



Attachment F - USACE and Illinois Coastal Management Program Supporting Information



Approved Jurisdictional Determination Request and Kensington Marsh Coordination

September 15, 2021



September 10, 2021

Mr. Colin Smalley
Section 408 Coordinator and Regulatory Project Manager
US Army Corps of Engineers
Chicago District
231 South La Salle Street, Suite 1500
Chicago, IL 60604

Re: Approved Jurisdictional Determination Request and Kensington Marsh Coordination
CTA Red Line Extension Project
Chicago, Cook County, Illinois

Dear Mr. Smalley:

The Chicago Transit Authority (CTA) is preparing a Final Environmental Impact Statement (EIS) for the Red Line Extension (RLE) Project and this package is intended to serve as a request for an Approved Jurisdictional Determination (AJD). The AJD would be utilized for permitting commitments to be documented in the Final EIS. Additionally, CTA would like to request a Letter of No Objection for placement of a stormwater drainage outlet into Kensington Marsh. The Metropolitan Water Reclamation District of Greater Chicago (MWRD) has ownership of Kensington Marsh, and requires this statement of no objection for further coordination and approval of placement of a stormwater drainage outlet into Kensington Marsh.

Project Description

CTA, as project sponsor to the Federal Transit Administration (FTA), proposes to extend the Red Line from the existing 95th/Dan Ryan terminal to 130th Street. The proposed 5.6-mile extension would include four new stations near 103rd Street, 111th Street, Michigan Avenue, and 130th Street. Each new station would include bus and parking facilities. The Preferred Alignment would run south along I-94 from the 95th/Dan Ryan terminal, then curve west along the north side of I-57 (within the I-57 right-of-way) on an elevated structure for nearly ½ mile until reaching and crossing over to the west side of the Union Pacific Railroad (UPRR) corridor in the vicinity of Eggleston Avenue. The alignment would turn south to follow the UPRR corridor on the elevated structure along the west side of the UPRR to 108th Place. At 108th Place the elevated structure would cross over to the east side of the UPRR corridor. The Preferred Alignment would continue along the east side of the UPRR corridor south and southeast to near

119th Street, where it would cross over the Canadian National/Metra Electric District tracks. South of this point, the Preferred Alignment would descend to grade while continuing southeast parallel to the Northern Indiana Commuter Transportation District/Chicago South Shore & South Bend Railroad corridor, using a portion of the Norfolk Southern Railway right-of-way. The alignment would continue south, going under 130th Street through a new opening in the 130th Street embankment to the terminus (end) of the RLE Project south of 130th Street. The project also includes a new yard and shop. The 120th Street yard and shop would provide a larger, modern railcar storage and repair facility for CTA at the south end of the RLE Project and would replace the function of the existing 98th Street Yard and Shop as a maintenance facility. This project is one part of the Red Ahead Program to extend and enhance the entire Red Line.

Approved Jurisdictional Determination Request

CTA requests an AJD for wetland and water resources and potential resources located in the RLE Project potential action area. **Enclosure A** includes the standard “Request for a Jurisdictional Determination” form. CTA is submitting this request subsequent to a pre-application meeting held on March 4, 2021, with representatives of USACE, MWRD, and CTA. A site meeting to review resources discussed in this document occurred on May 11, 2021, with representatives of the USACE and CTA.

This AJD request includes 20 resource locations, including Kensington Marsh (wetland 20). Locations are identified on **Figures 1 to 3**, provided in **Enclosure B**. These figures include the area for the AJD request. **Figures 4 to 6** identify the property ownership in the AJD area. The RLE Project previously received an AJD under the USACE Project Number LRC-2016-00408. A copy of this AJD is provided as **Enclosure C**. Wetlands 1 to 15 were identified in the previous AJD as being either isolated waters or exempt from regulation. Documentation of these wetlands was previously provided in a 2015 wetland delineation report by Hey & Associates. This wetland report is provided in **Enclosure D**.

USACE and CTA noted four (4) other potential wetland areas during the May 2021 project site review. These potential wetland areas have been noted on the submitted AJD request figures as wetlands 16 to 19, plus Kensington Marsh (wetland 20). These potential wetlands have been mapped utilizing aerial imagery. No additional delineation has been completed because these potential wetland areas are not expected to be considered waters of the U.S. The areas noted are low drainage areas exhibiting some surface ponding at the time of the visit (potential wetlands 16 - 18) or areas that appeared to be dominated by hydrophytic vegetation (potential wetland 19). The potential wetland areas are described as follows:

- Potential wetlands 16 and 17 are located in a drainage swale between a Beaubien Woods Forest Preserve access road and existing railroad track north of 132nd Street. No overland connectivity was observed for drainage from this area.
- Potential wetland 18 is located in a low area west of a Beaubien Woods Forest Preserve access road, north of 132nd Street. No overland connectivity was observed for drainage from this area.
- Potential wetland 19 consists of a strip of land observed to contain common reed (*Phragmites australis*) located to the south of the American Recycling facility to the

north/east of the facility access road. This potential wetland area is similar in location and connectivity to wetlands 6, 7, and 15.

Kensington Marsh (Wetland 20) is also included in this request. Kensington Marsh consists of constructed wetlands surrounding constructed open water. The dominant wetland vegetation is common reed. The wetland drains into a MWRD inlet at the southeast corner of the property. Kensington Marsh is discussed further below.

CTA requests an AJD of the resources described above and depicted in **Enclosure B**.

Kensington Marsh Letter of No Objection

MWRD constructed Kensington Marsh as part of a mitigation project for wetland impacts from development of their facilities located to the south of the marsh. The permit is associated with Application Number 5108502, effective June 10, 1985. MWRD supplied a copy of this permit to CTA, provided in **Enclosure E**. USACE and CTA observed that the constructed wetland area appears to be operating as designed, despite the dominance of a common reed monoculture.

After reviewing a variety of drainage options for the 120th Street yard and shop required to support the RLE operation, CTA has determined that the only reasonable and feasible drainage option for this location is to outlet a storm drainage pipe to Kensington Marsh. During the preliminary engineering phases, neither MWRD nor USACE has objected to stormwater drainage to Kensington Marsh from the 120th Street yard and shop area. MWRD requires a letter of no objection from the USACE to move forward with further coordination on this item.

The conceptual placement for the stormwater drainage outlet is in the northern third of Kensington Marsh. A preliminary drainage map is provided in **Enclosure F**. The drainage map also identifies detention ponds that will be utilized for the retention and treatment of stormwater runoff. Any stormwater from the 120th Street yard and shop area will be filtered through the detention ponds prior to entering Kensington Marsh. In order to maintain allowable flow rates into Kensington Marsh, nine (9) proposed detention ponds are included (eight above ground and one underground) in the proposed railroad yard project limits. The marsh is considered “open water,” which allows for a higher allowable release rate in comparison to discharging to an underground drainage pipe system. Prior to entering each respective detention pond, runoff would be collected by underdrains wrapped in a permeable filter fabric and located between selected railroad tracks. The underdrains are located in the sub-ballast section. These underdrains connect into pipes that outlet into respective detention ponds. The combination of the ballast, sub-ballast, and underdrains with filter fabric comprise the Volume Control Best Management Practices (VCBMP's) by minimizing suspended solids entry into the detention ponds. The VCBMP receives credit for the required water quality pre-treatment. Pre-treatment devices such as BaySaver units will be used to filter the parking lot and roof drainage before it enters a detention pond. To mitigate flow rates, the ponds utilize an outlet control structure, which includes orifices, a gate, and discharge pipe. Ultimately, the runoff exits a pond via the discharge pipe and enters the marsh. The access road to the railyard includes catch basins with a deep sump. The deep sump is used to collect sediment. The pipe leaving the catch basins connects into the pipe network that enters the marsh (i.e., the road drainage does not enter the detention

ponds). Volumes and peak flows have been calculated for a variety storm year events and durations, provided in **Enclosure G**.

Placement of the drainage outlet will disturb a small area of the Kensington Marsh wetland. CTA has not finalized grading limits during this preliminary analysis phase, but will not permanently fill more than 0.1 acre of wetland in the marsh. The area of fill is likely to be lower than this maximum quantity. Additionally, CTA will document the site conditions prior to construction and restore any area disturbed for construction to pre-construction conditions. No construction staging area will be placed in Kensington Marsh. All construction and restoration efforts will be coordinated with MWRD.

CTA requests USACE to provide a letter stating no objection to the use of Kensington Marsh for stormwater drainage.

We appreciate your review of these materials at your earliest convenience to complete an AJD and provide a letter stating no objection to use of Kensington Marsh for stormwater drainage. If you have any questions or require further information, please contact me at mfratinardo@transitchicago.com or Mr. Kelsey Kropp at krkropp@transystems.com or 816-490-1319. If preferred, we can set up a virtual meeting to discuss any clarifications or questions you have regarding this request.

Regards,

Marlise Fratinardo
Senior Project Manager, Planning
Chicago Transit Authority

Enclosures:

Enclosure A – Request for a Jurisdictional Determination Form

Enclosure B – AJD Resource Figures

Enclosure C – Project AJD for LRC-2016-00408

Enclosure D – Hey & Associates 2015 Wetland Delineation Report

Enclosure E – Kensington Marsh Permit 5108502

Enclosure F – Preliminary Drainage Plan

Enclosure G – Kensington Marsh Storm Event Volume and Peak Flow Data

U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT
REQUEST FOR A JURISDICTIONAL DETERMINATION
 For use of this form, see ER 405-1-12; the proponent agency is CELRC-TS-R.

PRIVACY ACT STATEMENT

AUTHORITIES: The Department of the Army permit program is authorized by Section 10 of the Rivers and Harbors Act (*RHA*) of 1899, 33 CFR Section 404 of the Clean Water Act, and Section 103 of the Marine Protection, Research, and Sanctuaries Act.
PRINCIPAL PURPOSE: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into water of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters.
ROUTINE USE(s): Information provided on this form will be used in determining Department of the Army jurisdictional boundaries. Information in this application is made a matter of public record.
DISCLOSURE OF THE INFORMATION REQUESTED IS VOLUNTARY: however, the data requested are necessary in order to establish Federal regulatory jurisdiction. If the necessary information is not provided, the jurisdictional determination cannot be completed.

This form can be used when you want to determine if areas on your property fall under regulatory requirements of the U.S. Army Corps of Engineers (*USACE*). Please supply the following information and supporting documents described below. This form can be filled out online and then printed. It must be **SIGNED BY THE PROPERTY OWNER** to be considered a formal request. Submitting this request authorizes the US Army Corps of Engineers to field inspect the property site, if necessary, to help in the determination process. The printed form and supporting documents should be mailed to:

U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT
 REGULATORY BRANCH
 231 SOUTH LASALLE STREET, SUITE 1500
 CHICAGO, ILLINOIS 60604
 FAX NUMBER: 312.353.4110
 E-MAIL: ChicagoRequests@usace.army.mil

Additionally, you may either call our branch telephone at 312.846.5530 or view our website at <http://www.lrc.usace.army.mil/Portals/36/docs/Regulatory/newapps.pdf> to determine which number and project manager has been assigned to your request. Project Manager contact information can be found here: <http://www.lrc.usace.army.mil/Missions/Regulatory/ContactInfo.aspx> . Please contact us if you need any assistance with filling out this form.

SECTION I - LOCATION AND INFORMATION ABOUT PROPERTY TO BE SUBJECT TO A JURISDICTIONAL DETERMINATION

1. PROPERTY ADDRESS / LOCATION CTA RLE Extension					
2. CITY (<i>Name</i>) OR UNINCORPORATED Chicago		3. STATE Illinois		4. ZIP CODE 60627/60628	
5. COUNTY Cook		6. TOWNSHIP NAME Lake Calumet			
7. QUARTER	8. SECTION 22, 26, 27, &35	9. TOWNSHIP 37N	10. RANGE 14E	11. PRINCIPAL MERIDIAN (<i>PM</i>)	
12a. LATITUDE IN DECIMAL DEGREES °NORTH 41.667993			b. LONGITUDE IN DECIMAL DEGREES °WEST -87.602630		
13. SIZE OF PROPERTY IN ACRES 175 Acres			14. TAX PERSONAL IDENTIFICATION NUMBER (<i>PIN</i>)		
15. PRIOR OR RELATED USACE PROJECT NUMBER LRC-2016-00408					
16. IS THE PROPERTY SUBJECT TO A CONSERVATION EASEMENT OR DEED RESTRICTION ? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE EXPLAIN AND SUBMIT DETAILS OF THE PROJECT AREA. See attached discussion					
17. WAS THE PROPERTY A SITE FOR MITIGATION PURSUANT TO A PROJECT PREVIOUSLY PERMITTED BY USACE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, PLEASE EXPLAIN AND SUBMIT DETAILS OF THE PROJECT AREA. See attached discussion					

18. IS THE PROPERTY NEIGHBORING / ADJACENT TO / BORDERING A PROJECT PREVIOUSLY PERMITTED BY USACE? YES NO
IF YES, PLEASE EXPLAIN AND SUBMIT THE NAME OF THE PROJECT, THE PERMITTEE'S NAME AND / OR ADDRESS, AND CORPS PERMIT NUMBER, IF AVAILABLE.

See attached discussion

SECTION II - PROPERTY OWNER CONTACT INFORMATION

1. PROPERTY OWNER NAME (Last, First MI) (must be an individual)

Fratinaro, Marlise (Ms.)(Project Representative)/ Ellen Avery (Ms.)(Property Owner Representative) - See Enclosure B

2. PROPERTY OWNER COMPANY (if applicable)

Chicago Transit Authority (CTA)/Metropolitan Water Reclamation District of Greater Chicago (MWRD) - See Enclosure B

3. MAILING ADDRESS (Post Office Box, Street, City, State and Zip Code)

567 West Lake Street
Chicago, Illinois 60661-1489

4. DAYTIME TELEPHONE NUMBER

312-681-4124

5. FAX NUMBER

6. E-MAIL ADDRESS

mfratinardo@transitchicago.com

SECTION III - REQUESTOR NON-PROPERTY OWNER CONTACT INFORMATION

IF THE PERSON REQUESTING THE JURISDICTIONAL DETERMINATION IS NOT THE PROPERTY OWNER, PLEASE ALSO SUPPLY THE REQUESTOR'S CONTACT INFORMATION HERE.

1. REQUESTOR'S NAME (Last, First MI)

Fratinaro, Marlise (Ms.)

2. REQUESTOR'S COMPANY (if applicable)

Chicago Transit Authority (CTA)

3. MAILING ADDRESS (Post Office Box, Street, City, State and Zip Code)

567 West Lake Street
Chicago, Illinois 60661-1489

4. DAYTIME TELEPHONE NUMBER

312-681-4124

5. FAX NUMBER

6. E-MAIL ADDRESS

mfratinardo@transitchicago.com

SECTION IV - OTHER DATA AND SIGNATURE CERTIFICATION

1. OTHER DATA / INFORMATION THAT MAY ASSIST WITH DETERMINATION

Please see the attached narrative document. This form is listed as Enclosure A. Enclosures additional to this document include:

Enclosure B – AJD Resource Figures

Enclosure C – Project AJD for LRC-2016-00408

Enclosure D – Hey & Associates 2015 Wetland Delineation Report

Enclosure E – Kensington Marsh Permit 5108502

Enclosure F – Preliminary Drainage Plan

Enclosure G – Kensington Marsh Storm Event Volume and Peak Flow Data

Please provide a map and / or copy of the plat of survey identifying the physical boundaries of the property.

Additionally, if you have any of the following information, please include it with your request: wetland delineation, relevant maps, drain tile survey, topographic survey, and site photographs.

If you are considering doing work on the property, please identify on the required site map, plat of survey, or in a separate drawing: the footprint, location, and type of potential work. It will assist us in the determination process and reduce unnecessary delays of processing subsequent permits, if required.

I hereby certify that the information contained in the Request for a Jurisdictional Determination is accurate and complete:

2a. PROPERTY OWNER (Last, First MI)

b. DATE (YYYYMMDD)

c. PROPERTY OWNER'S SIGNATURE



- Study Area
- Observed Potential Wetland
- Wetland (Delineated 2015)

**Figure 1: AJD Map
130th Street Station**

0 250 500 Feet



TranSystems
EXPERIENCE | Transportation

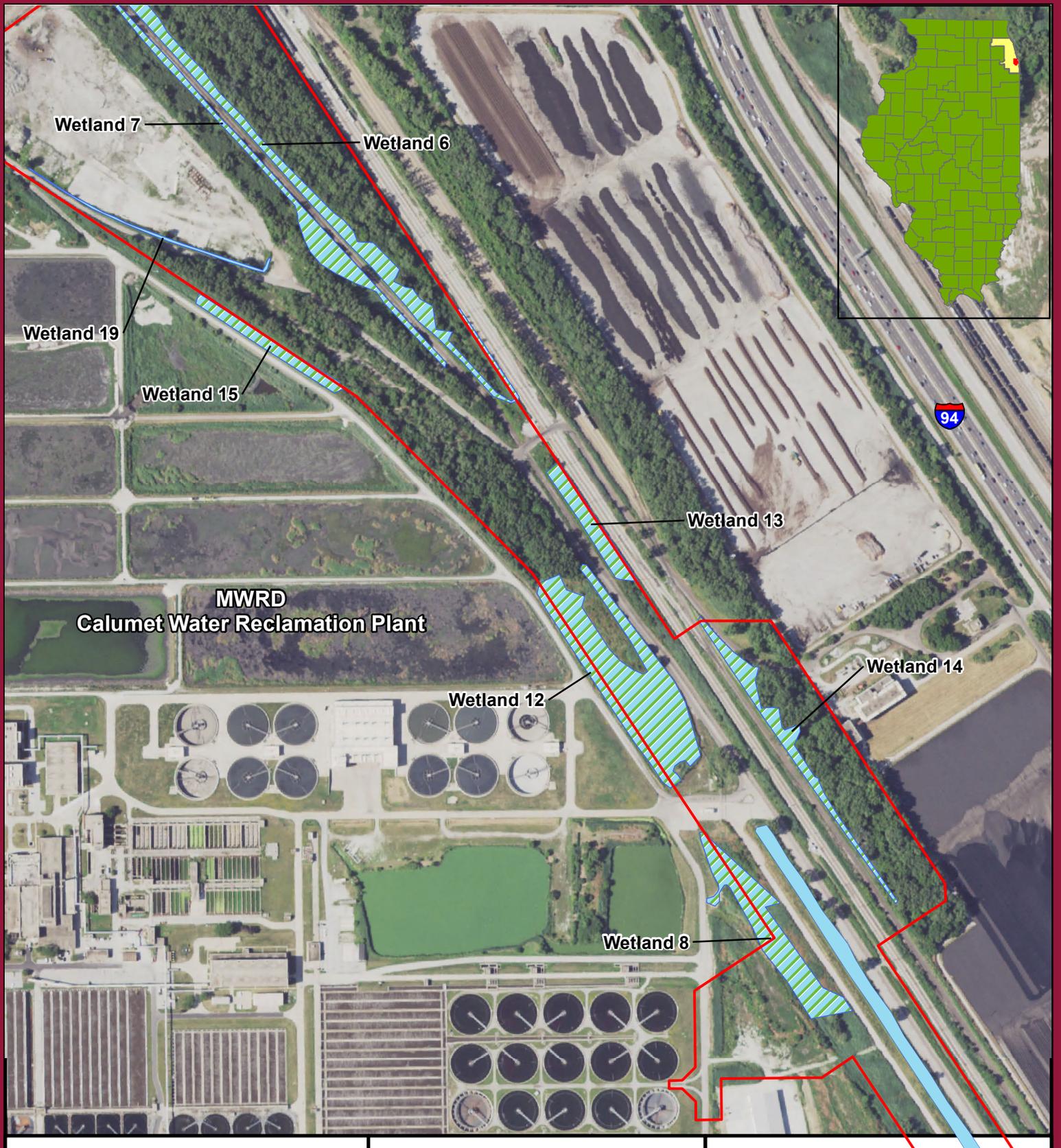
CTA RLE

AJD Request Map

Cook County, Illinois

Aerial Imagery: NAIP 2019 Cook County

July 7, 2021



- Study Area
- Observed Potential Wetland
- Wetland (Delineated 2015)

**Figure 2: AJD Map
120th Street Yard and Shop**



CTA RLE

AJD Request Map

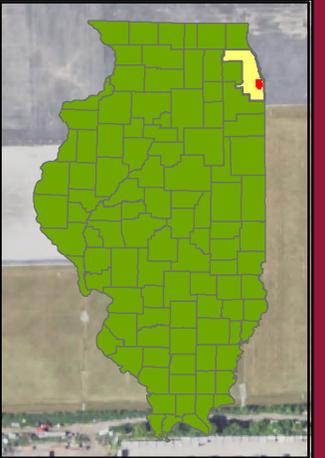
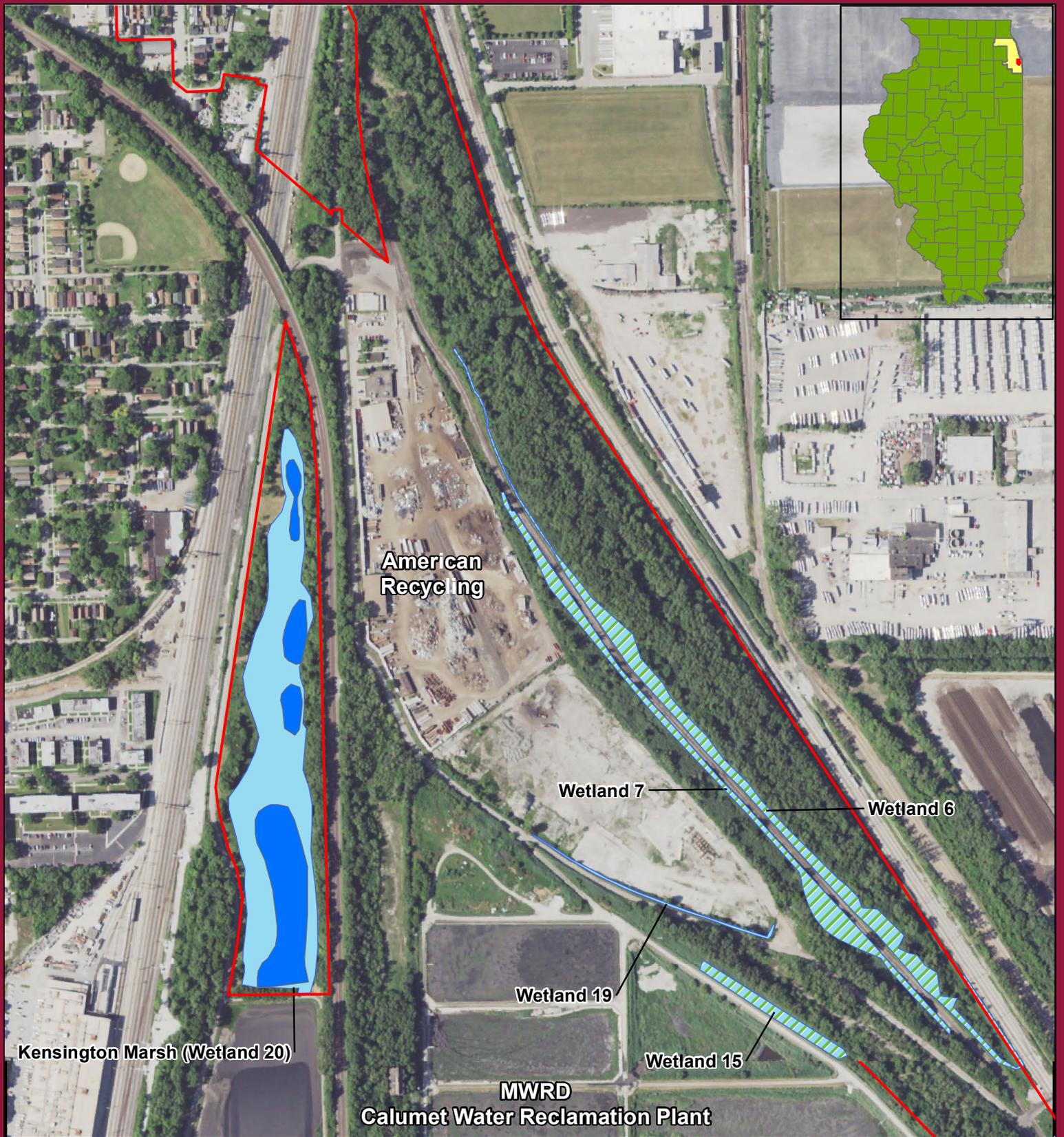
Cook County, Illinois

Aerial Imagery: NAIP 2019 Cook County

July 7, 2021

0 250 500 Feet





- Study Area
- Observed Potential Wetland
- Wetland (Delineated 2015)
- Open Water

