

Attachment F - USACE and Illinois Coastal Management Program Supporting Information



Approved Jurisdictional Determination Request and Kensington Marsh Coordination

September 15, 2021



567 West Lake Street Chicago, Illinois 60661-1498 TEL 312 664-7200 www.transitchicago.com

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 preapplication 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

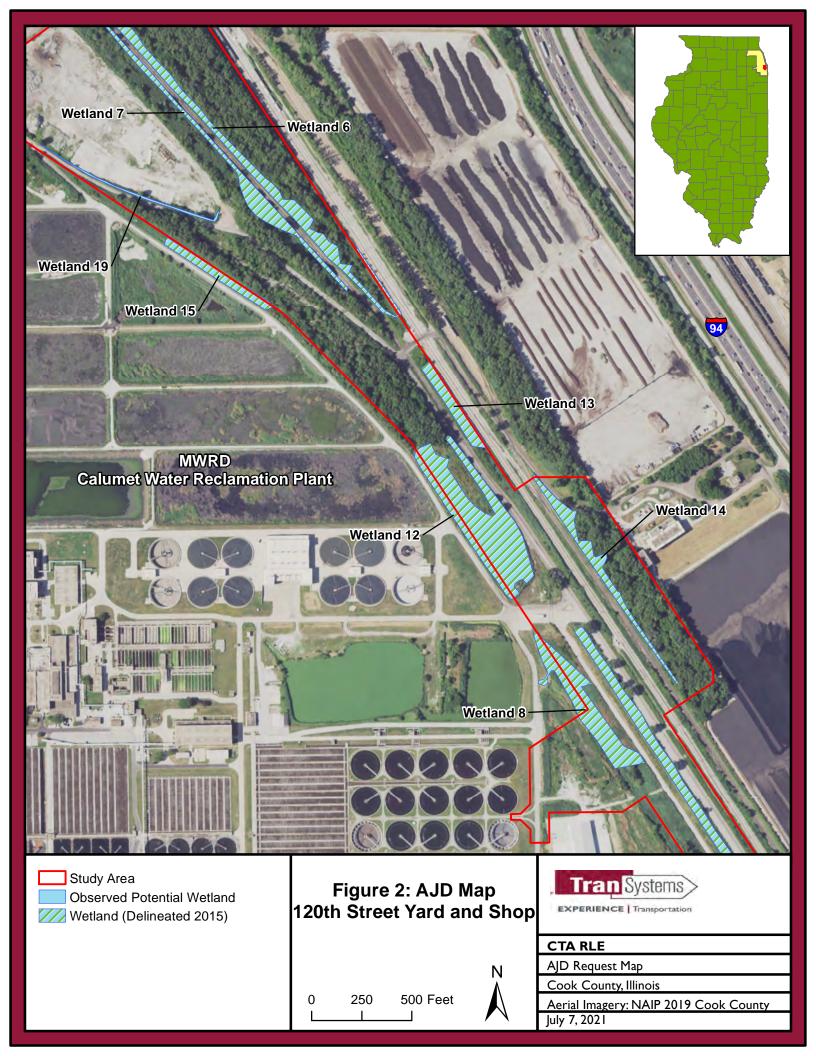
Additionally, you may either call our branch telephone at 312.846.5530 or view our website at http://www.lrc.usace.army.mil/Portals/36/docs/Regulatory/newapps.pdf to determine which number and project manager has been assigned to your request. Project Manager contact information can be found here: http://www.lrc.usace.army.mil/Missions/Regulatory/ContactInfo.asp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

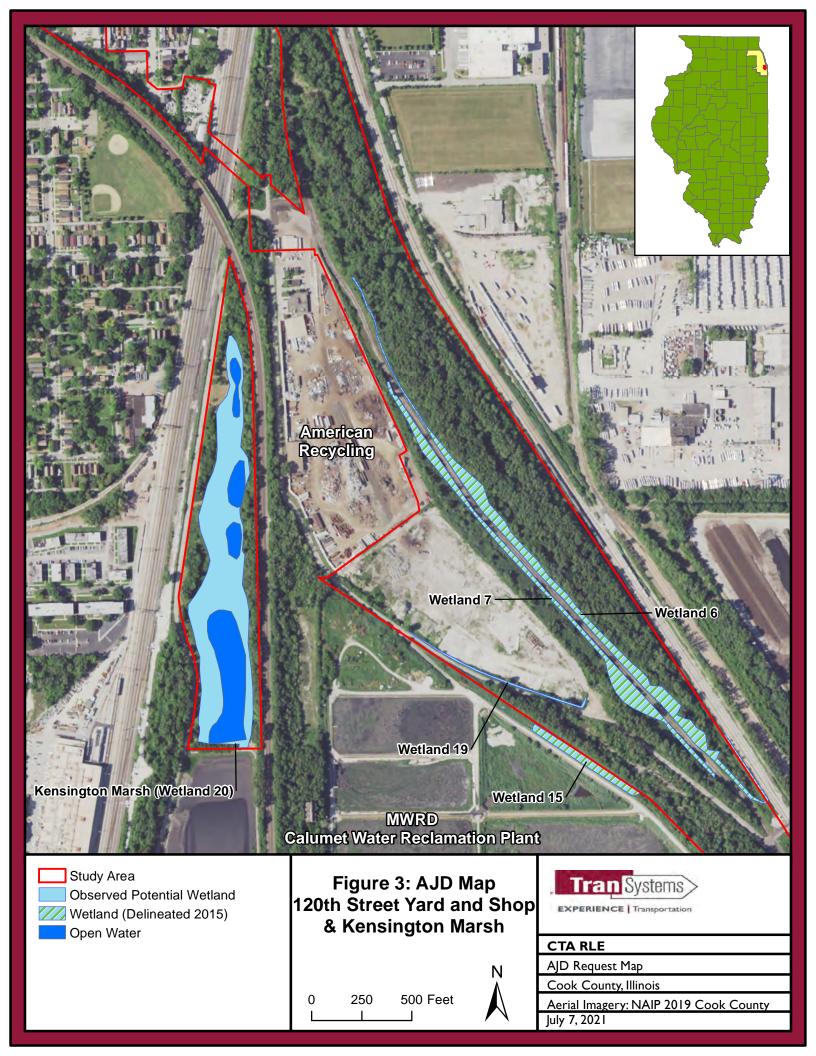
SECTION I - LOCATION AND INFORMATION ABOUT PROPERTY TO BE SUBJECT TO A JURISDICTIONAL DETERMINATION 1. PROPERTY ADDRESS / LOCATION CTA RLE Extension 2. CITY (Name) OR UNINCORPORATED 3. STATE 4, ZIP CODE Chicago 60627/60628 Illinois 5. COUNTY 6. TOWNSHIP NAME Cook Lake Calumet 9. TOWNSHIP 7. QUARTER 8.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

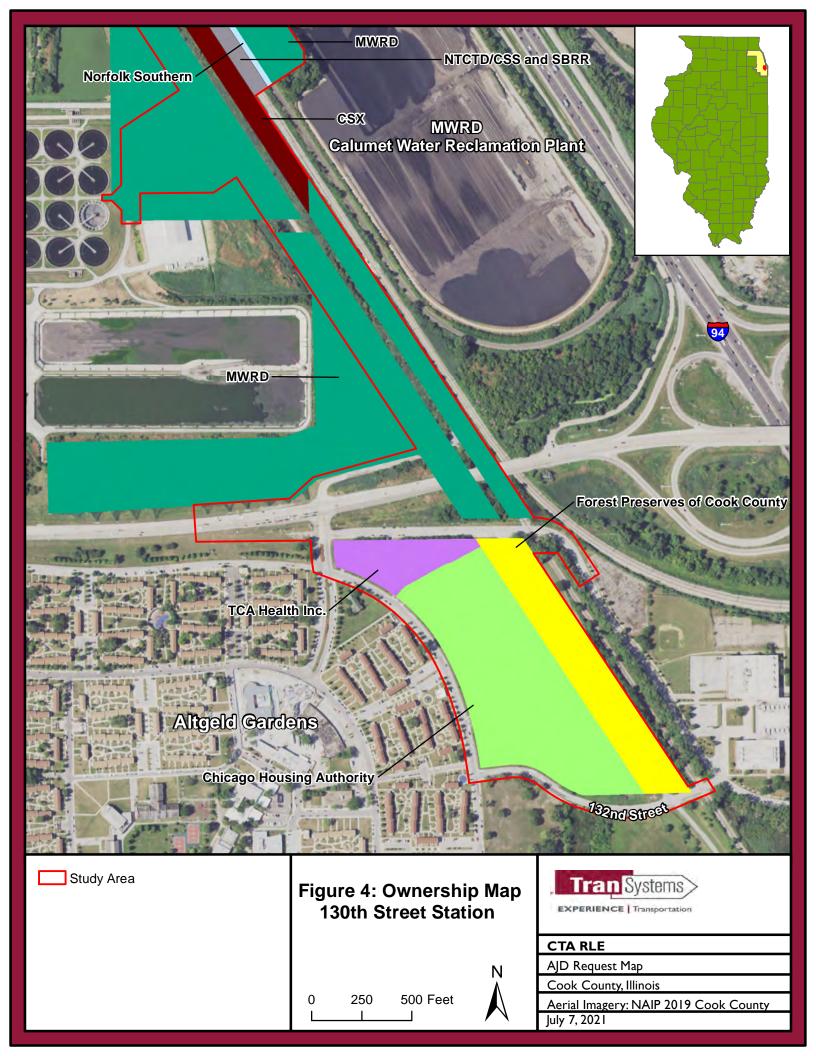
			DJECT PREVIOUSLY PERMITTED BY USACE? ** YES NO CORPS PERMIT NO CORPS PERMIT ** THE PERMITTEE'S NAME AND / OR ADDRESS, AND CORPS PERMIT ** THE
See attached discussion			
	SECT	ION II - PROPERTY OWI	NER CONTACT INFORMATION
1. PROPERTY OWNER NAME (Last, F	irst Mi) (must b	e an individual)	
Fratinardo, Marlise (Ms.)(Project	Representative	e)/ Ellen Avery (Ms.)(I	Property Owner Representative) - See Enclosure B
2. PROPERTY OWNER COMPANY (if			
	-	· · · · · · · · · · · · · · · · · · ·	strict of Greater Chicago (MWRD) - See Enclosure B
3. MAILING ADDRESS (Post Office Bo	x, Street, City, S	State and Zip Code)	
567 West Lake Street Chicago, Illinois 60661-1489			
Cincago, inmois occor-1409			
4. DAYTIME TELEPHONE NUMBER	5. FAX NUMB	ER	6. E-MAIL ADDRESS
312-681-4124			mfratinardo@transitchicago.com
s	SECTION III - RI	EQUESTOR NON-PROP	ERTY OWNER CONTACT INFORMATION
IF THE PERSON REQUESTING THE CONTACT INFORMATION HERE.	IURISDICTION	AL DETERMINATION IS I	NOT THE PROPERTY OWNER, PLEASE ALSO SUPPLY THE REQUESTOR'S
1. REQUESTOR'S NAME (Last, First N	11)		
Fratinardo, Marlise (Ms.)			
2. REQUESTOR'S COMPANY (if applic	cable)		
Chicago Transit Authority (CTA)			
3. MAILING ADDRESS (Post Office Bo	x, Street, City, S	State and Zip Code)	
567 West Lake Street			
Chicago, Illinois 60661-1489			
4. DAYTIME TELEPHONE NUMBER	5. FAX NUMB	ER	6. E-MAIL ADDRESS
312-681-4124			mfratinardo@transitchicago.com
	SECTIO	ON IV - OTHER DATA AN	ID SIGNATURE CERTIFICATION
1. OTHER DATA / INFORMATION THA	T MAY ASSIST	WITH DETERMINATION	V
		form is listed as Enclo	osure A. Enclosures additional to this document include:
Enclosure B – AJD Resource Figu		_	
Enclosure C – Project AJD for LR Enclosure D – Hey & Associates 2			
Enclosure E – Kensington Marsh I			
Enclosure F - Preliminary Drainag	ge Plan		
Enclosure G – Kensington Marsh	Storm Event V	olume and Peak Flow	Data
Please provide a map and / or copy of t	he plat of surve	y identifying the physical t	poundaries of the property.
Additionally, if you have any of the follor survey, and site photographs.	wing information	n, please include it with yo	our request: wetland delineation, relevant maps, drain tile survey, topographic
			site map, plat of survey, or in a separate drawing: the footprint, location, and necessary delays of processing subsequent permits, if required.
I hereby certify that the information cont	tained in the Re	quest for a Jurisdictional [Determination is accurate and complete:
2a. PROPERTY OWNER (Last, First M	/)	b. DATE (YYYYMMDD)	c. PROPERTY OWNER'S SIGNATURE

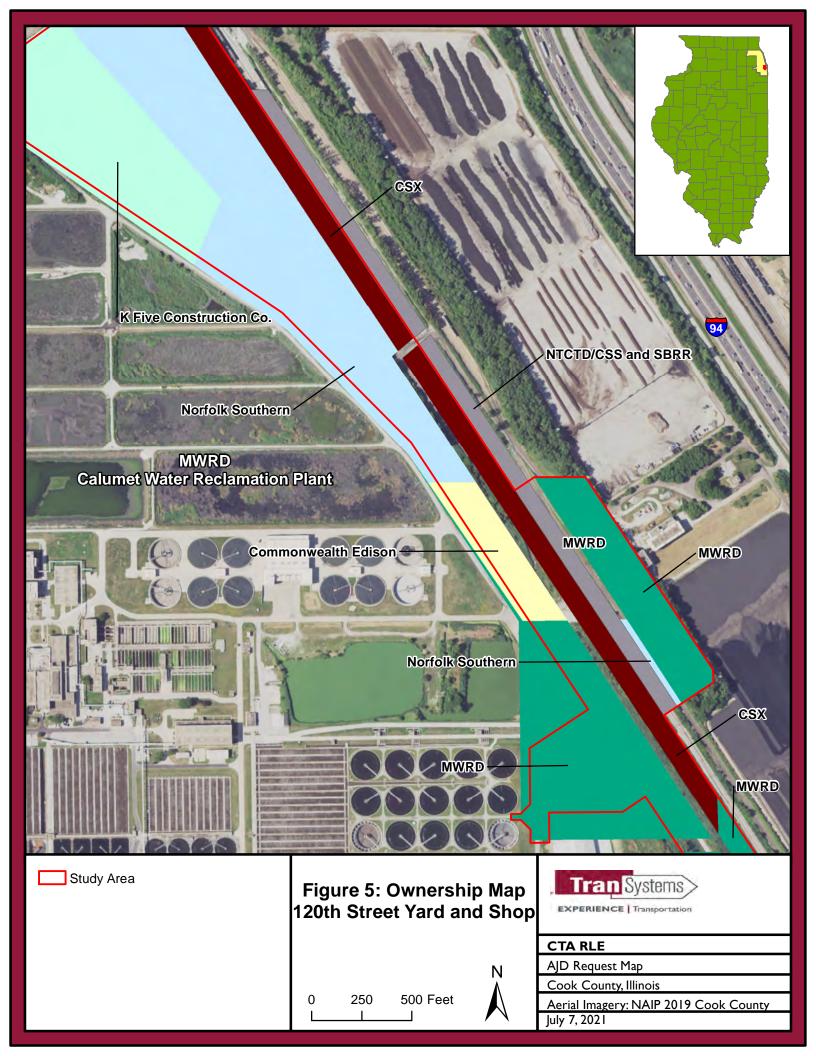
LRC FORM 10, JUN 2016 Page 2 of 2

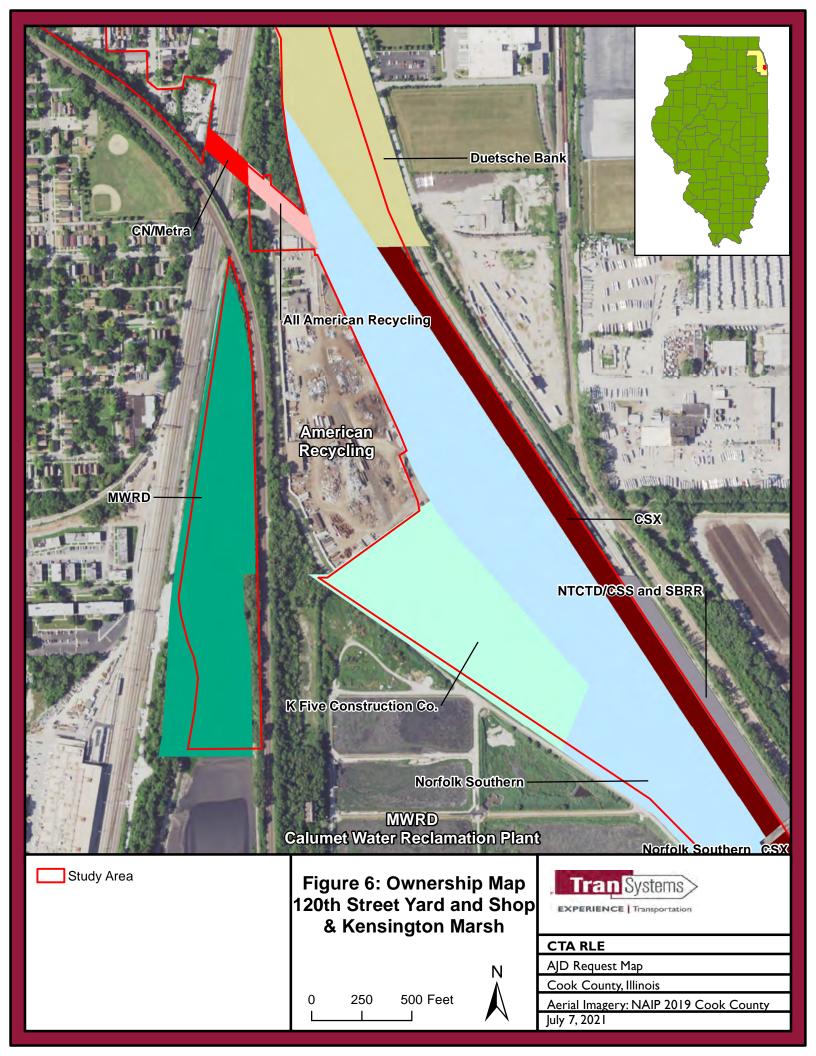












DEPARTMENT OF THE ARMY



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)

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		
Attache	Attached is:				
	INITIAL PROFFERED PERMIT (Standard Permit or L	A			
	PROFFERED PERMIT (Standard Permit or Letter of P	В			
	PERMIT DENIAL	С			
X	APPROVED JURISDICTIONAL DETERMINATION	D			
	PRELIMINARY JURISDICTIONAL DETERMINATI	ON	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 reaproffered permit in clear concise statements. You may attach additional objections are addressed in the administrative record.)			
ADDITIONAL INFORMATION: The appeal is limited to a review record of the appeal conference or meeting, and any supplemental clarify the administrative record. Neither the appellant nor the Coryou may provide additional information to clarify the location of in	information that the review officer rps may add new information or an	has determined is needed to alyses to the record. However,	
POINT OF CONTACT FOR QUESTIONS OR INFORMATION:			
If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regard also contact:	ding the appeal process you may	
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	Jacob Siegrist Appeal Review Officer Great Lakes and Ohio River Div CELRD-PD-REG 550 Main Street, Room 10032 Cincinnati, Ohio 45202-3222 Phone: (513) 684-2699 Fax: (51		
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.			
	Date:	Telephone number:	
Signature of appellant or agent.			

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

Thi	is form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.
	CCTION I: BACKGROUND INFORMATION
A.	REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): June 29, 2016
В.	DISTRICT OFFICE, FILE NAME, AND NUMBER: Chicago District, ComEd, LRC-2016-330
C.	PROJECT LOCATION AND BACKGROUND INFORMATION: NW of I-94 and 130 th Street State: Illinois County/parish/borough: Cook City: Chicago Center coordinates of site (lat/long in degree decimal format): Lat. 41.667957°N, Long87.601762° 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
	CCTION II: SUMMARY OF FINDINGS
A.	RHA SECTION 10 DETERMINATION OF JURISDICTION.
	ere Are no "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the riew area. [Required]
B.	CWA SECTION 404 DETERMINATION OF JURISDICTION.
The	ere 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]
	 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.
SE	CCTION 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): 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:
Pro	ovide 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:

acres.

■ Wetlands:

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 <u>sole</u> 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.
SE	CTION IV: DATA SOURCES.
	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 N 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). Pick List, 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):
В.	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

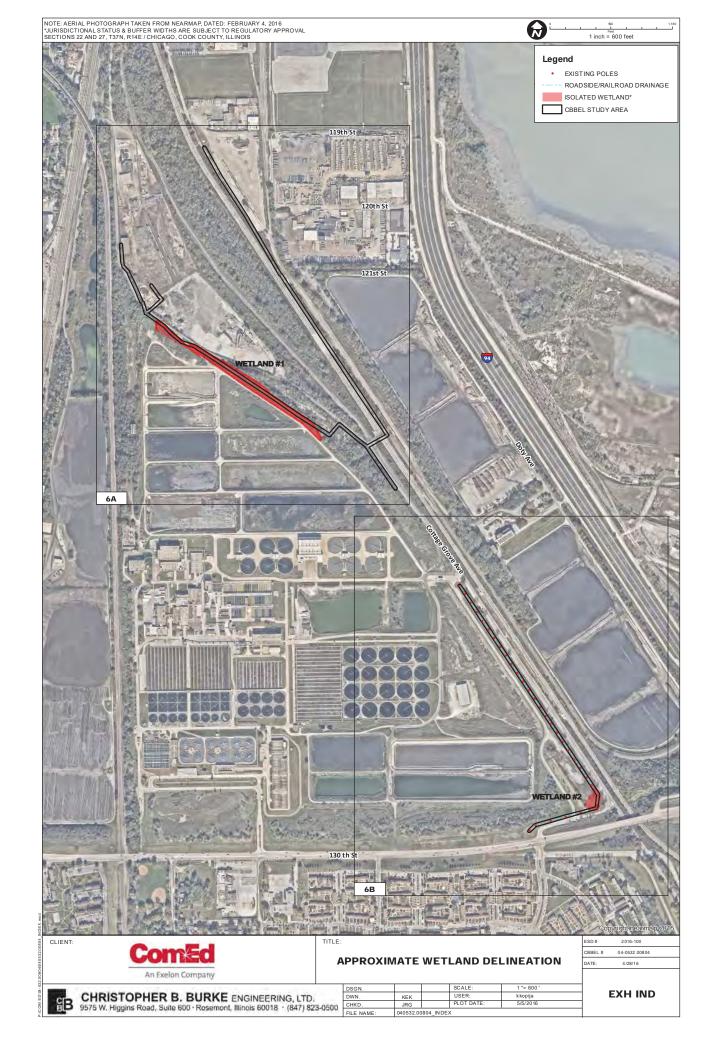
This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A.	REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): June 29, 2016
В.	DISTRICT OFFICE, FILE NAME, AND NUMBER: Chicago District, ComEd, LRC-2016-330
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	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
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В.	CWA SECTION 404 DETERMINATION OF JURISDICTION.
The	re 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]
	 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.
SEC	CTION 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):
SEC	CTION 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):
В. А	DD	ITIONAL 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:



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

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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 (Phragmites australis)
3	0.83	0.83	6.36	4.5	No ⁴	Marsh	Common reed and purple loosestrife (Lythrum salicaria)
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 (Acer negundo), Common reed (Phragmites australis)
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					

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.

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

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.

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.

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.

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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

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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.

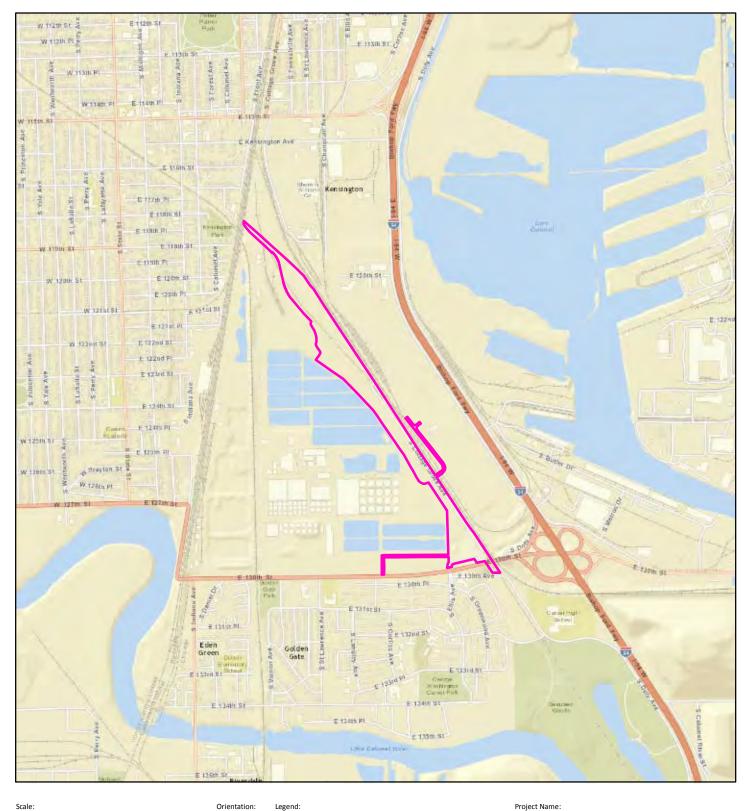
Wetland 14 is a swale located on the east side of the Indiana Harbor Belt Railroad/Metra South Shore line, but west of the MWRD fence around some sludge drying beds and other facilities. It is partially wooded by box elder and cottonwood but in open areas remains dominated by common reed.

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.



2,000 Feet

Project Permanent Envelope

Project Number: 15-0218

Latest Revision: 10/1/2015

Prepared by:

Hey and Associates, Inc.

Engineering, Ecology and Landscape Architecture

CTA Red Line Extension

Prepared for:

CDM Smith

Location Information:

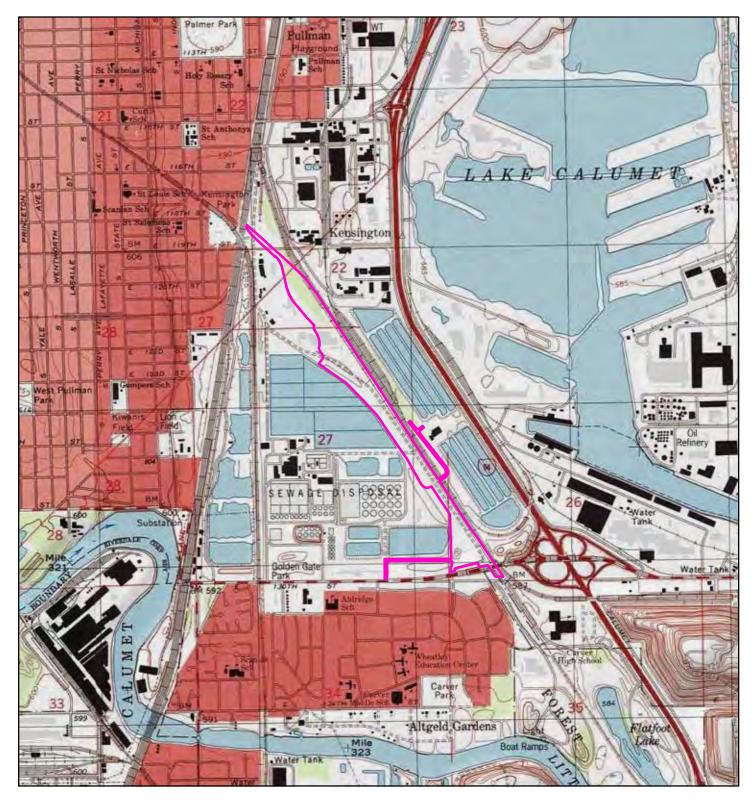
T.37N.-R.14E., Sections 22, 26 & 27

Exhibit Title:

Exhibit:

Project Location

1





Orientation:

Legend:

2,000 Feet Latest Revision: 10/1/2015

Project Permanent Envelope

Prepared by:

Project Number: 15-0218

Hey and Associates, Inc.

Engineering, Ecology and Landscape Architecture

Project Name:

CTA Red Line Extension

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CDM Smith

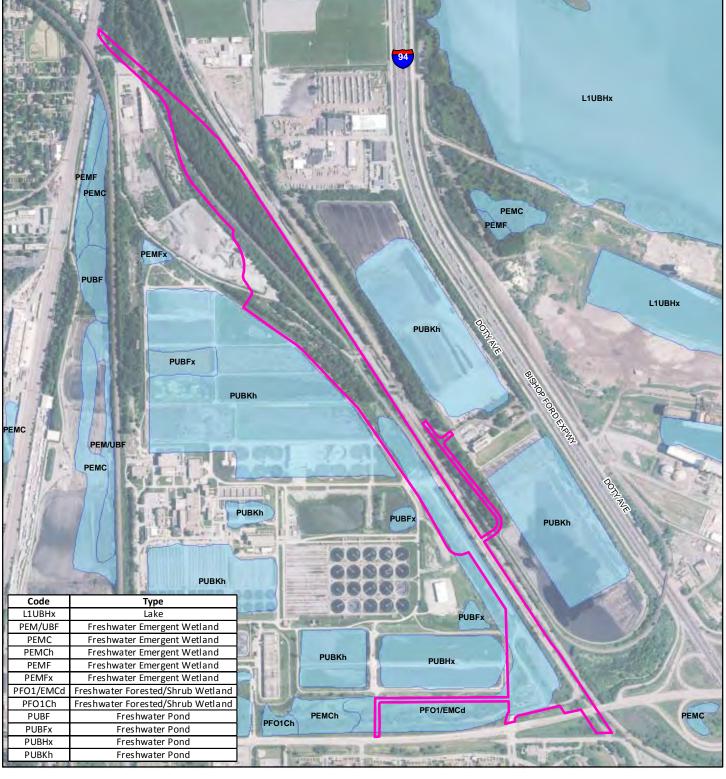
Location Information:

Lake Calumet Quadrangle

Exhibit Title:

Exhibit:

U.S.G.S. Topographic Map





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

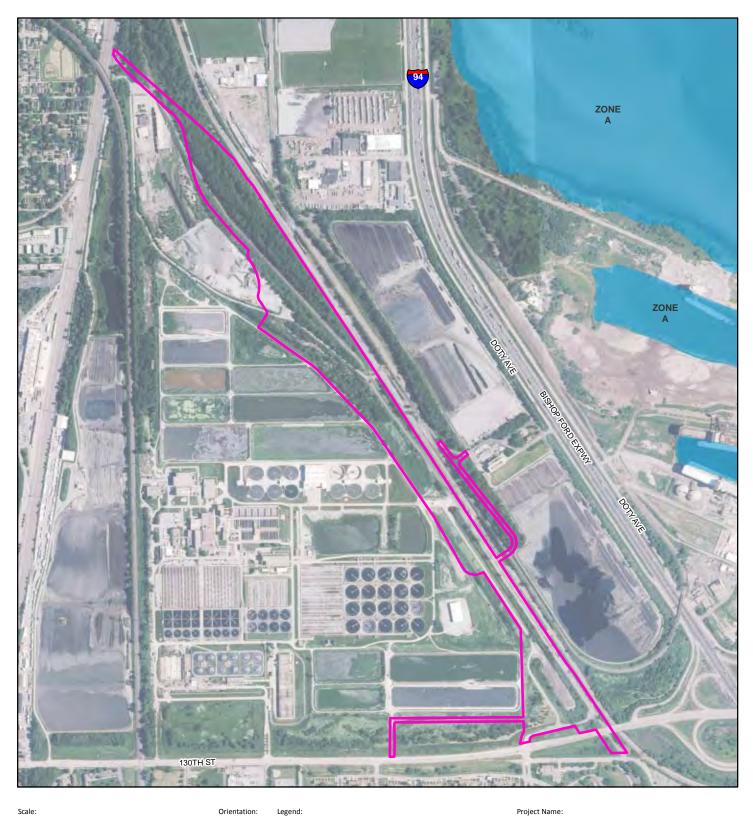
National Wetland Inventory

CTA Red Line Extension

Prepared for:

CDM Smith

NWI Date: 1981





1,000 Feet

Latest Revision: 10/1/2015

100 Year Flood Zone Project Permanent Envelope

Project Number: 15-0218

Prepared by:

Hey and Associates, Inc.

