replacement study area. The WWTP expansion study area is approximately 7.5 acres in size and is located adjacent to the existing WWTP. The WWTP expansion study area consists of a former town park with picnic and athletic facilities including an athletic field and walking track (Figure 2). Habitat found here is typical of a park setting and includes maintained lawn with scattered trees ranging in age from young to mature. This area is located outside of the floodway and no jurisdictional waters are located within the proposed WWTP expansion study area.

The effluent line replacement study area is a linear project that begins at the existing WWTP and extends south approximately 1,550 feet, within a varying-width corridor that terminates at Mill Creek. The effluent line replacement study area is dominated by young to mature wooded habitat with smaller areas of herbaceous and scrub/shrub habitat (Figure 2). Jurisdictional waters within the effluent line replacement study area include approximately 284 feet (0.014 acre) of ephemeral stream, 359 feet (0.021 acre) of degraded, urbanized intermittent stream, 520 feet (0.24 acre) of perennial stream (Mill Creek), and 1.31 acres of emergent and forested wetland. The southern approximately 550 feet of the effluent line replacement corridor study area are located within the floodway.

Proposed project activities include:

- The existing WWTP facility will be expanded to the southeast within the former town park property. No impacts to jurisdictional waters are proposed within the WWTP expansion site.
- The new effluent line will be installed and will discharge into a flow/energy dissipation feature prior to flowing into Mill Creek.
- The flow/energy dissipation feature will be constructed and will include an approximately 0.5-acre dissipation basin, followed by approximately 150 feet of a step-pool channel.
- The project will not involve any impacts to wetlands or intermittent streams.
- There will be temporary impacts to one ephemeral stream, Ephemeral 2.
- Approximately 60 feet of streambank along Mill Creek will be regraded.
- To complete the effluent line installation and flow/energy dissipation feature, approximately 1.5 acre of area within the floodway will be cleared and disturbed.
- Tree clearing within the project boundary will be limited to the few scattered trees within the WWTP expansion study area and those within the temporary effluent line construction easement.

Attached is the coordination response letter Redwing received from Mr. Ron Hellmich on May 23, 2012 that recommended contacting your office. Additionally, I have attached a Site Location topographic map (Figure 1) and an Aerial photograph of the site (Figure 2) along with several photos of the site.

Please contact Brad Anderson or Benjamin Deetsch of Redwing at (502) 625-3009 with any questions during your review. Thanks,
Ben

Benjamin Deetsch
Staff Ecologist
Redwing Ecological Services, Inc
1139 South Fourth Street
Louisville, KY 40203

phone - 502 625-3009
fax - 502 625-3077
cell - 502 644-0815



Indiana Department of Natural Resources

Mitchell E. Daniels, Jr., Governor
Robert E. Carter, Jr., Director

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

May 23, 2012

Bradley M. Anderson, PE, LEED AP
Redwing Ecological Services, Inc.
1139 South Fourth Street
Louisville, KY 40203

Dear Bradley Anderson:

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 the Clarksville WWTP Expansion and Effluent Line Replacement Project, Clarksville, Indiana. The Indiana Natural Heritage Data Center has been checked and following you will find information on the ETR species documented within 0.5 mile of the project area.

1. The state endangered bird *Nycticorax nycticorax*, black-crowned night-heron, was documented in 1985 in the area "bounded by Silver Creek, SR 62 and the Ohio River."

For more information on the animal species mentioned, please contact Christie Stanifer, Environmental Coordinator, Division of Fish and Wildlife, 402 W. Washington Room W273, Indianapolis, Indiana 46204, (317)232-8163.

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.

An Equal Opportunity Employer

For more information, please contact:

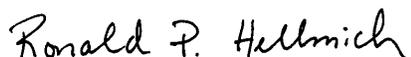
Department of Natural Resources
attn: Christie Stanifer
Environmental Coordinator
Division of Fish and Wildlife
402 W. Washington Street, Room W273
Indianapolis, IN 46204
(317)232-8163

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 if you have any questions or need additional information.

Sincerely,



Ronald P. Hellmich
Indiana Natural Heritage Data Center



VIA EMAIL

May 18, 2012

Mr. Ron Hellmich
Division of Nature Preserves
Indiana Department of Natural Resources
402 W. Washington Street – Room W267
Indianapolis, IN 46204
rhellmich@dnr.IN.gov

**Subject: Request for State Protected Species Coordination
Clarksville WWTP Expansion and Effluent Line Replacement Project
Clarksville, Clark County, Indiana
Redwing Projects 11-096 & 11-096-01**

Dear Mr. Hellmich:

On behalf of the Town of Clarksville, and as required under the Section 401 Water Quality Certification (WQC) Regional General Permit (RGP) Notification process, Redwing Ecological Services, Inc. respectfully requests coordination with your office regarding potential impacts to state-protected species by the proposed Clarksville Waste Water Treatment Plant (WWTP) Expansion and Effluent Line Replacement Project (Project). The Project consists of two distinct study areas, the WWTP expansion study area and the effluent line replacement study area. The WWTP expansion study area is approximately 7.5 acres in size and is located in the northwest quadrant of the intersection of Browns Station Way and Leuthart Drive in Clarksville, Clark County, Indiana, adjacent to the existing Clarksville WWTP (located at 1 Leuthart Drive in Clarksville, Indiana) (Figure 1). The WWTP expansion study area is approximately 9.4 acres in size and is located at Latitude: 38.29603° N, and Longitude: 85.77355° W. The effluent line replacement study area is a linear project beginning at the existing WWTP and extends south approximately 1,550 feet, within a varying-width corridor that terminates at Mill Creek. It is located at Latitude: 38.29516° N, and Longitude: 85.77548° W.

The WWTP expansion study area consists of a former town park with picnic and athletic facilities including an athletic field and walking track (Figure 2). Habitat found here is typical of a park setting and includes maintained lawn with scattered trees ranging in age from young to mature. No jurisdictional waters are located within this study area. The attached photographs illustrate conditions at the WWTP expansion study area.

The effluent line replacement study area is dominated primarily by young to mature woods habitat with smaller areas of herbaceous and scrub/shrub habitat (Figure 2). This study area begins at the existing WWTP and terminates at Mill Creek. Jurisdictional waters within this study area include approximately 284 feet (0.014 acre) of ephemeral stream, 359 feet (0.021 acre) of degraded, urbanized intermittent stream, 520 feet (0.24 acre) of perennial stream (Mill Creek), and 1.31 acre of wetland consisting of both emergent and forested habitat. Mill Creek is identified as a solid blue-line perennial stream on the USGS topographic map (Figure 1).

The proposed project activities are depicted on the attached Figure 3 and are described in more detail below:

- The existing WWTP facility will be expanded to the southeast within the former town park property.
- The installation of a new effluent line within the effluent line replacement study area. The effluent line will discharge into a flow/energy dissipation feature prior to flowing into Mill Creek.
- The flow/energy dissipation structure will involve an approximately 0.4-acre dissipation basin, followed by approximately 150 feet of a step-pool channel.
- The project will not involve any impacts to wetlands or intermittent streams. There will be temporary impacts to one ephemeral stream, and approximately 50 feet of streambank along Mill Creek will be regraded to allow for the creation of the step-pool channel. Tree clearing within the project boundary will be limited to the few scattered trees within the WWTP expansion study area and those within the temporary construction easement in the effluent line replacement study area.

As required by General Condition #11 of the RGP authorization in the State of Indiana, we are requesting correspondence from your office that either:

- 1) "no state endangered, threatened, or rare species are documented on a permanent or seasonal basis within a ½ mile radius of the proposed project site"; or
- 2) "the activities proposed will not constitute a violation of state laws protecting these species".

We appreciate your time in responding to this request for coordination letter. Please contact Brad Anderson or Ben Deetsch at (502) 625-3009 with any questions or if you need any additional information during your review.

Sincerely,


Benjamin J. Deetsch
Staff Ecologist


Bradley M. Anderson, PE
Senior Engineer

File:11-096/Reports/IDNR InfoRequest - Clarksville WWTP

Attachments: Figures
Photographs

cc: Ms. Brittany Montgomery – Town of Clarksville (electronic copy)
Mr. Gary Boblitt – HDR (electronic copy)

**CORREPENDENCE WITH U.S. FISH AND WILDLIFE
SERVICES AS PART OF SECTION 7 APPROVAL UNDER
THE ENDANGERED SPECIES ACT**

From: Condra, Norma C LRL [Norma.C.Condra@usace.army.mil]
Sent: Friday, August 17, 2012 1:00 PM
To: Brad Anderson
Subject: FW: Clark County Wastewater Treatment Plant (WWTP) Expansion and Effluent Line Replacement, LRL-2012-586-ncc

Attachments: ecblank.gif; pic27007.gif; graycol.gif

Brad,

Here is a copy of the USFWS comments regarding the Clark WWTP Expansion and Effluent Line Replacement Project.

Thanks.
Norma

From: Michael_Litwin@fws.gov [mailto:Michael_Litwin@fws.gov]
Sent: Friday, August 17, 2012 10:17 AM
To: Condra, Norma C LRL
Subject: RE: Clark County Wastewater Treatment Plant (WWTP) Expansion and Effluent Line Replacement, LRL-2012-586-ncc

In that case I think my previous comments, as per your email attachment are adequate with a few modifications, below.

1. Locate the sewer line to minimize tree removal and avoid large trees with good wildlife habitat quality.
2. Revegetate disturbed soils in the sewer line easement with native species after construction, using trees and shrubs in all areas of the construction footprint that are not needed for maintenance.
3. Avoid work in Mill Creek during fish spawning season (April 1 - June 30).

Endangered Species

The project site is within the range of the federally endangered Indiana bat (*Myotis sodalis*), gray bat (*M. grisescens*), and sheepsnose mussel (*Plethobasus cyphus*). If tree removal is avoided from April 1 through September 30 to prevent possible disturbance of an occupied Indiana bat roost tree, the project is not likely to adversely affect these listed species.

Michael Litwin
US Fish and Wildlife Service
620 South Walker Street
Bloomington, IN 47403
(812) 334-4261 ext. 205

Memo to File

From: Brandon Bratcher, FEMA Region V Environmental Protection Specialist

Date: August 28, 2012

Subject: Section 7 Endangered Species Act Consultation – Clarksville WWTP Expansion and Effluent Line Replacement Project 1997.664.

The Federal Emergency Management Agency (FEMA) and sub-applicant have prepared an Environmental Assessment (EA) for the Clarksville Waste Water Treatment Plant (WWTP) Expansion and Effluent Line Replacement Project in the Town of Clarksville, Clark County, Indiana.

The Clarksville Wastewater Treatment Department proposes the use of federal funding to relocate an effluent line damaged during the severe storms, tornadoes, straight-line winds and flooding occurring in April 2011. This improved project would involve the installation of a 545 linear foot effluent line. The final 200 feet of the line would include a detention pond and boulder step channel constituting an energy dissipater system to reduce the speed of the effluent before it joins Mill Creek. The Town proposes to expand the existing WWTP to provide treatment capacity for stormwater during wet weather events; however, expansion and renovation of the existing plant is also needed to meet more stringent regulatory thresholds for discharge to Mill Creek.

In compliance with Section 7 of the Endangered Species Act, a review of the potential impacts to federally-listed endangered, threatened and candidate species has been completed. According to the U.S. Fish and Wildlife technical assistance website, the following federally-listed species are known to occur in Clark County: Gray bat, Indiana bat, and Sheepnose Mussel.

Habitat for federally-protected species in the Clarksville WWTP Expansion and Effluent Line Replacement Project area is limited to potential summer roosting/foraging habitat for the Indiana bat and summer foraging habitat for the gray bat. The proposed project includes clearing scattered trees and shrubs within the WWTP expansion area and wooded habitat within the effluent line replacement study area to install the new effluent pipe and associated features. Tree clearing activities are proposed to take place between October 1, 2012 and March 31, 2013. Based on the amount of tree clearing proposed, the observance of appropriate tree clearing dates, the proposed erosion prevention/sediment control measures, and the lack of habitat for federally-listed mussels within the study areas, FEMA has determined that the project is not likely to adversely affect federally-listed species and/or habitat.