**Figure 3: AJD Map
120th Street Yard and Shop
& Kensington Marsh**



CTA RLE

AJD Request Map

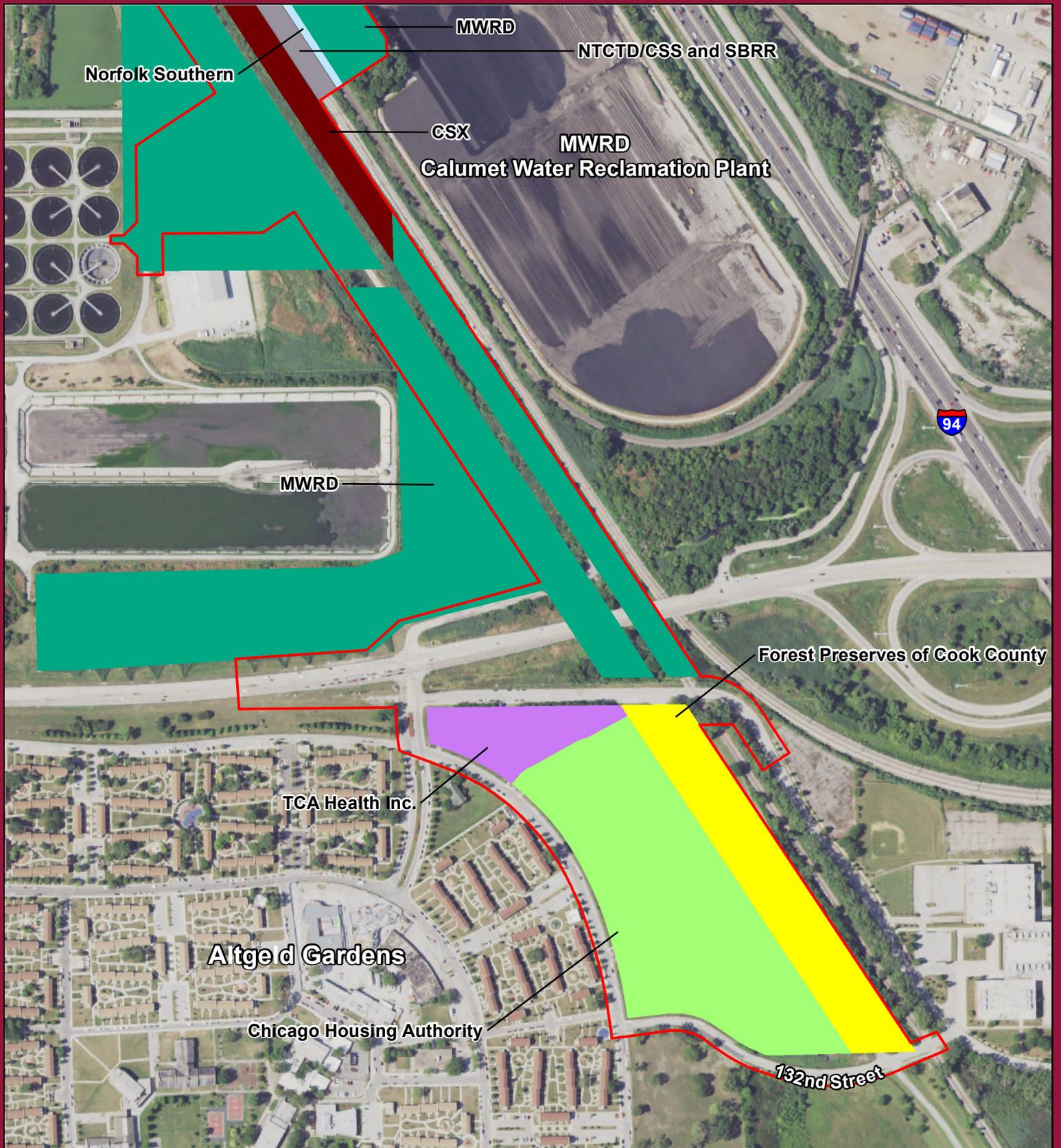
Cook County, Illinois

Aerial Imagery: NAIP 2019 Cook County

July 7, 2021

0 250 500 Feet





 Study Area

**Figure 4: Ownership Map
130th Street Station**



CTA RLE

AJD Request Map

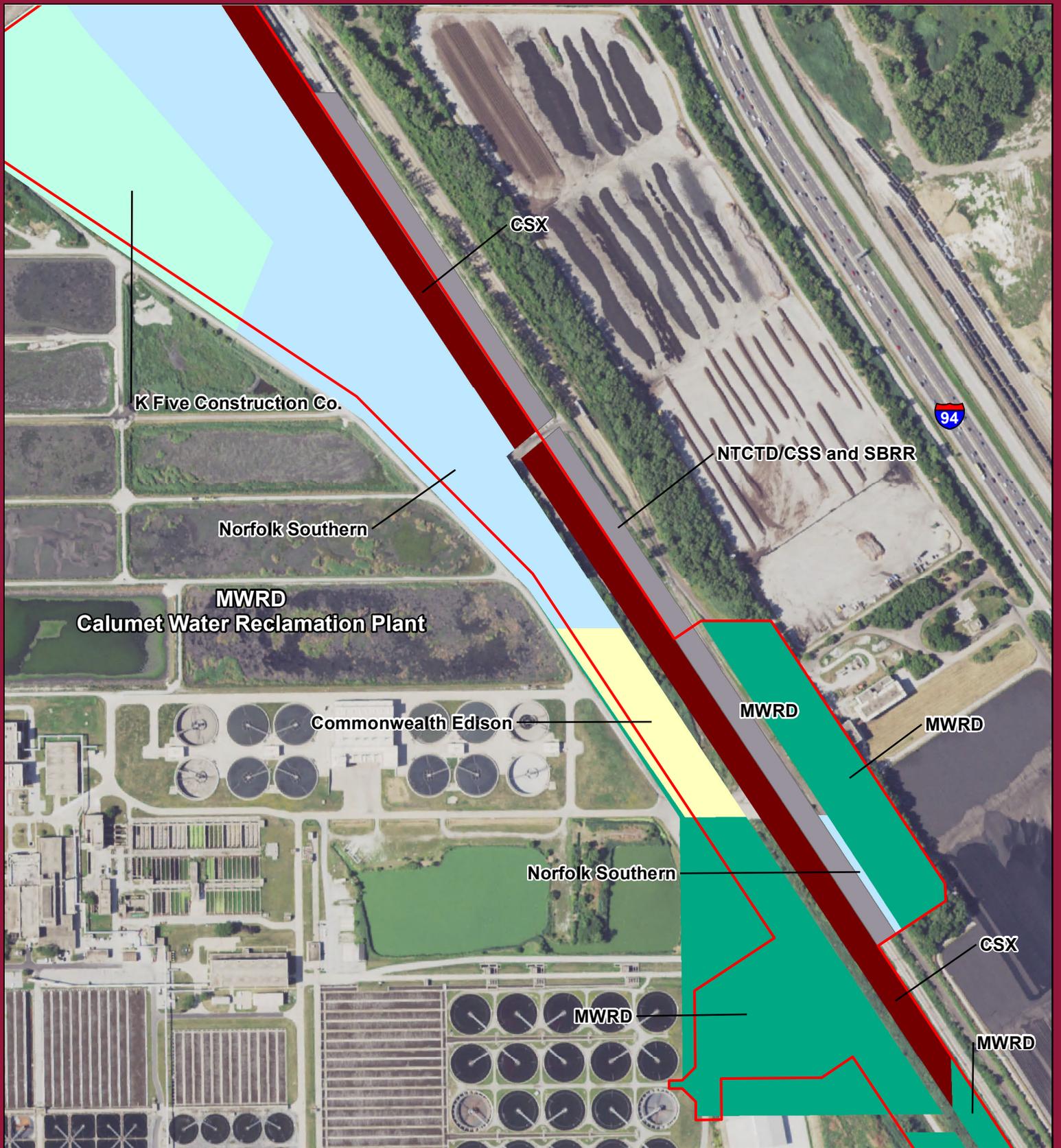
Cook County, Illinois

Aerial Imagery: NAIP 2019 Cook County

July 7, 2021

0 250 500 Feet





 Study Area

**Figure 5: Ownership Map
120th Street Yard and Shop**



CTA RLE

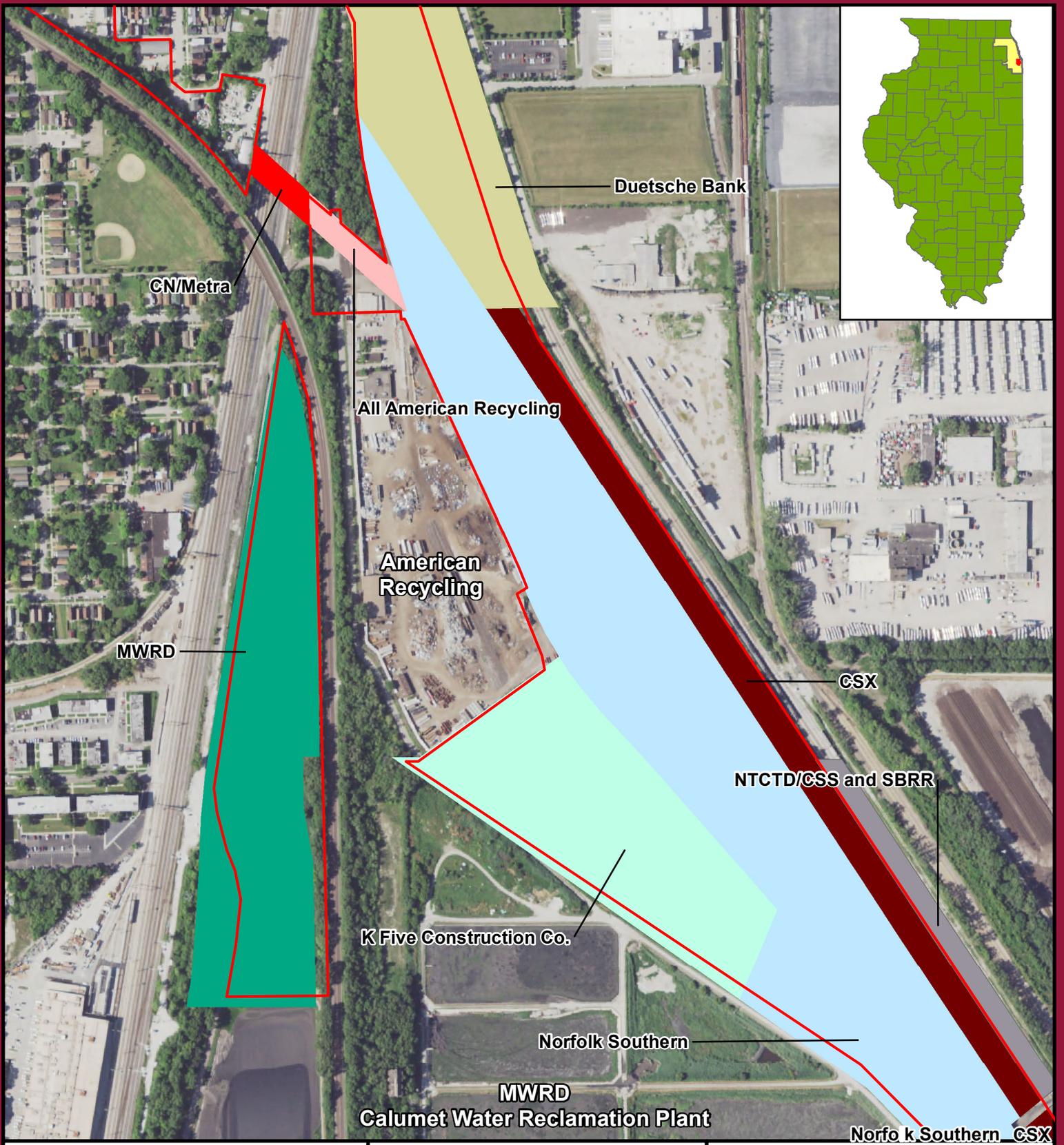
AJD Request Map

Cook County, Illinois

Aerial Imagery: NAIP 2019 Cook County
July 7, 2021

0 250 500 Feet





 Study Area

**Figure 6: Ownership Map
120th Street Yard and Shop
& Kensington Marsh**



CTA RLE

AJD Request Map

Cook County, Illinois

Aerial Imagery: NAIP 2019 Cook County

July 7, 2021

0 250 500 Feet





REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
CHICAGO DISTRICT, CORPS OF ENGINEERS
231 SOUTH LA SALLE STREET
CHICAGO, ILLINOIS 60604-1437

October 3, 2016

Technical Services Division
Regulatory Branch
LRC-2016-408

SUBJECT: Request for a Jurisdictional Determination for the CTA Red Line Extension Project Along and East of Cottage Grove Avenue between 119th Street and 130th Street in the Lake Michigan Watershed of the City of Chicago, Cook County, Illinois (41.66428, -87.59925)

Tandon Sanoli
Chicago Transit Authority
567 West Lake Street
Chicago, Illinois 60661

Dear Mr. Sanoli:

This is in response to your request that the U.S. Army Corps of Engineers complete a jurisdictional determination for the above-referenced site submitted on your behalf by Hey and Associates, Inc. The subject project has been assigned number LRC-2016-408. Please reference this number in all future correspondence concerning this project.

Following a review of the information you submitted, this office has determined that there are no waterways, wetlands or other areas considered "waters of the United States" under Corps of Engineers jurisdiction on the site. This site was subject to a previous jurisdictional determination under Chicago District project number LRC-2016-330 which found all of the wetlands and waters identified in your submittal to be either isolated waters or exempt from regulation. A copy of that approved jurisdictional determination is included for your records and is considered by the Chicago District to be valid until five years from the date of its original issuance on June 29, 2016 (see attached letter and basis forms).

It is your responsibility to obtain any required state, county, or local approvals for impacts to wetland areas not under the Department of the Army jurisdiction. For projects located in unincorporated and unauthorized municipalities in Cook County, please contact the Metropolitan Water Reclamation District of Greater Chicago at (312) 751-3247. For projects in incorporated areas of Cook County, contact the authorized municipality for information related to the Watershed Management Ordinance.

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers regulates the discharge of dredged or fill material into waters of the United States, including wetlands. A Department of the Army permit is required for any proposed work involving the discharge of dredged or fill material within the jurisdiction of this office. To initiate the permit process, please submit a joint permit application form along with detailed plans of the proposed

work. Information concerning our program, including the application form and an application checklist, can be found at and downloaded from our website:
<http://www.lrc.usace.army.mil/Missions/Regulatory.aspx>

If you have any questions, please contact Michael Murphy of my staff by telephone at 312-846-5538 or email at Michael.J.Murphy@usace.army.mil.

Sincerely,
CHERNICH.KATHLEEN.G.
1230365616
2016.11.16 16:40:51
-06'00'
Kathleen G. Chernich
Chief, East Section
Regulatory Branch

Enclosures

Copy Furnished w/out Enclosures

Illinois Department of Natural Resources/OWR (Gary Jereb)

Illinois Environmental Protection Agency (Thad Faught)

Metropolitan Water Reclamation District of Greater Chicago (Dan Feltes)

City of Chicago, Department of Transportation (Oswaldo Chaves)

Hay and Associates, Inc. (Jeff Mengler)



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
CHICAGO DISTRICT, CORPS OF ENGINEERS
231 SOUTH LA SALLE STREET
CHICAGO, ILLINOIS 60604-1437

June 29, 2016

Technical Services Division
Regulatory Branch
LRC-2016-00330

SUBJECT: Request for a Jurisdictional Determination on the ComEd GRID Z4333 Property North of 130th Street along Cottage Grove Avenue in Chicago, Cook County, Illinois (ComEd ESD #2016-100) (CBBEL Project No. 040532.00804)

Sara Race
Commonwealth Edison
Three Lincoln Center, 3rd Floor
Oakbrook Terrace, Illinois 60181-4260

Dear Ms. Race:

This is in response to your request that the U.S. Army Corps of Engineers complete a jurisdictional determination for the above-referenced site submitted on your behalf by Christopher B. Burke Engineering, Ltd. (CBBEL). The subject project has been assigned number LRC-2016-00330. Please reference this number in all future correspondence concerning this project.

Following a review of the information you submitted, this office has determined that there are no waterways, wetlands or other areas considered "waters of the United States" under Corps of Engineers jurisdiction at the site.

Wetlands #1 & #2 have been determined to be isolated and therefore not subject to Federal regulation. Ditches #1 and #2 are water features Exempt from Federal regulation. Please be informed that this office does not concur with the boundaries of waters not under the jurisdiction of this office.

For a detailed description of our determination please refer to the enclosed decision document. This determination covers only your project as depicted in Request for Jurisdictional Determination Report dated May 10, 2016, prepared by CBBEL.

This determination is valid for a period of five (5) years from the date of the letter, unless new information warrants revision of the determination before the expiration date or a District Commander has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.

This letter is considered an approved jurisdictional determination for your subject site. If you object to this determination, you may appeal, according to 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and a Request for Appeal (RFA) form. If you request to appeal the above determination, you must submit a completed RFA form to the Great Lakes/Ohio River Division Office at the following address:

Jacob Siegrist
Appeal Review Officer
Great Lakes and Ohio River Division
CELRD-PD-REG
550 Main Street, Room 10032
Cincinnati, Ohio 45202-3222
Phone: (513) 684-2699 Fax: (513) 684-2460

In order to be accepted, your RFA must be complete, meet the criteria for appeal and be received by the Division Office within sixty (60) days of the date of the NAP. If you concur with the determination in this letter, submittal of the RFA form to the Division office is not necessary.

This determination has been conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

It is your responsibility to obtain any required state, county, or local approvals for impacts to wetland areas not under the Department of the Army jurisdiction. For projects located in unincorporated and unauthorized municipalities in Cook County, please contact the Metropolitan Water Reclamation District of Greater Chicago at (312) 751-3247. For projects in incorporated areas of Cook County, contact the authorized municipality for information related to the Watershed Management Ordinance.

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers regulates the discharge of dredged or fill material into waters of the United States, including wetlands. A Department of the Army permit is required for any proposed work involving the discharge of dredged or fill material within the jurisdiction of this office. To initiate the permit process, please submit a joint permit application form along with detailed plans of the proposed work. Information concerning our program, including the application form and an application checklist, can be found at and downloaded from our website:

<http://www.lrc.usace.army.mil/Missions/Regulatory.aspx>

If you have any questions, please contact Mr. Mike Machalek of my staff by telephone at 312-846-5534 or email at Mike.J.Machalek@usace.army.mil.

Sincerely,

CHERNICH.KATHLEEN.G.12

30365616

2016.07.05 16:25:47 -05'00'

Kathleen G. Chernich

Chief, East Section

Regulatory Branch

Enclosures

Copy Furnished w/out Enclosures

Cook County Building and Zoning (Donald Wlodarski)

Metropolitan Water Reclamation District of Greater Chicago (Dan Feltes)

CBBEL (Julie Gangloff)

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Sara Race, Commonwealth Edison

File Number: LRC-2016-00330

Date: June 29, 2016

Attached is:

See Section below

	INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of Permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/CECW/Pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A. INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit or a Letter of Permission (LOP), you may sign the permit document and return it to the district commander for final authorization. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district commander. Your objections must be received by the district commander within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district commander will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district commander will send you a proffered permit for your reconsideration, as indicated in Section B below.

B. PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit or a Letter of Permission (LOP), you may sign the permit document and return it to the district commander for final authorization. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division commander. This form must be received by the division commander within 60 days of the date of this notice.

C. PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division commander. This form must be received by the division commander within 60 days of the date of this notice.

D. APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division commander. This form must be received by the division commander within 60 days of the date of this notice.

E. PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Regulatory Branch
Chicago District Corps of Engineers
231 South LaSalle Street, Suite 1500
Chicago, IL 60604-1437
Phone: (312) 846-5530
Fax: (312) 353-4110

If you only have questions regarding the appeal process you may also contact:

Jacob Siegrist
Appeal Review Officer
Great Lakes and Ohio River Division
CELRD-PD-REG
550 Main Street, Room 10032
Cincinnati, Ohio 45202-3222
Phone: (513) 684-2699 Fax: (513) 684-2460

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Commanders personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number:

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): June 29, 2016

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Chicago District, ComEd, LRC-2016-330

C. PROJECT LOCATION AND BACKGROUND INFORMATION: NW of I-94 and 130th Street
State: Illinois County/parish/borough: **Cook** City: Chicago
Center coordinates of site (lat/long in degree decimal format): Lat. 41.667957°N, Long. -87.601762° W.
Universal Transverse Mercator: Zone 16

Name of nearest waterbody: Calumet River

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Calumet River**

Name of watershed or Hydrologic Unit Code (HUC): **Little Calumet-Galien (04040001)**

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date: June 6, 2016

Field Determination. Date(s): May 27, 2016

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

2. Non-regulated waters/wetlands (check if applicable):¹

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: **Wetlands 1 & 2 are shallow Phragmites dominated wetland in a flat landscape, connected to roadside ditches that don't drain anywhere.**

SECTION III: CWA ANALYSIS

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):²

which are or could be used by interstate or foreign travelers for recreational or other purposes.

from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

which are or could be used for industrial purposes by industries in interstate commerce.

Interstate isolated waters. Explain: .

Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

Tributary waters: linear feet width (ft).

Other non-wetland waters: acres.

Identify type(s) of waters: .

Wetlands: acres.

¹ Supporting documentation is presented in Section III.F.

² Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: 1.6 acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: CBBEL May 10, 2016 Request for Jurisdictional Determination Report.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas: Lake Calumet HA 205, 1966, .
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Lake Calumet 7.5", 1991, Pick List, Pick List, Pick List, .
- USDA Natural Resources Conservation Service Soil Survey. Citation: Soil Survey of DuPage and Part of Cook (1979).
- National wetlands inventory map(s). Cite name: Lake Calumet, .
- State/Local wetland inventory map(s): Pick List, .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): .
or Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: Site visit on May 27, 2016 to walk ditches and trace to end.

- Area(s) are geographically isolated. Wetlands are shallow isolated depressions in the lake plain region of Lake Michigan.
- Area(s) do not have a hydrologic nexus. Water does not drain off-site into any flowing water of the U.S.
- Area(s) do not have an ecological nexus.
- Area(s) do not have evidence of a subsurface flow connection to a jurisdictional water.
- Area(s) do not have evidence of surface overland sheet flow.
- Area(s) are not located within the flood plain.

**APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers**

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

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Universal Transverse Mercator: Zone 16

Name of nearest waterbody: Calumet River

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Calumet River**

Name of watershed or Hydrologic Unit Code (HUC): **Little Calumet-Galien (04040001)**

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date: June 6, 2016

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SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

2. Non-regulated waters/wetlands (check if applicable):¹

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: **Two shallow roadside ditches are exempt.**

SECTION III: CWA ANALYSIS

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.

Other: (explain, if not covered above): .

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: CBBEL May 10, 2016 Request for Jurisdictional Determination Report.

Data sheets prepared/submitted by or on behalf of the applicant/consultant.

Office concurs with data sheets/delineation report.

Office does not concur with data sheets/delineation report.

Data sheets prepared by the Corps: .

Corps navigable waters' study: .

U.S. Geological Survey Hydrologic Atlas: Lake Calumet HA 205, 1966, .

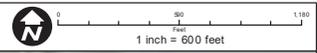
¹ Supporting documentation is presented in Section III.F.

- USGS NHD data.
- USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Lake Calumet 7.5", 1991, Pick List, Pick List, Pick List,
- USDA Natural Resources Conservation Service Soil Survey. Citation: Soil Survey of DuPage and Part of Cook (1979).
- National wetlands inventory map(s). Cite name: Lake Calumet,
- State/Local wetland inventory map(s): Pick List,
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date):
or Other (Name & Date):
- Previous determination(s). File no. and date of response letter:
- Applicable/supporting case law:
- Applicable/supporting scientific literature:
- Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD: Site visit on May 27, 2016 to walk ditches.

- Areas are ditches (check all that apply):
 - Non-tidal drainage and irrigation ditches excavated on dry land (51 FR 41217, Nov. 13, 1986).
 - Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water (USACE JD Form Instructional Guidebook 5/30/2007).
 - Ditches that do not have a relatively permanent flow into waters of the U.S. or between two (or more) waters of the U.S. (USACE JD Form Instructional Guidebook 5/30/2007).
- Area(s) are artificial waters created in upland or dry land:
 - Artificially irrigated areas which would revert to upland if the irrigation ceased (51 FR 41217, Nov. 13, 1986).
 - Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing (51 FR 41217, Nov. 13, 1986).
 - Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons (51 FR 41217, Nov. 13, 1986).
 - Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States (51 FR 41217, Nov. 13, 1986).
 - Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet criteria of this definition) (33 CFR 328.3 (a)).
- Area(s) are swales (USACE JD Form Instructional Guidebook 5/30/2007).
- Area(s) are erosional features (including gullies) (USACE JD Form Instructional Guidebook 5/30/2007).
- Area(s) are prior converted cropland (33 CFR 328.3(a)(8)).
- Area(s) are uplands.
- Other:

NOTE: AERIAL PHOTOGRAPH TAKEN FROM NEARMAP, DATED: FEBRUARY 4, 2016
 *JURISDICTIONAL STATUS & BUFFER WIDTHS ARE SUBJECT TO REGULATORY APPROVAL
 SECTIONS 22 AND 27, T37N, R14E / CHICAGO, COOK COUNTY, ILLINOIS



Legend

- EXISTING POLES
- ROADSIDE/RAILROAD DRAINAGE
- ISOLATED WETLAND*
- CBBEL STUDY AREA



C:\COM\EDM\52100004\0532.00804_INDEX.mxd

CLIENT:



TITLE:

APPROXIMATE WETLAND DELINEATION

ESD # 2016-100
 CBBEL # 04-0532.00804
 DATE: 4/28/16

CB CHRISTOPHER B. BURKE ENGINEERING, LTD.
 9575 W. Higgins Road, Suite 600 • Rosemont, Illinois 60018 • (847) 823-0500

DSGN.		SCALE:	1" = 600'
DWN.	KEK	USER:	k.kopija
CHKD.	JRG	PLOT DATE:	5/5/2016
FILE NAME:	040532.00804_INDEX		

EXH IND

Copyright nearmap 2015

WETLAND DELINEATION REPORT

CTA RED LINE EXTENSION – LAKE CALUMET

CHICAGO, COOK COUNTY, ILLINOIS

PREPARED FOR:

CDM Smith
14432 SE Eastgate Way, Suite 100
Bellevue, WA 98007

SEPTEMBER 16, 2015

Revised October 1, 2015

INTRODUCTION

A wetland delineation of the 78.9-acre permanent project envelope for the southern portion of the Chicago Transit Authority's Red Line Extension, near Lake Calumet was conducted on August 13 and 19, 2015. The site is located west of Interstate 94 (Bishop Ford Expressway), north of 130th Street, along the east side of the Metropolitan Water Reclamation District of Greater Chicago's (MWRD) Calumet Waste Water Treatment plant within the City of Chicago, Cook County, Illinois (Exhibit 1). The site is further located in Sections 22, 26, and 27, Township 37 North, Range 14 East. The project permanent envelope includes Cottage Grove Avenue, parts of the MWRD property, railroad lines, and other disturbed urban-industrial landscapes. The property has been disturbed by various grading, dumping, and filling activities over the past decades.

EXISTING DATA

The United States Geological Survey (USGS) topographic map indicates open water at the locations of the MWRD sewage lagoons and sludge drying beds (Exhibit 2), but does not indicate any wetlands or blue line streams within the defined project permanent envelope. The National Wetland Inventory (NWI) map similarly depicts the sewage lagoons and sludge drying beds, but also indicates the presence of wetlands within the project permanent envelope (Exhibit 3) that are designated PF01/EMCd (palustrine, forested, broad-leaved deciduous/emergent seasonally flooded, partially drained/ditched). The Flood Insurance Rate Map indicates no mapped floodplain or floodway within the project permanent envelope (Exhibit 4). The USGS Hydrologic Atlas indicates no flood of record waters within the project permanent envelope (Exhibit 5). The Cook County Soil Survey (Exhibit 6) shows six (6) different soil series of orthents, or urban land within the project permanent envelope.

WETLAND DELINEATION

Wetlands within the project permanent envelope were delineated by Vincent Mosca and Jeffrey Mengler, PWS of Hey and Associates, Inc. using procedures outlined in the 1987 Corps of Engineers' (Corps) Wetland Delineation Manual and the 2010 Regional Supplement: Midwest Region. The entire property was inspected, with areas supporting wetland plant species prioritized for investigation. If inspection revealed that wetland plant species comprised more than 50 percent of the plant cover, the suspected wetland was further examined for field indicators of hydric soil and hydrology. The Corps-accepted field indicators of hydric soil include: gleyed and low chroma matrix and mottle colors, and iron and manganese concretions. Necessary hydric soil indicators were field verified in the wetland area if possible. In most cases in this

project permanent envelope, the gravel and fill precluded investigation with hand tools, and the disturbed profiles would not have been illuminating. The Corps-approved field indicators of hydrology include: visual observation or photographic evidence of soil inundation or saturation during the growing season, oxidized channels associated with living roots and rhizomes, water marks, drift lines, waterborne sediment deposits, waterstained leaves, surface scoured areas and drainage patterns. Wetland hydrologic criteria were met in the areas delineated as wetland.

Lists of observed plant species in the wetland areas were compiled and data were gathered to complete Corps jurisdictional dataforms. A native vegetative quality rating was calculated for each wetland using the Floristic Quality Assessment (FQA) of Swink and Wilhelm as published in *Plants of the Chicago Region*, 1994. The FQA method assigns to plant species a rating that reflects the fundamental conservatism that the species exhibits for natural habitats. A native species that exhibits specific adaptations to a narrow spectrum of the environment is given a high rating. Conversely, a ubiquitous species that exhibits adaptations to a broad spectrum of environmental variables is given a low rating. Utilizing this method, a Floristic Quality Index (FQI) is derived for a given area. The FQI is an indication of native vegetative quality for an area: generally 1-19 indicates low vegetative quality, 20-35 indicates high vegetative quality and above 35 indicates "Natural Area" quality.

RESULTS

Fifteen (15) wetlands totaling 15.34 acres within the project permanent envelope were delineated on the property (Exhibit 7). The wetland boundaries shown on an aerial photograph in Exhibit 7 were recorded with sub-meter accuracy GPS unit in the field on August 13 and 19, 2015. Lists of the observed plant species for the wetland areas are given in Exhibit 8. The Corps' jurisdictional dataforms for upland and wetland areas are included as Exhibit 9. Georeferenced representative color photographs of the upland and wetland areas are provided in Exhibit 10.

Following is a table that summarizes the delineated wetlands. Wetland acreages were calculated based upon the sub-meter accuracy GPS data imported into a Geographical Information System (GIS).

Table 1. Summary of Wetlands within Project Limits.

Wetland	Area within Project Limits (acres)	Total Wetland Area (acres)	FQI ¹	Native Mean C ²	HQAR ³	Wetland Type	Dominant Vegetation
1 & 2	0.19	0.38	3.89	1.38	No	Drainage swale	Common reed (<i>Phragmites australis</i>)
3	0.83	0.83	6.36	4.5	No ⁴	Marsh	Common reed and purple loosestrife (<i>Lythrum salicaria</i>)
4	0.07	1.85	6.43	2.43	No	Drainage swale	Common reed
5	2.73	2.73	4.95	1.75	No	Drainage swale	Common reed
6	2.26	2.26	11.13	2.43	No	Drainage swale & degraded wet prairie	Common reed
7	1.63	1.63	13.68	2.79	No	Drainage swale & degraded wet prairie	Common reed
8	1.61	1.77	6.43	2.43	No	Degraded marsh	Common reed
9	1.09	1.09	2.04	0.83	No	Drainage swale/marsh	Common reed
10	0.07	0.07	6.43	2.43	No	Drainage ditch	Common reed
11	0.05	n/a	3.00	1.50	No	Drainage ditch	Common reed
12	3.56	3.56	3.00	1.50	No	Degraded marsh	Common reed
13	0.53	0.66	2.86	1.17	No	Wooded	Box Elder (<i>Acer negundo</i>), Common reed (<i>Phragmites australis</i>)
14	0.20	0.88	4.00	1.33	No	Drainage swale	Common reed
15	0.52	n/a	2.00	1.00	No	Drainage swale	Common reed
TOTAL	15.34	17.71					
<p>¹ The Floristic Quality Index (FQI) is an indication of native vegetative quality for an area: generally 1-19 indicates low vegetative quality, 20-35 indicates high vegetative quality and above 35 indicates "Natural Area" quality.</p> <p>² The Native Mean C is an indication of native vegetative quality for an area. Areas with value of 3.5 or greater are considered high quality.</p> <p>³ The Chicago District U.S. Army Corps of Engineers has designated various Waters of the United States to be high-quality aquatic resources (HQARs). This designation is based on the definitions found within the Regional Permit Program that became effective April 1, 2007.</p> <p>⁴ While this area has a Native Mean C of greater than 3.5, it was based on the presence of only two native species. The remainder of the vegetation was comprised of non-native species and would not be considered high quality in any ecological assessment.</p>							

Wetlands 1 and 2 are both part of the same drainage swale along the east-west portion of South Cottage Grove Avenue, just north of 135th Street. It is dominated by common reed and defined on the south by the 135th Street embankment, on the north and west by the Cottage Grove Avenue entrance off 135th Street, and on the east by a railroad access road. It is of very low floristic quality and wetland function, and has debris and trash scattered throughout it.

Wetland 3 is on the north side of the east-west portion of South Cottage Grove Avenue, and is connected to Wetland areas 5 and 9. It is dominated by common reed. It is defined by a gravel road and fill on all sides. This was one of the few areas that had standing water during the August 2015 assessment. It is of

low quality and function. It should be noted that the mean C value is 4.5, which suggests a high quality area, but this mean C value is based on the only 2 native species observed – the other 4 species were all invasive non-native species.

Wetland 4 is another drainage swale that runs from the entrance to the MWRD Calumet Wastewater Treatment Plant (WWTP) west along 135th Street. It is entirely dominated by common reed. The north boundary is defined by a mowed embankment up to the WWTP facility fence, and the southern boundary is defined by 135th Street and shoulder. The mowed area was composed of typical upland turf and weed species and not hydrophytic species, indicating that the edge of mowing corresponded with the edge of wetland. Wetland 4 appears to receive drainage from 135th Street via several stormsewers that create the undulating southern boundary.

Wetland 5 is a drainage swale that runs along the west side of South Cottage Grove Avenue from Wetland 3 north to the entrance and gatehouse for the Calumet WWTP. It is dominated by common reed, with patches of sandbar willow (*Salix interior*) and cottonwood trees (*Populus deltoides*). The eastern boundary is defined by Cottage Grove Avenue and the western boundary is a chain-link fence and mowed turf grass within the MRWDGC property.

Wetland 6 is a wet prairie drainage swale along a Indiana Harbor Belt Railroad line that does not appear to have frequent use. It is generally bounded by the railroad ballast on the west side and higher ground dominated by common buckthorn (*Rhamnus cathartica*) on the east side. Dominant vegetation was common reed, though pockets of native plant species were observed.

Similarly, Wetland 7 is a drainage swale on the west side of the same Indiana Harbor Belt Railroad line through the site. It is also bounded by the railroad ballast and higher ground covered in common buckthorn. It is of moderate floristic quality when calculated to include the scattered native wet prairie species observed, but is largely dominated by the invasive common reed.

Wetland 8 is an area of degraded marsh inside the MWRD Calumet WWTP perimeter fence, located just southeast of the gatehouse and entrance. It is surrounded by areas of fill/gravel that are much higher in elevation than the ground in the wetland area. The embankments around this wetland pocket are very steep and eroded, often at a 1:1 slope or steeper. The vegetation was dominated by common reed. It is an area of very low quality.

Wetland 9 is connected to Wetland 3 and ultimately Wetland 5. At the southern end of Wetland 5, these 3 wetland areas form a u-shaped marsh swale around a gravel fill pad that is 3-4 feet higher in elevation. This

area is bounded by the MWRD Calumet WWTP entrance road and Cottage Grove Avenue. The vegetation was dominated by common reed, and it is of low quality.

Wetland 10 is a small drainage ditch that runs from the 135th Street bridge over the Indiana Harbor Belt Railroad/Metra South Shore rail lines, to Cottage Grove Avenue. It is generally lined by cottonwoods and dead green ash (*Fraxinus pennsylvanica*) with common reed dominant in the ditch. The ditch was also littered with old tires and other refuse.

Wetland 11 is a small part of a wet area between the gravel railroad access road, and the Metra South Shore rail line. Most of the wetland is outside of the project limits and is dominated by common reed.

Wetland 12 is a marsh area located just north of the MWRD Calumet WWTP gatehouse. It is bounded by gravel access roads on the east and west sides, and the entrance road on the south. On the north side the wetland gives way to higher ground dominated by common buckthorn and a variety of upland weeds. The marsh is dominated by common reed.

Wetland 13 is a small wetland drainage swale located between the Metra South Shore Electric railroad line and the Indiana Harbor Belt Railroad freight line. It is dominated by common reed and is bounded by railroad ballast.