Engineering, Ecology and Landscape Architecture

CTA Red Line Extension

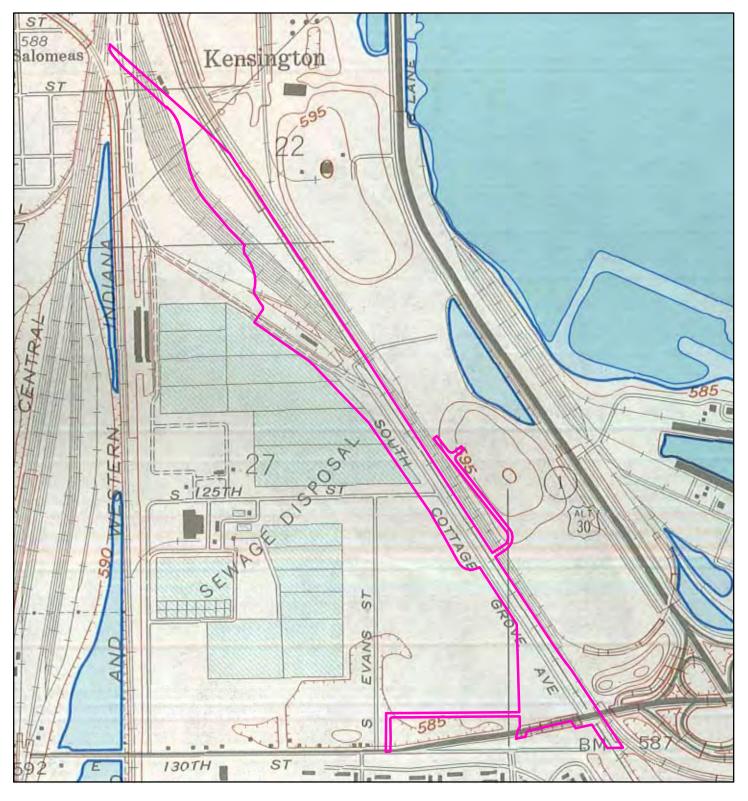
Prepared for:

CDM Smith

Panel #:

17031C0661J

Exhibit:



Legend: Project Permanent Envelope 1,000 Feet Project Number: 15-0218

Latest Revision: 10/1/2015

CTA Red Line Extension

Prepared for:

CDM Smith

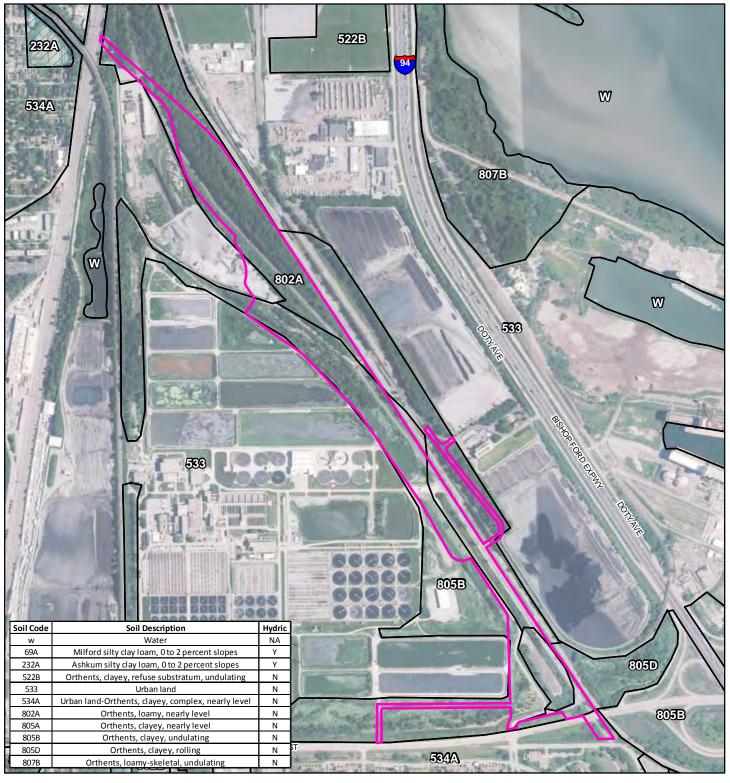
Hydro Atlas Date:

1966

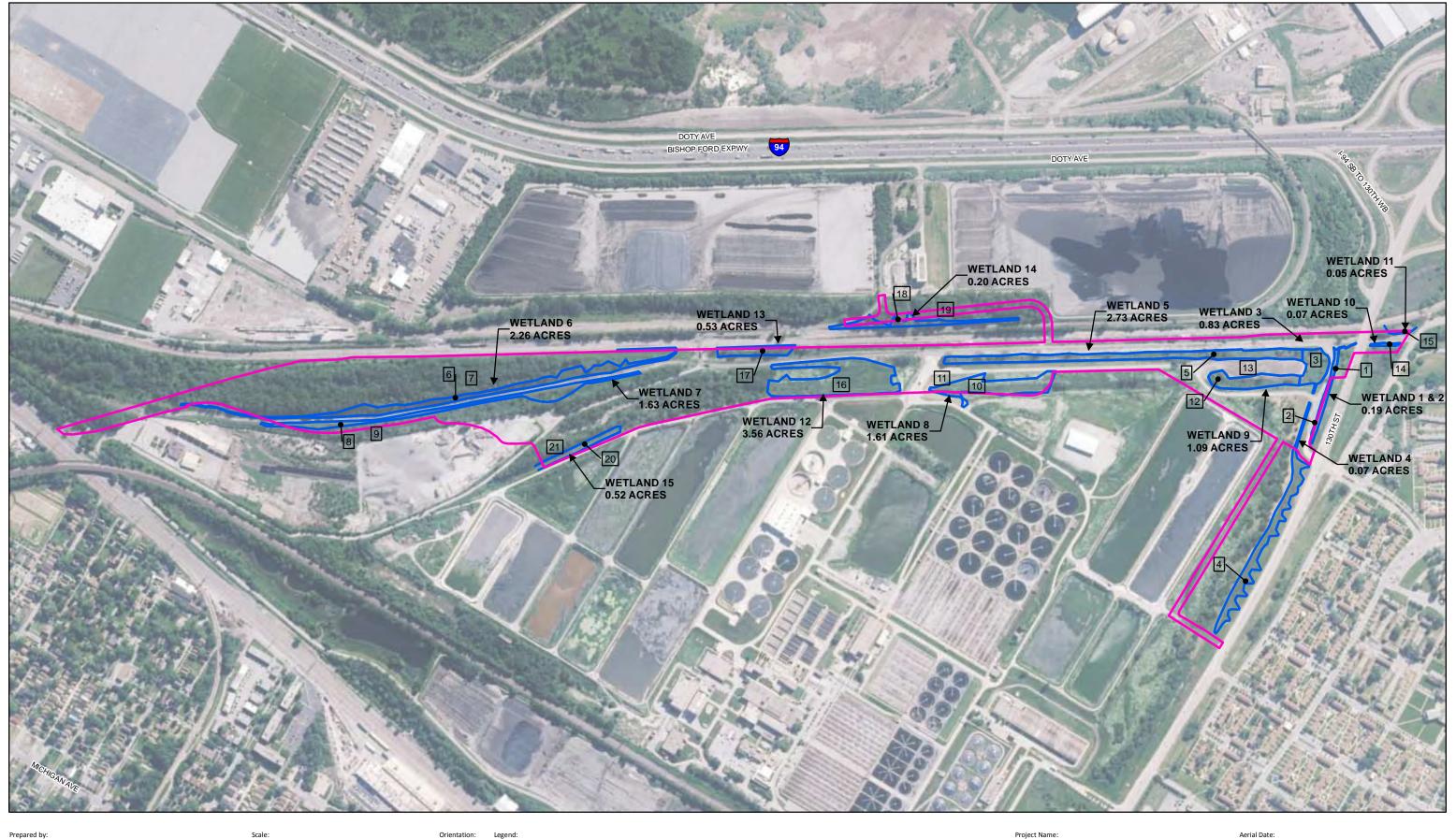
Exhibit:

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

Prepared by:







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



Orientation:

Latest Revision: 10/1/2015

Data Point

Surveyed Wetland Boundary (Labled wetland acreages for area within Project Permanent Envelope only)

Project Permanent Envelope

Project Name:
CTA Red Line Extension

Prepared For: Exhibit Title: CDM Smith Wetlan

Wetland Boundary

2014

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

Project Number: 15-0218 Project Name:

CTA Red Line Extension

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

Exhibit Title: Exhibit:

SITE: Wetland 1 & 2 - CTA Red Line Extension

LOCALE: Lake Calumet
BY: J Mengler, V Mosca
DATE: 8/13/2015

CONSERVATISM-

BASED METRICS

IVILITATES	
MEAN C (NATIVE SPECIES)	1.38
,	
MEAN C	
(ALL SPECIES)	0.85
,	0.83
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

13
8
0.38
-0.23
-0.50
0.77
0.62
0.00
0.00
0.92

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

4.50
1.50
2.00
2.00
7.00
n/a
6.36
0.30
3.67
25.98
0.67
0.17
0.00
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 % ANNUAL	0.00
% PERENNIAL	0.83

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

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

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 % ANNUAL	0.00
% PERENNIAL	0.82

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

	1
MEAN C (NATIVE SPECIES)	1.75
(NATIVE SPECIES)	1./5
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

IVIETRICS	
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 NAME				MIDWEST			
SPECIES	(NWPL/	SPECIES	COMMON		WET			
ACRONYM	MOHLENBROCK)	(SYNONYM)	NAME	C VALUE	INDICATOR	HABIT	DURATION	NATIVITY
		Ambrosia artemisiifolia						
ambart	Ambrosia artemisiifolia	elatior	Annual Ragweed	0	FACU	Forb	Annual	Native
ambtri	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	Forb	Annual	Native
branig	Brassica nigra	BRASSICA NIGRA	Black Mustard	0	UPL	Forb	Annual	Adventive
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
oenbie	Oenothera biennis	Oenothera biennis	Evening Primrose	0	FACU	Forb	Biennial	Native
	Parthenocissus	Parthenocissus						
parqui	quinquefolia	quinquefolia	Virginia-Creeper	2	FACU	Vine	Perennial	Native
	Phragmites australis							
phrausu	ssp. australis	Phragmites australis	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
rhacat	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	Shrub	Perennial	Adventive
ribame	Ribes americanum	Ribes americanum	Wild Black Currant	7	FACW	Shrub	Perennial	Native
salint	Salix interior	Salix interior	Sandbar Willow	1	FACW	Shrub	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	Forb	Perennial	Adventive
vitrip	Vitis riparia	Vitis riparia	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 32 SPECIES RICHNESS (NATIVE) 21 % NON-NATIVE WET INDICATOR 0.34 (ALL) -0.06 WET INDICATOR (NATIVE) -0.14 % HYDROPHYTE (MIDWEST) 0.66 % NATIVE PERENNIAL 0.53 % NATIVE ANNUAL % ANNUAL 0.06 0.09 % PERENNIAL 0.78

	SPECIES NAME				MIDWEST			
SPECIES	(NWPL/	SPECIES	COMMON		WET			
ACRONYM	MOHLENBROCK)	(SYNONYM)	NAME	C VALUE	INDICATOR	HABIT	DURATION	NATIVITY
		Acer negundo var.						
aceneg	Acer negundo	violaceum	Box Elder	0	FAC	Tree	Perennial	Native
agralb	Agrostis gigantea	AGROSTIS ALBA	Red Top	0	FACW	Grass	Perennial	Adventive
acnalt	Amaranthus tuberculatus	Acnida altissima	Rough-Fruit Amaranth	0	OBL	Forb	Annual	Native
ambtri	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	Forb	Annual	Native
andger	Andropogon gerardii	Andropogon gerardii	Big Bluestem	5	FAC	Grass	Perennial	Native
arcmin	Arctium minus	ARCTIUM MINUS	Lesser Burrdock	0	FACU	Forb	Biennial	Adventive
artvul	Artemisia vulgaris	ARTEMISIA VULGARIS	Common Mugwort	0	UPL	Forb	Perennial	Adventive
ascinc	Asclepias incarnata	Asclepias incarnata	Swamp Milkweed	4	OBL	Forb	Perennial	Native
cirdis	Cirsium discolor	Cirsium discolor	Field Thistle	2	FACU	Forb	Biennial	Native
comcom	Commelina communis	COMMELINA COMMUNIS	Asiatic Dayflower	0	FACU	Forb	Annual	Adventive
cypstr	Cyperus strigosus	Cyperus strigosus	Straw-Color Flat Sedge	1	FACW	Sedge	Perennial	Native
daucar	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	Forb	Biennial	Adventive
eupalt	Eupatorium altissimum	Eupatorium altissimum	Tall Boneset	0	UPL	Forb	Perennial	Native
solgra	Euthamia graminifolia	Solidago graminifolia nuttallii	Flat-Top Goldentop	4	FACW	Forb	Perennial	Native
polsca	Fallopia scandens	Polygonum scandens	Climbing Black- Bindweed	1	FAC	Vine	Perennial	Native
gaubie	Gaura biennis	Gaura biennis	Biennial Beeblossom	2	FACU	Forb	Biennial	Native
helgro	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower Spotted St. John's-	2	FACW	Forb	Perennial	Native
hyppun	Hypericum punctatum	Hypericum punctatum	Wort	4	FAC	Forb	Perennial	Native
liapyc	Liatris pycnostachya	Liatris pycnostachya	Priarie Blazing Star	8	FAC	Forb	Perennial	Native
	,,	, ,	Cut-Leaf Water-		ODI		Danamial	Nethro
lycame	Lycopus americanus	Lycopus americanus	Horehound	5 0	OBL	Forb	Perennial	Native
lytsal	Lythrum salicaria Phragmites australis ssp.	LYTHRUM SALICARIA	Purple Loosestrife	U	OBL	Forb	Perennial	Adventive
phrausu	australis	Phragmites australis	Common Reed	0	FACW	Grass	Perennial	Adventive
	2.250.000	agrinees adderans	Smooth Ground	·		3.033	· c.cai	
physub	Physalis subglabrata	Physalis subglabrata	Cherry	0	UPL	Forb	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
rhacat	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	Shrub	Perennial	Adventive

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

IVIETRICS	
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

IVIETRICS	
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/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY
achmil	Achillea millefolium	ACHILLEA MILLEFOLIUM	Common Yarrow	0	FACU	Forb	Perennial	Adventive
agralb	Agrostis gigantea	AGROSTIS ALBA	Red Top	0	FACW	Grass	Perennial	Adventive
andger	Andropogon gerardii	Andropogon gerardii	Big Bluestem	5	FAC	Grass	Perennial	Native
artvul	Artemisia vulgaris	ARTEMISIA VULGARIS	Common Mugwort	0	UPL	Forb	Perennial	Adventive
ascsyr	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	FACU	Forb	Perennial	Native
cirdis	Cirsium discolor	Cirsium discolor	Field Thistle	2	FACU	Forb	Biennial	Native
cypstr	Cyperus strigosus	Cyperus strigosus	Straw-Color Flat Sedge	1	FACW	Sedge	Perennial	Native
daucar	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	Forb	Biennial	Adventive
eriann	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	Forb	Biennial	Native
erican	Erigeron canadensis	Erigeron canadensis	Canadian Horseweed	0	FACU	Forb	Annual	Native
eupalt	Eupatorium altissimum	Eupatorium altissimum	Tall Boneset	0	UPL	Forb	Perennial	Native
eupper	Eupatorium perfoliatum	Eupatorium perfoliatum	Common Boneset	4	OBL	Forb	Perennial	Native
solgra	Euthamia graminifolia	Solidago graminifolia nuttallii	Flat-Top Goldentop	4	FACW	Forb	Perennial	Native
rhafra	Frangula alnus	RHAMNUS FRANGULA	Glossy Buckthorn	0	FACW	Shrub	Perennial	Adventive
helgro	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	2	FACW	Forb	Perennial	Native
hyppun	Hypericum punctatum	Hypericum punctatum	Spotted St. John's- Wort	4	FAC	Forb	Perennial	Native
jundud	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	4	FACW	Forb	Perennial	Native
juntor	Juncus torreyi	Juncus torreyi	Torrey's Rush	4	FACW	Forb	Perennial	Native
laccan	Lactuca canadensis	Lactuca canadensis	Canadian Blue Lettuce	2	FACU	Forb	Biennial	Native
lycame	Lycopus americanus	Lycopus americanus	Cut-Leaf Water- Horehound	5	OBL	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
muhglo	Muhlenbergia glomerata	Muhlenbergia glomerata	Spiked Muhly	10	FACW	Grass	Perennial	Native
oenbie	Oenothera biennis	Oenothera biennis	Evening Primrose	0	FACU	Forb	Biennial	Native
pancap	Panicum capillare	Panicum capillare	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	Panicum dichotomiflorum	Panicum dichotomiflorum	Fall Panic Grass	0	FACW	Grass	Annual	Native
panvir	Panicum virgatum	Panicum virgatum	Switch Grass	5	FAC	Grass	Perennial	Native
pendig	Penstemon digitalis	Penstemon digitalis	Foxglove Beardtongue	4	FAC	Forb	Perennial	Native
phrausu	Phragmites australis ssp. australis	Phragmites australis	Common Reed	0	FACW	Grass	Perennial	Adventive
scipen	Scirpus pendulus	Scirpus pendulus	Rufous Bulrush	4	OBL	Sedge	Perennial	Native
soldul	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0	FAC	Vine	Perennial	Adventive
solsem	Solidago sempervirens	SOLIDAGO SEMPERVIRENS	Seaside Goldenrod	0	FACW	Forb	Perennial	Adventive
traohi	Tradescantia ohiensis	Tradescantia ohiensis	Spiderwort	2	FACU	Forb	Perennial	Native
verhas	Verbena hastata	Verbena hastata	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

WETTER	
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

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

IVILITATES	
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

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

WILTRICS	
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 WET INDICATOR 0.50 (ALL) -0.13 WET INDICATOR (NATIVE) -0.25 % HYDROPHYTE (MIDWEST) 0.63 % NATIVE PERENNIAL 0.50

0.00

0.88

% NATIVE ANNUAL % ANNUAL

% PERENNIAL

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

IVIETRICS	
MEAN C (NATIVE SPECIES)	2.00
,	
MEAN C (ALL SPECIES)	1.00
, , , , , , , , , , , , , , , , , , , ,	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

<u></u>	
SPECIES RICHNESS (ALL)	4
SPECIES RICHNESS (NATIVE)	2
(IVATIVE)	
% 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	SPECIES NAME	SPECIES	COMMON		MIDWEST WET			
ACRONYM	(NWPL/	(SYNONYM)	NAME	C VALUE	INDICATOR	HABIT	DURATION	NATIVITY
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	Phragmites australis ssp. australis	Phragmites australis	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
vitrip	Vitis riparia	Vitis riparia	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

1.50
0.67
1.50
0.00
1.00
3.00
2.00
10.00
0.56
0.44
0.00
0.00

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

IVIETRICS	
MEAN C (NATIVE SPECIES)	1.17
()	1.1.
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

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

IVIETRICS	
MEANIC	
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	1100
(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

IVILTRICS	
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 % ANNUAL	0.07
% PERENNIAL	0.86

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET	HABIT	DURATION	NATIVITY
	A	Acer negundo var.	Day Eldan	0	546	T	Danama'al	NI-sti
aceneg	Acer negundo	violaceum	Box Elder	0	FAC	Tree	Perennial	Native
ambtri	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	Forb	Annual	Native
arcmin	Arctium minus	ARCTIUM MINUS	Lesser Burrdock	0	FACU	Forb	Biennial	Adventive
consep	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	Forb	Perennial	Native
phaaru	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	Grass	Perennial	Adventive
phrausu	Phragmites australis ssp. australis	Phragmites australis	Common Reed	0	FACW	Grass	Perennial	Adventive
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	Tree	Perennial	Native
rhacat	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	Shrub	Perennial	Adventive
solalt	Solidago altissima	Solidago altissima	Tall Goldenrod	1	FACU	Forb	Perennial	Native
sonuli	Sonchus arvensis ssp. uliginosus	SONCHUS ULIGINOSUS	Field Sow-Thistle	0	FACU	Forb	Perennial	Adventive
typlat	Typha latifolia	Typha latifolia	Broad-Leaf Cat-Tail	1	OBL	Forb	Perennial	Native
ulmame	Ulmus americana	Ulmus americana	American Elm	3	FACW	Tree	Perennial	Native
urtpro	Urtica dioica ssp. gracilis	Urtica procera	Tall Nettle	2	FACW	Forb	Perennial	Native
vitrip	Vitis riparia	Vitis riparia	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

IVIETRICS	
MEANIC	
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

<u></u>	
SPECIES RICHNESS (ALL)	8
CDECIES DIQUINESS	
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	SPECIES NAME (NWPL/	SPECIES	COMMON		MIDWEST WET			
ACRONYM	MOHLENBROCK)	(SYNONYM)	NAME	C VALUE	INDICATOR	HABIT	DURATION	NATIVITY
ACKONTIVI	WOTELINDROCK	Acer negundo var.	IVAIVIL	CVALUE	INDICATOR	HADH	DONATION	NATIVITI
aceneg	Acer negundo	violaceum	Box Elder	0	FAC	Tree	Perennial	Native
			Hedge False					
consep	Calystegia sepium	Convolvulus sepium	Bindweed	1	FAC	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	Forb	Perennial	Adventive
phrausu	Phragmites australis ssp. australis	Phragmites australis	Common Reed	0	FACW	Grass	Perennial	Adventive
rhacat	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	Shrub	Perennial	Adventive
solalt	Solidago altissima	Solidago altissima	Tall Goldenrod	1	FACU	Forb	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat-Tail	0	OBL	Forb	Perennial	Adventive
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	Vine	Perennial	Native

Project Number: 15-0218 Project Name:

CTA Red Line Extension

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

Exhibit Title:

Exhibit:

#9

15-0218 CDM-Smith -- CTA Red Line Extension

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	Cook		Sampling Date:	8/13/2015
Applicant/Owner: CTA/MWRD		State:	: Illin	iois S	ampling Point:	1
Investigator(s): J Mengler, V Mosca		<u> </u>	Section, Towns	ship, Range:	T34N R	14E S26
Landform (hillslope, terrace, etc.):	ch		ocal relief (cor	ncave, convex,	none):	ditch
Slope (%): Lat: 41.660019	9	Long:	-87.5954	129 [Datum:	
Soil Map Unit Name: urban land-orthents clayey comp	olex, nearly			VI Classification	n: r	none
Are climatic/hydrologic conditions of the site typical for	r this time o	of the year?	Υ (If no, explain in	remarks)	
Are vegetation , soil Y , or hydro	logy	significantl	y disturbed?	Y Are "norm	al circumstances"	
Are vegetation , soil , or hydro	logy	naturally p	roblematic?	N present?	iai on cametarioco	Υ
SUMMARY OF FINDINGS				(If needed	l, explain any ansv	vers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present?		Is the s	sampled area	within a wetla	and? Y	
Wetland hydrology present?		If yes	s, optional wet	tland site ID:	Wetland 1	
Remarks: (Explain alternative procedures here or in a	separate r	eport.)		_		
	·	. ,				
Relied primarily upon vegetation and landsca	pe positio	n due to d	ry time of se	eason, and m	ostly urbanland	fill for substrate.
VEGETATION Use scientific names of plan	nts.					
	Absolute	Dominant	Indicator	Dominan	ce Test Workshee	et
Tree Stratum (Plot size: 9 m)	% Cover	Species	Status	Number of Do	minant Species that	
1 Populus deltoides	20	Y	FAC	are OBL, I	FACW, or FAC:	5 (A)
2 Acer saccharinum	20	Y	FACW	Total Num	ber of Dominant	
3 Ulmus americana	5	N	FACW	Species A	cross all Strata:	5 (B)
4			_		minant Species that	
5	45	= Total Cove		are OBL, I	FACW, or FAC:	(A/B)
Sapling/Shrub stratum (Plot size: 4.6 m	1 45	- Total Cove	;1	Provalenc	ce Index Workshe	oot
1 Salix interior	, 15	Υ	FACW	Total % C		
2 Populus deltoides	10	Y	FAC	OBL spec		= 0
3 Fraxinus pennsylvanica	5	N	FACW	FACW sp		
4	-			FAC spec	ies 30 x 3	= 90
5				FACU spe	ecies 0 x 4	= 0
	30	= Total Cove	er	UPL spec		
Herb stratum (Plot size: 1 m sq)			Column to		370 (B)
1 Phragmites australis	95	Y	FACW	Prevalenc	ce Index = B/A =	2.18
2			_	I beedee ee be	41 - M 4 - 41 1	U 4
3				1 -	tic Vegetation Inc	
5					nance test is >50%	=
6					lence index is ≤3.0	
7						
8	-				nological adaptatio orting data in Rema	**
9					ate sheet)	
10				Proble	ematic hydrophytic	vegetation*
	95	= Total Cove	er	(expla	in)	
Woody vine stratum (Plot size: 1 m sq)				•	and hydrology must be
1					esent, unless disturbed	or problematic
2		- Total O		Hydro veget	ophytic ation	
	0	= Total Cove	er.	prese		
Remarks: (Include photo numbers here or on a separ	ate sheet)			I		_
	,					

	scription: (Descr	ine to ti	ne depth ne	eaea	to docu	ıment tr	ie indica	tor or confirm	the absen	ce of indicators.)
Depth Matrix Redox Features							,			
(Inches)	Color (moist)	%	Color (mo	ist)	%	Type*	Loc**	Textur	re e	Remarks
*Type: C =	Concentration, D	= Deplet	tion, RM = R	educ	ed Matri	x, MS =	Masked	Sand Grains.	**Locati	on: PL = Pore Lining, M = Matrix
Hydric S	oil Indicators:							Indicators	for Proble	ematic Hydric Soils:
His	stisol (A1)			San	dy Glev	ed Matrix	(S4)	Coast	Prairie Red	dox (A16) (LRR K, L, R)
	stic Epipedon (A2)			-	dy Redo		(-)			') (LRR K, L)
	ack Histic (A3)			-	-	ıtrix (S6)			•	t or Peat (S3) (LRR K, L, R)
	, ,	4)		- '	•	, ,			-	
	drogen Sulfide (A			_	•	ky Miner	` '		•	Masses (F12) (LRR K, L, R)
	ratified Layers (A5)		-		ed Matri				rk Surface (TF12)
	cm Muck (A10)			-		atrix (F3)		Other	(explain in	remarks)
De	epleted Below Dark	k Surfac	e (A11)	Red	ox Dark	Surface	(F6)			
Th	ick Dark Surface (A12)		Dep	leted Da	ark Surfa	ce (F7)	*Indicate	ors of hydro	phytic vegetation and wetland
Sa	andy Mucky Minera	al (S1)		Red	ox Depr	essions	(F8)			e present, unless disturbed or
5 c	cm Mucky Peat or	Peat (S3	3)	_				,		problematic
Restrictive	Layer (if observe	eq).	•							
	gravel, ballast, fill	ou).						Hydric s	oil presen	17
Depth (inch		nined				•		,	o p. 000	··
						•				
Remarks:										
Area ma	apped as urban	land, a	and located	l aloi	ng road	d at bas	e of an	other road er	nbankme	nt. Probe refusal within 2-
	s due to gravel				Ü					
HYDROL										
'	ydrology Indicato									
Primary Inc	dicators (minimum	of one is	s required; c	heck	all that a	apply)		Seco	ondary Indic	cators (minimum of two required
X Surface	e Water (A1)				Aquatic	Fauna (B	13)		Surface S	Soil Cracks (B6)
High W	ater Table (A2)				True Aq	uatic Plar	nts (B14)	>	C Drainage	Patterns (B10)
Saturat	tion (A3)				Hydroge	n Sulfide	Odor (C	1)	Dry-Seas	on Water Table (C2)
	Marks (B1)									Burrows (C8)
	ent Deposits (B2)				(C3)	ı Kılızosp	neres on	Living Roots	— '	n Visible on Aerial Imagery (C9)
	eposits (B3)					e of Redu	iced Iron	(C4)	_	or Stressed Plants (D1)
					rieseiic	e oi Reul	aceu iioii		_	
	lat or Crust (B4)					ron Redu	iction in T	illed Soils		hic Position (D2)
	eposits (B5)				(C6)			_	FAC-Neu	tral Test (D5)
	tion Visible on Aeria	•	, , ,		Thin Mu	ck Surfac	e (C7)			
X Sparsely Vegetated Concave Surface (B8) Gauge or Well Data (D9)										
<u></u> 224,00	01 : 11 (D0				Other (E	xplain in	Remarks	()		
	Stained Leaves (B9)								
)							107-4	
Water-S		Yes		No _	Χ	Depth (i	inches):			land
Water-Surface was Water table	ervations: ater present? e present?	Yes Yes	!	No	X	Depth (i	inches):		hydi	rology
Water-S Field Obse Surface wa Water table Saturation	ervations: ater present? e present? present?	Yes		-		. ' '	inches):	0	hydi	
Water-S Field Obse Surface wa Water table Saturation (includes ca	ervations: ater present? e present? present? apillary fringe)	Yes Yes Yes	X	No No	Х	Depth (i	inches): inches):		hydi pres	rology
Water-S Field Obse Surface wa Water table Saturation (includes ca	ervations: ater present? e present? present?	Yes Yes Yes	X	No No	Х	Depth (i	inches): inches):		hydi pres	rology
Water-S Field Obse Surface wa Water table Saturation (includes ca	ervations: ater present? e present? present? apillary fringe)	Yes Yes Yes	X	No No	Х	Depth (i	inches): inches):		hydi pres	rology
Water-S Field Obse Surface wa Water table Saturation (includes ca Describe re	ervations: ater present? e present? present? apillary fringe)	Yes Yes Yes	X	No No	Х	Depth (i	inches): inches):		hydi pres	rology
Water-S Field Obse Surface wa Water table Saturation (includes ca	ervations: ater present? e present? present? apillary fringe)	Yes Yes Yes	X	No No	Х	Depth (i	inches): inches):		hydi pres	rology
Water-S Field Obse Surface wa Water table Saturation (includes ca Describe re	ervations: ater present? e present? present? apillary fringe)	Yes Yes Yes	X I	No No g wel	X I, aerial	Depth (i	inches): inches):		hydi pres	rology

Project/Site Lake Calumet CTA Red Line Extension	City/County:	Cool	k Sampling Date: 8/13/2015
Applicant/Owner: CTA/MWRD	· —		nois Sampling Point: 2
Investigator(s): J Mengler, V Mosca		Section, Town	ship, Range: T37N, R14E, S26
Landform (hillslope, terrace, etc.): ditch		Local relief (co	ncave, convex, none): ditch
Slope (%): Lat: 41.6906323	Long:	-87.6205	5465 Datum:
Soil Map Unit Name: urban land-orthents clayey complex,			VI Classification: none
Are climatic/hydrologic conditions of the site typical for this			(If no, explain in remarks)
Are vegetation, soilY, or hydrology	significa	antly disturbed?	Y Are "normal circumstances"
	naturall		N present? Y
SUMMARY OF FINDINGS			(If needed, explain any answers in remarks.)
Hydrophytic vegetation present? Y			
Hydric soil present?	ls th	e sampled area	a within a wetland? Y
Wetland hydrology present? Y	If	yes, optional we	etland site ID: Wetland 2
Remarks: (Explain alternative procedures here or in a sep	arate report.)		
Delied primarily upon vegetation and landagene	agaitian dua ta	day time of a	accon, and mostly urbaniand/fill for substrate
Relied primarily upon vegetation and landscape	position due to	o ary time of s	eason, and mostly urbaniand/iii for substrate.
VEGETATION Use scientific names of plants.			
Ab	solute Domina	ant Indicator	Dominance Test Worksheet
Tree Stratum (Plot size: 9 m) %	Cover Specie	es Status	Number of Dominant Species that
1			are OBL, FACW, or FAC: 1 (A)
2			Total Number of Dominant Species Across all Strata: 1 (B)
5			Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)
	0 = Total Co	over	
Sapling/Shrub stratum (Plot size: 4.6 m)			Prevalence Index Worksheet
1			Total % Cover of:
2			OBL species 0 x 1 = 0
3			FACW species 95 x 2 = 190
4			FAC species 0 x 3 = 0
5			FACU species 0 x 4 = 0
Horb stratum (Diet size: 1 m sg.)	0 = Total Co	over	UPL species 0 x 5 = 0 Column totals 95 (A) 190 (B)
Herb stratum (Plot size: 1 m sq) 1 Phragmites australis	95 Y	FACW	Column totals 95 (A) 190 (B) Prevalence Index = B/A = 2.00
2			1 Tevalefiee findex = B/A = 2.00
3			Hydrophytic Vegetation Indicators:
4			Rapid test for hydrophytic vegetation
5			X Dominance test is >50%
6			X Prevalence index is ≤3.0*
7			Morphological adaptations* (provide
8			supporting data in Remarks or on a
9			separate sheet)
10	05 T-1-1-0		Problematic hydrophytic vegetation*
Woody vine stratum (Plot size: 1 m sq)	95 = Total Co	over	(explain)
Woody vine stratum (Plot size: 1 m sq) 1			*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2			Hydrophytic
	0 = Total Co	over	vegetation
			present? Y
Remarks: (Include photo numbers here or on a separate s	sheet)		

Profile Des	cription: (Descr	ibe to th	ne depth needed	l to docu	ument th	ne indica	tor or confirm t	he absenc	ce of indicators.)
Depth Matrix Redox Features									
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	;	Remarks
*Type: C = 0	Concentration, D	= Deple	tion, RM = Redu	ed Matri	ix, MS =	Masked	Sand Grains.	**Locatio	on: PL = Pore Lining, M = Matrix
Hydric Sc	il Indicators:						Indicators	for Proble	matic Hydric Soils:
His	tisol (A1)		Sai	ndv Glev	ed Matrix	(S4)	Coast F	Prairie Red	ox (A16) (LRR K, L, R)
	tic Epipedon (A2)			ndy Redo		(-)			(LRR K, L)
	ck Histic (A3)			-	itrix (S6)			, ,	or Peat (S3) (LRR K, L, R)
	, ,	4)			, ,			-	
	Irogen Sulfide (A			•	ky Miner	` '		-	Masses (F12) (LRR K, L, R)
	atified Layers (A5)			ed Matri				Surface (TF12)
	m Muck (A10)				atrix (F3)		Other (explain in r	remarks)
Dep	oleted Below Dark	k Surfac	e (A11) Re	dox Dark	Surface	(F6)			
Thic	ck Dark Surface (A12)	De	oleted Da	ark Surfa	ice (F7)	*Indicator	rs of hydroi	phytic vegetation and wetland
Sar	ndy Mucky Minera	ıl (S1)	Re	dox Depr	essions	(F8)			present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	3)				,		roblematic
Restrictive	Layer (if observe	ed):				I			
	ravel, ballast, fill	ou,.					Hydric so	il present	?
Depth (inch		nined			•		,	p	·
	·				•				
Remarks:									
Area ma	pped as urban	land, a	and located ald	ng road	d at bas	se of an	other road em	bankmer	nt. Probe refusal within 2-
	due to gravel			Ü					
HYDROL									
	drology Indicato								
Primary Indi	cators (minimum	of one is	s required; check	all that a	apply)		<u>Secor</u>	ndary Indica	ators (minimum of two required
X Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface So	oil Cracks (B6)
High Wa	ater Table (A2)			True Aq	uatic Plar	nts (B14)	X	Drainage I	Patterns (B10)
Saturation	on (A3)			Hydroge	n Sulfide	Odor (C	1)	Dry-Seaso	on Water Table (C2)
Water M	larks (B1)			Ovidized	l Phizoen	heres on	Living Roots	Crayfish B	surrows (C8)
X Sedimer	nt Deposits (B2)			(C3)	1 (111203p	incres on	Living Roots	 Saturation	Visible on Aerial Imagery (C9)
	posits (B3)			- ' '	e of Redu	iced Iron	(C4)	_	Stressed Plants (D1)
				-			· ′	_	
	at or Crust (B4)				ron Redu	iction in T	illed Soils	-	nic Position (D2)
	oosits (B5)			(C6)				FAC-Neut	ral Test (D5)
	on Visible on Aeria	•		Thin Mu	ck Surfac	e (C7)			
X Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge o	or Well Da	ata (D9)			
Water-S	tained Leaves (B9)		Other (E	xplain in	Remarks)		
Field Obser	rvations:								
Surface wat	er present?	Yes	No	Х	Depth (i	inches):	0-Jan	Wetla	
Water table	•	Yes	No	X	Depth (i	,		1	ology
Saturation p		Yes	X No		Depth (i	inches):	0	prese	ent? Y
•	pillary fringe)						!		
Describe red	corded data (strea	am gaug	je, monitoring we	ıı, aerıal	pnotos,	previous	inspections), if a	available:	
Remarks:									
Cotumotic	on within dital-	ohonn-	l linad by by-	onbyte-					
Saturatio	on within ditch	uiaiiie	i iiileu by fiyaf	opriytes	.				