From: Benjamin Deetsch [bdeetsch@redwingeco.com]
Sent: Wednesday, June 27, 2012 11:11 AM
To: 'Brad Anderson'
Subject: FW: Request for Informal Consultation

Attachments: pic04414.gif

From: Michael_Litwin@fws.gov [mailto:Michael_Litwin@fws.gov]
Sent: Wednesday, June 27, 2012 11:04 AM
To: Benjamin Deetsch
Subject: Re: Request for Informal Consultation

Your correct that the allowed tree clearing dates in Indiana are October 1 through March 31.

We can only concur on Section 7 conclusions with a federal agency or their official delegate -- in this case that would be the Corps of Engineers, when we comment on the 404 permit. This email is saying that if they implement the seasonal restriction (and assuming project plans don't change significantly between now and then) we will concur with "not likely to adversely affect".

Michael Litwin
US Fish and Wildlife Service
620 South Walker Street
Bloomington, IN 47403
(812) 334-4261 ext. 205

 "Benjamin Deetsch" <bdeetsch@redwingeco.com>

"Benjamin Deetsch"
<bdeetsch@redwingeco.com>

06/27/2012 10:49 AM

To:<Michael_Litwin@fws.gov>
cc"Brad Anderson" <banderson@redwing.win.net>
SubjectRequest for Informal Consultation

Hey Mike,

One more thing. Can we consider this email as your concurrence that this project will not impact any federally listed species or is a more formal response coming. Thanks, Ben

From: Benjamin Deetsch [<mailto:bdeetsch@redwingeco.com>]
Sent: Wednesday, June 27, 2012 10:08 AM
To: 'Michael_Litwin@fws.gov'
Cc: 'Brad Anderson'; 'Matt Blake'; 'rthomas@redwing.win.net'
Subject: RE: Request for Informal Consultation

Thanks for looking through this. So I can assume then that the dates I included in the Request for Informal Consultation are the ones the Services follows? If not please straighten me out. I need this information to properly advise the client of their options.

In response to the second paragraph in your email. The permitting process is underway with the entities you mention and a wetland delineation has been performed.

I mentioned the PS portion of your email regarding the Lentzier Creek Project to the Project Manager, Matt Blake (mblake@redwingeco.com) and let him know you would be contacting him soon.

From: Michael_Litwin@fws.gov [mailto:Michael_Litwin@fws.gov]

Sent: Wednesday, June 27, 2012 9:23 AM

To: Benjamin Deetsch

Subject: Re: Request for Informal Consultation

Ben

As you pointed out in your letter, there are no Indiana bat hibernanula near the project site (the nearest is at least 25 miles away). Due to the relatively small amount of tree removal a seasonal tree clearing restriction would be adequate to protect the Indiana bat. The site is over 6 miles from the gray bat summer roosting colony, but they are known to use Silver Creek for foraging, and may be using Mill Creek as well. There would be no endangered Species Act issues provided that there are no major alterations to the stream's aquatic insect production capability or to its riparian corridor.

There are some other issues that I should mention. The NWI maps show a large wetland at the south end of the effluent line replacement corridor; a wetland delineation would be necessary, and possible permits from the Corps of Engineers and IDEM (as well as a floodway permit from IDNR). We strongly recommend that the sewer line replacement be installed outside of the riparian tree line if there is room, and at a minimum it should be at least 25 feet from the top of the stream bank. I would have similar comments for the Corps and IDEM permits.

Is this email response adequate for your purposes?

Michael Litwin
US Fish and Wildlife Service
620 South Walker Street
Bloomington, IN 47403
(812) 334-4261 ext. 205

PS: As I looked through my mail backlog yesterday I also saw a letter from you for a much larger sewer line project along Lentzier Creek in Jeffersonville. You didn't mention that project in your phone call; it has bigger issues and I will plan on sending a written response.

 "Benjamin Deetsch" <bdeetsch@redwingeco.com>

"Benjamin Deetsch"
<bdeetsch@redwingeco.com>

06/22/2012 04:30 PM

To <Michael_Litwin@fws.gov>

cc
"Brad Anderson"
<banderson@redwing.win.net>

Subject
Request for Informal
Consultation

Hello Mr. Litwin,

Attached is a Request for Informal Consultation for a proposed project in Clark County, Indiana. Consultation with the USACE has already begun. One hardcopy of this document is being put in the mail this afternoon and

sent to you for your records. Let me know if you need any additional information, Ben

Benjamin Deetsch
Staff Ecologist
Redwing Ecological Services, Inc
1139 South Fourth Street
Louisville, KY 40203
phone - 502 625-3009
fax - 502 625-3077
cell - 502 644-0815

[attachment "USFWS Request for Informal Consultation.pdf" deleted by Michael Litwin/R3/FWS/DOI]



June 22, 2012

Mr. Michael Litwin
U.S. Fish and Wildlife Service
620 South Walker Street
Bloomington, Indiana 47403

Subject: **Request for Informal Consultation
Clarksville WWTP Expansion and Effluent Line Replacement Project
Clark County, Indiana
Redwing Projects 11-096 and 11-096-01**

Dear Mr. Litwin:

On behalf of the Town of Clarksville (Town), Redwing Ecological Services, Inc. (Redwing) respectfully requests informal consultation regarding potential impacts to federally threatened/endangered species, or their designated critical habitat, under jurisdiction of the U.S. Fish and Wildlife Service (USFWS) for the proposed Clarksville Waste Water Treatment Plant (WWTP) Expansion and Effluent Line Replacement Project (Project) in southern Clark County, Indiana (Figures 1 and 2).

This report addresses potential impacts to federally threatened/endangered species, or their designated critical habitat, and includes: a summary of project background; the results of the ecological assessment in terms of existing natural habitats and threatened/endangered species; and study conclusions.

The project is not likely to adversely impact federally-protected species, based on the absence of caves, rock shelters, and mine portals within the project area; the timing of proposed tree clearing associated with the project; and the implementation of an approved erosion prevention and sediment control (EPSC) plan.

BACKGROUND

The Project consists of two distinct study areas, the WWTP expansion study area and the effluent line replacement study area. The WWTP expansion study area is approximately 7.5 acres in size and is located at Latitude: 38.29603° N, and Longitude: 85.77355° W, in the northwest quadrant of the intersection of Browns Station Way and Leuthart Drive in Clarksville, Clark County, Indiana, adjacent to

the existing Clarksville WWTP (located at 1 Leuthart Drive in Clarksville, Indiana) (Figure 1). The effluent line replacement study area is a linear project beginning at the existing WWTP and extends south approximately 1,550 feet, within a varying-width corridor that terminates at Mill Creek. It is located at Latitude: 38.29515° N, and Longitude: 85.77548° W. Qualified Redwing Biologists conducted field visits on December 13 and 14, 2011 and February 3 and March 29, 2012 to delineate jurisdictional waters of the U.S., including wetlands, and identify habitat types on the project site.

RESULTS

The WWTP expansion study area consists of maintained lawn habitat with scattered young to mature trees, and the effluent line replacement study area consists primarily of young to mature forest habitat (Figure 2). Total jurisdictional water/wetlands within the combined project corridors include one perennial stream, two intermittent streams, two ephemeral streams, and three wetlands. The results of the ecological assessment are further described below in terms of existing natural habitats and federally-protected species.

EXISTING HABITATS

The WWTP expansion study area is dominated by maintained lawn with scattered trees and shrubs. The maintained lawn habitat is dominated by turf grasses such as fescue (*Festuca arundinacea*) and Kentucky bluegrass (*Poa pratensis*), while other common species included field garlic (*Allium vineale*), chickweed (*Cerastium viscosum*), crabgrass (*Digeteria sp.*), white clover (*Trifolium repense*), woodland strawberry (*Fragaria vesca*), and purple dead nettle (*Lamium purpureum*). Common species of trees and shrubs scattered throughout the project area include sugar maple (*Acer saccharum*), pin oak (*Quercus palustris*), American holly (*Ilex opaca*), white pine (*Pinus strobus*), Siberian elm (*Ulmus pumila*), and spruce (*Picea sp.*).

The effluent line replacement corridor is dominated by forested habitat containing both upland and wetland portions with a smaller area of emergent wetland. The forested upland areas are dominated by trees and shrubs and include box-elder (*Acer negundo*), bush honeysuckle (*Lonicera maackii*), hackberry (*Celtis occidentalis*), American elm (*Ulmus americanus*), black cherry (*Prunus serotina*), sycamore (*Platanus occidentalis*), sweet gum (*Liquidambar styraciflua*), black locust (*Robinia pseudoacacia*), elderberry (*Sambucus canadensis*), winter creeper (*Euonymus fortunei*), garlic mustard (*Alliaria petiolata*), and grape vine (*Vitis riparia*).

Common species in the forested wetland areas include box elder, green ash (*Fraxinus pennsylvanica*), silver maple (*Acer saccharinum*), sycamore, black willow (*Salix nigra*), winter creeper, woodland sedge (*Carex blanda.*), grape vine, and poison ivy (*Toxicodendron radicans*).

Common species in the emergent wetland areas include curly dock (*Rumex crispus*), softstem bulrush (*Schoenoplectus tabernaemontani*), arrow arum (*Peltandra virginica*), reed canary grass (*Phalaris arundinacea*), horsetail (*Equisetum sp.*), eastern cottonwood (*Populus deltoides*), arrowhead (*Sagettaria latifolia*), Japanese chaff flower (*Achyranthes japonica*), green bulrush (*Scirpus atrovirens*), and swamp smartweed (*Polygonum cf. hydropiperoides*).

THREATENED/ENDANGERED SPECIES

Redwing assessed the potential for the proposed project to impact federally-listed threatened/endangered species through a combination of in-house review and field surveys. The following table summarizes the status of all federally threatened/endangered species in the USFWS database for Clark County, Indiana.

Species	Common Name	Status	Habitat Present?	Species Likely Impacted?
Mammals				
<i>Myotis sodalis</i>	Indiana Bat	E	Potential Summer Roosting/Foraging	No
<i>Myotis grisescens</i>	Gray Bat	E	Potential Summer Foraging	No
Mussels				
<i>Plethobasus cyphus</i>	Sheepnose	E	No	No

E = Federally Endangered Species

The results of the field survey are discussed below for pertinent species.

Indiana Bat: This federally-endangered species requires distinct habitat types during the summer and winter months. Summer foraging habitat includes wooded areas and edge habitat along fields often in close proximity to streams. Summer roosting habitat includes live or dead trees with exfoliating bark, cracks, crevices, or cavities located either on upland slopes, bottomlands, or along streams. Winter hibernacula habitat consists of limestone caves with pools, rock shelters and abandoned mine portals.

Effects and Minimization: Due to the absence of caves, rock shelters or mine portals on the site, Indiana bat winter habitat is not present. Potential summer roosting/foraging habitat for the Indiana bat, including scattered snags and live trees ≥ 3" diameter at breast height (dbh) with exfoliating bark or cavities, is present in the wooded areas along the effluent line replacement corridor (0.32 kilometers) and the scattered trees within the WWTP expansion area (1.74 acres). Tree clearing activities will be required to install the effluent line and to expand the WWTP. Tree clearing activities for the effluent line replacement project are currently proposed to occur between October 1, 2012 and March 31, 2013 without a presence/absence survey. Tree clearing activities will also be necessary for the WWTP Expansion area, however these activities will occur

after September 30, 2012 and prior to April 1, 2013. Therefore, this project is not likely to have an adverse impact on this species.

Should the Town need to clear trees prior to October 1, 2012, a presence/absence mist net survey will be performed prior to August 16, 2012.

Gray Bat: The preferred summer and winter roosting habitat for this federally-endangered species includes limestone caves. Summer foraging habitat includes forested areas along banks of streams and lakes near cave entrances. No caves, rock shelters, or mine portals are present within the project area. The open and wooded habitat along Mill Creek represents potential summer foraging habitat.