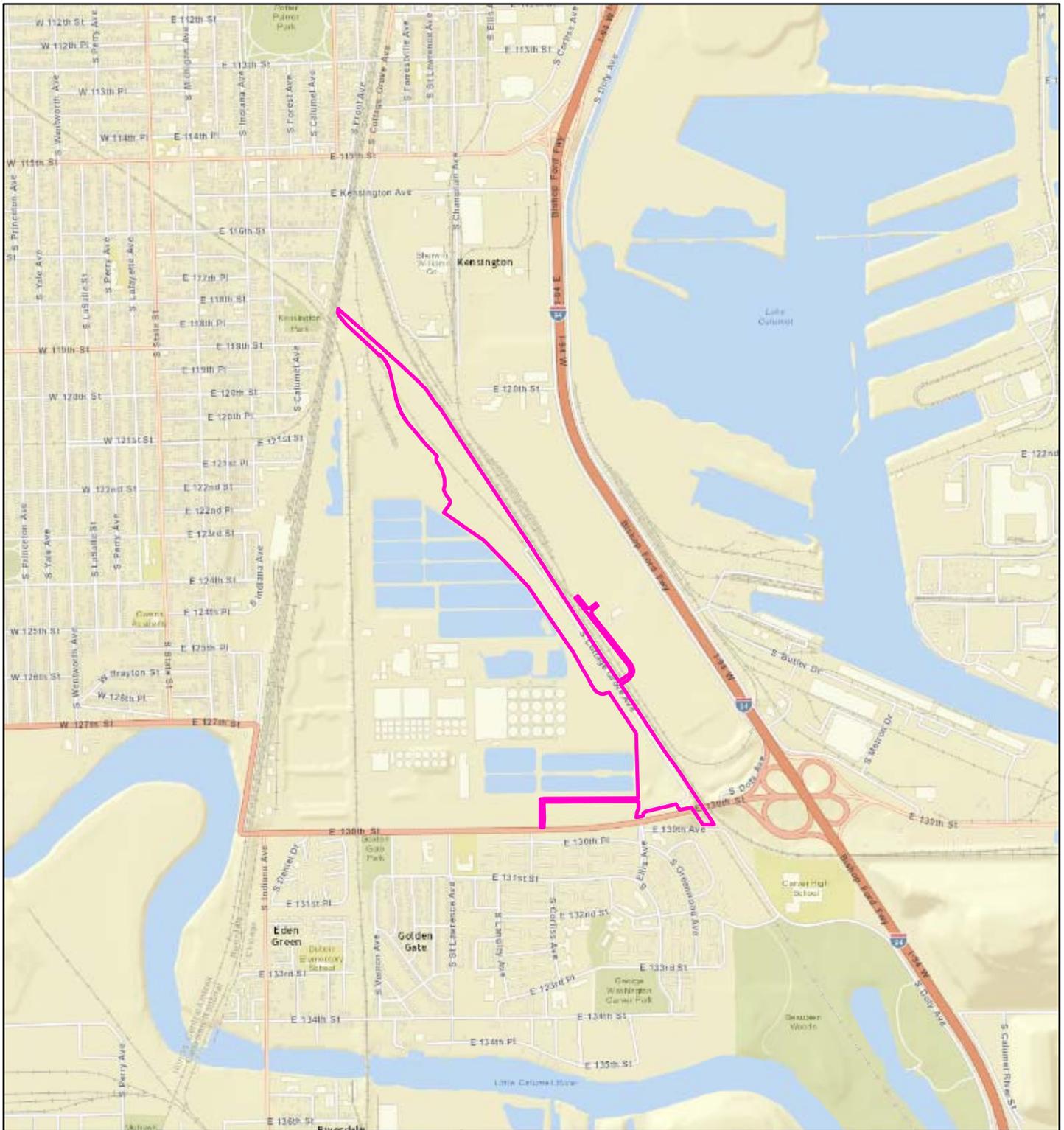
Wetland 14 is a swale located on the east side of the Indiana Harbor Belt Railroad/Metra South Shore line, but west of the MWRD fence around some sludge drying beds and other facilities. It is partially wooded by box elder and cottonwood but in open areas remains dominated by common reed.

Wetland 15 refers to a narrow drainage swale dominated by common reed located along a MWRD gravel access road in the northwest part of the project permanent envelope. It is of very low quality.

There are no High Quality Aquatic Resources on the subject property or mapped on adjacent properties. All wetlands observed were dominated by the invasive common reed, often in dense monotypic stands. The surrounding land is primarily developed urban or industrial landscapes.

SUMMARY AND CONCLUSIONS

The wetland delineation revealed 15 wetland areas totaling 15.34 acres within the project permanent envelope as depicted on Exhibit 7. All wetlands were of low quality and dominated by the invasive common reed. Most of the wetland boundaries are defined by fill and other manmade features. A jurisdictional determination will need to be requested from the U.S. Army Corps of Engineers to determine if the wetlands are under their Clean Water Act jurisdiction or if they are isolated wetlands of Cook County.



Project Number: 15-0218



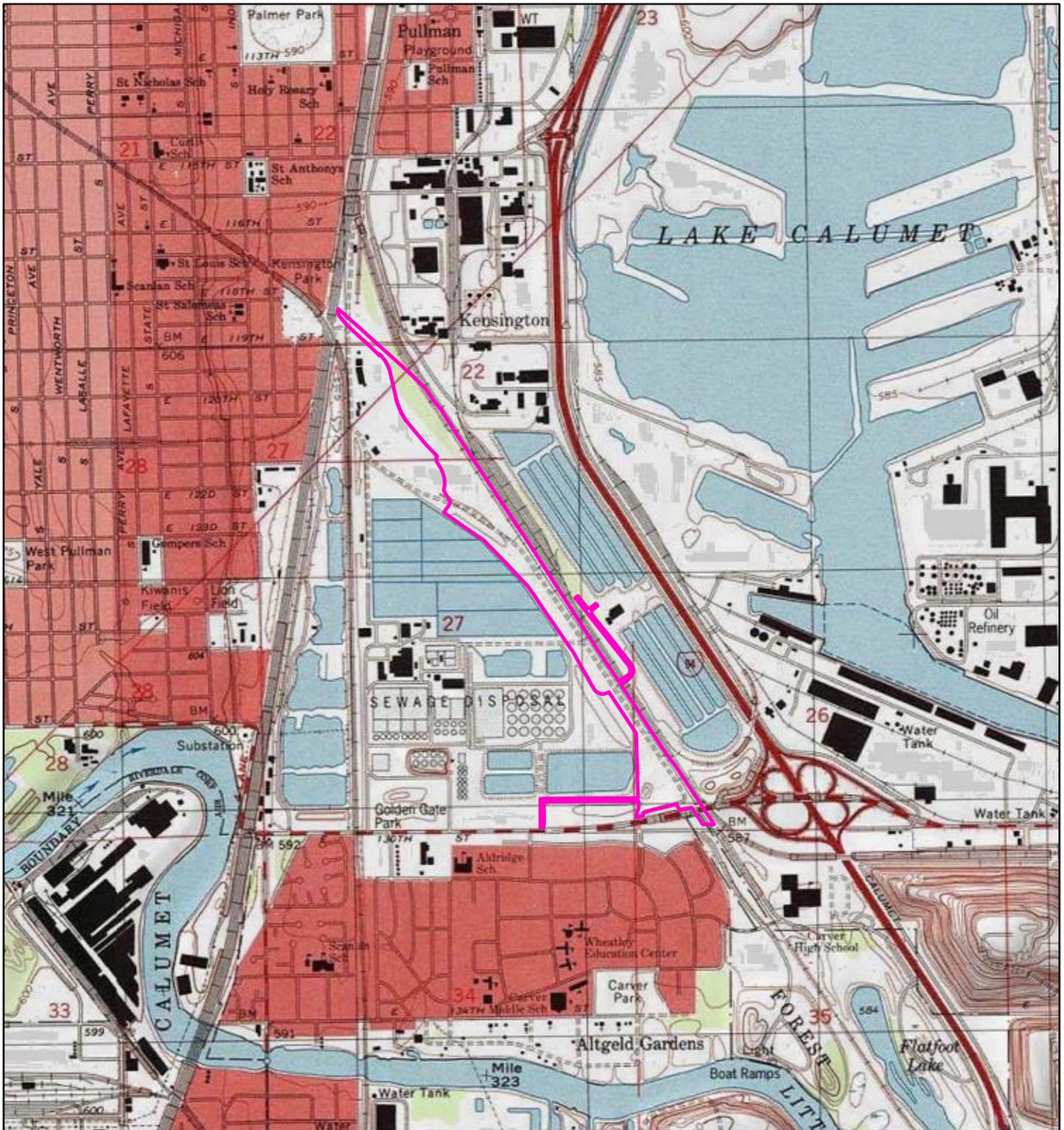
Latest Revision: 10/1/2015



Project Name:
CTA Red Line Extension

Prepared for:
CDM Smith

Location Information:
T.37N.-R.14E., Sections 22, 26 & 27



Scale:
 0 2,000 Feet

Orientation:

 Latest Revision: 10/1/2015

Legend:
 Project Permanent Envelope

Project Number: 15-0218

Prepared by:

Hey and Associates, Inc.
 Engineering, Ecology and Landscape Architecture

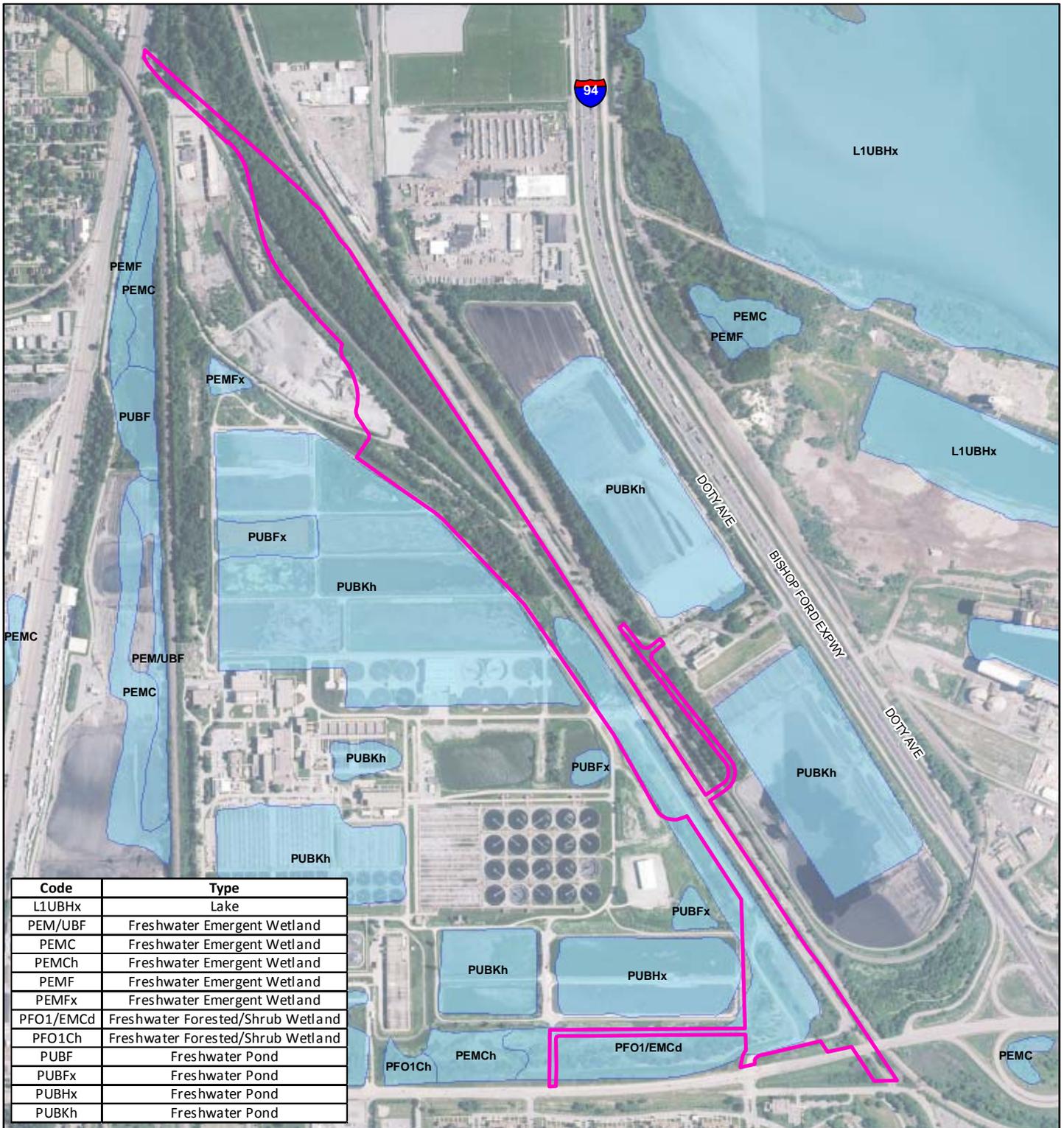
Project Name:
 CTA Red Line Extension

Prepared for:
 CDM Smith

Location Information:
 Lake Calumet Quadrangle

Exhibit Title:
 U.S.G.S. Topographic Map

Exhibit:
 2



Code	Type
L1UBHx	Lake
PEM/UBF	Freshwater Emergent Wetland
PEMC	Freshwater Emergent Wetland
PEMCh	Freshwater Emergent Wetland
PEMF	Freshwater Emergent Wetland
PEMFx	Freshwater Emergent Wetland
PFO1/EMCd	Freshwater Forested/Shrub Wetland
PFO1Ch	Freshwater Forested/Shrub Wetland
PUBF	Freshwater Pond
PUBFx	Freshwater Pond
PUBHx	Freshwater Pond
PUBKh	Freshwater Pond

Scale:
 0 1,000 Feet



Orientation: Legend:
 [Light Blue Box] National Wetland Inventory
 [Pink Outline Box] Project Permanent Envelope

Project Name:
 CTA Red Line Extension

Prepared for:
 CDM Smith

NWI Date:
 1981

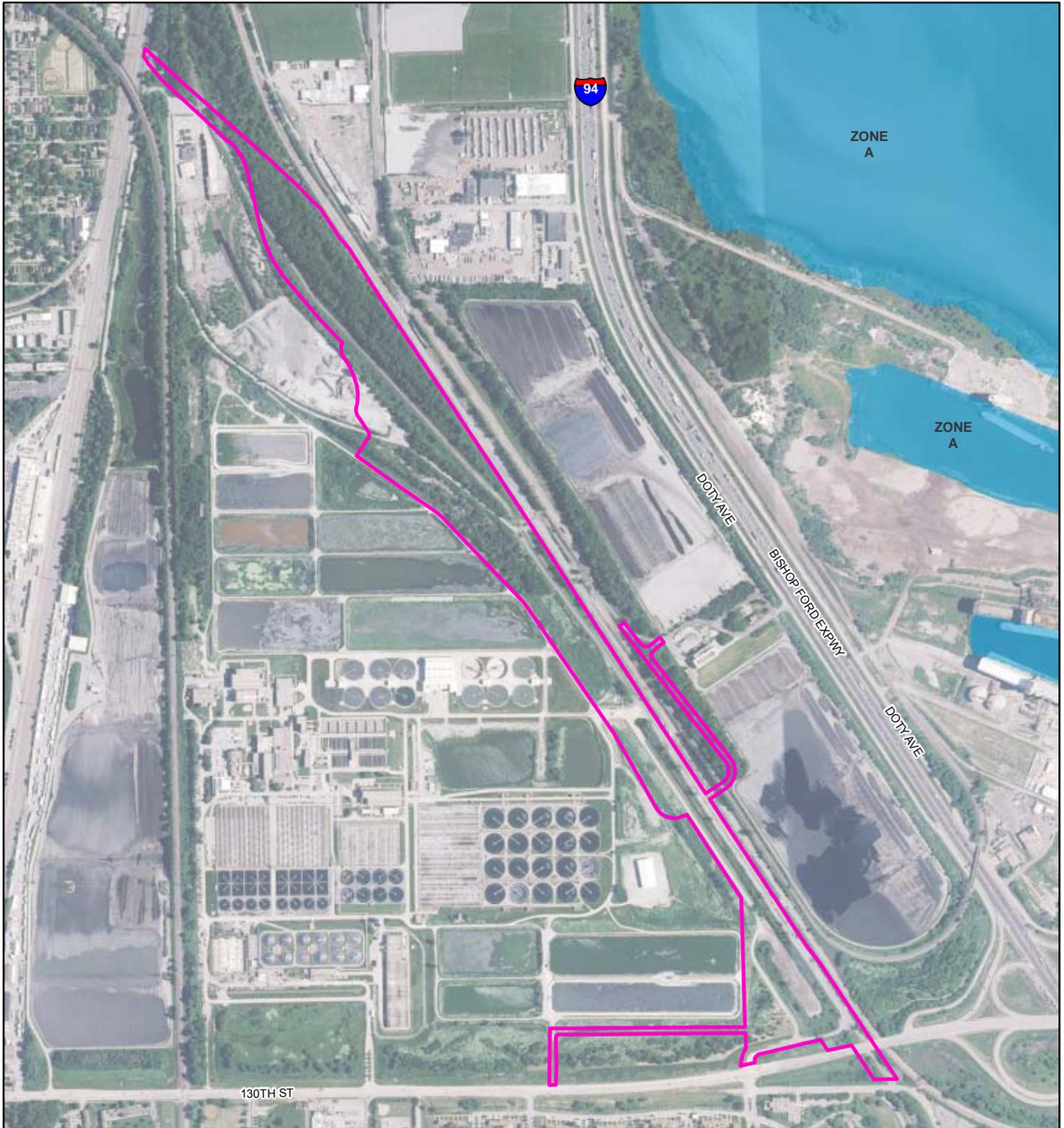
Project Number: 15-0218

Latest Revision: 10/1/2015

Prepared by:

Exhibit Title:
 National Wetland Inventory

Exhibit:
 3



Scale:



Project Number: 15-0218

Orientation:



Latest Revision: 10/1/2015

Legend:

- 100 Year Flood Zone
- Project Permanent Envelope

Project Name:

CTA Red Line Extension

Prepared for:

CDM Smith

Panel #:

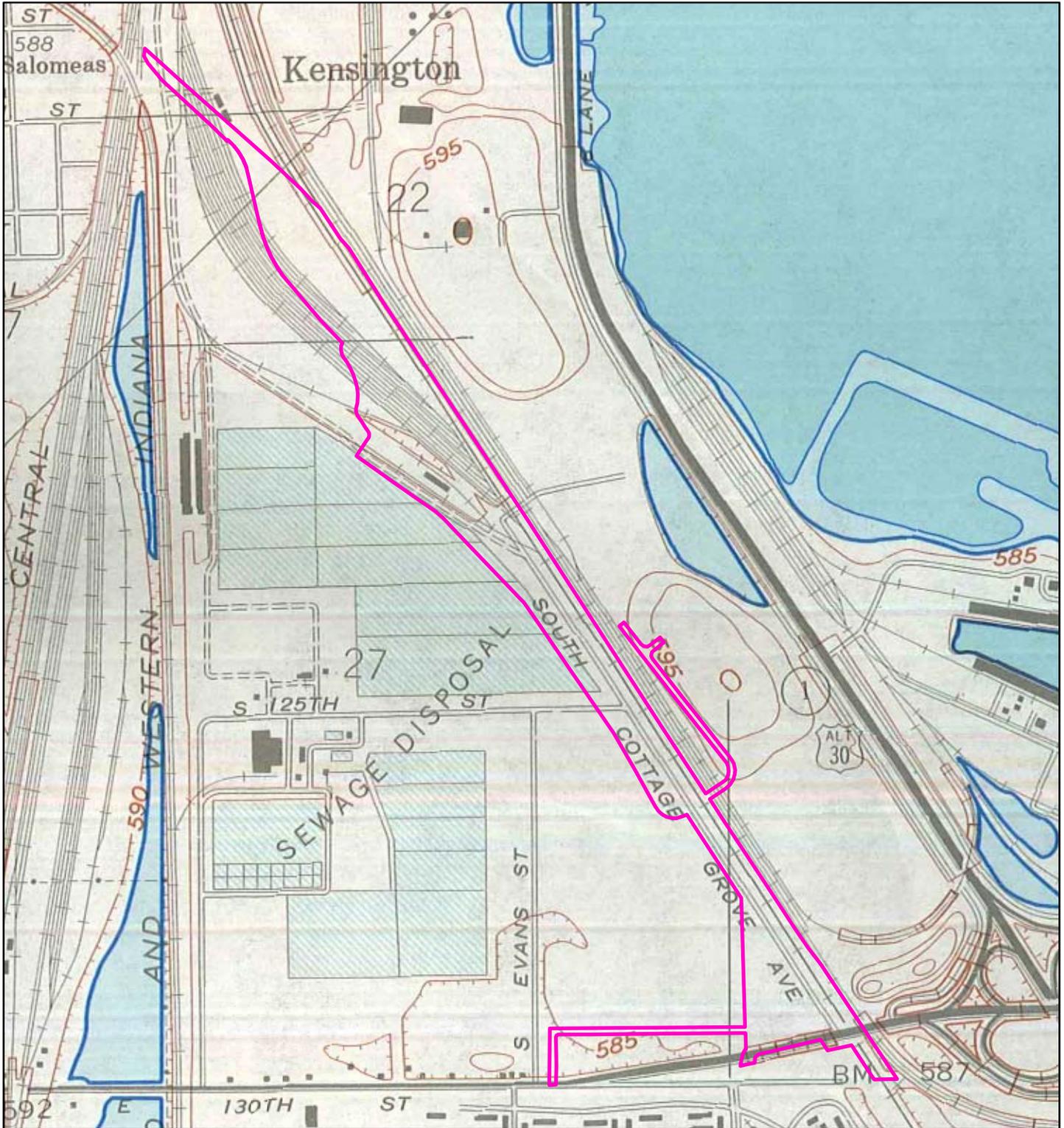
17031C0661J

Exhibit Title:

Flood Insurance Rate Map

Exhibit:

4



Scale:



Project Number: 15-0218

Orientation:



Latest Revision: 10/1/2015

Legend:

 Project Permanent Envelope

Project Name:

CTA Red Line Extension

Prepared for:

CDM Smith

Hydro Atlas Date:

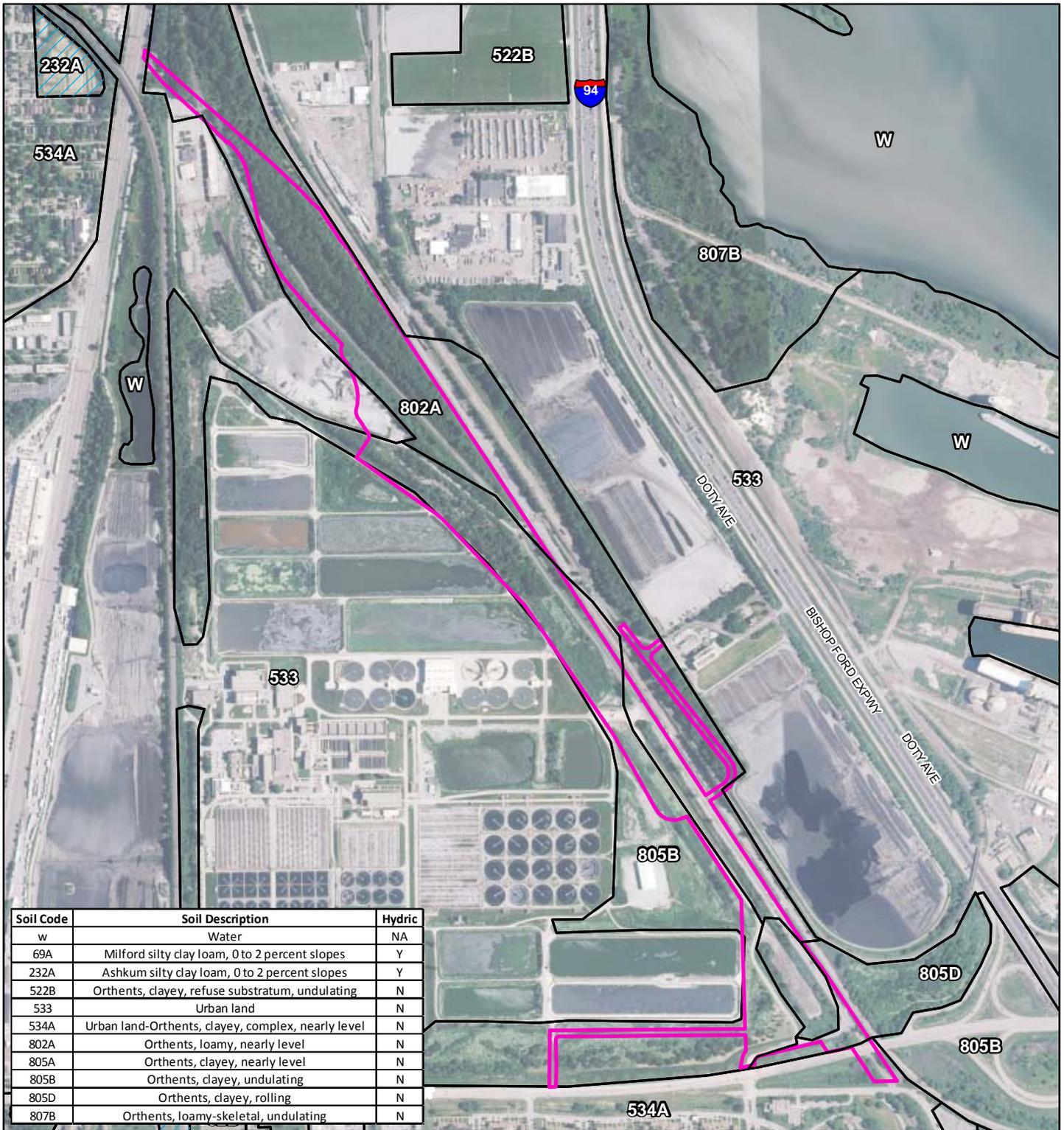
1966

Exhibit Title:

U.S.G.S Hydrologic Atlas

Exhibit:

5



Soil Code	Soil Description	Hydric
w	Water	NA
69A	Milford silty clay loam, 0 to 2 percent slopes	Y
232A	Ashkum silty clay loam, 0 to 2 percent slopes	Y
522B	Orthents, clayey, refuse substratum, undulating	N
533	Urban land	N
534A	Urban land-Orthents, clayey, complex, nearly level	N
802A	Orthents, loamy, nearly level	N
805A	Orthents, clayey, nearly level	N
805B	Orthents, clayey, undulating	N
805D	Orthents, clayey, rolling	N
807B	Orthents, loamy-skeletal, undulating	N

Scale:



Project Number: 15-0218

Orientation:



Latest Revision: 10/1/2015

Legend:

- Hydric Soils
- Soil Units
- Project Permanent Envelope

Project Name:

CTA Red Line Extension

Prepared for:

CDM Smith

Soil Survey Date:

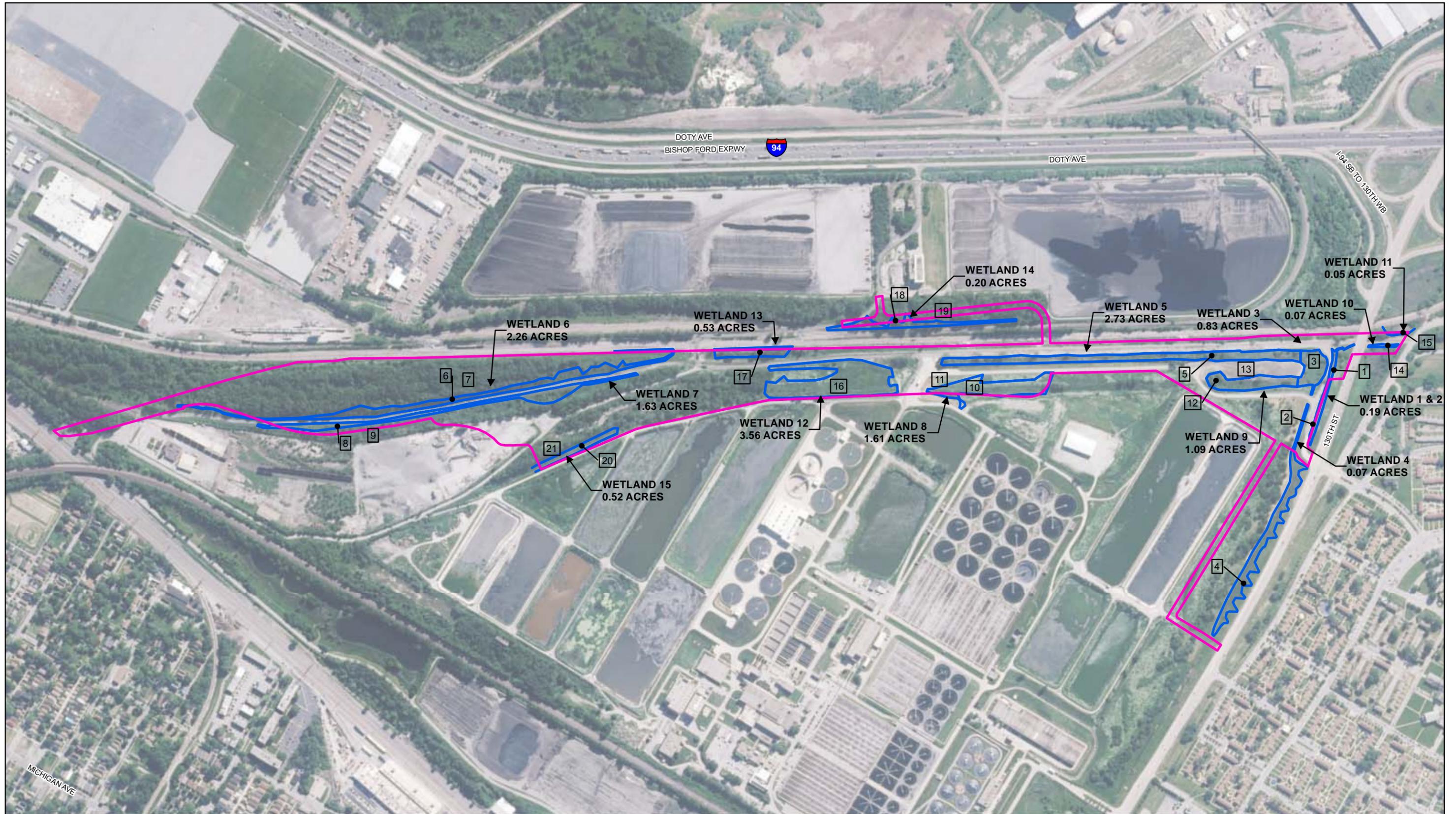
2012

Exhibit Title:

NRCS Soil Survey

Exhibit:

6



Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Scale:



Project Number: 15-0218

Orientation:



Latest Revision: 10/1/2015

Legend:

-  Data Point
-  Surveyed Wetland Boundary (Labeled wetland acreages for area within Project Permanent Envelope only)
-  Project Permanent Envelope

Project Name:

CTA Red Line Extension

Prepared For:

CDM Smith

Aerial Date:

2014

Exhibit Title:

Wetland Boundary

Exhibit:

7

The following floristic inventories, prepared by Hey and Associates, Inc., follow the nomenclature given in the National Wetland Plant List: (Lichvar, R. W., M. Butterwick, N.C. Melvin, and W. N. Kirchner 2014); The National Wetland Plant List 2014 Update of Wetland Ratings. (Phytoneuron 2014-41:1-42); and bio data/nomenclature follows Kartesz, J. T., 2013 *Floristic Synthesis of North America. Version 1.0 Biota of North American Program*. It also provides local synonymies based on Swink and Wilhelm's 1994 *Plants of the Chicago Region*.

Each species is listed with its database acronym and coefficient of conservatism (0 = weedy, 10 = conservative), and followed by its corresponding National Wetland Category (OBL = obligate wetland species, FACW = facultative wetland, FAC - facultative species, FACU = facultative upland, UPL = upland species), habit, duration, and nativity. Native taxa are those species believed to have been present in the Chicago region prior to European settlement.