Project/Site Lake Calumet CTA Red Line Extension	n City/	/County:	Cook	Sampling Date:	8/13/2015
Applicant/Owner: CTA/MWRD		State	e: Illin	nois Sampling Point:	3
Investigator(s): J Mengler, V Mosca			Section, Towns	ship, Range: T37N, R	14E, S26
Landform (hillslope, terrace, etc.):	ditch	<u> </u>	Local relief (co	ncave, convex, none):	ditch
Slope (%): Lat: 41.660	463	Long:	-87.595	Datum:	
Soil Map Unit Name: urban land-orthents clayey co	mplex, nearly	level	NV	VI Classification:	none
Are climatic/hydrologic conditions of the site typical	I for this time of	of the year?	? <u>Y</u> ((If no, explain in remarks)	
Are vegetation, soilY, or hyd	drology	significan	ntly disturbed?	Y Are "normal circumstances"	
Are vegetation, soil, or hyd	drology	naturally	problematic?	N present?	<u>Y</u>
SUMMARY OF FINDINGS				(If needed, explain any answ	vers in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present?		Is the	sampled area	within a wetland? Y	
Wetland hydrology present? Y		If ye	es, optional we	tland site ID: Wetland 3	
Remarks: (Explain alternative procedures here or i	n a separate r	report.)			
Relied primarily upon vegetation and lands	cane positic	on due to	dry time of se	eason, and mostly urbaniand	/fill for substrate
		m ddc tc	ury thric or co		/IIII IOI Juboliate.
VEGETATION Use scientific names of pl	ants.			1	
To a Charter (Diet eine)	Absolute			Dominance Test Workshe	
Tree Stratum (Plot size: 9 m)	% Cover	Species	s Status	Number of Dominant Species that are OBL, FACW, or FAC:	
2					1 (A)
3		-		Total Number of Dominant Species Across all Strata:	1 (B)
4				Percent of Dominant Species that	``
5	<u> </u>			are OBL, FACW, or FAC:	
	0	= Total Cov	ver		<u> </u>
Sapling/Shrub stratum (Plot size: 4.6 m)			Prevalence Index Worksho	eet
1				Total % Cover of:	
2				OBL species 10 x 1	
3				FACW species 95 x 2 FAC species 0 x 3	
				FAC species 0 x 3	
<u> </u>	0	= Total Cov	ver	UPL species 0 x 5	
Herb stratum (Plot size: 1 m sq)	•		Column totals 105 (A	
1 Phragmites australis	95	Y	FACW	Prevalence Index = B/A =	1.90
2 Lythrum salicaria	10	N	OBL		
3				Hydrophytic Vegetation In	
4				Rapid test for hydrophyt	-
5				X Dominance test is >50%	
6				X Prevalence index is ≤3.0)*
78				Morphological adaptation	(1
9				supporting data in Rema	arks or on a
10				Problematic hydrophytic	· vegetation*
	105	= Total Cov	ver	(explain)	Vegetation
Woody vine stratum (Plot size: 1 m sq)	•		*Indicators of hydric soil and wet	land hydrology must be
1	_ 			present, unless disturbed	
2				Hydrophytic	
	0	= Total Cov	/er	vegetation present? Y	
Remarks: (Include photo numbers here or on a sep	narate sheet)				_
Tremands. (moldae photo mambolo noto of o 2 55)	Jaiate Gricot,				

Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	ıment th	e indica	tor or confirm	the absen	ce of indicators.)
Depth	. <u>Matrix</u>			lox Feat					,
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textur	re	Remarks
*Type: C = 0	Concentration, D	= Deplet	tion RM = Reduc	ed Matri	x MS =	Masked	Sand Grains	**Location	on: PL = Pore Lining, M = Matrix
	oil Indicators:	Верісі	ion, raw reduce	ca matri	λ, ΜΟ	Maskea			ematic Hydric Soils:
•			0	d Ola	1 1 1 - 4 - 4 - 4 - 4	. (04)			•
	tisol (A1)				ed Matrix	((54)			dox (A16) (LRR K, L, R)
— His	tic Epipedon (A2)		Sar	dy Redo	x (S5)			•) (LRR K, L)
Bla	ck Histic (A3)		Stri	oped Ma	trix (S6)		5 cm N	Mucky Peat	or Peat (S3) (LRR K, L, R)
Нус	drogen Sulfide (A	4)	_ Loa	my Mucl	ky Miner	al (F1)	Iron-M	langanese	Masses (F12) (LRR K, L, R)
Stra	atified Layers (A5)	Loa	my Gley	ed Matri	x (F2)	Very S	Shallow Dar	k Surface (TF12)
	m Muck (A10)				atrix (F3)			(explain in	
	oleted Below Dark	c Surface			Surface			` '	,
	ck Dark Surface (` ′		ark Surfa	` '			
									phytic vegetation and wetland
	ndy Mucky Minera	` ,		iox Depr	essions	(F8)	hydrolo		present, unless disturbed or
5 CI	m Mucky Peat or	Peat (St	3)					ı	oroblematic
Restrictive	Layer (if observe	ed):							
Type: g	ravel, ballast, fill				•		Hydric s	oil present	?
Depth (inch	es): not determ	nined							
Remarks:									
Area ma	pped as urban	land, a	and located bet	ween g	ravel p	arking l	lot and grave	I road. P	robe refusal within 2-4
inches d	ue to gravel ar	ıd fill.							
HYDROL	2CV								
_	drology Indicato								
Primary Indi	cators (minimum	of one is	s required; check	all that a	apply)		Seco	ondary Indic	cators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface S	Soil Cracks (B6)
High Wa	ater Table (A2)			True Aq	uatic Plar	nts (B14)	>	C Drainage	Patterns (B10)
Saturation	on (A3)			Hydroge	n Sulfide	Odor (C	1)	Dry-Seas	on Water Table (C2)
	larks (B1)								Burrows (C8)
	nt Deposits (B2)			(C3)	Rnizosp	neres on	Living Roots	_ ′	n Visible on Aerial Imagery (C9)
					a af Dadi	محمدا اسمحه	(C4)	_	
	posits (B3)			Presenc	e oi Real	uced Iron	(C4)	_	r Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	ron Redu	iction in T	illed Soils	Geomorp	hic Position (D2)
Iron Dep	oosits (B5)			(C6)				FAC-Neu	tral Test (D5)
Inundati	on Visible on Aeria	I Imager	y (B7)	Thin Mu	ck Surfac	e (C7)			
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge o	r Well Da	ata (D9)			
X Water-S	stained Leaves (B9)	· · · —			Remarks)		
Field Obse		,		04101 (2	хрішіні	rtorriarito			
Surface wat		Yes	No	Χ	Depth (i	inches).		Wetl	and
Water table		Yes	No	X	Depth (i	,		hydr	ology
Saturation p	•	Yes	X No	-	Depth (i	,	0	1	ent? Y
	pillary fringe)					,		1	
Describe re	corded data (stre	am gauc	je, monitoring we	II, aerial	photos.	previous	inspections), if	available:	
	- (J G	5 40				//		
Remarks:									
Saturation	on within ditch/s	swale o	channel at lower	est poin	t in loca	al lands	cape.		
				•		_	•		

Project/Site Lake Calumet CTA Red Line	Extension	City/	County:	Cook	Samplin	g Date:	8/13/2015
Applicant/Owner: CTA/MWRD			State:	Illir	nois Sampling	g Point:	4
Investigator(s): J Mengler, V Mosca				ection, Town	ship, Range:	T37N, R1	4E, S27
Landform (hillslope, terrace, etc.):	swale at to	e of slope		ocal relief (co	ncave, convex, none):		swale
Slope (%): Lat:		-	Long:		•		
Soil Map Unit Name: orthents, clayey und	dulating				VI Classification:	PF0	1/EMCd
Are climatic/hydrologic conditions of the		r this time o	of the vear?		If no, explain in remark		
Are vegetation , soil Y			•	y disturbed?	· ·		
Are vegetation , soil	_			roblematic?	Are "normal circu N present?	mstances"	Υ
SUMMARY OF FINDINGS	, o, a. o.				(If needed, explai	n anv answ	
Hydrophytic vegetation present?	Υ						,
Hydric soil present?			Is the s	ampled area	within a wetland?	Υ	
Wetland hydrology present?				•	-	etland 4	
Remarks: (Explain alternative procedure	e horo or in a	conarato r		.,			
Remarks. (Explain alternative procedure	S Hele Of III a	separate i	ероп.)				
Relied primarily upon vegetation a	ind landsca	pe positio	n due to di	ry time of se	eason, and mostly ι	ırbanland/	fill for substrate.
VEGETATION Use scientific nar	mes of nlan	te					
VEGETATION OSC SCIENTING HAI	nes or plan		Daminant	lu dia atau	Dominance Test	Workshee	t
Tree Stratum (Plot size: 9	m)	Absolute % Cover	Dominant Species	Indicator Status			•
1			- p		Number of Dominant S are OBL, FACW, of	•	1 (A)
2					Total Number of D		``
3					Species Across all		1 (B)
4					Percent of Dominant S	Species that	
5					are OBL, FACW,	•	100.00% (A/B)
		0	= Total Cove	r			
Sapling/Shrub stratum (Plot size:	4.6 m)			Prevalence Inde	x Workshe	et
1			i.		Total % Cover of:		
2				- ——	OBL species	20 x 1	
3			-	. ——	FACW species	100 x 2	
4			Ü.		FAC species FACU species	0 x 3 0 x 4	
			= Total Cove		UPL species	0 x 5	
Herb stratum (Plot size:	1 m sq		10101 0010	•	Column totals	120 (A)	
1 Phragmites australis		100	Υ	FACW	Prevalence Index		1.83
2 Lythrum salicaria		20	N	OBL			
3					Hydrophytic Veg	etation Ind	licators:
4					Rapid test for	hydrophyti	c vegetation
5					X Dominance to	est is >50%	
6					X Prevalence in	ndex is ≤3.0	*
7			i.		Morphologica	l adaptation	ns* (provide
8			-		supporting da		rks or on a
9					separate she	•	
10		120	= Total Cove	<u> </u>	Problematic h (explain)	nydrophytic	vegetation*
Woody vine stratum (Plot size:	1 m sq	120	- Total Cove	:1	 ``'		
1	, iii 34	,			•		and hydrology must be or problematic
			-	- ——	Hydrophytic		- F
2					riyaropiiyao		
2		0	= Total Cove	<u> </u>	vegetation		
2		0	= Total Cove	r		Y	-
Remarks: (Include photo numbers here	or on a separ		= Total Cove	er	vegetation		<u>- </u>

(Inches)			_		dox Feat					
,	Color (moist)	%	Color (m	noist)	%	Type*	Loc**	Text	ure	Remarks
vne C =	Concentration, D	= Deplet	tion RM =	Reduc	ed Matri	ix MS =	Masked	Sand Grains	**Locat	ion: PL = Pore Lining, M = Ma
	oil Indicators:	Воріос		rtodac	ou muu	, IVIO	Macroa			ematic Hydric Soils:
-				0		1 1 1 1 - 4 - 4 - 4	(0.4)			•
	stisol (A1)		_	_		ed Matrix	x (54)			dox (A16) (LRR K, L, R)
His	stic Epipedon (A2))	_	Sar	ndy Redo	ox (S5)				7) (LRR K, L)
Bla	nck Histic (A3)		_	Stri	pped Ma	trix (S6)		5 cm	n Mucky Pea	t or Peat (S3) (LRR K, L, R)
Hy	drogen Sulfide (A	4)		Loa	my Muc	ky Miner	al (F1)	Iron-	Manganese	Masses (F12) (LRR K, L, R)
Str	atified Layers (A5)		 Loa	my Gley	ed Matri	x (F2)	Very	Shallow Da	rk Surface (TF12)
	m Muck (A10)	,	_	_		atrix (F3)			er (explain in	, ,
	pleted Below Darl	k Surface	_ (<u>\</u>			Surface			or (explain in	Temanoj
			<u> </u>	_						
	ick Dark Surface (ark Surfa		*Indica	ators of hydro	ophytic vegetation and wetlar
Sa	ndy Mucky Minera	al (S1)	_	Red	dox Depr	essions	(F8)	hydro	ology must be	e present, unless disturbed o
5 c	m Mucky Peat or	Peat (S3	3)							problematic
strictive	Layer (if observ	ed):								
	ravel, ballast, fill	•						Hydric	soil presen	t?
epth (inch	ies): not detern	nined				•		-	•	
emarks:	<u> </u>					-				
Area ma	apped as urban	land, a	and locate	ed roa	nd and I	berm ar	round se	ewage lago	ons.	
	apped as urban	land, a	and locate	ed roa	ad and I	berm ar	round se	ewage lago	ons.	
YDROL	OGY		and locate	ed roa	ad and I	berm aı	round se	ewage lago	ons.	
YDROL etland Hy	OGY ydrology Indicato	ors:					round s	ewage lago	ons.	
YDROL etland Hy	OGY	ors:					round se			cators (minimum of two requi
YDROL etland Hy imary Ind	OGY ydrology Indicato	ors:			all that a				condary Indi	cators (minimum of two requi Soil Cracks (B6)
YDROL etland Hy imary Ind _ Surface	OGY ydrology Indicato licators (minimum Water (A1)	ors:			all that a	apply) Fauna (B	313)		condary Indi	Soil Cracks (B6)
YDROL etland Hy imary Ind Surface High W	OGY ydrology Indicato icators (minimum Water (A1) ater Table (A2)	ors:			all that a	apply) Fauna (B uatic Plar	313) nts (B14)	<u>Se</u>	condary Indi Surface 9 X Drainage	Soil Cracks (B6) Patterns (B10)
YDROL etland Hy imary Ind Surface High W Saturati	OGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3)	ors:			all that a Aquatic True Aq Hydroge	apply) Fauna (B uatic Plar n Sulfide	813) nts (B14) e Odor (C1	<u>Se</u> - -	condary Indi Surface S X Drainage Dry-Seas	Soil Cracks (B6) Patterns (B10) Son Water Table (C2)
YDROL etland Hy imary Ind Surface High Wa Saturati Water M	OGY ydrology Indicato iicators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1)	ors:			all that a Aquatic True Aquatic Hydroge	apply) Fauna (B uatic Plar n Sulfide	813) nts (B14) e Odor (C1	<u>Se</u>	condary Indi Surface S X Drainage Dry-Seas Crayfish	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8)
YDROL etland Hy imary Ind Surface High W Saturati Water M	OGY ydrology Indicato iicators (minimum water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)	ors:			all that a Aquatic True Aq Hydroge	apply) Fauna (B uatic Plar n Sulfide	813) nts (B14) e Odor (C1	<u>Se</u> - -	Surface S X Drainage Dry-Seas Crayfish Saturatio	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9
YDROL etland Hy imary Ind Surface High W Saturati Water M	OGY ydrology Indicato iicators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1)	ors:			all that a Aquatic True Aqu Hydroge Oxidized (C3)	apply) Fauna (B uatic Plar n Sulfide	813) nts (B14) e Odor (C1	Ser - -) _ Living Roots _	Surface S X Drainage Dry-Seas Crayfish Saturatio	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8)
YDROL etland Hy imary Ind Surface High Water Mater Mat	OGY ydrology Indicato iicators (minimum water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)	ors:			all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc	apply) Fauna (B uatic Plar en Sulfide d Rhizosp	et13) et odor (Croheres on uced Iron	Ser - -) - Living Roots - (C4) -	condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9
YDROL etland Hy imary Ind Surface High Wa Saturati Water Mater Mat	OGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	ors:			all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc	apply) Fauna (B uatic Plar en Sulfide d Rhizosp	et13) et odor (Croheres on uced Iron	Ser - -) _ Living Roots _	condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Visible on Aerial Imagery (C9 or Stressed Plants (D1)
YDROL Yetland Hyrimary Ind Surface High W. Saturati Water N C Sedime Drift De Algal M: Iron De	oGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ors: of one is	s required;		all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6)	apply) Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu	et13) et Odor (C ² otheres on uced Iron uction in T	Ser - -) - Living Roots - (C4) -	condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Othic Position (D2)
YDROL etland Hyrimary Ind Surface High W. Saturati Water M. Sedime Drift De Algal M. Iron De Inundati	OGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria	ors: of one is	s required;		all that a Aquatic True Aq Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu	apply) Fauna (B uatic Plar n Sulfide d Rhizosp e of Redu lron Redu	at13) ats (B14) ats (B14) be Odor (C ² beheres on uced Iron uction in T	Ser - -) - Living Roots - (C4) -	condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Othic Position (D2)
YDROL YETANO HY YETANO HIGH Surface High W Saturati Water M Sedime Drift De Algal M Iron De Inundati Sparsel	OGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca	ors: of one is	s required;		all that and Aquatic True Aquatic Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mu Gauge of	apply) Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu iron Redu ck Surfac	ata (D9)	Ser Living Roots _ (C4) _ illed Soils _	condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Or Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Othic Position (D2)
YDROL Yetland Hyrimary Ind Surface High W Saturati Water M C Sedime Drift De Algal M Iron De Inundati Sparsel Water-S	OGY ydrology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca Stained Leaves (B9	ors: of one is	s required;		all that and Aquatic True Aquatic Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mu Gauge of	apply) Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu iron Redu ck Surfac	at13) ats (B14) ats (B14) be Odor (C ² beheres on uced Iron uction in T	Ser Living Roots _ (C4) _ illed Soils _	condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Or Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Othic Position (D2)
YDROL Yetland Hyrimary Ind Surface High Water Mater Ma	OGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca Stained Leaves (B9 irvations:	ors: of one is al Imagery ave Surface	s required;	check	all that and Aquatic True Aquatic True Aquatic Canal Presence (C3) Presence Recent I (C6) Thin Mu Gauge Control (E)	apply) Fauna (B uatic Plan en Sulfide d Rhizosp e of Redu iron Redu ck Surfac or Well Da explain in	ata (D9) Remarks	Ser Living Roots _ (C4) _ illed Soils _	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted G Geomorp FAC-Neu	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Or Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
YDROL Yetland Hyrimary Ind Surface High W. Saturati Water M C Sedime Drift De Algal M: Iron De Inundati Sparsel Water-S Water-S Water-S	OGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca Stained Leaves (B9 irvations: ter present?	of one is al Imagery ive Surface)	s required;	check	all that and Aquatic True Aquatic True Aquatic Control	apply) Fauna (Buatic Plaren Sulfided Rhizospee of Reduron Reducts Surfacer Well Dax Explain in	ata (D9) Remarks inches):	Ser Living Roots _ (C4) _ illed Soils _	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted G Geomorp FAC-Neu	e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9 or Stressed Plants (D1) ohic Position (D2) utral Test (D5)
YDROL Yetland Hyrimary Ind Surface High W Saturati Water M Sedime Drift De Algal M Iron De Inundati Sparsel Water-S Geld Obse	oGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca Stained Leaves (B9 irvations: ter present?	of one is al Imagery ve Surface) Yes Yes	s required; y (B7) ce (B8)	No	all that and Aquatic True Aquatic True Aquatic Canal Presence (C3) Presence Recent I (C6) Thin Mu Gauge Control (E)	apply) Fauna (Buatic Plaren Sulfided Rhizospee of Reduck Surfacer Well Daixplain in Depth (Depth (De	ata (D9) Remarks inches):	Ser Living Roots _ (C4) _ illed Soils _	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted G Geomorp FAC-Neu	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Or Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
Vetland Hyrimary Ind Surface High W Saturati Water M X Sedime Drift De Algal M Iron De Inundati Sparsel Water-S ield Obse urface wa Vater table aturation p	oGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca Stained Leaves (B9 rvations: ter present? present?	of one is al Imagery ive Surface)	s required;	check	all that and Aquatic True Aquatic True Aquatic Control	apply) Fauna (Buatic Plaren Sulfided Rhizospee of Reduron Reducts Surfacer Well Dax Explain in	ata (D9) Remarks inches):	Ser Living Roots _ (C4) _ illed Soils _	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted G Geomorp FAC-Neu	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Or Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
YDROL Yetland Hyrimary Ind Surface High W. Saturati Water M C Sedime Drift De Algal M Iron De Inundati Sparsel Water-S eld Obse urface wa Vater table aturation pacludes ca	OGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca Stained Leaves (B9 irvations: ter present? present? present? apillary fringe)	of one is al Imagery ve Surface Yes Yes Yes	y (B7) ce (B8)	No	all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (Buatic Plansen Sulfide di Rhizosphe of Reductor Well December (Depth (De	ents (B14)	Ser Ser Control Control Ser Control Control Ser Control Control Ser Ser Control Ser Ser Ser Ser Ser Ser Ser Se	Condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomory FAC-Neu Wet hyd pres	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Or Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
YDROL Yetland Hyrimary Ind Surface High W. Saturati Water M C Sedime Drift De Algal M Iron De Inundati Sparsel Water-S Ield Obse urface wa Vater table aturation pacides ca	oGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca Stained Leaves (B9 rvations: ter present? present?	of one is al Imagery ve Surface Yes Yes Yes	y (B7) ce (B8)	No	all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (Buatic Plansen Sulfide di Rhizosphe of Reductor Well December (Depth (De	ents (B14)	Ser Ser Control Control Ser Control Control Ser Control Control Ser Ser Control Ser Ser Ser Ser Ser Ser Ser Se	Condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomory FAC-Neu Wet hyd pres	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Or Visible on Aerial Imagery (C9) Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
YDROL Yetland Hyrimary Ind Surface High W Saturati Water M Sedime Drift De Algal M Iron De Inundati Sparsel Water-S eld Obse urface wa Yater table aturation pel	OGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca Stained Leaves (B9 irvations: ter present? present? present? apillary fringe)	of one is al Imagery ve Surface Yes Yes Yes	y (B7) ce (B8)	No	all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (Buatic Plansen Sulfide di Rhizosphe of Reductor Well December (Depth (De	ents (B14)	Ser Ser Control Control Ser Control Control Ser Control Control Ser Ser Control Ser Ser Ser Ser Ser Ser Ser Se	Condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomory FAC-Neu Wet hyd pres	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Or Visible on Aerial Imagery (C9 Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
YDROL etland Hy imary Ind Surface High W. Saturati Water N Sedime Drift De Algal M: Iron De Inundati Sparsel Water-Seld Obse urface wa ater table aturation p	OGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca Stained Leaves (B9 irvations: ter present? present? present? apillary fringe)	of one is al Imagery ve Surface Yes Yes Yes	y (B7) ce (B8)	No	all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (Buatic Plansen Sulfide di Rhizosphe of Reductor Well December (Depth (De	ents (B14)	Ser Ser Control Control Ser Control Control Ser Control Control Ser Ser Control Ser Ser Ser Ser Ser Ser Ser Se	Condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomory FAC-Neu Wet hyd pres	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Or Visible on Aerial Imagery (C6) Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
Property of the control of the contr	ydrology Indicators (minimum water (A1) ater Table (A2) on (A3) Marks (B1) at or Crust (B4) posits (B5) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Concastained Leaves (B9) ivvations: ter present? expresent? expresent.	of one is al Imagery ive Surface Yes Yes Yes am gaug	y (B7) ce (B8) X ge, monitor	No No No ing we	all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (Buatic Plan en Sulfide d Rhizosp e of Redu fron Redu ck Surfac or Well Da explain in Depth (Depth (Depth (ata (D9) Remarks inches): inches): previous	See See Living Roots (C4) illed Soils	Condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomory FAC-Neu Wet hyd pres	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Or Visible on Aerial Imagery (C6) Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
YDROL etland Hy imary Ind Surface High W. Saturati Water M. Sedime Drift De Algal M. Iron De Inundati Sparsel Water-Selid Obse uturation p cludes ca escribe re	OGY ydrology Indicator icators (minimum Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca Stained Leaves (B9 irvations: ter present? present? present? apillary fringe)	of one is al Imagery ive Surface Yes Yes Yes am gaug	y (B7) ce (B8) X ge, monitor	No No No ing we	all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (Buatic Plan en Sulfide d Rhizosp e of Redu fron Redu ck Surfac or Well Da explain in Depth (Depth (Depth (ata (D9) Remarks inches): inches): previous	See See Living Roots (C4) illed Soils	Condary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomory FAC-Neu Wet hyd pres	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) Or Visible on Aerial Imagery (C9 Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)

Project/Site Lake Calumet CT/	A Red Line Extension	City/	County:	Cook	Sampling Date	e: 8/13/2015
Applicant/Owner: CTA/MW	'RD		State:		nois Sampling Poir	nt: 5
Investigator(s): J Mengler, V M	Vlosca		S	ection, Towns	ship, Range: T37N,	R14E, S26 & 27
Landform (hillslope, terrace, e	tc.): sw	vale	Lc	cal relief (co	ncave, convex, none):	swale
Slope (%): La	at: 41.66359) 6	Long:	-87.5980	043 Datum:	
Soil Map Unit Name: orthents,	loamy, nearly level			NV	VI Classification:	none
Are climatic/hydrologic condition	ons of the site typical f	or this time o	of the year?	((If no, explain in remarks)	
Are vegetation, soil	Y , or hydro	ology	significantly	/ disturbed?	Y Are "normal circumstar	nces"
Are vegetation, soil	, or hydro	ology	naturally pro	oblematic?	N present?	<u>Y</u>
SUMMARY OF FINDING	<u>s</u>				(If needed, explain any	answers in remarks.)
Hydrophytic vegetation pre	esent? Y		ı			
Hydric soil present?			Is the sa	ampled area	within a wetland?	Υ
Wetland hydrology presen	it? <u>Y</u>		If yes	, optional wet	tland site ID: Wetland	d 5
Remarks: (Explain alternative	procedures here or in	a separate r	eport.)			
Relied primarily upon veg	retation and landsc:	ane nositic	on due to dr	v time of se	eason, and mostly urban	land/fill for substrate
				y unic or co	ason, and mostly disc	Idia/iiii ioi susstiate.
VEGETATION Use scie	entific names of pla	nts.			·	
Trace Chrotum (Diot oil		Absolute		Indicator	Dominance Test Worl	
<u>Tree Stratum</u> (Plot siz	ze: 9 m)	% Cover	Species	Status	Number of Dominant Specie are OBL, FACW, or FAC	
2		. ——		. ——		``
3					Total Number of Domina Species Across all Strata	
4					Percent of Dominant Specie	``
5		·			are OBL, FACW, or FAC	
		0	= Total Cover	ι		
Sapling/Shrub stratum (Plo	ot size: 4.6 m	_)			Prevalence Index Wor	rksheet
1					Total % Cover of:	_
2					· —	x1=0
3		- ——			· —	x = 200 x = 0
5		- ——			FAC species 0 FACU species 0	-x3 = 0 x4 = 0
		0	= Total Cover	r ———	UPL species 0	x = 5 = 0
Herb stratum (Plo	ot size: 1 m sq)			Column totals 100	
1 Phragmites australis		100	Y	FACW	Prevalence Index = B/A	—·· ——· · ·
2		· _				
3					Hydrophytic Vegetation	
4		- ——			Rapid test for hydro	
5					X Dominance test is:	
6		- ——			X Prevalence index is	§ ≤3.0°
8		. ——		. ——	Morphological ada	
9					supporting data in separate sheet)	Remarks or on a
10		. ——			Problematic hydrog	obytic vegetation*
		100	= Total Cover	r	(explain)	mytic vegetation
Woody vine stratum (Plo	ot size: 1 m sq)			*Indicators of hydric soil ar	nd wetland hydrology must be
1		· 			•	sturbed or problematic
2					Hydrophytic	
		0	= Total Cover	t	vegetation present?	Υ
Remarks: (Include photo numl	hore here or on a sena	rate sheet)			p. 600	
Remarks. (molude photo ham	Dela licie di dii a acpa	Tale silecty				

Depth	<u>Matrix</u>				dox Feat	<u>ures</u>				
(Inches)	Color (moist)	%	Color (mo	ist)	%	Type*	Loc**	Text	ure	Remarks
					-					
mo: C = Cor	ncentration, D	- Donlot	tion DM - D	oduc	od Matri	iv MS -	Mackad	Sand Grains	**Locat	ion: PL = Pore Lining, M = M
		- Debiei	uon, Kivi – K	euuc	cu man	IX, IVIO –	IVIASKEU			
lydric Soil I				_						ematic Hydric Soils:
Histiso	ol (A1)			_		ed Matrix	(S4)			dox (A16) (LRR K, L, R)
Histic F	Epipedon (A2)			Sar	ndy Redo	ox (S5)		Dark	Surface (S	7) (LRR K, L)
Black I	Histic (A3)			Stri	pped Ma	atrix (S6)		5 cm	Mucky Pea	t or Peat (S3) (LRR K, L, R)
Hydrod	gen Sulfide (A	4)		_ Loa	my Muc	ky Miner	al (F1)	Iron-	Manganese	Masses (F12) (LRR K, L, R
	ied Layers (A5			_		ed Matri				rk Surface (TF12)
	Muck (A10)	,		_			` '			, ,
	` ,	. 0	- (0.44)	- '		atrix (F3)			r (explain in	remarks)
	ted Below Dark		e (A11)	_		Surface	. ,			
	Dark Surface (,		_ Dep	oleted Da	ark Surfa	ice (F7)	*Indica	tors of hydr	ophytic vegetation and wetla
Sandy	Mucky Minera	ıl (S1)		Red	dox Depr	ressions	(F8)			e present, unless disturbed of
5 cm N	Mucky Peat or	Peat (S3	3)	_					••	problematic
etrictive La	yer (if observe	aq).								
	el, ballast, fill	suj.						Hydric	soil presen	t2
pth (inches):		nined				-		riyanc	Jon presen	
par (mones).	. Hot determ	iii ica				-				
Area mapp	ed as urban	land, a	and located	d bet	tween r	oads				
		land, a	and located	d bet	tween r	oads				
YDROLOG	SY .		and located	d bet	tween r	roads				
/DROLOG	SY ology Indicato	ors:								
DROLOG	SY .	ors:						Sec	condary Indi	cators (minimum of two requ
DROLOG	SY ology Indicato tors (minimum	ors:			all that		13)	Sec	-	cators (minimum of two requ Soil Cracks (B6)
'DROLOG tland Hydro mary Indicat	SY ology Indicato tors (minimum ater (A1)	ors:			all that	apply)		<u>Sec</u>	Surface	
CDROLOG etland Hydro mary Indicat Surface Wa High Water	ology Indicators (minimum ater (A1)	ors:			all that a	apply) Fauna (B uatic Plar	nts (B14)		Surface S X Drainage	Soil Cracks (B6) Patterns (B10)
TDROLOG etland Hydro mary Indicat Surface Wa High Water Saturation (ology Indicator tors (minimum ater (A1) Table (A2) (A3)	ors:			all that a Aquatic True Aq Hydroge	apply) Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C	-	Surface X Drainage Dry-Seas	Soil Cracks (B6) Patterns (B10) son Water Table (C2)
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TDROLOG etland Hydro mary Indicat Surface Wa High Water Saturation (Water Mark Sediment D	ology Indicators (minimum ater (A1) Table (A2) (A3) (A3) Opposits (B2)	ors:			Aquatic True Aq Hydroge Oxidized (C3)	apply) Fauna (B uatic Plar en Sulfide d Rhizosp	ots (B14) Odor (Conheres on	Living Roots _ - -	Surface X Drainage Dry-Seas Crayfish Saturatio	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C
TDROLOG Itland Hydro mary Indicat Surface Wa High Water Saturation (Water Mark	ology Indicators (minimum ater (A1) Table (A2) (A3) (A3) Opposits (B2)	ors:			Aquatic True Aq Hydroge Oxidized (C3)	apply) Fauna (B uatic Plar en Sulfide	ots (B14) Odor (Conheres on	Living Roots _ - -	Surface X Drainage Dry-Seas Crayfish Saturatio	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8)
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TDROLOG tland Hydro mary Indicat Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi	ology Indicator tors (minimum ater (A1) Table (A2) (A3) (A5 (B1) Deposits (B2) Litts (B3) Tor Crust (B4)	ors:			all that and Aquatic True Aq Hydroge Oxidized (C3) Presence	apply) Fauna (B uatic Plar en Sulfide d Rhizosp	Odor (C heres on uced Iron	Living Roots _ (C4)	Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomory	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (Ctor Stressed Plants (D1)
Property of the property of th	ology Indicator tors (minimum ater (A1) Table (A2) (A3) (A5 (B1) Deposits (B2) Litts (B3) Tor Crust (B4)	ors: of one is	s required; c		all that and Aquatic True Aq Hydroge Oxidized (C3) Presend Recent I (C6)	apply) Fauna (B uatic Plar en Sulfide d Rhizosp	odor (Canada (Living Roots _ (C4)	Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomory	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (Coor Stressed Plants (D1) Othic Position (D2)
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YDROLOG etland Hydro imary Indicat Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation (Sparsely Ve Water-Stain	cology Indicator tors (minimum ater (A1) Table (A2) (A3) (A5) (A5) (A5) (A5) (A5) (A5) (A5) (A5	ors: of one is I Imagery ve Surface	s required; c	heck	all that and Aquatic True Aq Hydroge Oxidized (C3) Presence (C6) Thin Mu Gauge Co Other (E	apply) Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu lron Redu ck Surfac or Well Da explain in	onts (B14) Odor (Critheres on Luced Iron In True (C7) Remarks	Living Roots _ (C4) _ illed Soils _	Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomory FAC-Net	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C5) Or Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
YDROLOG etland Hydro imary Indicat Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation (Sparsely Ve Water-Stain	cology Indicator tors (minimum ater (A1) Table (A2) (A3) (A5) (A5) (A5) (A5) (A5) (A5) (A5) (A5	ors: of one is I Imagery ve Surface	s required; c		all that and Aquatic True Aq Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mu Gauge C Other (E	apply) Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu fron Redu ck Surfac or Well Da explain in	odor (Cheres on Luced Iron Luced	Living Roots _ (C4) _ illed Soils _	Surface X Drainage Dry-Seas Crayfish Saturatio Stunted Geomory FAC-Net	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (Ctor Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
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YDROLOG etland Hydro imary Indicat Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Inundation (Sparsely Ve Water-Stain eld Observat arface water pater table presituration presi	ology Indicators (minimum later (A1) Table (A2) (A3) (A3) (A5) (A5) (A5) (A5) (A5) (A5) (A5) (A5	ors: of one is I Imagery ve Surface	y (B7) ce (B8)		all that and Aquatic True Aq Hydroge Oxidized (C3) Presence Recent I (C6) Thin Mu Gauge C Other (E	apply) Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu fron Redu ck Surfac or Well Da explain in	odor (Cheres on Luced Iron Iron Luced Iron Iron Luced Iron Iron Luced Iron Iron Iron Luced Iron Iron Iron Iron Iron Iron Iron Iron	Living Roots _ (C4) _ illed Soils _	Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomory FAC-Nes	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (Coor Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)
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MOROLOG Petland Hydro mary Indicat Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation N Sparsely Ve Water-Stain Fid Observat rface water pater table pre- turation prescludes capilli scribe record	cotors (minimum ater (A1) Table (A2) (A3) (A5) Coposits (B2) Coposits (B3) Coposits (B4) Coposits (B	of one is I Imagery ve Surface) Yes Yes Yes	y (B7) ce (B8)	No No No	all that and Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge Co Other (E	apply) Fauna (Buatic Planen Sulfiden Sulfiden Reduler of Reduler Sulfacen Well December 1 Depth (Depth (Dep	odor (Cheres on Luced Iron Luced	Living Roots _ (C4) _ illed Soils	Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomory FAC-Nes Wethyd pres	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (Cor Stressed Plants (D1) Ohic Position (D2) Utral Test (D5)