Effects and Minimization: Due to the absence of caves, rock shelter or mine portals on the site, gray bat summer and winter roosting habitat are not present. Tree clearing along the streams will be limited to the minimum extent necessary to construct the replacement effluent line. All work will be performed during daylight hours as to not disturb the gray bat during foraging time. Although a portion of the streambank along Mill Creek will be regraded, an EPSC plan approved by the Indiana Department of Environmental Management will be followed throughout construction which will ensure sediment is not transferred to Mill Creek and adversely affecting downstream aquatic insect populations, which are important to gray bats during foraging. Additionally, no potential gray bat habitat will be impacted by the WWTP Expansion portion of the project. Therefore, this project is not likely to have an adverse impact on this species.

Sheepnose: One federally-endangered mussel species is known to occur in Clark County; however, it appears that this mussel occurs only in the Ohio River.

Effects and Minimization: Since sheepnose habitat is limited to the Ohio River, this project is not likely to impact this endangered mussel species. In addition, an approved EPSC plan will be implemented during construction to ensure sediment is not transferred off site. Thus, it is not likely that this project will have adverse effects on this species or its critical habitat.

Based on the limited amount of tree clearing proposed, the observance of appropriate tree clearing dates, the proposed EPSC measures, and the lack of habitat for federally-listed mussels within the project corridor, it appears that the proposed project is not likely to have an adverse impact on federally-protected species.

CONCLUSION

Habitat for federally-protected species in the Clarksville WWTP Expansion and Effluent Line Replacement Project area is limited to potential summer roosting/foraging habitat for the Indiana bat and foraging habitat for the gray bat. Currently, all tree clearing activities will take place between October 1, 2012 and March 31, 2013. However, should the Town need to clear trees prior to October 1, 2012, a presence/absence mist net survey will be performed prior to August 16, 2012 following the approval of a mist net survey Work Plan by the USFWS. Therefore, since tree clearing will be limited and will take place between October 1

and March 31, the project is not likely to have an adverse impact on federally-listed threatened or endangered species.

We respectfully request informal consultation with the USFWS in regard to federally-listed threatened/endangered species. If you have any questions regarding this letter or the overall project, please feel free to contact Benjamin Deetsch or Brad Anderson at (502) 625-3009.

Sincerely,



Benjamin J. Deetsch
Staff Ecologist



Bradley M. Anderson, PE
Senior Engineer

File: 11-096\Report\USFWSRequest for Informal Consultation

cc: Ms. Brittany Montgomery – Town of Clarksville (electronic copy)
Mr. Gary Boblitt – HDR (electronic copy)

Attachments: Figure 1 – Site Location Map
Figure 2 – Aerial Photograph Map
Photographs

**CORREPENDENCE WITH FEDERAL EMERGENCY
MANAGEMENT AGENCY AND INDIANA STATE
HISTORIC PRESERVATION OFFICE AS PART OF
SECTION 106 APPROVAL UNDER THE NATIONAL
HISTORIC PRESERVATION ACT**



FILE COPY

11-096

TRANSMITTAL COVER SHEET

Brad Anderson, PE

1139 South Fourth Street
Louisville, KY 40203

Phone: 502.625.3009
Fax: 502.625.3077

Email: banderson@redwingeco.com

Date: August 20, 2012

Attention: **Dr. James Glass**
Deputy State Historic Preservation Officer
Indiana Department of Natural Resources
Division of Historic Preservation and Archaeology
402 West Washington Street, W274
Indianapolis, Indiana 46204-2739

Dr. Glass,

As requested, please find enclosed copies of the revised Phase IA Archaeological and Cultural Historic Survey Reports prepared by Cultural Resource Analysts, Inc. in support of the Clarksville Wastewater Treatment Plant Expansion and Effluent Line Replacement Project in Clark County, Indiana. The DHPA reference number for the project is 12824.

Please let us know if you have any questions or comments or if you need additional information.

Thanks,

Brad

Enclosures: **Phase IA Archaeological and Cultural Historic Survey for a Proposed Effluent Line and Expansion of the Wastewater Treatment Plant in Clark County, Indiana**

Phase IA Archaeological and Cultural Historic Survey for a Proposed Effluent Line West of the Wastewater Treatment Plant in Clark County, Indiana



Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 • Indianapolis, IN 46204-2739
Phone 317-232-1646 • Fax 317-232-0693 • dhpa@dnr.IN.gov



August 8, 2012

Nicholas Mueller
Acting Regional Environmental Officer
FEMA, Region V
536 S. Clark St., 6th Floor
Chicago, Illinois 60605-1521

Federal Agency: Federal Emergency Management Agency "FEMA"

State Agency: Indiana Division of State Parks & Reservoirs

Re: Notification of FEMA's finding of "no adverse effect," phase Ia archaeological report for an effluent line and expansion of the wastewater treatment plant (Quick, 3/28/12), and phase Ia archaeological report for an effluent line west of the wastewater treatment plant (Quick, Cooper, and Hopwood, 5/24/12) (DHPA #12824)

Dear Mr. Mueller:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated July 9, 2012 and received on July 12, 2012, for the above indicated project in Clarksville, Clark County, Indiana.

We concur with the FEMA's July 9, 2012 finding that there are no historic buildings, structures, districts, objects, or archaeological resources within the area of potential effects that will be adversely affected by the above indicated project.

This identification is subject to the following conditions:

- The project activities avoid archaeological sites 12C1972 and 12C1969. We concur that if these sites cannot be avoided by proposed project activities, then additional archaeological investigations will be necessary to determine their current nature and register eligibility. We concur with the proposed buffer boundaries around the sites which you mentioned in your letter. Any proposed archaeological investigation on state owned land will need an approved plan under Indiana Code 14-21-1-16. The approved plan would need to be obtained prior to the commencement of any archaeological fieldwork.
- The archaeological site form for 12C1972 will be entered into SHAARD as soon as possible.

Regarding the archaeological investigations, and the two archaeological reports, we have the following comments:

1. We note that the Phase Ic investigation which was approved in archaeological plan 2012002 is no longer proposed based upon the results of these surveys.
2. We concur that site 12C1698, as it is currently known, is not eligible for the National Register of Historic Places. However, we note that the site, as well as 12C1972 and 12C1970, might extend beyond the boundaries of the currently proposed project ground disturbance areas.
3. Our office will need to receive a revised version of each of the two archaeological reports. These reports will need to include the additional following information:
 - Each report needs to include a map showing the portion of the project area which is state owned, as well as clarification that the investigation on the state owned portion of the project area was conducted under an approved plan (2012002) under state statute.

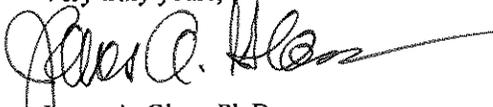
Nicolas Mueller
August 8, 2012
Page 2

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

For future reference, archaeological information should be kept separate from area of potential effect and historic structure information. As archaeological information is considered confidential and those records are kept separate from the general Section 106 submissions, storage is made difficult when the information is combined into one report.

If you have questions about archaeological issues please contact Amy Johnson at (317) 232-6982 or ajohnson@dnr.IN.gov. If you have questions about buildings or structures please contact Kim Marie Padgett at (317) 234-6705 or kpadgett@dnr.IN.gov.

Very truly yours,



James A. Glass, Ph.D.
Deputy State Historic Preservation Officer

JAG:KMP:ALJ:aj

cc: Falls of the Ohio State Park
emc: Ginger Murphy, Division of State Parks
Benjamin Clark, Chief of Cultural Resources, Division of State Parks & Reservoirs
Leiellen Atz, Corps of Engineers
Jonathon Kerr, CRAI
Brittany Montgomery, City of Clarksville
Andrew Bradbury, CRAI



FEMA

July 9, 2012

James A. Glass, Ph.D.
Assistant Director of Environmental Reviews
Division of Historic Preservation and Archaeology
Indiana Department of Natural Resources
402 West Washington Street, W274
Indianapolis, IN 46204

Re: Clarksville Water Treatment Plant, Clarksville, Clark County
(DHPA #12824; FEMA-1997-DR-IN PW 664)

Dear Dr. Glass:

Pursuant to Section 106 of the National Historic Preservation Act, I am writing this letter to conclude consultation regarding the captioned Public Assistance project which is slated to receive federal funding provided under the Stafford Act.

In accordance with 36 CFR §800.11, I am enclosing documentation regarding the proposed undertaking and its effect on historic properties. The documentation provides the justification for FEMA's finding of no adverse effects on historic properties; the purpose of this communication is to seek concurrence in that finding.

If you have questions or comments contact me at nicholas.mueller@fema.dhs.gov or at 312-408-5438. Please provide your final response by fax, email or mail. For your convenience, we have included a response area below. Pursuant to 36 CFR §800.3(c)(4), if we receive no response from your office within thirty (30) days, we will assume your concurrence with our findings.

Sincerely,

A handwritten signature in black ink, appearing to read "Nicholas Mueller".

Nicholas Mueller
Acting Regional Environmental Officer
FEMA, Region V

enclosures

Brad Anderson

From: Bratcher, Brandon [Brandon.Bratcher@fema.dhs.gov]

Sent: Tuesday, July 31, 2012 5:03 PM

To: Brad Anderson

Subject: RE: EA example

From: Bratcher, Brandon [mailto:Brandon.Bratcher@fema.dhs.gov]

Sent: Tuesday, July 31, 2012 4:48 PM

To: Brad Anderson

Cc: rclausen@redwingeco.com

Subject: RE: EA example

Brad:

You are correct. We look forward to seeing the draft and sending any comments we have.

A SHPO consultation (with arch. surveys) was sent July 9, 2012.

On July 10, 2012, THPO letters (summarizing the survey results, but without the physical surveys) were sent to:

- George Strack, Tribal Historic Preservation Officer
Miami Tribe of Oklahoma
- John P. Froman, Chief
Peoria Tribe of Indians of Oklahoma
- Henryetta Ellis, Tribal Historic Preservation Officer
Absentee Shawnee Tribe of Oklahoma
- Robin Dushane, Cultural Resources Director
Eastern Shawnee Tribe of Oklahoma
- Ron Sparkman, Chairman
Shawnee Tribe
- Mark Parrish, Tribal Historic Preservation Officer
Pokagon Band of Potawatomi Indians

So far, we've received no response from SHPO or THPOs.

Thanks for the update.

B. L. Bratcher

Environmental Protection Specialist

Department of Homeland Security

Office: (312) 408-4493

Blackberry: (312) 241-7379

From: Brad Anderson [mailto:banderson@redwing.win.net]

Sent: Tuesday, July 31, 2012 3:27 PM

To: Bratcher, Brandon

Cc: rclausen@redwingeco.com

Subject: RE: EA example

8/3/2012

Brandon,

Thanks for checking in. We hope to have "draft" EA Report finished tomorrow and submitted to the Town of Clarksville for review on Thursday, 8/2. We then hope to send out the EA Report to FEMA on Friday, 8/3. If I understood correctly from the phone conference call we had on June 28, 2012, we are supposed to submit the EA Report to FEMA in "draft" for review and comment first. Then, once we address FEMA's comments, we will submit the EA Report as final. Is my understanding correct? If so, what individuals at FEMA do we need to send the "draft" EA Report to for review and comment?

Also – It is my understanding that the Phase 1A Archaeology and Historic Survey Reports have been forwarded by FEMA to Indiana SHPO. Do you know if Reports were sent out for Tribal Consultation? If they have been, can you provide me with some details as to when the Reports were submitted and to what Tribe Associations for inclusion in Subsection 3.5.3 of the EA Report?

Thanks for your help!
Brad

Bradley M. Anderson, PE, LEED AP
Senior Engineer
Redwing Ecological Services, Inc.
1139 South Fourth Street
Louisville, KY 40203
502-625-3009
502-625-3077 fax
502-475-8145 mobile
banderson@redwingeco.com

**CORREPENDENCE WITH TOWN OF CLARKSVILLE
FOR LOCAL FLOODPLAIN DEVELOPMENT
PERMIT APPROVAL**

(A COPY OF THE LOCAL FLOODPLAIN APPLICATION
TO BE INSERTED HERE ONCE SUBMITTED TO THE
TOWN OF CLARKSVILLE)

REQUEST FOR JURISDICTIONAL DETERMINATION

From: Brad Anderson [banderson@redwing.win.net]
Sent: Friday, August 03, 2012 1:15 PM
To: 'Condra, Norma C LRL'
Subject: RE: Clarksville WWTP Expansion and Effluent Line, Clark Co

Attachments: preliminary JD - Clarksville WWTP - signed by Redwing on 8-3-12.pdf; Revised water-wetland location map per USACE visit on 8-2-12.pdf

Norma,

Please find attached a PDF copy of the signed preliminary JD form for the Clarksville WWTP Expansion and Effluent Line Replacement Project. I have made the necessary revisions to the form per our site visit yesterday. I have also provided a PDF copy of the revised Water/Wetland Location Map. Please let me know if you have any questions or if you need additional information.