The conservatism metric information above the species list provides analysis of the vegetative quality of the site. It shows the total number of species present (species richness), the mean coefficient of conservatism (Mean C), the floristic quality index (FQAI), and mean wetness; calculated separately for native species only and then including the adventive species (W/Adventives). The Mean C datum indicates the average coefficient of conservatism. The FQAI is derived by multiplying the Mean C by the square root of the number of species. If the FQAI of an area registers in the middle 30's or higher, one can be relatively certain that there is sufficient native character to be of rather profound environmental importance in terms of a regional natural area perspective. The wet indicator value indicates the mean or average wet indicator category for all species present, natives only and then with adventives – numbers less than 0 indicate hydrophytic vegetation, while numbers greater than 0 correspond to the upland vegetation categories. The table also provides the number of species in each physiognomic or habit class, native versus adventive along with their percentage of the total inventory.

Source: Herman, B., Sliwinski, R. and S. Whitaker. 2013. Chicago Region FQA (Floristic Quality Assessment) Calculator. U.S. Army Corps of Engineers, Chicago, IL. Version September 29, 2014

SITE: Wetland 1 & 2 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/13/2015

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	1.38
MEAN C (ALL SPECIES)	0.85
MEAN C (NATIVE TREES)	1.50
MEAN C (NATIVE SHRUBS)	1.00
MEAN C (NATIVE HERBACEOUS)	1.00
FQAI (NATIVE SPECIES)	3.89
FQAI (ALL SPECIES)	3.05
ADJUSTED FQAI	10.79
% C VALUE 0	0.46
% C VALUE 1-3	0.54
% C VALUE 4-6	0.00
% C VALUE 7-10	0.00

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	13
SPECIES RICHNESS (NATIVE)	8
% NON-NATIVE	0.38
WET INDICATOR (ALL)	-0.23
WET INDICATOR (NATIVE)	-0.50
% HYDROPHYTE (MIDWEST)	0.77
% NATIVE PERENNIAL	0.62
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	0.92

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
acesai	<i>Acer saccharinum</i>	<i>Acer saccharinum</i>	Silver Maple	0	FACW	Tree	Perennial	Native
artvul	<i>Artemisia vulgaris</i>	ARTEMISIA VULGARIS	Common Mugwort	0	UPL	Forb	Perennial	Adventive
consep	<i>Calystegia sepium</i>	<i>Convolvulus sepium</i>	Hedge False Bindweed	1	FAC	Forb	Perennial	Native
diplac	<i>Dipsacus laciniatus</i>	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	Forb	Biennial	Adventive
frapen	<i>Fraxinus pennsylvanica</i>	<i>Fraxinus pennsylvanica subintegerrima</i>	Green Ash	1	FACW	Tree	Perennial	Native
lytsal	<i>Lythrum salicaria</i>	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	<i>Phragmites australis ssp. australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	<i>Populus deltoides</i>	<i>Populus deltoides</i>	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
rhacat	<i>Rhamnus cathartica</i>	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	Shrub	Perennial	Adventive
salint	<i>Salix interior</i>	<i>Salix interior</i>	Sandbar Willow	1	FACW	Shrub	Perennial	Native
solalt	<i>Solidago altissima</i>	<i>Solidago altissima</i>	Tall Goldenrod	1	FACU	Forb	Perennial	Native
ulmame	<i>Ulmus americana</i>	<i>Ulmus americana</i>	American Elm	3	FACW	Tree	Perennial	Native
vitrip	<i>Vitis riparia</i>	<i>Vitis riparia</i>	River-Bank Grape	2	FACW	Vine	Perennial	Native

SITE: Wetland 3 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/13/2015

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	4.50
MEAN C (ALL SPECIES)	1.50
MEAN C (NATIVE TREES)	2.00
MEAN C (NATIVE SHRUBS)	7.00
MEAN C (NATIVE HERBACEOUS)	n/a
FQAI (NATIVE SPECIES)	6.36
FQAI (ALL SPECIES)	3.67
ADJUSTED FQAI	25.98
% C VALUE 0	0.67
% C VALUE 1-3	0.17
% C VALUE 4-6	0.00
% C VALUE 7-10	0.17

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	6
SPECIES RICHNESS (NATIVE)	2
% NON-NATIVE	0.67
WET INDICATOR (ALL)	-0.67
WET INDICATOR (NATIVE)	-0.50
% HYDROPHYTE (MIDWEST)	0.83
% NATIVE PERENNIAL	0.33
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	0.83

SPECIES ACRONYM	SPECIES NAME (NWPL/MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
diplac	<i>Dipsacus laciniatus</i>	<i>DIPSACUS LACINIATUS</i>	Cut-Leaf Teasel	0	UPL	Forb	Biennial	Adventive
lytsal	<i>Lythrum salicaria</i>	<i>LYTHRUM SALICARIA</i>	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	<i>Phragmites australis ssp. australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	<i>Populus deltoides</i>	<i>Populus deltoides</i>	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
ribame	<i>Ribes americanum</i>	<i>Ribes americanum</i>	Wild Black Currant	7	FACW	Shrub	Perennial	Native
typang	<i>Typha angustifolia</i>	<i>Typha angustifolia</i>	Narrow-Leaf Cat-Tail	0	OBL	Forb	Perennial	Adventive

SITE: Wetland 4 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/13/2015

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	2.43
MEAN C (ALL SPECIES)	1.00
MEAN C (NATIVE TREES)	n/a
MEAN C (NATIVE SHRUBS)	n/a
MEAN C (NATIVE HERBACEOUS)	2.67
FQAI (NATIVE SPECIES)	6.43
FQAI (ALL SPECIES)	4.12
ADJUSTED FQAI	15.58
% C VALUE 0	0.59
% C VALUE 1-3	0.24
% C VALUE 4-6	0.18
% C VALUE 7-10	0.00

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	17
SPECIES RICHNESS (NATIVE)	7
% NON-NATIVE	0.59
WET INDICATOR (ALL)	-0.18
WET INDICATOR (NATIVE)	-0.43
% HYDROPHYTE (MIDWEST)	0.59
% NATIVE PERENNIAL	0.41
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	0.82

SPECIES ACRONYM	SPECIES NAME (NWPL/MOHLBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
arcmin	<i>Arctium minus</i>	ARCTIUM MINUS	Lesser Burdock	0	FACU	Forb	Biennial	Adventive
ascinc	<i>Asclepias incarnata</i>	<i>Asclepias incarnata</i>	Swamp Milkweed	4	OBL	Forb	Perennial	Native
consep	<i>Calystegia sepium</i>	<i>Convolvulus sepium</i>	Hedge False Bindweed	1	FAC	Forb	Perennial	Native
carnut	<i>Carduus nutans</i>	CARDUUS NUTANS	Nodding Plumeless-Thistle	0	FACU	Forb	Biennial	Adventive
cirarv	<i>Cirsium arvense</i>	CIRSIIUM ARVENSE	Canadian Thistle	0	FACU	Forb	Perennial	Adventive
diplac	<i>Dipsacus laciniatus</i>	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	Forb	Biennial	Adventive
solgra	<i>Euthamia graminifolia</i>	<i>Solidago graminifolia nuttallii</i>	Flat-Top Goldenrod	4	FACW	Forb	Perennial	Native
polsca	<i>Fallopia scandens</i>	<i>Polygonum scandens</i>	Climbing Black-Bindweed	1	FAC	Vine	Perennial	Native
lytsal	<i>Lythrum salicaria</i>	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	<i>Phragmites australis ssp. australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
phyame	<i>Phytolacca americana</i>	<i>Phytolacca americana</i>	American Pokeweed	1	FACU	Forb	Perennial	Native
scipun	<i>Schoenoplectus pungens</i>	<i>Scirpus pungens</i>	Three-Square	5	OBL	Sedge	Perennial	Native
soldul	<i>Solanum dulcamara</i>	SOLANUM DULCAMARA	Climbing Nightshade	0	FAC	Vine	Perennial	Adventive
solalt	<i>Solidago altissima</i>	<i>Solidago altissima</i>	Tall Goldenrod	1	FACU	Forb	Perennial	Native
solsem	<i>Solidago sempervirens</i>	SOLIDAGO SEMPERVIRENS	Seaside Goldenrod	0	FACW	Forb	Perennial	Adventive
sonuli	<i>Sonchus arvensis ssp. uliginosus</i>	SONCHUS ULIGINOSUS	Field Sow-Thistle	0	FACU	Forb	Perennial	Adventive
typang	<i>Typha angustifolia</i>	<i>Typha angustifolia</i>	Narrow-Leaf Cat-Tail	0	OBL	Forb	Perennial	Adventive

SITE: Wetland 5 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/13/2015

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	1.75
MEAN C (ALL SPECIES)	1.08
MEAN C (NATIVE TREES)	2.00
MEAN C (NATIVE SHRUBS)	4.00
(NATIVE HERBACEOUS)	0.00
FQAI (NATIVE SPECIES)	4.95
FQAI (ALL SPECIES)	3.88
ADJUSTED FQAI	13.73
% C VALUE 0	0.62
% C VALUE 1-3	0.31
% C VALUE 4-6	0.00
% C VALUE 7-10	0.08

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	13
SPECIES RICHNESS (NATIVE)	8
% NON-NATIVE	0.38
WET INDICATOR (ALL)	-0.23
WET INDICATOR (NATIVE)	0.00
% HYDROPHYTE (MIDWEST)	0.69
% NATIVE PERENNIAL	0.38
% NATIVE ANNUAL	0.15
% ANNUAL	0.23
% PERENNIAL	0.69

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
ambart	<i>Ambrosia artemisiifolia</i>	<i>Ambrosia artemisiifolia elatior</i>	Annual Ragweed	0	FACU	Forb	Annual	Native
ambtri	<i>Ambrosia trifida</i>	<i>Ambrosia trifida</i>	Great Ragweed	0	FAC	Forb	Annual	Native
branig	<i>Brassica nigra</i>	BRASSICA NIGRA	Black Mustard	0	UPL	Forb	Annual	Adventive
lytsal	<i>Lythrum salicaria</i>	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
oenbie	<i>Oenothera biennis</i>	<i>Oenothera biennis</i>	Evening Primrose	0	FACU	Forb	Biennial	Native
parqui	<i>Parthenocissus quinquefolia</i>	<i>Parthenocissus quinquefolia</i>	Virginia-Creeper	2	FACU	Vine	Perennial	Native
phrausu	<i>Phragmites australis ssp. australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	<i>Populus deltoides</i>	<i>Populus deltoides</i>	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
rhacat	<i>Rhamnus cathartica</i>	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	Shrub	Perennial	Adventive
ribame	<i>Ribes americanum</i>	<i>Ribes americanum</i>	Wild Black Currant	7	FACW	Shrub	Perennial	Native
salint	<i>Salix interior</i>	<i>Salix interior</i>	Sandbar Willow	1	FACW	Shrub	Perennial	Native
typang	<i>Typha angustifolia</i>	<i>Typha angustifolia</i>	Narrow-Leaf Cat-Tail	0	OBL	Forb	Perennial	Adventive
vitrip	<i>Vitis riparia</i>	<i>Vitis riparia</i>	River-Bank Grape	2	FACW	Vine	Perennial	Native

SITE: Wetland 6 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/13/2015

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	2.43
MEAN C (ALL SPECIES)	1.59
MEAN C (NATIVE TREES)	1.00
MEAN C (NATIVE SHRUBS)	1.00
MEAN C (NATIVE HERBACEOUS)	2.76
FQAI (NATIVE SPECIES)	11.13
FQAI (ALL SPECIES)	9.02
ADJUSTED FQAI	19.67
% C VALUE 0	0.50
% C VALUE 1-3	0.25
% C VALUE 4-6	0.22
% C VALUE 7-10	0.03

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	32
SPECIES RICHNESS (NATIVE)	21
% NON-NATIVE	0.34
WET INDICATOR (ALL)	-0.06
WET INDICATOR (NATIVE)	-0.14
% HYDROPHYTE (MIDWEST)	0.66
% NATIVE PERENNIAL	0.53
% NATIVE ANNUAL	0.06
% ANNUAL	0.09
% PERENNIAL	0.78

SPECIES ACRONYM	SPECIES NAME (NWPL/MOHLBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
aceneg	<i>Acer negundo</i>	<i>Acer negundo</i> var. <i>violaceum</i>	Box Elder	0	FAC	Tree	Perennial	Native
agralb	<i>Agrostis gigantea</i>	AGROSTIS ALBA	Red Top	0	FACW	Grass	Perennial	Adventive
acnalt	<i>Amaranthus tuberculatus</i>	<i>Acnida altissima</i>	Rough-Fruit Amaranth	0	OBL	Forb	Annual	Native
ambtri	<i>Ambrosia trifida</i>	<i>Ambrosia trifida</i>	Great Ragweed	0	FAC	Forb	Annual	Native
andger	<i>Andropogon gerardii</i>	<i>Andropogon gerardii</i>	Big Bluestem	5	FAC	Grass	Perennial	Native
arcmi	<i>Arctium minus</i>	ARCTIUM MINUS	Lesser Burrdock	0	FACU	Forb	Biennial	Adventive
artvul	<i>Artemisia vulgaris</i>	ARTEMISIA VULGARIS	Common Mugwort	0	UPL	Forb	Perennial	Adventive
ascinc	<i>Asclepias incarnata</i>	<i>Asclepias incarnata</i>	Swamp Milkweed	4	OBL	Forb	Perennial	Native
cirdis	<i>Cirsium discolor</i>	<i>Cirsium discolor</i>	Field Thistle	2	FACU	Forb	Biennial	Native
comcom	<i>Commelina communis</i>	COMMELINA COMMUNIS	Asiatic Dayflower	0	FACU	Forb	Annual	Adventive
cypstr	<i>Cyperus strigosus</i>	<i>Cyperus strigosus</i>	Straw-Color Flat Sedge	1	FACW	Sedge	Perennial	Native
daucar	<i>Daucus carota</i>	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	Forb	Biennial	Adventive
eupalt	<i>Eupatorium altissimum</i>	<i>Eupatorium altissimum</i>	Tall Boneset	0	UPL	Forb	Perennial	Native
solgra	<i>Euthamia graminifolia</i>	<i>Solidago graminifolia</i> <i>nuttallii</i>	Flat-Top Goldentop	4	FACW	Forb	Perennial	Native
polsca	<i>Fallopia scandens</i>	<i>Polygonum scandens</i>	Climbing Black-Bindweed	1	FAC	Vine	Perennial	Native
gaubie	<i>Gaura biennis</i>	<i>Gaura biennis</i>	Biennial Beeblossom	2	FACU	Forb	Biennial	Native
helgro	<i>Helianthus grosseserratus</i>	<i>Helianthus grosseserratus</i>	Saw-Tooth Sunflower	2	FACW	Forb	Perennial	Native
hyppun	<i>Hypericum punctatum</i>	<i>Hypericum punctatum</i>	Spotted St. John's-Wort	4	FAC	Forb	Perennial	Native
liapyc	<i>Liatris pycnostachya</i>	<i>Liatris pycnostachya</i>	Priarie Blazing Star	8	FAC	Forb	Perennial	Native
lycame	<i>Lycopus americanus</i>	<i>Lycopus americanus</i>	Cut-Leaf Water-Horehound	5	OBL	Forb	Perennial	Native
lytsal	<i>Lythrum salicaria</i>	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	<i>Phragmites australis</i> ssp. <i>australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
physub	<i>Physalis subglabrata</i>	<i>Physalis subglabrata</i>	Smooth Ground Cherry	0	UPL	Forb	Perennial	Native
popdel	<i>Populus deltoides</i>	<i>Populus deltoides</i>	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
rhacat	<i>Rhamnus cathartica</i>	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	Shrub	Perennial	Adventive

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
samcan	<i>Sambucus nigra ssp. canadensis</i>	<i>Sambucus canadensis</i>	Elderberry	1	FACW	Shrub	Perennial	Native
sapoff	<i>Saponaria officinalis</i>	<i>SAPONARIA OFFICINALIS</i>	Bouncing-Bett	0	FACU	Forb	Perennial	Adventive
andsco	<i>Schizachyrium scoparium</i>	<i>Andropogon scoparius</i>	Little Bluestem	5	FACU	Grass	Perennial	Native
soldul	<i>Solanum dulcamara</i>	<i>SOLANUM DULCAMARA</i>	Climbing Nightshade	0	FAC	Vine	Perennial	Adventive
solalt	<i>Solidago altissima</i>	<i>Solidago altissima</i>	Tall Goldenrod	1	FACU	Forb	Perennial	Native
typang	<i>Typha angustifolia</i>	<i>Typha angustifolia</i>	Narrow-Leaf Cat-Tail	0	OBL	Forb	Perennial	Adventive
verhas	<i>Verbena hastata</i>	<i>Verbena hastata</i>	Blue Vervain	4	FACW	Forb	Perennial	Native

SITE: Wetland 7 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/13/2015

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	2.79
MEAN C (ALL SPECIES)	2.03
MEAN C (NATIVE TREES)	n/a
MEAN C (NATIVE SHRUBS)	0.00
MEAN C (NATIVE HERBACEOUS)	2.79
FQAI (NATIVE SPECIES)	13.68
FQAI (ALL SPECIES)	11.66
ADJUSTED FQAI	23.81
% C VALUE 0	0.45
% C VALUE 1-3	0.18
% C VALUE 4-6	0.33
% C VALUE 7-10	0.03

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	33
SPECIES RICHNESS (NATIVE)	24
% NON-NATIVE	0.27
WET INDICATOR (ALL)	-0.18
WET INDICATOR (NATIVE)	-0.21
% HYDROPHYTE (MIDWEST)	0.67
% NATIVE PERENNIAL	0.52
% NATIVE ANNUAL	0.09
% ANNUAL	0.09
% PERENNIAL	0.76

SPECIES ACRONYM	SPECIES NAME (NWPL/MOHLNBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
achmil	<i>Achillea millefolium</i>	ACHILLEA MILLEFOLIUM	Common Yarrow	0	FACU	Forb	Perennial	Adventive
agralb	<i>Agrostis gigantea</i>	AGROSTIS ALBA	Red Top	0	FACW	Grass	Perennial	Adventive
andger	<i>Andropogon gerardii</i>	<i>Andropogon gerardii</i>	Big Bluestem	5	FAC	Grass	Perennial	Native
artvul	<i>Artemisia vulgaris</i>	ARTEMISIA VULGARIS	Common Mugwort	0	UPL	Forb	Perennial	Adventive
ascysr	<i>Asclepias syriaca</i>	<i>Asclepias syriaca</i>	Common Milkweed	0	FACU	Forb	Perennial	Native
cirdis	<i>Cirsium discolor</i>	<i>Cirsium discolor</i>	Field Thistle	2	FACU	Forb	Biennial	Native
cypstr	<i>Cyperus strigosus</i>	<i>Cyperus strigosus</i>	Straw-Color Flat Sedge	1	FACW	Sedge	Perennial	Native
daucar	<i>Daucus carota</i>	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	Forb	Biennial	Adventive
eriann	<i>Erigeron annuus</i>	<i>Erigeron annuus</i>	Eastern Daisy Fleabane	0	FACU	Forb	Biennial	Native
erican	<i>Erigeron canadensis</i>	<i>Erigeron canadensis</i>	Canadian Horseweed	0	FACU	Forb	Annual	Native
eupalt	<i>Eupatorium altissimum</i>	<i>Eupatorium altissimum</i>	Tall Boneset	0	UPL	Forb	Perennial	Native
eupper	<i>Eupatorium perfoliatum</i>	<i>Eupatorium perfoliatum</i>	Common Boneset	4	OBL	Forb	Perennial	Native
solgra	<i>Euthamia graminifolia</i>	<i>Solidago graminifolia nuttallii</i>	Flat-Top Goldentop	4	FACW	Forb	Perennial	Native
rhafra	<i>Frangula alnus</i>	RHAMNUS FRANGULA	Glossy Buckthorn	0	FACW	Shrub	Perennial	Adventive
helgro	<i>Helianthus grosseserratus</i>	<i>Helianthus grosseserratus</i>	Saw-Tooth Sunflower	2	FACW	Forb	Perennial	Native
hyppun	<i>Hypericum punctatum</i>	<i>Hypericum punctatum</i>	Spotted St. John's-Wort	4	FAC	Forb	Perennial	Native
jundud	<i>Juncus dudleyi</i>	<i>Juncus dudleyi</i>	Dudley's Rush	4	FACW	Forb	Perennial	Native
juntor	<i>Juncus torreyi</i>	<i>Juncus torreyi</i>	Torrey's Rush	4	FACW	Forb	Perennial	Native
laccan	<i>Lactuca canadensis</i>	<i>Lactuca canadensis</i>	Canadian Blue Lettuce	2	FACU	Forb	Biennial	Native
lycame	<i>Lycopus americanus</i>	<i>Lycopus americanus</i>	Cut-Leaf Water-Horehound	5	OBL	Forb	Perennial	Native
lytsal	<i>Lythrum salicaria</i>	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
muhglo	<i>Muhlenbergia glomerata</i>	<i>Muhlenbergia glomerata</i>	Spiked Muhly	10	FACW	Grass	Perennial	Native
oenbie	<i>Oenothera biennis</i>	<i>Oenothera biennis</i>	Evening Primrose	0	FACU	Forb	Biennial	Native
pancap	<i>Panicum capillare</i>	<i>Panicum capillare</i>	Common Panic Grass	1	FAC	Grass	Annual	Native

SPECIES ACRONYM	SPECIES NAME (NWPL/MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
pandic	<i>Panicum dichotomiflorum</i>	<i>Panicum dichotomiflorum</i>	Fall Panic Grass	0	FACW	Grass	Annual	Native
panvir	<i>Panicum virgatum</i>	<i>Panicum virgatum</i>	Switch Grass	5	FAC	Grass	Perennial	Native
pendig	<i>Penstemon digitalis</i>	<i>Penstemon digitalis</i>	Foxglove Beardtongue	4	FAC	Forb	Perennial	Native
phrausu	<i>Phragmites australis ssp. australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
scipen	<i>Scirpus pendulus</i>	<i>Scirpus pendulus</i>	Rufous Bulrush	4	OBL	Sedge	Perennial	Native
soldul	<i>Solanum dulcamara</i>	<i>SOLANUM DULCAMARA</i>	Climbing Nightshade	0	FAC	Vine	Perennial	Adventive
solsem	<i>Solidago sempervirens</i>	<i>SOLIDAGO SEMPERVIRENS</i>	Seaside Goldenrod	0	FACW	Forb	Perennial	Adventive
traohi	<i>Tradescantia ohiensis</i>	<i>Tradescantia ohiensis</i>	Spiderwort	2	FACU	Forb	Perennial	Native
verhas	<i>Verbena hastata</i>	<i>Verbena hastata</i>	Blue Vervain	4	FACW	Forb	Perennial	Native

SITE: Wetland 8 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/19/2015

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	2.43
MEAN C (ALL SPECIES)	1.21
MEAN C (NATIVE TREES)	2.00
MEAN C (NATIVE SHRUBS)	1.00
MEAN C (NATIVE HERBACEOUS)	2.67
FQAI (NATIVE SPECIES)	6.43
FQAI (ALL SPECIES)	4.54
ADJUSTED FQAI	17.17
% C VALUE 0	0.57
% C VALUE 1-3	0.21
% C VALUE 4-6	0.21
% C VALUE 7-10	0.00

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	14
SPECIES RICHNESS (NATIVE)	7
% NON-NATIVE	0.50
WET INDICATOR (ALL)	-0.21
WET INDICATOR (NATIVE)	-0.57
% HYDROPHYTE (MIDWEST)	0.79
% NATIVE PERENNIAL	0.36
% NATIVE ANNUAL	0.14
% ANNUAL	0.14
% PERENNIAL	0.79

SPECIES ACRONYM	SPECIES NAME (NWPL/MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
ambtri	<i>Ambrosia trifida</i>	<i>Ambrosia trifida</i>	Great Ragweed	0	FAC	Forb	Annual	Native
cirarv	<i>Cirsium arvense</i>	<i>CIRSIUM ARVENSE</i>	Canadian Thistle	0	FACU	Forb	Perennial	Adventive
diplac	<i>Dipsacus laciniatus</i>	<i>DIPSACUS LACINIATUS</i>	Cut-Leaf Teasel	0	UPL	Forb	Biennial	Adventive
echlob	<i>Echinocystis lobata</i>	<i>Echinocystis lobata</i>	Wild Cucumber	5	FACW	Vine	Annual	Native
polsca	<i>Fallopia scandens</i>	<i>Polygonum scandens</i>	Climbing Black-Bindweed	1	FAC	Vine	Perennial	Native
jundud	<i>Juncus dudleyi</i>	<i>Juncus dudleyi</i>	Dudley's Rush	4	FACW	Forb	Perennial	Native
juntor	<i>Juncus torreyi</i>	<i>Juncus torreyi</i>	Torrey's Rush	4	FACW	Forb	Perennial	Native
lytsal	<i>Lythrum salicaria</i>	<i>LYTHRUM SALICARIA</i>	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	<i>Phragmites australis ssp. australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	<i>Populus deltoides</i>	<i>Populus deltoides</i>	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
salfra	<i>Salix fragilis</i>	<i>SALIX FRAGILIS</i>	Crack Willow	0	UPL	Tree	Perennial	Adventive
salint	<i>Salix interior</i>	<i>Salix interior</i>	Sandbar Willow	1	FACW	Shrub	Perennial	Native
soldul	<i>Solanum dulcamara</i>	<i>SOLANUM DULCAMARA</i>	Climbing Nightshade	0	FAC	Vine	Perennial	Adventive
solsem	<i>Solidago sempervirens</i>	<i>SOLIDAGO SEMPERVIRENS</i>	Seaside Goldenrod	0	FACW	Forb	Perennial	Adventive

SITE: Wetland 9 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/19/2015

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	0.83
MEAN C (ALL SPECIES)	0.45
MEAN C (NATIVE TREES)	1.00
MEAN C (NATIVE SHRUBS)	n/a
MEAN C (NATIVE HERBACEOUS)	0.33
FQAI (NATIVE SPECIES)	2.04
FQAI (ALL SPECIES)	1.51
ADJUSTED FQAI	6.15
% C VALUE 0	0.73
% C VALUE 1-3	0.27
% C VALUE 4-6	0.00
% C VALUE 7-10	0.00

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	11
SPECIES RICHNESS (NATIVE)	6
% NON-NATIVE	0.45
WET INDICATOR (ALL)	-0.18
WET INDICATOR (NATIVE)	0.00
% HYDROPHYTE (MIDWEST)	0.82
% NATIVE PERENNIAL	0.36
% NATIVE ANNUAL	0.18
% ANNUAL	0.18
% PERENNIAL	0.82

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
aceneg	<i>Acer negundo</i>	<i>Acer negundo</i> var. <i>violaceum</i>	Box Elder	0	FAC	Tree	Perennial	Native
ambtri	<i>Ambrosia trifida</i>	<i>Ambrosia trifida</i>	Great Ragweed	0	FAC	Forb	Annual	Native
consep	<i>Calystegia sepium</i>	<i>Convolvulus sepium</i>	Hedge False Bindweed	1	FAC	Forb	Perennial	Native
erican	<i>Erigeron canadensis</i>	<i>Erigeron canadensis</i>	Canadian Horseweed	0	FACU	Forb	Annual	Native
lytsal	<i>Lythrum salicaria</i>	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
moralb	<i>Morus alba</i>	MORUS ALBA	White Mulberry	0	FAC	Tree	Perennial	Adventive
phaaru	<i>Phalaris arundinacea</i>	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	Grass	Perennial	Adventive
phrausu	<i>Phragmites australis</i> ssp. <i>australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	<i>Populus deltoides</i>	<i>Populus deltoides</i>	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
salfra	<i>Salix fragilis</i>	SALIX FRAGILIS	Crack Willow	0	UPL	Tree	Perennial	Adventive
vitrip	<i>Vitis riparia</i>	<i>Vitis riparia</i>	River-Bank Grape	2	FACW	Vine	Perennial	Native

SITE: Wetland 10 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler
DATE: 8/13/2015

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	1.50
MEAN C (ALL SPECIES)	0.75
MEAN C (NATIVE TREES)	1.50
MEAN C (NATIVE SHRUBS)	n/a
MEAN C (NATIVE HERBACEOUS)	1.00
FQAI (NATIVE SPECIES)	3.00
FQAI (ALL SPECIES)	2.12
ADJUSTED FQAI	10.61
% C VALUE 0	0.50
% C VALUE 1-3	0.50
% C VALUE 4-6	0.00
% C VALUE 7-10	0.00

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	8
SPECIES RICHNESS (NATIVE)	4
% NON-NATIVE	0.50
WET INDICATOR (ALL)	-0.13
WET INDICATOR (NATIVE)	-0.25
% HYDROPHYTE (MIDWEST)	0.63
% NATIVE PERENNIAL	0.50
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	0.88

SPECIES ACRONYM	SPECIES NAME (NWPL/MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
arcmin	<i>Arctium minus</i>	ARCTIUM MINUS	Lesser Burrdock	0	FACU	Forb	Biennial	Adventive
artvul	<i>Artemisia vulgaris</i>	ARTEMISIA VULGARIS	Common Mugwort	0	UPL	Forb	Perennial	Adventive
frapen	<i>Fraxinus pennsylvanica</i>	<i>Fraxinus pennsylvanica subintegerrima</i>	Green Ash	1	FACW	Tree	Perennial	Native
lytsal	<i>Lythrum salicaria</i>	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	<i>Phragmites australis ssp. australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	<i>Populus deltoides</i>	<i>Populus deltoides</i>	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
solalt	<i>Solidago altissima</i>	<i>Solidago altissima</i>	Tall Goldenrod	1	FACU	Forb	Perennial	Native
vitrip	<i>Vitis riparia</i>	<i>Vitis riparia</i>	River-Bank Grape	2	FACW	Vine	Perennial	Native

SITE: Wetland 11 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/19/2015

**CONSERVATISM-
 BASED
 METRICS**

MEAN C (NATIVE SPECIES)	2.00
MEAN C (ALL SPECIES)	1.00
MEAN C (NATIVE TREES)	2.00
MEAN C (NATIVE SHRUBS)	n/a
MEAN C (NATIVE HERBACEOUS)	n/a
FQAI (NATIVE SPECIES)	2.83
FQAI (ALL SPECIES)	2.00
ADJUSTED FQAI	14.14
% C VALUE 0	0.50
% C VALUE 1-3	0.50
% C VALUE 4-6	0.00
% C VALUE 7-10	0.00

**ADDITIONAL
 METRICS**

SPECIES RICHNESS (ALL)	4
SPECIES RICHNESS (NATIVE)	2
% NON-NATIVE	0.50
WET INDICATOR (ALL)	-1.00
WET INDICATOR (NATIVE)	-0.50
% HYDROPHYTE (MIDWEST)	1.00
% NATIVE PERENNIAL	0.50
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	1.00

SPECIES ACRONYM	SPECIES NAME (NWPL/)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
lytsal	<i>Lythrum salicaria</i>	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	<i>Phragmites australis ssp. australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	<i>Populus deltoides</i>	<i>Populus deltoides</i>	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
vitrip	<i>Vitis riparia</i>	<i>Vitis riparia</i>	River-Bank Grape	2	FACW	Vine	Perennial	Native

SITE: Wetland 12 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/13/2015

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	1.50
MEAN C (ALL SPECIES)	0.67
MEAN C (NATIVE TREES)	1.50
MEAN C (NATIVE SHRUBS)	0.00
MEAN C (NATIVE HERBACEOUS)	1.00
FQAI (NATIVE SPECIES)	3.00
FQAI (ALL SPECIES)	2.00
ADJUSTED FQAI	10.00
% C VALUE 0	0.56
% C VALUE 1-3	0.44
% C VALUE 4-6	0.00
% C VALUE 7-10	0.00