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	Cook	Sampling Date: 8/13/2015	5
Applicant/Owner: CTA/MWRD		State:		nois Sampling Point: 6	
Investigator(s): J Mengler, V Mosca		Ser	ction, Towns	ship, Range: T37N, R14E, S27	
Landform (hillslope, terrace, etc.):	ale	Loc	cal relief (cor	ncave, convex, none): swale	
Slope (%): Lat: 41.669077	7	Long:	-87.6015	Datum:	
Soil Map Unit Name: orthents, loamy, nearly level		-	NV	VI Classification: none	
Are climatic/hydrologic conditions of the site typical fo	r this time c	of the year?	<u>Y</u> ((If no, explain in remarks)	
Are vegetation, soilY, or hydrol	logy	significantly	disturbed?	Y Are "normal circumstances"	
Are vegetation, soil, or hydrol	logy	naturally prol	blematic?	N present? Y	<i>'</i>
SUMMARY OF FINDINGS				(If needed, explain any answers in remark	ks.)
Hydrophytic vegetation present? Y					
Hydric soil present?		Is the sa	mpled area	within a wetland?	
Wetland hydrology present? Y		If yes,	optional wet	tland site ID: Wetland 6	
Remarks: (Explain alternative procedures here or in a	separate r	eport.)			
			time of or		
Relied primarily upon vegetation and landsca	pe positio	n due to dry	time or se	eason, and mostly urbanianu/iiii ioi subs	trate.
VEGETATION Use scientific names of plan	its.				_
	Absolute		Indicator	Dominance Test Worksheet	
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Species	Status	Number of Dominant Species that	
1				are OBL, FACW, or FAC: 1	(A)
2				Total Number of Dominant	
3					(B)
5				Percent of Dominant Species that are OBL, FACW, or FAC: 100.00%	/
5	0	= Total Cover		are Obl., FACTV, OF FAC.	(Avb)
Sapling/Shrub stratum (Plot size: 4.6 m	1	- 10tal 30.5.		Prevalence Index Worksheet	
1	,			Total % Cover of:	
2				OBL species 20 x 1 = 20	
3				FACW species 84 x 2 = 168	
4				FAC species 0 x 3 = 0	
5				FACU species 0 x 4 = 0	
	0	= Total Cover		UPL species 0 x 5 = 0	ı
Herb stratum (Plot size: 1 m sq)				(B)
1 Phragmites australis	80	Y N	FACW	Prevalence Index = B/A = 1.81	•
2 Lythrum salicaria	10	N	OBL	Under whether Verentation Indicators	
3 Typha angustifolia 4 Helianthus grosseserratus	10 2	N	FACW	Hydrophytic Vegetation Indicators: Rapid test for hydrophytic vegetation	
4 Helianthus grosseserratus 5 Verbena hastata	2	- <u>N</u>	FACW	X Dominance test is >50%	
6			TACTV	X Prevalence index is ≤3.0*	
7				-	
8				Morphological adaptations* (provide supporting data in Remarks or on a	
9				separate sheet)	
10				Problematic hydrophytic vegetation*	
	104	= Total Cover		(explain)	
Woody vine stratum (Plot size: 1 m sq)			*Indicators of hydric soil and wetland hydrology m	nust be
1				present, unless disturbed or problematic	
2				Hydrophytic vegetation	
	0	= Total Cover		present?	
Remarks: (Include photo numbers here or on a separ	ate sheet)				
Nemarks. (morado pristo names o militario pris	ale ener,				

	<u>x</u>		edox Feat					
(Inches) Color (moist)	%	Color (moist)	%	Type*	Loc**	Text	ure	Remarks
ype: C = Concentration, I) = Denlet	ion RM = Redu	iced Matr	iv MS =	Masked	Sand Grains	**Locati	ion: PL = Pore Lining, M = M
Hydric Soil Indicators:	D - Depict	ion, raw – rada	icca iviati	ix, ivio –	Maskea			ematic Hydric Soils:
•					(0.4)			•
Histisol (A1)			andy Gley		x (S4)			dox (A16) (LRR K, L, R)
Histic Epipedon (A	2)	Sa	andy Red	ox (S5)		Dark	Surface (S7	7) (LRR K, L)
Black Histic (A3)		St	ripped Ma	atrix (S6)		5 cm	Mucky Pea	t or Peat (S3) (LRR K, L, R)
Hydrogen Sulfide (A4)	Lo	amy Muc	ky Miner	al (F1)	Iron-	Manganese	Masses (F12) (LRR K, L, R)
Stratified Layers (A			amy Gley					rk Surface (TF12)
	10)				, ,			, ,
2 cm Muck (A10)	and Court		epleted M	, ,	•		r (explain in	iciliaiko)
Depleted Below Da		· · · · · · · · · · · · · · · · · · ·	edox Dark					
Thick Dark Surface	e (A12)		epleted D			*Indica	itors of hydro	ophytic vegetation and wetlar
Sandy Mucky Mine	eral (S1)	Re	edox Dep	ressions	(F8)			e present, unless disturbed o
5 cm Mucky Peat of	or Peat (S3	<u>—</u>				•		problematic
estrictive Layer (if obser	avod).							
pe: gravel, ballast, fil						Hydric	soil presen	+2
epth (inches): not dete				-		riyunc	son presen	
pur (mories).	iiiiiiou			-				
4rea mapped as urba	ın land, a	and located be	etween r	road an	d railroa	nd.		
	ın land, a	and located be	etween r	road an	d railroa	ıd.		
YDROLOGY		and located be	etween r	road an	d railroa	ıd.		
YDROLOGY etland Hydrology Indica	itors:				d railroa	ad.		
YDROLOGY etland Hydrology Indica	itors:				d railroa		condary Indi	cators (minimum of two requi
YDROLOGY etland Hydrology Indica	itors:		k all that				•	cators (minimum of two requi
YDROLOGY etland Hydrology Indica imary Indicators (minimum Surface Water (A1)	itors:		k all that	apply) Fauna (B	313)		Surface S	Soil Cracks (B6)
YDROLOGY etland Hydrology Indicationary Indicators (minimum Surface Water (A1) High Water Table (A2)	itors:		k all that Aquatic True Aq	<u>apply)</u> Fauna (B uatic Plai	313) nts (B14)	<u>Sec</u>	Surface S X Drainage	Soil Cracks (B6) Patterns (B10)
YDROLOGY etland Hydrology Indication of the standard Indicators (minimus Surface Water (A1) High Water Table (A2) Saturation (A3)	itors:		k all that Aquatic True Aq	<u>apply)</u> Fauna (B uatic Plai	313)	<u>Sec</u>	Surface S X Drainage Dry-Seas	Soil Cracks (B6) Patterns (B10) son Water Table (C2)
Properties of the state of the	itors:		k all that Aquatic True Aq Hydroge	apply) Fauna (B Juatic Plai en Sulfide	313) nts (B14) • Odor (C	<u>Sec</u>	Surface S X Drainage Dry-Seas Crayfish	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8)
Properties of the second secon	itors:		k all that Aquatic True Aq Hydroge	apply) Fauna (B Juatic Plai en Sulfide	313) nts (B14) • Odor (C	<u>Se</u> -	Surface S X Drainage Dry-Seas Crayfish	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8)
YDROLOGY etland Hydrology Indication imary Indicators (minimus) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	itors:		Aquatic True Aq Hydroge Oxidized	apply) Fauna (B juatic Plai en Sulfide d Rhizosp	313) nts (B14) • Odor (C	Sed - - I) _ Living Roots _	Surface S X Drainage Dry-Seas Crayfish Saturatio	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8)
POROLOGY etland Hydrology Indicationary Indicators (minimus Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	itors:		Aquatic True Aq Hydroge Oxidized (C3) Presence	apply) Fauna (Buuatic Platen Sulfided Rhizospeed of Rediagney)	et13) hts (B14) e Odor (C' heres on	Ser - - !) - Living Roots _ - (C4) _	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9
YDROLOGY etland Hydrology Indicationary Indicators (minimus) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	itors:		Aquatic True Aq Hydroge Oxidized (C3) Presence	apply) Fauna (Buuatic Platen Sulfided Rhizospeed of Rediagney)	et13) hts (B14) e Odor (C' heres on	Sed - - I) _ Living Roots _	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted G Geomorp	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9 Or Stressed Plants (D1) Shic Position (D2)
YDROLOGY etland Hydrology Indicatimary Indicators (minimulators (Minimulators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	itors: m of one is	s required; chec	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6)	apply) Fauna (Buatic Plai en Sulfide d Rhizosp ee of Redi	et13) et Odor (Croheres on uced Iron uction in T	Ser - - !) - Living Roots _ - (C4) _	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted G Geomorp	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (CS) Or Stressed Plants (D1)
YDROLOGY etland Hydrology Indicationary Indicators (minimus) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aer	itors: m of one is	s required; chec	k all that Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu	apply) Fauna (E uatic Plan en Sulfide d Rhizosp e of Redu lron Redu	at13) ants (B14) ants (B14) be Odor (C ² beheres on uced Iron uction in T	Ser - - !) - Living Roots _ - (C4) _	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted G Geomorp	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9 Or Stressed Plants (D1) Shic Position (D2)
YDROLOGY etland Hydrology Indica imary Indicators (minimul Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aei Sparsely Vegetated Cone	ntors: m of one is rial Imagery cave Surfac	s required; chec	Aquatic True Aq Hydroge Oxidized (C3) Presence Recent (C6) Thin Mu Gauge (C3)	apply) Fauna (E uatic Plan en Sulfide d Rhizosp ee of Redu Iron Redu uck Surfac	ata (D9)	Second Se	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted G Geomorp	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9 Or Stressed Plants (D1) Shic Position (D2)
YDROLOGY etland Hydrology Indicatimary Indicators (minimumous Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aei Sparsely Vegetated Cone Water-Stained Leaves (E	ntors: m of one is rial Imagery cave Surfac	s required; chec	Aquatic True Aq Hydroge Oxidized (C3) Presence Recent (C6) Thin Mu Gauge (C3)	apply) Fauna (E uatic Plan en Sulfide d Rhizosp ee of Redu Iron Redu uck Surfac	at13) ants (B14) ants (B14) be Odor (C ² beheres on uced Iron uction in T	Second Se	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted G Geomorp	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9 Or Stressed Plants (D1) Shic Position (D2)
YDROLOGY etland Hydrology Indicatimary Indicators (minimus) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aer Sparsely Vegetated Cone Water-Stained Leaves (Eeld Observations:	itors: m of one is rial Imagery cave Surface 39)	s required; chec	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	apply) Fauna (Buuatic Planen Sulfided Rhizospee of Reduler Surfacer Well December 2011)	ata (D9) Remarks	Second Se	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomorp FAC-Neu	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9 Or Stressed Plants (D1) Sohic Position (D2) Utral Test (D5)
High Water Table (A2) Saturation (A3) (Water Marks (B1) (Sediment Deposits (B2) Drift Deposits (B3) (Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aer Sparsely Vegetated Conductor Water-Stained Leaves (Eeld Observations: urface water present?	rial Imagery cave Surface 39)	s required; chec	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge (Other (E	apply) Fauna (Buatic Planen Sulfider d Rhizospere of Redulation Reduction Re	ata (D9) Remarks inches):	Second Se	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomory FAC-Neu	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9 Or Stressed Plants (D1) Sohic Position (D2) Sutral Test (D5)
YDROLOGY Yetland Hydrology Indicationary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aeron Sparsely Vegetated Concumulation Visible on Aeron Water-Stained Leaves (Example 1998) Interval of the Architecture of the Archi	ntors: m of one is rial Imagery cave Surface 39) Yes Yes	s required; chec	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C	apply) Fauna (E uatic Plan en Sulfide d Rhizosp ee of Redu lron Redu lck Surfac or Well Di Explain in Depth (Depth (ata (D9) Remarks inches):	Ser Living Roots _ (C4) _ iilled Soils _ -	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomory FAC-Neu Wet hyde	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9 For Stressed Plants (D1) Sohic Position (D2) Sutral Test (D5) Iland Irology
YDROLOGY Yetland Hydrology Indicatimary Indicators (minimumon Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aeron Sparsely Vegetated Concumumon Water-Stained Leaves (Beld Observations: Cater table present? Saturation present?	rial Imagery cave Surface 39)	s required; chec	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge (Other (E	apply) Fauna (E uatic Plan en Sulfide d Rhizosp ee of Redu lron Redu lck Surfac or Well Di Explain in Depth (Depth (ata (D9) Remarks inches):	Second Se	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomory FAC-Neu Wet hyde	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9 Or Stressed Plants (D1) Sohic Position (D2) Sutral Test (D5)
PDROLOGY etland Hydrology Indicatimary Indicators (minimulation Marks (Mater Mater M	rial Imagery cave Surface 39) Yes Yes Yes	y (B7) ce (B8) No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	apply) Fauna (Buatic Plaien Sulfided Rhizospece of Reducted Surface of Well December 1) Depth (Depth	ents (B14)	Sei	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomorp FAC-Neu Wet hydi pres	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9 Or Stressed Plants (D1) Sohic Position (D2) Sutral Test (D5)
YDROLOGY Yetland Hydrology Indicatimary Indicators (minimumon Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aeron Sparsely Vegetated Concumumon Water-Stained Leaves (Eatled Observations: Unificate water present?	rial Imagery cave Surface 39) Yes Yes Yes	y (B7) ce (B8) No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	apply) Fauna (Buatic Plaien Sulfided Rhizospece of Reducted Surface of Well December 1) Depth (Depth	ents (B14)	Sei	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomorp FAC-Neu Wet hydi pres	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9 Or Stressed Plants (D1) Sohic Position (D2) Sutral Test (D5) Iland Irology
PDROLOGY etland Hydrology Indicatimary Indicators (minimumous Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aeron Sparsely Vegetated Concentration Water-Stained Leaves (Beld Observations: Uniface water present? Auturation present.	rial Imagery cave Surface 39) Yes Yes Yes	y (B7) ce (B8) No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	apply) Fauna (Buatic Plaien Sulfided Rhizospece of Reducted Surface of Well December 1) Depth (Depth	ents (B14)	Sei	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomorp FAC-Neu Wet hydi pres	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C6) Or Stressed Plants (D1) Sohic Position (D2) Sutral Test (D5) Iland Irology
PDROLOGY etland Hydrology Indicationary Indicators (minimus) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aer Sparsely Vegetated Cone Water-Stained Leaves (Eald Observations: Inface water present? Interest of the Marks (B1) Interest of	rial Imagery cave Surface 39) Yes Yes Yes	y (B7) ce (B8) No No No	Aquatic True Aq Hydroge Oxidized (C3) Presend Recent (C6) Thin Mu Gauge C Other (E	apply) Fauna (Buatic Plaien Sulfided Rhizospece of Reducted Surface of Well December 1) Depth (Depth	ents (B14)	Sei	Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted of Geomorp FAC-Neu Wet hydi pres	Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (Citor Stressed Plants (D1) Sohic Position (D2) Sutral Test (D5) Iland Irology

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	Cook	Sampling Dat	e: 8/13/2015
Applicant/Owner: CTA/MWRD		State:	Illin	ois Sampling Poir	nt: 7
Investigator(s): J Mengler, V Mosca			ection, Towns	ship, Range: T37	7N, R14E, S27
Landform (hillslope, terrace, etc.):	wale		ocal relief (cor	ncave, convex, none):	swale
Slope (%): Lat: 41.6690	77	Long:	-87.6015	542 Datum:	
Soil Map Unit Name: orthents, loamy, nearly level				VI Classification:	none
Are climatic/hydrologic conditions of the site typical	for this time	of the year?		If no, explain in remarks)	
Are vegetation , soil Y , or hyd	rology	significantl	y disturbed?	Y Are "normal circumstar	"
Are vegetation , soil , or hyd		-	oblematic?	N present?	Y
SUMMARY OF FINDINGS				(If needed, explain any	answers in remarks.)
Hydrophytic vegetation present? Y				, , , , ,	,
Hydric soil present?		Is the s	ampled area	within a wetland?	N
Wetland hydrology present?			s, optional wet		
			, optional wo	adia ono ib.	
Remarks: (Explain alternative procedures here or in	i a separate i	eport.)			
Relied primarily upon vegetation and lands	cape position	on due to di	y time of se	eason, and mostly urban	land/fill for substrate.
VEGETATION Use scientific names of pla	ante				
- Use scientific flames of pic		D	I I' 4	Dominance Test Wor	kshoot
Tree Stratum (Plot size: 9 m)	Absolute % Cover	Dominant Species	Indicator Status		
1		5,73333		Number of Dominant Specie are OBL, FACW, or FAC	
2				Total Number of Domina	`` ′
3				Species Across all Strat	
4				Percent of Dominant Specie	es that
5	_			are OBL, FACW, or FAC	
	0	= Total Cove	r		
Sapling/Shrub stratum (Plot size: 4.6 m	_)			Prevalence Index Wo	rksheet
1 Rhamnus cathartica	100	Y	FAC	Total % Cover of:	
2				· —	x1=0
3			- ——	FACW species 0	
5				FAC species 100 FACU species 0	x = 300 x = 300 x = 300
3	100	= Total Cove	<u> </u>	UPL species 0	$x_5 = 0$
Herb stratum (Plot size: 1 m sq)	. 10101 0010			(A) 300 (B)
1	- ′ 80	Υ		Prevalence Index = B/	_
2	10	N			
3	10	N		Hydrophytic Vegetati	on Indicators:
4	2	N		Rapid test for hydro	ophytic vegetation
5	2	N		Dominance test is	
6				X Prevalence index i	s ≤3.0*
7				Morphological ada	ptations* (provide
8	_			supporting data in	Remarks or on a
9			<u> </u>	separate sheet)	
10	104	= Total Cove	<u> </u>	Problematic hydrol (explain)	onytic vegetation*
Woody vine stratum (Plot size: 1 m sq)	- Total Cove	1		
1	_′				nd wetland hydrology must be sturbed or problematic
2		· 		Hydrophytic	, , , , , , , , , , , , , , , , , , ,
	0	= Total Cove	r	vegetation	
				present?	<u>Y</u>
Remarks: (Include photo numbers here or on a sep	arate sheet)				

Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	ıment th	e indica	tor or confirm	the abser	nce of indicators.)
Depth	Matrix			dox Feat					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks
*Type: C = 0	Concentration, D	= Deplet	tion, RM = Reduc	ed Matri	x, MS =	Masked	Sand Grains.	**Locat	ion: PL = Pore Lining, M = Matrix
	il Indicators:								ematic Hydric Soils:
_	tisol (A1)		Sar	ndy Gley	ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	tic Epipedon (A2)			ndy Redo		(01)			7) (LRR K, L)
				-				•	• • • •
	ck Histic (A3)	4.		pped Ma	, ,			-	t or Peat (S3) (LRR K, L, R)
	Irogen Sulfide (A			my Muc	•			•	Masses (F12) (LRR K, L, R)
Stra	atified Layers (A5)	Loa	my Gley	ed Matri	x (F2)	Very S	Shallow Da	rk Surface (TF12)
2 cr	m Muck (A10)			oleted Ma			Other	(explain in	remarks)
Dep	oleted Below Dark	k Surface	e (A11) Red	dox Dark	Surface	(F6)			
Thi	ck Dark Surface (A12)	Dep	oleted Da	ark Surfa	ce (F7)	*Indicat	ore of hydr	ophytic vegetation and wetland
Sar	ndy Mucky Minera	ıl (S1)	Red	dox Depr	essions	(F8)			e present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3					11,4101	ogy maor b	problematic
	Layer (if observe					1			<u> </u>
	ravel, ballast, fill	eu).					Hydric s	soil presen	+2
Depth (inch		nined					riyuric s	oli preser	
Remarks:									
Area ma	pped as urban	land, a	and 2-3 feet hig	gher in	elevatio	n than	adjacent wet	tland swa	les.
HYDROL	OGY								
Wetland Hy	drology Indicate	rs:							
Primary Indi	cators (minimum	of one is	s required; check	all that a	apply)		Sec	ondary Indi	cators (minimum of two required)
-	Water (A1)		•		Fauna (B	13)		Surface	Soil Cracks (B6)
	ater Table (A2)				uatic Plar	,	_	_	e Patterns (B10)
— ·	` '		-			Odor (C	_		son Water Table (C2)
Saturatio				nyuroge	ii Suilide	Ouoi (C	''		
	larks (B1)				Rhizosp	heres on	Living Roots		Burrows (C8)
	nt Deposits (B2)			(C3)			_		on Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4)	Stunted	or Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	ron Redu	iction in T	illed Soils	Geomor	phic Position (D2)
Iron Dep	osits (B5)			(C6)				FAC-Ne	utral Test (D5)
Inundation	on Visible on Aeria	I Imager	y (B7)	Thin Mu	ck Surfac	e (C7)	_	-	
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge c	r Well Da	ata (D9)			
Water-S	tained Leaves (B9)				Remarks	;)		
Field Obser	•	,	_	- \-	•		•		
Surface wat		Yes	No	X	Depth (i	inches):		Wet	land
Water table	•	Yes	No	X	Depth (i			hyd	rology
Saturation p		Yes	No	X	Depth (i	inches):	0	pre	sent? N
,	pillary fringe)								
Describe red	corded data (stre	am gaug	e, monitoring we	II, aerial	photos,	previous	inspections), if	f available:	
Remarks:									
2-3 feet	higher in eleva	tion tha	an adjacent we	tland sv	wales w	ith no e	evidence of h	nydrology	

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	Cook	Sampling Date: 8/13/2015
Applicant/Owner: CTA/MWRD		State:		nois Sampling Point: 8
Investigator(s): J Mengler, V Mosca		Se	ction, Towns	ship, Range: T37N, R14E, S22 & 27
Landform (hillslope, terrace, etc.):	ale	Loc	cal relief (co	ncave, convex, none): swale
Slope (%): Lat: 41.672876	3	Long:	-87.6070	044 Datum:
Soil Map Unit Name: orthents, loamy, nearly level			NV	VI Classification: none
Are climatic/hydrologic conditions of the site typical fo	r this time o	of the year?	<u>Y</u> ((If no, explain in remarks)
Are vegetation, soilY, or hydrol	logy	significantly	disturbed?	Y Are "normal circumstances"
Are vegetation, soil, or hydrol	logy	naturally pro	blematic?	N present? Y
SUMMARY OF FINDINGS				(If needed, explain any answers in remarks.)
Hydrophytic vegetation present? Y				
Hydric soil present?		Is the sa	mpled area	a within a wetland?
Wetland hydrology present? Y		If yes,	optional we	tland site ID: Wetland 7
Remarks: (Explain alternative procedures here or in a	separate r	eport.)		
			· than a of a	
Relied primarily upon vegetation and landsca	pe positio	n due to dry	time or se	eason, and mostly urbanland/fill for substrate.
VEGETATION Use scientific names of plan	ıts.			
	Absolute	Dominant	Indicator	Dominance Test Worksheet
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Species	Status	Number of Dominant Species that
1				are OBL, FACW, or FAC: 1 (A)
2				Total Number of Dominant
3				Species Across all Strata: 1 (B)
				Percent of Dominant Species that
5		= Total Cover		are OBL, FACW, or FAC: 100.00% (A/B)
Sapling/Shrub stratum (Plot size: 4.6 m	,	= TUtai OUVU.		Prevalence Index Worksheet
1	,			Total % Cover of:
2				OBL species 10 x 1 = 10
3				FACW species 94 x 2 = 188
4				FAC species 0 x 3 = 0
5				FACU species 0 x 4 = 0
	0	= Total Cover	_	UPL species 0 x 5 = 0
Herb stratum (Plot size: 1 m sq)			Column totals 104 (A) 198 (B)
1 Phragmites australis	80	- <u>Y</u>	FACW	Prevalence Index = B/A = 1.90
2 Lythrum salicaria	10	N N	OBL	the decrete de Manatation Indicators
3 Solidago graminifolia 4 Helianthus grosseserratus	10 2	N N	FACW FACW	Hydrophytic Vegetation Indicators:
4 Helianthus grosseserratus 5 Verbena hastata	2	- <u>N</u>	FACW	Rapid test for hydrophytic vegetation X Dominance test is >50%
6 Verbena nasiata			IACVV	X Prevalence index is ≤3.0*
7				-
8				Morphological adaptations* (provide supporting data in Remarks or on a
9				separate sheet)
10				Problematic hydrophytic vegetation*
	104	= Total Cover		(explain)
Woody vine stratum (Plot size: 1 m sq)			*Indicators of hydric soil and wetland hydrology must be
1				present, unless disturbed or problematic
2				Hydrophytic
	0	= Total Cover		vegetation present?
Remarks: (Include photo numbers here or on a separ	ate sheet)			
Remarks. (molude prioto namboro noro or on a ocqui	ale snoot,			

Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	ıment th	e indica	tor or confirm the a	absence of indicators.)
Depth	Matrix			dox Feat				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
*Type: C = 0	Concentration, D	= Deplet	tion, RM = Reduc	ed Matri	x, MS =	Masked	Sand Grains. **	Location: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicators for I	Problematic Hydric Soils:
Hist	isol (A1)		Sar	dy Gleye	ed Matrix	(S4)	Coast Prair	ie Redox (A16) (LRR K, L, R)
— Hist	Histic Epipedon (A2) Sandy Redox (S5)						Dark Surfac	ce (S7) (LRR K, L)
	ck Histic (A3)			-	ıtrix (S6)			y Peat or Peat (S3) (LRR K, L, R)
	rogen Sulfide (A	1)		•	ky Miner			inese Masses (F12) (LRR K, L, R)
	-							, ,, ,
	itified Layers (A5)			ed Matri			w Dark Surface (TF12)
	n Muck (A10)				atrix (F3)		Other (expl	ain in remarks)
	leted Below Dark				Surface			
Thic	k Dark Surface (A12)			ark Surfa		*Indicators of	hydrophytic vegetation and wetland
Sandy Mucky Mineral (S1) Redox Depressions (F8) hydrology must be present, unless disturbed o								
5 cr	n Mucky Peat or	Peat (S3	3)					problematic
Restrictive	Layer (if observ	ed):						
	avel, ballast, fill	,					Hydric soil pr	esent?
Depth (inche	es): not determ	nined			•			
Remarks:								
Remarks.								
A ****	nnad aa urban	land a	and located ba		اممعانم	and are	wal aantraatar wa	d
Area ma	pped as urban	iana, a	and located bei	ween r	aliroad	and gra	avel contractor ya	ra.
LIVEROL	201/							
HYDROLO								
-	drology Indicato							
Primary Indi	cators (minimum	of one is	s required; check	all that a	apply)		Secondar	y Indicators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)	Sui	rface Soil Cracks (B6)
High Wa	ter Table (A2)			True Aq	uatic Plar	nts (B14)	X Dra	ainage Patterns (B10)
Saturation	on (A3)			Hydroge	n Sulfide	Odor (C	I) Dry	/-Season Water Table (C2)
X Water M	arks (B1)			Oxidized	l Rhizoso	heres on	Living Roots Cra	ayfish Burrows (C8)
X Sedimer	t Deposits (B2)			(C3)	i i tilizoop	110103 011	· —	turation Visible on Aerial Imagery (C9)
	oosits (B3)			•	e of Redu	iced Iron		inted or Stressed Plants (D1)
	t or Crust (B4)			•			· · · — _{Co}	omorphic Position (D2)
					ron Redu	iction in T	IIICa Collo	
	osits (B5)			(C6)			FA	C-Neutral Test (D5)
	on Visible on Aeria			Thin Mu	ck Surfac	e (C7)		
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge o	r Well Da	ata (D9)		
X Water-S	tained Leaves (B9)		Other (E	xplain in	Remarks)	
Field Obser	vations:							
Surface wat	•	Yes	No	X	Depth (i	,		Wetland
Water table	•	Yes	No No	X	Depth (i	,		hydrology
Saturation p		Yes	X No		Depth (i	inches):	0	present? Y
	pillary fringe)	om co	o monitorina	II ocrisi	nhotos	nrovious	inapostions) if accell	able
Describe red	corded data (strea	am gaug	je, monitoring we	ıı, aerial	priotos,	previous	inspections), if avail	aule.
Remarks:								
Saturation	n within drains	ade swa	ale along railro	ad				

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	Cook	Sampling Date: 8/13/2015			
Applicant/Owner: CTA/MWRD		State	: Illin	ois Sampling	Point: 9		
Investigator(s): J Mengler, V Mosca			Section, Towns	ship, Range:	T37N, R14E, S27		
Landform (hillslope, terrace, etc.):	ale		ocal relief (cor	ncave, convex, none):	swale		
Slope (%): Lat: 41.66907	7	Long:	-87.6015	542 Datum:			
Soil Map Unit Name: orthents, loamy, nearly level				/I Classification:	none		
Are climatic/hydrologic conditions of the site typical for	or this time o	of the year?		If no, explain in remarks			
Are vegetation , soil Y , or hydro	ology	significantl	ly disturbed?	Y Are "normal circum			
Are vegetation , soil , or hydro			roblematic?	N present?	istances Y		
SUMMARY OF FINDINGS		, ,		 '	any answers in remarks.)		
Hydrophytic vegetation present? Y				, , , ,		,	
Hydric soil present?		Is the s	Is the sampled area within a wetland?				
Wetland hydrology present?			s, optional wet	-			
	a aanarata r		o, optional tro	Maria ono 15.			
Remarks: (Explain alternative procedures here or in	a separate r	eport.)					
Relied primarily upon vegetation and landsca	ape positio	n due to d	ry time of se	eason, and mostly url	banland/fill for substra	ate.	
VEGETATION Use scientific names of plan	nte						
Ose scientific flames of plan		Daninant	la dia atau	Dominance Test V			
Tree Stratum (Plot size: 9 m)	Absolute % Cover	Dominant Species	Indicator Status				
1		5,755.55		Number of Dominant Sp are OBL, FACW, or		()	
2				Total Number of Dor		,	
3				Species Across all S		5)	
4				Percent of Dominant Sp	ecies that		
5				are OBL, FACW, or		VB)	
	0	= Total Cove	er				
Sapling/Shrub stratum (Plot size: 4.6 m	.)			Prevalence Index	Worksheet		
1 Rhamnus cathartica	100	Y	FAC	Total % Cover of:			
2				OBL species	0 x 1 = 0		
3		· 		FACW species	0 x 2 = 0		
5				FAC species FACU species	$ \begin{array}{ccccccccccccccccccccccccccccccccc$		
3	100	= Total Cove		UPL species	$0 \times 4 = 0$ 0 x 5 = 0		
Herb stratum (Plot size: 1 m sq)	·	,1		100 (A) 300 (B)	3)	
1	.′ 80	Υ		Prevalence Index =		,	
2	10	N					
3	10	N		Hydrophytic Vege	tation Indicators:		
4	2	N		Rapid test for h	nydrophytic vegetation		
5	2	N		Dominance tes	t is >50%		
6				X Prevalence ind	ex is ≤3.0*		
7				Morphological a	adaptations* (provide		
8					a in Remarks or on a		
9				separate sheet			
10	104	= Total Cove		Problematic hy (explain)	drophytic vegetation*		
Woody vine stratum (Plot size: 1 m sq)	- Total Cove	2 1	— ` · · ·			
1	.′			-	oil and wetland hydrology must ss disturbed or problematic	it be	
2				Hydrophytic	<u> </u>		
	0	= Total Cove	er	vegetation	.,		
				present?	<u>Y</u>		
Remarks: (Include photo numbers here or on a sepa	rate sheet)						