Thanks,
Brad

-----Original Message-----

From: Condra, Norma C LRL [mailto:Norma.C.Condra@usace.army.mil]
Sent: Friday, August 03, 2012 11:51 AM
To: McMahan, Aaron
Cc: Brad Anderson
Subject: RE: Clarksville WWTP Expansion and Effluent Line, Clark Co

Hi Aaron,

I conducted a site inspection at the subject project site yesterday to verify the wetlands, and the points you raised in your last email. The intermittent stream that is not being impacted was found to be a perennial stream, but other than that, I agree with the delineation that was submitted by Redwing. Brad Anderson will be revising the preliminary JD and will forward the revised form to me for approval.

Please let me know if you need anything else from the Corps.

Thanks.
Norma

-----Original Message-----

From: McMahan, Aaron [mailto:AMcMahan@idem.IN.gov]
Sent: Monday, July 23, 2012 4:05 PM
To: Brad Anderson
Cc: Condra, Norma C LRL
Subject: Clarksville WWTP Expansion and Effluent Line, Clark Co

Brad- I have completed my initial review of the RGP notification and have the following questions/requests:

1. Because there are jurisdictional waters involved I will need some type of correspondence from the Corp which accepts your delineation. This could be a signed Pre-JD or the permit approval letter.
2. As we discussed I am concerned with a few of your data points. Specifically please have a look at DP-9, DP-11, and DP-13. Unless I am reading these wrong, it looks like you meet the F3 soil indicator with DP 11 and DP 13 which in one case would expand the wetland size. Ultimately the Corp will need to sign off on the delineation, but these were

just things I came across during my review.

3. It appears you had a ETR species hit from the IDNR natural heritage database search so you will need to contact Christie Stanifer per the letter for follow up.

I received your RGP submittal on July 9 and have 30 days to make a decision. Please provide the requested items within the review timeframe or the application will be considered out-of-scope. Let me know if you have any questions.

Aaron McMahan
IDEM- Office of Water Quality,
Wetlands & Stormwater
100 North Senate Ave
IGCN 1255
Indianapolis, IN 46204

Tel: (317) 234-6351

Fax: (317) 234-4145

E-mail: amcmahan@idem.in.gov



REDWING
ECOLOGICAL SERVICES, INC.

1139 South Fourth Street • Louisville, KY 40203 • Phone 502.625.3009 • Fax 502.625.3077

May 18, 2012

Mr. Gregory McKay
Chief North Section – Regulatory Branch
U.S. Army Corps of Engineers
Louisville District
600 Dr. Martin Luther King, Jr. Place
Louisville, Kentucky 40202

Subject: **Request for Jurisdictional Determination
Clarksville WWTP Expansion and Effluent Line Replacement Project
Clark County, Indiana
Redwing Projects 11-096 and 11-096-01**

Dear Mr. McKay:

Redwing Ecological Services, Inc. (Redwing) is pleased to submit this Request for Jurisdictional Determination regarding the Clarksville Waste Water Treatment Plant (WWTP) Expansion and Effluent Line Replacement Project (Project) in Clark County, Indiana. The Project consists of two distinct study areas, an approximately 7.5-acre tract to the southeast of the existing WWTP which is proposed for the WWTP expansion, and an approximately 9.4-acre corridor located south of the existing WWTP, where a new replacement effluent line will be installed. The existing WWTP site is located at 1 Luethart Drive in Clarksville, Clark County, Indiana (Figure 1).

The WWTP expansion study area consists of maintained lawn habitat with scattered young to mature trees, and the effluent line replacement study area consists primarily of young to mature forest habitat (Figure 2). Total jurisdictional water/wetlands within the combined project corridors include one perennial stream, two intermittent streams, two ephemeral streams, and three wetlands (Figure 3).

METHODOLOGY

The goal of this project is to determine the location and extent of jurisdictional waters of the U.S., including wetlands, within the study areas using a combination of in-house research and field evaluation. In-house research included a review of a USGS topographic map, aerial photography, FEMA floodplain survey, and the USDA Soil Survey Geographic Database for Clark County, Indiana (2009). Following the review of

these available materials, Redwing wetland scientists conducted field visits on December 13 and 14, 2011 and on February 3 and March 29, 2012, to delineate jurisdictional waters of the U.S., including wetlands, on the project site.

The wetland delineation of the site was accomplished through documentation of the presence/absence of hydric soils, wetland hydrology and hydrophytic vegetation per the guidelines of the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0 (August 2010). The presence of open waters, such as streams and ponds, within the project area was determined based on evaluations of ordinary high water mark (OHWM), defined bed and bank features, and flow regime. Soil, hydrology and vegetation data were formally collected at 15 points throughout the study areas (Figure 3), and Wetland Determination Data Forms are attached as Appendix A. The quality of the on-site intermittent and perennial streams was assessed using the Rapid Bioassessment Protocol (RBP) developed by the U.S. Environmental Protection Agency, and the completed RBP Forms are attached as Appendix B. A Preliminary Jurisdictional Determination Form for the on-site features is attached as Appendix C.

RESULTS

All jurisdictional waters within the project boundary were identified within the effluent line replacement study area and include approximately 284 feet (0.014 acre) of ephemeral stream, 359 feet (0.021 acre) of degraded, urbanized intermittent stream, 520 feet (0.24 acre) of perennial stream (Mill Creek), and 1.31 acres of emergent and forested wetland. No jurisdictional waters were observed within the WWTP expansion study area. Each of the identified waters/wetlands is depicted on the attached Figure 3 and is summarized in the table below:

Feature	Stream Length (ft)	Area (Acres)	Status
Mill Creek	520	0.24	Jurisdictional
Perennial Stream Total	520	0.24	
Intermittent 1	307	0.02	Jurisdictional
Intermittent 2	52	0.001	Jurisdictional
Intermittent Stream Total	359	0.021	
Ephemeral 1	175	0.01	Jurisdictional
Ephemeral 2	109	0.004	Jurisdictional
Ephemeral Stream Total	284	0.014	
Wetland 1	----	0.01	Jurisdictional
Wetland 2	----	0.71	Jurisdictional
Wetland 3	----	0.59	Jurisdictional
Wetland Total	----	1.31	
Total Jurisdictional Waters	1,163	1.585	

Perennial Streams: One perennial stream (Mill Creek) is located within the effluent line replacement corridor (Figure 3). Mill Creek measures approximately 520 linear feet (0.24 acre) within the corridor and flows from east to west through the southern portion of the corridor. Mill Creek enters the study area through a series of concrete culverts under the flood wall in the southeast corner of the study area and exits the corridor in the southwest corner. Mill Creek is depicted as a solid blue-line perennial stream on the USGS topographic map (Figure 1), and ranges from 15 to 30 feet wide. The stream is dominated mostly by sand and silt substrate with bank heights ranging from three to five feet high. During the field visit there was one to three-feet of flowing water. The RBP assessment scores for Mill Creek were 106 and 108, which indicates a poor quality stream. The completed RBP Forms are provided in Appendix B.

Intermittent Streams: Two intermittent streams totaling approximately 359 linear feet (0.021 acre) are located within the effluent line replacement corridor (Figure 3). Intermittent 1 measures approximately 307 linear feet (0.02 acre) and flows north to south in the southwest portion of the corridor. Intermittent 1 begins within Wetland 2 where flow becomes concentrated and forms a bed and bank and flows southwardly until it discharges into Mill Creek. Intermittent 1 is not depicted as a dashed blue-line intermittent stream on the USGS topographic map (Figure 1). This intermittent stream ranges from one to four feet wide and is dominated mostly by silt and sand substrate with some small gravel. Intermittent 1 exhibits bank heights ranging between six inches and two and one-half feet high. During the field visit there was two to six inches of slow flowing water. The RBP assessment score for Intermittent 1 was 122, which indicates a poor quality stream. The completed RBP Form is provided in Appendix B.

Intermittent 2 measures approximately 52 linear feet (0.001 acre) and flows west to east in the southwest portion of the effluent line replacement corridor. It starts within Wetland 2 at a seep and flows eastwardly until it discharges into Intermittent 1. Intermittent 2 is not depicted as a dashed blue-line intermittent stream on the USGS topographic map (Figure 1). The intermittent stream ranges from six inches to one and one-half feet wide and is dominated by silt substrate. Intermittent 2 exhibits bank heights ranging between six inches and one and one-half feet high. During the field visit there was one to two inches of slow flowing water. The RBP assessment score for Intermittent 2 was 126, which indicates a poor quality stream. The completed RBP Form is provided in Appendix B.

Ephemeral Streams: Two ephemeral streams totaling approximately 284 linear feet (0.014 acre) are located within the effluent line replacement corridor (Figure 3). Ephemeral 1 measures approximately 175 linear feet (0.01 acre) and flows north to south through the northwest portion of the corridor. It enters the study area in the northwest corner and flows southwardly where it loses its bed and bank. The ephemeral stream ranges from two to three feet wide with three-inch bank heights. The stream substrate is dominated by silt with some gravel. During the field visit, Ephemeral 1 was not flowing, but did have up to two inches of pooled water in areas. Ephemeral 1 is considered jurisdictional based upon its direct flow connection to downgradient jurisdictional waters.

Ephemeral 2 measures approximately 109 linear feet (0.004 acre) and flows east to west within the central portion of the effluent line replacement corridor. It enters the study area in the east central portion through a culvert pipe under the flood wall and flows westwardly to a point where it begins to flow underground at the toe of slope of an abandoned road bed. The ephemeral stream ranges from one to two feet wide with three to six-inch bank heights. The stream substrate is dominated by silt with some gravel. During the field visit, Ephemeral 2 was not flowing, but did have up to one-half inch of pooled water in areas. Ephemeral 2 is considered jurisdictional based upon its direct connection to an underground water conveyance system which appears to resurface on the other side of the abandoned road bed.

Wetlands: Three jurisdictional wetlands totaling 1.31 acres were identified within the effluent line replacement area, and are described in more detail below. Wetland 1 is a small forested wetland (approximately 0.01 acre) that is located in a broad drainage swale in the central portion of the corridor downgradient of where Ephemeral 1 loses its bed and bank. The wetland appears to be poor quality. The wetland does provide some flood flow attenuation, water quality, and limited value for wildlife and aquatic habitat functions. Wetland 1 is relatively small and is not connected to other large blocks of wetland habitat

but is considered jurisdictional based on its direct surface flow connection to downgradient jurisdictional waters.

Wetland 2 contains both emergent and forested wetland habitat and measures approximately 0.71 acre within the southwest portion of the effluent line replacement corridor. It is apart of a larger emergent/forested wetland complex that extends beyond the project study area. It exhibits predominantly emergent habitat in the northern portion of the wetland and young forest habitat in the southern portion. Wetland 2 is fed from numerous seeps. The wetland appears to be average quality due to its large size and variety of habitat. The wetland provides flood flow attenuation, water quality, wildlife and aquatic habitat functions, and has value for outdoor education and recreation. Wetland 2 is considered jurisdictional due to its direct connection to Intermittents 1 and 2 and Mill Creek.

Wetland 3 is an emergent wetland located within Mill Creek's floodplain in the southern portion of the effluent line replacement corridor. It measures approximately 0.59 acre and is apart of a larger emergent wetland complex that extends beyond the project study area. Wetland 3 receives hydrology from overbanking of Mill Creek and surface water runoff from adjacent properties. The wetland appears to be average quality due to its large size. The wetland provides flood flow attenuation, water quality, and wildlife and aquatic habitat functions. Wetland 3 is considered jurisdictional due to its direct connection to Mill Creek.

The wetland delineation assessed site characteristics in terms of soil, hydrology, and vegetation as discussed below. The data point locations are shown in Figure 3.