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	9
SPECIES RICHNESS (NATIVE)	4
% NON-NATIVE	0.56
WET INDICATOR (ALL)	-0.11
WET INDICATOR (NATIVE)	-0.25
% HYDROPHYTE (MIDWEST)	0.67
% NATIVE PERENNIAL	0.44
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	0.89

SPECIES ACRONYM	SPECIES NAME (NWPL/MOHLNBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
arcmin	<i>Arctium minus</i>	ARCTIUM MINUS	Lesser Burrdock	0	FACU	Forb	Biennial	Adventive
artvul	<i>Artemisia vulgaris</i>	ARTEMISIA VULGARIS	Common Mugwort	0	UPL	Forb	Perennial	Adventive
Frapen	<i>Fraxinus pennsylvanica</i>	<i>Fraxinus pennsylvanica subintegerrima</i>	Green Ash	1	FACW	Tree	Perennial	Native
lytsal	<i>Lythrum salicaria</i>	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	<i>Phragmites australis ssp. australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	<i>Populus deltoides</i>	<i>Populus deltoides</i>	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
rhacat	<i>Rhamnus cathartica</i>	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	Shrub	Perennial	Adventive
solalt	<i>Solidago altissima</i>	<i>Solidago altissima</i>	Tall Goldenrod	1	FACU	Forb	Perennial	Native
vitrip	<i>Vitis riparia</i>	<i>Vitis riparia</i>	River-Bank Grape	2	FACW	Vine	Perennial	Native

SITE: Wetland 13 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/19/2015

**CONSERVATISM-
 BASED
 METRICS**

MEAN C (NATIVE SPECIES)	1.17
MEAN C (ALL SPECIES)	0.78
MEAN C (NATIVE TREES)	1.00
MEAN C (NATIVE SHRUBS)	1.00
MEAN C (NATIVE HERBACEOUS)	1.00
FQAI (NATIVE SPECIES)	2.86
FQAI (ALL SPECIES)	2.33
ADJUSTED FQAI	9.53
% C VALUE 0	0.44
% C VALUE 1-3	0.56
% C VALUE 4-6	0.00
% C VALUE 7-10	0.00

**ADDITIONAL
 METRICS**

SPECIES RICHNESS (ALL)	9
SPECIES RICHNESS (NATIVE)	6
% NON-NATIVE	0.33
WET INDICATOR (ALL)	-0.67
WET INDICATOR (NATIVE)	-0.17
% HYDROPHYTE (MIDWEST)	0.89
% NATIVE PERENNIAL	0.67
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	1.00

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
aceneg	<i>Acer negundo</i>	<i>Acer negundo</i> var. <i>violaceum</i>	Box Elder	0	FAC	Tree	Perennial	Native
consep	<i>Calystegia sepium</i>	<i>Convolvulus sepium</i>	Hedge False Bindweed	1	FAC	Forb	Perennial	Native
lytsal	<i>Lythrum salicaria</i>	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	<i>Phragmites australis</i> ssp. <i>australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	<i>Populus deltoides</i>	<i>Populus deltoides</i>	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
samcan	<i>Sambucus nigra</i> ssp. <i>canadensis</i>	<i>Sambucus canadensis</i>	Black Elderberry	1	FACW	Shrub	Perennial	Native
solalt	<i>Solidago altissima</i>	<i>Solidago altissima</i>	Tall Goldenrod	1	FACU	Forb	Perennial	Native
typang	<i>Typha angustifolia</i>	<i>Typha angustifolia</i>	Narrow-Leaf Cat-Tail	0	OBL	Forb	Perennial	Adventive
vitrip	<i>Vitis riparia</i>	<i>Vitis riparia</i>	River-Bank Grape	2	FACW	Vine	Perennial	Native

SITE: Wetland 14 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/19/2015

**CONSERVATISM-
 BASED
 METRICS**

MEAN C (NATIVE SPECIES)	1.33
MEAN C (ALL SPECIES)	0.86
MEAN C (NATIVE TREES)	1.67
MEAN C (NATIVE SHRUBS)	0.00
MEAN C (NATIVE HERBACEOUS)	1.00
FQAI (NATIVE SPECIES)	4.00
FQAI (ALL SPECIES)	3.21
ADJUSTED FQAI	10.69
% C VALUE 0	0.50
% C VALUE 1-3	0.50
% C VALUE 4-6	0.00
% C VALUE 7-10	0.00

**ADDITIONAL
 METRICS**

SPECIES RICHNESS (ALL)	14
SPECIES RICHNESS (NATIVE)	9
% NON-NATIVE	0.36
WET INDICATOR (ALL)	-0.29
WET INDICATOR (NATIVE)	-0.44
% HYDROPHYTE (MIDWEST)	0.79
% NATIVE PERENNIAL	0.57
% NATIVE ANNUAL	0.07
% ANNUAL	0.07
% PERENNIAL	0.86

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
aceneg	<i>Acer negundo</i>	<i>Acer negundo</i> var. <i>violaceum</i>	Box Elder	0	FAC	Tree	Perennial	Native
ambtri	<i>Ambrosia trifida</i>	<i>Ambrosia trifida</i>	Great Ragweed	0	FAC	Forb	Annual	Native
arcmin	<i>Arctium minus</i>	ARCTIUM MINUS	Lesser Burrdock	0	FACU	Forb	Biennial	Adventive
consep	<i>Calystegia sepium</i>	<i>Convolvulus sepium</i>	Hedge False Bindweed	1	FAC	Forb	Perennial	Native
phaaru	<i>Phalaris arundinacea</i>	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	Grass	Perennial	Adventive
phrausu	<i>Phragmites australis</i> ssp. <i>australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	<i>Populus deltoides</i>	<i>Populus deltoides</i>	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
rhacat	<i>Rhamnus cathartica</i>	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	Shrub	Perennial	Adventive
solalt	<i>Solidago altissima</i>	<i>Solidago altissima</i>	Tall Goldenrod	1	FACU	Forb	Perennial	Native
sonuli	<i>Sonchus arvensis</i> ssp. <i>uliginosus</i>	SONCHUS ULIGINOSUS	Field Sow-Thistle	0	FACU	Forb	Perennial	Adventive
typlat	<i>Typha latifolia</i>	<i>Typha latifolia</i>	Broad-Leaf Cat-Tail	1	OBL	Forb	Perennial	Native
ulmame	<i>Ulmus americana</i>	<i>Ulmus americana</i>	American Elm	3	FACW	Tree	Perennial	Native
urtpro	<i>Urtica dioica</i> ssp. <i>gracilis</i>	<i>Urtica procera</i>	Tall Nettle	2	FACW	Forb	Perennial	Native
vitrip	<i>Vitis riparia</i>	<i>Vitis riparia</i>	River-Bank Grape	2	FACW	Vine	Perennial	Native

SITE: Wetland 15 - CTA Red Line Extension
LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/19/2015

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	1.00
MEAN C (ALL SPECIES)	0.50
MEAN C (NATIVE TREES)	0.00
MEAN C (NATIVE SHRUBS)	0.00
MEAN C (NATIVE HERBACEOUS)	1.00
FQAI (NATIVE SPECIES)	2.00
FQAI (ALL SPECIES)	1.41
ADJUSTED FQAI	7.07
% C VALUE 0	0.63
% C VALUE 1-3	0.38
% C VALUE 4-6	0.00
% C VALUE 7-10	0.00

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	8
SPECIES RICHNESS (NATIVE)	4
% NON-NATIVE	0.50
WET INDICATOR (ALL)	-0.63
WET INDICATOR (NATIVE)	0.00
% HYDROPHYTE (MIDWEST)	0.88
% NATIVE PERENNIAL	0.50
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	1.00

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
aceneg	<i>Acer negundo</i>	<i>Acer negundo</i> var. <i>violaceum</i>	Box Elder	0	FAC	Tree	Perennial	Native
consep	<i>Calystegia sepium</i>	<i>Convolvulus sepium</i>	Hedge False Bindweed	1	FAC	Forb	Perennial	Native
lytsal	<i>Lythrum salicaria</i>	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	<i>Phragmites australis</i> ssp. <i>australis</i>	<i>Phragmites australis</i>	Common Reed	0	FACW	Grass	Perennial	Adventive
rhacat	<i>Rhamnus cathartica</i>	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	Shrub	Perennial	Adventive
solalt	<i>Solidago altissima</i>	<i>Solidago altissima</i>	Tall Goldenrod	1	FACU	Forb	Perennial	Native
typang	<i>Typha angustifolia</i>	<i>Typha angustifolia</i>	Narrow-Leaf Cat-Tail	0	OBL	Forb	Perennial	Adventive
vitrip	<i>Vitis riparia</i>	<i>Vitis riparia</i>	River-Bank Grape	2	FACW	Vine	Perennial	Native

Project Number: 15-0218

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Project Name:
CTA Red Line Extension

Exhibit Title:
Jurisdictional Data Forms

Exhibit:
#9

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/13/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 1
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T34N R14E S26
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): ditch
 Slope (%): _____ Lat: 41.660019 Long: -87.595429 Datum: _____
 Soil Map Unit Name: urban land-orthents clayey complex, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 1</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 <u>Populus deltoides</u>	20	Y	FAC		Number of Dominant Species that are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across all Strata: <u>5</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
2 <u>Acer saccharinum</u>	20	Y	FACW		
3 <u>Ulmus americana</u>	5	N	FACW		
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>45</u> = Total Cover				Prevalence Index Worksheet	
Sapling/Shrub stratum (Plot size: <u>4.6 m</u>)					
1 <u>Salix interior</u>	15	Y	FACW		Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>140</u> x 2 = <u>280</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>170</u> (A) <u>370</u> (B) Prevalence Index = B/A = <u>2.18</u>
2 <u>Populus deltoides</u>	10	Y	FAC		
3 <u>Fraxinus pennsylvanica</u>	5	N	FACW		
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>30</u> = Total Cover				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* 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	
Herb stratum (Plot size: <u>1 m sq</u>)					
1 <u>Phragmites australis</u>	95	Y	FACW		
2 _____	_____	_____	_____		
3 _____	_____	_____	_____		
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
6 _____	_____	_____	_____		
7 _____	_____	_____	_____		
8 _____	_____	_____	_____		
9 _____	_____	_____	_____		
10 _____	_____	_____	_____		
<u>95</u> = Total Cover				Hydrophytic vegetation present? <u>Y</u>	
Woody vine stratum (Plot size: <u>1 m sq</u>)					
1 _____	_____	_____	_____		
2 _____	_____	_____	_____	Hydrophytic vegetation present? <u>Y</u>	
<u>0</u> = Total Cover					

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

SOIL

Sampling Point: 1

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
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Remarks:
 Area mapped as urban land, and located along road at base of another road embankment. Probe refusal within 2-4 inches due to gravel and fill.

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Water table present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <u> </u> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u>Y</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Saturation within ditch channel lined by hydrophytes.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/13/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 2
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S26
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): ditch
 Slope (%): _____ Lat: 41.6906323 Long: -87.6205465 Datum: _____
 Soil Map Unit Name: urban land-orthents clayey complex, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 2</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____	_____	_____	_____	Total % Cover of:	
2	_____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3	_____	_____	_____	_____	FACW species <u>95</u> x 2 = <u>190</u>	
4	_____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5	_____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
		_____	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
		<u>0</u>	= Total Cover		Column totals <u>95</u> (A) <u>190</u> (B)	
					Prevalence Index = B/A = <u>2.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	<u>95</u>	<u>Y</u>	<u>FACW</u>	_____ Rapid test for hydrophytic vegetation	
2	_____	_____	_____	_____	<u>X</u> Dominance test is >50%	
3	_____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	_____ Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____		
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>95</u>	= Total Cover		*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			

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

SOIL

Sampling Point: 2

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
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Remarks:
 Area mapped as urban land, and located along road at base of another road embankment. Probe refusal within 2-4 inches due to gravel and fill.

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u>0-Jan</u></p> <p>Water table present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <u> </u> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u>Y</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Saturation within ditch channel lined by hydrophytes.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/13/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 3
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S26
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): ditch
 Slope (%): _____ Lat: 41.660463 Long: -87.59576 Datum: _____
 Soil Map Unit Name: urban land-orthents clayey complex, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 3</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____	_____	_____	_____	Total % Cover of:	
2	_____	_____	_____	_____	OBL species <u>10</u> x 1 = <u>10</u>	
3	_____	_____	_____	_____	FACW species <u>95</u> x 2 = <u>190</u>	
4	_____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5	_____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
		<u>105</u>	= Total Cover		Column totals <u>105</u> (A) <u>200</u> (B)	
		<u>105</u>	= Total Cover		Prevalence Index = B/A = <u>1.90</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	<u>95</u>	<u>Y</u>	<u>FACW</u>	_____ Rapid test for hydrophytic vegetation	
2	<u>Lythrum salicaria</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	<u>X</u> Dominance test is >50%	
3	_____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	_____ Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>105</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			

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

SOIL

Sampling Point: 3

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
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Remarks:
 Area mapped as urban land, and located between gravel parking lot and gravel road. Probe refusal within 2-4 inches due to gravel and fill.

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Water table present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <u> </u> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u>Y</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Saturation within ditch/swale channel at lowest point in local landscape.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/13/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 4
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S27
 Landform (hillslope, terrace, etc.): swale at toe of slope Local relief (concave, convex, none): swale
 Slope (%): _____ Lat: 41.659641 Long: -87.599965 Datum: _____
 Soil Map Unit Name: orthents, clayey undulating NWI Classification: PF01/EMCd

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 4</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____				Total % Cover of:	
2	_____				OBL species <u>20</u> x 1 = <u>20</u>	
3	_____				FACW species <u>100</u> x 2 = <u>200</u>	
4	_____				FAC species <u>0</u> x 3 = <u>0</u>	
5	_____				FACU species <u>0</u> x 4 = <u>0</u>	
					UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>120</u> (A) <u>220</u> (B)	
					Prevalence Index = B/A = <u>1.83</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	_____ Rapid test for hydrophytic vegetation	
2	<u>Lythrum salicaria</u>	<u>20</u>	<u>N</u>	<u>OBL</u>	<u>X</u> Dominance test is >50%	
3	_____				<u>X</u> Prevalence index is ≤3.0*	
4	_____				Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____				_____ Problematic hydrophytic vegetation* (explain)	
6	_____				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____					
8	_____					
9	_____					
10	_____					
		<u>120</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____					
2	_____					
		<u>0</u>	= Total Cover			

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

SOIL

Sampling Point: 4

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
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Remarks:

Area mapped as urban land, and located road and berm around sewage lagoons.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input checked="" type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input checked="" type="checkbox"/> Water-Stained Leaves (B9)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>

<p>Field Observations:</p> <p>Surface water present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Water table present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <u> </u> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u>Y</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation within swale channel at lowest point in local landscape.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/13/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 5
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S26 & 27
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): swale
 Slope (%): _____ Lat: 41.663596 Long: -87.598043 Datum: _____
 Soil Map Unit Name: orthents, loamy, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 5</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____				Total % Cover of:	
2	_____				OBL species <u>0</u> x 1 = <u>0</u>	
3	_____				FACW species <u>100</u> x 2 = <u>200</u>	
4	_____				FAC species <u>0</u> x 3 = <u>0</u>	
5	_____				FACU species <u>0</u> x 4 = <u>0</u>	
					UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>100</u> (A) <u>200</u> (B)	
					Prevalence Index = B/A = <u>2.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	<u> </u> Rapid test for hydrophytic vegetation	
2	_____	_____	_____	_____	<u>X</u> Dominance test is >50%	
3	_____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>100</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			

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

SOIL

Sampling Point: 5

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <input type="checkbox"/></p>
<p>Remarks:</p> <p>Area mapped as urban land, and located between roads</p>	

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <input type="checkbox"/> Y</p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation within drainage swale along road.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/13/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 6
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S27
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): swale
 Slope (%): _____ Lat: 41.669077 Long: -87.601542 Datum: _____
 Soil Map Unit Name: orthents, loamy, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 6</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____	_____	_____	_____	Total % Cover of:	
2	_____	_____	_____	_____	OBL species <u>20</u> x 1 = <u>20</u>	
3	_____	_____	_____	_____	FACW species <u>84</u> x 2 = <u>168</u>	
4	_____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5	_____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
		_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>	
		_____	_____	_____	Column totals <u>104</u> (A) <u>188</u> (B)	
		_____	_____	_____	Prevalence Index = B/A = <u>1.81</u>	
		<u>0</u>	= Total Cover			
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	<u>80</u>	<u>Y</u>	<u>FACW</u>	_____ Rapid test for hydrophytic vegetation	
2	<u>Lythrum salicaria</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	<u>X</u> Dominance test is >50%	
3	<u>Typha angustifolia</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	<u>X</u> Prevalence index is ≤3.0*	
4	<u>Helianthus grosseserratus</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	_____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	<u>Verbena hastata</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	_____ Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	_____ *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>104</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			

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

SOIL

Sampling Point: 6

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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Restrictive Layer (if observed): Type: <u>gravel, ballast, fill</u> Depth (inches): <u>not determined</u>	Hydric soil present? <u> </u>
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Remarks:

Area mapped as urban land, and located between road and railroad.

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Saturation present? Yes <input checked="" type="checkbox"/> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation within drainage swale along railroad.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/13/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 7
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S27
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): swale
 Slope (%): _____ Lat: 41.669077 Long: -87.601542 Datum: _____
 Soil Map Unit Name: orthents, loamy, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? _____	
Wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	<u>Rhamnus cathartica</u>	<u>100</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of:	
2	_____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3	_____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>	
4	_____	_____	_____	_____	FAC species <u>100</u> x 3 = <u>300</u>	
5	_____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
		<u>100</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>100</u> (A) <u>300</u> (B)	
					Prevalence Index = B/A = <u>3.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	_____	<u>80</u>	<u>Y</u>	_____	_____ Rapid test for hydrophytic vegetation	
2	_____	<u>10</u>	<u>N</u>	_____	_____ Dominance test is >50%	
3	_____	<u>10</u>	<u>N</u>	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	<u>2</u>	<u>N</u>	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	<u>2</u>	<u>N</u>	_____	_____ Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>104</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			

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

SOIL

Sampling Point: 7

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
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Remarks:

Area mapped as urban land, and 2-3 feet higher in elevation than adjacent wetland swales.

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

2-3 feet higher in elevation than adjacent wetland swales with no evidence of hydrology

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/13/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 8
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S22 & 27
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): swale
 Slope (%): _____ Lat: 41.672876 Long: -87.607044 Datum: _____
 Soil Map Unit Name: orthents, loamy, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 7</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>0</u> = Total Cover					
Sapling/Shrub stratum (Plot size: <u>4.6 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet	
1 _____	_____	_____	_____	Total % Cover of:	
2 _____	_____	_____	_____	OBL species <u>10</u> x 1 = <u>10</u>	
3 _____	_____	_____	_____	FACW species <u>94</u> x 2 = <u>188</u>	
4 _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
_____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>	
_____	_____	_____	_____	Column totals <u>104</u> (A) <u>198</u> (B)	
<u>0</u> = Total Cover				Prevalence Index = B/A = <u>1.90</u>	
Herb stratum (Plot size: <u>1 m sq</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Phragmites australis</u>	<u>80</u>	<u>Y</u>	<u>FACW</u>	_____ Rapid test for hydrophytic vegetation	
2 <u>Lythrum salicaria</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	<u>X</u> Dominance test is >50%	
3 <u>Solidago graminifolia</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	<u>X</u> Prevalence index is ≤3.0*	
4 <u>Helianthus grosseserratus</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	_____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5 <u>Verbena hastata</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	_____ Problematic hydrophytic vegetation* (explain)	
6 _____	_____	_____	_____	_____ *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 _____	_____	_____	_____		
8 _____	_____	_____	_____		
9 _____	_____	_____	_____		
10 _____	_____	_____	_____		
<u>104</u> = Total Cover					
Woody vine stratum (Plot size: <u>1 m sq</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>	
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</u> = Total Cover					

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

SOIL

Sampling Point: 8

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
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Remarks:

Area mapped as urban land, and located between railroad and gravel contractor yard.

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Water table present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <u> </u> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u>Y</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation within drainage swale along railroad.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/13/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 9
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S27
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): swale
 Slope (%): _____ Lat: 41.669077 Long: -87.601542 Datum: _____
 Soil Map Unit Name: orthents, loamy, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? _____	
Wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	<u>Rhamnus cathartica</u>	<u>100</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of:	
2	_____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3	_____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>	
4	_____	_____	_____	_____	FAC species <u>100</u> x 3 = <u>300</u>	
5	_____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
		<u>100</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>100</u> (A) <u>300</u> (B)	
					Prevalence Index = B/A = <u>3.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	_____	<u>80</u>	<u>Y</u>	_____	_____ Rapid test for hydrophytic vegetation	
2	_____	<u>10</u>	<u>N</u>	_____	_____ Dominance test is >50%	
3	_____	<u>10</u>	<u>N</u>	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	<u>2</u>	<u>N</u>	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	<u>2</u>	<u>N</u>	_____	_____ Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>104</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			

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

SOIL

Sampling Point: 9

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p> *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
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Remarks:

Area mapped as urban land, and 2-3 feet higher in elevation than adjacent wetland swales.

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

2-3 feet higher in elevation than adjacent wetland swales with no evidence of hydrology

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/19/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 10
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S27
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): swale
 Slope (%): _____ Lat: 41.65712 Long: -87.600738 Datum: _____
 Soil Map Unit Name: orthents, loamy, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 8</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____				Total % Cover of:	
2	_____				OBL species <u>0</u> x 1 = <u>0</u>	
3	_____				FACW species <u>100</u> x 2 = <u>200</u>	
4	_____				FAC species <u>0</u> x 3 = <u>0</u>	
5	_____				FACU species <u>0</u> x 4 = <u>0</u>	
					UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>100</u> (A) <u>200</u> (B)	
					Prevalence Index = B/A = <u>2.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	<u> </u> Rapid test for hydrophytic vegetation	
2	_____	_____	_____	_____	<u>X</u> Dominance test is >50%	
3	_____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>100</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			

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

SOIL

Sampling Point: 10

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
<p>Remarks:</p> <p>Area mapped as urban land, and located between gravel roads.</p>	

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Water table present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <u> </u> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u>Y</u></p>
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<p>Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:</p>
<p>Remarks:</p> <p>Saturation within drainage swale along roads.</p>

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/19/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 11
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S27
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): swale
 Slope (%): _____ Lat: 41.665712 Long: -87.600738 Datum: _____
 Soil Map Unit Name: orthents, loamy, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? _____	
Wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>0</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____	_____	_____	_____	Total % Cover of:	
2	_____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3	_____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>	
4	_____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5	_____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>0</u> (A) <u>0</u> (B)	
					Prevalence Index = B/A = _____	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Ambrosia trifida</u>	_____	_____	FAC	____ Rapid test for hydrophytic vegetation	
2	<u>Artemisia vulgaris</u>	_____	_____	UPL	____ Dominance test is >50%	
3	<u>Melilotus albus</u>	_____	_____	FACU	____ Prevalence index is ≤3.0*	
4	<u>Arctium minus</u>	_____	_____	FACU	____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	<u>Lotus corniculata</u>	_____	_____	FACU	____ Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	____	
7	_____	_____	_____	_____	____	
8	_____	_____	_____	_____	____	
9	_____	_____	_____	_____	____	
10	_____	_____	_____	_____	____	
		<u>0</u>	= Total Cover		*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>N</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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Restrictive Layer (if observed): Type: <u>gravel, ballast, fill</u> Depth (inches): <u>not determined</u>	Hydric soil present? <u> </u>
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Remarks:
 Area mapped as urban land, and 2-4 feet higher in elevation than adjacent wetland swales.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (B9)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 2-4 feet higher in elevation than adjacent wetland swales with no evidence of hydrology

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/19/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 12
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S26
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): swale
 Slope (%): _____ Lat: 41.661704 Long: -87.597341 Datum: _____
 Soil Map Unit Name: orthents, clayey, undulating NWI Classification: PF01/EMCd

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 9</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____	_____	_____	_____	Total % Cover of:	
2	_____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3	_____	_____	_____	_____	FACW species <u>100</u> x 2 = <u>200</u>	
4	_____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5	_____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
		<u>100</u>	= Total Cover		Column totals <u>100</u> (A) <u>200</u> (B)	
		<u>0</u>	= Total Cover		Prevalence Index = B/A = <u>2.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	<u> </u> Rapid test for hydrophytic vegetation	
2	_____	_____	_____	_____	<u>X</u> Dominance test is >50%	
3	_____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>100</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			

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

SOIL

Sampling Point: 12

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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Restrictive Layer (if observed): Type: <u>gravel, ballast, fill</u> Depth (inches): <u>not determined</u>	Hydric soil present? <u> </u>
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Remarks:
 Area mapped as urban land, and located between gravel parking pad and road.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)

Field Observations: Surface water present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Saturation present? Yes <input checked="" type="checkbox"/> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Saturation within drainage swale along higher ground.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/19/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 13
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S26
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): swale
 Slope (%): _____ Lat: 41.661704 Long: -87.597341 Datum: _____
 Soil Map Unit Name: orthents, loamy, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? _____	
Wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A)	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>6</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>33.33%</u> (A/B)	
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>0</u> = Total Cover					
Sapling/Shrub stratum (Plot size: <u>4.6 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet	
1 _____	_____	_____	_____	Total % Cover of:	
2 _____	_____	_____	_____	OBL species <u>10</u> x 1 = <u>10</u>	
3 _____	_____	_____	_____	FACW species <u>10</u> x 2 = <u>20</u>	
4 _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5 _____	_____	_____	_____	FACU species <u>40</u> x 4 = <u>160</u>	
_____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>	
_____	_____	_____	_____	Column totals <u>60</u> (A) <u>190</u> (B)	
<u>0</u> = Total Cover				Prevalence Index = B/A = <u>3.17</u>	
Herb stratum (Plot size: <u>1 m sq</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Polygonum lapathifolium</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	_____ Rapid test for hydrophytic vegetation	
2 <u>Carduus nutans</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	_____ Dominance test is >50%	
3 <u>Medicago lupulina</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	_____ Prevalence index is ≤3.0*	
4 <u>Helianthus annuus</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	_____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5 <u>Acnida altissima</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	_____ Problematic hydrophytic vegetation* (explain)	
6 <u>Lotus corniculata</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	_____ *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 _____	_____	_____	_____		
8 _____	_____	_____	_____		
9 _____	_____	_____	_____		
10 _____	_____	_____	_____		
<u>60</u> = Total Cover					
Woody vine stratum (Plot size: <u>1 m sq</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>N</u>	
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p> *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
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Remarks:

Area mapped as urban land, and a gravel parking pad 2-4 feet higher than surrounding wetland.

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u></p> <p>Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u></p> <p>Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

2-4 feet higher in elevation than adjacent wetland swales with no evidence of hydrology

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/13/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 14
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N, R14E, S26
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): swale
 Slope (%): _____ Lat: 41.659598 Long: -87.594462 Datum: _____
 Soil Map Unit Name: urban land- orthents, clayey, complex, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 10</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____	_____	_____	_____	Total % Cover of:	
2	_____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3	_____	_____	_____	_____	FACW species <u>100</u> x 2 = <u>200</u>	
4	_____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5	_____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
		<u>100</u>	= Total Cover		Column totals <u>100</u> (A) <u>200</u> (B)	
		<u>0</u>	= Total Cover		Prevalence Index = B/A = <u>2.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	<u> </u> Rapid test for hydrophytic vegetation	
2	_____	_____	_____	_____	<u>X</u> Dominance test is >50%	
3	_____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>100</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <input type="checkbox"/></p>
<p>Remarks:</p> <p>Area mapped as urban land, and located at base of roadway embankment and along railroad</p>	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one is required; check all that apply)</p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input checked="" type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input checked="" type="checkbox"/> Water-Stained Leaves (B9)</p>		<p>Secondary Indicators (minimum of two required)</p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>		<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input checked="" type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>	
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<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <input checked="" type="checkbox"/> Y</p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation within drainage swale along higher ground, wet mud among old tires.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/19/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 15
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N R14E S26
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): ditch
 Slope (%): _____ Lat: 41.660019 Long: -87.595429 Datum: _____
 Soil Map Unit Name: urban land-orthents clayey complex, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 11</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	<u>Salix interior</u>	_____	_____	FACW	Total % Cover of:	
2	_____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3	_____	_____	_____	_____	FACW species <u>100</u> x 2 = <u>200</u>	
4	_____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5	_____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>100</u> (A) <u>200</u> (B)	
					Prevalence Index = B/A = <u>2.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	100	Y	FACW	_____ Rapid test for hydrophytic vegetation	
2	_____	_____	_____	_____	<u>X</u> Dominance test is >50%	
3	_____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	_____ Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>100</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
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Remarks:
 Area mapped as urban land, and located along road at base of a railroad embankment. Probe refusal within 2-4 inches due to gravel and fill.

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Water table present? Yes <u> </u> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <u> </u> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u>Y</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/19/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 16
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N R14E S27
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): ditch
 Slope (%): _____ Lat: 41.667542 Long: -87.602091 Datum: _____
 Soil Map Unit Name: urban land-orthents clayey complex, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 12</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____	_____	_____	_____	Total % Cover of:	
2	_____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3	_____	_____	_____	_____	FACW species <u>100</u> x 2 = <u>200</u>	
4	_____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5	_____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
		<u>100</u>	= Total Cover		Column totals <u>100</u> (A) <u>200</u> (B)	
		<u>0</u>	= Total Cover		Prevalence Index = B/A = <u>2.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	<u> </u> Rapid test for hydrophytic vegetation	
2	_____	_____	_____	_____	<u>X</u> Dominance test is >50%	
3	_____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>100</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
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Remarks:
 Area mapped as urban land, and located along road at base of a road embankment. Probe refusal within 2-4 inches due to gravel and fill.

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0-2 </u></p> <p>Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u></p> <p>Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0 </u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u> Y </u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/19/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 17
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N R14E S27
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): ditch
 Slope (%): _____ Lat: 41.669078 Long: -87.602444 Datum: _____
 Soil Map Unit Name: urban land-orthents clayey complex, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 13</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____				Total % Cover of:	
2	_____				OBL species <u>0</u> x 1 = <u>0</u>	
3	_____				FACW species <u>100</u> x 2 = <u>200</u>	
4	_____				FAC species <u>0</u> x 3 = <u>0</u>	
5	_____				FACU species <u>0</u> x 4 = <u>0</u>	
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>100</u> (A) <u>200</u> (B)	
					Prevalence Index = B/A = <u>2.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	<u> </u> Rapid test for hydrophytic vegetation	
2	_____	_____	_____	_____	<u>X</u> Dominance test is >50%	
3	_____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>100</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			

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

SOIL

Sampling Point: 17

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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Restrictive Layer (if observed): Type: <u>gravel, ballast, fill</u> Depth (inches): <u>not determined</u>	Hydric soil present? <u> </u>
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Remarks:
 Area mapped as urban land, and located along railroad embankment. Probe refusal within 2-4 inches due to gravel and fill.