SOIL	Sampling Point:	_
500	Sambing Point	u

Profile Desc	cription: (Descr	ibe to th	ne depth needed	to docu	ıment th	e indica	tor or confirm	the absen	ice of indicators.)
Depth	Matrix		Red	dox Feat	<u>ures</u>				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textur	re e	Remarks
*Type: C = C	Concentration, D	= Deplet	tion, RM = Reduc	ed Matri	x, MS =	Masked	Sand Grains.	**Locati	ion: PL = Pore Lining, M = Matrix
	il Indicators:	•			,				ematic Hydric Soils:
	isol (A1)		Sar	dv Gleve	ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			idy Redo		. (0 .)			7) (LRR K, L)
	ck Histic (A3)			-	itrix (S6)			•	t or Peat (S3) (LRR K, L, R)
	rogen Sulfide (A	1)		•	ky Minera	al (E1)		-	Masses (F12) (LRR K, L, R)
	itified Layers (A5			•	ed Matri			•	rk Surface (TF12)
		,							
	n Muck (A10)	. Curfoo			atrix (F3)		Other	(explain in	remarks)
	oleted Below Dark				Surface				
	ck Dark Surface (,			ark Surfa				ophytic vegetation and wetland
Sandy Mucky Mineral (S1) Redox Depressions (F8) hydrology must be present, unless disturbed of the present of						-			
	n Mucky Peat or		3)						problematic
	Layer (if observe	ed):							
, <u> </u>	avel, ballast, fill						Hydric s	oil presen	t?
Depth (inche	es): not determ	iinea			•				
Remarks: Area mapped as urban land, and 2-3 feet higher in elevation than adjacent wetland swales.									
HYDROLO	OGY								
Wetland Hy	drology Indicate	rs:							
Primary Indi	cators (minimum	of one is	s required; check	all that a	apply)		Seco	ndary Indi	cators (minimum of two required)
Surface '	Water (A1)			Aquatic	Fauna (B	13)		Surface S	Soil Cracks (B6)
	ter Table (A2)			•	uatic Plar			_	Patterns (B10)
Saturation					n Sulfide				son Water Table (C2)
_	arks (B1)							_	Burrows (C8)
	t Deposits (B2)			(C3)	ı Kılızosp	neres on	Living Roots	– '	n Visible on Aerial Imagery (C9)
	oosits (B3)				e of Redu	iced Iron	(C4)	_	or Stressed Plants (D1)
	t or Crust (B4)							_	phic Position (D2)
	osits (B5)			(C6)	ron Redu	iction in I	illed Soils		utral Test (D5)
	osits (B3) on Visible on Aeria	llmagen		• *	ck Surfac	o (C7)			iliai Test (D3)
	Vegetated Conca			•					
─ '	•				or Well Da		`		
	tained Leaves (B9)		Otner (E	xplain in	Remarks)	_	
Field Obser Surface water		Yes	No	Х	Depth (i	nchoc):		Wet	land
Water table	•	Yes	No	X	Depth (i	,			rology
Saturation p	•	Yes	No	X	Depth (i	,	0	-	sent? N
	pillary fringe)				· · `				
Describe red	corded data (stream	am gaug	je, monitoring we	II, aerial	photos,	previous	inspections), if	available:	
Remarks:									
2-3 feet l	nigher in eleva	tion tha	an adjacent we	tland sv	wales w	ith no e	evidence of h	ydrology	

Project/Site Lake Calumet CTA Red Line Extension	ı City	/County:	Cook	Sampling Date:		8/19/2015
Applicant/Owner: CTA/MWRD		State:	: Illin	ois Samp	ling Point:	10
Investigator(s): J Mengler, V Mosca			Section, Towns	ship, Range:	T37N, R	14E, S27
Landform (hillslope, terrace, etc.):	wale		ocal relief (co	ncave, convex, none	e):	swale
Slope (%): Lat: 41.657	12	Long:	-87.6007	738 Datur	n:	
Soil Map Unit Name: orthents, loamy, nearly level				/I Classification:	r	none
Are climatic/hydrologic conditions of the site typical	for this time	of the year?		If no, explain in rem		
Are vegetation , soil Y , or hyd		•	y disturbed?	Y Are "normal cir		
Are vegetation , soil , or hyd			roblematic?	cumstances	Y	
SUMMARY OF FINDINGS				N present? (If needed, exp	lain any ansv	vers in remarks.)
Hydrophytic vegetation present? Y				·	· ·	· ·
Hydric soil present?		Is the sampled area within a wetland?				
Wetland hydrology present?		If yes	s, optional we	land site ID:	Wetland 8	
Remarks: (Explain alternative procedures here or in	n a separate i		•			
	·					
Relied primarily upon vegetation and lands	cape position	on due to d	ry time of se	eason, and mostly	/ urbanland	fill for substrate.
VEGETATION Use scientific names of plants	ants.					
	Absolute	Dominant	Indicator	Dominance Te	est Workshee	et
Tree Stratum (Plot size: 9 m)	% Cover		Status	Number of Dominar	nt Species that	
1				are OBL, FACV	•	1 (A)
2				Total Number of	Dominant	
3				Species Across	all Strata:	1 (B)
4				Percent of Dominar	•	100.000/ (1/17)
5		= Total Cove		are OBL, FACV	V, OF FAC:	(A/B)
Sapling/Shrub stratum (Plot size: 4.6 m	,	- Total Cove	;ı	Prevalence Inc	dex Workshe	et
1	- ′			Total % Cover		
2				OBL species	0 x 1	= 0
3				FACW species	100 x 2	= 200
4				FAC species	0 x 3	= 0
5	_		_	FACU species	0 x 4	= 0
	0	= Total Cove	er	UPL species	0 x 5	
Herb stratum (Plot size: 1 m sq	_)			Column totals	100 (A)	
1 Phragmites australis	100	Y	FACW	Prevalence Ind	lex = B/A =	2.00
2				Hydrophytic V	ogotation Inc	dicators:
4					for hydrophyti	
5				X Dominance		-
6	_			X Prevalence		
7				Morpholog	ical adaptatio	ns* (provido
8					ical adaptatio data in Rema	**
9				separate s	heet)	
10					c hydrophytic	vegetation*
	100	= Total Cove	er	(explain)		
Woody vine stratum (Plot size: 1 m sq	_)			,		and hydrology must be
1					unless disturbed	or problematic
2	0	= Total Cove		Hydrophyt vegetation		
	U	- Total Cove	•1	present?	Y	_
Remarks: (Include photo numbers here or on a sep	arate sheet)					

	Matrix	ibe to ti		dox Feat		ie indica	itor or confirm the a	absence of indicators.)
Depth (Inches)	Color (moist)	%	Color (moist)	<u>ж геац</u> %	Type*	Loc**	Texture	Remarks
(1101100)	Odior (moist)	70	00101 (1110131)	70	Турс	Loc	Texture	Remarks
*Tumo: C = (Concentration D	- Donlo	tion DM = Doduc	ad Matr	iv MC =	Maakad	Cond Crains **	Location: DL - Doro Lining M - Matrix
	Concentration, D	= Deple	lion, Rivi = Reduc	eu Mau	IX, IVIS =	Masked		Location: PL = Pore Lining, M = Matrix
•	oil Indicators:		_					Problematic Hydric Soils:
	tisol (A1)				ed Matrix	x (S4)		ie Redox (A16) (LRR K, L, R)
His	tic Epipedon (A2)		Sar	ndy Redo	ox (S5)		Dark Surfac	ce (S7) (LRR K, L)
Bla	ck Histic (A3)		Stri	pped Ma	atrix (S6)		5 cm Muck	y Peat or Peat (S3) (LRR K, L, R)
—— Hyd	drogen Sulfide (A	4)	Loa	ımy Muc	ky Miner	al (F1)	Iron-Manga	nese Masses (F12) (LRR K, L, R)
Stra	atified Layers (A5)	Loa	ımy Gley	ed Matri			
	m Muck (A10)				atrix (F3)	. ,		ain in remarks)
	oleted Below Darl	k Surfac			Surface			,
	ck Dark Surface (ark Surfa			
								hydrophytic vegetation and wetland
	ndy Mucky Minera			зох Бері	ressions	(F8)	hydrology m	ust be present, unless disturbed or
5 cı	m Mucky Peat or	Peat (S	3)					problematic
Restrictive	Layer (if observ	ed):						
Type: g	ravel, ballast, fill				_		Hydric soil pr	resent?
Depth (inch	es): not determ	nined			_			
Area ma	pped as urban	land, a	and located be	tween (gravel r	oads.		
HYDROL	OGY							
Wetland Hy	drology Indicate	ors:						
Primary Indi	cators (minimum	of one is	s required; check	all that	apply)		Secondar	y Indicators (minimum of two required
-	Water (A1)		•		Fauna (B	313)	·	rface Soil Cracks (B6)
	ater Table (A2)			•	uatic Plar			ainage Patterns (B10)
Saturation				•		Odor (C		/-Season Water Table (C2)
				пушоде	en Sumae	Odoi (C		
	larks (B1)				d Rhizosp	heres on	Living Roots	ayfish Burrows (C8)
	nt Deposits (B2)			(C3)				turation Visible on Aerial Imagery (C9)
Drift De	posits (B3)			Presenc	e of Red	uced Iron	(C4) Stu	inted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent	Iron Redu	uction in T	illed Soils Ge	omorphic Position (D2)
Iron Dep	osits (B5)			(C6)			FA	C-Neutral Test (D5)
Inundati	on Visible on Aeria	I Imager	y (B7)	Thin Mu	ck Surfac	ce (C7)		
	Vegetated Conca			Gauge o	or Well Da	ata (D9)		
	tained Leaves (B9					Remarks)	
Field Obse	•	,		- 0 11101 (2	-xpiaiii iii	Ttomarko	,	
Surface wat		Yes	No	X	Depth (inches).		Wetland
Water table	•	Yes	No	$\frac{\chi}{X}$	Depth (hydrology
Saturation p	•	Yes	X No		Depth (,	0	present? Y
(includes ca	pillary fringe)				<u> </u>			
Describe re	corded data (stre	am gaug	ge, monitoring we	II, aerial	photos,	previous	inspections), if avail	able:
Remarks:								
. tomanto.								
Coturation	on within dealer	200 011	ala alana zaz-l	_				
Jaiurali	on within draina	age sw	ale along roads	э.				

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	Cook	Sampling Date: 8/19/2015		
Applicant/Owner: CTA/MWRD		State:	Illir	ois Sampling Point: 11		
Investigator(s): J Mengler, V Mosca		Se	ction, Town	ship, Range: T37N, R14E, S27		
Landform (hillslope, terrace, etc.):	ale	Loc	al relief (co	ncave, convex, none): swale		
Slope (%): Lat: 41.665712	2	Long:	-87.600	738 Datum:		
Soil Map Unit Name: orthents, loamy, nearly level			NV	VI Classification: none		
Are climatic/hydrologic conditions of the site typical for	or this time of	of the year?		If no, explain in remarks)		
Are vegetation , soil Y , or hydro		-		YAre "normal circumstances"		
	logy			N present? Y		
SUMMARY OF FINDINGS	<u> </u>	, , , ,		(If needed, explain any answers in remarks.)		
Hydrophytic vegetation present? Y						
Hydric soil present?		Is the sampled area within a wetland?				
Wetland hydrology present?			-	dland site ID:		
Remarks: (Explain alternative procedures here or in a	e congrato r			<u> </u>		
Remarks. (Explain alternative procedures here or in a	a separate r	eport.)				
Relied primarily upon vegetation and landsca	pe positio	n due to dry	time of se	eason, and mostly urbanland/fill for substrate.		
VEGETATION Use scientific names of plar	nts					
Coc delenante names el plan	Absolute	Dominant	Indicator	Dominance Test Worksheet		
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Species	Status	Number of Dominant Species that		
1		•		are OBL, FACW, or FAC: 0 (A)		
2				Total Number of Dominant		
3				Species Across all Strata: 0 (B)		
4				Percent of Dominant Species that		
5				are OBL, FACW, or FAC: 0.00% (A/B)		
	0	= Total Cover				
Sapling/Shrub stratum (Plot size: 4.6 m)			Prevalence Index Worksheet		
1				Total % Cover of:		
				OBL species 0 x 1 = 0 FACW species 0 x 2 = 0		
3				FACW species 0 x 2 = 0 FAC species 0 x 3 = 0		
5	-			FACU species 0 x 4 = 0		
	0	= Total Cover		UPL species $0 \times 5 = 0$		
Herb stratum (Plot size: 1 m sq)			Column totals 0 (A) 0 (B)		
1 Ambrosia trifida			FAC	Prevalence Index = B/A =		
2 Artemisia vulgaris			UPL			
3 Melilotus albus			FACU	Hydrophytic Vegetation Indicators:		
4 Arctium minus			FACU	Rapid test for hydrophytic vegetation		
5 Lotus corniculata			FACU	Dominance test is >50%		
6				Prevalence index is ≤3.0*		
7				Morphological adaptations* (provide		
8				supporting data in Remarks or on a separate sheet)		
10	-					
	0	= Total Cover		Problematic hydrophytic vegetation* (explain)		
Woody vine stratum (Plot size: 1 m sq)					
1	,			*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic		
2				Hydrophytic		
	0	= Total Cover		vegetation		
				present? N		
Remarks: (Include photo numbers here or on a separ	ate sheet)					

(Inches) Color (moist) Eype: C = Concentration, D = E Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (Septicity Layer (if observed)) per gravel, ballast, fill epth (inches):	Surface (A11)	educed Matri Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe	Remarks ation: PL = Pore Lining, M = M blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R)
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) rpe: gravel, ballast, fill epth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) rpe: gravel, ballast, fill epth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) pe: gravel, ballast, fill epth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1) Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) pe: gravel, ballast, fill epth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1) Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) pe: gravel, ballast, fill pth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) pe: gravel, ballast, fill epth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) pe: gravel, ballast, fill epth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) pe: gravel, ballast, fill epth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) rpe: gravel, ballast, fill epth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) rpe: gravel, ballast, fill epth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) pe: gravel, ballast, fill epth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1) Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe estrictive Layer (if observed) pe: gravel, ballast, fill epth (inches): not determine	Surface (A11)	Sandy Gleye Sandy Redo Stripped Ma Loamy Muck Loamy Gleye Depleted Ma Redox Dark Depleted Da	ed Matrix (S4) ox (S5) trix (S6) cy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Indicators for Prol Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	blematic Hydric Soils: Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (\$5 cm Mucky Peat or Pe estrictive Layer (if observed) pe: gravel, ballast, fill epth (inches): not determine	2) S1)	Sandy Redo Stripped Ma Loamy Muck Loamy Gleyo Depleted Ma Redox Dark Depleted Da	trix (S5) trix (S6) xy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Coast Prairie R Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	Redox (A16) (LRR K, L, R) S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R)
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (\$ 5 cm Mucky Peat or Pe strictive Layer (if observed) pe: gravel, ballast, fill pth (inches): not determine	2) S1)	Sandy Redo Stripped Ma Loamy Muck Loamy Gleyo Depleted Ma Redox Dark Depleted Da	trix (S5) trix (S6) xy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Dark Surface (5 cm Mucky Pe Iron-Manganes Very Shallow D	S7) (LRR K, L) eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (Second Second Seco	2) S1)	Stripped Ma Loamy Muck Loamy Gleyo Depleted Ma Redox Dark Depleted Da	trix (S6) xy Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	5 cm Mucky Pe Iron-Manganes Very Shallow D	eat or Peat (S3) (LRR K, L, R) se Masses (F12) (LRR K, L, R
Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe strictive Layer (if observed) Dec gravel, ballast, fill pth (inches): not determine	2) S1)	Loamy Muck Loamy Gleyon Depleted Ma Redox Dark Depleted Da	ky Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Iron-Manganes Very Shallow D	se Masses (F12) (LRR K, L, R
Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (\$ 5 cm Mucky Peat or Pe strictive Layer (if observed) De: gravel, ballast, fill pth (inches): not determine	2) S1)	Loamy Muck Loamy Gleyon Depleted Ma Redox Dark Depleted Da	ky Mineral (F1) ed Matrix (F2) atrix (F3) Surface (F6)	Iron-Manganes Very Shallow D	se Masses (F12) (LRR K, L, R
Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (\$ 5 cm Mucky Peat or Pe strictive Layer (if observed) De: gravel, ballast, fill pth (inches): not determine	2) S1)	Loamy Gley Depleted Ma Redox Dark Depleted Da	ed Matrix (F2) atrix (F3) Surface (F6)	Very Shallow D	, , ,
2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (\$ 5 cm Mucky Peat or Pe strictive Layer (if observed) De: gravel, ballast, fill pth (inches):not determine	2) S1)	Depleted Ma Redox Dark Depleted Da	atrix (F3) Surface (F6)		
Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (\$ 5 cm Mucky Peat or Pe strictive Layer (if observed) pe: gravel, ballast, fill pth (inches): not determine	2) S1)	Redox Dark Depleted Da	Surface (F6)	Other (explain	` ,
Thick Dark Surface (A1 Sandy Mucky Mineral (S 5 cm Mucky Peat or Pe strictive Layer (if observed) De: gravel, ballast, fill pth (inches): not determine	2) S1)	Depleted Da	, ,		in remarks)
Sandy Mucky Mineral (5 5 cm Mucky Peat or Pe strictive Layer (if observed) pe: gravel, ballast, fill pth (inches): not determine	S1)	•			
5 cm Mucky Peat or Pe strictive Layer (if observed) be: gravel, ballast, fill pth (inches): not determine		Redox Denr	ark Surface (F7)	*Indicators of hyd	drophytic vegetation and wetla
strictive Layer (if observed) pe: gravel, ballast, fill pth (inches): not determine	at (S3)	reduce Depr	essions (F8)		be present, unless disturbed of
strictive Layer (if observed) pe: gravel, ballast, fill pth (inches): not determine	()	•		,	problematic
pe: gravel, ballast, fill pth (inches): not determine	١.		1		·
epth (inches): not determine):			Hardela a all access	
· · · · · · · · · · · · · · · · · · ·				Hydric soil prese	ent?
emarks:	ea				
YDROLOGY					
etland Hydrology Indicators					
mary Indicators (minimum of	one is required; ch	neck all that a	apply)	Secondary In	dicators (minimum of two requ
Surface Water (A1)		Aquatic I	Fauna (B13)	Surface	e Soil Cracks (B6)
High Water Table (A2)		True Agu	uatic Plants (B14)	Draina	ge Patterns (B10)
Saturation (A3)			n Sulfide Odor (C1)		eason Water Table (C2)
		nydroge	ii Suilide Odol (C1)		
_Water Marks (B1)			Rhizospheres on Li	iving roots	sh Burrows (C8)
Sediment Deposits (B2)		(C3)		Saturat	tion Visible on Aerial Imagery (CS
Drift Deposits (B3)		Presence	e of Reduced Iron (0	C4) Stunted	d or Stressed Plants (D1)
Algal Mat or Crust (B4)		Recent I	ron Reduction in Till	led Soils Geomo	orphic Position (D2)
Iron Deposits (B5)		(C6)	TOTT TCCGGCGGT IIT TIII		leutral Test (D5)
Inundation Visible on Aerial In	nagery (B7)	 ' ' '	ck Surface (C7)		\= -/
Sparsely Vegetated Concave	ourrace (B8)		r Well Data (D9)		
Water-Stained Leaves (B9)		Other (E	xplain in Remarks)		
alal Olanamiatiana.					
			Depth (inches):		etland
urface water present?			Depth (inches):		/drology
urface water present? ater table present?	Yes N		Depth (inches):	0 pr	resent? N
urface water present? ater table present? aturation present?	Yes N	10 <u>X</u>			
urface water present? ater table present? aturation present? ucludes capillary fringe)	Yes N				
ater table present?	Yes N		photos, previous ir	nspections), if available	e:
urface water present? ater table present? aturation present? cludes capillary fringe)	Yes N		photos, previous ir	nspections), if available	e:
orface water present? ater table present? aturation present? cludes capillary fringe)	Yes N		photos, previous ir	nspections), if available	e:
rface water present? hater table present? turation present? cludes capillary fringe) scribe recorded data (stream	Yes N Yes N I gauge, monitoring	g well, aerial			

Project/Site Lake Calumet CTA Red Line Extension	City/	City/County: Cook		Sampling Date:		8/19/2015	
Applicant/Owner: CTA/MWRD		State	e: Illin	ois Samplir	ng Point:	12	
Investigator(s): J Mengler, V Mosca			Section, Towns	ship, Range:	T37N, R	14E, S26	
Landform (hillslope, terrace, etc.):	/ale		ocal relief (cor	ncave, convex, none):		swale	
Slope (%): Lat: 41.66170)4	Long:	-87.5973	Datum:			
Soil Map Unit Name: orthents, clayey, undulating				/I Classification:	PF0	1/EMCd	
Are climatic/hydrologic conditions of the site typical for	or this time	of the year?	Υ (If no, explain in remar	ks)		
Are vegetation , soil Y , or hydro	ology	significant	tly disturbed?	Y Are "normal circu	ımstances"		
Are vegetation , soil , or hydro	ology	naturally p	turally problematic? N present?				
SUMMARY OF FINDINGS		•		(If needed, expla	in any answ	ers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present?		Is the	sampled area	within a wetland?	Y		
Wetland hydrology present?		If ye	s, optional wet	tland site ID:V	Vetland 9		
Remarks: (Explain alternative procedures here or in	a separate r	eport.)		<u></u>			
	·	. ,					
Relied primarily upon vegetation and landsca	ape positio	on due to d	iry time of se	eason, and mostly	urbanland	fill for substrate.	
VEGETATION Use scientific names of pla	nts.						
	Absolute	Dominant	t Indicator	Dominance Tes	t Workshee	et	
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Species	Status	Number of Dominant	Species that		
1				are OBL, FACW,	or FAC:	1 (A)	
2				Total Number of D		. (5)	
3		. ———		Species Across a	II Strata:	1(B)	
5				Percent of Dominant are OBL, FACW,	•	100.00% (A/B)	
3	0	= Total Cov	er	aic obt, i Aow,	orrao.	100.00 % (A/B)	
Sapling/Shrub stratum (Plot size: 4.6 m)	•		Prevalence Inde	ex Workshe	et	
1	• ′			Total % Cover of	f:		
2				OBL species	0 x 1	= 0	
3				FACW species	100 x 2	= 200	
4				FAC species	0 x 3		
5				FACU species	0 x 4		
Horb stretum (Diet size) 1 m ss	0	= Total Cov	er	UPL species	0 x 5		
Herb stratum (Plot size: 1 m sq 1 Phragmites australis	100	Y	FACW	Column totals Prevalence Inde	$\frac{100}{x = R/\Delta} = (A)$	200 (B) 2.00	
2	100	· — '	<u> TACW</u>	i revalence inde	X - D/X -	2.00	
3		. ———		Hydrophytic Ve	getation Inc	dicators:	
4				Rapid test fo	•		
5				X Dominance t	est is >50%		
6			_	X Prevalence i	ndex is ≤3.0	*	
7				Morphologic	al adaptatio	ns* (provide	
8				supporting d		irks or on a	
9				separate she	,		
10	100	= Total Cov		Problematic	hydrophytic	vegetation*	
Woody vine stratum (Plot size: 1 m sq	100	= Total Cov	еі	(explain)			
1	.'			1		and hydrology must be or problematic	
2				Hydrophytic			
	0	= Total Cov	er	vegetation			
				present?	Y	-	
Remarks: (Include photo numbers here or on a sepa	rate sheet)						

Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	ıment th	e indica	tor or confirm the ab	sence of indicators.)
Depth	Matrix			dox Feat				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
*Type: C = 0	Concentration, D	= Deplet	tion, RM = Reduc	ed Matri	x, MS =	Masked	Sand Grains. **Lo	ocation: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicators for Pr	oblematic Hydric Soils:
Hist	isol (A1)		Sar	ndv Glev	ed Matrix	(S4)	Coast Prairie	Redox (A16) (LRR K, L, R)
	ic Epipedon (A2)			ndy Redo		(-)		(S7) (LRR K, L)
	ck Histic (A3)			-	itrix (S6)			Peat or Peat (S3) (LRR K, L, R)
	, ,	4)			, ,			, ,, , , , ,
	rogen Sulfide (A			•	ky Miner	. ,		ese Masses (F12) (LRR K, L, R)
	tified Layers (A5))			ed Matri			Dark Surface (TF12)
	n Muck (A10)				atrix (F3)		Other (explai	n in remarks)
Dep	leted Below Dark	k Surface	e (A11)Red	dox Dark	Surface	(F6)		
Thic	ck Dark Surface (A12)	Dep	oleted Da	ark Surfa	ce (F7)	*Indicators of h	ydrophytic vegetation and wetland
San	dy Mucky Minera	ıl (S1)	Red	dox Depr	essions	(F8)		st be present, unless disturbed or
5 cm Mucky Peat or Peat (S3) problematic						-		
Restrictive	Layer (if observe	eq).	•					•
	avel, ballast, fill	cuj.					Hydric soil pre	sent?
Depth (inche		nined					riyano con pro	
					•			
Remarks:								
Area ma	pped as urban	iand, a	and located be	ween g	gravei p	arking	oad and road.	
HYDROLO								
-	drology Indicato							
Primary Indi	cators (minimum	of one is	s required; check	all that a	apply)		<u>Secondary</u>	Indicators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)	Surfa	ace Soil Cracks (B6)
High Wa	ter Table (A2)			True Aq	uatic Plar	nts (B14)	X Drair	nage Patterns (B10)
X Saturation	on (A3)			Hydroge	n Sulfide	Odor (C	 Dry-9	Season Water Table (C2)
	arks (B1)							fish Burrows (C8)
	t Deposits (B2)			(C3)	i Kilizosp	neres on	Living Roots	ration Visible on Aerial Imagery (C9)
	osits (B3)			•	a of Padı	uced Iron		ted or Stressed Plants (D1)
				rieselic	e oi Reul	aceu iron		· ·
	t or Crust (B4)				ron Redu	iction in T	ilica dolla	morphic Position (D2)
	osits (B5)			(C6)			FAC	Neutral Test (D5)
Inundatio	on Visible on Aeria	I Imager	y (B7)	Thin Mu	ck Surfac	e (C7)		
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge o	or Well Da	ata (D9)		
X Water-S	tained Leaves (B9)		Other (E	xplain in	Remarks)	
Field Obser	vations:							
Surface wat	er present?	Yes	No	Х	Depth (i	inches):		Wetland
Water table	•	Yes	No	X	Depth (i	,		hydrology
Saturation p		Yes	X No		Depth (nches):	0	present? Y
	pillary fringe)							
Describe red	corded data (strea	am gaug	je, monitoring we	II, aerial	photos,	previous	inspections), if availal	ole:
Remarks:								
Saturation	n within drains	200 04"	alo alona hicha	ar arai ir	nd			
Jaiurall	n within draina	age swi	are arong myne	, groui	ia.			

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	Cook	Sampling	8/19/2015		
Applicant/Owner: CTA/MWRD		State:	Illin	nois Sampling	Point:	13	
Investigator(s): J Mengler, V Mosca			ection, Towns	ship, Range:	T37N, R1	4E, S26	
Landform (hillslope, terrace, etc.): sw	ale		ocal relief (co	ncave, convex, none):		swale	
Slope (%): Lat: 41.66170	4	Long:		_			
Soil Map Unit Name: orthents, loamy, nearly level		·		VI Classification:	n	one	
Are climatic/hydrologic conditions of the site typical for	or this time of	of the year?		If no, explain in remarks		-	
Are vegetation , soil Y , or hydro		•	y disturbed?	V			
Are vegetation , soil , or hydro		•		Are "normal circur N present?	nstances"	Y	
SUMMARY OF FINDINGS				(If needed, explain	n anv answe		
Hydrophytic vegetation present?				(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Hydric soil present?		Is the s	Is the sampled area within a wetland?				
Wetland hydrology present?			•	tland site ID:	.,,		
			, optional we				
Remarks: (Explain alternative procedures here or in a	a separate r	report.)					
Relied primarily upon vegetation and landsca	ape positio	on due to dr	y time of se	eason, and mostly u	rbanland/f	ill for substrate.	
VECETATION Lies exigntific names of plan	-1-						
VEGETATION Use scientific names of plan	nts.			Danish and Table	14 /		
Tree Stratum (Plot size: 9 m)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test			
1 (Flot size: 9 III)	% Cover	Species	Status	Number of Dominant S are OBL, FACW, o	•	2 (A)	
2		-	· ——		•	(//)	
3				Total Number of Do Species Across all		6 (B)	
4	-			Percent of Dominant S	•	(,	
5				are OBL, FACW, o	•	33.33% (A/B)	
	0	= Total Cove	r		•		
Sapling/Shrub stratum (Plot size: 4.6 m)	•		Prevalence Index	Workshee	t	
1				Total % Cover of:			
2				OBL species	10 x 1	= 10	
3				FACW species	10 x 2		
4				FAC species	0 x 3		
5		T-4-1 0		FACU species	40 x 4		
Herb stratum (Diet size) 1 m eg	\ <u> </u>	= Total Cove	Г	UPL species	0 x 5		
Herb stratum (Plot size: 1 m sq 1 Polygonum lapathifolium	10	Y	FACW	Column totals Prevalence Index	60 (A)	190 (B) 3.17	
2 Carduus nutans	10	Y	FACU	i revalence index	- 6/4 -	3.17	
3 Medicago lupulina	10	Y	FACU	Hydrophytic Vege	etation Ind	cators:	
4 Helianthus annuus	10	Υ	FACU	Rapid test for			
5 Acnida altissima	10	Υ	OBL	Dominance te	st is >50%	-	
6 Lotus corniculata	10	Y	FACU	Prevalence inc	dex is ≤3.0*		
7				Morphological	adantation	s* (provide	
8				supporting dat		\I	
9				separate shee	et)		
10				Problematic h	ydrophytic v	egetation*	
	60	= Total Cove	r	(explain)			
Woody vine stratum (Plot size: 1 m sq)					nd hydrology must be	
1 2				present, unle	ess disturbed of	or problematic	
2	0	= Total Cove		vegetation			
	J	i otai oove		present?	N		
Remarks: (Include photo numbers here or on a separ	rate sheet)						

Profile Desc	cription: (Descr	ibe to th	ne depth needed	to docu	ument th	e indica	tor or confirm the abs	sence of indicators.)		
Depth	Matrix			lox Feat				·		
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks		
*Typo: C = 0	Concontration D	- Donlot	ion, RM = Reduc	od Matri	iv MC –	Mackad	Sand Grains **Lo	cation: PL = Pore Lining, M = Matrix		
		- Deblei	lion, Rivi – Reduc	eu maui	IX, IVIO –	IVIASKEU		-		
1 -	il Indicators:							oblematic Hydric Soils:		
Hist	isol (A1)		Sar	idy Gley	ed Matrix	(S4)	Coast Prairie	Redox (A16) (LRR K, L, R)		
Hist	Histic Epipedon (A2) Sandy Redox (S5)						Dark Surface	(S7) (LRR K, L)		
Blac	ck Histic (A3)		Stri	oped Ma	trix (S6)		5 cm Mucky P	Mucky Peat or Peat (S3) (LRR K, L, R)		
— Hvd	rogen Sulfide (A	4)	Loa	mv Muc	ky Miner	al (F1)	Iron-Mangane	ese Masses (F12) (LRR K, L, R)		
	tified Layers (A5			•	ed Matri	. ,		Dark Surface (TF12)		
		,								
	n Muck (A10)				atrix (F3)		Other (explain	in remarks)		
	leted Below Dark				Surface					
Thic	k Dark Surface (A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicators of hy	drophytic vegetation and wetland		
San	dy Mucky Minera	ıl (S1)	Red	lox Depr	essions	(F8)		t be present, unless disturbed or		
5 cr	n Mucky Peat or	Peat (S3	3)			problematic				
	Layer (if observ					Ī		•		
	avel, ballast, fill	eu).					Hydric soil pres	ont?		
Depth (inche		nined			•		riyuric son pres			
	not determ	iii ica								
Remarks:										
Area ma	pped as urban	land, a	and a gravel pa	rking p	ad 2-4	feet hig	her than surroundir	g wetland.		
HYDROLO	OGY									
	drology Indicate	ors:								
-			s required; check	all that a	annly)		Secondary I	ndicators (minimum of two required)		
-		01 0110 1	o roquirou, orioon			40)				
	Water (A1)				Fauna (B	-		ce Soil Cracks (B6)		
High Wa	ter Table (A2)			•	uatic Plar	, ,		age Patterns (B10)		
Saturation	on (A3)			Hydroge	n Sulfide	Odor (C	I) Dry-S	eason Water Table (C2)		
Water M	arks (B1)			Oxidized	Rhizoso	heres on	Living Roots Crayfi	sh Burrows (C8)		
Sedimen	t Deposits (B2)			(C3)	. 1 tm200p	110100 011		ation Visible on Aerial Imagery (C9)		
_	oosits (B3)				e of Redu	iced Iron		ed or Stressed Plants (D1)		
				Trescrie	c or recu	acca iron				
	t or Crust (B4)				ron Redu	iction in T		orphic Position (D2)		
Iron Dep	osits (B5)			(C6)			FAC-I	Neutral Test (D5)		
Inundation	on Visible on Aeria	I Imager	y (B7)	Thin Mu	ck Surfac	e (C7)				
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge o	or Well Da	ata (D9)				
Water-S	tained Leaves (B9)		Other (E	xplain in	Remarks)			
Field Obser	•	,					,			
Surface wat		Yes	No	Χ	Depth (i	inches).	v	Vetland		
Water table	•	Yes	No	X	Depth (i			ydrology		
Saturation p	•	Yes	No	$\frac{\lambda}{X}$	Depth (i	,		resent?		
•	pillary fringe)	-				-,	 "			
		am gauc	ie. monitorina we	II. aerial	photos.	previous	inspections), if availab	le:		
	(3-10	, , , , , , , , , , , , , , , , , , , ,	,	, ,					
Remarks:										
2-4 feet l	nigher in eleva	tion tha	an adjacent we	tland sv	wales w	ith no e	evidence of hydrolog	av		
	5		,		•			,		