Soils: The USDA Soil Survey Geographic Database for Clark County, Indiana, maps the corridor as being underlain predominately by an Urban Land-Aquents soil complex with a loamy substratum and Udorents with a small area of former sand and gravel pits in the northern portion of the effluent line replacement study area (Figure 4). These soil complexes are not listed as hydric. Soils were examined at various locations in addition to the 15 formal data points (Appendix A). Soil profiles generally confirmed the mapped soil series with the exception of those within the emergent and forested wetland areas

Hydrology: The main sources of hydrology to the site are precipitation, surface flow from adjacent properties, and overbanking of Mill Creek and the various intermittent and ephemeral stream channels. Wetland hydrology indicators observed in the wetlands included surface water, saturated soils, water in soil pit, oxidized root channels, water-stained leaves, water marks, sediment and drift deposits, the FAC-neutral test, sparsely vegetated concave surface, drainage patterns and crayfish burrows. The majority of the effluent line replacement study project corridor is located within the 100-year floodplain, while none of the WWTP expansion study area is located in the 100-year floodplain (Figure 5).

Vegetation: The WTTTP expansion study area is dominated by maintained lawn with scattered trees and shrubs. The open fields are dominated by turf grasses such as fescue (*Festuca arundinacea*) and Kentucky bluegrass (*Poa pratensis*), while other common species included field garlic (*Allium vineale*), chickweed (*Cerastium viscosum*), crabgrass (*Digeteria sp.*), white clover (*Trifolium repense*), woodland strawberry (*Fragaria vesca*), and purple dead nettle (*Lamium purpureum*). Common species of trees and shrubs scattered throughout out the project area include sugar maple (*Acer saccharum*), pin oak (*Quercus palustris*), American holly (*Ilex opaca*), white pine (*Pinus strobus*), Siberian elm (*Ulmus pumila*), and spruce (*Picea sp.*). These species are listed as upland (UPL), facultative upland (FACU), facultative (FAC), and facultative wetland (FACW) on the National List of Plant Species that Occur in Wetlands (Reed, 1988).

The effluent line replacement corridor is dominated by forested habitat containing both upland and wetland portions with a smaller area of emergent wetland. The forested upland areas are dominated by trees and shrubs and include box-elder (*Acer negundo*), bush honeysuckle (*Lonicera maackii*), hackberry (*Celtis occidentalis*), American elm (*Ulmus americanus*), black cherry (*Prunus serotina*), sycamore (*Platanus occidentalis*), sweet gum (*Liquidambar styraciflua*), black locust (*Robina pseudoacacia*), elderberry (*Sambucus canadensis*), winter creeper

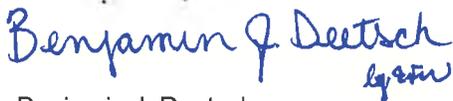
(*Euonymus fortunei*), garlic mustard (*Alliaria petiolata*), and grape vine (*Vitis riparia*). These species are listed as UPL, FACU, FAC, and FACW on the National List of Plant Species that Occur in Wetlands (Reed, 1988)

Common species in the emergent wetland areas included curly dock (*Rumex crispus*), softstem bulrush (*Schoenoplectus tabernaemontani*), arrow arum (*Peltandra virginica*), reed canary grass (*Phalaris arundinacea*), horsetail (*Equisetum sp.*), eastern cottonwood (*Populus deltoides*), arrowhead (*Sagittaria latifolia*), Japanese chaff flower (*Achyranthes japonica*), green bulrush (*Scirpus atrovirens*), and swamp smartweed (*Polygonum cf. hydropiperoides*). These species are listed as FAC, FACW, and obligate (OBL) in Reed, 1988.

Common species in the forested wetland areas included box elder, green ash (*Fraxinus pennsylvanica*), silver maple (*Acer saccharinum*), sycamore, black willow (*Salix nigra*), winter creeper, woodland sedge (*Carex blanda.*), grape vine, and poison ivy (*Toxicodendron radicans*). These species are listed as FAC, FACW, and OBL in Reed, 1988.

We respectfully request USACE concurrence with the results of this delineation of the Project study areas. Please contact Ben Deetsch or Brad Anderson at (502) 625-3009 with any questions regarding this submittal or the overall project.

Sincerely,



Benjamin J. Deetsch
Staff Ecologist



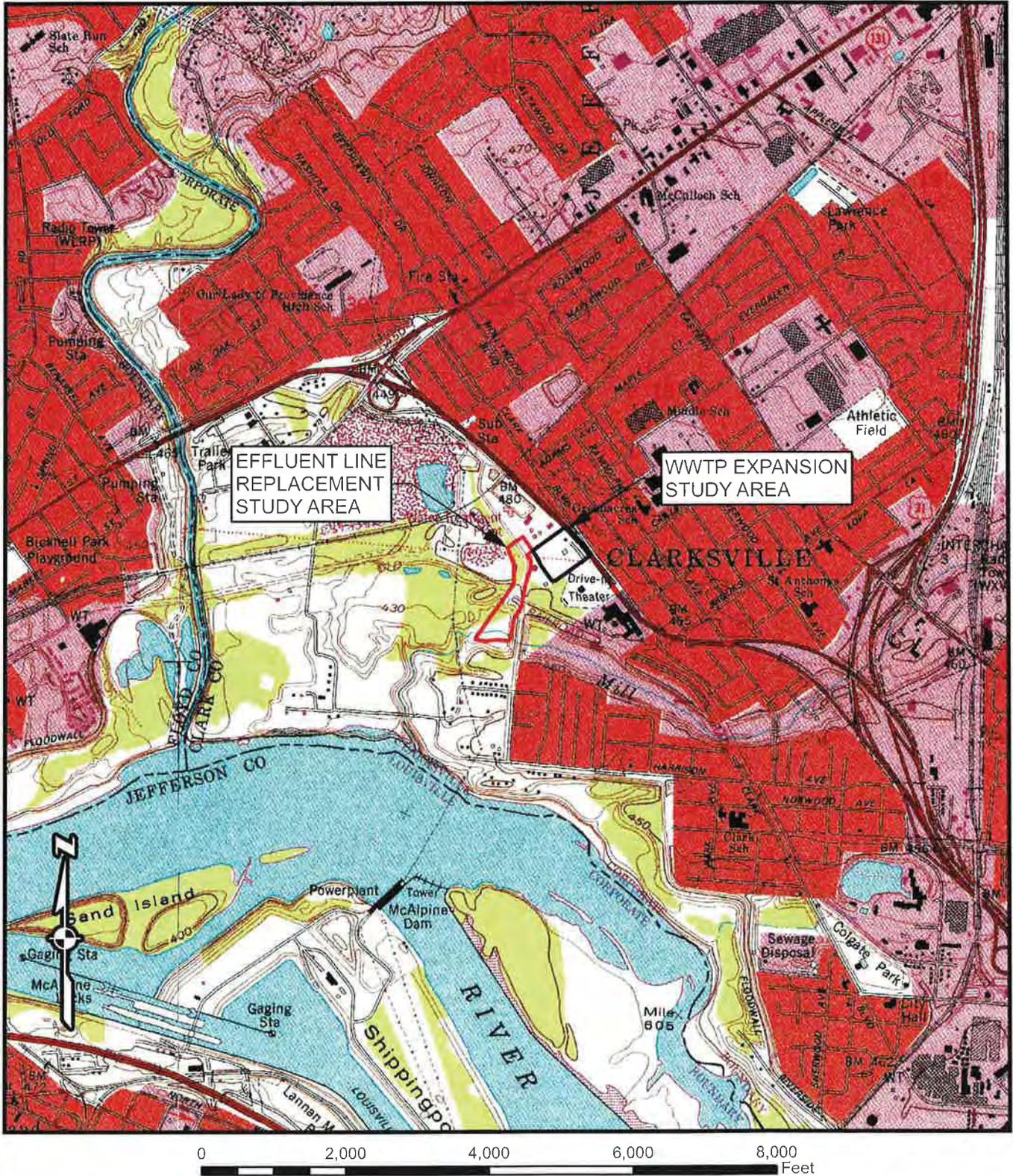
Bradley M. Anderson, PE
Senior Engineer

File:11-096/Reports/JDrequest-Clarksville WWTP

cc: Ms. Brittany Montgomery – Town of Clarksville (electronic copy)
Mr. Gary Boblitt – HDR (electronic copy)

Attachments: Figure 1 – Site Location Map
Figure 2 – Aerial Photograph Map
Figure 3 – Water/Wetland Location Map
Figure 4 – Soil Survey Map
Figure 5 – FEMA Floodplain Map
Photographs
Appendix A – Wetland Determination Data Forms
Appendix B – Rapid Bioassessment Protocol Forms
Appendix C – Preliminary Jurisdictional Determination Form

FIGURES



CLARKSVILLE WWTP EXPANSION AND
EFFLUENT LINE REPLACEMENT PROJECT
CLARK COUNTY, INDIANA

FILE: Redwing/11-096/Figures/Site Location

REDWING PROJECT 11-096

REVISED DATE 5.14.2012

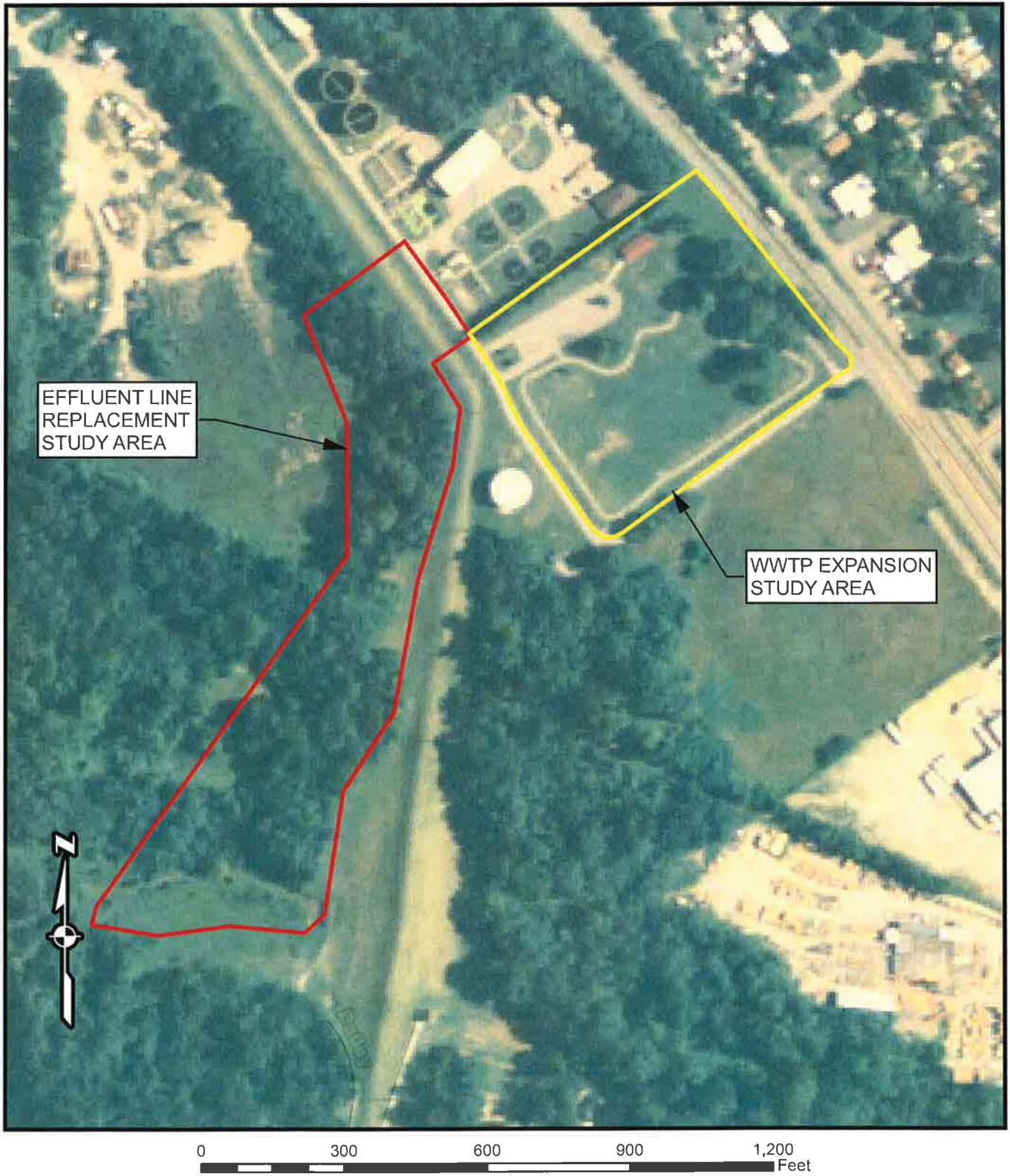
DRAWN BY JMR/EDB



SITE LOCATION MAP

FIGURE 1

Source: Aerial; USDA-FSA Aerial Photography Field Office (2007).