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

Field Observations:		Wetland hydrology present? <u>Y</u>
Surface water present? Yes <u>X</u> No <u> </u>	Depth (inches): <u>0-2</u>	
Water table present? Yes <u> </u> No <u>X</u>	Depth (inches): <u> </u>	
Saturation present? Yes <u>X</u> No <u> </u>	Depth (inches): <u>0</u>	

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/19/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 18
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N R14E S27
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): ditch
 Slope (%): _____ Lat: 41.667289 Long: -87.600100 Datum: _____
 Soil Map Unit Name: urban land-orthents clayey complex, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 14</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>3</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____	_____	_____	_____	Total % Cover of:	
2	_____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3	_____	_____	_____	_____	FACW species <u>100</u> x 2 = <u>200</u>	
4	_____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5	_____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>	
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
		<u>100</u>	= Total Cover		Column totals <u>100</u> (A) <u>200</u> (B)	
		<u>35</u>	= Total Cover		Prevalence Index = B/A = <u>2.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	100	Y	FACW	_____ Rapid test for hydrophytic vegetation	
2	_____	_____	_____	_____	<u>X</u> Dominance test is >50%	
3	_____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	_____ Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	<u>Vitis riparia</u>	20	Y	FACW		
2	<u>Convolvulus sepium</u>	15	Y	FAC		
		<u>35</u>	= Total Cover			

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

SOIL

Sampling Point: 18

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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Restrictive Layer (if observed): Type: <u>gravel, ballast, fill</u> Depth (inches): <u>not determined</u>	Hydric soil present? <u> </u>
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Remarks:
 Area mapped as urban land, and located between gravel roads. Probe refusal within 2-4 inches due to gravel and fill.

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

Field Observations: Surface water present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0-2 </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0 </u> (includes capillary fringe)	Wetland hydrology present? <u> Y </u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/19/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 19
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N R14E S27
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): ditch
 Slope (%): _____ Lat: 41.667289 Long: -87.600100 Datum: _____
 Soil Map Unit Name: urban land-orthents clayey complex, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? _____	
Wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 <u>Morus alba</u>	40	Y	FAC		Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across all Strata: <u>6</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
2 <u>Acer negundo</u>	20	Y	FAC		
3 _____	_____	_____	_____		
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>60</u> = Total Cover				Prevalence Index Worksheet	
Sapling/Shrub stratum (Plot size: <u>4.6 m</u>)					
1 <u>Prunus serotina</u>	15	Y	FACU		Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>100</u> (A) <u>330</u> (B) Prevalence Index = B/A = <u>3.30</u>
2 _____	_____	_____	_____		
3 _____	_____	_____	_____		
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>15</u> = Total Cover				Hydrophytic Vegetation Indicators:	
Herb stratum (Plot size: <u>1 m sq</u>)					
1 <u>Eupatorium rugosum</u>	10	Y	FACU		
2 <u>Arctium minus</u>	10	Y	FACU		
3 <u>Geum laciniatum</u>	5	Y	FACW		
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
6 _____	_____	_____	_____		
7 _____	_____	_____	_____		
8 _____	_____	_____	_____		
9 _____	_____	_____	_____		
10 _____	_____	_____	_____		
<u>25</u> = Total Cover				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	
Woody vine stratum (Plot size: <u>1 m sq</u>)					
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</u> = Total Cover				Hydrophytic vegetation present? <u>N</u>	

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

SOIL

Sampling Point: 19

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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Restrictive Layer (if observed): Type: <u>gravel, ballast, fill</u> Depth (inches): <u>not determined</u>	Hydric soil present? <u> </u>
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Remarks:
 Area mapped as urban land, and located between gravel roads. Probe refusal within 2-4 inches due to gravel and fill.

HYDROLOGY

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

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? <u> N </u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 No evidence of hydrology observed, Ground cover mostly dry undisturbed leaf litter.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/19/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 20
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N R14E S27
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): ditch
 Slope (%): _____ Lat: 41.671562 Long: -87.607147 Datum: _____
 Soil Map Unit Name: urban land-orthents clayey complex, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 15</u>
Hydric soil present? _____	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	_____				Total % Cover of:	
2	_____				OBL species <u>0</u> x 1 = <u>0</u>	
3	_____				FACW species <u>100</u> x 2 = <u>200</u>	
4	_____				FAC species <u>0</u> x 3 = <u>0</u>	
5	_____				FACU species <u>0</u> x 4 = <u>0</u>	
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>100</u> (A) <u>200</u> (B)	
					Prevalence Index = B/A = <u>2.00</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phragmites australis</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	<u> </u> Rapid test for hydrophytic vegetation	
2	_____	_____	_____	_____	<u>X</u> Dominance test is >50%	
3	_____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>100</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>Y</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			

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

SOIL

Sampling Point: 20

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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
--	---	---

<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <input type="checkbox"/></p>
---	---

Remarks:
 Area mapped as urban land, and along steep road embankment. Probe refusal within 2-4 inches due to gravel and fill.

HYDROLOGY

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

<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u></p> <p>Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <input checked="" type="checkbox"/> Y</p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Lake Calumet CTA Red Line Extension City/County: Cook Sampling Date: 8/19/2015
 Applicant/Owner: CTA/MWRD State: Illinois Sampling Point: 21
 Investigator(s): J Mengler, V Mosca Section, Township, Range: T37N R14E S27
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): ditch
 Slope (%): _____ Lat: 41.671562 Long: -87.607147 Datum: _____
 Soil Map Unit Name: urban land-orthents clayey complex, nearly level NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil Y, or hydrology _____ significantly disturbed? Y Are "normal circumstances" present? _____
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N present? _____ Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? _____	
Wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Relied primarily upon vegetation and landscape position due to dry time of season, and mostly urbanland/fill for substrate.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>9 m</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1	_____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A)	
2	_____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>4</u> (B)	
3	_____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)	
4	_____	_____	_____	_____		
5	_____	_____	_____	_____		
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>4.6 m</u>)				Prevalence Index Worksheet	
1	<u>Rhamnus cathartica</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>	Total % Cover of:	
2	<u>Morus alba</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	OBL species <u>0</u> x 1 = <u>0</u>	
3	_____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>	
4	_____	_____	_____	_____	FAC species <u>100</u> x 3 = <u>300</u>	
5	_____	_____	_____	_____	FACU species <u>30</u> x 4 = <u>120</u>	
		<u>100</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>130</u> (A) <u>420</u> (B)	
					Prevalence Index = B/A = <u>3.23</u>	
Herb stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Glechoma hederacea</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	_____ Rapid test for hydrophytic vegetation	
2	<u>Arctium minus</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	_____ Dominance test is >50%	
3	_____	_____	_____	_____	_____ Prevalence index is ≤3.0*	
4	_____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5	_____	_____	_____	_____	_____ Problematic hydrophytic vegetation* (explain)	
6	_____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7	_____	_____	_____	_____		
8	_____	_____	_____	_____		
9	_____	_____	_____	_____		
10	_____	_____	_____	_____		
		<u>30</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>1 m sq</u>)				Hydrophytic vegetation present? <u>N</u>	
1	_____	_____	_____	_____		
2	_____	_____	_____	_____		
		<u>0</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*	Loc**		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p><small>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</small></p>
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<p>Restrictive Layer (if observed):</p> <p>Type: <u>gravel, ballast, fill</u></p> <p>Depth (inches): <u>not determined</u></p>	<p>Hydric soil present? <u> </u></p>
---	--

Remarks:
 Area mapped as urban land, and along steep road embankment. Probe refusal within 2-4 inches due to gravel and fill.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>		<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>
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<p>Field Observations:</p> <p>Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u></p> <p>Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u></p> <p>Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u></p> <p>(includes capillary fringe)</p>	<p>Wetland hydrology present? <u> N </u></p>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



Photograph 1:

Wetland 1 looking east from west end.



Photograph 2:

Existing fly dumping piles along Cottage Grove Road and edge of Wetland 3.



Photograph 3:

North edge of Wetland 4 looking west – mostly out of project area.



Photograph 4:

Edge of Wetland 5 along Cottage Grove Road looking south.



Photograph 5:

Wetland 6 along railroad looking south.



Photograph 6:

Evidence of hydrology along railroad and edge of Wetland 6.



Photograph 7:

Remnant prairie plants in Wetland 7 along railroad.



Photograph 8:

Mowed edge of Wetland 8.



Photograph 9:

Existing upland gravel area
next to Wetland 8.



Photograph 10:

Wetland 9.



Photograph 11:
Existing trash piles in
Wetland 10.



Photograph 12:
Wetland 12.



Photograph 13:

Wetland 14.



Photograph 14:

Wetland 15.



Photograph 15:

Upland in northwest finger of project area looking north.



Photograph 16:

Northwest extent of project area.

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

CONTRACT 84-270-2P

SLUDGE DRYING AREA-WEST, CALUMET S.T.W.

APPENDIX A - TABLE OF CONTENTS

<u>Page No.</u>	<u>R.O.W. Document File No.</u>	
1-13	1.	Department of the Army Permit No. 5108502 Mr. Tom Slowinski (Phone: 353-6428)
14-18	2.	City of Chicago, Department of Streets and Sanitation, Bureau of Forestry, Parkways and Beautification, Permit No. 85-62 Ms. Karen Nowacki-Forestry (Phone: 744-4391) Mr. R. E. Baker-Water Distribution (Phone: 744-5067)
19-21	3.	Cook County Department of Highways Permit No. 85-3-155 Mr. Gabriel Ditore (443-5988)
22	4.	Commonwealth Edison Co. Letter of Notification Mr. Orville Burandt (Phone: 294-3270)
22	- - -	Last Page of Right-of-Way Documents

Application No. 5108502
Name of Applicant Metropolitan Sanitary District of Greater Chicago
Effective Date 10 June 1985
Expiration Date (If applicable) 10 June 1988

7.0.V. FILE #1

**DEPARTMENT OF THE ARMY
PERMIT**

Referring to written request dated 24 January 85 for a permit to:

() Perform work in or affecting navigable waters of the United States, upon the recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403);

(x) Discharge dredged or fill material into waters of the United States upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344);

() Transport dredged material for the purpose of dumping it into ocean waters upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (86 Stat. 1052; P.L. 92-532);

Metropolitan Sanitary District of Greater Chicago
100 East Erie Street
Chicago, Illinois 60629

is hereby authorized by the Secretary of the Army:

to construct a municipal sludge drying facility

in a wetland near the Little Calumet River

at W $\frac{1}{2}$ of Section 27, T37N, R14E, near 130th and Indiana Avenue,
Chicago, Cook County, Illinois

in accordance with the plans and drawings attached hereto which are incorporated in and made a part of this permit (on drawings, give file number or other definite identification marks.)

24 January 1985 permit application and plans
29 May 1985 letter and enclosures

subject to the following conditions:

I. General Conditions:

a. That all activities identified and authorized herein shall be consistent with the terms and conditions of this permit; and that any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this permit which may result in the modification, suspension or revocation of this permit, in whole or in part, as set forth more specifically in General Conditions j or k hereto, and in the institution of such legal proceedings as the United States Government may consider appropriate, whether or not this permit has been previously modified, suspended or revoked in whole or in part.

ENG FORM 1721, Sep 82

EDITION OF 1 JUL 77 IS OBSOLETE

(ER 1146-2-303)

b. That all activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States or ocean waters, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibitions, pretreatment standards and management practices established pursuant to the Clean Water Act (33 U.S.C. 1344), the Marine Protection, Research and Sanctuaries Act of 1972 (P.L. 92-532, 86 Stat. 1052), or pursuant to applicable State and local law.

c. That when the activity authorized herein involves a discharge during its construction or operation, or any pollutant (including dredged or fill material), into waters of the United States, the authorized activity shall, if applicable water quality standards are revised or modified during the term of this permit, be modified, if necessary, to conform with such revised or modified water quality standards within 6 months of the effective date of any revision or modification of water quality standards, or as directed by an implementation plan contained in such revised or modified standards, or within such longer period of time as the District Engineer, in consultation with the Regional Administrator of the Environmental Protection Agency, may determine to be reasonable under the circumstances.

d. That the discharge will not destroy a threatened or endangered species as identified under the Endangered Species Act, or endanger the critical habitat of such species.

e. That the permittee agrees to make every reasonable effort to prosecute the construction or operation of the work authorized herein in a manner so as to minimize any adverse impact on fish, wildlife, and natural environmental values.

f. That the permittee agrees that he will prosecute the construction or work authorized herein in a manner so as to minimize any degradation of water quality.

g. That the permittee shall allow the District Engineer or his authorized representative(s) or designee(s) to make periodic inspections at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

h. That the permittee shall maintain the structure or work authorized herein in good condition and in reasonable accordance with the plans and drawings attached hereto.

i. That this permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and that it does not authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations.

j. That this permit does not obviate the requirement to obtain state or local assent required by law for the activity authorized herein.

k. That this permit may be either modified, suspended or revoked in whole or in part pursuant to the policies and procedures of 33 CFR 325.7.

l. That in issuing this permit, the Government has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be materially false, materially incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Government may, in addition, institute appropriate legal proceedings.

m. That any modification, suspension, or revocation of this permit shall not be the basis for any claim for damages against the United States.

n. That the permittee shall notify the District Engineer at what time the activity authorized herein will be commenced, as far in advance of the time of commencement as the District Engineer may specify, and of any suspension of work, if for a period of more than one week, resumption of work and its completion.

o. That if the activity authorized herein is not completed on or before _____ day of _____, 19_____, (three years from the date of issuance of this permit unless otherwise specified) this permit, if not previously revoked or specifically extended, shall automatically expire.

p. That this permit does not authorize or approve the construction of particular structures, the authorization or approval of which may require authorization by the Congress or other agencies of the Federal Government.

q. That if and when the permittee desires to abandon the activity authorized herein, unless such abandonment is part of a transfer procedure by which the permittee is transferring his interests herein to a third party pursuant to General Condition t hereof, he must restore the area to a condition satisfactory to the District Engineer.

r. That if the recording of this permit is possible under applicable State or local law, the permittee shall take such action as may be necessary to record this permit with the Register of Deeds or other appropriate official charged with the responsibility for maintaining records of title to and interests in real property.

s. That there shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein.

t. That this permit may not be transferred to a third party without prior written notice to the District Engineer, either by the transferee's written agreement to comply with all terms and conditions of this permit or by the transferee subscribing to this permit in the space provided below and thereby agreeing to comply with all terms and conditions of this permit. In addition, if the permittee transfers the interests authorized herein by conveyance of realty, the deed shall reference this permit and the terms and conditions specified herein and this permit shall be recorded along with the deed with the Register of Deeds or other appropriate official.

u. That if the permittee during prosecution of the work authorized herein, encounters a previously unidentified archeological or other cultural resource within the area subject to Department of the Army jurisdiction that might be eligible for listing in the National Register of Historic Places, he shall immediately notify the district engineer.

II. Special Conditions: (Here list conditions relating specifically to the proposed structure or work authorized by this permit):

1. That the permittee notify Mr. Tom Slowinski, Chief, Regulatory Functions Branch, Chicago District Office, 219 South Dearborn Street, Chicago, Illinois 60604-1797, telephone 312/353-6428 at least five days in advance of commencement and completion of the work authorized herein.

2. That the permittee supply a copy of this permit with all attachments to his contractor or project engineer so that all terms and conditions are fully known and understood.

3. That the permittee submit any revisions of plans or location to this issuing office for approval before work is begun.

4. That the permittee comply with the Illinois Environmental Protection Agency's conditions (attached), as stated in their 22 March 1985 water quality certification for the project under Section 401 of the Clean Water Act (Public Law 95-217).

5. That the permittee develop and implement the wetland mitigation plan in accordance with their 29 May 1985 letter and enclosures.

The following Special Conditions will be applicable when appropriate:

STRUCTURES IN OR AFFECTING NAVIGABLE WATERS OF THE UNITED STATES:

a. That this permit does not authorize the interference with any existing or proposed Federal project and that the permittee shall not be entitled to compensation for damage or injury to the structures or work authorized herein which may be caused by or result from existing or future operations undertaken by the United States in the public interest.

b. That no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized by this permit.

c. That if the display of lights and signals on any structure or work authorized herein is not otherwise provided for by law, such lights and signals as may be prescribed by the United States Coast Guard shall be installed and maintained by and at the expense of the permittee.

d. That the permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the authorized structure or work, shall, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the waterway to its former conditions. If the permittee fails to comply with the direction of the Secretary of the Army or his authorized representative, the Secretary or his designee may restore the waterway to its former condition, by contract or otherwise, and recover the cost thereof from the permittee.

e. Structures for Small Boats: That permittee hereby recognizes the possibility that the structure permitted herein may be subject to damage by wave wash from passing vessels. The issuance of this permit does not relieve the permittee from taking all proper steps to insure the integrity of the structure permitted herein and the safety of boats moored thereto from damage by wave wash and the permittee shall not hold the United States liable for any such damage.

MAINTENANCE DREDGING:

a. That when the work authorized herein includes periodic maintenance dredging, it may be performed under this permit for _____ years from the date of issuance of this permit (*ten years unless otherwise indicated*);

b. That the permittee will advise the District Engineer in writing at least two weeks before he intends to undertake any maintenance dredging.

DISCHARGES OF DREDGED OR FILL MATERIAL INTO WATERS OF THE UNITED STATES:

a. That the discharge will be carried out in conformity with the goals and objectives of the EPA Guidelines established pursuant to Section 404(b) of the Clean Water Act and published in 40 CFR 230;

b. That the discharge will consist of suitable material free from toxic pollutants in toxic amounts.

c. That the fill created by the discharge will be properly maintained to prevent erosion and other non-point sources of pollution.

DISPOSAL OF DREDGED MATERIAL INTO OCEAN WATERS:

a. That the disposal will be carried out in conformity with the goals, objectives, and requirements of the EPA criteria established pursuant to Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, published in 40 CFR 220-228.

b. That the permittee shall place a copy of this permit in a conspicuous place in the vessel to be used for the transportation and/or disposal of the dredged material as authorized herein.

This permit shall become effective on the date of the District Engineer's signature.

Permittee hereby accepts and agrees to comply with the terms and conditions of this permit.

Frederick E. Juliano
PERMITEE

6-10-85
DATE

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Frank R. Finch
LTC FRANK R. FINCH, P.E.
DISTRICT ENGINEER,
U.S. ARMY, CORPS OF ENGINEERS

10 June 85
DATE

Transferee hereby agrees to comply with the terms and conditions of this permit.

TRANSFEEE

DATE



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

NOTICE OF AUTHORIZATION

10 June 19 85

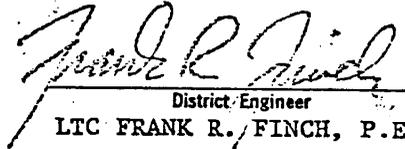
A PERMIT TO construct a municipal sludge drying facility
in a wetland near the Little Calumet River

AT W₂ of Section 27, T37N, R14E, near 130th Street and Indiana Avenue
Chicago, Cook County, Illinois

HAS BEEN ISSUED TO Metropolitan Sanitary District ON 10 June 19 85
of Greater Chicago

ADDRESS OF PERMITTEE 100 East Erie Street
Chicago, Illinois 60629

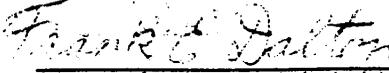
PERMIT NUMBER 5108502


District Engineer
LTC FRANK R. FINCH, P.E.

ENG Form 4336
Jul 70

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE SITE OF WORK.

JOINT APPLICATION FORM

1. Application Number (To be assigned by Agency)	2. Date 24 Jan. 85 <small>Day Month Year</small>	3. For Agency use only (Date Received)										
4. Name and address of applicant Metropolitan Sanitary District of Greater Chicago 100 East Erie Street Chicago, Ill. 50629 Telephone no. during business hours A/C () _____ A/C 312) 751-5868	5. Name, address, and title of authorized agent N/A Telephone no. during business hours A/C () _____ A/C () _____											
6. Describe in detail the proposed activity, its purpose, and intended use. If additional space is needed, attach additional support information to each agency application. <p align="center">See Attachment</p>												
7. Names, addresses, and telephone numbers of all adjoining and potentially affected property owners, including the owner of subject property if different from applicant. <p align="center">None</p>												
8. Location of activity Address: 300 East 130th Street Street, road, or other descriptive location Chicago In or near city or town Cook Illinois 60628 County State Zip Code	Legal Description: N.W. (S.I.B.L) 27 37 14 3 N.W. (N.I.B.L) 1/4 Sec. Twp. Rge. P.M. Tax Assessor's Description (if known): Map No. Subdiv. No. Lot No. Name of waterway at location of the activity Wet lands											
9. Date activity is proposed to commence <u>March, 1985</u> Date activity is expected to be completed <u>November, 1985</u>												
10. Is any portion of the activity for which authorization is sought now complete? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If answer is "Yes" give reasons in the remark section. Month and Year the activity was completed _____ Indicate the existing work on drawings.												
11. List all approvals or certifications required by other federal, interstate, state, or local agencies for any structures, construction, discharges, deposits, or other activities described in this application. If this form is being used for concurrent application to the Corps of Engineers, Illinois Department of Transportation, and Illinois Environmental Protection Agency, these agencies need not be listed. <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Issuing Agency</u></th> <th style="text-align: left;"><u>Type Approval</u></th> <th style="text-align: left;"><u>Identification No.</u></th> <th style="text-align: left;"><u>Date of Application</u></th> <th style="text-align: left;"><u>Date of Approval</u></th> </tr> </thead> <tbody> <tr> <td colspan="5">None</td> </tr> </tbody> </table>			<u>Issuing Agency</u>	<u>Type Approval</u>	<u>Identification No.</u>	<u>Date of Application</u>	<u>Date of Approval</u>	None				
<u>Issuing Agency</u>	<u>Type Approval</u>	<u>Identification No.</u>	<u>Date of Application</u>	<u>Date of Approval</u>								
None												
12. Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If "Yes", explain in remarks.)												
13. Remarks This contract is designated as: "Sludge Drying Area - West at Calumet Sewerage Treatment Plant" (84-270-2P)												
14. Application is hereby made for authorizations of the activities described herein. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. <p align="center">  _____ Signature of Applicant or Authorized Agent Frank E. Dalton Chief Engineer </p>												

JOINT APPLICATION FORM

INFORMATION

Information in the application is made a matter of public record through issuance of a public notice. Disclosure of the information requested is voluntary; however, the data requested is necessary in order to communicate with the applicant and to evaluate the permit application. If necessary information is not provided, the permit application cannot be processed nor can a permit be issued.

18 United States Code Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

Applicant is informed that all approvals must be obtained before work can be started.

INSTRUCTIONS

General:

It is very important that you provide a complete and accurate application (form, drawings, and support information) concerning your project. If the application is incomplete or unacceptable, it will be returned. This usually results in delaying the evaluation of your application.

Submit one copy of the application (form, drawings, and support information) to each regulatory agency (Corps of Engineers, Illinois Department of Transportation, Division of Water Resources (IDOT/DWR), and the Illinois Environmental Protection Agency). For addresses see attached "Protecting Illinois Waters" and jurisdictional boundary map. (For the construction of dams, the IDOT/DWR copy of the application should always be sent to the Springfield office.)

Application:

Item 6 of the application must provide a complete description of the activity and always include the purpose and intended use. For any major activity, additional support information should be provided by attached sheets to the application.

Dredging and Fill Activities - Describe the location, type, composition and quantity of material to be dredged/filled, method of dredging/filling, and method of transportation to disposal/fill site. Also describe the disposal/fill site by including location, quantity of material it will hold, composition of receiving soil, and method of containment. Provide Illinois Environmental Protection Agency material analysis data as required.

The application must be signed by the applicant; however:

1. It may be signed by a duly authorized agent (named in Item 5) if this form is accompanied by a statement by the applicant designating the agent and agreeing to furnish upon request supplemental information in support of the application.
2. If the applicant is a corporation, the president or other authorized officer shall sign the application form.
3. If the applicant is a county, city or other political subdivision, the application form shall be signed by an appropriate authorized officer.
4. If the applicant is a partnership, each partner shall sign the application form.
5. If the applicant is a trust, the trust officer shall sign the name of the trustee by him (her) as trust officer. A disclosure affidavit must be filed with the application, identifying each beneficiary of the trust by name and address and defining the respective interests therein.

Environmental Assessment:

Pursuant to Section 102 of the National Environmental Policy Act, Public Law 91-190, an assessment of the environmental impacts and determination of need for an environmental impact statement must be made for Federally permitted activities. The environmental assessment will, in part, be based on the following written support information (attached sheets to application) which you must submit:

1. Complete description of project (Item 6 of application).
2. Analysis of the need and purpose of the proposed project.
3. Description of the environment in the vicinity of the project which would be directly affected by the permitted action as well as any of the secondary effects.

a. Ecological and Natural Resource Impacts

- (permanent and temporary)
- (1) Fish and wildlife populations (include threatened and endangered species)
 - (2) Aquatic habitat (include shellfish and benthic life)
 - (3) Vegetation habitat
 - (4) Wetland area (marshes, bogs, swamps, etc.)
 - (5) Water resources
 - (a) Public water supply (surface, ground)
 - (b) Water conservation (reuse, reduction of use)
 - (c) Water quality (chemical, physical, and biological integrity of general area)
 - (6) Air quality and noise
 - (7) Soil erosion and siltation

b. Social and Economical Impacts

- (permanent and temporary)
- (1) Aesthetics
 - (2) Cultural values
 - (a) Historic and archaeological sites
 - (b) Other (national rivers, wilderness areas, recreation areas, parks, monuments, wild and scenic rivers, etc.)
 - (3) Recreational areas (present and potential)
 - (4) Public facilities and services (health, safety, etc.)
 - (5) Navigation (commercial and small craft)
 - (6) Flood damage prevention and effect on local flood heights
 - (7) Shore erosion and accretion
 - (8) Land use
 - (a) Conservation
 - (b) Prime and unique farmlands
 - (c) Food production
 - (d) Existing and potential use (zoning and planning)
 - (9) Economic
 - (a) Energy needs
 - (b) Employment (regional growth)
 - (c) Tax base (property values)

4. Identification of practical alternatives (methods and locations) to the proposed action which would accomplish all the objectives desired, those which would provide only a partial solution to the objectives of the project, and the alternative of no action. This analysis is required so that the final project recommendation is made in the best overall public interest.

Drawings:

Each sheet of drawings submitted should contain a title block in the lower right hand corner identifying the proposed activity and contain the name of the body of water, river mile (if applicable), number of the sheet and total number of sheets in set, and date the drawing was prepared.

The first sheet of the drawings should include a vicinity map which shows:

1. Project site
2. Name of waterway
3. All applicable boundary lines
4. Name of and distance to local town, community or other identifying location
5. Names of all roads in the vicinity of the site
6. Graphic or numerical scale
7. North arrow

The drawings should also include a plan view of the project showing:

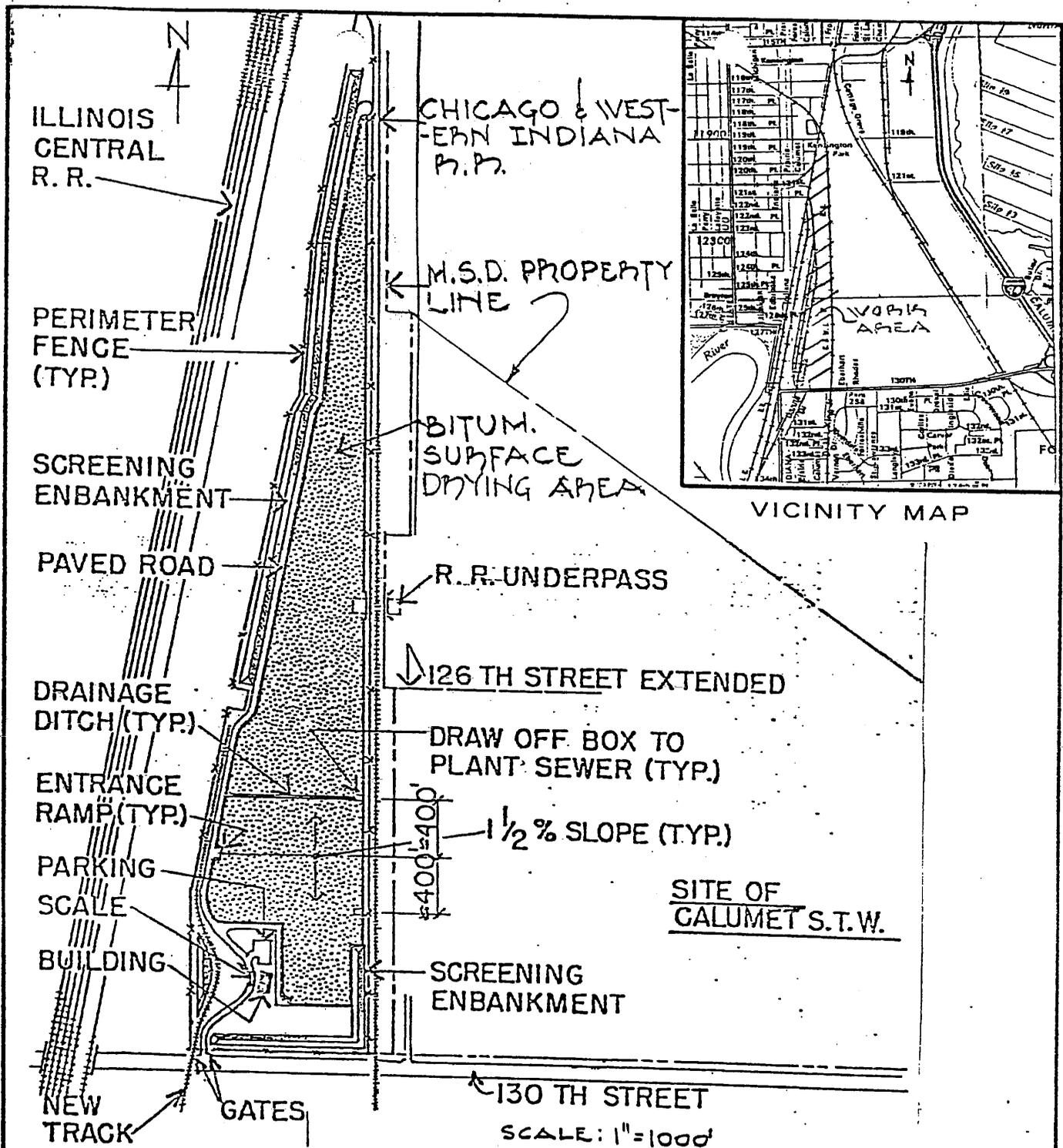
1. Existing shoreline and the normal water surface elevation (if Mean Sea Level datum is not used, adjustment should be indicated)
2. Adjacent property lines and ownership as listed in item 7 of the application form
3. Principal dimensions of the structure or work and extent of encroachment into the waterway (as measured from a fixed structure or object)
4. Distance between proposed activity and navigation channel, when applicable
5. Floodway/Floodplain lines if established and if known
6. North arrow
7. Graphic or numerical scale
8. A note describing the proposed method of revegetation or stabilization of disturbed areas

The drawings should also contain a section view of the project showing:

1. Shoreline, elevations, extent of encroachment, and principal dimensions of the work as shown in plan view
2. Graphic or numerical scales (horizontal and vertical)

ATTACHEMENT TO PERMIT APPLICATION, PARAGRAPH 6

This project will develop an area of 70 net acres in size, for use as an "agitation" drying facility. Sludge having a concentration of 15% to 30% will be delivered to the "agitation" drying facility. The latter relatively "wet" sludge will be spread in thin layers over the drying facility area and subjected to agitation and compression by operating heavy construction equipment, such as bulldozers and tractor mounted horizontal augers, over its surface. The "agitation" drying areas shall be prepared by sealing the ground over the entire area with clay, or other suitable material, to obtain an adequate impermeable surface. The use of existing onsite materials as well as excavated materials from other MSDGC construction activities shall be considered. A crushed stone base, a bituminous base course, and a bituminous wearing surface shall be laid in adequate thickness over the impervious surface. Drainage from each parcel shall be returned to the closest appropriate MSDGC sewer from a draw-off box.