Project/Site Lake Calur	net CTA Red Lir	ne Extension	City/	County:	Cod	ok	Sampling Date:	8/13/2015
Applicant/Owner: C	TA/MWRD			Sta	ite: II	llinois	Sampling Point:	14
Investigator(s): J Meng	gler, V Mosca			<u> </u>	Section, Tow	/nship, Range:	T37N, R ²	14E, S26
Landform (hillslope, ter	race, etc.):	SWa	ale		Local relief (c	concave, convex	x, none):	swale
Slope (%):	Lat:	41.659598	3	Long:	-87.59)4462	Datum:	
Soil Map Unit Name: ur	ban land- orther	nts, clayey, cor	nplex, nearl	ly level	N	NWI Classificatio	on:r	none
Are climatic/hydrologic	conditions of the	e site typical fo	r this time c	of the year	? Y	(If no, explain i	n remarks)	_
Are vegetation	, soil Y	, or hydro	logy	significa	ntly disturbed?	? Y Are "norr	mal circumstances"	
Are vegetation	, soil	, or hydro	logy	naturally	y problematic?			<u>Y</u>
SUMMARY OF FIN	DINGS					(If neede	ed, explain any answ	vers in remarks.)
Hydrophytic vegeta	ition present?	<u>Y</u>		i				
Hydric soil present	?			Is the	e sampled are	ea within a wetl	and? Y	
Wetland hydrology	present?	<u>Y</u>		lf y	yes, optional w	vetland site ID:	Wetland 10	
Remarks: (Explain alte	rnative procedur	res here or in a	separate r	eport.)				
Relied primarily upo	on vegetation	and landsca	ene positic	n due to	dry time of	season and n	mostly urbanland	/fill for substrate.
					ury urric o	3000011, G11G 11	1103tiy dibamana	TIII TOT GUDGUAG.
VEGETATION Us	se scientific na	ames of plan	ıts.			1		
Tree Ctrotum	(Dist size)	• \	Absolute				nce Test Workshee	
Tree Stratum ((Plot size:	9 m)	% Cover	Specie	es Status		ominant Species that FACW, or FAC:	
2						-		1 (A)
3							nber of Dominant Across all Strata:	1 (B)
4						- '	ominant Species that	``
5							FACW, or FAC:	100.00% (A/B)
			0	= Total Co	over	<u> </u>		
Sapling/Shrub stratur	<u>m</u> (Plot size:	4.6 m)			Prevalen	nce Index Workshe	et
1						Total % (
2						OBL spe		
3						FACW sp	· —	
5						FAC spe		
			0	= Total Co	over	UPL spec		
Herb stratum	(Plot size:	1 m sq)	-		Column t		
1 Phragmites austr	alis		100	Y	FACW	Prevalen	ice Index = B/A =	2.00
2								
3						- 1 ' '	nytic Vegetation Inc	
4						- I — ·	d test for hydrophyti	•
5						-	inance test is >50%	
6						- X Preva	alence index is ≤3.0)*
7							phological adaptatio	\ I
ρ						01100	orting data in Reins	arks or on a
8 9							-	
				·		sepa	rate sheet)	vegetation*
9			100	= Total Co	ver	sepa	rate sheet) lematic hydrophytic	vegetation*
9	(Plot size:	1 m sq	100	= Total Co	over	sepa Probl (expl	rate sheet) lematic hydrophytic lain)	-
9 10	(Plot size:	1 m sq	100	= Total Co	over	sepa Probl (expl *Indicator	rate sheet) lematic hydrophytic	and hydrology must be
9 10 Woody vine stratum	(Plot size:	1 m sq	100	= Total Co	over	sepa Probl (expl *Indicator pr	rate sheet) Ilematic hydrophytic lain) Its of hydric soil and wethersent, unless disturbed rophytic	and hydrology must be
9 10 Woody vine stratum 1	(Plot size:	1 m sq)	= Total Co		sepaProble(expl*IndicatorprobleHydrvege	rate sheet) Ilematic hydrophytic lain) Its of hydric soil and wethersent, unless disturbed rophytic station	and hydrology must be
9			0			sepa Probl (expl *Indicator pr	rate sheet) Ilematic hydrophytic lain) Its of hydric soil and wethersent, unless disturbed rophytic station	and hydrology must be
9 10 Woody vine stratum 1			0			sepaProble(expl*IndicatorprobleHydrvege	rate sheet) Ilematic hydrophytic lain) Its of hydric soil and wethersent, unless disturbed rophytic station	and hydrology must be

Profile Des	cription: (Descr	ibe to th	ne depth neede	to docu	ument th	e indica	tor or confirm t	he absend	ce of indicators.)
Depth	Matrix			dox Feat					,
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	:	Remarks
								-	
*Type: C = 0	Concentration, D	= Deple	tion, RM = Redu	ced Matri	ix, MS =	Masked	Sand Grains.	**Locatio	on: PL = Pore Lining, M = Matrix
Hydric Sc	oil Indicators:						Indicators	for Proble	matic Hydric Soils:
•	tisol (A1)		Sa	ndy Gley	ed Matrix	(S4)			lox (A16) (LRR K, L, R)
	tic Epipedon (A2)			ndy Redo		. (0 .)) (LRR K, L)
				-					or Peat (S3) (LRR K, L, R)
	ck Histic (A3)	4)		pped Ma	, ,			-	
	drogen Sulfide (A			amy Muc	•	` '		•	Masses (F12) (LRR K, L, R)
	atified Layers (A5)		amy Gley					k Surface (TF12)
2 cı	m Muck (A10)			pleted M			Other (explain in ı	remarks)
Dep	oleted Below Dark	k Surfac	e (A11) Re	dox Dark	Surface	(F6)			
Thi	ck Dark Surface (A12)	De	pleted Da	ark Surfa	ce (F7)	*Indicator	e of hydro	phytic vegetation and wetland
Sar	ndy Mucky Minera	al (S1)	Re	dox Depr	essions	(F8)			present, unless disturbed or
5 cı	m Mucky Peat or	Peat (S3	3)				,		problematic
	Layer (if observe		<u>, </u>			Ī			
	ravel, ballast, fill	eu).					Hydric so	il nresent	?
Depth (inch		nined			-		Tiyano 30	ıı prosent	·
Remarks:					•				
Area ma	pped as urban	land, a	and located at	base of	roadwa	ay emb	ankment and a	along rail	road
HYDROL	OGY								
	drology Indicato	ors:							
_	cators (minimum		s required: check	all that	apply)		Secon	ndary Indic	ators (minimum of two required
-	Water (A1)	0. 0	<u> </u>		Fauna (B	13)	<u></u>	•	oil Cracks (B6)
				-	uatic Plar	,		-	Patterns (B10)
	ater Table (A2)			- '		. ,		_	, ,
X Saturation				Hydroge	n Sulfide	Odor (C		-	on Water Table (C2)
Water M	larks (B1)			Oxidized	d Rhizosp	heres on	Living Roots	Crayfish E	Burrows (C8)
Sedimer	nt Deposits (B2)			(C3)				Saturation	Visible on Aerial Imagery (C9)
Drift De	posits (B3)			Presenc	e of Redu	uced Iron	(C4)	Stunted or	r Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	ron Redu	ction in T	illed Soils	Geomorph	nic Position (D2)
Iron Dep	oosits (B5)			(C6)				FAC-Neut	tral Test (D5)
Inundati	on Visible on Aeria	l Imager	y (B7)	Thin Mu	ck Surfac	e (C7)		=	
	/ Vegetated Conca	•		-	or Well Da				
	tained Leaves (B9			-	xplain in		A		
Field Obser	•	,	_	Otrici (L	.xpiaiii iii	rtemarks	')		
Surface wat		Yes	No	Χ	Depth (i	inches).		Wetla	and
Water table		Yes	No	$\frac{\lambda}{X}$	Depth (i				ology
Saturation p	•	Yes	X No		Depth (i	,	0	pres	
	pillary fringe)				`	,			
Describe re	corded data (strea	am gaug	ge, monitoring we	ell, aerial	photos,	previous	inspections), if a	available:	
Remarks:									
Saturation	on within draina	age swa	ale along high	er grour	nd, wet	mud ar	nong old tires.		

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	Cool	k .	Sampling Date:	8/19/2015
Applicant/Owner: CTA/MWRD		Sta	te: Illir	nois S	Sampling Point:	15
Investigator(s): J Mengler, V Mosca			Section, Town	ship, Range:	T37N R	14E S26
Landform (hillslope, terrace, etc.):	itch		Local relief (co	ncave, convex,	, none):	ditch
Slope (%): Lat: 41.6600	19	Long:	-87.595	429	Datum:	
Soil Map Unit Name: urban land-orthents clayey com	nplex, nearly	<u> </u>		VI Classificatio	n: .	none
Are climatic/hydrologic conditions of the site typical f	for this time	of the year		(If no, explain i		
Are vegetation , soil Y , or hydro	ology	significa	ntly disturbed?	Υ Δre "norn	nal circumstances"	
Are vegetation , soil , or hydro		•	problematic?	N present?	nai circumstances	Υ
SUMMARY OF FINDINGS		•		(If neede	d, explain any ansv	vers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present?		Is the	e sampled area	a within a wetl	and? Y	
Wetland hydrology present?		lf y	es, optional we	tland site ID:	Wetland 11	
Remarks: (Explain alternative procedures here or in	a separate r		-	_		
		. ,				
Relied primarily upon vegetation and landsc	ape position	on due to	dry time of s	eason, and n	nostly urbanland	/fill for substrate.
VEGETATION Use scientific names of pla	ints.					
	Absolute	Domina	nt Indicator	Dominan	ice Test Workshe	et
Tree Stratum (Plot size: 9 m)	% Cover	Specie	s Status	Number of Do	ominant Species that	
1	_			are OBL,	FACW, or FAC:	1 (A)
2				Total Num	ber of Dominant	
3				Species A	Across all Strata:	1 (B)
4					minant Species that	
5		= Total Co		are OBL,	FACW, or FAC:	100.00% (A/B)
Sapling/Shrub stratum (Plot size: 4.6 m	,	- Total Co	ivei	Provalon	ce Index Workshe	not .
1 Salix interior	_'		FACW	Total % C		,61
2	_			OBL spec		= 0
3				FACW sp	pecies 100 x 2	2 = 200
4				FAC spec	cies 0 x 3	3 = 0
5			_	FACU sp	ecies 0 x 4	1 = 0
	0	= Total Co	ver	UPL spec	cies 0 x 5	
Herb stratum (Plot size: 1 m sq	_)			Column t	`) <u>200</u> (B)
1 Phragmites australis	100	. <u>Y</u>	FACW	Prevalen	ce Index = B/A =	2.00
2				Hydronb	utio Vocatation In	diantara
3	_				ytic Vegetation Indicate of test for hydrophyt	
5	_				nance test is >50%	•
6					alence index is ≤3.0	
7	-					
8					hological adaptatio orting data in Rema	(1
9					rate sheet)	
10	_			Probl	ematic hydrophytic	vegetation*
	100	= Total Co	ver	(expla	ain)	
Woody vine stratum (Plot size: 1 m sq	_)				•	land hydrology must be
1	_			· ·	esent, unless disturbed	l or problematic
2	0	= Total Co	wor	1	ophytic tation	
	U	- rotal C0	v CI	prese		_
Remarks: (Include photo numbers here or on a sepa	arate sheet)			1		

Profile Des	cription: (Descr	ibe to th	ne depth needed	to docı	ument th	e indica	tor or confirm the abser	nce of indicators.)
Depth	Depth Matrix Redox Features							
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
	 				 			
	 			 	\vdash			
				<u> </u>				
				l				
	 							
	 			 	\vdash			
				<u> </u>				
	!			l'	l!			
*Type: C = (Concentration, D	= Deplet	ion, RM = Reduc	ed Matri	ix, MS =	Masked	Sand Grains. **Locat	tion: PL = Pore Lining, M = Matrix
	oil Indicators:	-						lematic Hydric Soils:
-	tisol (A1)		Sar	ndv Glevo	ed Matrix	(S4)		edox (A16) (LRR K, L, R)
	tic Epipedon (A2)			ndy Redo		(0.)	Dark Surface (S	, , , , , , , , , , , , , , , , , , , ,
				-				
	ck Histic (A3)	_			atrix (S6)			at or Peat (S3) (LRR K, L, R)
	drogen Sulfide (A	,		•	ky Minera	, ,		Masses (F12) (LRR K, L, R)
Stra	atified Layers (A5)	Loa	my Gley	ed Matrix	x (F2)	Very Shallow Da	ark Surface (TF12)
2 cr	m Muck (A10)		Dep	oleted Ma	atrix (F3))	Other (explain in	remarks)
Der	pleted Below Dark	k Surface	e (A11) Rec	dox Dark	Surface	(F6)		
—— Thi	ck Dark Surface (A12)	Dep	oleted Da	ark Surfa	ce (F7)	*!	the constation and wotland
	ndy Mucky Minera	,			ressions			ophytic vegetation and wetland e present, unless disturbed or
	m Mucky Peat or			10% E Sp.	00010.1.0	(1 5)	Hydrology Huat b	problematic
			(^ر					problematic
	Layer (if observe	ed):			ļ			
7.	ravel, ballast, fill	*			.		Hydric soil preser	it?
Depth (inch	es): not determ	inea			<u> </u>			
Remarks:								
^ ma		مامحا م	مام محدد علا		' -4 boo		The section of the se	Dealer and within 2.4
			ina located alo	ng road	d at das	se or a r	allroad empankment.	Probe refusal within 2-4
inches a	lue to gravel ar	id fill.						
HYDROL	OGY							_
	drology Indicate	ors:						
-	icators (minimum		s required: check	all that a	annlv)		Secondary Indi	icators (minimum of two required)
X Surface		0. 02			Fauna (B	12\	· · · · · · · · · · · · · · · · · · ·	Soil Cracks (B6)
	` ,			• 1	-			
	ater Table (A2)			•	uatic Plan			e Patterns (B10)
Saturation	on (A3)			Hydroge	n Sulfide	Odor (C1	1) Dry-Sea	son Water Table (C2)
Water M	/larks (B1)			Oxidized	l Rhizosp	heres on	Living Roots Crayfish	Burrows (C8)
Sedimer	nt Deposits (B2)			(C3)	*			on Visible on Aerial Imagery (C9)
Drift De	posits (B3)			Presenc	e of Redu	uced Iron	(C4) Stunted	or Stressed Plants (D1)
	at or Crust (B4)			-			Coomer	phic Position (D2)
	, ,				ron Reau	iction in I		• •
	oosits (B5)			(C6)		: >=\	FAC-ING	utral Test (D5)
	on Visible on Aeria			Thin Mu	ck Surfac	e (C7)		
Sparsely	y Vegetated Conca	ve Surfac	ce (B8)	Gauge o	or Well Da	ata (D9)		
Water-S	Stained Leaves (B9)		Other (E	xplain in	Remarks)	
Field Obser	rvations:		 _	<u>'</u>				
Surface wat	er present?	Yes	No	X	Depth (i	inches):		tland
Water table	•	Yes	No	X	Depth (i	,		rology
Saturation p		Yes	X No		Depth (i	inches):	0 pre	sent? Y
	apillary fringe)							
Describe re	corded data (streate	am gaug	e, monitoring we	II, aerial	photos, p	previous	inspections), if available:	
D								
Remarks:								
I								
l								

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): Slope (%): Lat: 41.667542 Long: -87.602091 Datum:	t: 16 7N R14E S27
Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): Slope (%): Lat: 41.667542 Long: -87.602091 Datum:	7N R14E S27
Slope (%): Lat: 41.667542 Long: -87.602091 Datum:	
	ditch
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, soilY, or hydrology significantly disturbed? Y _Are "normal circumstar	ices"
Are vegetation, soil , or hydrology naturally problematic? N present?	<u>Y</u>
SUMMARY OF FINDINGS (If needed, explain any	answers in remarks.)
Hydrophytic vegetation present? Y	
Hydric soil present? Is the sampled area within a wetland?	Υ
Wetland hydrology present? Y If yes, optional wetland site ID: Wetland	12
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 urban	land/fill for substrate
The lieu primarily upon vegetation and landscape position due to dry time or season, and mostly diban	ianu/iii ioi substrate.
VEGETATION Use scientific names of plants.	
Absolute Dominant Indicator Dominance Test World	sheet
Tree Stratum (Plot size: 9 m) % Cover Species Status Number of Dominant Species	
1 are OBL, FACW, or FAC	``
Total Number of Domina Species Across all Strat.	
4 Percent of Dominant Specie	 ` ` ´
5 are OBL, FACW, or FAC	
0 = Total Cover	
Sapling/Shrub stratum (Plot size: 4.6 m) Prevalence Index Wo	ksheet
1 Total % Cover of:	
	_x1 =0
	$\begin{array}{ccc} $
4 FAC species 0 FACU species 0	- x = 0
0 = Total Cover UPL species 0	x = 5 = 0
	(A) 200 (B)
1 Phragmites australis 100 Y FACW Prevalence Index = B//	2.00
2	
3 Hydrophytic Vegetation	
4 Rapid test for hydro	. , .
5 X Dominance test is X Prevalence index is	
6 X Prevalence index is	5 = 3.0
8 Morphological ada supporting data in	\ '
9 separate sheet)	Ciliano di dila
10 Problematic hydrop	hytic vegetation*
100 = Total Cover (explain)	, ,
I · · · · · · · · · · · · · · · · · · ·	nd wetland hydrology must be
	turbed or problematic
2 Hydrophytic 0 = Total Cover vegetation	
present?	Y
Remarks: (Include photo numbers here or on a separate sheet)	

Depth						4111611t ti		tor or commi	ii tiie absei	nce of indicators.)
	<u>Matrix</u>				dox Feat					,
(Inches)	Color (moist)	%	Color ((moist)	%	Type*	Loc**	Textu	ıre	Remarks
*Type: C = Co	oncentration, D	= Deplet	tion, RM	= Redu	ced Matri	ix, MS =	Masked			ion: PL = Pore Lining, M = Matri
Hydric Soil	Indicators:							Indicator	s for Probl	ematic Hydric Soils:
Histis	sol (A1)			Saı	ndy Gley	ed Matrix	x (S4)	Coas	st Prairie Re	dox (A16) (LRR K, L, R)
Histic	Epipedon (A2)		•	Saı	ndy Redo	ox (S5)		 Dark	Surface (S	7) (LRR K, L)
Black	(Histic (A3)		•	Str	pped Ma	trix (S6)		5 cm	Mucky Pea	t or Peat (S3) (LRR K, L, R)
	ogen Sulfide (A	4)	•		amy Muc	` '			•	Masses (F12) (LRR K, L, R)
	ified Layers (A5		i		amy Gley	•			•	rk Surface (TF12)
	Muck (A10)	,	•		pleted Ma		` ,		r (explain in	
	, ,		- (044)			•			i (expiairi ii	Terriarks)
	eted Below Dark		e (ATT)		dox Dark					
	Dark Surface (•		pleted Da			*Indica	tors of hydr	ophytic vegetation and wetland
	ly Mucky Minera	. ,	,	Re	dox Depr	essions	(F8)	hydro	logy must b	e present, unless disturbed or
5 cm	Mucky Peat or	Peat (S3	3)							problematic
Restrictive La	ayer (if observ	ed):								
Type: grav	vel, ballast, fill							Hydric	soil presen	t?
Depth (inches	s): not determ	nined				-				
Remarks:										
Area map	-		and loca	ited ald	ong road	d at bas	se of a r	oad embank	kment. P	robe refusal within 2-4
Area map	ped as urban e to gravel ar		and loca	ited ald	ong road	d at bas	se of a r	oad embank	kment. P	robe refusal within 2-4
Area map	e to gravel ar		and loca	ited ald	ong road	d at bas	se of a r	oad embanl	kment. P	robe refusal within 2-4
Area mappinches due	e to gravel ar	nd fill.	and loca	ited alc	ong road	d at bas	se of a r	oad embank	kment. P	robe refusal within 2-4
Area mappinches due	e to gravel ar GY rology Indicato	ors:					se of a r			
Area mappinches due HYDROLOG Wetland Hydi Primary Indica	e to gravel ar GY rology Indicato ators (minimum	ors:			all that a	apply)			condary Indi	cators (minimum of two required
Area mappinches due HYDROLOG Wetland Hydrimary Indica X Surface W	e to gravel ar GY rology Indicato ators (minimum /ater (A1)	ors:			all that a	<u>apply)</u> Fauna (B	113)	<u>Sec</u>	condary Indi	cators (minimum of two required Soil Cracks (B6)
Area mappinches due HYDROLOG Wetland Hydro Primary Indicat X Surface W High Wate	e to gravel ar GY rology Indicator ators (minimum /ater (A1) er Table (A2)	ors:			all that a	apply) Fauna (B uatic Plai	113) nts (B14)	<u>Sec</u>	condary Indi Surface X Drainage	cators (minimum of two required Soil Cracks (B6) Patterns (B10)
Area mappinches due HYDROLOG Wetland Hydro Primary Indica X Surface W High Wate Saturation	e to gravel ar GY rology Indicate ators (minimum /ater (A1) er Table (A2) a (A3)	ors:			all that a	apply) Fauna (B uatic Plai	113)	<u>Sec</u>	condary Indi Surface X Drainage Dry-Sea:	cators (minimum of two required Soil Cracks (B6) e Patterns (B10) son Water Table (C2)
Area mappinches due HYDROLOG Wetland Hydro Primary Indicat X Surface W High Wate	e to gravel ar GY rology Indicate ators (minimum /ater (A1) er Table (A2) a (A3)	ors:			all that a Aquatic True Aquatic Hydroge	apply) Fauna (B uatic Plai en Sulfide	313) nts (B14)	<u>Sec</u>	condary Indi Surface X Drainage Dry-Seas	cators (minimum of two required Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8)
Area mappinches due HYDROLOG Wetland Hydi Primary Indica X Surface W High Wate Saturation Water Mar	e to gravel ar GY rology Indicate ators (minimum /ater (A1) er Table (A2) a (A3)	ors:			all that a Aquatic True Aquatic Hydroge	apply) Fauna (B uatic Plai en Sulfide	313) nts (B14)	<u>Sec</u> - -	condary Indi Surface X Drainage Dry-Seas	cators (minimum of two required Soil Cracks (B6) e Patterns (B10) son Water Table (C2)
Area mappinches due HYDROLOG Wetland Hydi Primary Indica X Surface W High Wate Saturation Water Mar	GY rology Indicate ators (minimum /ater (A1) er Table (A2) 1 (A3) rks (B1) Deposits (B2)	ors:			Aquatic True Aquatic Hydroge Oxidized (C3)	apply) Fauna (B uatic Plar en Sulfide d Rhizosp	313) nts (B14)	Sec - -) _ Living Roots _	condary Indi Surface X Drainage Dry-Sea: Crayfish Saturatio	cators (minimum of two required Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8)
Area mappinches due HYDROLOG Wetland Hydro Primary Indica X Surface W High Water Saturation Water Mar Sediment I Drift Depos	GY rology Indicate ators (minimum /ater (A1) er Table (A2) 1 (A3) rks (B1) Deposits (B2)	ors:			Aquatic True Aqu Hydroge Oxidized (C3) Presence	apply) Fauna (E uatic Plai en Sulfide d Rhizosp	a13) Ints (B14) Odor (Croheres on uced Iron	Sec - -) _ Living Roots _ (C4) _	Surface Surface X Drainage Dry-Seas Crayfish Saturatic	cators (minimum of two required Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9)
Area mappinches due HYDROLOG Wetland Hydro Primary Indica X Surface W High Water Saturation Water Mar Sediment I Drift Depos	e to gravel ar GY rology Indicator ators (minimum /ater (A1) er Table (A2) a (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4)	ors:			Aquatic True Aquatic Hydroge Oxidized (C3) Presence	apply) Fauna (E uatic Plai en Sulfide d Rhizosp	a13) Ints (B14) Odor (Croheres on uced Iron	Sec - -) _ Living Roots _	Surface Surface X Drainage Dry-Sea Crayfish Saturatic Stunted Geomory	cators (minimum of two required Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1)
Area mappinches due HYDROLOG Wetland Hydro Primary Indica X Surface W High Water Saturation Water Mar Sediment I Drift Depos	rology Indicators (minimum Vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) esits (B3) or Crust (B4) esits (B5)	ors: of one is	s require		Aquatic True Aquatic Hydroge Oxidized (C3) Presence Recent I (C6)	apply) Fauna (Buatic Planer Sulfider Rhizosper Green Reduring Redu	at13) ats (B14) dodor (Cr wheres on uced Iron uction in T	Sec - -) _ Living Roots _ (C4) _	Surface Surface X Drainage Dry-Sea Crayfish Saturatic Stunted Geomory	cators (minimum of two required Soil Cracks (B6) Patterns (B10) Son Water Table (C2) Burrows (C8) On Visible on Aerial Imagery (C9) Or Stressed Plants (D1)
Area mappinches due HYDROLOG Wetland Hydro Primary Indica X Surface W High Water Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Inundation	rology Indicators (minimum /ater (A1) er Table (A2) in (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) in Visible on Aeria	ors: of one is	s required		Aquatic True Aquatic Hydroge Oxidizec (C3) Presence Recent I (C6) Thin Mu	apply) Fauna (Buatic Plan In Sulfide In Rhizosp In Granner In Reduited In Redu	of 13) Odor (Craheres on uced Iron uction in The (C7)	Sec - -) _ Living Roots _ (C4) _	Surface Surface X Drainage Dry-Sea Crayfish Saturatic Stunted Geomory	cators (minimum of two required Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1)
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Area mappinches due HYDROLOG Wetland Hydro Primary Indication X Surface W High Water Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Inundation Sparsely W Water-Sta	e to gravel and GY rology Indicator (minimum / ater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) n Visible on Aeria //egetated Conca	ors: of one is I Imagery	s required y (B7) ce (B8)	d; check	Aquatic True Aquatic Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c	apply) Fauna (Buatic Plan En Sulfide I Rhizosp e of Redulation Redulation Reduction Re	ata) nts (B14) nodor (Cr wheres on uced Iron uction in T ce (C7) ata (D9) Remarks	Sec Living Roots _ (C4) _ illed Soils _ ()	Sondary Indi Surface X Drainage Dry-Sea: Crayfish Saturatic Stunted Geomory FAC-Net	cators (minimum of two required Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) utral Test (D5)
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Project/Site Lake Calumet CTA Red Line E	xtension C	City/County:	Cool	k Sampling [Date: 8/19/2015
Applicant/Owner: CTA/MWRD		Sta	ate: Illir	nois Sampling P	Point: 17
Investigator(s): J Mengler, V Mosca			Section, Town	ship, Range:	T37N R14E S27
Landform (hillslope, terrace, etc.):	ditch		Local relief (co	ncave, convex, none):	ditch
Slope (%): Lat:	41.669078	Long:	-87.602	444 Datum:	
Soil Map Unit Name: urban land-orthents cl	ayey complex, nea	arly level	N	WI Classification:	none
Are climatic/hydrologic conditions of the site	e typical for this tin	ne of the year	r? <u>Y</u>	(If no, explain in remarks)	
Are vegetation, soilY	, or hydrology	significa	antly disturbed?	Y Are "normal circums	stances"
Are vegetation, soil	, or hydrology	naturally	y problematic?	N present?	<u>Y</u>
SUMMARY OF FINDINGS				(If needed, explain a	any answers in remarks.)
Hydrophytic vegetation present?	<u>Y</u>				
Hydric soil present?		Is th	ie sampled area	a within a wetland?	Υ
Wetland hydrology present?	<u>Y</u>	lf ·	yes, optional we	tland site ID: Wetla	and 13
Remarks: (Explain alternative procedures h	ere or in a separa	ite report.)			
Relied primarily upon vegetation and	l landscape pos	sition due to	dry time of s	eason, and mostly urb	hanland/fill for substrate
		illon ddo to	Tary time or o		dilland/illi for Sabotrato.
VEGETATION Use scientific name	s of plants.			-	
Topic Chartering (Plot size)	Absolu			Dominance Test W	/orksheet
Tree Stratum (Plot size: 9 m) % Cov	ver Specie	es Status	Number of Dominant Spe are OBL, FACW, or F	
2					``
3				Total Number of Dom Species Across all St	
4				Percent of Dominant Spe	`` ′
5		<u> </u>		are OBL, FACW, or F	
	0	= Total Co	over		
Sapling/Shrub stratum (Plot size: 4	.6 m)			Prevalence Index V	Norksheet
1				Total % Cover of:	
2				<u> </u>	0 x 1 = 0
3					$\frac{100}{0}$ x 2 = $\frac{200}{0}$
5					$\frac{0}{0} \times 3 = \frac{0}{0}$
	0	= Total Co	over	UPL species	$0 \times 5 = 0$
Herb stratum (Plot size: 1	m sq)				100 (A) 200 (B)
1 Phragmites australis	100) _ <u>Y</u>	FACW	Prevalence Index =	
2					<u>-</u>
3				Hydrophytic Vegeta	
4				·	ydrophytic vegetation
5				X Dominance test	
6 7				X Prevalence inde	X IS ≤3.U^
8				, ,	adaptations* (provide
9				supporting data separate sheet)	in Remarks or on a
10				<u> </u>	drophytic vegetation*
	100	= Total Co	over	(explain)	iopriyuc vegetation
Woody vine stratum (Plot size: 1	m sq)			*Indicators of hydric so	oil and wetland hydrology must be
1				,	s disturbed or problematic
2		 		Hydrophytic	
	0	= Total Co	over	vegetation present?	Υ
				p. 000	<u> </u>
Domarks: (Include photo numbers here or o	an a congrate shee	~+ \			
Remarks: (Include photo numbers here or o	on a separate she	et)		1	

Profile Des	cription: (Descr	ibe to th	ne depth	needec	to docu	ument th	ne indica	tor or confirm	the abser	nce of indicators.)
Depth	Matrix				dox Feat					•
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	ire	Remarks
*Type: C = 0	Concentration, D	= Deple	tion, RM =	Reduc	ed Matri	ix, MS =	Masked	Sand Grains.	**Locat	tion: PL = Pore Lining, M = Matrix
Hydric Sc	oil Indicators:							Indicator	s for Probl	lematic Hydric Soils:
•	tisol (A1)			Sar	ndv Glev	ed Matrix	x (S4)			edox (A16) (LRR K, L, R)
	tic Epipedon (A2)		-		ndy Redo		. (0 .)			7) (LRR K, L)
			-		-	ntrix (S6)			•	et or Peat (S3) (LRR K, L, R)
	ck Histic (A3)	4)	-			` '			-	
	drogen Sulfide (A		_		•	ky Miner			-	Masses (F12) (LRR K, L, R)
	atified Layers (A5)	_			ed Matri				ark Surface (TF12)
2 cı	m Muck (A10)		_			atrix (F3)		Other	r (explain in	remarks)
Dep	oleted Below Dark	k Surfac	e (A11)	Red	dox Dark	Surface	(F6)			
Thi	ck Dark Surface (A12)		Dep	oleted Da	ark Surfa	ce (F7)	*Indicat	tore of hydr	ophytic vegetation and wetland
Sar	ndy Mucky Minera	ıl (S1)	_	Red	dox Depr	essions	(F8)			e present, unless disturbed or
5 cı	m Mucky Peat or	Peat (S3	3)					, a. o.	09)	problematic
	Layer (if observe		,				1			•
	ravel, ballast, fill	eu).						Hydric	soil presen	nt?
Depth (inch		nined				-		riyane .	on presen	
						•				
Remarks:										
Area ma	pped as urban	land. a	and locat	ted ald	ng railr	oad em	bankm	ent. Probe	refusal wi	ithin 2-4 inches due to
gravel a		,								
HYDROL	OGY									
Wetland Hy	drology Indicate	rs:								
Primary Indi	cators (minimum	of one is	s required	; check	all that a	apply)		<u>Sec</u>	ondary Indi	icators (minimum of two required
X Surface	Water (A1)				Aquatic	Fauna (B	313)		Surface	Soil Cracks (B6)
High Wa	ater Table (A2)				True Aq	uatic Plar	nts (B14)		X Drainage	e Patterns (B10)
Saturation				_	Hydroge	n Sulfide	Odor (C	<u> </u>	Dry-Sea:	son Water Table (C2)
	larks (B1)			_	•			_		Burrows (C8)
	nt Deposits (B2)				Oxidized (C3)	Rhizosp	heres on	Living Roots _	— '	on Visible on Aerial Imagery (C9)
	. , ,				• * * * * * * * * * * * * * * * * * * *	f D l		-		3 , (,
	posits (B3)				Presenc	e of Real	uced Iron	(C4) _		or Stressed Plants (D1)
	at or Crust (B4)					ron Redu	uction in T	illed Soils		phic Position (D2)
Iron Dep	oosits (B5)				(C6)			_	FAC-Ne	utral Test (D5)
Inundati	on Visible on Aeria	I Imager	y (B7)		Thin Mu	ck Surfac	ce (C7)			
Sparsely	Vegetated Conca	ve Surfa	ce (B8)		Gauge o	or Well Da	ata (D9)			
Water-S	tained Leaves (B9)			Other (E	xplain in	Remarks)		
Field Obse	rvations:							-		
Surface wat		Yes	X	No		Depth (inches):	0-2	Wet	tland
Water table	present?	Yes		No	X	Depth (inches):		hyd	lrology
Saturation p		Yes	X	No		Depth (inches):	0	pre	sent? Y
•	pillary fringe)									
Describe re	corded data (strea	am gaug	je, monito	ring we	II, aerial	photos,	previous	inspections), i	f available:	
Domesti										
Remarks:										