CLARKSVILLE WWTP EXPANSION AND
EFFLUENT LINE REPLACEMENT PROJECT
CLARK COUNTY, INDIANA

FILE: Redwing/11-096/Figures/Aerial

REDWING PROJECT 11-096

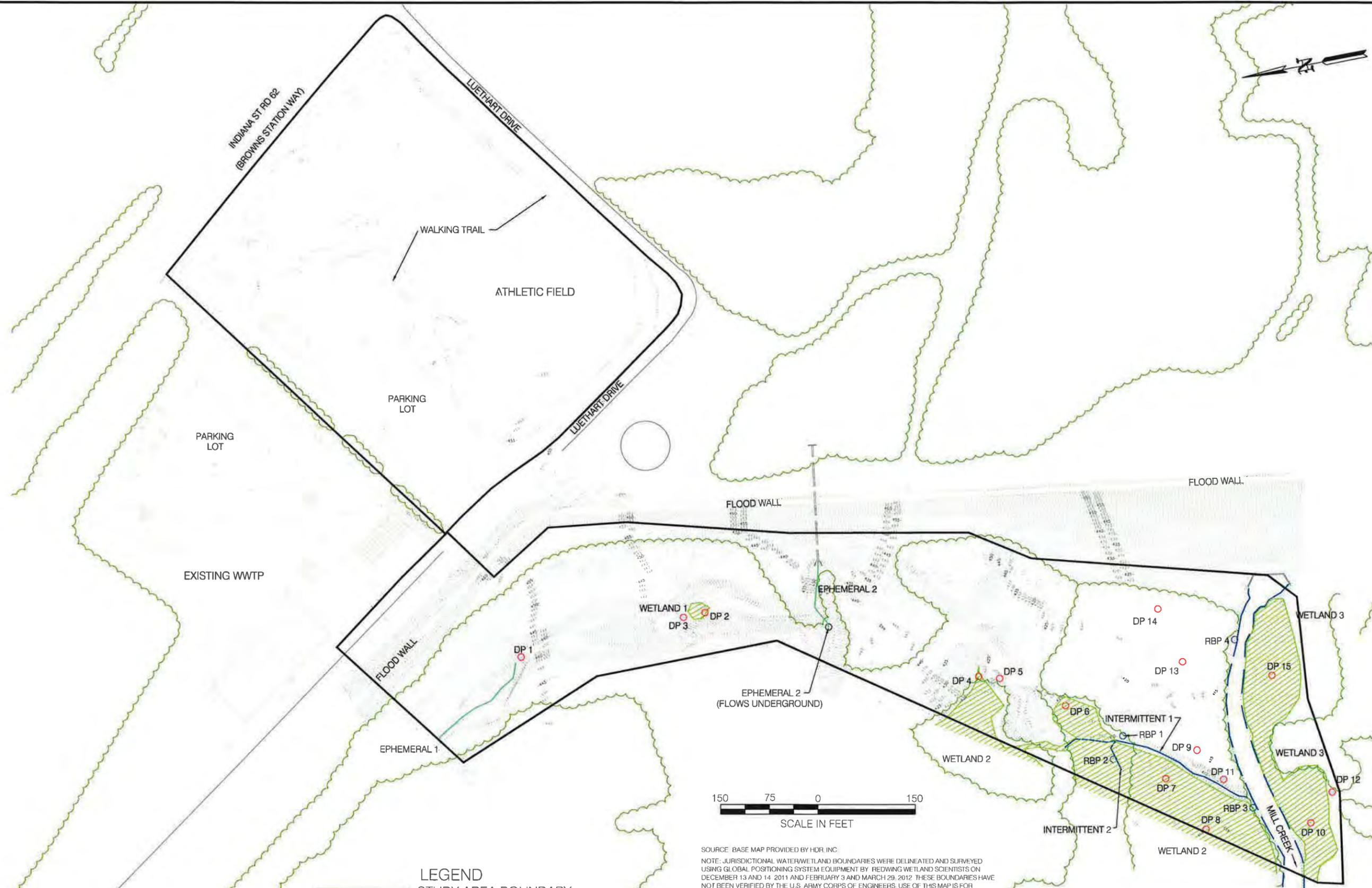
REVISED DATE 5.14.2012

DRAWN BY JMR/EDB



AERIAL PHOTOGRAPH MAP

FIGURE 2



- LEGEND**
- STUDY AREA BOUNDARY
 - EPHEMERAL STREAM
 - INTERMITTENT STREAM
 - PERENNIAL STREAM
 - WETLAND LOCATION
 - DP 1 DATA POINT
 - RBP 1 RAPID BIOASSESSMENT POINT

SOURCE: BASE MAP PROVIDED BY HDR, INC.
 NOTE: JURISDICTIONAL WATER/WETLAND BOUNDARIES WERE DELINEATED AND SURVEYED USING GLOBAL POSITIONING SYSTEM EQUIPMENT BY REDWING WETLAND SCIENTISTS ON DECEMBER 13 AND 14 2011 AND FEBRUARY 3 AND MARCH 29, 2012. THESE BOUNDARIES HAVE NOT BEEN VERIFIED BY THE U.S. ARMY CORPS OF ENGINEERS. USE OF THIS MAP IS FOR PRELIMINARY PLANNING PURPOSES ONLY.

CLARKSVILLE WWTP EXPANSION AND EFFLUENT LINE REPLACEMENT PROJECT
 CLARK COUNTY, INDIANA

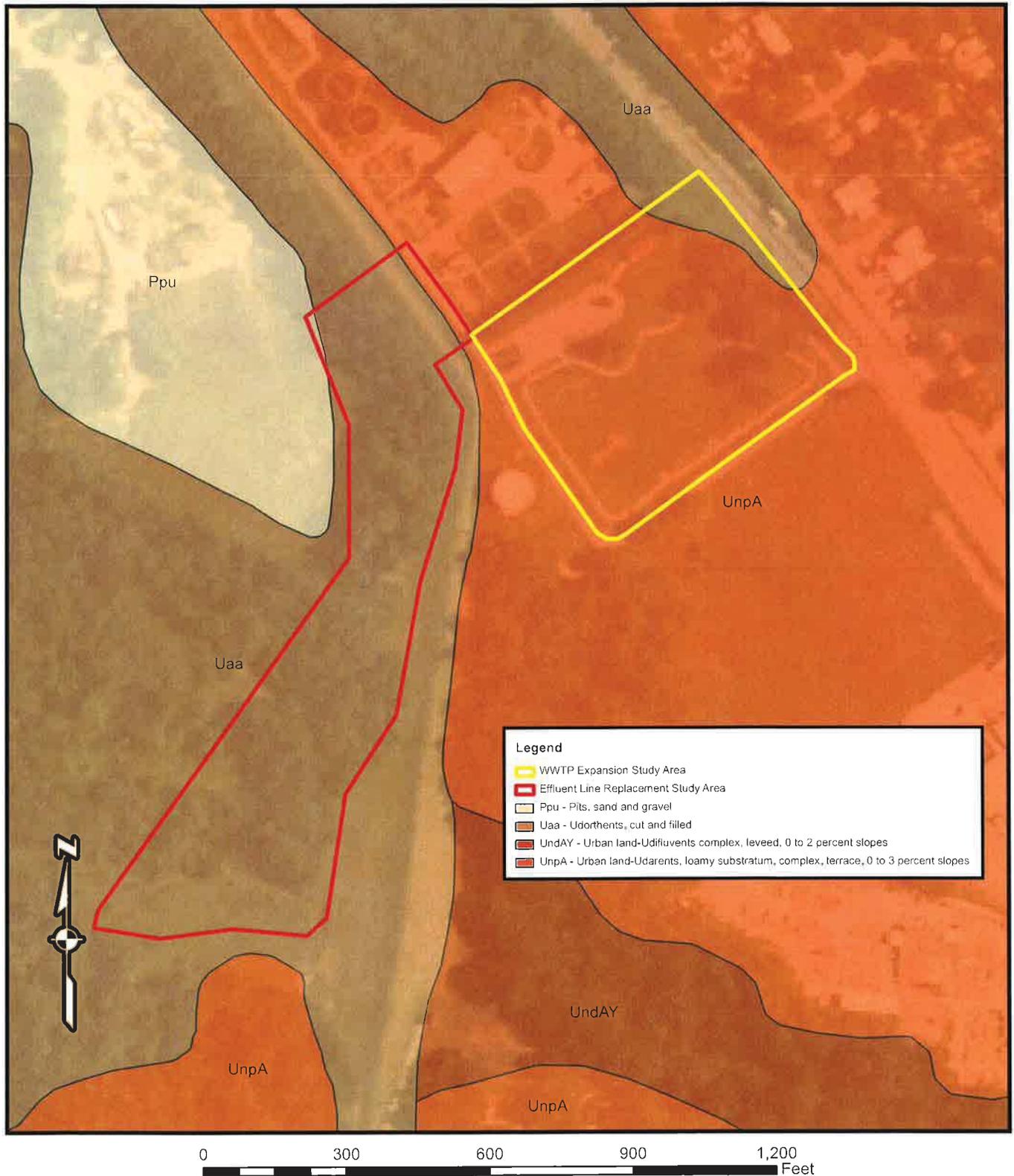
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PRINT DATE	05-18-2012



WATER/WETLAND LOCATION MAP

FIGURE: 3

Source: Aerial; USDA-FSA Aerial Photography Field Office (2007); Soil Survey Geographic (SSURGO) database for Clark County, Indiana (2009).