LIST OF ADJACENT PROPERTY OWNERS

NO.	NAME	ADDRESS
1.		
2.		
3.		
4.		

PROJECT DESCRIPTION:
 SLUDGE DRYING AREA -
 WEST CALUMET S.T.P.
 (84-270-2P)
 LOCATION:
 300 E. 130th ST.
 CHICAGO, ILL.

NICHOLAS J. MELAS
PRESIDENT



BOARD OF COMMISSIONER
JOANNE H. ALTER
THOMAS S. FULLER
NELLIE L. JONES
JAMES C. KIRIE
GLORIA MAJEWSKI
NICHOLAS J. MELAS
AURELIA PUCINSKI
RICHARD J. TROY
LOUIS S. VIVERITO

May 29, 1985

Lieutenant Colonel Frank R. Finch, P.E.
District Engineer
U.S. Army Corps of Engineers
219 South Dearborn Street
Chicago, IL 60604

Subject: Application for Permit to Site Sludge Drying Facility in
a Wetland West of Calumet Sewage Treatment Plant, Chicago,
Cook County, Illinois (R.O.W. File #1, 84-270-2P) --
Response to Corps' Comments

Dear Colonel Finch:

The Sanitary District is in receipt of your letter and attachments dated May 10, 1985. In reviewing your transmittal we note that you have identified three aspects of the proposed project as requiring clarification. These aspects are: a) review of alternatives; b) protection of groundwater; and c) mitigation of wetland laws.

Further detail regarding each of the three aspects is provided below in sufficient detail, we believe, to make it unnecessary for us to prepare individual responses to each of the parties who submitted comments to you relative to this project.

(1) Review of alternatives

Detail studies and cost-effective analyses have been made of solids handling alternatives by the MSDGC. At the conclusion of the studies, the analyses showed that the most feasible alternative for handling Calumet STW and WSW-STW sludges would be to dry them to 60% solids and dispose of them in a landfill. A summary of the studies is contained in the attached Facilities Planning Study, Solids Update - April 1985 (Exhibit A).

The site chosen for Project 84-270-2P is the closest available agitation drying site at the Calumet STW. It possesses abundant area, roads, and utility services which contribute to providing very efficient land use. Also, the location so near the Calumet STW will result in the minimum operational costs for sludge hauling.

(2) Protection of the groundwater

A 2' minimum impervious clay seal will be provided beneath the sludge drying area to prevent groundwater contamination. Also, water stops in the concrete retaining walls will be provided to contain liquids in the drying area. The clay seal will be a cohesive impervious material having the following properties:

Item	Specification
Maximum percent retained on No. 4 sieve	15
Minimum percent passing No. 200 sieve	25
Maximum liquid limit	50
Minimum plasticity index	10
Maximum coefficient of permeability	10^{-7} cm/sec

The facility is designed so that all surface runoff from the drying cells and any passage into the granular subbase beneath the bituminous surface is transported via sewers and underdrains back to the treatment plant.

Four groundwater monitoring wells will be provided on the Calumet-West site which will be sampled on a regular basis by our R&D Department. The water quality data will be transmitted to IEPA. A copy of the groundwater monitoring data from Project 80-159-2P "LASMA Solids Drying Site-WSW STW," which was submitted to the IEPA on April 9, 1985, is attached (Exhibit B). The LASMA drying site is similar to the proposed project.

(3) Mitigation of wetland laws

Attached as Exhibit C is a proposed wetland and support area located within the Sanitary District's property line. This proposed development represents a 15½-acre site removed from project development and proposed to be set aside permanently as a quality wetland area.

The proposed development is a result of staff meetings and site review between the Sanitary District, the Corps, and the U.S. Fish and Wildlife Service. The proposed development includes a surface water lake of 7½ acres, a wet zone of 4½ acres and an upland support area of 3½ acres. It has been designed in a naturalistic configuration to enhance its visual quality and provide quality wetland habitat and support.

May 29, 1985

The Sanitary District is proposing that this 15 $\frac{1}{2}$ -acre development area be removed from the sludge drying area contract, and be developed into a quality wetland on the basis of the following schedule:

- completion of preliminary design - September 1985,
- completion of design contract documents - January 1986,
- and award and construction - summer 1986.

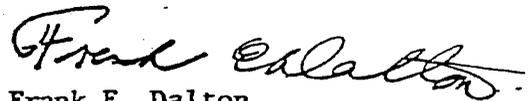
The Sanitary District agrees to consult with the Corps, the Fish and Wildlife Service, and the Illinois Department of Conservation in the development of design criteria, preliminary design, and final contract documents.

In addition to the proposed 15 $\frac{1}{2}$ -acre development, the design for the project drainage system includes approximately 6 acres of surface drainage swales. They fit into the Corps' definition of wetland area, and should be considered as part of the mitigation proposal.

It is the judgment of the Sanitary District that the above responds to the issues raised in the Corps' summary letter and attachments. Therefore, the Sanitary District requests that the Corps issue the permit which will allow the construction of this project to commence at the earliest possible time.

Sincerely yours,

METROPOLITAN SANITARY DISTRICT OF
GREATER CHICAGO



Frank E. Dalton
Chief Engineer

FED:mt

Enclosures



GT:

bcc: Barbolini
DiVita
Kelly
File



217/782-0610

MSDGC (Cook County)
Sludge Drying Facility -- Isolated Wetland
Log #C-73-85

March 22, 1985

Department of the Army
Chicago District
Corps of Engineers
219 South Dearborn Street
Chicago, Illinois 60604

Gentlemen:

This Agency received a request on February 1, 1985, from the Metropolitan Sanitary District of Greater Chicago requesting necessary comments for environmental consideration concerning the construction of a sludge drying facility on approximately 70 acres adjacent to the Calumet Sewage Treatment Works. We offer the following comments.

Based on the information included in this submittal, it is our engineering judgment that the proposed project may be completed without causing water pollution as defined in the Illinois Environmental Protection Act, provided the project is carefully planned and supervised.

These comments are directed at the effect on water quality of the construction procedures involved in the above described project and is not an approval of any discharge resulting from the completed facility, nor an approval of the design of the facility. These comments do not supplant any permit responsibilities of the applicant towards this Agency.

This Agency hereby issues certification under Section 401 of the Clean Water Act (PL 95-217), subject to the applicant's compliance with the following conditions:

1. The applicant shall not cause:
 - a. violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C: Water Pollution Rules and Regulations;
 - b. water pollution as defined and prohibited by the Illinois Environmental Protection Act; and
 - c. interference with water use practices near public recreation areas or water supply intakes.



Page 2

2. The applicant shall provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.
3. Any spoil material excavated, dredged or otherwise produced must not be returned to the river or stream but must be deposited in a self-contained area in compliance with all State statutes, regulations and permit requirements with no discharge to the waters of the State unless a permit has been issued by this Agency. Any back filling must be done with clean material and placed in a manner to prevent violation of stream water quality standards.
4. The applicant shall comply with the Subtitle C permit issued for these facilities by the Agency.
5. This certification becomes effective when the Department of the Army, Corps of Engineers, includes the above conditions #1 through 4 as conditions of the requested permit issued pursuant to Section 404 of PL 95-217.

This certification does not grant immunity from any enforcement action found necessary by this Agency to meet its responsibilities in prevention, abatement, and control of water pollution.

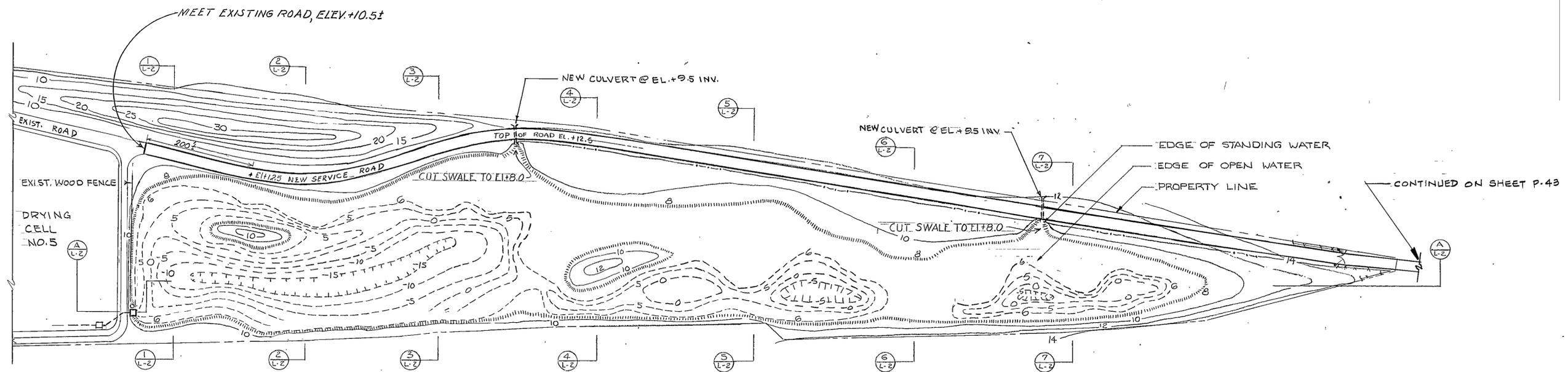
Very truly yours,

Thomas G. McSwiggin, P.E.
Manager, Permit Section
Division of Water Pollution Control

TGM:BY:sd/600e/55-56

Attachment

cc: IEPA, DWPC, Records Unit
DWPC, Field Operations Section, Region 2
IDOT, Division of Water Resources, Schaumburg
USEPA, Region V
MSDGC — Field Services Section

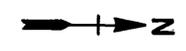


TOPOGRAPHIC PLAN
SCALE: 1" = 100'-0"

NOTES:

LEGEND

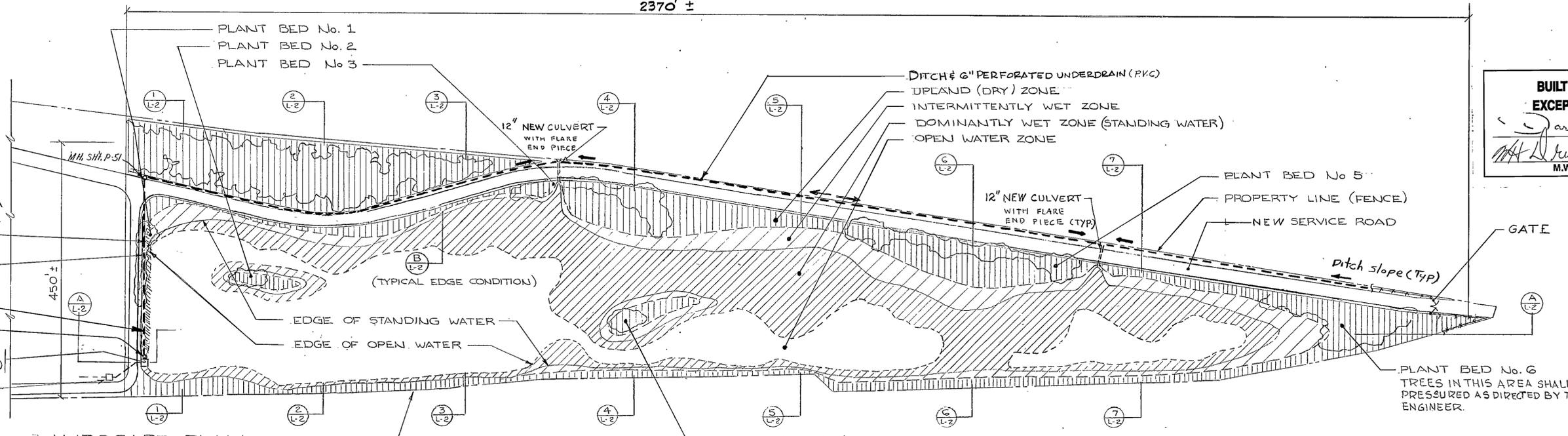
- ABOVE WATER CONTOUR
- SUBSURFACE CONTOUR
- EDGE OF STANDING WATER



- 2- THE UPLAND (DRY) ZONE AREA SHALL BE CONSTRUCTED TO MEET THE NEW SERVICE ROAD AND SHALL DRAIN TO OPEN WATER.
- 3- ALL PEAT AND SIMILAR MATERIALS AS DIRECTED BY THE ENGINEER SHALL BE REMOVED FROM THE SWAMP AREA AND STOCKPILED SEPARATELY FOR USE IN CONSTRUCTION OF THE WET ZONE AREA. DRYING CELL NO. 5, SOUTH OF THE WETLANDS, MAY BE USED FOR THIS PURPOSE.
- 4- THE CONTRACTOR SHALL REMOVE AND DELIVER APPROXIMATELY 114-3'x3'x3' CONCRETE BLOCKS, LOCATED ALONG THE SOUTHERN BOUNDARY OF THE WETLANDS, TO THE CALUMET S.T.W. AT A SITE AS DIRECTED BY THE ENGINEER.

- 5- ANY MARINE OR OTHER WILDLIFE HELPLESSLY STRANDED BY THE DRAINING OF THE SWAMPY AREA SHALL BE TRANSPORTED TO CELL NO. 5 AS DIRECTED BY ENGINEER.
- 6- THE CONTRACTOR SHALL FILL THE WETLANDS, AFTER COMPLETION, WITH UNCONTAMINATED STORM WATER OR GROUND WATER TAKEN FROM THE UNDERDRAIN SYSTEM AT THE CALUMET SLUDGE DRYING AREA - WEST. STORM WATER RETAINED IN CELL NO. 5 MAY ALSO BE USED. IF INSUFFICIENT WATER IS AVAILABLE TO FILL THE WETLANDS, THE CONTRACTOR MAY USE A WELL OR 1 PART MSDGC FINAL PLANT EFFLUENT WATER, TAKEN FROM THE PLANT EFFLUENT, IN A MANNER APPROVED BY THE ENGINEER, TO EVERY 3 PARTS STORM WATER. ALL PUMPS, WELLS, HOSE, ELECTRICAL SERVICE, ETC. REQUIRED TO PROVIDE WATER TO FILL THE WETLANDS SHALL BE PROVIDED BY THE CONTRACTOR UNDER THE CONTRACT.

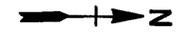
CONTINUED ON SHEET P-43



LANDSCAPE PLAN
SCALE: 1" = 100'-0"

LEGEND

- OPEN WATER (3' OR MORE DEEP)
- WET ZONE INTERMITTENTLY WET
- UPLAND (DRY) ZONE



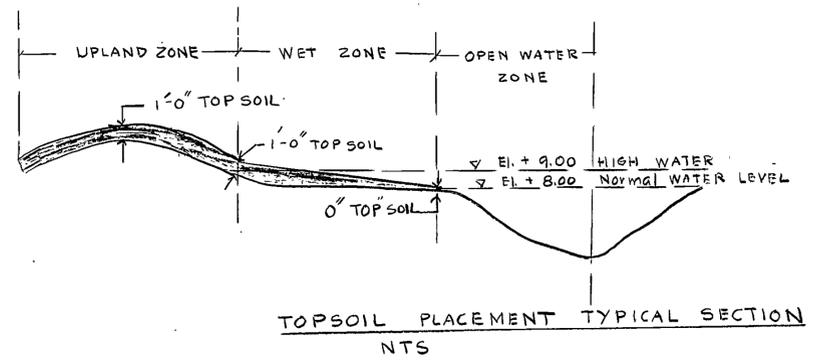
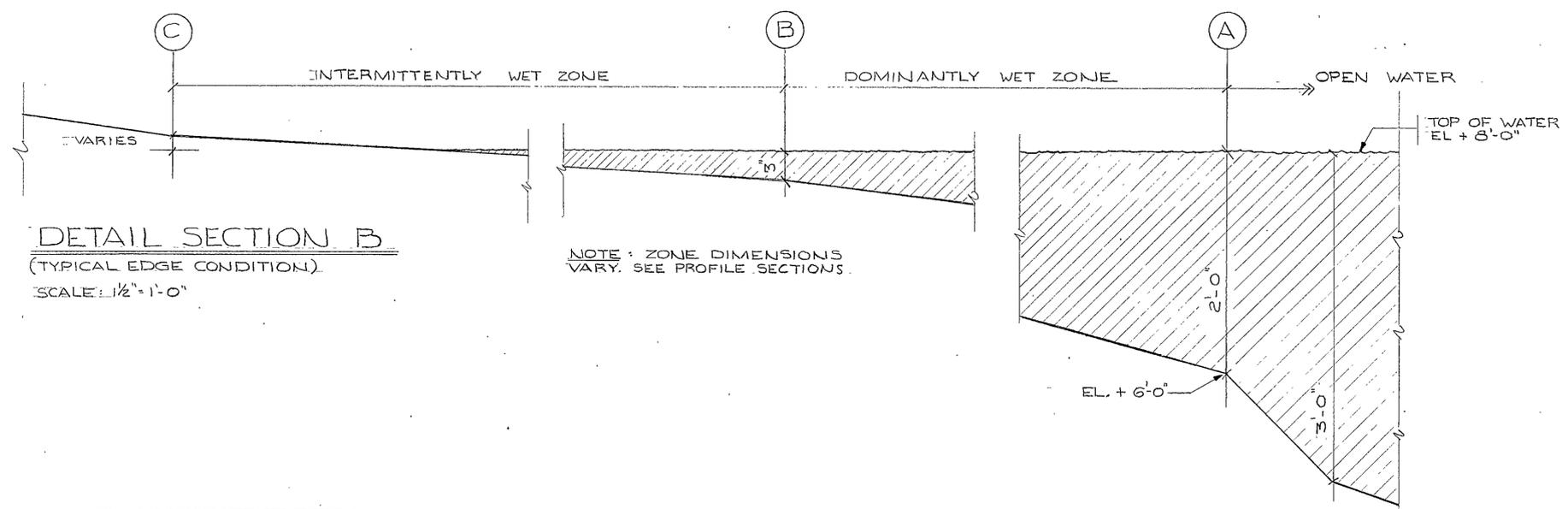
THIS SHEET P-44 IS COMPLETELY REVISED

BUILT AS SHOWN EXCEPT AS NOTED
[Signature]
Contractor
[Signature]
M.W.R.D. Resident Engineer

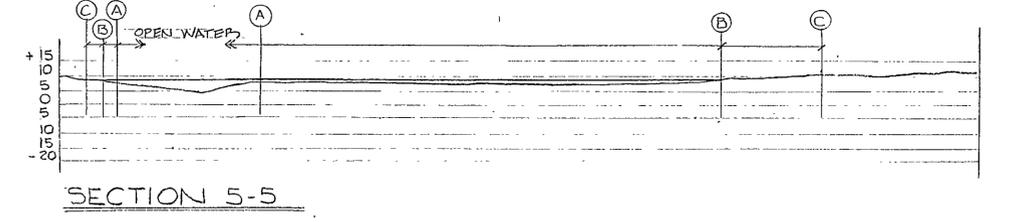
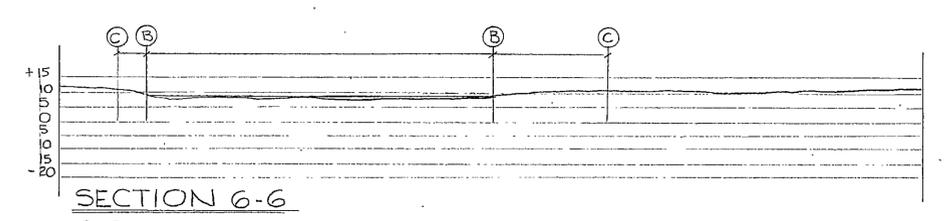
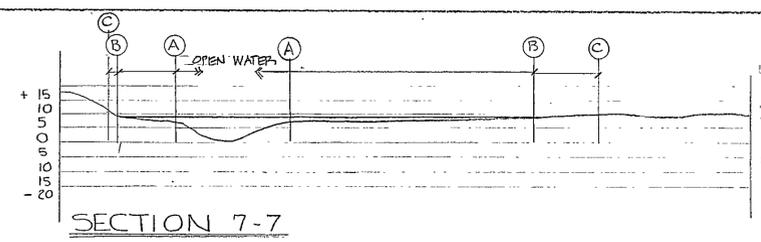
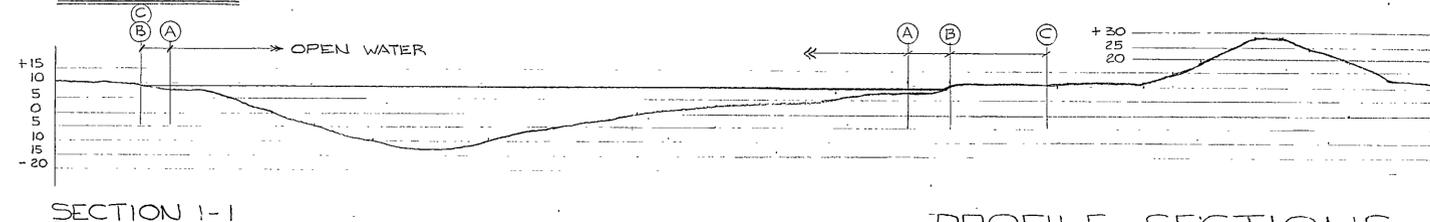
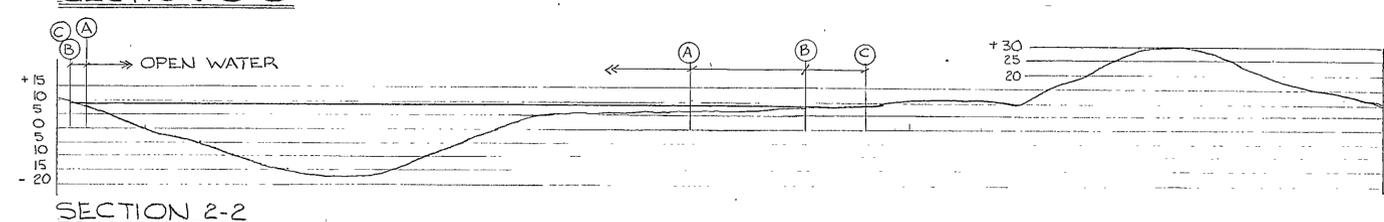
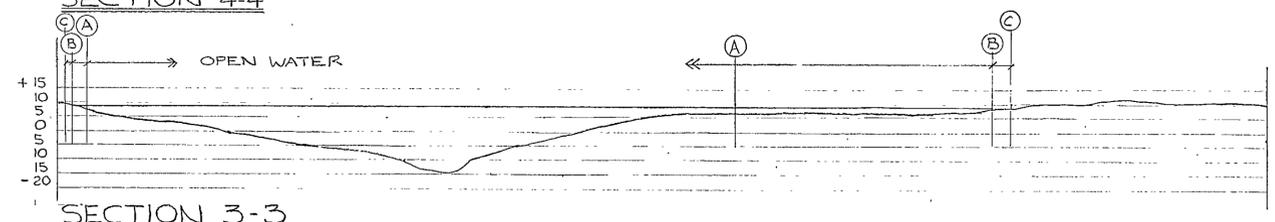
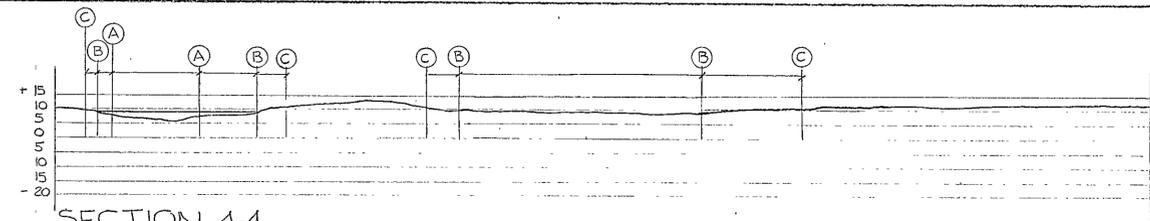
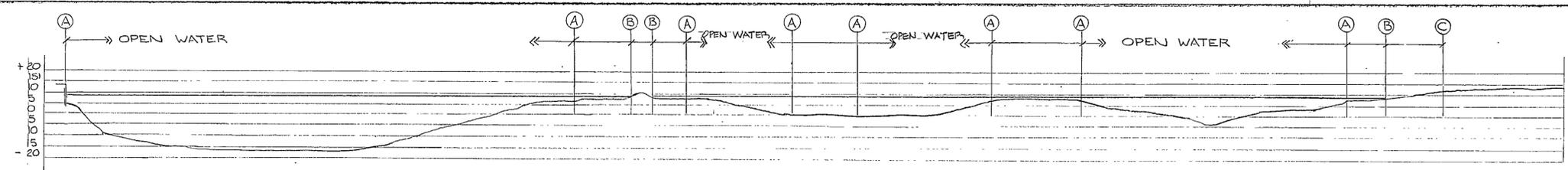
REVISIONS		
NO.	DATE	BY
1	11-20-86	WAT

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO
CALUMET SEWAGE TREATMENT WORKS
CONTRACT 75-215-2P
ADDITIONAL GRAVITY CONCENTRATION TANKS
WETLAND IMPROVEMENTS

Correct *George J. Kelly*
Approved *Robert Bublinski* Assistant Chief Engineer
Approved *Leo R. DeVita* Chief Engineer
SCALES SHOWN ARE SCALES OF TRACINGS



- Note:
1. Topsoil from "OFF-SITE" sources shall meet the requirements specified under Art. 717.04 of the IDOT Standard Specifications. Sludge is not permitted to be used in Wetland.
 2. The Contractor shall replace the peat removed during construction of the wetlands, into the open water zone and into the dominantly wet zone to the depth of 1 ft. Peat containing cinders and debris shall not be returned to the wet lands but may be used in construction of the hillmass.



BUILT AS SHOWN EXCEPT AS NOTED

[Signature]
Contractor

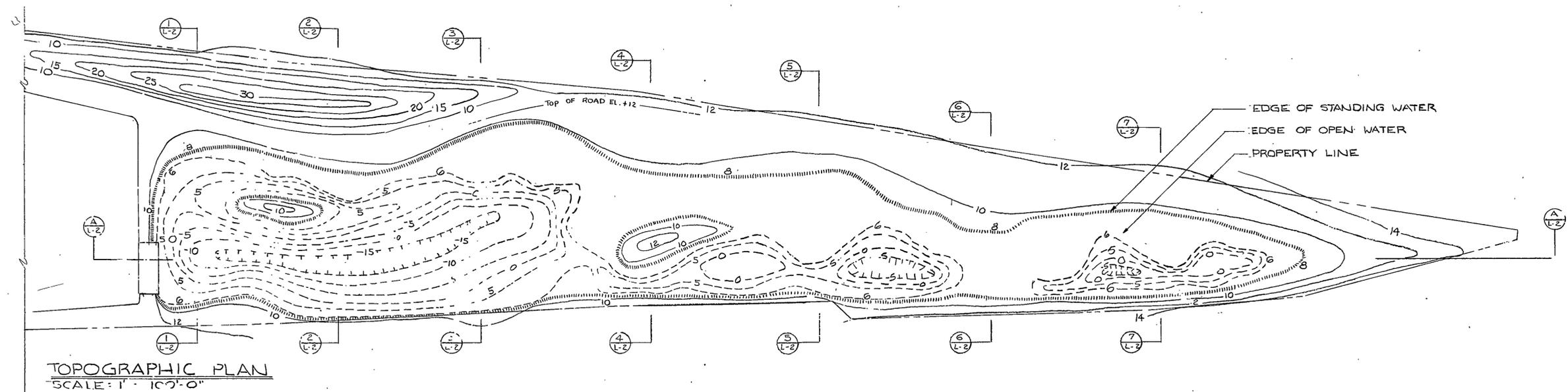
[Signature]
M.W.R.D. Resident Engineer

PROFILE SECTIONS
SCALE: 1" = 30'-0"
(HORIZONTAL ≠ VERTICAL)
SEE SHEET L-1 FOR LOCATIONS

REVISIONS			THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO CALUMET SEWAGE TREATMENT WORKS CONTRACT 75-215-2P ADDITIONAL GRAVITY CONCENTRATION TANKS WETLAND IMPROVEMENTS	Correct
NO.	DATE	BY		<i>[Signature]</i>
				Approved <i>[Signature]</i> Assistant Chief Engineer
				Approved <i>[Signature]</i> Chief Engineer
				SCALES SHOWN ARE SCALES OF TRACINGS
				DESIGNED _____ DRAWN _____ CHECKED <i>[Signature]</i> REVIEWED <i>[Signature]</i> DATE OCT., 1986 SHEET NO. P-45

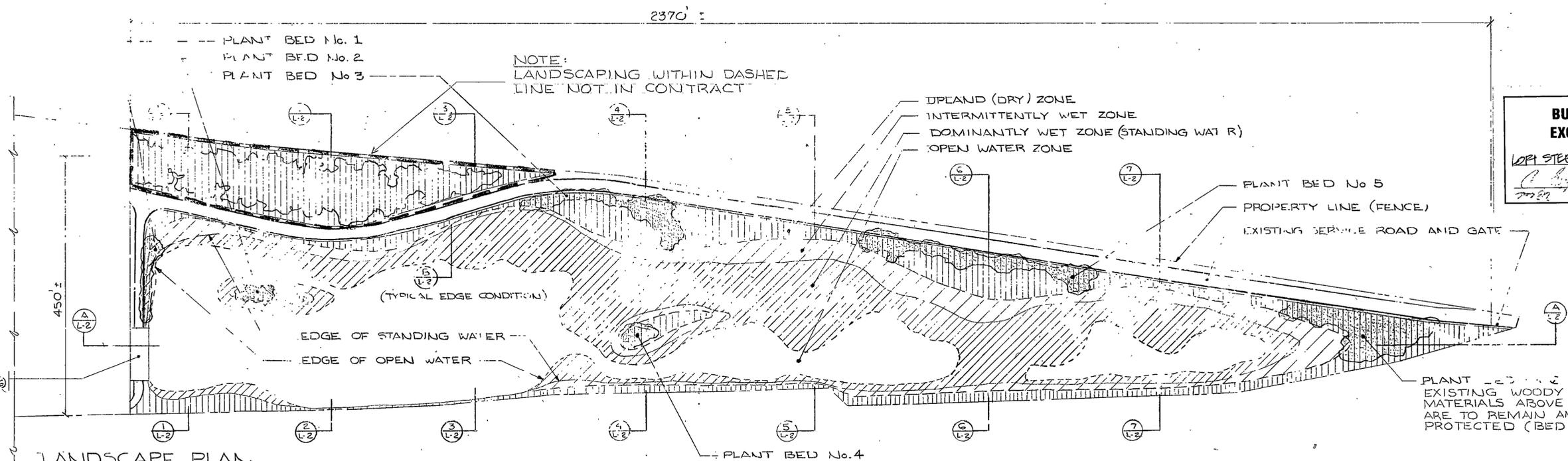
LH

As built MF 2/20/92



TOPOGRAPHIC PLAN
SCALE: 1" = 100'-0"