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	Cook	Sampling Date:	8/19/2015
Applicant/Owner: CTA/MWRD		Stat	e: Illin	ois Sampling Point:	18
Investigator(s): J Mengler, V Mosca			Section, Towns	ship, Range: T37N R	14E S27
Landform (hillslope, terrace, etc.):	tch	_	Local relief (co	ncave, convex, none):	ditch
Slope (%): Lat: 41.66728	9	Long:	-87.600	100 Datum:	
Soil Map Unit Name: urban land-orthents clayey com	plex, nearly	level	NV	/I Classification:	none
Are climatic/hydrologic conditions of the site typical for	or this time o	of the year?	Y (If no, explain in remarks)	
Are vegetation, soilY, or hydro	ology	significar	tly disturbed?	Y Are "normal circumstances"	
Are vegetation, soil, or hydro	ology	naturally	problematic?	N present?	Y
SUMMARY OF FINDINGS				(If needed, explain any answ	vers in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present?		Is the	sampled area	within a wetland?	
Wetland hydrology present? Y		If y	es, optional we	tland site ID: Wetland 14	
Remarks: (Explain alternative procedures here or in	a separate r	eport.)			
Police primarily upon vagetation and landers	ano nocitio	n due te	dry time of co	accon, and mostly urbaniand	/fill for substrate
Relied primarily upon vegetation and landsca	ape positio	on due to	ury ume or se	ason, and mostly urbaniand	filli ioi substrate.
VEGETATION Use scientific names of plan	nts.				
	Absolute	Dominar		Dominance Test Workshe	et
Tree Stratum (Plot size: 9 m)	% Cover	Species	Status	Number of Dominant Species that	
1				are OBL, FACW, or FAC:	(A)
3				Total Number of Dominant Species Across all Strata:	3 (B)
4					``
5				Percent of Dominant Species that are OBL, FACW, or FAC:	100.00% (A/B)
	0	= Total Cov	/er		``
Sapling/Shrub stratum (Plot size: 4.6 m)			Prevalence Index Worksho	eet
1				Total % Cover of:	
2				OBL species 0 x 1	1 = 0
3				FACW species 100 x 2	
4	· 	· 		FAC species 0 x 3	
⁵	0	= Total Cov		FACU species 0 x 4 UPL species 0 x 5	
Herb stratum (Plot size: 1 m sq)	Total oo		Column totals 100 (A	
1 Phragmites australis	.′ 100	Υ	FACW	Prevalence Index = B/A =	2.00
2					
3				Hydrophytic Vegetation In	dicators:
4				Rapid test for hydrophyt	•
5		· 		X Dominance test is >50%	
6				X Prevalence index is ≤3.0)*
8		-		Morphological adaptation	\(\)
9				supporting data in Rema separate sheet)	arks or on a
10				Problematic hydrophytic	vegetation*
	100	= Total Cov	/er	(explain)	rogotation
Woody vine stratum (Plot size: 1 m sq)	•		*Indicators of hydric soil and wet	land hydrology must be
1 Vitis riparia	20	Y	FACW	present, unless disturbed	
2 Convolvulus sepium	15	Y	FAC	Hydrophytic vegetation	
	35	= Total Cov	/er	present? Y	
Remarks: (Include photo numbers here or on a sepa	rate sheet)				_
	,				

Profile Des	cription: (Descr	ibe to th	ne depth	needec	to docu	ument th	ne indica	tor or confirr	n the abse	nce of indicators.)
Depth	Matrix		•		dox Feat					•
(Inches)	Color (moist)	%	Color (ı	noist)	%	Type*	Loc**	Text	ure	Remarks
*Type: C = (Concentration, D	= Deplet	ion RM =	Reduc	ed Matri	ix MS =	Masked	Sand Grains	**Locat	ion: PL = Pore Lining, M = Matrix
	il Indicators:	Верісі	.1011, 1 (111	rtoduc	oca iviatii	ix, ivio	Maskea			ematic Hydric Soils:
•				0		1 1 1 1 - 4 - 4 - 4	(0.4)			•
	tisol (A1)		_	_		ed Matrix	x (S4)			edox (A16) (LRR K, L, R)
— His	tic Epipedon (A2)		_	Sar	ndy Redo	ox (S5)			•	7) (LRR K, L)
Bla	ck Histic (A3)		_	Stri	pped Ma	trix (S6)		5 cm	Mucky Pea	t or Peat (S3) (LRR K, L, R)
Hyd	lrogen Sulfide (A	1)		Loa	ımy Muc	ky Miner	al (F1)	Iron-	Manganese	Masses (F12) (LRR K, L, R)
Stra	atified Layers (A5)		Loa	ımy Gley	ed Matri	x (F2)	Very	Shallow Da	irk Surface (TF12)
	n Muck (A10)		_			atrix (F3)			r (explain in	
	oleted Below Dark	Surface	_ (Δ11) =			Surface			(,
	ck Dark Surface (-			ark Surfa				ophytic vegetation and wetland
	ndy Mucky Minera		_	Red	ox Depr	essions	(F8)	hydro	logy must b	e present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	3)							problematic
Restrictive	Layer (if observe	ed):								
Type: gi	avel, ballast, fill							Hydric	soil preser	it?
Depth (inch	es): not determ	ined				•				
Remarks:	·									
r torriaritor										
Area ma	pped as urban	land, a	and locat	ed be	tween g	gravel r	oads.	Probe refusa	al within 2	-4 inches due to gravel and
fill.										
LIVEROL	201/									
HYDROL										
-	drology Indicato									
Primary Indi	cators (minimum	of one is	s required	; check	all that a	apply)		Sec	condary Indi	cators (minimum of two required)
X Surface	Water (A1)				Aquatic	Fauna (B	313)	_	Surface	Soil Cracks (B6)
High Wa	iter Table (A2)				True Aq	uatic Plar	nts (B14)	_	X Drainage	e Patterns (B10)
Saturation	on (A3)				Hvdroae	n Sulfide	Odor (C	1)	Drv-Sea	son Water Table (C2)
	larks (B1)				•			_		Burrows (C8)
	nt Deposits (B2)					Rnizosp	neres on	Living Roots _		on Visible on Aerial Imagery (C9)
	. , ,			_	(C3)	(5.		-		0 , (,
	posits (B3)				Presenc	e of Real	uced Iron	(C4)		or Stressed Plants (D1)
Algal Ma	it or Crust (B4)				Recent I	ron Redu	uction in T	illed Soils	Geomor	ohic Position (D2)
Iron Dep	osits (B5)				(C6)			_	FAC-Ne	utral Test (D5)
Inundation	on Visible on Aeria	l Imager	/ (B7)		Thin Mu	ck Surfac	ce (C7)			
Sparsely	Vegetated Conca	ve Surfa	ce (B8)		Gauge o	or Well Da	ata (D9)			
Water-S	tained Leaves (B9	١	, ,				Remarks)		
Field Obser		,			Other (E	.xpiaiii iii	Tterriarite	,		
Surface wat		Yes	X	No		Denth (inches):	0-2	Wes	tland
Water table	•	Yes		No	X		inches):	J-L		rology
Saturation p	•	Yes	X	No		- ' '	inches):	0	-	sent? Y
	pillary fringe)					• • •	,			
Describe red	corded data (strea	am gauc	e, monito	ring we	II, aerial	photos.	previous	inspections),	if available:	
	- (J 3		5		,		//		
<u></u>										
Remarks:										
1										

Project/Site Lake Calumet CTA Red Line Extension	City/C	County:	Cook	Sampling Date: 8/19/2015
Applicant/Owner: CTA/MWRD		State:	Illin	ois Sampling Point: 19
Investigator(s): J Mengler, V Mosca		Se	ction, Towns	ship, Range: T37N R14E S27
Landform (hillslope, terrace, etc.): dite	ch	Loc	cal relief (cor	ncave, convex, none): ditch
Slope (%): Lat: 41.667289	9	Long:	-87.6001	100 Datum:
Soil Map Unit Name: urban land-orthents clayey comp	ρlex, nearly le	evel	NW	VI Classification: none
Are climatic/hydrologic conditions of the site typical fo	or this time of	the year?	Υ (If no, explain in remarks)
Are vegetation, soilY, or hydrol	ology	significantly	disturbed?	Y Are "normal circumstances"
	ology		blematic?	N present? Y
SUMMARY OF FINDINGS				(If needed, explain any answers in remarks.)
Hydrophytic vegetation present? N				
Hydric soil present?		Is the sa	impled area	within a wetland? N
Wetland hydrology present?		If yes,	optional wet	tland site ID:
Remarks: (Explain alternative procedures here or in a	a separate re	port.)		
			" of oc	december of the contract of the support of
Relied primarily upon vegetation and landsca	ipe position	1 due to dry	/ time or se	ason, and mostly urbaniano/iiii for substrate:
VEGETATION Use scientific names of plan	nts.			
	Absolute	Dominant	Indicator	Dominance Test Worksheet
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Species	Status	Number of Dominant Species that
1 Morus alba	40	<u>Y</u>	FAC	are OBL, FACW, or FAC: 3 (A)
2 Acer negundo	20	Y	FAC	Total Number of Dominant
3				Species Across all Strata: 6 (B)
5	·			Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B
5	60 =	Total Cover		are OBL, FACW, or FAC:
Sapling/Shrub stratum (Plot size: 4.6 m	1 00	Tutai octo.		Prevalence Index Worksheet
1 Prunus serotina	15	Υ	FACU	Total % Cover of:
2				OBL species0 _ x 1 =0
3				FACW species 5 x 2 = 10
4	<u></u>			FAC species 60 x 3 = 180
5				FACU species 35 x 4 = 140
	=	Total Cover		UPL species 0 x 5 = 0
Herb stratum (Plot size: 1 m sq)	• •		Column totals 100 (A) 330 (B)
1 Eupatorium rugosum	10	Y	FACU	Prevalence Index = B/A = 3.30
2 Arctium minus 3 Geum laciniatum	<u>10</u> 5	<u>Y</u> Y	FACU FACW	Hydrophytic Vegetation Indicators:
4			FACTV	Rapid test for hydrophytic vegetation
5				Dominance test is >50%
6				Prevalence index is ≤3.0*
7				<u> </u>
8				Morphological adaptations* (provide supporting data in Remarks or on a
9				separate sheet)
10	<u> </u>			Problematic hydrophytic vegetation*
	25 =	Total Cover		(explain)
Woody vine stratum (Plot size: 1 m sq)			*Indicators of hydric soil and wetland hydrology must b
1				present, unless disturbed or problematic
2		T-1-1 Oave		Hydrophytic vegetation
	0 =	= Total Cover		present? N
Remarks: (Include photo numbers here or on a separ	rate sheet)			<u> </u>
	,			

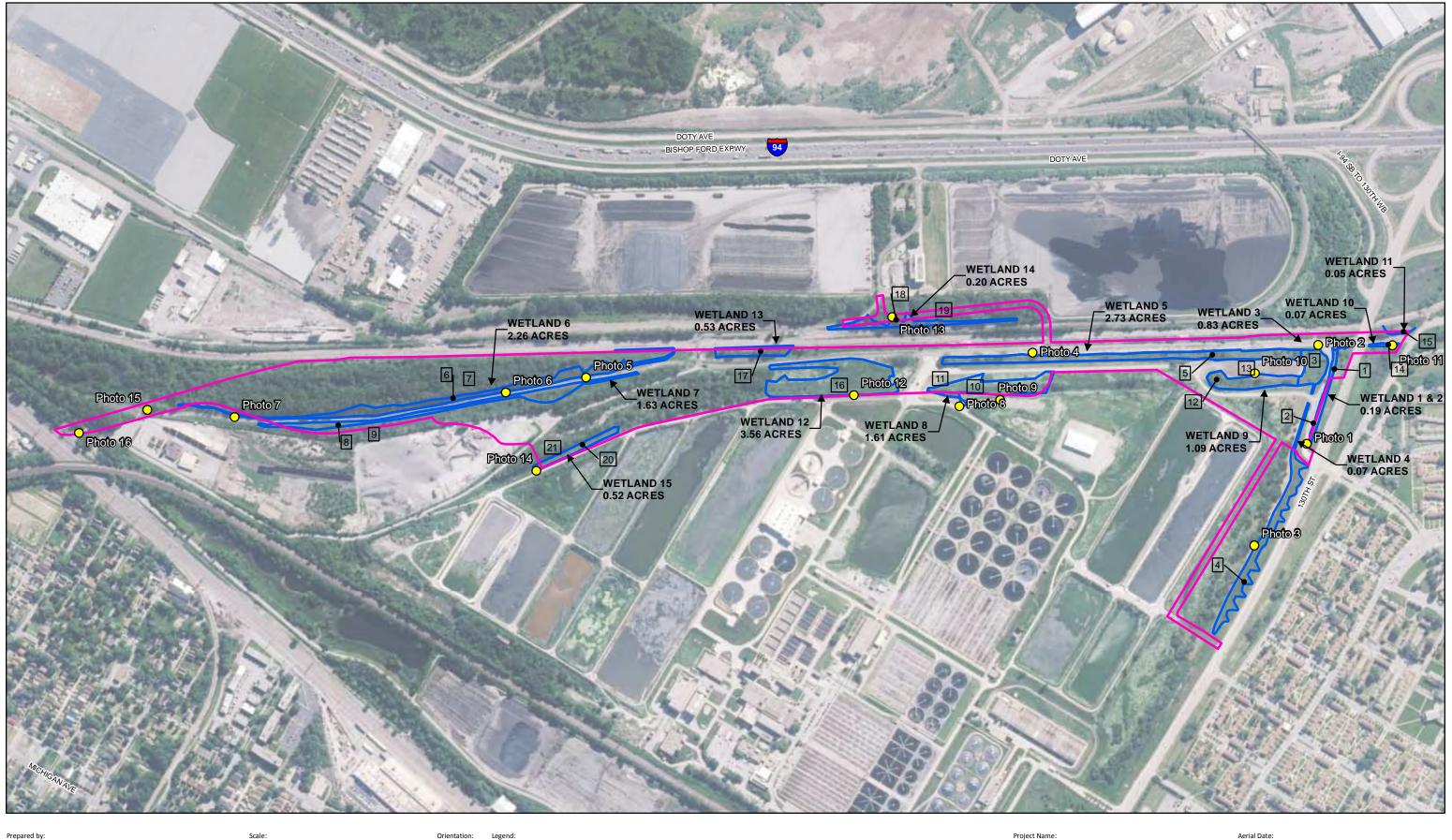
Profile Desc	cription: (Descr	ibe to th	ne depth needed	to docu	ıment th	e indica	tor or confirm the abse	nce of indicators.)
Depth	Matrix			ox Feat				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
*Type: C = C	Concentration, D	= Deplet	ion, RM = Reduc	ed Matri	x, MS =	Masked	Sand Grains. **Loca	tion: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicators for Prob	lematic Hydric Soils:
Hist	isol (A1)		Sar	dv Gleve	ed Matrix	(S4)	Coast Prairie R	edox (A16) (LRR K, L, R)
	ic Epipedon (A2)			dy Redo		(-)	Dark Surface (S	, , , , , , , , , , , , , , , , , , , ,
	ck Histic (A3)			-	ıtrix (S6)			at or Peat (S3) (LRR K, L, R)
	, ,	4)		•	` ,			
	rogen Sulfide (A				ky Miner			e Masses (F12) (LRR K, L, R)
	tified Layers (A5)			ed Matri			ark Surface (TF12)
	n Muck (A10)			leted Ma	atrix (F3))	Other (explain i	n remarks)
Dep	leted Below Dark	k Surface	e (A11) Red	ox Dark	Surface	(F6)		
Thic	ck Dark Surface (A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicators of hyd	rophytic vegetation and wetland
San	dy Mucky Minera	ıl (S1)	Red	ox Depr	essions	(F8)		be present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	<u>—</u>				, 0,	problematic
Restrictive	Layer (if observ	eq).	•					
	avel, ballast, fill	cuj.					Hydric soil prese	nt?
Depth (inche		nined			•		riyano con proco	
					•			
Remarks:								
Area ma	pped as urban	land, a	and located bet	ween g	gravel re	oads.	Probe refusal within 2	2-4 inches due to gravel and
fill.	•	,			•			ŭ
HYDROLO								
-	drology Indicato							
Primary Indi	cators (minimum	of one is	s required; check	all that a	apply)		Secondary Inc	icators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)	Surface	Soil Cracks (B6)
High Wa	ter Table (A2)			True Aqı	uatic Plar	nts (B14)	Drainag	e Patterns (B10)
Saturation	on (A3)			Hydroge	n Sulfide	Odor (C	Dry-Sea	ison Water Table (C2)
_	arks (B1)						Crowfield	Burrows (C8)
	t Deposits (B2)			(C3)	Rnizosp	neres on	Living Roots	on Visible on Aerial Imagery (C9)
					o of Dod	lood Iron		
	oosits (B3)			Presenc	e oi Real	uced Iron		or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	iction in T	ilica collo	phic Position (D2)
	osits (B5)			(C6)			FAC-Ne	eutral Test (D5)
Inundatio	on Visible on Aeria	I Imager	/ (B7)	Thin Mu	ck Surfac	e (C7)		
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge o	r Well Da	ata (D9)		
Water-S	tained Leaves (B9)		Other (E	xplain in	Remarks)	
Field Obser	vations:							
Surface water		Yes	No	Χ	Depth (i	inches):	We	tland
Water table	•	Yes	No	Х	Depth (i	inches):	hye	drology
Saturation p		Yes	No	Χ	Depth (i	inches):	pre	esent? N
	pillary fringe)							
Describe red	corded data (stream	am gaug	e, monitoring we	I, aerial	photos,	previous	inspections), if available	:
Remarks:								
TCHIAINS.								
No outst-	noo of burdens! -	av ob c	anuad Casses	1 000:	macti	dr	diaturbad laaf !!#==	
I INO EVIDE	nice of flyarolo	gy obs	erveu, Groun	ı cover	mostry	ury un	disturbed leaf litter.	

Project/Site Lake Calumet CTA Red Line Extension	City/0	County:	Cook	:	Sampling Date:	8/19/2015	
Applicant/Owner: CTA/MWRD		State	ate: Illinois		Sampling Point:	20	
Investigator(s): J Mengler, V Mosca			Section, Towns	ship, Range:			
Landform (hillslope, terrace, etc.):	tch	L	ocal relief (co	ncave, convex,	none):	ditch	
Slope (%): Lat: 41.67156	62	Long:	-87.607	147 I	Datum:		
Soil Map Unit Name: urban land-orthents clayey com	plex, nearly l			VI Classification	n: r	none	
Are climatic/hydrologic conditions of the site typical f	or this time o	of the year?	Υ (If no, explain ir	remarks)		
Are vegetation , soil Y , or hydro	ology	significant	ly disturbed?	Y Are "norm	nal circumstances"		
Are vegetation , soil , or hydro	ology	naturally p	roblematic?	N present?	iai on cametanece	Υ	
SUMMARY OF FINDINGS				(If needed	d, explain any ansv	vers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present?		Is the sampled area within a wetland?					
Wetland hydrology present?		If ye	s, optional we	tland site ID:	: Wetland 15		
Remarks: (Explain alternative procedures here or in	a separate re	eport.)					
	·	. ,		_			
Relied primarily upon vegetation and landsc	ape positio	n due to d	ry time of se	eason, and m	lostly urbaniand	fill for substrate.	
VEGETATION Use scientific names of pla	nts.						
	Absolute	Dominant	Indicator	Dominan	ce Test Workshee	et	
Tree Stratum (Plot size: 9 m)	% Cover	Species	Status	Number of Do	minant Species that		
1				are OBL,	FACW, or FAC:	1 (A)	
2					ber of Dominant	4 (5)	
3					cross all Strata:	1(B)	
5					minant Species that FACW, or FAC:	100.00% (A/B)	
	0 :	= Total Cove	er	arc obl.,	7,000,017,0.	100.0070 (A/B)	
Sapling/Shrub stratum (Plot size: 4.6 m)			Prevalen	ce Index Workshe	et	
1	• '			Total % C	over of:		
2				OBL spec	eies <u>0</u> x 1	= 0	
3				FACW sp	ecies 100 x 2	= 200	
4				FAC spec			
5		- Tatal Caus		FACU spe			
Herb stratum (Plot size: 1 m sg	,	= Total Cove	er	UPL spec			
1 Phragmites australis	_) 100	Y	FACW		otals 100 (A) ce Index = B/A =	2.00 (B)	
2	100		171011	Trevalence	oe maex Birt		
3			_	Hydrophy	tic Vegetation Inc	dicators:	
4				Rapid	test for hydrophyti	c vegetation	
5				X Domii	nance test is >50%	1	
6				X Preva	lence index is ≤3.0)*	
7				Morph	nological adaptatio	ns* (provide	
8					orting data in Rema	arks or on a	
9					ate sheet)		
10	100 :	= Total Cove		Proble (expla	ematic hydrophytic ain)	vegetation*	
Woody vine stratum (Plot size: 1 m sq)	10101 0010	J1	 , .	,		
1	- ′				s of hydric soil and wetl esent, unless disturbed	and hydrology must be or problematic	
2				Hydro	phytic		
	0 :	= Total Cove	er	veget			
Demonstra (Include a bata accessor a	mata -t O			prese	ent? Y	_	
Remarks: (Include photo numbers here or on a sepa	ırate sneet)						

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	<u>Matrix</u>	rix Redox Features					·			
(Inches)	Color (moist)	%	Color (moist)	:) % Type* Loc		Loc**	Textur	е	Remarks	
	Concentration, D	= Deplet	ion, RM = Reduc	ed Matri	x, MS =	Masked			: PL = Pore Lining, M = Matrix	
Hydric Sc	il Indicators:								natic Hydric Soils:	
His	tisol (A1)		Sar	idy Gleye	ed Matrix	(S4)	Coast	Prairie Redo	x (A16) (LRR K, L, R)	
His	tic Epipedon (A2)		Sar	dy Redo	ox (S5)		Dark Surface (S7) (LRR K, L)			
Bla	ck Histic (A3)		Stri	pped Ma	trix (S6)		5 cm Mucky Peat or Peat (S3) (LRR K, L, R)			
Hyc	lrogen Sulfide (A4	1)	Loa	my Mucl	ky Minera	al (F1)	Iron-Manganese Masses (F12) (LRR K, L, R)			
	atified Layers (A5)	,		-	ed Matrix		Very Shallow Dark Surface (TF12)			
	m Muck (A10)	•		-	atrix (F3)			ther (explain in remarks)		
	oleted Below Dark	Surface			Surface			(CXPIGITI III TC	marks)	
	ck Dark Surface (` ′ —		ark Surfa	` '				
	,	,				` '			hytic vegetation and wetland	
	ndy Mucky Minera	. ,		lox Depr	essions	(F8)	hydrolo		present, unless disturbed or	
5 cr	m Mucky Peat or I	Peat (S3	3)					pro	oblematic	
	Layer (if observe	ed):								
, <u> </u>	avel, ballast, fill						Hydric s	oil present?		
Depth (inch	es): not determ	ined			•					
Remarks:					J					
A		م امداما					Duala a safera	ر مانطالانی، ام	1 :	
	pped as urban	iana, a	ind along stee	o road e	embank	ment.	Probe refusa	ai within ∠-4	1 inches due to gravel	
and fill.										
HYDROLO	OGY									
Wetland Hy	drology Indicato	rs:								
_	cators (minimum		s required; check	all that a	apply)		Seco	ndary Indicat	tors (minimum of two required)	
X Surface	Water (A1)		•	Aquatic	Fauna (B	13)		Surface Soi	l Cracks (B6)	
X Surface Water (A1)					uatic Plar			_	` '	
High Water Table (A2) Saturation (A3)				•				X Drainage Patterns (B10) Dry-Season Water Table (C2)		
_				пушоде	n Sulfide	Odoi (C	''	_		
	Water Marks (B1) Oxidized Rhizo					heres on	Living Roots	Crayfish Bu	, ,	
Sediment Deposits (B2)								_	/isible on Aerial Imagery (C9)	
Drift Dep	oosits (B3)			Presenc	Stressed Plants (D1)					
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils Geomorphic Position (D2)						c Position (D2)				
Iron Dep	osits (B5)			(C6)				FAC-Neutra	al Test (D5)	
Inundation	on Visible on Aeria	l Imager	/ (B7)	Thin Mu	ck Surfac	e (C7)		 '		
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge o	r Well Da	ata (D9)				
	tained Leaves (B9		· · · —		xplain in)			
Field Obser	•	•					,			
Surface wat		Yes	No	X	Depth (i	nches):		Wetlar	nd	
Water table	•	Yes	No	X	Depth (i	,		hydrol	logy	
Saturation p		Yes	X No		Depth (i	nches):	0	preser	nt? Y	
(includes ca	pillary fringe)				-					
Describe red	Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Donasides										
Remarks:										

Project/Site Lake Calumet CTA Red Line Extension		County:	Cook	Sampling Date: 8/19/201	15	
Applicant/Owner: CTA/MWRD		State:		oois Sampling Point: 21		
Investigator(s): J Mengler, V Mosca		Se	ection, Towns	ship, Range: T37N R14E S27	T37N R14E S27	
Landform (hillslope, terrace, etc.):	tch	Lo	cal relief (cor	ncave, convex, none): ditch		
Slope (%): Lat: 41.671562	2	Long:	-87.607	147 Datum:		
Soil Map Unit Name: urban land-orthents clayey comp	plex, nearly	level	NV	VI Classification: none		
Are climatic/hydrologic conditions of the site typical for	or this time c	of the year?	<u>Y</u> (If no, explain in remarks)		
Are vegetation, soilY, or hydro	ology	significantly	disturbed?	Y Are "normal circumstances"		
Are vegetation, soil, or hydro	ology	naturally pro	oblematic?		Υ	
SUMMARY OF FINDINGS				(If needed, explain any answers in remark	rks.)	
Hydrophytic vegetation present? N						
Hydric soil present?		Is the sa	ampled area	within a wetland?		
Wetland hydrology present?		If yes,	, optional wet	tland site ID:		
Remarks: (Explain alternative procedures here or in a	a separate r	eport.)				
			the of or	and the subsequent of the cube	tanka.	
Relied primarily upon vegetation and landsca	ape positio	n due to ury	y time or se	eason, and mostly urbaniand/fill for subs	strate.	
VEGETATION Use scientific names of plan	nts.					
	Absolute	Dominant	Indicator	Dominance Test Worksheet		
Tree Stratum (Plot size: 9 m)	% Cover	Species	Status	Number of Dominant Species that		
1				are OBL, FACW, or FAC: 2	(A)	
2				Total Number of Dominant	· _ `	
3		. ———		Species Across all Strata: 4	_(B)	
5				Percent of Dominant Species that are OBL, FACW, or FAC: 50.00%	/ ^ /R)	
5	0	= Total Cover	. ——	are OBL, FACW, or FAC: 50.00%	_(A/B)	
Sapling/Shrub stratum (Plot size: 4.6 m	,	- Total 55.5.		Prevalence Index Worksheet		
1 Rhamnus cathartica	80	Υ	FAC	Total % Cover of:		
2 Morus alba	20	Y	FAC	OBL species 0 x 1 = 0		
3				FACW species 0 x 2 = 0	-	
4				FAC species 100 x 3 = 300	- -	
5	. <u> </u>			FACU species 30 x 4 = 120	_	
_	100	= Total Cover		UPL species 0 x 5 = 0	_	
Herb stratum (Plot size: 1 m sq)		· · · · · ·	Column totals 130 (A) 420	_(B)	
1 Glechoma hederacea	15	Y Y	FACU	Prevalence Index = B/A = 3.23	_	
2 Arctium minus	15	<u> </u>	FACU	United the Verestation Indicators		
3				Hydrophytic Vegetation Indicators: Rapid test for hydrophytic vegetation	-	
5				Dominance test is >50%	i	
6				Prevalence index is ≤3.0*		
7				-		
8				Morphological adaptations* (provide supporting data in Remarks or on a		
9				separate sheet)		
10				Problematic hydrophytic vegetation*		
	30	= Total Cover		(explain)		
Woody vine stratum (Plot size: 1 m sq)			*Indicators of hydric soil and wetland hydrology		
1				present, unless disturbed or problematic	;	
2		=		Hydrophytic vegetation		
	0	= Total Cover		present? N		
Remarks: (Include photo numbers here or on a separ	rate sheet)			<u> </u>	-	
Tromano. (morado pristo resistante de la constante de la const	rate c,					

Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	ument th	e indica	tor or confirm t	he absen	ce of indicators.)	
Depth	Matrix			lox Feat					·	
(Inches)	Color (moist)	oist) % Color (moist) %		Type*	Loc**	Texture	;	Remarks		
*Type: C = 0	Concentration, D	= Deple	ion, RM = Reduc	ed Matr	ix, MS =	Masked	Sand Grains.	**Locatio	on: PL = Pore Lining, M = Matrix	
Hydric Sc	il Indicators:						Indicators	for Proble	matic Hydric Soils:	
•	tisol (A1)		San	dv Glev	ed Matrix	(S4)			lox (A16) (LRR K, L, R)	
	tic Epipedon (A2)			andy Gleyed Matrix (S4) andy Redox (S5)				Dark Surface (S7) (LRR K, L)		
				-				cm Mucky Peat or Peat (S3) (LRR K, L, R)		
	ck Histic (A3)	4)		•	atrix (S6)			n-Manganese Masses (F12) (LRR K, L, R)		
	Irogen Sulfide (A			•	ky Miner			-	, , , , , , , , , , , , , , , , , , , ,	
	atified Layers (A5)			ed Matri			Shallow Dark Surface (TF12)		
2 cr	m Muck (A10)		Dep	leted M	atrix (F3))	Other (explain in ı	remarks)	
Dep	oleted Below Dark	k Surfac	e (A11) Red	lox Dark	Surface	(F6)				
Thi	ck Dark Surface (A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicator	re of hydro	phytic vegetation and wetland	
Sar	ndy Mucky Minera	al (S1)	Red	lox Depi	ressions	(F8)			present, unless disturbed or	
5 cr	m Mucky Peat or	Peat (S3		•		, ,	nyarolog		problematic	
	Layer (if observe	•				1				
	ravel, ballast, fill	eu).					Hydric so	il procent	2	
Depth (inch		nined			-		Hydric So	ıı present	·	
	1101 4010111	iiiica			-					
Remarks:										
Δrea ma	nned as urhan	land a	and along steel	road i	emhank	ment	Prohe refusa	l within 2	-4 inches due to gravel	
and fill.	pped do dibaii	iaria, c	ind diong steep	o roda v	Ciribain	arront.	T TODE TETUSA	· •••••	4 mones due to graver	
and iii.										
HYDROL	OGY									
Wetland Hy	drology Indicate	ors:								
Primary Indi	cators (minimum	of one is	s required; check	all that	apply)		Secor	ndary Indic	ators (minimum of two required)	
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface S	oil Cracks (B6)	
	ater Table (A2)				uatic Plar	-		Drainage Patterns (B10)		
Saturation (A3)					n Sulfide			Dry-Season Water Table (C2)		
							One field Decrees (OO)			
	larks (B1)				d Rhizosp	heres on	Living Roots	- ′	,	
	Sediment Deposits (B2) (C3)							_	Visible on Aerial Imagery (C9)	
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4)	Stunted or	Stressed Plants (D1)	
Algal Ma	at or Crust (B4)			Recent I	Iron Redu	ction in T	illed Soils	Geomorph	nic Position (D2)	
Iron Dep	osits (B5)			(C6)				FAC-Neut	ral Test (D5)	
Inundation	on Visible on Aeria	l Imager	/ (B7)	Thin Mu	ck Surfac	e (C7)		_		
Sparselv	Vegetated Conca	ve Surfa	ce (B8)	i e	or Well Da					
Water-Stained Leaves (B9) Other (Explain in Remarks)										
Field Obser	•	,		Outer (E	-vhiaii i ii	. Comains	·' <i>i</i>	1		
Surface wat		Yes	No	Х	Depth (i	inches).		Wetla	and	
Water table	•	Yes	No	X	Depth (i	,			ology	
Saturation p	•	Yes	No	$\frac{x}{x}$	Depth (i	,		pres		
	pillary fringe)				- · `	,				
Describe red	corded data (stre	am gaug	e, monitoring we	II, aerial	photos,	previous	inspections), if a	available:		
	,		9		. ,	_	. ,,			
Remarks:										



Hey and Associates, Inc. Engineering, Ecology and Landscape Architecture Project Number: 15-0218

Latest Revision: 10/5/2015

Data Point O Photo Locations

Surveyed Wetland Boundary (Labled wetland acreas for Project Permanent Envelope only) Project Permanent Envelope

CTA Red Line Extension

2014

Exhibit Title:

10



Photograph 1:

Wetland 1 looking east from west end.



Photograph 2:

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

Project Number: 15-0218

Project Name:

CTA Red Line Extension



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.

Project Number: 15-0218

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

Project Name:

CTA Red Line Extension

Exhibit Title:

Exhibit:



Photograph 5:

Wetland 6 along railroad looking



Photograph 6:

Evidence of hydrology along railroad and edge of Wetland 6.

Project Number: 15-0218

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

Project Name:

CTA Red Line Extension

Exhibit Title: Exhibit:

Representative Photographs #10



Photograph 7:

Remnant prairie plants in Wetland 7 along railroad.



Photograph 8:

Mowed edge of Wetland 8.

Project Number: 15-0218

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

Project Name:

CTA Red Line Extension

Exhibit Title: Exhibit:



Photograph 9:

Existing upland gravel area next to Wetland 8.



Photograph 10:

Wetland 9.

Project Number: 15-0218

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

Project Name:

CTA Red Line Extension

Exhibit Title:

Representative Photographs #10

Exhibit: #10



Photograph 11:

Existing trash piles in Wetland 10.



Photograph 12:

Wetland 12.

Project Number: 15-0218

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

Project Name:

CTA Red Line Extension

Exhibit Title: Exhibit:

Representative Photographs #10



Photograph 13:

Wetland 14.



Photograph 14: Wetland 15.

Project Number: 15-0218

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

Project Name:

CTA Red Line Extension

Exhibit Title: Exhibit:



Photograph 15:

Upland in northwest finger of project area looking north.



Photograph 16:

Northwest extent of project area.

Project Number: 15-0218

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

Project Name:

CTA Red Line Extension

Exhibit Title:

Representative Photographs #10

Exhibit:

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO CONTRACT 84-270-2P

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

APPENDIX A - TABLE OF CONTENTS

Page No.	R.O.W. Document File No.	
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	
Name of Applicant Metropolitan Sanitary District of Greater Chi	cago
Effective Date 10 June 1985	7.0 W. FILE #
Expiration Date (If applicable) 10 June 1988	
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 recomme pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403);	ndation of the Chief of Engineers,
(x) Discharge dredged or fill material into waters of the United States upon the issuance of Army acting through the Chief of Engineers pursuant to Section 404 of the Clean Water Act (a permit from the Secretary of the 33 U.S.C. 1344);
() Transport dredged material for the purpose of dumping it into ocean waters upon t Secretary of the Army acting through the Chief of Engineers pursuant to Section 103 of the Sanctuaries Act of 1972 (86 Stat. 1052; P.L. 92-532);	he issuance of a permit from the Marine Protection, Research and
Metropolitan Sanitary District of Greater Chicago 100 East Erie Street Chicago, Illinois 60629	
onicago, illinois ooozy	
is hereby authorized by the Secretary of the Army:	
construct a municipal sludge drying facility	
in a wetland near the Little Calumet River	
at W2 of Section 27, T37N, R14E, near 130th and Indiana Av	renue,

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 that any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions 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

ENG FORM 1721, Sep 82

- 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 transferree's written agreement to comply with all terms and conditions of this permit or by the transferree 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.

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.

the waterway to its former condition, by condition of the state of the
e. Structures for Small Boats: That permittee hereby recognizes the possibility that the structure permitted herein may subject to damage by wave wash from passing vessels. The issuance of this permit does not relieve the permittee from taking proper steps to insure the integrity of the structure permitted herein and the safety of boats moored thereto from damage 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 periodic maintenance dredging, it may be performed under this periodic maintenance dredging, it may be performed under this periodic maintenance dredging, it may be performed under this periodic maintenance dredging, it may be performed under this periodic maintenance dredging, it may be performed under this periodic maintenance dredging, it may be performed under this periodic maintenance dredging, it may be performed under this periodic maintenance dredging, it may be performed under this periodic maintenance dredging, it may be performed under this periodic maintenance dredging, it may be performed under this periodic maintenance dredging.
b. That the permittee will advise the District Engineer in writing at least two weeks before he intends to undertake a
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 p suant 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 po
tion.
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 crite established pursuant to Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, published in 40 CFR 2 228.
b. That the permittee shall place a copy of this permit in a conspicuous place in the vessel to be used for the transportational 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 & Juliand 6-10-85
PERMUTEE
BY AUTHORITY OF THE SECRETARY OF THE ARMY:
LTC FRANK R. FINCH, P.E. DATE
DISTRICT ENGINEER, U.S. ARMY, CORPS OF ENGINEERS
Transferee hereby agrees to comply with the terms and conditions of this permit.
TRANSFEREE 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 of Greater Chicago

10 June 19 85

ADDRESS OF PERMITTEE 100 East Erie Street Chicago, Illinois 60629

PERMIT NUMBER 5108502

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

ENG Form 4335 Jul 70

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

. JOIN	T APPLICA	ION FORM			
Application Number (To be assigned by Agency)	2. Date			3. For Agency u	
•	24	Jan. 85		(DELB RECEIV	cu)
	Day	Month Y	ear		
Name and address of applicant		5. Name, address, a	nd title	of authorized agen	t
tropolitan Sanitary District of		•	-		
Greater Chicago		1 00	/A -	200	
00 East Erie Street Gicago, Ill. 50629					
Telephone no. during business bours		Telephone no. du	ring busin	ness hours	
νc 312) 751–5868		A/C ()			•
Describe in detail the proposed activity, its purpose information to each agency application.	e, and intended	use. If additional sp	ace is nee	eded, attach addit	Ional support
	•				
	See A	ttachment			
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Names, addresses, and telephone numbers of all adjoint property if different from applicant.	ning and potent:	ally affected property	owners,	including the owne	r of subject
higherth is different from abbitcents	None				
	HOTTE				
		₩			
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Location of activity	М	W. (S.I.E.L)	tion:		
Address: 00 East 130th Street	M.	v. (H.I <u>.B.L)</u>	27	37	14 3
Street, road, or other descriptive location		¥ 4.	Sec.	Twp.	Rge. P.
		Tow Assessed	a Descrin	tion (if known):	
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In or near city or town ok Illinois 60	0628	Map No.	Su	odiv. No.	
In or near city or town		Map No.	Su		
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APPLICANT'S COPY

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, concesis, 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:

Them 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 subidivision, 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

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:

- Complete description of project (Item 6 of application).
 Analysis of the need and purpose of the proposed project.
 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.
- Ecological and Natural Resource Impacts
- (permanent and temporary)
 (1) Fish and wildlife populations (include threatened and
- endangered species)
 Aquatic habitat (include shellfish and benthic life)
- Vegetation habitat
- Wetland area (marshes, bogs, swamps, etc.)
 - Water resources
- (3) 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

- Social and Economical Imp (permanent and temporary)
- (1) Asstherics
- - Cultural values
 (a) Historic and archaeological sites
 (b) Other (national rivers, wilderness areas, recreation areas, parks, sonuments, wild and scenic rivers, etc.)
 Recreational areas (present and potential)
 Public facilities and services (health, safety, etc.)
 Navigation (commercial and small craft)
 Flood damage prevention and effect on local flood heights
 Shore erosion and accretion

- (7) (8)
- Land use
 - (a) Conservation
 - (b) Prime and unique farmlands (c) Food production
 - (d) Existing and potential use (zoning and planning)
- 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

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

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

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

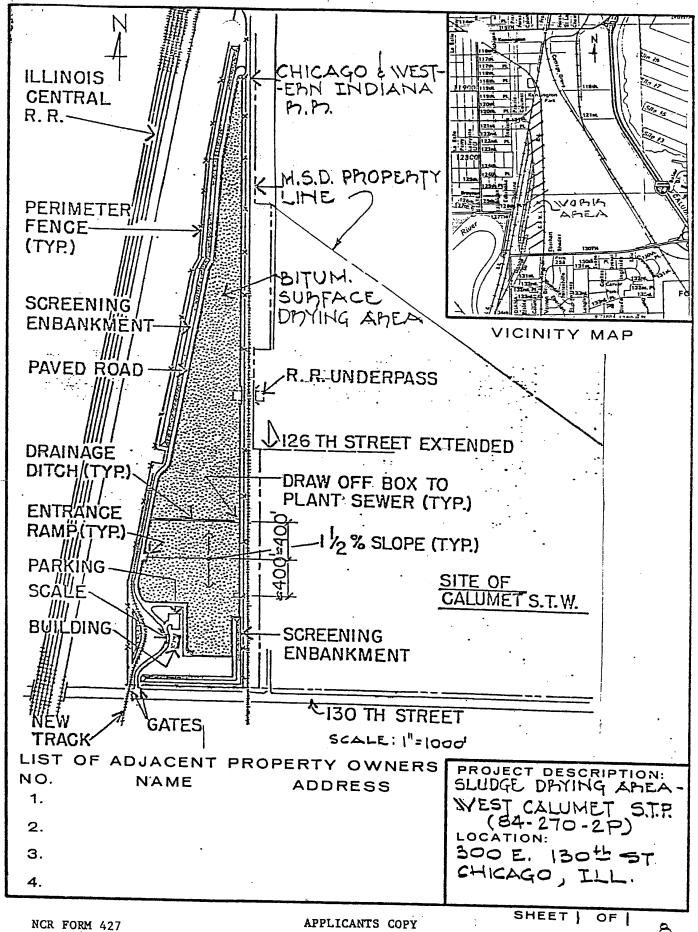
- Existing shoreline and the normal water surface elevation (if Bean Sea Level datum is not used,
- adjustment should be indicated)
 Adjacent property lines and ownership as listed in item 7 of the application form
- Principal dimensions of the structure or work and extent of encroschment into the waterway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

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

- 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.



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NICHOLAS J. MELAS PRESIDENT





JOANNE H. ALTER
THOMAS S. FULLER
NELLIE L. JONES
JAMES C. KIRIE
GLORIA MAJEVSKI
NICHOLAS J. MELAS
AURELIA PUCINSKI
RICHARO 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 151/2-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 74 acres, a wet zone of 44 acres and an upland support area of 3 acres. It has been designed in a naturalistic configuration to enhance its visual quality and provide quality wetland habitat and support.

The Sanitary District is proposing that this 15½-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 15½-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

- The applicant shall not cause:
 - violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C: Water Pollution Rules and Regulations;
 - 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

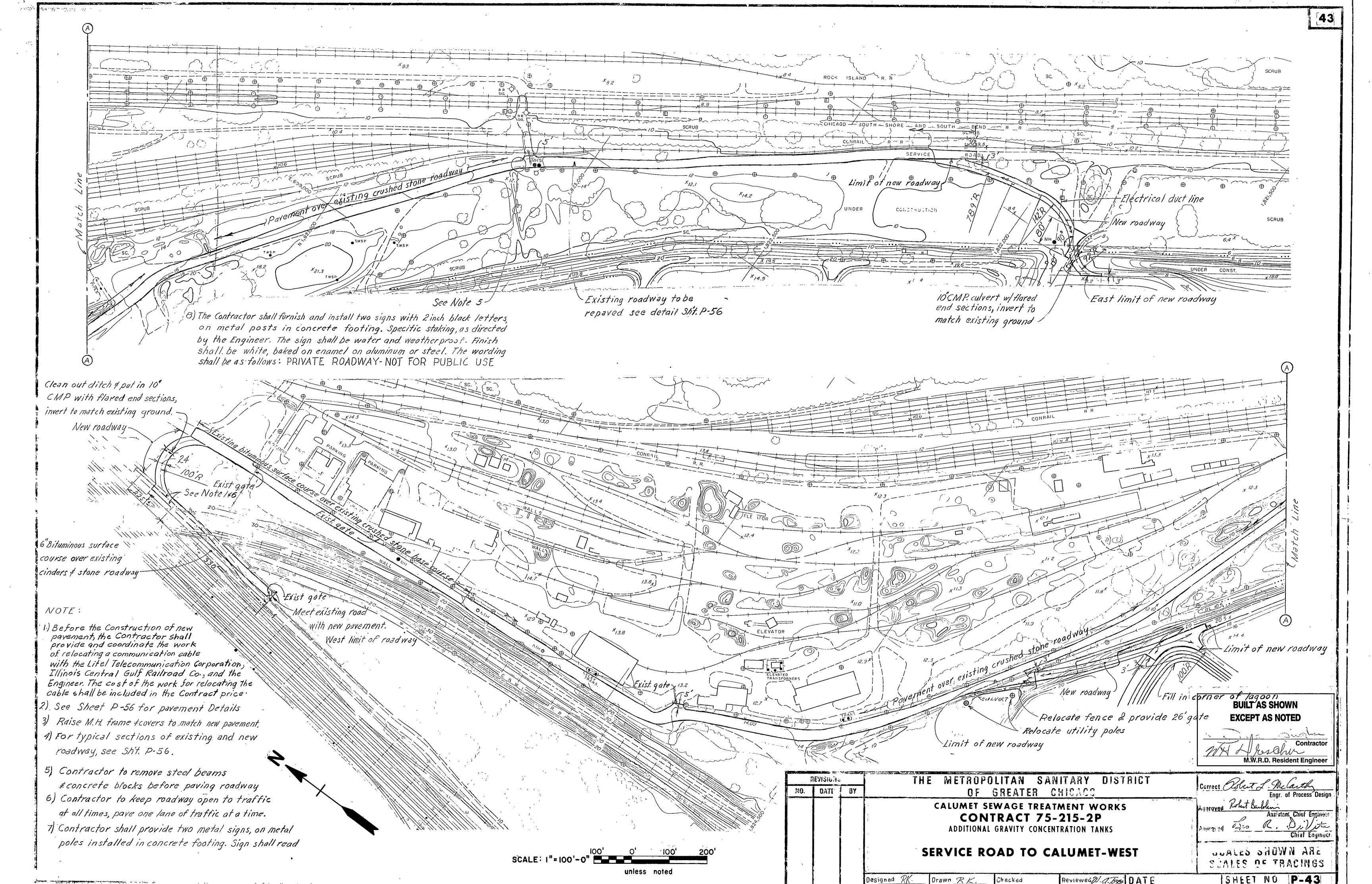
cc: IEPA, DWPC, Records Unit

DWPC, Field Operations Section, Region 2

IDOT, Division of Water Resources, Schaumburg

USEPA, Region V

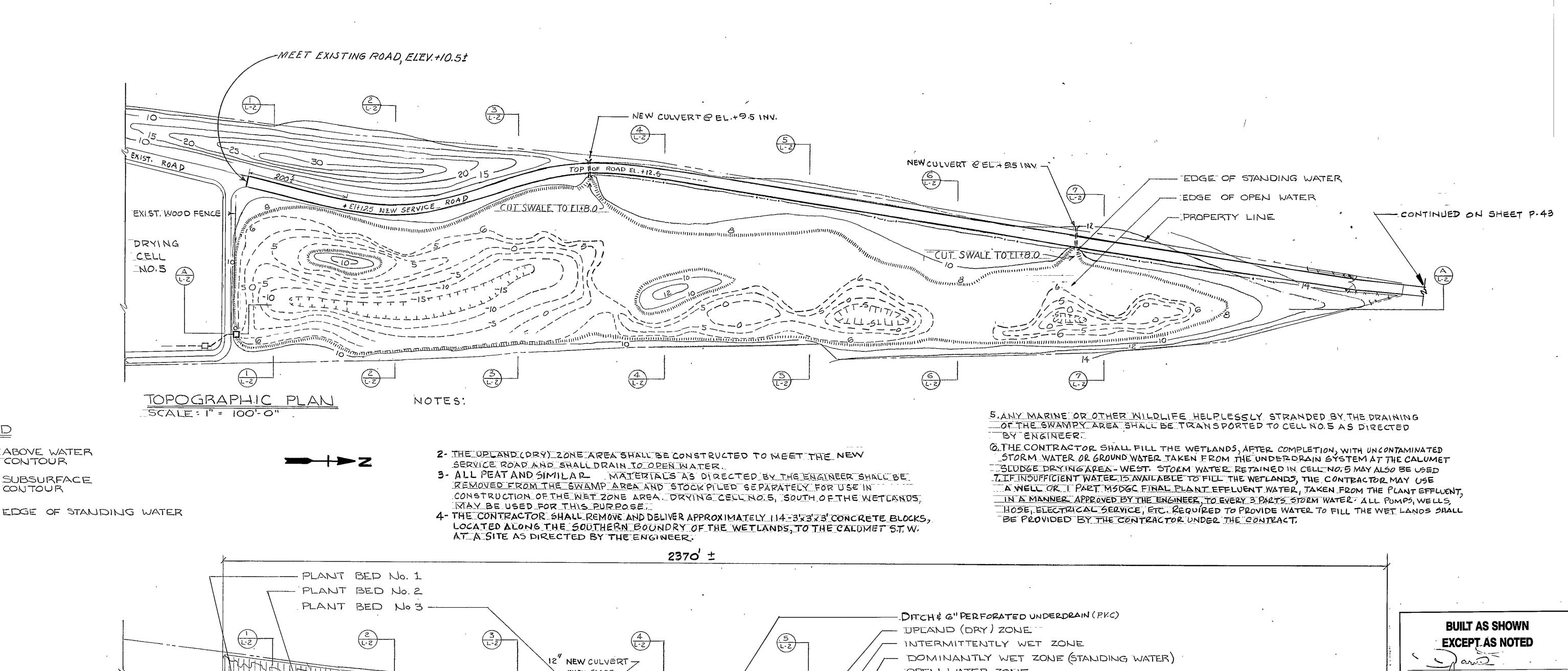
MSDGC — Field Services Section

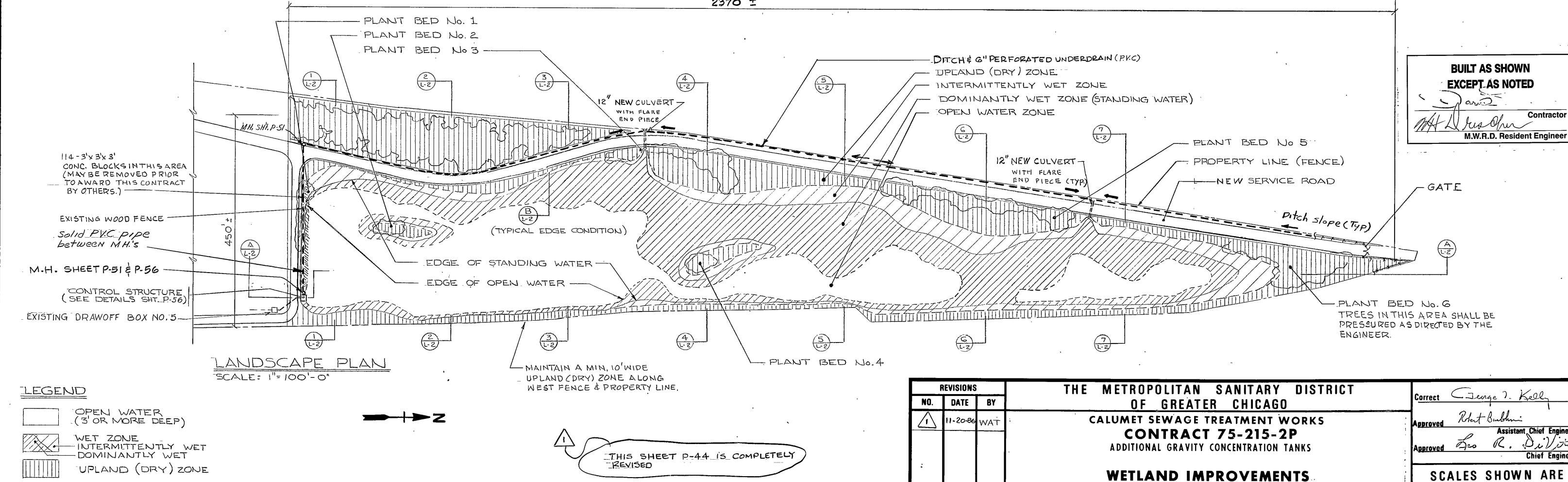


SCALES OF TRACINGS

As built MF 2/20/92 -

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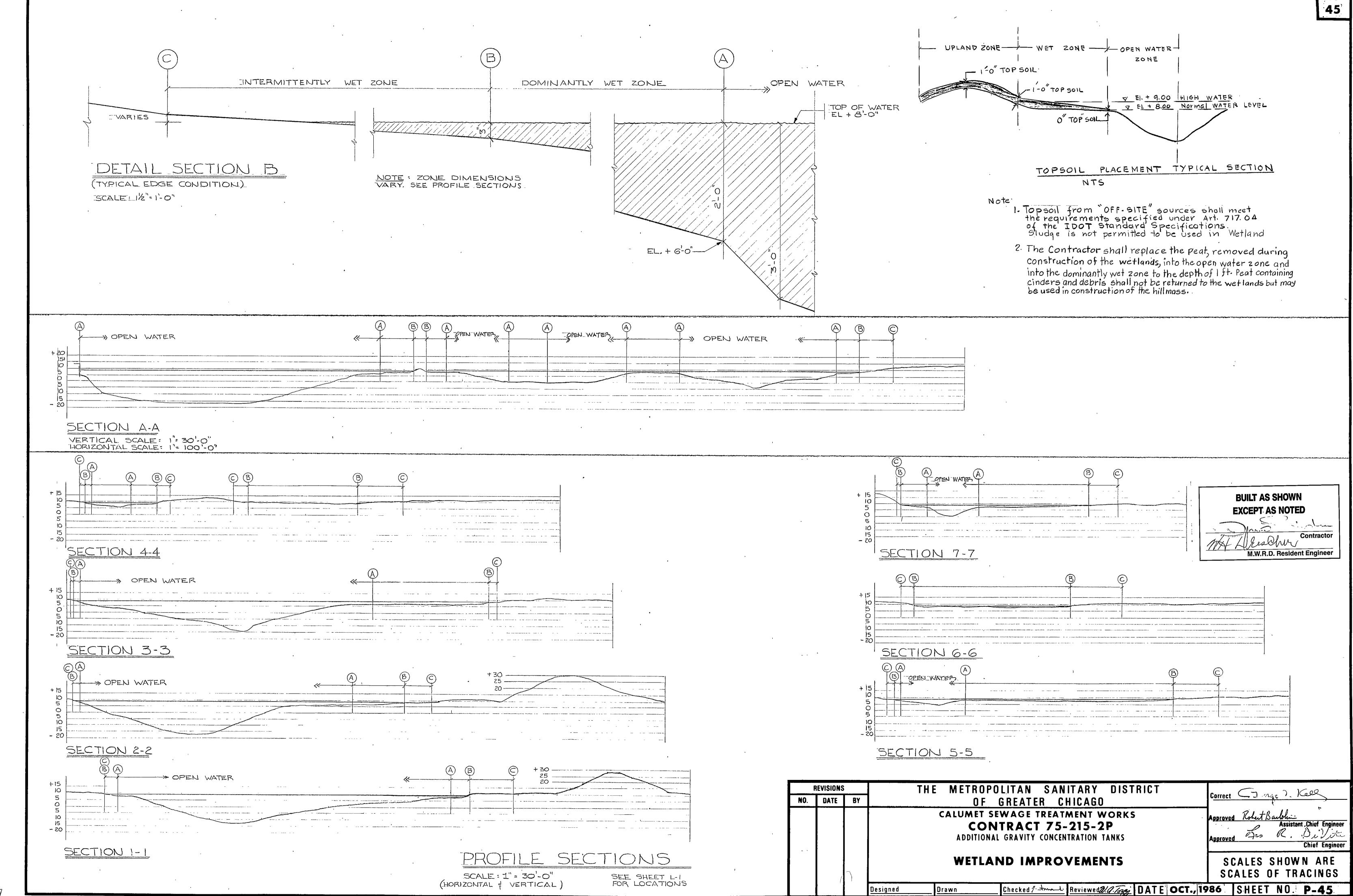
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Drawn RAC

LEGEND

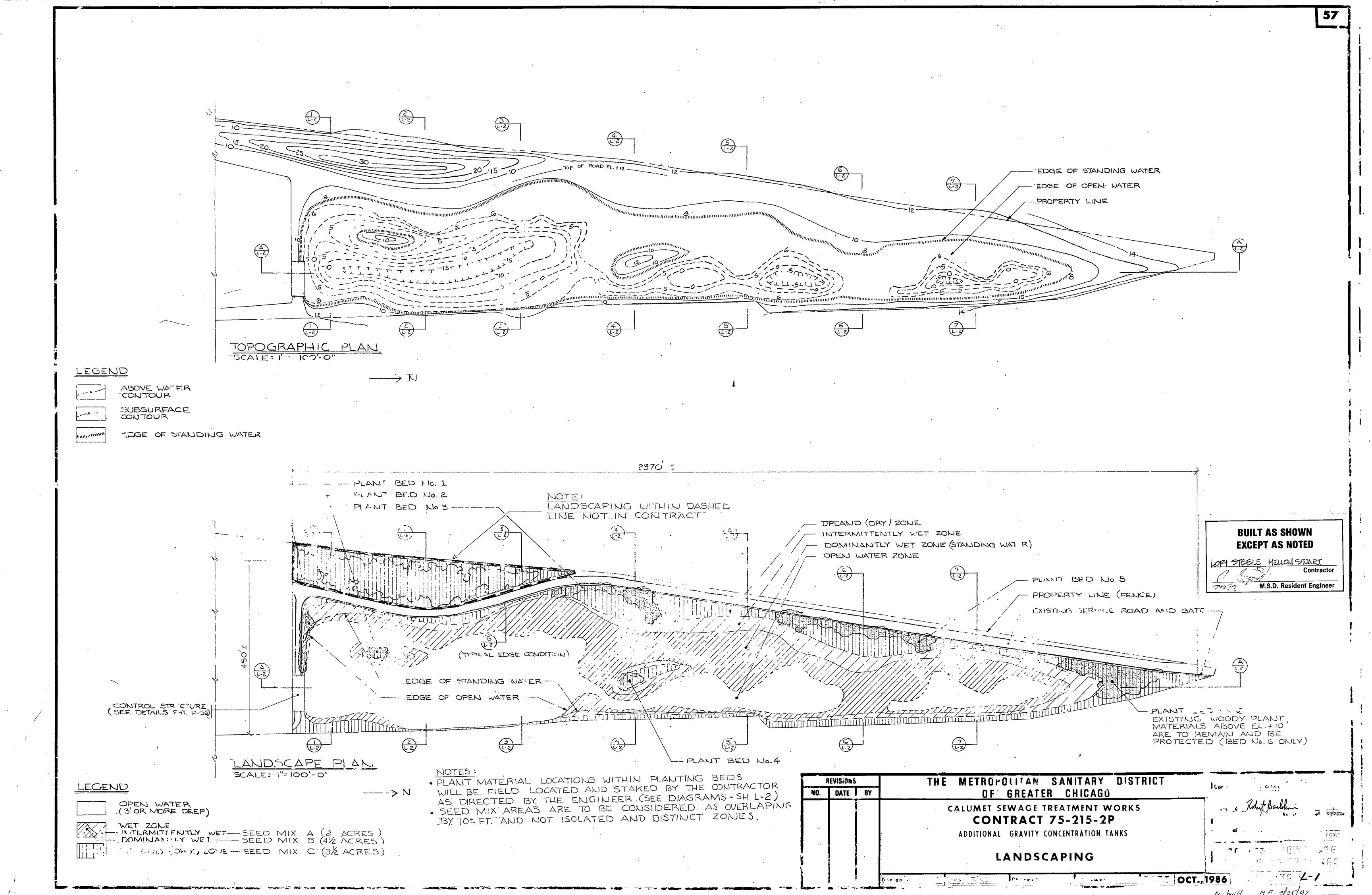
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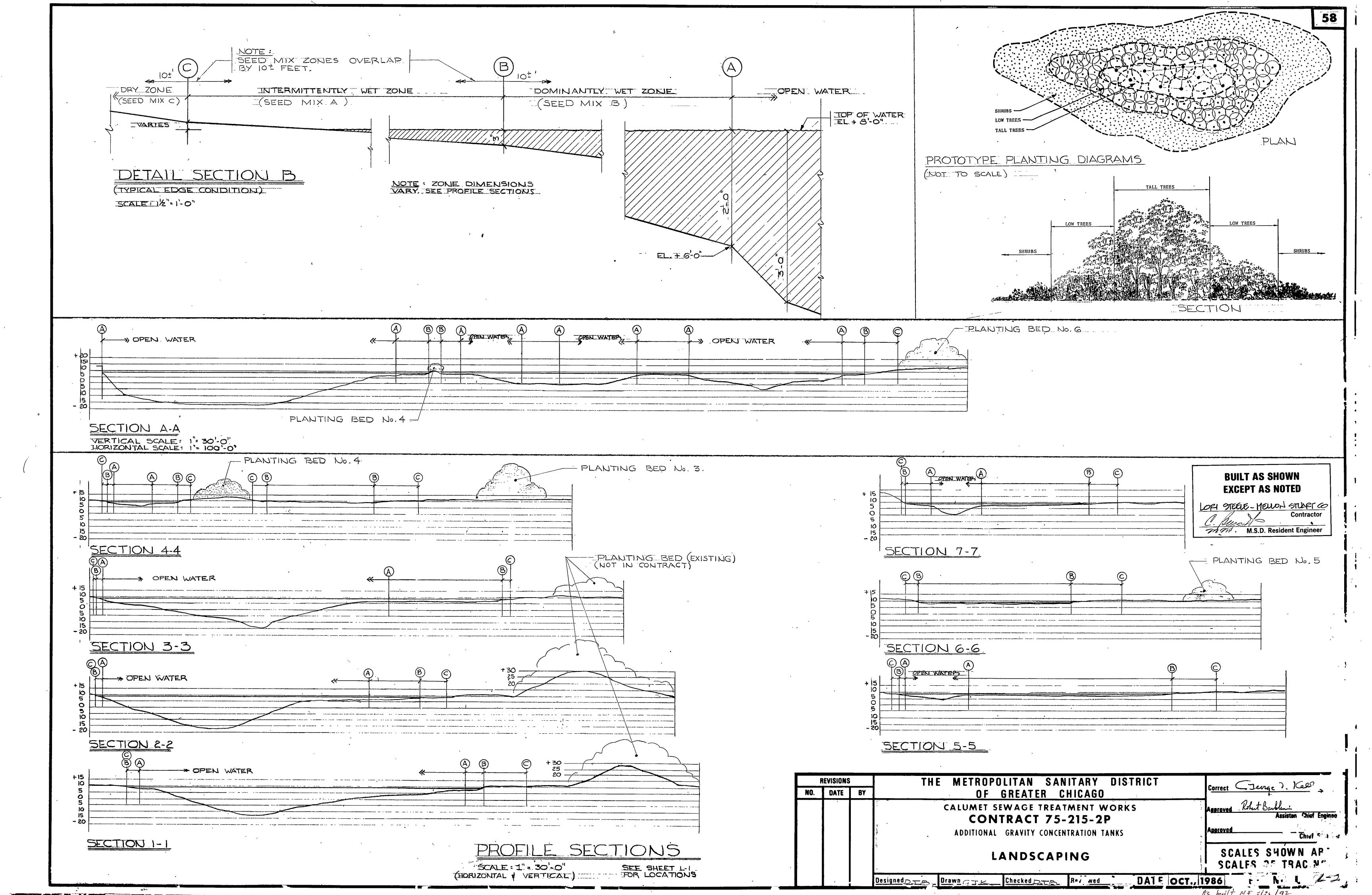
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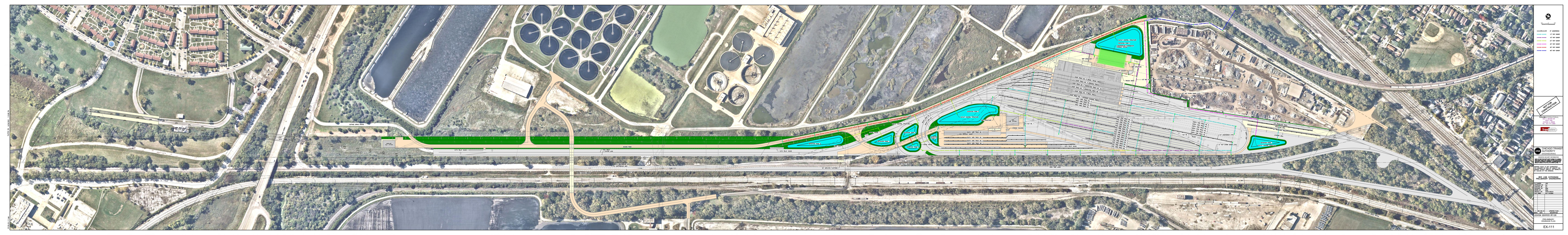


As built MF 2/20/92

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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	Volume	Peak Flow	Storm	Volume	Peak Flow	ow Storm	Volume	Peak Flow	Storm Duration	Volume	Peak Flow
Duration	CF	CFS	Duration	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



567 West Lake Street Chicago, Illinois 60661-1498 TEL 312 664-7200 www.transitchicago.com

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 <u>rmartel@wightco.com</u> 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,

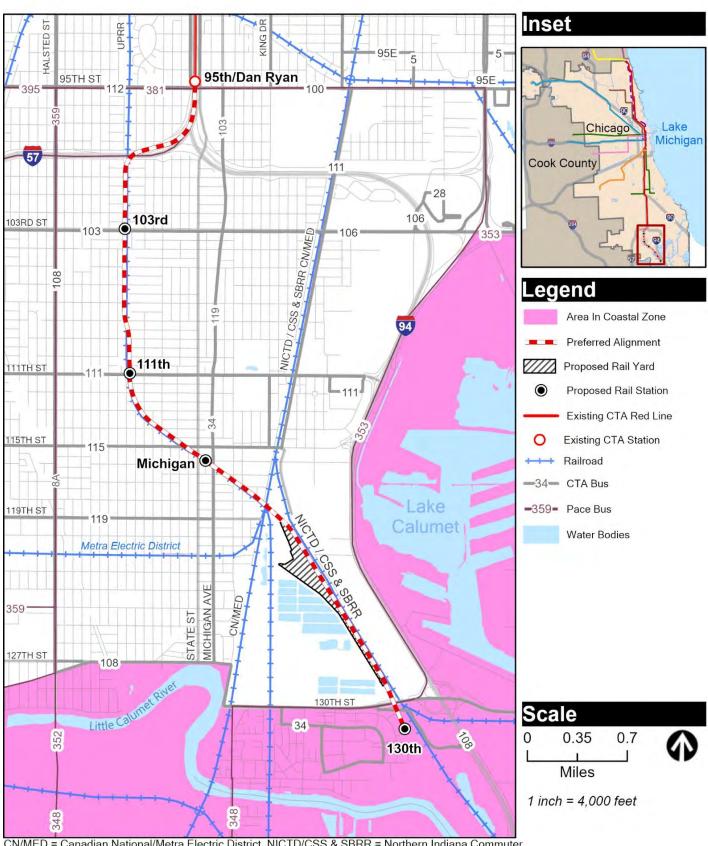
Marlise Fratinardo Senior Project Manager, Planning Chicago Transit Authority

Enclosures:

Enclosure A – Project Location Map with Illinois Coastal Zone Boundaries

Enclosure B – FTA Project Development Initiation Letter

Enclosure A – Project Location Map



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,

X Felicia L. James

December 15, 2020

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,

James P. Casey