CLARKSVILLE WWTP EXPANSION AND
EFFLUENT LINE REPLACEMENT PROJECT
CLARK COUNTY, INDIANA

FILE: Redwing/11-096/Figures/Soils

REDWING PROJECT 11-096

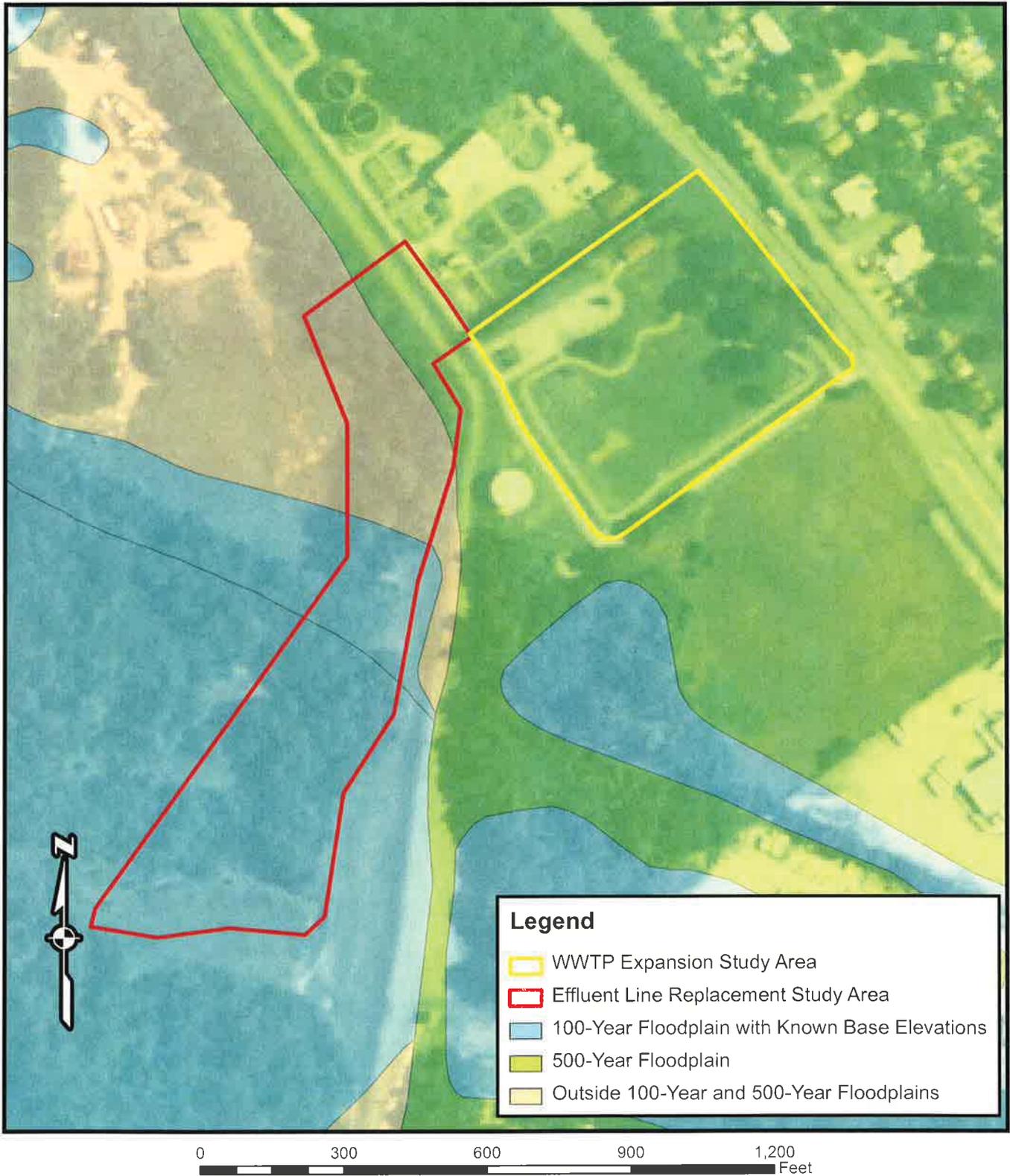
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SOIL SURVEY MAP

FIGURE 4



CLARKSVILLE WWTP EXPANSION AND
EFFLUENT LINE REPLACEMENT PROJECT
CLARK COUNTY, INDIANA



FEMA FLOODPLAIN MAP

FILE: Redwing/11-096/Figures/FEMA

REDWING PROJECT 11-096

REVISED DATE 5.14.2012

DRAWN BY JMR/EDB

FIGURE 5

PHOTOGRAPHS



Photograph 1: View looking southeast of an athletic field adjacent to existing WWTP at the site of the proposed treatment plant expansion. Clarksville WWTP Expansion and Effluent Line Replacement Project. December 13, 2011.



Photograph 2: View of Ephemeral 1, looking north. Clarksville WWTP Expansion and Effluent Line Replacement Project. December 13, 2011.



Photograph 3: View of Ephemeral 2, looking west. Clarksville WWTP Expansion and Effluent Line Replacement Project. December 13, 2011.



Photograph 4: View of point where Ephemeral 2 goes underground. Clarksville WWTP Expansion and Effluent Line Replacement Project. December 13, 2011.



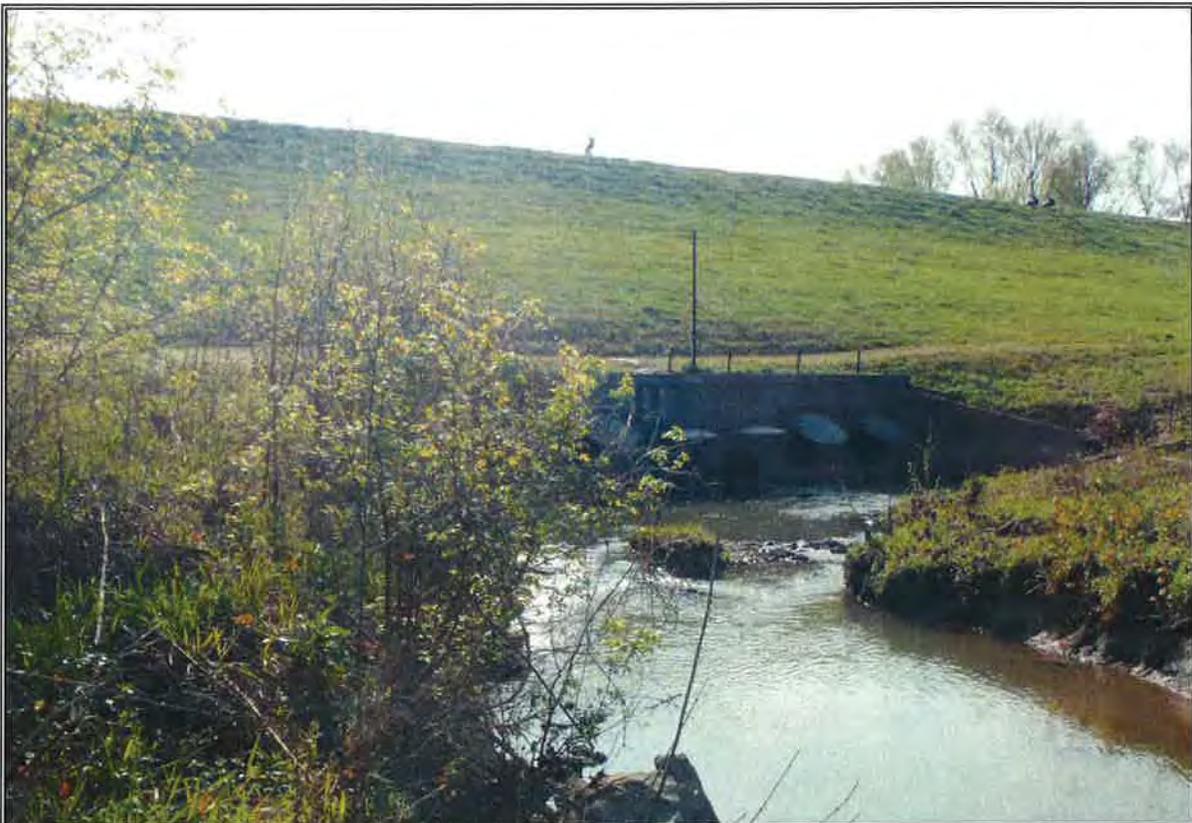
Photograph 5: View of Intermittent 1, looking north. Clarksville WWTP Expansion and Effluent Line Replacement Project. December 13, 2011.



Photograph 6: View of Intermittent 2, looking west. Clarksville WWTP Expansion and Effluent Line Replacement Project. December 13, 2011.



Photograph 7: View of Perennial 1 (Mill Creek), looking west. Clarksville WWTP Expansion and Effluent Line Replacement Project. December 13, 2011.



Photograph 8: View of Mill Creek where it flows through the culverts and under the flood wall, looking north. Clarksville WWTP Expansion and Effluent Line Replacement Project. March 28, 2012.



Photograph 9: View of Wetland 1, looking south. This wetland is found in a low-lying area downgradient of Ephemeral 1. Clarksville WWTP Expansion and Effluent Line Replacement Project. December 13, 2011.



Photograph 10: View of Wetland 2, looking west. This wetland consists of both emergent and wooded habitat. Clarksville WWTP Expansion and Effluent Line Replacement Project. December 13, 2011.



Photograph 11: View of Wetland 2, looking west. The wooded portion of this wetland is dominated by species such as box elder (*Acer negundo*), green ash (*Fraxinus pennsylvanica*), and silver maple (*Acer saccharinum*). Clarksville WWTP Expansion and Effluent Line Replacement Project. December 13, 2011.



Photograph 12: View of Wetland 3 located on the south side of Mill Creek, looking south. Clarksville WWTP Expansion and Effluent Line Replacement Project. March 28, 2012.

APPENDIX A

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Clarksville WWTP Expansion and Effluent Line Replacement Project City/County: Clark Sampling Date: 12/13/2011
 Applicant/Owner: Town of Clarksville State: Indiana Sampling Point: DP-1
 Investigator(s): B. Deetsch, L. Darnell Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Small valley Local relief (concave, convex, none): Concave
 Slope (%): -1% Lat: N 38 2958° Long: W 85 7751° Datum: _____
 Soil Map Unit Name Uaa - Udorthents, cut and filled NWI classification: _____
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present?
 Are Vegetation _____ Soil _____ or Hydrology _____ naturally problematic? Yes X No _____
 (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	Dominant Test worksheet
Tree Stratum (Plot size: 30-foot radius)				Number of Dominant Species That are OBL, FACW, or FAC: _____ (A)
1. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)
2. _____	_____	_____	_____	Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Prevalence Index worksheet:
5. _____	_____	_____	_____	
Sapling/Shrub Stratum (Plot size: 15-foot radius)				OBL species _____ x 1 = _____
1. <i>Lonicera maackii</i>	80	Y	UPL	FACW species _____ x 2 = _____
2. _____	_____	_____	_____	FAC species _____ x 3 = _____
3. _____	_____	_____	_____	FACU species _____ x 4 = _____
4. _____	_____	_____	_____	UPL species _____ x 5 = _____
5. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)
Herb Stratum (Plot size: 5-foot radius)				Prevalence Index = B/A = ####
1. <i>Euonymus fortunei</i>	30	Y	UPL	Hydrophytic Vegetation Indicators:
2. _____	_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation
3. _____	_____	_____	_____	2 - Dominance Test is >50%
4. _____	_____	_____	_____	3 - Prevalence Index is ≤3 0'
5. _____	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
6. _____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)
7. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	_____	_____	_____	Hydrophytic Vegetation Present?
9. _____	_____	_____	_____	Yes _____
10. _____	_____	_____	_____	No <u>X</u>
Woody Vine Stratum (Plot size: 30-foot radius)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	

Remarks: (Include photo numbers here or on a separate sheet)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix				Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 3	10YR3/3	100					Sandy Loam	
3 - 6	10YR3/3	90	10YR4/4	10	C	M	Sandy Loam	
6 - 14	10YR4/4	85	10YR3/3	15	D	M	Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS = Masked or Coated Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)

- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Material (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils^a

- Coast Prairie Redox (A16)
- Dark Surface (S7)
- Iron-Manganese Masses (F12)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

^aIndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present?

Yes _____ No _____ X _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain Remark)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ X _____ Depth (inches): _____ NA _____ (in.)
 Water Table Present? Yes _____ No _____ X _____ Depth (inches): _____ >14 _____ (in.)
 Saturation Present? Yes _____ No _____ X _____ Depth (inches): _____ >14 _____ (in.)
 (includes capillary fringe)

Wetland Hydrology Present?