- LEGEND**
- ABOVE WATER CONTOUR
 - SUBSURFACE CONTOUR
 - EDGE OF STANDING WATER



LANDSCAPE PLAN
SCALE: 1" = 100'-0"

- LEGEND**
- OPEN WATER (3' OR MORE DEEP)
 - WET ZONE
 - INTERMITTENTLY WET — SEED MIX A (2 ACRES)
 - DOMINANTLY WET — SEED MIX B (4 1/2 ACRES)
 - DPLAND (DRY) ZONE — SEED MIX C (3 1/2 ACRES)

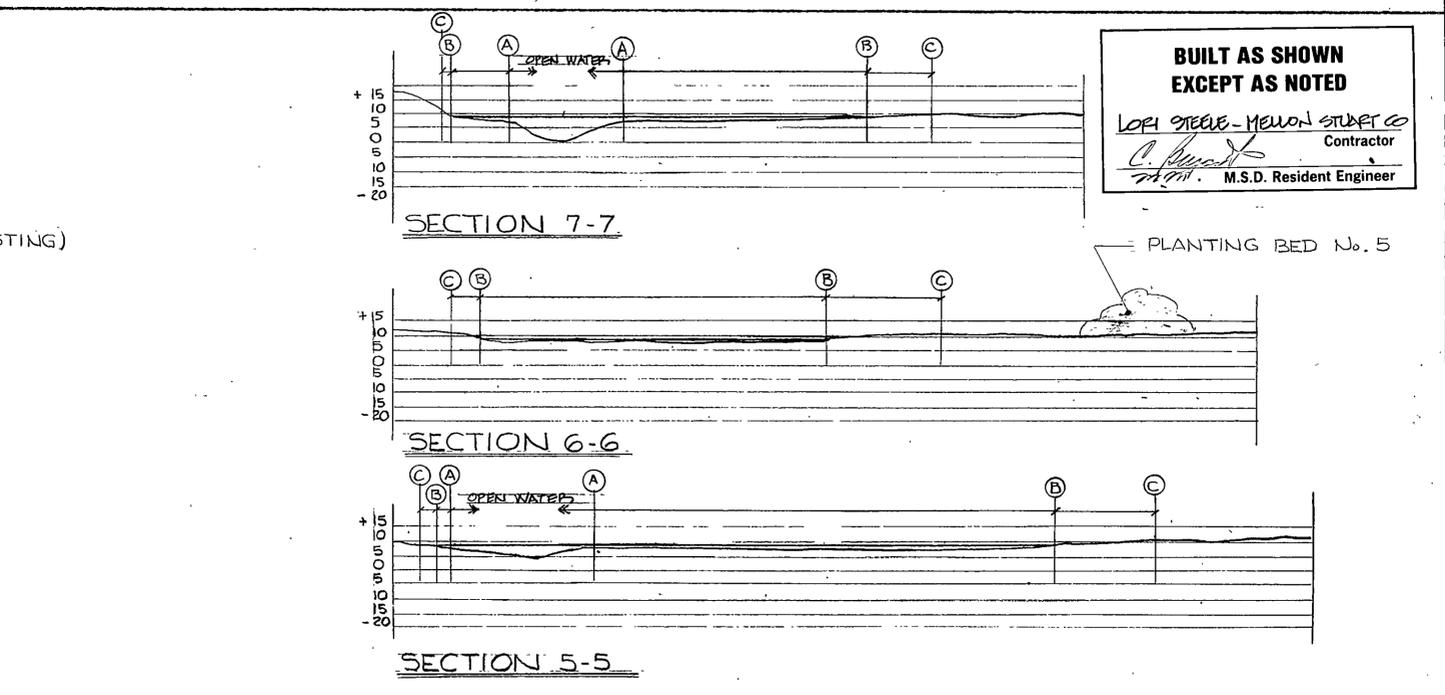
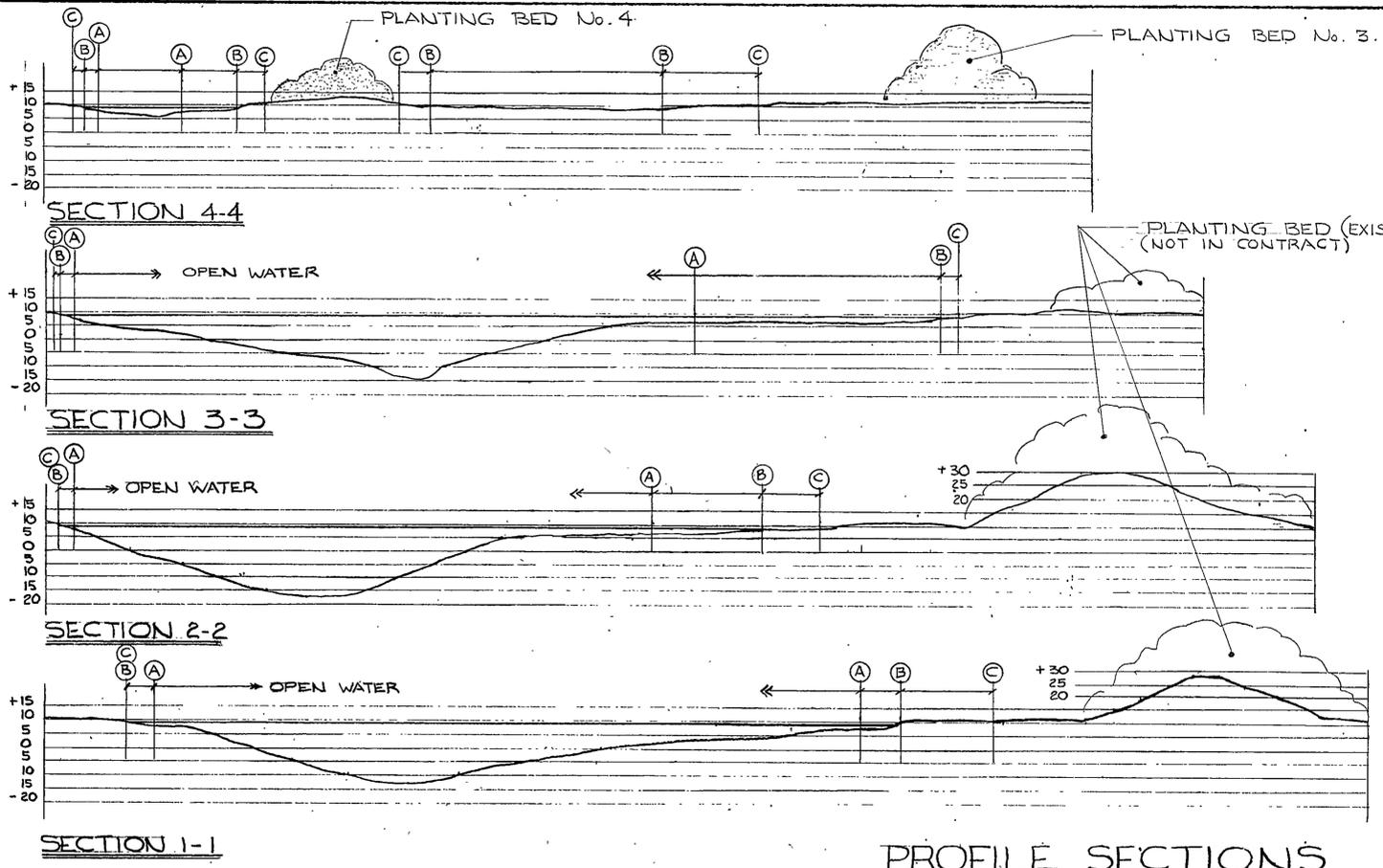
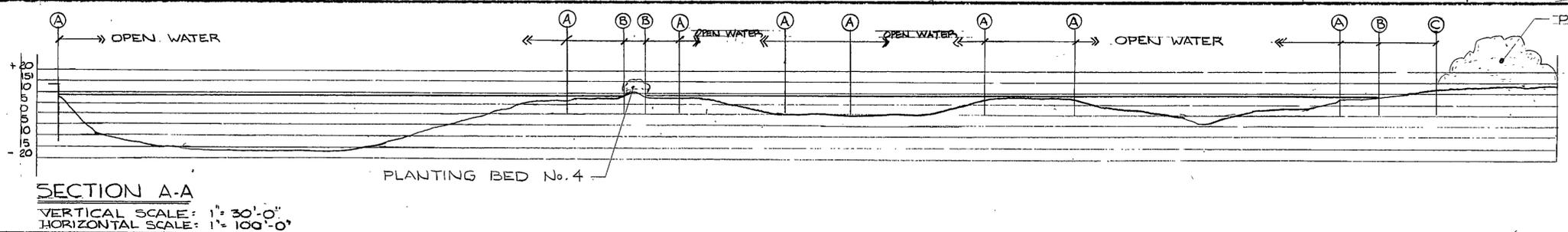
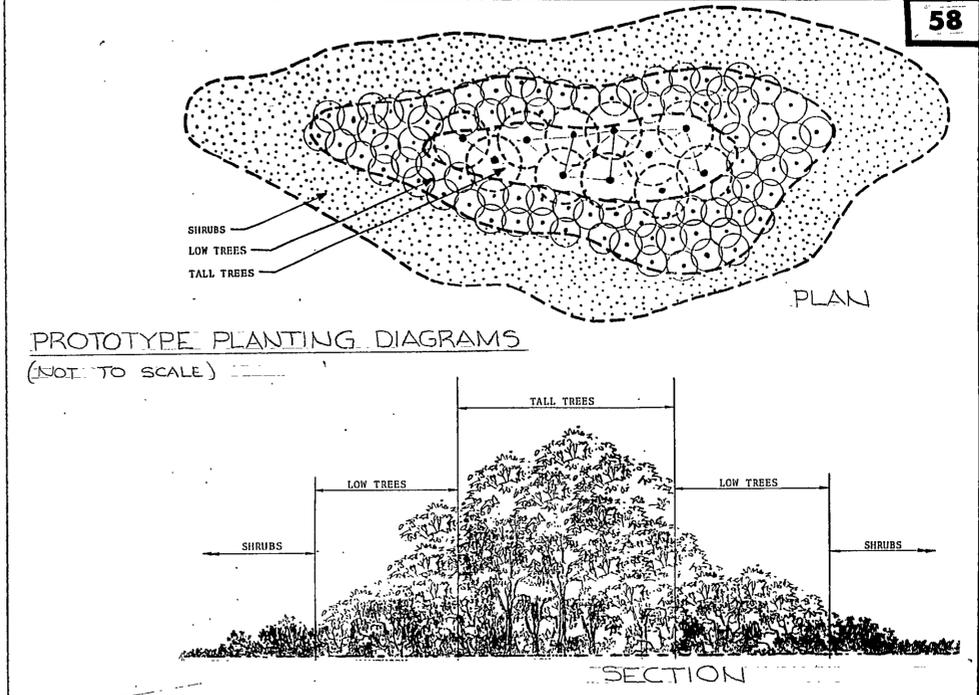
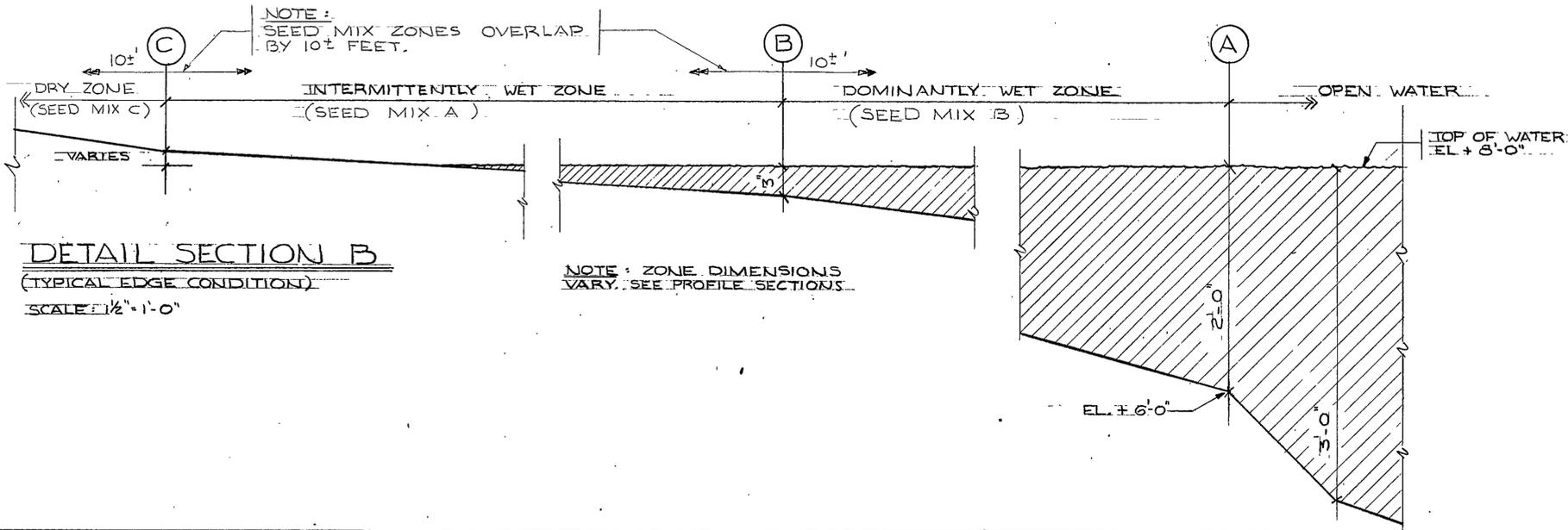
- NOTES:**
- PLANT MATERIAL LOCATIONS WITHIN PLANTING BEDS WILL BE FIELD LOCATED AND STAKED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER (SEE DIAGRAMS - SH L-2)
 - SEED MIX AREAS ARE TO BE CONSIDERED AS OVERLAPPING BY 10 FT. AND NOT ISOLATED AND DISTINCT ZONES.

**BUILT AS SHOWN
EXCEPT AS NOTED**

LOPA STEELE MELLON STUART
Contractor

M.S.D. Resident Engineer

REVISIONS			THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO	
NO.	DATE	BY		
			CALUMET SEWAGE TREATMENT WORKS CONTRACT 75-215-2P ADDITIONAL GRAVITY CONCENTRATION TANKS LANDSCAPING	
			OCT. 1986	



REVISIONS			THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO	Correct <i>George J. Kell</i>
NO.	DATE	BY		
			CALUMET SEWAGE TREATMENT WORKS CONTRACT 75-215-2P ADDITIONAL GRAVITY CONCENTRATION TANKS	Approved <i>Robert Barkley</i> Assistant Chief Engineer
				Approved _____ Chief
			LANDSCAPING	SCALES SHOWN ABOVE SCALES OF TRAC #
			Designed <i>DJA</i> Drawn <i>GJK</i> Checked <i>DJA</i> Rev. <i>wed</i> DATE OCT., 1986	



Kensington Marsh - Drainage Runoff from Proposed Rail Yard

In order to maintain allowable flow rates into the Kensington Marsh (Marsh), nine (9) proposed detention ponds are included (8 above ground and 1 underground) in the proposed railroad yard project limits. The Marsh is considered “open water” which allows for a higher allowable release rate in comparison to discharging to an underground drainage pipe system. Prior to entering each respective detention pond, runoff would be collected by underdrains wrapped in a permeable filter fabric and located between selected railroad tracks. The underdrains are located in the sub-ballast section. These underdrains connect into pipes that outlet into respective detention ponds. The combination of the ballast, sub-ballast, and underdrains with filter fabric comprise the Volume Control Best Management Practices (VCBMP’s) by minimizing suspended solids entry into the detention ponds. The VCBMP receives credit for the required water quality pre-treatment. Pre-treatment devices such as BaySaver units will be used to filter the parking lot and roof drainage before it enters a respective detention ponds. To mitigate flow rates, the ponds utilize an outlet control structure, which includes orifices, a grate, and discharge pipe. Ultimately, the runoff exits the pond via the discharge pipe and enters the Marsh. The access road to the railyard includes catch basins with a deep sump. The deep sump is used to collect sediment. The pipe leaving the catch basins connects into the pipe network that enters the Marsh (i.e. the road drainage does not enter the detention ponds). See Table A: Kensington Marsh (DP-Marsh) for volume of runoff and flow rates entering the Marsh.

Table A: Kensington Marsh (DP-Marsh)											
2 Year Storm Event			10 Year Storm Event			50 Year Storm Event			100 Year Storm Event		
Storm Duration	Volume	Peak Flow	Storm Duration	Volume	Peak Flow	Storm Duration	Volume	Peak Flow	Storm Duration	Volume	Peak Flow
	CF	CFS		CF	CFS		CF	CFS		CF	CFS
1 Hour	79,873	7.52	1 Hour	170,197	13.71	1 Hour	350,578	33.35	1 Hour	455,635	43.13
2 Hour	141,331	9.39	2 Hour	269,944	16.64	2 Hour	508,573	40.75	2 Hour	644,144	50.92
3 Hour	176,322	9.54	3 Hour	311,745	16.19	3 Hour	574,471	40.82	3 Hour	723,780	49.41
6 Hour	242,810	9.33	6 Hour	406,492	15.39	6 Hour	721,896	38.40	6 Hour	899,008	46.61
12 Hour	315,818	10.41	12 Hour	511,681	17.14	12 Hour	880,240	32.70	12 Hour	1,089,392	41.61
18 Hour	356,867	10.86	18 Hour	552,672	16.97	18 Hour	943,916	32.66	18 Hour	1,164,225	41.72
24 Hour	391,399	10.13	24 Hour	621,435	15.70	24 Hour	1,047,428	30.32	24 Hour	1,290,140	38.29

* The Peak Flow Rates are generated from critical duration analysis. The critical durations for each storm event are 1 hour, 2, hour, 3 hour, 6 hour, 12 hour, 18 hour, and 24 hour. The **BOLD** represents the Peak Flow Rate for each respective Storm Event.



Illinois Coastal Management Federal Consistency Review Letter

August 27, 2021





August 27, 2021

Mr. James Casey, Chief
Lake Michigan Management Section
Illinois Department of Natural Resources
Office of Water Resources
160 N. LaSalle Street, Suite S-703
Chicago, IL 60601

Re: Illinois Coastal Management Federal Consistency Review
CTA Red Line Extension Project
Chicago, Cook County, Illinois

Dear Mr. Casey:

The Chicago Transit Authority (CTA) is preparing a Final Environmental Impact Statement (EIS) for the Red Line Extension (RLE) Project and we are submitting this letter and enclosures for your review and initial determination as to whether a federal consistency review would be required for the RLE Project. This letter describes the project including detailing the portion of the RLE Project that is within the Illinois coastal zone boundaries and the federal financial assistance.

Project Description

CTA, as project sponsor to the Federal Transit Administration (FTA), proposes to extend the Red Line from the existing 95th/Dan Ryan terminal to 130th Street. The proposed 5.6-mile extension would include four new stations near 103rd Street, 111th Street, Michigan Avenue, and 130th Street. Each new station would include bus and parking facilities. This project is one part of the Red Ahead Program to extend and enhance the entire Red Line.

CTA and FTA published a Draft Environmental Impact Statement (EIS) on October 6, 2016 that evaluated the environmental impacts of constructing and operating the RLE Project. The Draft EIS proposed a terminal station, the 130th Street station, located north of 130th Street adjacent to the Metropolitan Water Reclamation District of Greater Chicago (MWRD) Calumet Water Reclamation Plant.

In 2017, the Chicago Housing Authority demolished three housing blocks of the Altgeld Gardens neighborhood, creating an opportunity to relocate the station to the area of the demolished blocks. In 2019, CTA began exploring this opportunity to relocate the 130th Street station adjacent to the Altgeld Gardens neighborhood. The relocated 130th Street station would be constructed in a previously developed area within the Illinois coastal zone. As the project location map depicts (**Enclosure A**), the Illinois Coastal Management Program boundary follows 130th Street in this location. The 130th Street station in the Draft EIS was outside this boundary. However, the relocated 130th Street station (located south of 130th Street) would be within the Illinois coastal zone boundaries. The new station location is currently being evaluated as part of a Supplemental Environmental Assessment (EA).

The 130th Street station would include an at-grade station platform located south of 130th Street. A station entrance would be located at the terminus of the extension north of 132nd Street. A five-bay bus turnaround would be located to the west of the main station for direct transfers. A park & ride facility would be located northwest of the station platform, with another station entrance at the top level to bridge over the tracks to access the station platform for park & ride transfers. CTA Transportation Offices would also be located at the terminus, with a connection to the park & ride facility and nearby station entrance. The Transportation Offices would include office space and restroom facilities for station personnel.

The RLE Project would improve transit access and pedestrian connections to the Forest Preserves of Cook County Beaubien Woods Forest Preserve, located south of the project, and its amenities, including access to the Little Calumet River and the boat launch located within the forest preserve. The RLE Project would open up opportunities to create a gateway to the Beaubien Woods Forest Preserve from the rest of the city and surrounding suburbs through direct connection to the rail transit network through a new station, enhanced bus service connections at the station, and a proposed park & ride facility directly adjacent to the forest preserve.

Although there are wetlands located within the Illinois coastal zone boundaries (between 130th Street and Old 130th Street on both sides of the existing Conrail railroad tracks), these wetlands would not be impacted by the RLE Project.

Stormwater drainage from the relocated 130th Street station would be sent to the existing city stormwater system. Design features would be included to manage stormwater drainage so as not to overload the existing stormwater system.

Federal Financial Assistance

This RLE Project would be funded, in part, by the FTA Capital Investment Grants – New Starts Program, which is a listed federal financial program in the Illinois Coastal Management Program. CTA submitted a request for entry into the Project Development phase in November 2020 and received approval in December 2020. **Enclosure B** includes the letter from FTA approving the RLE Project for entry into Project Development.

We appreciate your review of these materials at your earliest convenience to determine whether a full federal consistency review would be required for the RLE Project. If you have any questions or require further information, please contact me at mfratinardo@transitchicago.com or Robin

Martel at rmartel@wightco.com or 312.261.5730. If preferred, we can set up a virtual meeting to discuss any clarifications or questions you have regarding this request.

Regards,

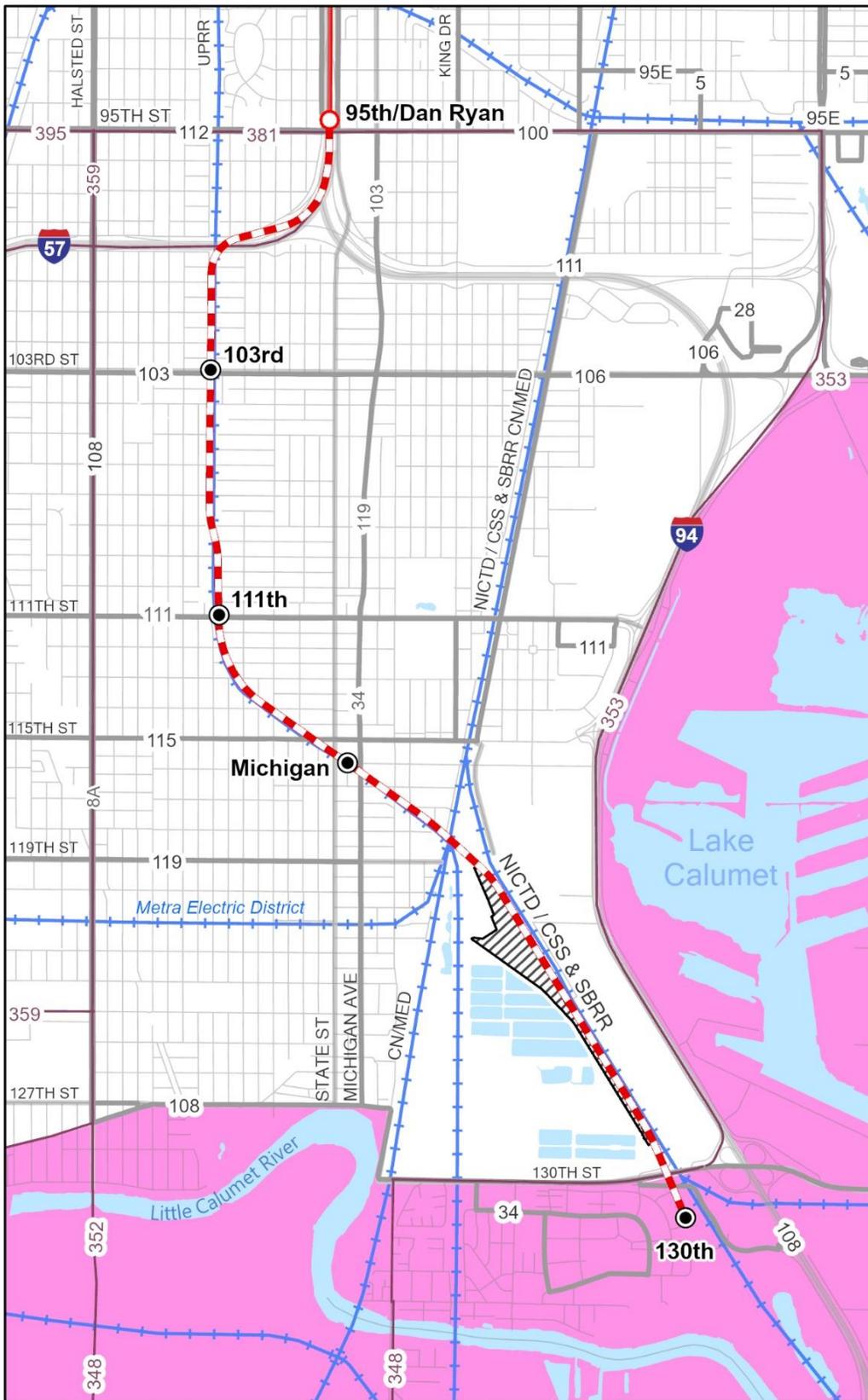
Marlise Fratinardo
Senior Project Manager, Planning
Chicago Transit Authority

Enclosures:

Enclosure A – Project Location Map with Illinois Coastal Zone Boundaries

Enclosure B – FTA Project Development Initiation Letter

Enclosure A – Project Location Map



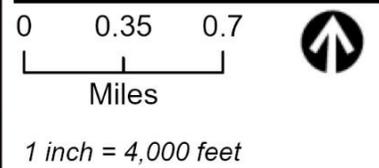
Inset



Legend

- Area In Coastal Zone
- Preferred Alignment
- Proposed Rail Yard
- Proposed Rail Station
- Existing CTA Red Line
- Existing CTA Station
- Railroad
- 34 CTA Bus
- 359 Pace Bus
- Water Bodies

Scale



CN/MED = Canadian National/Metra Electric District, NICTD/CSS & SBRR = Northern Indiana Commuter Transportation District/Chicago South Shore & South Bend Railroad

Enclosure B - FTA's Project Development Initiation Letter



U.S. Department
Of Transportation
**Federal Transit
Administration**

Headquarters

1200 New Jersey Avenue S.E.
Washington DC 20590

Mr. Dorval R. Carter, Jr.
President
Chicago Transit Authority
567 W. Lake Street
Chicago, IL 60661

Re: Project Development Initiation – Red Line Extension

Dear Mr. Carter:

Thank you for your letter, dated November 3, 2020, requesting entry into the Project Development (PD) phase under the Federal Transit Administration's (FTA) Capital Investment Grants (CIG) New Starts program for the Chicago Transit Authority's (CTA) Red Line Extension (RLE) project (the Project). After reviewing your initial letter, FTA requested additional information including an updated map and supporting documentation for available funding on November 17, 2020, and received response on November 27, 2020. At that time, FTA determined that the information provided was sufficient to enter the PD phase.

Please note that the CTA undertakes the PD work at its own risk, and that the Project must still progress through further steps in the CIG program to be eligible for consideration to receive CIG funding.

Per the requirements of the Fixing America's Surface Transportation (FAST) Act, the following activities must be completed during PD:

- Select a locally preferred alternative;
- Have the locally preferred alternative adopted into the fiscally constrained long range transportation plan;
- Complete the environmental review process; and
- Complete the activities required to develop sufficient information for evaluation and rating under the CIG criteria.

The FTA encourages you to familiarize yourself with the information found on the CIG program webpage at <https://www.transit.dot.gov/funding/grant-programs/capital-investments/about-program>. There you will find more details and information on the activities mentioned above including answers to frequently asked questions and the information that must be provided to FTA for eventual project evaluation and rating.

The FTA will be in contact to discuss its technical assistance and project oversight plans as the Project moves through PD. The FTA would appreciate periodic updates from CTA on the status

of completion of PD activities. CTA must contact FTA no later than six months prior to your anticipated request to enter the Engineering phase so that we can proceed with our formal project oversight process and take the steps necessary to undertake our evaluation and rating.

CTA must formally request an extension from FTA if the PD activities mentioned above and outlined more fully on our website cannot be completed within the two-year timeframe specified in the FAST Act. In determining whether to grant an extension, FTA will consider the reasons an extension is needed, the reasonableness of the proposed revised schedule, and the timeframe needed to complete PD activities. The FTA anticipates extensions will be granted only on an occasional basis rather than on a routine basis, and only for unforeseen and unusual circumstances that might arise. If an extension to the two-year timeframe is not granted by FTA, the Project will be withdrawn from PD. CTA will be asked to complete additional work before being allowed to reapply for entry into the program.

With this entry into PD, CTA has pre-award authority to incur costs for PD activities prior to grant approval and to retain eligibility of those activities for future FTA grant assistance. PD activities include the work necessary to complete the environmental review process and as much engineering and design activities as CTA believes are necessary to support the environmental review process. Upon completion of the environmental review process, FTA extends pre-award authority to project sponsors in PD to incur costs for as much engineering and design as necessary to develop a reasonable cost estimate and financial plan, utility relocation, and real property acquisition and associated relocations. This pre-award authority does not constitute a commitment that future Federal funds will be approved for PD or any other Project cost. As with all pre-award authority, relevant Federal requirements must be met prior to incurring costs in order to preserve eligibility of the costs for future FTA grant assistance.

If you have any questions or comments, please contact Faisal Chowdhury at (202) 366-9851 or faisal.chowdhury@dot.gov.

Sincerely,

 Felicia L. James December 15, 2020

Felicia L. James
Associate Administrator for Planning and En...
Signed by: FELICIA LANISE JAMES

Felicia L. James
Associate Administrator for Planning
and Environment

cc: Kelley Brookins, Regional Administrator, TRO-5



IDNR Response to Illinois Coastal Management Federal Consistency Review Letter

October 8, 2021



BJ Pritzker, Governor

Colleen Callahan, Illinois Department of Natural Resources Director

160 N. LaSalle St., Suite S-703 • Chicago, Illinois 60601 • 312-814-1405 • www.dnr.illinois.gov/cmp

October 8, 2021

Marlise Fratinardo
Chicago Transit Authority
567 W. Lake Street
Chicago, IL 60661

RE: IDNR/CMP Federal Consistency Certificate IFC2021017 by the Chicago Transit Authority for the extension of the Red Line from the existing 95th/Dan Ryan terminal to 130th Street, in Chicago, IL

Dear Ms. Fratinardo,

Thank you for the above referenced Illinois Coastal Management Program (ICMP) Federal Consistency Certificate (FCC) dated August 27, 2021. Department staff has reviewed the FCC and concur that the proposed activity complies with the enforceable policies of the ICMP and will be conducted in a manner consistent with the ICMP.

If you have any questions, feel free to contact me at 312 793-5947 or james.casey@illinois.gov.

Sincerely,

A handwritten signature in black ink that reads "James P. Casey".

James P. Casey