Yes _____
No _____ X _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Clarksville WWTP Expansion and Effluent Line Replacement Project City/County: Clark State: Indiana Sampling Date: 12/13/2011
 Applicant/Owner: Town of Clarksville Section, Township, Range: _____ Sampling Point: DP-2
 Investigator(s): B. Deetsch, L. Darnell Landform (hillslope, terrace, etc.): Small depression (Wetland 1) Local relief (concave, convex, none): Concave
 Slope (%): <1% Lat: N 38.2950° Long: W 85.7751° Datum: _____
 Soil Map Unit Name: Uaa - Udorthents, cut and filled NWI classification: _____
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present?
 Are Vegetation _____ Soil _____ or Hydrology _____ naturally problematic? Yes X No _____
 (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? <input type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	

Remarks: _____

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30-foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominant Test worksheet																													
1. <u>Ulmus americana</u>	30	Y	FACW	Number of Dominant Species That are OBL, FACW, or FAC:	<u>3</u> (A)																												
2. <u>Acer negundo</u>	10	Y	FACW	Total Number of Dominant Species Across All Strata:	<u>3</u> (B)																												
3. _____				Percent of Dominant Species That are OBL, FACW, or FAC:	<u>100%</u> (A/B)																												
4. _____				Prevalence Index worksheet:																													
5. _____	40	=	Total Cover	<table border="0"> <tr> <td colspan="2">Total % Cover of:</td> <td colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td align="right">x 1 =</td> <td align="right">0</td> <td></td> </tr> <tr> <td>FACW species</td> <td align="right">x 2 =</td> <td align="right">0</td> <td></td> </tr> <tr> <td>FAC species</td> <td align="right">x 3 =</td> <td align="right">0</td> <td></td> </tr> <tr> <td>FACU species</td> <td align="right">x 4 =</td> <td align="right">0</td> <td></td> </tr> <tr> <td>UPL species</td> <td align="right">x 5 =</td> <td align="right">0</td> <td></td> </tr> <tr> <td>Column Totals:</td> <td align="right"><u>0</u> (A)</td> <td align="right"><u>0</u> (B)</td> <td></td> </tr> </table>		Total % Cover of:		Multiply by:		OBL species	x 1 =	0		FACW species	x 2 =	0		FAC species	x 3 =	0		FACU species	x 4 =	0		UPL species	x 5 =	0		Column Totals:	<u>0</u> (A)	<u>0</u> (B)	
Total % Cover of:		Multiply by:																															
OBL species	x 1 =	0																															
FACW species	x 2 =	0																															
FAC species	x 3 =	0																															
FACU species	x 4 =	0																															
UPL species	x 5 =	0																															
Column Totals:	<u>0</u> (A)	<u>0</u> (B)																															
Sapling/Shrub Stratum (Plot size: 15-foot radius)				Prevalence Index = B/A = ###																													
1. _____				Hydrophytic Vegetation Indicators:																													
2. _____				<table border="0"> <tr> <td><u>X</u></td> <td>1 - Rapid Test for Hydrophytic Vegetation</td> </tr> <tr> <td><u>X</u></td> <td>2 - Dominance Test is >50%</td> </tr> <tr> <td></td> <td>3 - Prevalence Index is ≤3.0</td> </tr> <tr> <td></td> <td>4 - Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)</td> </tr> <tr> <td></td> <td>Problematic Hydrophytic Vegetation* (Explain)</td> </tr> <tr> <td></td> <td>*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</td> </tr> </table>		<u>X</u>	1 - Rapid Test for Hydrophytic Vegetation	<u>X</u>	2 - Dominance Test is >50%		3 - Prevalence Index is ≤3.0		4 - Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)		Problematic Hydrophytic Vegetation* (Explain)		*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
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	4 - Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)																																
	Problematic Hydrophytic Vegetation* (Explain)																																
	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
3. _____				<table border="0"> <tr> <td>Hydrophytic Vegetation Present?</td> <td>Yes <u>X</u></td> </tr> <tr> <td></td> <td>No _____</td> </tr> </table>		Hydrophytic Vegetation Present?	Yes <u>X</u>		No _____																								
Hydrophytic Vegetation Present?	Yes <u>X</u>																																
	No _____																																
4. _____																																	
5. _____																																	
6. _____																																	
7. _____																																	
8. _____																																	
9. _____																																	
10. _____																																	
Herb Stratum (Plot size: 5-foot radius)																																	
1. _____																																	
2. _____																																	
3. _____																																	
4. _____																																	
5. _____																																	
6. _____																																	
7. _____																																	
8. _____																																	
9. _____																																	
10. _____																																	
Woody Vine Stratum (Plot size: 30-foot radius)																																	
1. <u>Vitis riparia</u>	5	Y	FACW																														
2. _____																																	
	5	=	Total Cover																														

Remarks: (Include photo numbers here or on a separate sheet.)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix			Redox Features			Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type ¹		
0 - 3	10YR3/2	95		10YR4/6	5	C	M	Silty Clay Loam
3 - 6	10YR3/2	80		10YR4/1	20	D	M	Silty Clay Loam
6 - 12	10YR4/3	100						Loamy Sand
12 - 14	10YR4/6	70		10YR3/2	15	D	M	Sandy Clay Loam
				10YR5/3	15	D	M	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS = Masked or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Material (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³

- Coast Prairie Redox (A16)
- Dark Surface (S7)
- Iron-Manganese Masses (F12)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present?

Yes No

Remarks: Soil is very sandy.

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|---|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain Remark) | |

Field Observations:

Surface Water Present? Yes No Depth (inches): NA (in.)

Water Table Present? Yes No Depth (inches): >14 (in.)

Saturation Present? Yes No Depth (inches): >14 (in.)
(includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Clarksville WWTP Expansion and Effluent Line Replacement Project City/County: Clark Sampling Date: 12/13/2011
 Applicant/Owner: Town of Clarksville State: Indiana Sampling Point: DP-3
 Investigator(s): B. Deetsch, L. Darnell Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Small valley (Upland adjacent to Wetland 1) Local relief (concave, convex, none): Concave
 Slope (%): <1% Lat: N 38 2951° Long: W 85 7751° Datum: _____
 Soil Map Unit Name: Uaa - Udorthents, cut and filled NWI classification: _____
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present?
 Are Vegetation _____ Soil _____ or Hydrology _____ naturally problematic? Yes X No _____
 (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			

Remarks: _____

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	Dominant Test worksheet	
Tree Stratum (Plot size: <u>30-foot radius</u>)					
1. <u>Ulmus americana</u>	30	Y	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100%</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
30	=	Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15-foot radius</u>)					
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = 0 FACW species _____ x 2 = 0 FAC species _____ x 3 = 0 FACU species _____ x 4 = 0 UPL species _____ x 5 = 0 Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = ####	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____	=	Total Cover			
Herb Stratum (Plot size: <u>5-foot radius</u>)					
1. <u>Euonymus fortunei</u>	2	N	UPL		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
2	=	Total Cover			
Woody Vine Stratum (Plot size: <u>30-foot radius</u>)					
1. <u>Vitis riparia</u>	30	Y	FACW		
2. _____	_____	_____	_____		
30	=	Total Cover			

Remarks: (Include photo numbers here or on a separate sheet.) _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 3	10YR4/3	95	10YR5/6	5	C	M	Sandy Clay Loam	
3 - 10	10YR4/4	100					Sand	
10 - 14	10YR4/2	85	10YR5/8	10	C	M	Silty Clay Loam	
			10YR5/4	5	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS = Masked or Coated Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Material (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³

- Coast Prairie Redox (A16)
- Dark Surface (S7)
- Iron-Manganese Masses (F12)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present?

Yes _____ No _____ X _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain Remark) | |

Field Observations:

Surface Water Present? Yes _____ No X _____ Depth (inches): NA (in.)

Water Table Present? Yes _____ No X _____ Depth (inches): >14 (in.)

Saturation Present? Yes _____ No X _____ Depth (inches): >14 (in.)
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Clarksville WWTP Expansion and Effluent Line Replacement Project City/County: Clark State: Indiana Sampling Date: 12/13/2011
 Applicant/Owner: Town of Clarksville State: Indiana Sampling Point: DP-4
 Investigator(s): B. Deetsch, L. Darnell Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Swale at edge of ponded area (Wetland 2) Local relief (concave, convex, none): Concave
 Slope (%): 2-3% Lat: N 38 2939° Long: W 85 7757° Datum: _____
 Soil Map Unit Name: Uaa - Udorthents, cut and filled NWI classification: _____
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present?
 Are Vegetation _____ Soil _____ or Hydrology _____ naturally problematic? Yes X No _____
 (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	Yes <u>X</u>	No _____		
Wetland Hydrology Present?	Yes <u>X</u>	No _____		

Remarks: _____

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30-foot radius)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	=	Total Cover		
Sapling/Shrub Stratum (Plot size: 15-foot radius)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	=	Total Cover		
Herb Stratum (Plot size: 5-foot radius)				
1. <i>Bidens cf. frondosa</i>	40	Y	FACW	
2. <i>Senecio glabellus</i>	8	N	OBL	
3. <i>Lysimachia nummularia</i>	2	N	FACW	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	=	Total Cover		
	50			
Woody Vine Stratum (Plot size: 30-foot radius)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	=	Total Cover		

Dominant Test worksheet	
Number of Dominant Species That are OBL, FACW, or FAC:	<u>1</u> (A)
Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
Percent of Dominant Species That are OBL, FACW, or FAC:	<u>100%</u> (A/B)

Prevalence Index worksheet:	
Total % Cover of:	Multiply by:
OBL species _____ x 1 =	<u>0</u>
FACW species _____ x 2 =	<u>0</u>
FAC species _____ x 3 =	<u>0</u>
FACU species _____ x 4 =	<u>0</u>
UPL species _____ x 5 =	<u>0</u>
Column Totals: <u>0</u> (A)	<u>0</u> (B)
Prevalence Index = B/A = <u>###</u>	

Hydrophytic Vegetation Indicators:	
<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
Problematic Hydrophytic Vegetation ¹ (Explain)	
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Hydrophytic Vegetation Present?	Yes <u>X</u> No _____

Remarks: (Include photo numbers here or on a separate sheet.) _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 10	Gley1 2.5/N	100					Silt	
10 - 14	Gley1 3Y/10Y	100					Silt	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS = Masked or Coated Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)

- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Material (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils*

- Coast Prairie Redox (A16)
- Dark Surface (S7)
- Iron-Manganese Masses (F12)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present?

Yes _____ X _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain Remark) | |

Field Observations:

Surface Water Present? Yes No _____ Depth (inches): <1 (in.)

Water Table Present? Yes No _____ Depth (inches): 12 (in.)

Saturation Present? Yes No _____ Depth (inches): 14 (in.)
(includes capillary fringe)

Wetland Hydrology Present? Yes No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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 Applicant/Owner: Town of Clarksville State: Indiana Sampling Point: DP-5
 Investigator(s): B. Deetsch, L. Darnell Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Hillslope (Upland adjacent to Wetland 2) Local relief (concave, convex, none): Convex
 Slope (%): 1-2% Lat: N 38 2938° Long: W 85.7758° Datum: _____
 Soil Map Unit Name: Uaa - Udorthents. cut and filled NWI classification: _____
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present?
 Are Vegetation _____, Soil _____ or Hydrology _____ naturally problematic? Yes X No _____
 (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks: _____

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: <u>30-foot radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominant Test worksheet Number of Dominant Species That are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)
1. <u>Ulmus rubra</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Platanus occidentalis</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Robinia pseudoacacia</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
4. <u>Morus alba</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	
5. <u>Ailanthus altissima</u>	<u>5</u>	<u>N</u>	<u>NI</u>	
	<u>100</u> =	Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15-foot radius</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = #####
1. <u>Acer negundo</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
3. <u>Lonicera maackii</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	
4. _____				
5. _____				
	<u>55</u> =	Total Cover		
Herb Stratum (Plot size: <u>5-foot radius</u>)				Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0' _____ 4 - Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation! (Explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>Euonymus fortunei</u>	<u>35</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Symphotrichum sp.</u>	<u>15</u>	<u>Y</u>		
3. <u>Carex blanda</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. <u>Elymus virginicus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
5. <u>Stellaria media</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	
6. <u>Galium sp.</u>	<u>1</u>	<u>N</u>		
7. _____				
8. _____				
9. _____				
10. _____				
	<u>62</u> =	Total Cover		
Woody Vine Stratum (Plot size: <u>30-foot radius</u>)				
1. <u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Vitis riparia</u>	<u>2</u>	<u>Y</u>	<u>FACW</u>	
	<u>7</u> =	Total Cover		

Remarks: (Include photo numbers here or on a separate sheet) _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix			Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0 - 5	10YR4/3	100					Silty Clay Loam
5 - 14	10YR4/3	75	10YR5/8	25	C	M	Silty Clay Loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS = Masked or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³

- Coast Prairie Redox (A16)
- Dark Surface (S7)
- Iron-Manganese Masses (F12)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present?

Yes _____ No _____ X _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
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| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain Remark) | |

Field Observations:

Surface Water Present? Yes _____ No _____ X _____ Depth (inches): NA (in.)

Water Table Present? Yes _____ No _____ X _____ Depth (inches): >14 (in.)

Saturation Present? Yes _____ No _____ X _____ Depth (inches): >14 (in.)

(includes capillary fringe)

Wetland Hydrology Present?

Yes _____
No _____ X _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: