

Attachment F - USACE and Illinois Coastal Management Program Supporting Information





Approved Jurisdictional Determination Request and Kensington Marsh Coordination

September 15, 2021



CHICAGO TRANSIT AUTHORITY



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 pre-application meeting held on March 4, 2021, with representatives of USACE, MWRD, and CTA. A site meeting to review resources discussed in this document occurred on May 11, 2021, with representatives of the USACE and CTA.

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

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

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

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

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

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

Kensington Marsh Letter of No Objection

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

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

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

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

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

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

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

Regards,

Marlise Fratinardo Senior Project Manager, Planning Chicago Transit Authority

Enclosures:

- **Enclosure A** Request for a Jurisdictional Determination Form
- **Enclosure B** AJD Resource Figures
- Enclosure C Project AJD for LRC-2016-00408
- Enclosure D Hey & Associates 2015 Wetland Delineation Report
- Enclosure E Kensington Marsh Permit 5108502
- **Enclosure F** Preliminary Drainage Plan
- Enclosure G Kensington Marsh Storm Event Volume and Peak Flow Data

U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT REQUEST FOR A JURISDICTIONAL DETERMINATION

For use of this form, see ER 405-1-12; the proponent agency is CELRC-TS-R.

PRIVACY ACT STATEMENT

AUTHORITIES: The Department of the Army permit program is authorized by Section 10 of the Rivers and Harbors Act (RHA) of 1899, 33 CFR Section 404 of the Clean Water Act, and Section 103 of the Marine Protection, Research, and Sanctuaries Act.

PRINCIPAL PURPOSE: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into water of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters.

ROUTINE USE(s): Information provided on this form will be used in determining Department of the Army jurisdictional boundaries. Information in this application is made a matter of public record.

DISCLOSURE OF THE INFORMATION REQUESTED IS VOLUNTARY: however, the data requested are necessary in order to establish Federal regulatory jurisdiction. If the necessary information is not provided, the jurisdictional determination cannot be completed.

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

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

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

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

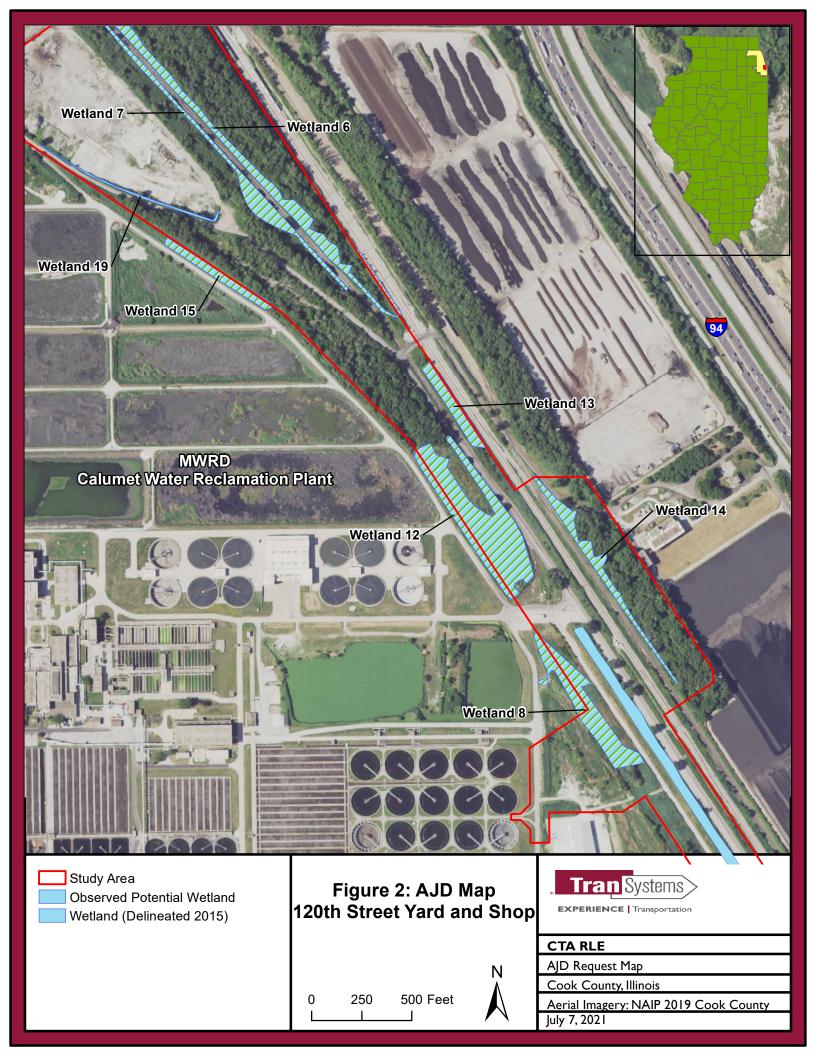
1. PROPERTY ADDRESS / LOCATION

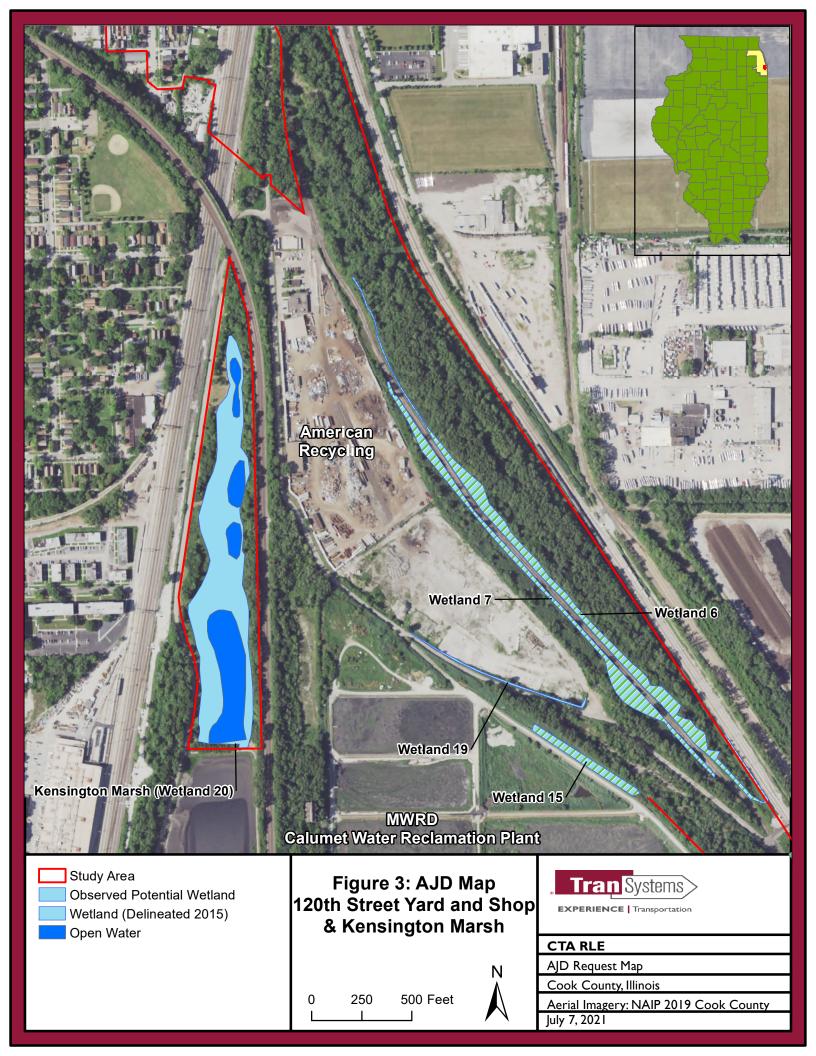
CTA RLE Extension

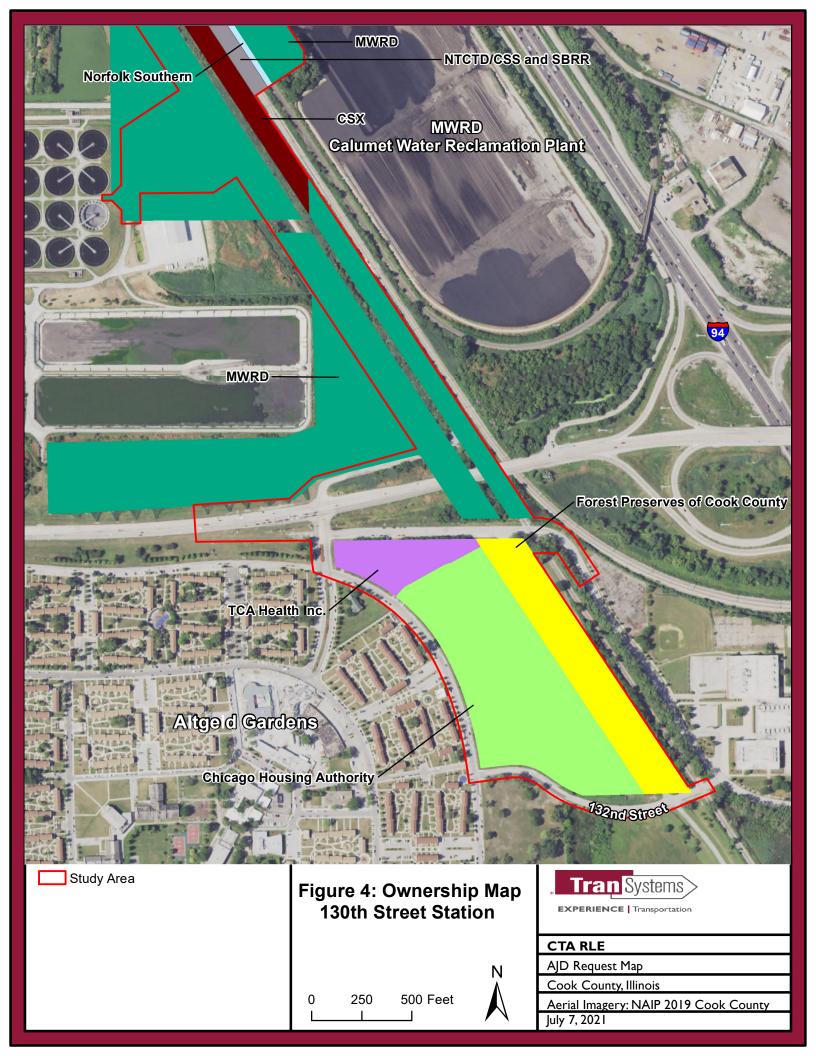
2. CITY (Name) OR UNINCORP		3. STATE		4. ZIP CODE			
Chicago		Illinois		60627/60628			
5. COUNTY			6. TOWNSHIP	NAME	L		
Cook			Lake Calumo	et			
7. QUARTER	8. SECTION	9. TOWNSHIP		10. RANGE	11. PRINCIPAL MERIDIAN (PM)		
	22, 26, 27, &35	37N		14E			
12a. LATITUDE IN DECIMAL DE	EGREES *NORTH	•	b. LONGITUDE	E IN DECIMAL DEGREE	S WEST		
41.667993			-87.602630				
13. SIZE OF PROPERTY IN AC	RES		14. TAX PERS	ONAL IDENTIFICATION	NUMBER (PIN)		
175 Acres							
15. PRIOR OR RELATED USAC	E 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							
	TE FOR MITIGATION PURSUAN BMIT DETAILS OF THE PROJEC		ECT PREVIOUS	SLY PERMITTED BY USA	ACE? X YES NO IF YES,		
See attached discussion							

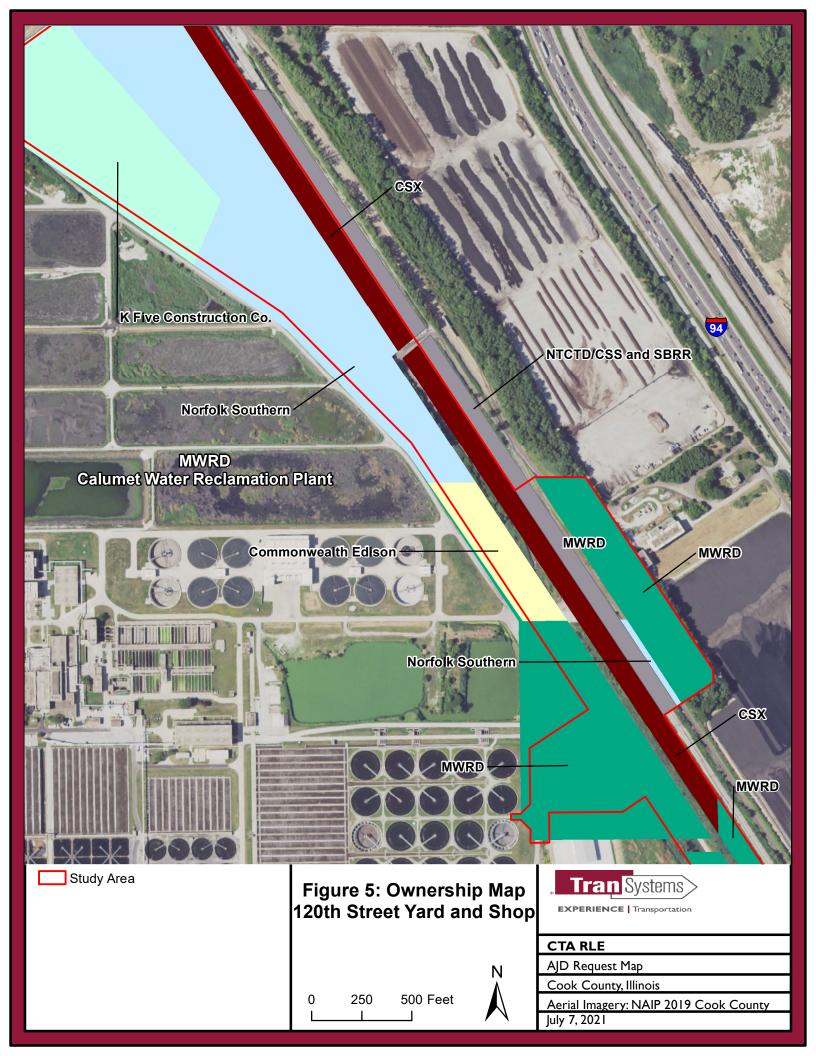
			DJECT PREVIOUSLY PERMITTED BY USACE? X YES NO HE PERMITTEE'S NAME AND / OR ADDRESS, AND CORPS PERMIT
See attached discussion			
	SECT	ION II - PROPERTY OWN	IER CONTACT INFORMATION
1. PROPERTY OWNER NAME (Last, F		•	
	-	e)/ Ellen Avery (Ms.)(F	Property Owner Representative) - See Enclosure B
2. PROPERTY OWNER COMPANY (If	•• •		
	-		strict of Greater Chicago (MWRD) - See Enclosure B
3. MAILING ADDRESS (Post Office Bo	x, Street, City, S	tate and Zip Code)	
567 West Lake Street Chicago, Illinois 60661-1489			
Chicago, minors 00001-1409			
4. DAYTIME TELEPHONE NUMBER	5. FAX NUMB	ER	6. E-MAIL ADDRESS
312-681-4124			mfratinardo@transitchicago.com
s	ECTION III - RE	EQUESTOR NON-PROPE	ERTY OWNER CONTACT INFORMATION
IF THE PERSON REQUESTING THE CONTACT INFORMATION HERE.	IURISDICTION	AL DETERMINATION IS N	NOT THE PROPERTY OWNER, PLEASE ALSO SUPPLY THE REQUESTOR'S
1. REQUESTOR'S NAME (Last, First M	(1)		
Fratinardo, Marlise (Ms.)			
2. REQUESTOR'S COMPANY (if applic	cable)		
Chicago Transit Authority (CTA)			
3. MAILING ADDRESS (Post Office Bo.	x, Street, City, S	tate and Zip Code)	
567 West Lake Street			
Chicago, Illinois 60661-1489			
4. DAYTIME TELEPHONE NUMBER	5. FAX NUMB	=R	6. E-MAIL ADDRESS
312-681-4124			mfratinardo@transitchicago.com
	SECTIC		
			D SIGNATURE CERTIFICATION
1. OTHER DATA / INFORMATION THA			
Enclosure B – AJD Resource Figu		form is listed as Enclo	osure A. Enclosures additional to this document include:
Enclosure $C - Project AJD$ for LR		}	
Enclosure D – Hey & Associates 2			
Enclosure E – Kensington Marsh I		2	
Enclosure F – Preliminary Drainag		Johnma and Daals Elam	Dete
Enclosure G – Kensington Marsh	Storm Event	olume and reak rlow	Data
			83
Please provide a map and / or copy of t	he plat of surve	v identifying the physical b	
Additionally, if you have any of the follow survey, and site photographs.	wing information	, please include it with yo	ur request: wetland delineation, relevant maps, drain tile survey, topographic
			site map, plat of survey, or in a separate drawing: the footprint, location, and inecessary delays of processing subsequent permits, if required.
I hereby certify that the information conf	tained in the Re	quest for a Jurisdictional [Determination is accurate and complete:
2a. PROPERTY OWNER (Last, First M	1)	b. DATE (YYYYMMDD)	c. PROPERTY OWNER'S SIGNATURE

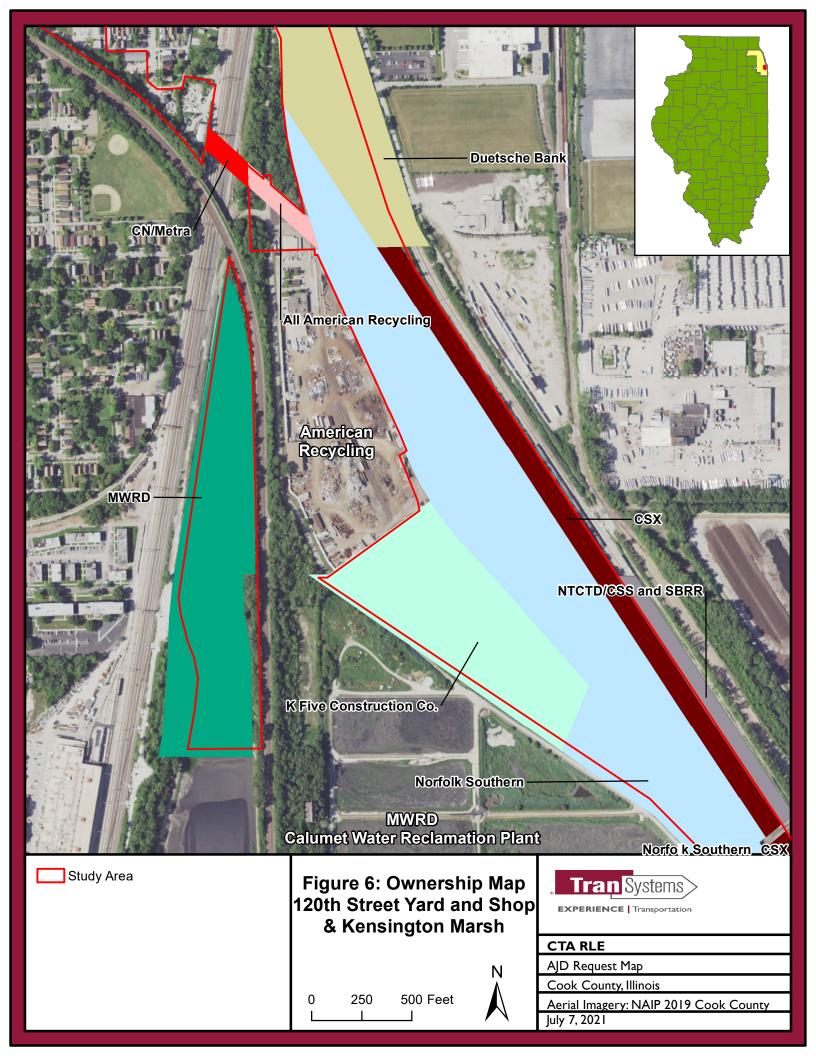














DEPARTMENT OF THE ARMY

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

REPLY TO ATTENTION OF:

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

REPLY TO ATTENTION OF:

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

Applic	cant: Sara Race, Commonwealth Edison	File Number: LRC-2016-00330	Date: June 29, 2016	
Attach	See Section below			
	А			
	В			
	С			
Х	D			
	PRELIMINARY JURISDICTIONAL DETERMIN	Е		
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.

CECTION II	DEOLIEGT FOD	ADDEAL	OBJECTIONS TO	ANT INTTUAT	DDOFFEDED	DEDMIT
SECTION II -	REQUENT FOR	APPEAL or	URIECTIONS TO	AN INFEAL	PRUFFERED	PERMIT
DECTION	THE QUEDT TOR		ODJECTIONS TO	THE HEAT THE THE	I ROLLERED	I DIGUILI

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

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

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal	If you only have questions regarding the appeal process you may				
process you may contact:	also contact:				
Regulatory Branch	Jacob Siegrist				
Chicago District Corps of Engineers	Appeal Review Officer				
231 South LaSalle Street, Suite 1500	Great Lakes and Ohio River Division				
Chicago, IL 60604-1437	CELRD-PD-REG				
Phone: (312) 846-5530	550 Main Street, Room 10032				
Fax: (312) 353-4110	Cincinnati, Ohio 45202-3222				
	Phone: (513) 684-2699 Fax: (513) 684-2460				
PIGUT OF ENTRY. Your signature below grants the right of entry to Corps of Commanders personnal and any government					

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

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

SECTION I: BACKGROUND INFORMATION

- A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): June 29, 2016
- B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Chicago District, ComEd, LRC-2016-330
- C. PROJECT LOCATION AND BACKGROUND INFORMATION: NW of I-94 and 130th Street

State: Illinois County/parish/borough: Cook City: Chicago

Center coordinates of site (lat/long in degree decimal format): Lat. 41.667957°N, Long. -87.601762° W. Universal Transverse Mercator: Zone 16

Name of nearest waterbody: Calumet River

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

- Name of watershed or Hydrologic Unit Code (HUC): Little Calumet-Galien (04040001)
 - Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

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

- Office (Desk) Determination. Date: June 6, 2016
- Field Determination. Date(s): May 27, 2016

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

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

SECTION III: CWA ANALYSIS

- E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):²
 - which are or could be used by interstate or foreign travelers for recreational or other purposes.
 - from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 - which are or could be used for industrial purposes by industries in interstate commerce.
 - Interstate isolated waters. Explain:
 - Other factors. Explain:

Identify water body and summarize rationale supporting determination:

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

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.
- Identify type(s) of waters:
- Wetlands: acres.

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*.

¹ Supporting documentation is presented in Section III.F.

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

- 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 <u>solely</u> 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:
 - Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

SECTION IV: DATA SOURCES.

- A. SUPPORTING DATA. Data reviewed for JD (check all that apply checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
 - Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: CBBEL May 10, 2016 Request for Jurisdictional Determination Report.
 - Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
 - Data sheets prepared by the Corps:
 - Corps navigable waters' study:
 - U.S. Geological Survey Hydrologic Atlas:Lake Calumet HA 205, 1966,
 - USGS NHD data.
 - \boxtimes 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 \boxtimes Other (Name & Date):
 - Previous determination(s). File no. and date of response letter:
 - Applicable/supporting case law:
 - Applicable/supporting scientific literature:
 - Other information (please specify):

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

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

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

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Universal Transverse Mercator: Zone 16

Name of nearest waterbody: Calumet River

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Calumet River Name of watershed or Hydrologic Unit Code (HUC): Little Calumet-Galien (04040001)

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

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

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

- 2. Non-regulated waters/wetlands (check if applicable):¹
 - Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: Two shallow roadside ditches are exempt.

SECTION III: CWA ANALYSIS

- F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
 - If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
 - Other: (explain, if not covered above):

SECTION IV: DATA SOURCES.

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

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

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

- Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:Lake Calumet HA 205, 1966,

¹ Supporting documentation is presented in Section III.F.

	USGS NHD data.
	⊠ USGS 8 and 12 digit HUC maps.
\boxtimes	U.S. Geological Survey map(s). Cite scale & quad name: Lake Calumet 7.5", 1991, Pick List, Pick List, Pick List,
\boxtimes	USDA Natural Resources Conservation Service Soil Survey. Citation: Soil Survey of DuPage and Part of Cook (1979).
\boxtimes	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)
\boxtimes	Photographs: 🛛 Aerial (Name & Date):
	or \square Other (Name & Date):
	Previous determination(s). File no. and date of response letter:
	Applicable/supporting case law: .
	Applicable/supporting scientific literature:
	Other information (please specify):

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

Areas are ditches (check all that apply):

Non-tidal drainage and irrigation ditches excavated on dry land (51 FR 41217, Nov. 13, 1986).

Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water (USACE JD Form Instructional Guidebook 5/30/2007).

Ditches that do not have a relatively permanent flow into waters of the U.S. or between two (or more) waters of the U.S. (USACE JD Form Instructional Guidebook 5/30/2007).

Area(s) are artificial waters created in upland or dry land:

Artificially irrigated areas which would revert to upland if the irrigation ceased (51 FR 41217, Nov. 13, 1986).

Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used

exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing (51 FR 41217, Nov. 13, 1986).

Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons (51 FR 41217, Nov. 13, 1986).

Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States (51 FR 41217, Nov. 13, 1986).

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet criteria of this definition) (33 CFR 328.3 (a)).

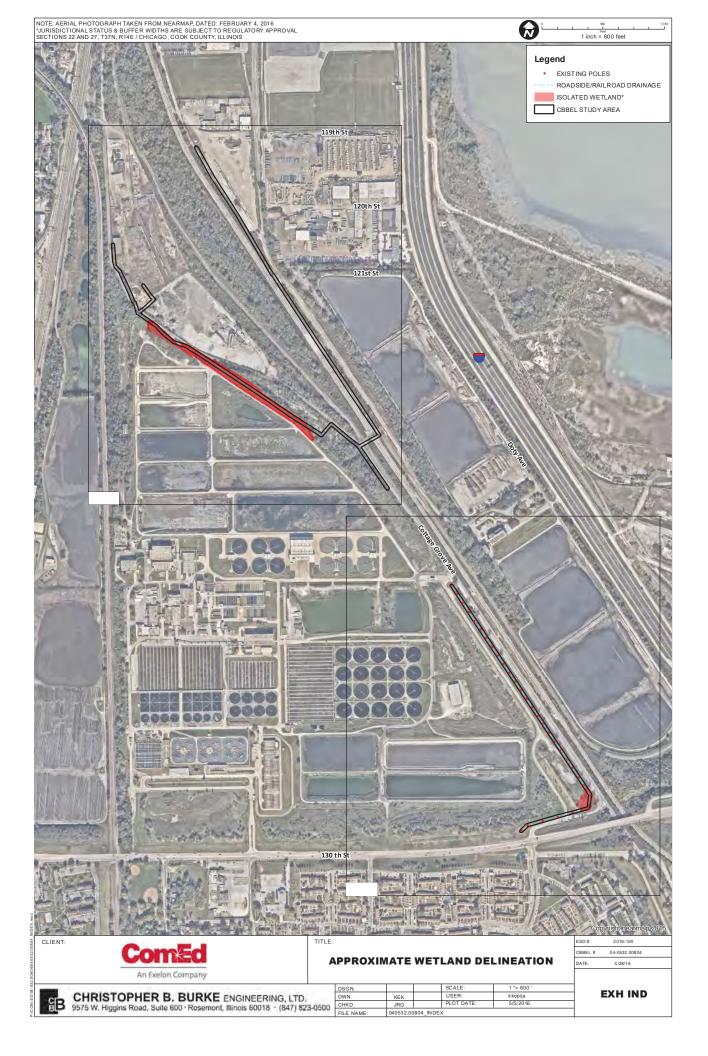
Area(s) are swales (USACE JD Form Instructional Guidebook 5/30/2007).

Area(s) are erosional features (including gullies) (USACE JD Form Instructional Guidebook 5/30/2007).

Area(s) are prior converted cropland (33 CFR 328.3(a)(8)).

Area(s) are uplands.

Other: .



15-0218

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

26575 W. Commerce Drive, Suite 601, Volo, Illinois 60073 Office (847) 740-0888 Fax (847) 740-2888

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

Hey and Associates, Inc.

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).

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 (<i>Phragmites australis</i>)
14	0.20	0.88	4.00	1.33	No	Drainage swale	Common reed
15	0.52	n/a	2.00	1.00	No	Drainage swale	Common reed
TOTAL	15.34	17.71					
v 2 3 6 4	regetative quality a 2 The Native Mear 3 The Chicago Dis designation is base 4 While this area	nd above 35 ind 1 C is an indicat strict U.S. Arm 2d on the defin has a Native M	dicates "Nat ion of nativ ny Corps of itions found Mean C of g	tural Area" qual e vegetative qua Engineers has l within the Re greater than 3.	lity. ality for an are designated vi gional Permit 5, it was base	a. Areas with value of 3.5 or greater arious Waters of the United States t Program that became effective Apr	o be high-quality aquatic resources (HQARs). This

Table 1. Summary of Wetlands within Project Limits.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

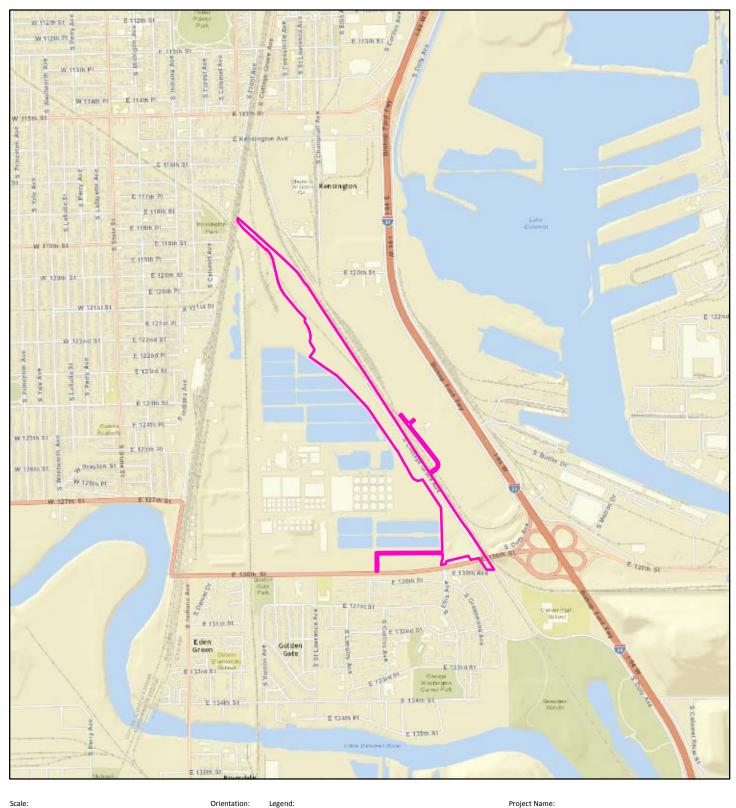
Wetland 14 is a swale located on the east side of the Indiana Harbor Belt Railroad/Metra South Shore line, but west of the MWRD fence around some sludge drying beds and other facilities. It is partially wooded by box elder and cottonwood but in open areas remains dominated by common reed.

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

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

SUMMARY AND CONCLUSIONS

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



0



Prepared by:

Feet





Project Permanent Envelope

Project Name: **CTA Red Line Extension**

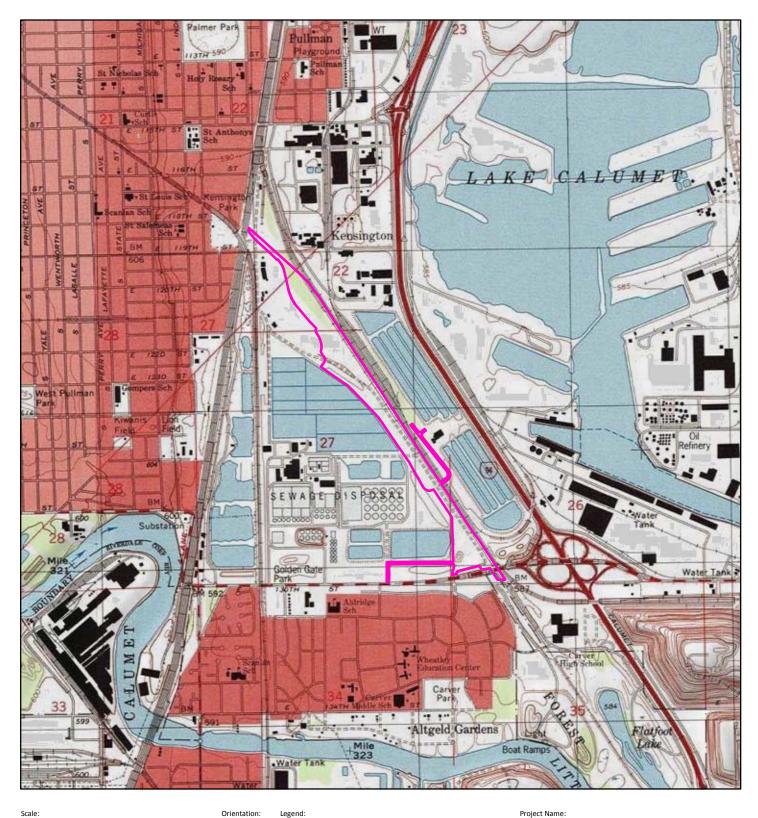
Prepared for: **CDM Smith**

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

Exhibit Title: **Project Location**

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

2,000



0

2,000





Latest Revision: 10/1/2015



Project Permanent Envelope

Project Name: CTA Red Line Extension

Prepared for: **CDM Smith**

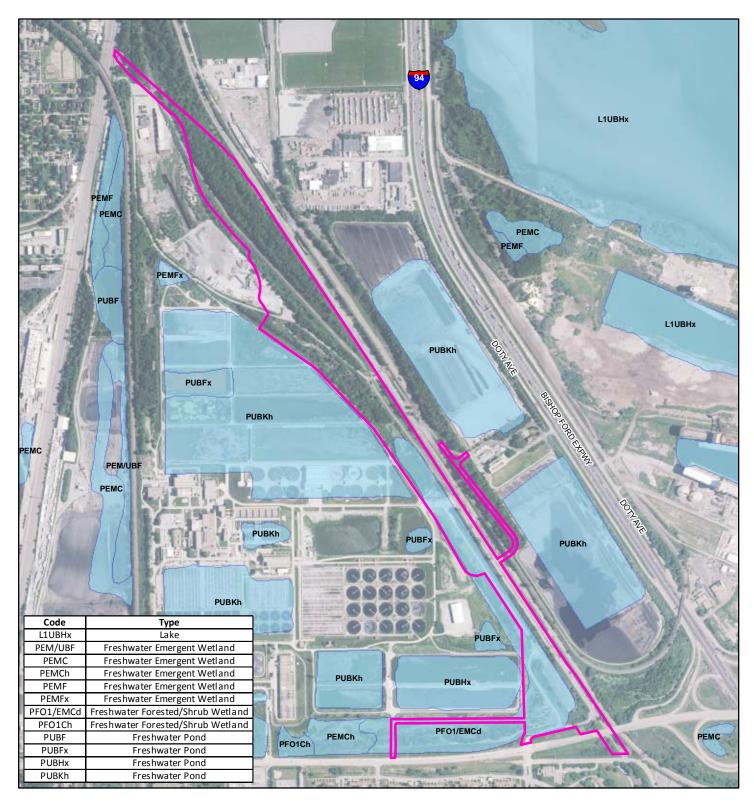
Location Information: Lake Calumet Quadrangle

Prepared by:

Project Number: 15-0218



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



0

Prepared by:

Project Number: 15-0218



Feet



Latest Revision: 10/1/2015

Legend:

National Wetland Inventory Project Permanent Envelope Project Name: **CTA Red Line Extension**

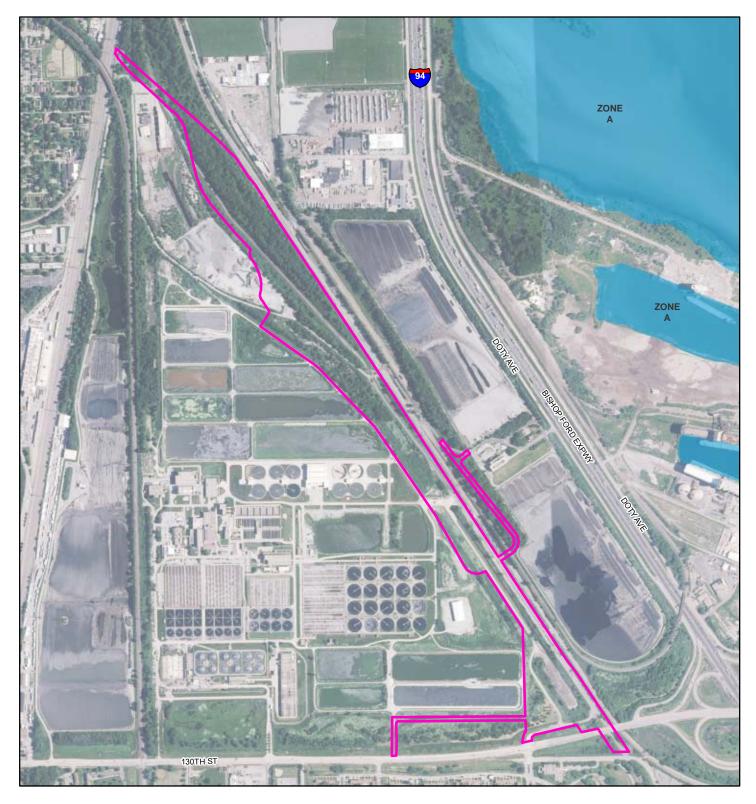
Prepared for: **CDM Smith**

NWI Date: 1981

Hey and Associates, Inc.

Engineering, Ecology and Landscape Architecture

3









Legend:

Project Number: 15-0218

Latest Revi



100 Year Flood Zone Project Permanent Envelope Project Name: CTA Red Line Extension

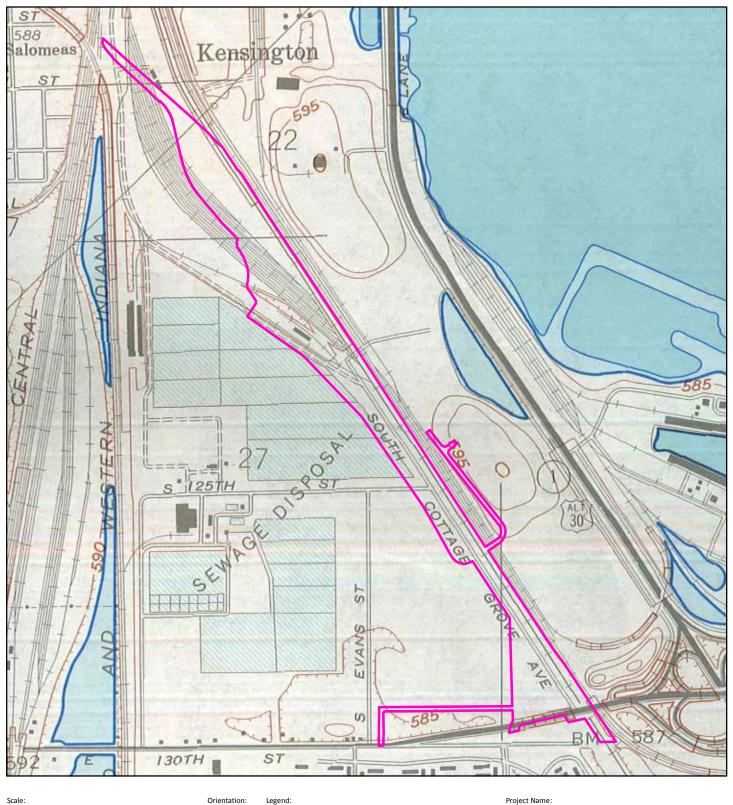
Prepared for: CDM Smith

Panel #: 17031C0661J

Prepared by:



Exhibit Title: Flood Insurance Rate Map



Scale:

0

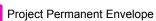
Prepared by:

Project Number: 15-0218



Latest Revision: 10/1/2015





Project Name: CTA Red Line Extension

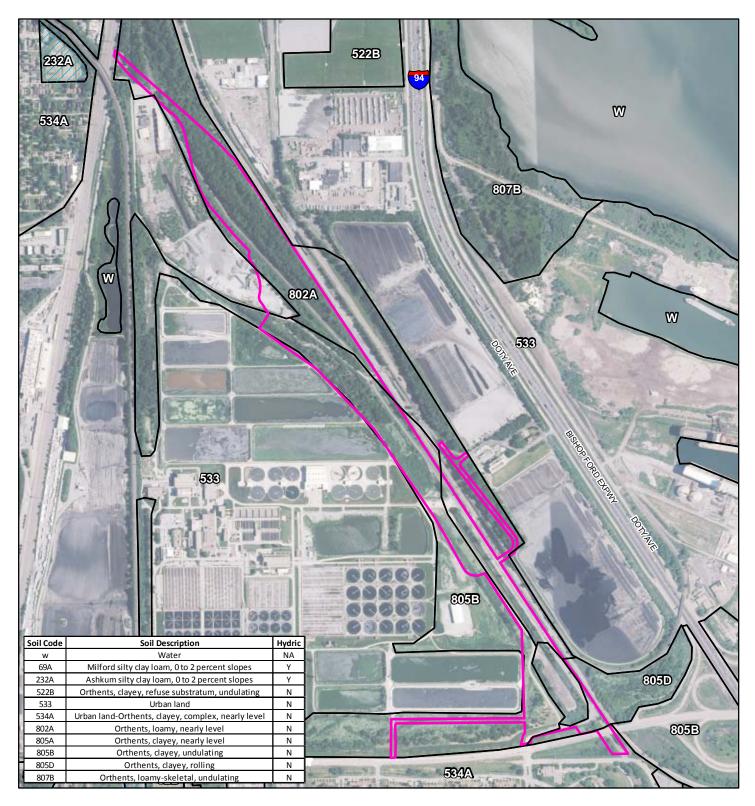
Prepared for: **CDM Smith**

Hydro Atlas Date: 1966



1,000 Feet

Exhibit Title: **U.S.G.S Hydrologic Atlas**



Scale:

0

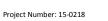




1,000











Legend:

Hydric Soils
 Soil Units
 Project Permanent Envelope

Project Name: CTA Red Line Extension

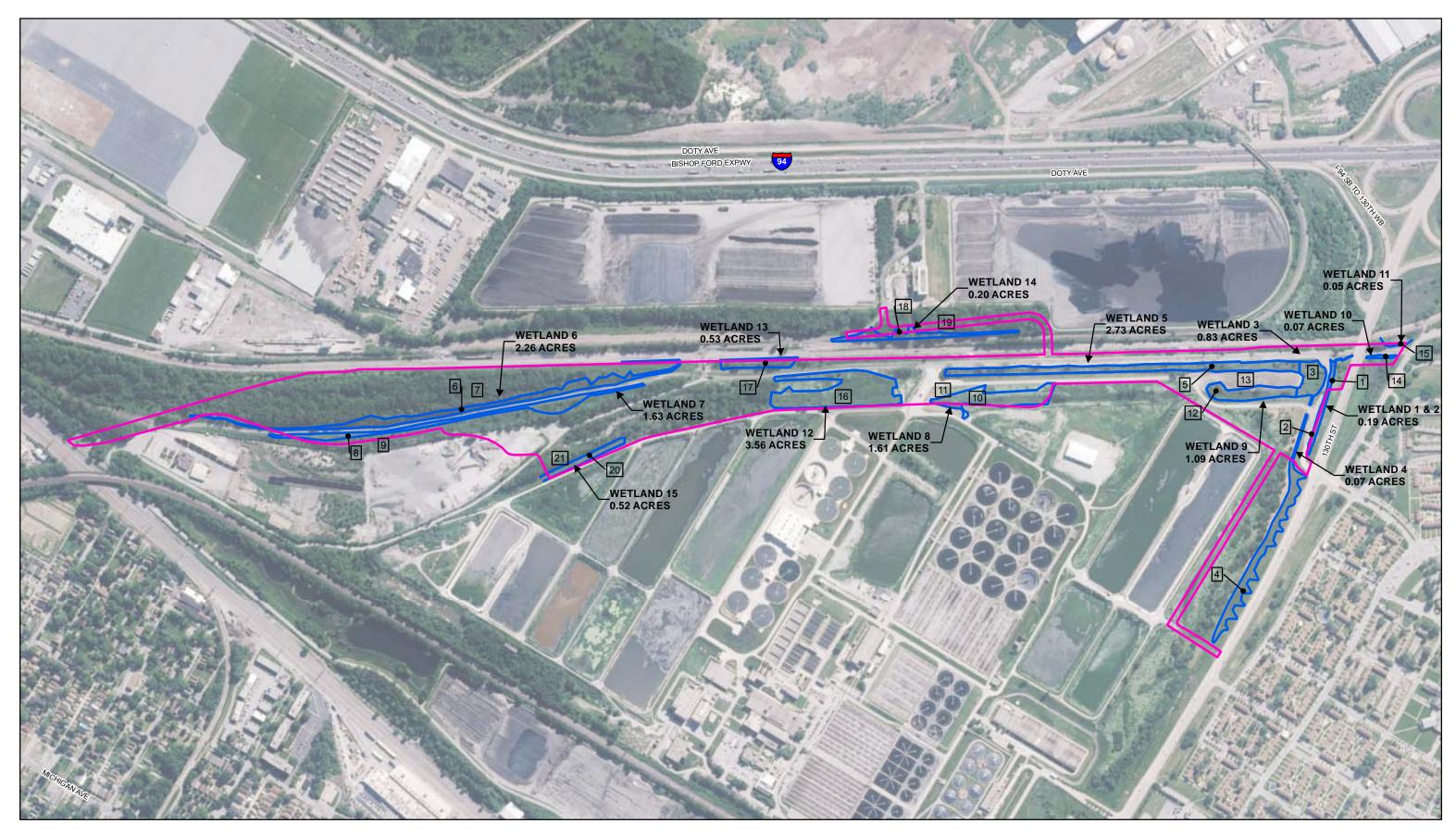
Prepared for: CDM Smith

Soil Survey Date: 2012

Prepared by:

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

Exhibit Title: NRCS Soil Survey





Scale:

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

0 600 Feet Project Number: 15-0218 Latest Revision: 10/1/2015

Orientation:

Legend: X Data Point

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

Project Permanent Envelope

Project Name: CTA Red Lin

Prepared For: CDM Smith

CTA Red Line Extension

Aerial Date: 2014

Exhibit Title: Wetland Boundary

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

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

Project Name: CTA Red Line Extension

Exhibit Title: Exhibit: **Observed Wetland Species**

CONSERVATISM-BASED METRICS

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

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

	SPECIES 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
			Hedge False					
consep	Calystegia sepium	Convolvulus sepium	Bindweed	1	FAC	Forb	Perennial	Native
diplac	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	Forb	Biennial	Adventive
		Fraxinus pennsylvanica						
frapen	Fraxinus pennsylvanica	subintegerrima	Green Ash	1	FACW	Tree	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
P - P								
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

CONSERVATISM-BASED

METRICS

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

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
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat- Tail	0	OBL	Forb	Perennial	Adventive

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

BASED

METRICS	
SPECIES RICHNESS (ALL)	17
SPECIES RICHNESS (NATIVE)	7
% NON-NATIVE	0.59
WET INDICATOR (ALL)	-0.18
WET INDICATOR (NATIVE)	-0.43
% HYDROPHYTE (MIDWEST)	0.59
% NATIVE PERENNIAL	0.41
% NATIVE ANNUAL % 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
carnut	Carduus nutans	CARDUUS NUTANS	Nodding Plumeless- 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
polsca	Fallopia scandens	Polygonum scandens	Climbing Black- 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

BASED

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

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

	SPECIES 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

BASED	
METRICS	
MEAN C	
(NATIVE SPECIES)	2.43
MEAN C	
-	1.50
(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

METRICS	
SPECIES RICHNESS (ALL)	32
SPECIES RICHNESS (NATIVE)	21
% NON-NATIVE	0.34
WET INDICATOR (ALL)	-0.06
WET INDICATOR (NATIVE)	-0.14
% HYDROPHYTE (MIDWEST)	0.66
% NATIVE PERENNIAL	0.53
% NATIVE ANNUAL % ANNUAL	0.06
% 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
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
	Phragmites australis ssp.							
phrausu	australis	Phragmites australis	Common Reed	0	FACW	Grass	Perennial	Adventive
			Smooth Ground					
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

0050150	SPECIES NAME				MIDWEST			
SPECIES	(NWPL/	SPECIES	COMMON	C VALUE	WET INDICATOR	HABIT	DUDATION	NATIVITY
ACRONYM	MOHLENBROCK)	(SYNONYM)	NAME	C VALUE	INDICATOR	HABII	DURATION	NATIVITY
samcan	Sambucus nigra ssp. 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 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) ADJUSTED FQAI % C VALUE 0 % C VALUE 1-3 11.66 23.81 0.45 0.18 % C VALUE 4-6 % C VALUE 7-10 0.33 0.03

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

SPECIES ACRONYM	SPECIES NAME (NWPL/ 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

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

14
7
0.50
-0.21
-0.57
0.79
0.36
0.14
0.14
0.79

	SPECIES NAME				MIDWEST			
SPECIES	(NWPL/	SPECIES	COMMON		WET			
ACRONYM	MOHLENBROCK)	(SYNONYM)	NAME	C VALUE	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

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

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

	SPECIES 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
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
	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
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

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

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

	SPECIES 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
artvul	Artemisia vulgaris	ARTEMISIA VULGARIS	Common Mugwort	0	UPL	Forb	Perennial	Adventive
		Fraxinus pennsylvanica						
frapen	Fraxinus pennsylvanica	subintegerrima	Green Ash	1	FACW	Tree	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
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

CONSERVATISM-BASED

METRICS

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

METRICS	
SPECIES RICHNESS (ALL)	4
SPECIES RICHNESS (NATIVE)	2
% NON-NATIVE	0.50
WET INDICATOR (ALL)	-1.00
WET INDICATOR (NATIVE)	-0.50
% HYDROPHYTE (MIDWEST)	1.00
% NATIVE PERENNIAL	0.50
% NATIVE ANNUAL % 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
	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
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	Vine	Perennial	Native

CONSERVATISM-BASED

METRICS

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

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

	SPECIES 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

CONSERVATISM-BASED METRICS

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

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

	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	
samcan	Sambucus nigra ssp. 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	

CONSERVATISM-BASED

METRICS

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

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

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	HABIT	DURATION	NATIVITY	
aceneg	Acer negundo	Acer negundo var. violaceum	Box Elder	0	FAC	Tree	Perennial	Native	
aceneg	Acer negunuo	violaceum	DOX LIGEI	0	TAC	nee	Ferennia	INALIVE	
ambtri	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	Forb	Annual	Native	
arcmin	Arctium minus	ARCTIUM MINUS	Lesser Burrdock	0	FACU	Forb	Biennial	Adventive	
			Hedge False						
consep	Calystegia sepium	Convolvulus sepium	Bindweed	1	FAC	Forb	Perennial	Native	
phaaru	aaru Phalaris arundinacea PHALARIS ARUNDINACE.		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	

CONSERVATISM-BASED

METRICS

MEAN C (NATIVE SPECIES)	1.00
MEAN C	
(ALL SPECIES)	0.50
MEAN C	
(NATIVE TREES)	0.00
MEAN C	
(NATIVE SHRUBS)	0.00
MEAN C	
(NATIVE	
HERBACEOUS)	1.00
FQAI	
(NATIVE SPECIES)	2.00
FQAI	2.00
(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

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

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET	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
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

Exhibit Title: Exhibit: Urisdictional Data Forms #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	ois Sampling	Point:	1	
Investigator(s): J Mengler, V Mosca		Se	ction, Towns	ship, Range:	T34N R14E	₹14E S26	
Landform (hillslope, terrace, etc.): di	tch	Loc	cal relief (cor	ncave, convex, none):	c	litch	
Slope (%): Lat: 41.66001	9	Long:	-87.5954	- I29 Datum:			
Soil Map Unit Name: urban land-orthents clayey com	plex, nearly			/I Classification:	non	e	
Are climatic/hydrologic conditions of the site typical for			Y (If no, explain in remarks			
Are vegetation , soil Y , or hydro	oloav	significantly		Y Are "normal circun			
Are vegetation , soil , or hydro				N present?	istances	Y	
SUMMARY OF FINDINGS		indication of pro-		(If needed, explain	anv answer		
Hydrophytic vegetation present? Y				(, ,	
Hydric soil present?		Is the sa	mpled area	within a wetland?	Y		
Wetland hydrology present? Y			•	—	etland 1	_	
		-				_	
Remarks: (Explain alternative procedures here or in a	a separate r	eport.)					
Relied primarily upon vegetation and landsca	ape positio	on due to dry	time of se	ason, and mostly ur	banland/fill	for substrate.	
	-						
VEGETATION Use scientific names of plan				Deminence Test	Alexies best		
<u>Tree Stratum</u> (Plot size: 9 m)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test			
1 Populus deltoides	% Cover	Y	FAC	Number of Dominant Sp are OBL, FACW, or		5 (A)	
2 Acer saccharinum	20	Y	FACW			<u> </u>	
3 Ulmus americana	5	 N	FACW	Total Number of Do Species Across all		5 (B)	
4				Percent of Dominant Sp		(2)	
5				are OBL, FACW, or		00.00% (A/B)	
	45	= Total Cover					
Sapling/Shrub stratum (Plot size: 4.6 m)			Prevalence Index	Worksheet		
1 Salix interior	15	Y	FACW	Total % Cover of:			
2 Populus deltoides	10	Y	FAC	OBL species	0 x 1 =	0	
3 Fraxinus pennsylvanica	5	Ν	FACW	FACW species	140 x 2 =	280	
4				FAC species	30 x 3 =	90	
5				FACU species	0 x 4 =	0	
	30	= Total Cover		UPL species	0 x 5 =	0	
Herb stratum (Plot size: 1 m sq)		54014	Column totals	170 (A)	370 (B)	
1 Phragmites australis	95	Y	FACW	Prevalence Index :	= B/A =	2.18	
23	·	·		Hydrophytic Vege	tation India	toro	
3 4		·		Rapid test for			
+5		·		X Dominance tes		Seculor	
6				X Prevalence inc			
7	·			—		<i>,</i>	
8				Morphological supporting dat			
9	·			separate shee			
10	·			Problematic hy	/drophytic ve	getation*	
	95	= Total Cover		(explain)	, ,	-	
Woody vine stratum (Plot size: 1 m sq)			*Indicators of hydric s	soil and wetland	hydrology must be	
1	· . <u></u>				ss disturbed or p		
2				Hydrophytic			
	0	= Total Cover		vegetation present?	Y		
Domarka: (Includo aboto numboro baro or on a corre	rato abaat			prosenti			
Remarks: (Include photo numbers here or on a sepa	ale sileel)						

SOIL	
------	--

Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	ument th	e indica	tor or confirm the abse	ence of indicators.)	
Depth	<u>Matrix</u>			dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks	
*Type: C = 0	Concentration, D	= Deplet	tion, RM = Reduc	ed Matri	ix, MS =	Masked	Sand Grains. **Loca	ation: PL = Pore Lining, M = Matrix	
Hydric So	il Indicators:						Indicators for Prol	plematic Hydric Soils:	
Hist	isol (A1)		Sar	ndy Gley	ed Matrix	(S4)	Coast Prairie R	edox (A16) (LRR K, L, R)	
	ic Epipedon (A2)	1		ndy Redo		· /	Dark Surface (
	ck Histic (A3)			-	atrix (S6)			at or Peat (S3) (LRR K, L, R)	
	lrogen Sulfide (A	4)		•••	ky Miner	al (F1)		e Masses (F12) (LRR K, L, R)	
	tified Layers (A5				ed Matri	. ,		ark Surface (TF12)	
	n Muck (A10))			atrix (F3)	. ,	Other (explain i		
	bleted Below Dark	k Surfac			Surface			in remainsy	
			· · · ·						
Thick Dark Surface (A12) Depleted Dark Surface (F7) Indicators of hydrophytic vegetation and v Sandy Mucky Mineral (S1) Redox Depressions (F8) hydrology must be present unless disturt									
					63310113	(10)	hydrology must	be present, unless disturbed or problematic	
	n Mucky Peat or		<i>)</i>)					problematic	
	Layer (if observe	ed):						-42	
Type: gr Depth (inche	avel, ballast, fill es): not determ	nined			-		Hydric soil prese	nt ?	
		lineu			-				
Remarks:									
Area ma	pped as urban	land, a	and located alo	ng road	d at bas	e of an	other road embankm	ent. Probe refusal within 2-	
	due to gravel			5					
HYDROLO									
-	drology Indicato		a raquiradi abaak	all that	o o o o la vi		Casandan da		
-	cators (minimum	or one is	s required, check					dicators (minimum of two required)	
X Surface				•	Fauna (B			e Soil Cracks (B6)	
	ter Table (A2)				uatic Plar	. ,		ge Patterns (B10)	
Saturatio				Hydroge	en Sulfide	Odor (C		ason Water Table (C2)	
	arks (B1)				d Rhizosp	heres on		h Burrows (C8)	
X Sedimer	t Deposits (B2)			(C3)				ion Visible on Aerial Imagery (C9)	
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4) Stunted	l or Stressed Plants (D1)	
Algal Ma	t or Crust (B4)			Recent I	ron Redu	iction in T	illed Soils Geomo	rphic Position (D2)	
Iron Dep	osits (B5)			(C6)			FAC-N	eutral Test (D5)	
Inundatio	on Visible on Aeria	I Imager	y (B7)	Thin Mu	ck Surfac	e (C7)			
X Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge c	or Well Da	ata (D9)			
Water-S	tained Leaves (B9)		Other (E	xplain in	Remarks)		
Field Obser	vations:			-					
Surface wat	•	Yes	No	Х	Depth (,		etland	
Water table	•	Yes	No No	Х	Depth (i	,		drology	
Saturation p	pillary fringe)	Yes	X No		Depth (i	ncnes).	<u> </u>	esent? Y	
		am dauc	e monitoring we	ll aerial	photos	previous	inspections), if available		
Becchiberet		an gaag	jo, monitoring tro	ii, aonai	priotoo,	proviouo	nioposiono), n'avaliable		
Remarks:									
Saturatio	on within ditch	channe	I lined by hydro	ophytes	6.				

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	Cook	sampling	Date:	8/13/2015	
Applicant/Owner: CTA/MWRD		State	e: Illir	nois Sampling	Point:	2	
Investigator(s): J Mengler, V Mosca			Section, Township, Range: T37N, R14			4E, S26	
Landform (hillslope, terrace, etc.): dit	ch	I	Local relief (concave, convex, none):			ditch	
Slope (%): Lat: 41.690632	3	Long:					
Soil Map Unit Name: urban land-orthents clayey comp	olex, nearly			VI Classification:	no	ne	
Are climatic/hydrologic conditions of the site typical for	-		Y (If no, explain in remarks	;)		
Are vegetation, soilY, or hydro				Y Are "normal circum			
Are vegetation , soil , or hydro				N present?	ISIGNCES	Y	
SUMMARY OF FINDINGS				(If needed, explain	any answe	rs in remarks.)	
Hydrophytic vegetation present? Y				· · ·		,	
Hydric soil present?		Is the	sampled area	within a wetland?	Y		
Wetland hydrology present? Y			-	tland site ID: We		—	
	o oporato r						
Remarks: (Explain alternative procedures here or in a	a separate r	eport.)					
Relied primarily upon vegetation and landsca	ipe positio	n due to d	dry time of se	eason, and mostly ur	banland/fi	I for substrate.	
VEGETATION Use scientific names of plar	nte						
	Absolute	Dominon	t Indiactor	Dominance Test	Norksheet]	
Tree Stratum (Plot size: 9 m)	% Cover	Dominan Species		Number of Dominant Sp			
1		·		are OBL, FACW, or		1 (A)	
2				Total Number of Do	minant –		
3				Species Across all		1 (B)	
4				Percent of Dominant Sp	ecies that		
5				are OBL, FACW, or	FAC:	100.00% (A/B)	
	0	= Total Cov	rer				
Sapling/Shrub stratum (Plot size: 4.6 m)			Prevalence Index	Worksheet	•	
1				Total % Cover of:	0	0	
2				OBL species FACW species	0 x 1 = 95 x 2 =		
3				FAC species	$\frac{95}{0}$ x 2 =		
5				FACU species	$\frac{0}{0} \times 4 =$		
	0	= Total Cov	ver	UPL species	0 x 5 =		
Herb stratum (Plot size: 1 m sq)			Column totals	95 (A)	190 (B)	
1 Phragmites australis	95	Y	FACW	Prevalence Index :	= B/A =	2.00	
2							
3				Hydrophytic Vege	etation Indic	ators:	
4				Rapid test for I		vegetation	
5				X Dominance tes			
6				X Prevalence inc	iex is ≤3.0*		
/				Morphological	•		
8				supporting dat separate shee		s or on a	
9 10						actation*	
	95	= Total Cov	ver	Problematic hy (explain)		gelalion	
Woody vine stratum (Plot size: 1 m sq)			*Indicators of hydric s	oil and water	d hydrology must be	
1					soil and wetlan		
2				Hydrophytic			
	0	= Total Cov	rer	vegetation present?	V		
Demonstrati (Include altrata acceste an	ala chi O			present?	<u> </u>		
Remarks: (Include photo numbers here or on a separ	ate sneet)						

SOIL	
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Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	iment th	e indica	tor or confirm the	absence of indicators.)	
Depth	Matrix		Rec	dox Feati	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks	
*Type: C = C	Concentration, D	= Deplet	tion, RM = Reduc	ed Matri	x, MS =	Masked	Sand Grains. **	Location: PL = Pore Lining, M = Ma	trix
	il Indicators:		,		,			Problematic Hydric Soils:	
•	tisol (A1)		Sar	ndv Gleve	ed Matrix	(S4)		rie Redox (A16) (LRR K, L, R)	
	tic Epipedon (A2)			ndy Redo		(-)		ce (S7) (LRR K, L)	
	ck Histic (A3)			pped Ma				v Peat or Peat (S3) (LRR K, L, R)	
	Irogen Sulfide (A	4)			ky Minera	al (E1)		anese Masses (F12) (LRR K, L, R)	
	atified Layers (A5				ed Matrix	. ,		bw Dark Surface (TF12)	
	m Muck (A10))				. ,		. ,	
		Curfoo			atrix (F3)			lain in remarks)	
	bleted Below Dark				Surface				
	ck Dark Surface (ark Surfa			f hydrophytic vegetation and wetlan	
	ndy Mucky Minera	• •		lox Depr	essions	(F8)	hydrology m	nust be present, unless disturbed or	
	n Mucky Peat or		3)					problematic	
	Layer (if observ	ed):							
	avel, ballast, fill	in a d					Hydric soil p	resent?	
Depth (inche	es): not determ	linea			•				
Remarks:									
Area ma	oped as urban	land, a	and located alo	na road	d at bas	e of an	other road embai	nkment. Probe refusal within	2-
	due to gravel			0					
HYDROLO									
-	drology Indicato		a required: abook	all that a			Casanda	n Indiantora (minimum of two roquir	e d'
-	cators (minimum	or one is	s required, check					ry Indicators (minimum of two requir	ea)
X Surface					Fauna (B	-		Irface Soil Cracks (B6)	
	ter Table (A2)				uatic Plar			ainage Patterns (B10)	
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C1	l)Dr	y-Season Water Table (C2)	
Water M	larks (B1)			Oxidized	l Rhizosp	heres on		ayfish Burrows (C8)	
X Sedimer	nt Deposits (B2)			(C3)			Sa	turation Visible on Aerial Imagery (C9))
Drift Dep	oosits (B3)			Presenc	e of Redu	iced Iron	(C4) Stu	unted or Stressed Plants (D1)	
Algal Ma	t or Crust (B4)			Recent I	ron Redu	ction in T	illed SoilsGe	eomorphic Position (D2)	
Iron Dep	osits (B5)			(C6)			FA	C-Neutral Test (D5)	
Inundatio	on Visible on Aeria	I Imager	y (B7)	Thin Mu	ck Surfac	e (C7)			
X 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 wat	er present?	Yes	No	Х	Depth (i	nches):	0-Jan	Wetland	
Water table	•	Yes	No	Х	Depth (i			hydrology	
Saturation p		Yes	X No		Depth (i	nches):	0	present? Y	
	pillary fringe)	am david		ll aorial	nhotos -	arevieue	inspections), if avai	lable.	
Describe rec		ann yaug	je, monitoring we	n, a c rial	μποιοs,		mapecuona), il aval		
Remarks:									
Saturatio	on within ditch	channe	I lined by hydro	ophytes	s.				

Project/Site Lake Calumet CTA Red Line Extension	City/C	County:	Cook	i i i i i i i i i i i i i i i i i i i	Sampling Date:	8/13/2015	
Applicant/Owner: CTA/MWRD		Sta	te: Illir	ois	Sampling Point: 3		
Investigator(s): J Mengler, V Mosca			Section, Towns	ship, Range:	T37N, R14E, S26		
Landform (hillslope, terrace, etc.): dite	ch		Local relief (co	ncave, conve	k, none):	ditch	
Slope (%): Lat: 41.660463	3	Long:	-87.595	76	Datum:		
Soil Map Unit Name: urban land-orthents clayey comp				VI Classificatio	on:	none	
Are climatic/hydrologic conditions of the site typical fo				If no, explain	in remarks)		
Are vegetation, soil Y, or hydrol	ogy	significa	ntly disturbed?	Y Are "nor	mal circumstances"		
Are vegetation , soil , or hydrol				N present?		Y	
SUMMARY OF FINDINGS	··	-		(If neede	ed, explain any ans	wers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present?		Is the	e sampled area	within a wet	land? Y		
Wetland hydrology present? Y			-		Wetland 3		
Remarks: (Explain alternative procedures here or in a	senarate re						
	i separate re	pon.)					
Relied primarily upon vegetation and landsca	pe positior	n due to	dry time of se	eason, and r	mostly urbanland	l/fill for substrate.	
VEGETATION Use scientific names of plan	its.						
	Absolute	Domina	nt Indicator	Domina	nce Test Workshe	et	
Tree Stratum (Plot size: 9 m)	% Cover	Specie		Number of D	ominant Species tha	t	
1					, FACW, or FAC:	1 (A)	
2				Total Nur	mber of Dominant		
3				Species	Across all Strata:	<u>1</u> (B)	
4					ominant Species tha		
5				are OBL	, FACW, or FAC:	<u>100.00%</u> (A/B)	
Copling/Chrub stratum (Plat size) 4.6 m	=	Total Co	ver	Dreveley	naa Inday Warkab		
Sapling/Shrub stratum (Plot size: 4.6 m)				nce Index Worksh Cover of:	eet	
2				OBL spe		1 = 10	
3					pecies 95 x 2		
4	······			FAC spe		3 = 0	
5				FACU s		4 = 0	
	0 =	Total Co	ver	UPL spe	cies 0 x	5 = 0	
Herb stratum (Plot size: 1 m sq)			Column	`) <u>200</u> (B)	
1 Phragmites australis	95	Y	FACW	Prevaler	nce Index = B/A =	1.90	
2 Lythrum salicaria	10	N	OBL				
3					nytic Vegetation In		
4					id test for hydrophy	•	
5 6					ninance test is >50% valence index is ≤3.		
7	·						
8					phological adaptation porting data in Rem		
9					arate sheet)		
10				Prob	enatic hydrophytic	vegetation*	
	105 =	Total Co	ver	(exp		č	
Woody vine stratum (Plot size: 1 m sq)			*Indicato	rs of hydric soil and we	land hydrology must be	
1					present, unless disturbed	d or problematic	
2		- · · -		-	rophytic etation		
	0 =	Total Co	ver	-	sent? Y		
Remarks: (Include photo numbers here or on a separ	ate sheet)			1			
	,						

SOIL	
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Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	ument th	e indica	tor or confirm the abso	ence of indicators.)
Depth	Matrix		Rec	lox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
+ T 0 0								
		= Deplet	ion, RM = Reduc	ed Matri	x, MS =	Masked		ation: PL = Pore Lining, M = Matrix
•	il Indicators:							plematic Hydric Soils:
	isol (A1)				ed Matrix	(S4)		edox (A16) (LRR K, L, R)
	ic Epipedon (A2)		Sar	dy Redo	ox (S5)		Dark Surface (
Blac	ck Histic (A3)		Stri	oped Ma	trix (S6)		5 cm Mucky Pe	at or Peat (S3) (LRR K, L, R)
Hyd	rogen Sulfide (A	4)	Loa	my Mucł	ky Minera	al (F1)	Iron-Manganes	e Masses (F12) (LRR K, L, R)
Stra	atified Layers (A5)	Loa	my Gley	ed Matriz	x (F2)	Very Shallow D	ark Surface (TF12)
2 cr	n Muck (A10)		Dep	leted Ma	atrix (F3))	Other (explain	n remarks)
Dep	leted Below Darl	<pre>surfac</pre>	e (A11) Rec	lox Dark	Surface	(F6)		
Thio	ck Dark Surface (A12)	Dep	leted Da	ark Surfa	ce (F7)	*ledicaters of bur	
Sar	dy Mucky Minera	ul (S1)	Rec	lox Depr	essions	(F8)		Irophytic vegetation and wetland be present, unless disturbed or
	n Mucky Peat or			•		()	nyarology mast	problematic
	Layer (if observ		/					
	avel, ballast, fill	eu).					Hydric soil prese	nt?
Depth (inche		nined					Hydric son prese	
Remarks:								
Area ma	pped as urban	land, a	and located bet	ween g	ravel p	arking I	ot and gravel road.	Probe refusal within 2-4
	ue to gravel ar					Ũ	0	
	-							
HYDROL								
-	drology Indicato						O a secondaria da	
		of one is	s required; check					dicators (minimum of two required)
	Water (A1)				Fauna (B			e Soil Cracks (B6)
·	ter Table (A2)				uatic Plar	. ,		ge Patterns (B10)
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C1	I) Dry-Se	ason Water Table (C2)
Water M	arks (B1)			Oxidized	l Rhizosp	heres on	Living Roots Crayfis	h Burrows (C8)
X Sedimer	t Deposits (B2)			(C3)			Saturat	ion Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4) Stunted	or Stressed Plants (D1)
Algal Ma	t or Crust (B4)			Recent I	ron Redu	iction in T	illed Soils Geomo	rphic Position (D2)
Iron Dep	osits (B5)			(C6)				eutral Test (D5)
	on Visible on Aeria	I Imager	/ (B7)	Thin Mu	ck Surfac	e (C7)		
	Vegetated Conca				r Well Da			
	tained Leaves (B9					Remarks)	
Field Obser	•)				I CITIAI KS)	
Surface wat		Yes	No	Х	Depth (i	inches).	w	etland
Water table	•	Yes	No	X	Depth (i	,		drology
Saturation p	•	Yes	X No		Depth (i	,		esent? Y
(includes ca	pillary fringe)				-			
Describe red	corded data (strea	am gaug	e, monitoring we	ll, aerial	photos,	previous	inspections), if available	2
Pomorkov								
Remarks:								
Contract.	المعاد مالاد ا	oI -	honneletter		ا مرا اه	al le a -l		
Saturatio	m within altch/	swale	hannel at lowe	si poin	L III 10Ca	ai ianos	cape.	

Project/Site Lake Calumet CTA Red Line Extension	City/	County: Cook			Sampling Date: 8/13/2015		
Applicant/Owner: CTA/MWRD		Stat	e: Illir	nois	Sampling Point:	4	
Investigator(s): J Mengler, V Mosca			Section, Town	ship, Range:	e: T37N, R14E, S27		
Landform (hillslope, terrace, etc.): swale at t	oe of slope	_	Local relief (co	ncave, conve	k, none):	swale	
Slope (%): Lat: 41.65964	1	Long:	-87.599	965	Datum:		
Soil Map Unit Name: orthents, clayey undulating				VI Classificatio	on: PFC)1/EMCd	
Are climatic/hydrologic conditions of the site typical f	or this time c	of the year		If no, explain			
Are vegetation , soil Y , or hydro	ology	significar	ntly disturbed?	Y Are "nor	mal circumstances"		
Are vegetation , soil , or hydro				N present?		Y	
SUMMARY OF FINDINGS				(If neede	ed, explain any ans	wers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present?		Is the	sampled area	within a wet	land? Y		
Wetland hydrology present? Y		lf y	es, optional we	tland site ID:	Wetland 4		
Remarks: (Explain alternative procedures here or in	a senarate r						
Relied primarily upon vegetation and landsc	ape positio	on due to	dry time of se	eason, and r	mostly urbanland	l/fill for substrate.	
VEGETATION Use scientific names of pla	nts.						
	Absolute	Domina	nt Indicator	Domina	nce Test Workshe	et	
Tree Stratum (Plot size: 9 m)	% Cover	Species		Number of D	ominant Species that	t	
1	. <u> </u>			are OBL	, FACW, or FAC:	1 (A)	
2				Total Nur	mber of Dominant		
3				Species	Across all Strata:	<u> </u>	
4	·				ominant Species that		
5	0	- Total Ca		are OBL,	, FACW, or FAC:	<u>100.00%</u> (A/B)	
Sapling/Shrub stratum (Plot size: 4.6 m)	= Total Co	vei	Provalo	nce Index Worksho	pot	
1	_)				Cover of:	561	
2				OBL spe		1 = 20	
3	·			FACW s			
4	·			FAC spe	ecies 0 x 3	3 = 0	
5				FACU sp	pecies 0 x 4	4 = 0	
	0	= Total Co	ver	UPL spe	ecies 0 x s	5 = 0	
Herb stratum (Plot size: 1 m sq)			Column		, ` ,	
1 Phragmites australis	100	Y	FACW	Prevaler	nce Index = B/A =	1.83	
2 Lythrum salicaria	20	N	OBL	<u> </u>			
3					hytic Vegetation In		
45	·				id test for hydrophyt hinance test is >50%	-	
6	·				alence index is ≤3.0		
7							
8	·				phological adaptatic porting data in Rem		
9					arate sheet)		
10				Prob	enatic hydrophytic	vegetation*	
	120	= Total Co	ver	(exp	lain)		
Woody vine stratum (Plot size: 1 m sq 1)				ors of hydric soil and wet present, unless disturbed		
2	·				rophytic		
	0	= Total Co	ver	-	etation		
				pres	sent? Y		
Remarks: (Include photo numbers here or on a sepa	rate sheet)						

SOIL	
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Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	ument th	e indica	tor or confir	m the abser	nce of indicators.)
Depth	Matrix	Rec	lox Feat	ures				-	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
*Type: C = (Concentration, D	= Deplet	ion RM = Reduc	ed Matri	x MS =	Masked	Sand Grains	**Locat	ion: PL = Pore Lining, M = Matrix
	bil Indicators:	Dopiot			х, шо	maonou			ematic Hydric Soils:
-	tisol (A1)		Sar	dy Gleve	ed Matrix	(\$4)			dox (A16) (LRR K, L, R)
	tic Epipedon (A2)			idy Redo		(04)			7) (LRR K, L)
				-					t or Peat (S3) (LRR K, L, R)
	ck Histic (A3)	4)			itrix (S6)			•	
	Irogen Sulfide (A			-	ky Minera			-	Masses (F12) (LRR K, L, R)
	atified Layers (A5)			ed Matrix			-	rk Surface (TF12)
	m Muck (A10)				atrix (F3)		Oth	er (explain in	remarks)
	pleted Below Dark				Surface				
	ck Dark Surface (ark Surfa		*Indic	ators of hydro	ophytic vegetation and wetland
Sar	ndy Mucky Minera	ıl (S1)	Rec	lox Depr	ressions	(F8)	hydr	ology must be	e present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	3)						problematic
Restrictive	Layer (if observe	ed):							
	ravel, ballast, fill						Hydric	: soil presen	t?
Depth (inche	es): not determ	nined							
Remarks: Area mapped as urban land, and located road and berm around sewage lagoons.									
Remarks: Area ma	pped as urban	land, a	and located roa	id and I	oerm ar	round se	ewage lago	oons.	
		land, a	and located roa	id and I	oerm ar	ound se	ewage lago	oons.	
Area ma			and located roa	id and I	oerm ar	round se	ewage lago	oons.	
Area ma HYDROLO Wetland Hy	OGY	ors:				ound se			cators (minimum of two required)
Area ma HYDROL(Wetland Hy Primary Indi	DGY drology Indicato	ors:		all that a				econdary Indi	<u>cators (minimum of two required)</u> Soil Cracks (B6)
Area ma HYDROLO Wetland Hy Primary Indi Surface	DGY drology Indicato cators (minimum	ors:		all that a	apply)	13)		econdary Indi	
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2)	ors:		all that a Aquatic True Aqu	<u>apply)</u> Fauna (B uatic Plar	13)	<u>Se</u>	econdary Indi Surface S X Drainage	Soil Cracks (B6) Patterns (B10)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2) on (A3)	ors:		all that a Aquatic True Aqu Hydroge	<u>apply)</u> Fauna (B uatic Plar n Sulfide	13) nts (B14) Odor (C1)	econdary Indi Surface S X Drainage Dry-Seas	Soil Cracks (B6) Patterns (B10) son Water Table (C2)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1)	ors:		all that a Aquatic True Aqu Hydroge Oxidized	<u>apply)</u> Fauna (B uatic Plar n Sulfide	13) nts (B14) Odor (C1	<u>Se</u>	econdary Indi Surface S X Drainage Dry-Seas Crayfish	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)	ors:		all that a Aquatic True Aqu Hydroge Oxidizec (C3)	apply) Fauna (B uatic Plar n Sulfide I Rhizosp	13) hts (B14) Odor (C1 heres on) Living Roots	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) in Visible on Aerial Imagery (C9)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) ht Deposits (B2) posits (B3)	ors:		all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc	apply) Fauna (B uatic Plar In Sulfide I Rhizosp e of Redu	13) hts (B14) Odor (C1 heres on uced Iron) Living Roots (C4)	econdary 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) or Stressed Plants (D1)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	ors:		all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I	apply) Fauna (B uatic Plar In Sulfide I Rhizosp e of Redu	13) hts (B14) Odor (C1 heres on uced Iron) Living Roots	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp	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)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ors: of one is	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6)	apply) Fauna (B uatic Plar In Sulfide I Rhizosp I Rhizosp e of Redu ron Redu	13) Odor (C1 heres on uced Iron iction in T) Living Roots (C4)	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) or Stressed Plants (D1)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep Inundatio	DGY drology Indicato <u>cators (minimum</u> Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	ors: of one is	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu	apply) Fauna (B uatic Plar In Sulfide I Rhizosp e of Redu ron Redu ck Surfac	13) Odor (C1 heres on uced Iron iction in T) Living Roots (C4)	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp	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)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca	ors: of one is I Imagery ve Surfa	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c	apply) Fauna (B uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da	13) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9)) Living Roots (C4) illed Soils	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp	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)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9	ors: of one is I Imagery ve Surfa	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c	apply) Fauna (B uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da	13) Odor (C1 heres on uced Iron iction in T) Living Roots (C4) illed Soils	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp	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)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations:	ors: of one is I Imagery ve Surfac)	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc (C3) Presenc (C6) Thin Mu Gauge c Other (E	apply) Fauna (B uatic Plar In Sulfide I Rhizosp e of Redu ron Redu ron Redu ck Surfac or Well Da ixplain in	13) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks) Living Roots (C4) illed Soils	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp FAC-Neu	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)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wat	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present?	ors: of one is I Imagery ve Surfac) Yes	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c	apply) Fauna (B uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ron Redu ck Surfac or Well Da ixplain in	13) Odor (C1 heres on uced Iron uction in T ee (C7) ata (D9) Remarks) Living Roots (C4) illed Soils	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp FAC-Neu	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) in Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) utral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present?	ors: of one is I Imagery ve Surfac)	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc (C3) Presenc (C3) Presenc (C6) Thin Mu Gauge o Other (E	apply) Fauna (B uatic Plar In Sulfide I Rhizosp e of Redu ron Redu ron Redu ck Surfac or Well Da ixplain in	13) Odor (C1 heres on uced Iron ction in T ee (C7) ata (D9) Remarks nches): nches):) Living Roots (C4) illed Soils	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp FAC-Neu FAC-Neu	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) utral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wat Water table Saturation p (includes ca	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present? present? present? present? pillary fringe)	I Imagery ve Surfac) Yes Yes Yes	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	apply) Fauna (B uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da cxplain in Depth (i Depth (i	13) Odor (C1 heres on uced Iron ction in T ee (C7) ata (D9) Remarks nches): nches): nches):) Living Roots (C4) illed Soils	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp FAC-Neu FAC-Neu	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) in Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) utral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wat Water table Saturation p (includes ca	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present? present?	I Imagery ve Surfac) Yes Yes Yes	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	apply) Fauna (B uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da cxplain in Depth (i Depth (i	13) Odor (C1 heres on uced Iron ction in T ee (C7) ata (D9) Remarks nches): nches): nches):) Living Roots (C4) illed Soils	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp FAC-Neu FAC-Neu	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) in Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) utral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wat Water table Saturation p (includes ca	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present? present? present? present? pillary fringe)	I Imagery ve Surfac) Yes Yes Yes	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	apply) Fauna (B uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da cxplain in Depth (i Depth (i	13) Odor (C1 heres on uced Iron ction in T ee (C7) ata (D9) Remarks nches): nches): nches):) Living Roots (C4) illed Soils	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp FAC-Neu FAC-Neu	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) in Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) utral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obsen Surface wat Water table Saturation p (includes ca Describe red	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present? present? present? present? pillary fringe)	I Imagery ve Surfac) Yes Yes Yes	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	apply) Fauna (B uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da cxplain in Depth (i Depth (i	13) Odor (C1 heres on uced Iron ction in T ee (C7) ata (D9) Remarks nches): nches): nches):) Living Roots (C4) illed Soils	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp FAC-Neu FAC-Neu	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) in Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) utral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio Water M X Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wat Water table Saturation p (includes ca	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present? present? present? present? pillary fringe)	I Imagery ve Surfac) Yes Yes Yes	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	apply) Fauna (B uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da cxplain in Depth (i Depth (i	13) Odor (C1 heres on uced Iron ction in T ee (C7) ata (D9) Remarks nches): nches): nches):) Living Roots (C4) illed Soils	econdary Indi Surface S X Drainage Dry-Seas Crayfish Saturatio Stunted o Geomorp FAC-Neu FAC-Neu	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) in Visible on Aerial Imagery (C9) or Stressed Plants (D1) ohic Position (D2) utral Test (D5)

Project/Site Lake Calumet CTA Red Line Extension	City/Co	ounty:	Cook		Sampling Date:	8/13/2015
Applicant/Owner: CTA/MWRD		State:	Illin	ois	Sampling Point: 5	
Investigator(s): J Mengler, V Mosca		Se	ection, Towns	ship, Range:	T37N, R14	E, S26 & 27
Landform (hillslope, terrace, etc.): swa	ale	Lo	cal relief (cor	ncave, convex	, none):	swale
Slope (%): Lat: 41.663596	3 I	Long:	-87.5980)43	Datum:	
Soil Map Unit Name: orthents, loamy, nearly level			NM	/I Classificatio	on:	none
Are climatic/hydrologic conditions of the site typical fo	or this time of t	the year?	Y (lf no, explain i	in remarks)	
Are vegetation , soil Y , or hydro	logy s	significantly	disturbed?	Y Are "per	mal circumstances'	,
Are vegetation , soil , or hydro				N present?		Y
SUMMARY OF FINDINGS	···			(If neede	d, explain any ans	wers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present?		Is the sa	ampled area	within a wet	land? Y	
Wetland hydrology present? Y			-		Wetland 5	
Remarks: (Explain alternative procedures here or in a	senarate ren					
	a separate rep	011.)				
Relied primarily upon vegetation and landsca	pe position	due to dry	y time of se	eason, and r	nostly urbanland	d/fill for substrate.
VEGETATION Use scientific names of plan	nts.					
		Dominant	Indicator	Domina	nce Test Workshe	et
Tree Stratum (Plot size: 9 m)	% Cover	Species	Status	Number of D	ominant Species tha	t
1					FACW, or FAC:	1 (A)
2				Total Nur	nber of Dominant	
3				Species	Across all Strata:	<u>1</u> (B)
4					ominant Species tha	
5				are OBL,	FACW, or FAC:	100.00% (A/B)
Copling/Chrub stratum (Dist size) 4.6 m	= T	Total Cover		Dreveley		
Sapling/Shrub stratum (Plot size: 4.6 m)				nce Index Worksh Cover of:	eet
2				OBL spe		1 = 0
3					pecies 100 x	
4				FAC spe	·	3 = 0
5				FACU sp		4 = 0
	0 = 7	Total Cover		UPL spe	cies 0 x	5 = 0
Herb stratum (Plot size: 1 m sq)			Column	totals 100 (A	A) 200 (B)
1 Phragmites australis	100	Y	FACW	Prevaler	ice Index = B/A =	2.00
2						
3					nytic Vegetation In	
4					d test for hydrophy	-
5 6	············				inance test is >50% alence index is ≤3.	
7	······					
8					phological adaptation porting data in Rem	
9	·				irate sheet)	
10					lematic hydrophytic	c vegetation*
	100 = 1	Total Cover		(exp		J
Woody vine stratum (Plot size: 1 m sq)			*Indicato	rs of hydric soil and we	tland hydrology must be
1				· · · ·	resent, unless disturbe	d or problematic
2				-	rophytic etation	
	0 = 7	Total Cover		-	ent? Y	
Remarks: (Include photo numbers here or on a separ	ate sheet)					
	-7					

SOIL	
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Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	ument th	ne indica	tor or confirm t	he absend	ce of indicators.)
Depth	Matrix			lox Feat					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	;	Remarks
*Type: C = 0	Concentration, D	= Deple	tion, RM = Reduc	ed Matri	x, MS =	Masked	Sand Grains.	**Locatio	on: PL = Pore Lining, M = Matrix
Hydric Sc	il Indicators:						Indicators	for Proble	matic Hydric Soils:
Hist	tisol (A1)		Sar	dy Gleye	ed Matrix	(S4)	Coast F	Prairie Red	ox (A16) (LRR K, L, R)
His	tic Epipedon (A2)		Sar	dy Redo	ox (S5)		Dark S	urface (S7)) (LRR K, L)
	ck Histic (A3)			-	trix (S6)				or Peat (S3) (LRR K, L, R)
	Irogen Sulfide (A	4)		•	ky Miner			•	Masses (F12) (LRR K, L, R)
	-			-		. ,		•	
	atified Layers (A5)			ed Matri				k Surface (TF12)
	m Muck (A10)				atrix (F3)		Other (explain in r	emarks)
	pleted Below Darl				Surface	• •			
Thie	ck Dark Surface (A12)			ark Surfa		*Indicator	rs of hydro	phytic vegetation and wetland
Sar	ndy Mucky Minera	al (S1)	Rec	lox Depr	essions	(F8)		-	present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	3)					p	problematic
Restrictive	Layer (if observ	ed):							
	avel, ballast, fill	,					Hydric so	il present	?
Depth (inch		nined						•	
Remarks:									
Remarks.									
Area ma	nnad ag urban	land a	and located hat	woonr	oodo				
Alea Illa	ppeu as urban	ianu, a	and located bet	weenn	uaus				
HYDROL(
-	drology Indicato								
Primary Indi	cators (minimum	of one is	s required; check				Secor	ndary Indic	ators (minimum of two required)
Surface	Water (A1)			Aquatic I	Fauna (B	13)		Surface S	oil Cracks (B6)
High Wa	ter Table (A2)			True Aqu	uatic Plar	nts (B14)	X	Drainage	Patterns (B10)
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C	1)	Dry-Seaso	on Water Table (C2)
Water M	larks (B1)			Oxidized	l Rhizosn	heres on	Living Roots	Crayfish E	Burrows (C8)
X Sedimer	nt Deposits (B2)			(C3)	1112000			Saturation	Visible on Aerial Imagery (C9)
	oosits (B3)				e of Redi	uced Iron	(C4)	-	Stressed Plants (D1)
	it or Crust (B4)						· · · _	-	nic Position (D2)
					ron Redu	iction in T	illed Soils	-	
	osits (B5)			(C6)		(07)		- FAC-Neul	ral Test (D5)
	on Visible on Aeria	•			ck Surfac				
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									
Surface wat	•	Yes	No	Х	Depth (,		Wetla	
Water table	•	Yes	No No	Х	Depth (i	,		-	ology
Saturation p		Yes	X No		Depth (i	inches):	0	pres	ent? Y
	pillary fringe)	om ac:::	o monitoria	l oori-i	nhoto -	nroviewa	inonactions) if		
Describe ree	Lorueu data (stře	am gaug	je, monitoring we	n, aerial	priotos,	previous	inspections), if a	available:	
Remarks:									
-									
Saturatio	n within drains		ale along road.						
Saturatio		-90 000	als along rodu.						

Project/Site Lake Calumet CTA Red Line Extension	City/0	County:	ty: Cook Sampling Date:			8/13/2015	
Applicant/Owner: CTA/MWRD		State	:Illin	6			
Investigator(s): J Mengler, V Mosca		s	Section, Township, Range: T37N, R14E,				
Landform (hillslope, terrace, etc.): swa	ale	L	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		NWI Classification: none					
Are climatic/hydrologic conditions of the site typical for	or this time o	f the year?		If no, explain i			
Are vegetation , soil Y , or hydro		-			mal circumstances'		
Are vegetation , soil , or hydro				N present?		Y	
SUMMARY OF FINDINGS				<u> </u>	d, explain any ans	wers in remarks)	
Hydrophytic vegetation present? Y				(
Hydric soil present?		ls the s	sampled area	within a wet	land? Y		
Wetland hydrology present? Y			-		Wetland 6		
					weiland o		
Remarks: (Explain alternative procedures here or in a	a separate re	eport.)					
Relied primarily upon vegetation and landsca	pe positio	n due to d	ry time of se	eason, and r	nostly urbanland	d/fill for substrate.	
			-		-		
VEGETATION Use scientific names of plan	its.			<u> </u>			
Tree Stratum (Plot size: 9 m)	Absolute	Dominant			nce Test Workshe		
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Species	Status		ominant Species tha FACW, or FAC:		
2						<u> </u>	
3					nber of Dominant Across all Strata:	1 (B)	
4						、 ,	
5					ominant Species tha FACW, or FAC:	100.00% (A/B)	
	0	= Total Cove	er			、 ,	
Sapling/Shrub stratum (Plot size: 4.6 m)			Prevaler	nce Index Worksh	eet	
1				Total % (Cover of:		
2				OBL spe	cies <u>20</u> x	1 = 20	
3				FACW s	pecies <u>84</u> x 2	2 = 168	
4				FAC spe	cies <u>0</u> x	3 = 0	
5				FACU sp		4 = 0	
	0	= Total Cove	er	UPL spe		5 = 0	
Herb stratum (Plot size: 1 m sq)		54014	Column f	`	, (,	
1 Phragmites australis	80	Y	FACW	Prevalen	ce Index = B/A =	1.81	
2 Lythrum salicaria	10	<u>N</u>		Liversek	, tie Vegetetien In	diaatara	
3 Typha angustifolia 4 Helianthus grosseserratus	<u>10</u> 2	<u>N</u>	OBL FACW		ytic Vegetation In d test for hydrophy		
5 Verbena hastata	2	N	FACW	· · ·	inance test is >50%	Ũ	
6					alence index is ≤3.		
7							
8					phological adaptation orting data in Rem		
9			_		rate sheet)		
10				Prob	lematic hydrophytic	c vegetation*	
	104	= Total Cove	er	(expl		0	
<u>Woody vine stratum</u> (Plot size: 1 m sq 1)				rs of hydric soil and we resent, unless disturbe	tland hydrology must be d or problematic	
2					ophytic		
	0	= Total Cove	er	vege pres	ent? Y		
Remarks: (Include photo numbers here or on a separ	ate sheet)						

SOIL

Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	iment th	e indica	tor or confirm	m the abser	nce of indicators.)			
Depth <u>Matrix</u> Redox Features									-			
(Inches) Color (moist) % Color (%	Type*	Loc**	Text	ure	Remarks			
*Type: C = 0	Concentration, D	= Deplet	tion, RM = Reduc	ed Matri	x, MS =	Masked	Sand Grains.	**Locat	ion: PL = Pore Lining, M = Matrix			
Hydric So	il Indicators:						Indicato	rs for Probl	ematic Hydric Soils:			
Hist	tisol (A1)		Sar	dy Gleye	ed Matrix	-						
	tic Epipedon (A2)			dy Redo		. ,			7) (LRR K, L)			
	ck Histic (A3)			-	trix (S6)				it or Peat (S3) (LRR K, L, R)			
	Irogen Sulfide (A	4)		•	ky Minera	al (E1)		•	Masses (F12) (LRR K, L, R)			
	•			-	-			-				
	atified Layers (A5)			ed Matrix				rk Surface (TF12)			
	m Muck (A10)				atrix (F3)		Othe	er (explain in	remarks)			
	pleted Below Darl				Surface							
Thio	ck Dark Surface (A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indica	ators of hvdr	ophytic vegetation and wetland			
Sar	ndy Mucky Minera	al (S1)	Rec	lox Depr	ressions	(F8)			e present, unless disturbed or			
5 cr	m Mucky Peat or	Peat (S3	3)				-		problematic			
Restrictive	Layer (if observ	ed):										
	avel, ballast, fill	,-					Hydric	soil presen	it?			
Depth (inche		nined										
Remarks:												
Area mapped as urban land, and located between road and railroad.												
HYDROLO												
-	drology Indicato						_					
Primary Indi	cators (minimum	of one is	s required; check	all that a	apply)		Sec	condary Indi	cators (minimum of two required)			
Surface	Water (A1)			Aquatic I	Fauna (B	13)	-	Surface	Soil Cracks (B6)			
						nts (B14)	_	X Drainage	e Patterns (B10)			
Saturation (A3) Hydrogen Sulfie							1)	Dry-Seas	son Water Table (C2)			
X Water M	larks (B1)			Ovidized	Rhizoen	heres on	Living Roots	Crayfish	Burrows (C8)			
X Sedimer	nt Deposits (B2)			(C3)	r ttil203p			Saturatio	on Visible on Aerial Imagery (C9)			
	posits (B3)				e of Redu	uced Iron	(C4)		or Stressed Plants (D1)			
							-					
~	t or Crust (B4)				ron Redu	iction in T	illed Soils		phic Position (D2)			
	osits (B5)		(D=)	(C6)			-	FAC-Net	utral 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-Stained Leaves (B9) Other (Explain in Remarks)												
Field Obser	vations:											
Surface wat	•	Yes	No	Х	Depth (i				lland			
Water table	•	Yes	No	Х	Depth (i	,		-	rology			
Saturation p		Yes	X No		Depth (i	ncnes):	0	pre	sent? Y			
(includes capillary fringe)												
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:												
Remarks:												
Saturatio	on within drains		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	e: Illir	iois	Sampling Point:	7
Investigator(s): J Mengler, V Mosca			Section, Township, Range: T37N			14E, S27
Landform (hillslope, terrace, etc.): sw	ale		Local relief (co	ncave, convex	, none):	swale
Slope (%): Lat: 41.66907	7	Long:	-87.601	542	Datum:	
Soil Map Unit Name: orthents, loamy, nearly level				VI Classificatio	n:	none
Are climatic/hydrologic conditions of the site typical for	or this time o	of the year?	Y (If no, explain i	n remarks)	
Are vegetation , soil Y , or hydro	ology	significan	tly disturbed?	Y Are "norm	nal circumstances"	
	ology		problematic?	N present?		Y
SUMMARY OF FINDINGS		-		(If neede	d, explain any ansv	wers in remarks.)
Hydrophytic vegetation present? Y					· · ·	·
Hydric soil present?		Is the	sampled area	within a wetl	and? N	
Wetland hydrology present? N			es, optional we			
Remarks: (Explain alternative procedures here or in	a senarate r		.,			
	a separate n	eport.)				
Relied primarily upon vegetation and landsca	ape positio	n due to o	dry time of se	eason, and n	nostly urbanland	/fill for substrate.
L VEGETATION Use scientific names of play	nts					
	Absolute	Dominar	t Indicator	Dominar	nce Test Workshe	et
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Species		Number of Do	ominant Species that	•
1					FACW, or FAC:	1 (A)
2				Total Num	ber of Dominant	
3				Species A	Across all Strata:	<u>2</u> (B)
4					minant Species that	
5				are OBL,	FACW, or FAC:	50.00% (A/B)
	0	= Total Cov	ver			
Sapling/Shrub stratum (Plot size: 4.6 m)	Ň	540		ice Index Worksho	eet
1 Rhamnus cathartica	100	Y	FAC	Total % C		1 - 0
2				OBL spec FACW sp		
4				FAC spec		
5				FACU sp		4 = 0
	100	= Total Cov	ver	UPL spec		5 = 0
Herb stratum (Plot size: 1 m sq)			Column t	otals 100 (A) <u>300</u> (B)
1	80	Y		Prevalen	ce Index = B/A =	3.00
2	10	Ν				
3	10	N		Hydroph	ytic Vegetation In	dicators:
4	2	N			d test for hydrophyt	-
5	2	N			inance test is >50%	
6				X Preva	alence index is ≤3.0	J
8	·				hological adaptatio	
89					orting data in Rema rate sheet)	arks of on a
10					lematic hydrophytic	vegetation*
	104	= Total Cov	ver	(expl		
Woody vine stratum (Plot size: 1 m sq)			` ·	,	land hydrology must be
1	·				esent, unless disturbed	
2			_	-	ophytic	
	0	= Total Cov	ver	vege	tation ent? Y	
Pomorko: (Includo aboto aumboro baro a se s	roto obcati			pies	<u> </u>	_
Remarks: (Include photo numbers here or on a sepa	ale sileel)					

SOIL	
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Profile Des	cription: (Descr	ibe to th	ne depth neede	d to docu	ument th	e indica	tor or confirn	n the abser	nce of indicators.)		
Depth	Matrix	Re	dox Feat	ures							
(Inches)	(Inches) Color (moist) % Color (noist) % Type* Loc**			Textu	ire	Remarks		
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix											
	bil Indicators:	- Depier			x, wo -	Maskeu			ematic Hydric Soils:		
-	tisol (A1)		Sa	ndy Gley	ad Matrix	(\$4)			dox (A16) (LRR K, L, R)		
	. ,					((34)					
	tic Epipedon (A2)			ndy Redo					7) (LRR K, L)		
	ck Histic (A3)			ipped Ma				•	t or Peat (S3) (LRR K, L, R)		
	Irogen Sulfide (A			amy Muc	•	• •		-	Masses (F12) (LRR K, L, R)		
	atified Layers (A5)		amy Gley					rk Surface (TF12)		
	m Muck (A10)			pleted Ma			Other	er (explain in remarks)			
	pleted Below Dark			dox Dark							
Thio	ck Dark Surface (A12)	De	pleted Da	ark Surfa	ce (F7)	*Indica	ators of hydrophytic vegetation and wetland blogy must be present, unless disturbed or			
San	ndy Mucky Minera	l (S1)	Re	dox Depr	ressions	(F8)					
5 cr	m Mucky Peat or	Peat (S3	3)						problematic		
Restrictive	Layer (if observe	ed):									
	avel, ballast, fill						Hydric s	soil presen			
Depth (inche	es): not determ	nined			-						
Remarks:											
Area mapped as urban land, and 2-3 feet higher in elevation than adjacent wetland swales.											
HYDROLO											
Wetland Hy	drology Indicato	ors:									
Primary Indi	cators (minimum	of one is	s required; chec	k all that a	apply)		Sec	ondary Indi	cators (minimum of two required)		
Surface	Water (A1)		Aquatic	Fauna (B	13)		Surface Soil Cracks (B6)				
High Wa	iter Table (A2)		True Aq	uatic Plar	nts (B14)		Drainage Patterns (B10)				
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C1	1)	Dry-Season Water Table (C2)			
Water M	larks (B1)		– Oxidized	Rhizosn	heres on	Living Roots	Roots Crayfish Burrows (C8)				
Sedimer	nt Deposits (B2)		(C3)			g	Saturation Visible on Aerial Imagery (C9)				
Drift Dep	oosits (B3)		- Presenc	e of Redu	uced Iron	(C4)	Stunted or Stressed Plants (D1)				
·	it or Crust (B4)		- Bocont I	ron Rodu	uction in T		Geomorphic Position (D2)				
	osits (B5)		Recent Iron Reduction in Tilled Soils (C6)					FAC-Neutral Test (D5)			
·	on Visible on Aeria	(B7)		ck Surfac	e (C7)	—					
	Vegetated Conca			Gauge or Well Data (D9)							
· _ ·	tained Leaves (B9			Other (Explain in Remarks)							
Field Obser	•)			xpiairi iri	Remains)				
		Yes	No	х	Depth (i	inches).		Wet	land		
	urface water present? Yes No X Depth (incl /ater table present? Yes No X Depth (incl								rology		
Saturation p	resent?	Yes	No	Х	Depth (i		0	pres	sent? N		
(includes capillary fringe)											
Describe red	corded data (strea	am gaug	je, monitoring w	ell, aerial	photos,	previous	inspections), i	f available:			
Remarks [.]											
Remarks:											

Project/Site Lake Calumet CTA Red Line Extension	City/C	County:	Cook		Sampling Date:	8/13/2015		
Applicant/Owner: CTA/MWRD		State	: Illin	iois	Sampling Point:	8		
Investigator(s): J Mengler, V Mosca			Section, Towns	E, S22 & 27				
Landform (hillslope, terrace, etc.): swa	ale	L	ocal relief (cor	ncave, convex	, none):	swale		
Slope (%): Lat: 41.672876	6	Long:	-87.6070)44	Datum:			
Soil Map Unit Name: orthents, loamy, nearly level			N۷	VI Classificatio	n:	none		
Are climatic/hydrologic conditions of the site typical for	or this time o	f the year?		If no, explain i				
Are vegetation , soil Y , or hydro					nal circumstances"			
Are vegetation , soil , or hydro				N present?		Y		
SUMMARY OF FINDINGS				<u> </u>	d, explain any ans	wers in remarks.)		
Hydrophytic vegetation present? Y				(
Hydric soil present?		ls the	sampled area	within a wetl	and? Y			
Wetland hydrology present? Y			•		Wetland 7			
					Wetland 7			
Remarks: (Explain alternative procedures here or in a	a separate re	eport.)						
Relied primarily upon vegetation and landsca	pe positio	n due to d	ry time of se	eason, and n	nostly urbanland	l/fill for substrate.		
			-		-			
VEGETATION Use scientific names of plan	its.							
Tree Stratum (Plot size: 9 m)	Absolute	Dominant			nce Test Workshe			
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Species	Status		ominant Species that FACW, or FAC:			
2						(A)		
3					ber of Dominant Across all Strata:	1 (B)		
4				-				
5					minant Species that FACW, or FAC:	100.00% (A/B)		
	0 :	= Total Cove	er			、 ,		
Sapling/Shrub stratum (Plot size: 4.6 m)			Prevalen	ce Index Worksh	eet		
1				Total % C	Cover of:			
2				OBL spe	cies <u>10</u> x [·]	1 = 10		
3				FACW sp	pecies <u>94</u> x 2	2 = 188		
4				FAC spe	cies <u>0</u> x3	3 = 0		
5				FACU sp		4 = 0		
		= Total Cove	er	UPL spec		5 = 0		
Herb stratum (Plot size: 1 m sq)		54.014	Column t		, , ,		
1 Phragmites australis	80	Y	FACW	Prevalen	ce Index = B/A =	1.90		
2 Lythrum salicaria	10	<u>N</u>	OBL	I hada a hadis Manada ti sa hadisa da na				
3 Solidago graminifolia 4 Helianthus grosseserratus	<u>10</u> 2	<u>N</u>	FACW FACW	Hydrophytic Vegetation Indicators:				
5 Verbena hastata	2	N	FACW	Rapid test for hydrophytic vegetation X Dominance test is >50%				
6			171011	X Dominance test is >50% X Prevalence index is ≤3.0*				
7								
8					hological adaptatic orting data in Remain			
9					rate sheet)			
10				Probl	lematic hydrophytic	vegetation*		
	104 :	= Total Cove	er	(expl		J		
Woody vine stratum (Plot size: 1 m sq 1)				s of hydric soil and wel esent, unless disturbed	land hydrology must be d or problematic		
2					ophytic			
	0 :	= Total Cove	er	vege	tation ent? Y	_		
Remarks: (Include photo numbers here or on a separ	ate sheet)							

SOIL

Profile Des	cription: (Descr	ibe to th	ne depth needeo	l to docu	iment th	ne indica	tor or confirm	n the absen	ce of indicators.)
Depth	Matrix			dox Feat					-
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	ıre	Remarks
*Type: C = (Concentration, D	= Deplet	tion RM = Redu	ced Matri	x MS =	Masked	Sand Grains	**Locati	on: PL = Pore Lining, M = Matrix
	oil Indicators:	Dopier			,, e	maonou			ematic Hydric Soils:
-	tisol (A1)		Sa	ndy Gleye	ad Matrix	(\$4)			dox (A16) (LRR K, L, R)
	tic Epipedon (A2)			ndy Redo		(04)			(LRR K, L)
				-					t or Peat (S3) (LRR K, L, R)
	ck Histic (A3)	4)		pped Ma				•	
	Irogen Sulfide (A	,		amy Mucl	-			-	Masses (F12) (LRR K, L, R)
	atified Layers (A5)		amy Gley					rk Surface (TF12)
	m Muck (A10)			pleted Ma	• • •		Othe	r (explain in	remarks)
	pleted Below Dark			dox Dark					
	ck Dark Surface (pleted Da			*Indica	tors of hydro	ophytic vegetation and wetland
Sar	ndy Mucky Minera	ıl (S1)	Re	dox Depr	ressions	(F8)	hydro	logy must be	e present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	3)						problematic
Restrictive	Layer (if observe	ed):							
<u> </u>	ravel, ballast, fill						Hydric	soil presen	t?
Depth (inche	es): not determ	nined							
Remarks:									
Remarks:									
	pped as urban	land, a	and located be	tween r	ailroad	and gra	avel contract	or yard.	
Area ma		land, a	and located be	tween r	ailroad	and gra	avel contract	or yard.	
Area ma	DGY		and located be	tween r	ailroad	and gra	avel contract	or yard.	
Area ma HYDROLO Wetland Hy	DGY drology Indicato	ors:				and gra			
Area ma HYDROLO Wetland Hy	DGY	ors:				and gra			cators (minimum of two required)
Area ma HYDROLO Wetland Hy Primary Indi	DGY drology Indicato	ors:		all that a				condary India	cators (minimum of two required) Soil Cracks (B6)
Area ma HYDROLO Wetland Hy Primary Indi Surface	DGY drology Indicato cators (minimum	ors:		all that a	apply)	:13)	<u>Sec</u>	condary India	
Area ma HYDROLO Wetland Hy Primary Indi Surface	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2)	ors:		all that a Aquatic	<u>apply)</u> Fauna (B uatic Plar	:13)	<u>Sec</u> -	condary India Surface S X Drainage	Soil Cracks (B6)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2) on (A3)	ors:		all that a Aquatic True Aqu Hydroge	<u>apply)</u> Fauna (B uatic Plar n Sulfide	13) nts (B14) Odor (C ²	<u>Sec</u> - 1) _	condary India Surface S X Drainage Dry-Seas	Soil Cracks (B6) Patterns (B10)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2) on (A3)	ors:		all that a Aquatic True Aqu Hydroge	<u>apply)</u> Fauna (B uatic Plar n Sulfide	13) nts (B14) Odor (C ²	<u>Sec</u> -	Surface S Surface S Drainage Dry-Seas Crayfish	Soil Cracks (B6) Patterns (B10) son Water Table (C2)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1)	ors:		all that a Aquatic True Aqu Hydroge Oxidized (C3)	apply) Fauna (B uatic Plar n Sulfide I Rhizosp	13) nts (B14) Odor (C ²	Sec - - - Living Roots - -	Surface S Surface S Drainage Dry-Seas Crayfish Saturatio	Soil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)	ors:		all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu	113) hts (B14) Odor (C ² heres on uced Iron	<u>Sec</u> - - - - - - - - - - - - - - - - - - -	Surface S Surface S Drainage Dry-Seas Crayfish Saturatio Stunted c	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	ors:		all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu	113) hts (B14) Odor (C ² heres on uced Iron	Sec - - - Living Roots - -	Surface S Surface S Drainage Dry-Seas Crayfish Saturatio Stunted c Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) whic Position (D2)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep	DGY drology Indicato <u>cators (minimum</u> Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ors: of one is	s required; check	<u>all that a</u> Aquatic I True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6)	apply) Fauna (B Jatic Plar n Sulfide I Rhizosp e of Redu ron Redu	13) nts (B14) Odor (C ² wheres on uced Iron uction in T	<u>Sec</u> - - - - - - - - - - - - - - - - - - -	Surface S Surface S Drainage Dry-Seas Crayfish Saturatio Stunted c Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep Inundatio	DGY drology Indicato <u>cators (minimum</u> Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	ors: of one is	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac	13) nts (B14) Odor (C ⁴ wheres on uced Iron uction in T ce (C7)	<u>Sec</u> - - - - - - - - - - - - - - - - - - -	Surface S Surface S Drainage Dry-Seas Crayfish Saturatio Stunted c Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) whic Position (D2)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep Inundatio Sparsely	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca	ors: of one is I Imagery ve Surfa	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da	13) Odor (C ² heres on uced Iron uction in T ce (C7) ata (D9)	Sec - - - - - - - - - - - - -	Surface S Surface S Drainage Dry-Seas Crayfish Saturatio Stunted c Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) whic Position (D2)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep Inundatio Sparsely X Water-S	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9)	ors: of one is I Imagery ve Surfa	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da	13) nts (B14) Odor (C ⁴ wheres on uced Iron uction in T ce (C7)	Sec - - - - - - - - - - - - -	Surface S Surface S Drainage Dry-Seas Crayfish Saturatio Stunted c Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) or Stressed Plants (D1) whic Position (D2)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations:	ors: of one is I Imagery ve Surfac)	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (B Jatic Plar n Sulfide I Rhizosp e of Redu ron Redu ron Redu ck Surfac r Well Da xplain in	113) nts (B14) Odor (C ² wheres on uced Iron uced Iron iction in T ce (C7) ata (D9) Remarks	Sec - - - - - - - - - - - - -	Surface S Surface S Drainage Dry-Seas Crayfish Saturatio Stunted c Geomorp	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) or Stressed Plants (D1) whic Position (D2) ttral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep Inundatio Sparsely X Water-S	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present?	ors: of one is I Imagery ve Surfa	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da	113) nts (B14) Odor (C ² wheres on uced Iron uced Iron inction in T ce (C7) ata (D9) Remarks inches):	Sec - - - - - - - - - - - - -	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) whic Position (D2) ttral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wat	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present?	ors: of one is I Imagery ve Surfac) Yes	s required; check	all that a Aquatic I True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ron Redu ck Surfac r Well Da xplain in	13) Odor (C ² heres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches):	Sec - - - - - - - - - - - - -	Crayfish Saturatio Stunted of Geomorp FAC-Neu Wet hydr	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) or Stressed Plants (D1) whic Position (D2) thral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wat Water table Saturation p (includes ca	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present? present? present? present? pillary fringe)	I Imagery ve Surfac) Yes Yes Yes	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	13) Odor (C ² heres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches): inches):	Sec - - - - - - - - - - - - -	Crayfish Saturatio Stunted of Geomorp FAC-Neu Wet hyde pres	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) or Stressed Plants (D1) shic Position (D2) ttral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wat Water table Saturation p (includes ca	DGY drology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present? present?	I Imagery ve Surfac) Yes Yes Yes	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	13) Odor (C ² heres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches): inches):	Sec - - - - - - - - - - - - -	Crayfish Saturatio Stunted of Geomorp FAC-Neu Wet hyde pres	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) or Stressed Plants (D1) shic Position (D2) ttral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wat Water table Saturation p (includes ca	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present? present? present? present? pillary fringe)	I Imagery ve Surfac) Yes Yes Yes	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	13) Odor (C ² heres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches): inches):	Sec - - - - - - - - - - - - -	Crayfish Saturatio Stunted of Geomorp FAC-Neu Wet hyde pres	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) or Stressed Plants (D1) shic Position (D2) ttral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obsen Surface wat Water table Saturation p (includes ca Describe red	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present? present? present? present? pillary fringe)	I Imagery ve Surfac) Yes Yes Yes	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	13) Odor (C ² heres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches): inches):	Sec - - - - - - - - - - - - -	Crayfish Saturatio Stunted of Geomorp FAC-Neu Wet hyde pres	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) or Stressed Plants (D1) shic Position (D2) ttral Test (D5)
Area ma HYDROLO Wetland Hy Primary Indi Surface High Wa Saturatio X Water M X Sedimer Drift Dep X Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wat Water table Saturation p (includes ca	DGY rdrology Indicato cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present? present? present? present? pillary fringe)	I Imagery ve Surfac) Yes Yes Yes	s required; check	all that a Aquatic True Aqu Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	apply) Fauna (B uatic Plar n Sulfide I Rhizosp e of Redu ron Redu ck Surfac r Well Da xplain in Depth (i Depth (i	13) Odor (C ² heres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches): inches):	Sec - - - - - - - - - - - - -	Crayfish Saturatio Stunted of Geomorp FAC-Neu Wet hyde pres	Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) In Visible on Aerial Imagery (C9) or Stressed Plants (D1) shic Position (D2) ttral Test (D5)

Project/Site Lake Calumet CTA Red Line Extension	City/0	County:	Cook		Sampling Date:	8/13/2015	
Applicant/Owner: CTA/MWRD		State	e: Illin	ois	Sampling Point:	9	
Investigator(s): J Mengler, V Mosca			Section, Township, Range: T37N, R14E				
Landform (hillslope, terrace, etc.): sw	ale	I	_ocal relief (co	ncave, convex	, none):	swale	
Slope (%): Lat: 41.66907	7	Long:	-87.601	542	Datum:		
Soil Map Unit Name: orthents, loamy, nearly level			NV	VI Classificatio	on:	none	
Are climatic/hydrologic conditions of the site typical for	or this time o	of the year?	Y (lf no, explain i	in remarks)		
Are vegetation , soil Y , or hydro	logy	significan	tly disturbed?	Y Are "norr	mal circumstances"		
	logy		problematic?	N present?		Y	
SUMMARY OF FINDINGS				(If neede	d, explain any ans	wers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present?		Is the	sampled area	within a wet	land? N		
Wetland hydrology present? N			s, optional we				
Remarks: (Explain alternative procedures here or in a	separate r		.,	_			
	a separate re	epon.)					
Relied primarily upon vegetation and landsca	ipe positio	n due to c	dry time of se	eason, and r	nostly urbanland	I/fill for substrate.	
VEGETATION Use scientific names of plar	nts						
	Absolute	Dominan	t Indicator	Domina	nce Test Workshe	et	
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Species		Number of Do	ominant Species tha	t	
1					FACW, or FAC:	1 (A)	
2				Total Nun	nber of Dominant		
3				Species /	Across all Strata:	<u>2</u> (B)	
4					ominant Species that		
5				are OBL,	FACW, or FAC:	50.00% (A/B)	
	<u> </u>	= Total Cov	er	<u> </u>			
Sapling/Shrub stratum (Plot size: 4.6 m 1 Rhamnus cathartica)	Y	FAC	Total % (nce Index Worksh	eet	
2	100	I	FAC	OBL spe		1 = 0	
3				FACW s		2 = 0	
4				FAC spe	·		
5				FACU sp		4 = 0	
	100	= Total Cov	er	UPL spe		5 = 0	
Herb stratum (Plot size: 1 m sq)			Column f	totals 100 (A	.) <u>300</u> (B)	
1	80	Y		Prevalen	ice Index = B/A =	3.00	
2	10	N					
3	10	N			nytic Vegetation In		
4	2	<u> </u>			d test for hydrophy	•	
5	2	N			inance test is >50%	-	
6 7					alence index is ≤3.	U	
8					phological adaptation		
9					oorting data in Rem irate sheet)		
10					lematic hydrophytic	vegetation*	
	104	= Total Cov	er	(expl		- egotatori	
<u>Woody vine stratum</u> (Plot size: 1 m sq 1)				rs of hydric soil and we resent, unless disturbe	tland hydrology must be d or problematic	
2				· · · · ·	rophytic		
	0	= Total Cov	er	vege pres	ent? Y	_	
Remarks: (Include photo numbers here or on a separ	rate sheet)						

SOIL

Profile Des	cription: (Descr	ibe to th	ne depth neede	d to doci	ument th	e indica	tor or confirm	the absen	ce of indicators.)
Depth	Matrix			edox Feat					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textur	e	Remarks
				_					
*Type: C = 0	Concentration, D	= Deplet	ion, RM = Redu	iced Matr	ix, MS =	Masked	Sand Grains.	**Locati	ion: PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicators	for Proble	ematic Hydric Soils:
Hist	isol (A1)		Sa	indy Gley	ed Matrix	(S4)	Coast	Prairie Re	dox (A16) (LRR K, L, R)
	ic Epipedon (A2)		Sa	indy Redo	ox (S5)		Dark S	urface (S7	7) (LRR K, L)
Bla	ck Histic (A3)			ripped Ma					t or Peat (S3) (LRR K, L, R)
	rogen Sulfide (A	4)		amy Muc				•	Masses (F12) (LRR K, L, R)
	atified Layers (A5			amy Gley		. ,		-	rk Surface (TF12)
	n Muck (A10)	,		pleted M				explain in	
	leted Below Darl	k Surface		dox Dark	. ,				
	ck Dark Surface (pleted Da		• •			
	idy Mucky Minera			dox Depi					ophytic vegetation and wetland e present, unless disturbed or
	n Mucky Peat or				00010110	(10)	nyuroio		problematic
	-		,			1			
	Layer (if observer avel, ballast, fill	eu).					Hydric s	oil presen	+2
Depth (inche		nined			-		Tryanci se	n presen	
Remarks:	·				-				
rtemarks.									
Area ma	pped as urban	land, a	and 2-3 feet h	iaher in	elevatio	n than	adiacent wetl	and swal	es
		, .		J					
HYDROLO	DGY								
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	s required; chec	k all that	apply)		<u>Seco</u>	ndary Indie	cators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface S	Soil Cracks (B6)
High Wa	ter Table (A2)			True Aq	uatic Plar	nts (B14)		Drainage	Patterns (B10)
Saturatio	on (A3)			 Hydroge	en Sulfide	Odor (C1	1)	Dry-Seas	son Water Table (C2)
Water M	arks (B1)			 Oxidized	Rhizoso	heres on	Living Roots	Crayfish	Burrows (C8)
Sedimer	t Deposits (B2)			(C3)				Saturatio	n Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4)	Stunted of	or Stressed Plants (D1)
Algal Ma	t or Crust (B4)			Recent	Iron Redu	uction in T	Tilled Soils	Geomorp	phic Position (D2)
-	osits (B5)			(C6)	Inon recut			FAC-Neu	Itral Test (D5)
	on Visible on Aeria	I Imagery	/ (B7)	Thin Mu	ck Surfac	e (C7)		_	
	Vegetated Conca		· · · ·		or Well Da				
	tained Leaves (B9		· · · ·	- °	xplain in	. ,	.)		
Field Obser		/		01.01 (2			·)		
Surface wat		Yes	No	х	Depth (i	inches):		Wet	land
Water table	present?	Yes	No	Х	Depth (,		hyd	rology
Saturation p		Yes	No	Х	Depth (i	inches):	0	pres	sent? N
•	pillary fringe)			all a	un hat		in an anti- in a life		
Describe red	corded data (stre	am gaug	e, monitoring w	eii, aerial	priotos,	previous	inspections), if	avaliable:	
Remarks:									
2-3 feet	higher in eleva	tion tha	n adjacent w	etland s	wales w	ith no e	evidence of hy	/drology	

Project/Site Lake Calumet CTA Red Line Extension	City/0	County: Cook			Sampling Date:	8/19/2015	
Applicant/Owner: CTA/MWRD		Sta	ite: Illir	nois	Sampling Point:	10	
Investigator(s): J Mengler, V Mosca			Section, Town	ship, Range:	T37N, F	14E, S27	
Landform (hillslope, terrace, etc.): swa	ale		Local relief (co	ncave, conve	k, none):	swale	
Slope (%): Lat: 41.65712		Long:	-87.600	738	Datum:		
Soil Map Unit Name: orthents, loamy, nearly level				VI Classificatio	on:	none	
Are climatic/hydrologic conditions of the site typical fo	r this time o	f the year	?Y ((If no, explain	in remarks)		
Are vegetation, soilY, or hydrol	ogy	significa	ntly disturbed?	Y Are "nor	mal circumstances		
Are vegetation, soil, or hydrol	ogy	naturally	/ problematic?	N present?	>	Y	
SUMMARY OF FINDINGS				(If neede	ed, explain any ans	wers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present?		Is th	e sampled area	a within a wet	land? Y		
Wetland hydrology present? Y		lfy	yes, optional we	tland site ID:	Wetland 8		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)					
			du sting of o				
Relied primarily upon vegetation and landsca	pe positio	n due lo	ary time of se	eason, and r	nostiy urbaniano	mini for substrate.	
VEGETATION Use scientific names of plan	ts.						
	Absolute	Domina	int Indicator	Domina	nce Test Workshe	et	
Tree Stratum (Plot size: 9 m)	% Cover	Specie	s Status		ominant Species that	t	
1				are OBL	, FACW, or FAC:	(A)	
2					nber of Dominant	1 (P)	
3					Across all Strata:	<u> </u>	
5					ominant Species tha , FACW, or FAC:	t 100.00% (A/B)	
	0	= Total Co	over		, - ,	(==)	
Sapling/Shrub stratum (Plot size: 4.6 m	,			Prevale	nce Index Worksh	eet	
1				Total %	Cover of:		
2				OBL spe	ecies <u>0</u> x	1 = 0	
3				FACW s	·		
4				FAC spe		3 = 0	
5	0	= Total Co	wer	FACU sp UPL spe		4 = 0 5 = 0	
Herb stratum (Plot size: 1 m sq			7001	Column			
1 Phragmites australis	100	Y	FACW		nce Index = $B/A =$	2.00	
2							
3				Hydroph	nytic Vegetation Ir	dicators:	
4				Rapi	id test for hydrophy	tic vegetation	
5					ninance test is >50%		
6				X Prev	alence index is ≤3.	0*	
7					phological adaptation		
8					porting data in Rem arate sheet)	arks or on a	
9 10				·	,		
`` <u></u>	100	= Total Co	over	Prob (exp	olematic hydrophytio Iain)	vegetation*	
Woody vine stratum (Plot size: 1 m sq				`·	,	tland hydrology must be	
1					present, unless disturbe		
2				-	rophytic		
	0	= Total Co	over	-	etation sent? Y		
Pomarka: (Includo photo numboro horo or on a	ato choot)			pres	<u> </u>		
Remarks: (Include photo numbers here or on a separ	ale Sheel)						

SOIL	
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Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	ument th	e indica	tor or confirm t	he absence of indic	ators.)
Depth (Inches)	Matrix Color (moist)	%	Re Color (moist)	dox Feat %	<u>ures</u> Type*	Loc**	Texture		Remarks
, ,			,		51				
*Tvne: C = (Concentration, D	= Deplet	tion RM = Reduc	ed Matri	x MS =	Masked	Sand Grains	**Location: PL = P	ore Lining, M = Matrix
	oil Indicators:	20010			,, e	maenea		or Problematic Hyd	-
•	tisol (A1)		Sa	ndy Gleye	ed Matrix	(S4)		Prairie Redox (A16) (
	tic Epipedon (A2)			ndy Redo		(0.)		urface (S7) (LRR K,	
	ck Histic (A3)			pped Ma				ucky Peat or Peat (S	
	Irogen Sulfide (A	4)		amy Mucl	. ,			nganese Masses (F	, , , ,
	atified Layers (A5			amy Gley		. ,		allow Dark Surface	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	m Muck (A10))		pleted Ma		. ,		explain in remarks)	(11 12)
	pleted Below Darl	Surfac		dox Dark	. ,				
	ck Dark Surface (· · · ·	pleted Da		. ,			
	ndy Mucky Minera			dox Depr				s of hydrophytic veg	
	n Mucky Peat or				00010110	(10)	nyarolog	y must be present, u problemati	
	Layer (if observ	,	-)					P	-
	ravel, ballast, fill	cuj.					Hvdric soi	il present?	
Depth (inche		nined			•			· · · · · ·	-
	pped as urban	land, a	and located be	tween g	gravel ro	oads.			
HYDROLO									
-	drology Indicato						_		
	cators (minimum	of one is	s required; check				Secon	· · · · ·	imum of two required)
	Water (A1)				Fauna (B	-		Surface Soil Cracks	
	ater Table (A2)			-	uatic Plar			Drainage Patterns (E	
Saturatio				Hydroge	n Sulfide	Odor (C	1)	Dry-Season Water T	
	larks (B1)				l Rhizosp	heres on	Living Roots	Crayfish Burrows (Ca	
	nt Deposits (B2)			(C3)			<u> </u>	Saturation Visible on	
	posits (B3)			Presenc	e of Redi	uced Iron	(C4)	Stunted or Stressed	
- č	at or Crust (B4)				ron Redu	iction in T	illed Soils	Geomorphic Position	
	oosits (B5)			(C6)		(07)		FAC-Neutral Test (D	5)
	on Visible on Aeria			-	ck Surfac				
	Vegetated Conca		се (ва)	-	or Well Da		、		
	tained Leaves (B9)		Other (E	xplain in	Remarks)		
Field Obser Surface wat		Yes	No	х	Depth (i	inches).		Wetland	
Water table		Yes	No	X	Depth (i	,		hydrology	
Saturation p		Yes	X No		Depth (inches):	0	present?	Y
	pillary fringe)		_						
Describe red	corded data (strea	am gaug	ge, monitoring we	ell, aerial	photos,	previous	inspections), if a	vailable:	
Remarks:									

Project/Site Lake Calumet CTA Red Line Extension	City/	County: Cook			Sampling Date:	8/19/2015
Applicant/Owner: CTA/MWRD		State:	Illin	iois S	Sampling Point:	11
Investigator(s): J Mengler, V Mosca		Se	ction, Towns	ship, Range:	T37N, R ⁻	14E, S27
Landform (hillslope, terrace, etc.): sw	ale	Lo	cal relief (co	ncave, convex,	, none):	swale
Slope (%): Lat: 41.665712	2	Long:	-87.6007	738	Datum:	
Soil Map Unit Name: orthents, loamy, nearly level			NV	VI Classificatio	n: r	none
Are climatic/hydrologic conditions of the site typical for	or this time o	of the year?	Y (If no, explain ir	n remarks)	
Are vegetation , soil Y , or hydro	logy	significantly	disturbed?	Y Are "norm	nal circumstances"	
	logy			N present?		Y
SUMMARY OF FINDINGS				(If needed	d, explain any answ	vers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present?		Is the sa	mpled area	within a wetla	and? N	
Wetland hydrology present? N			•	tland site ID:		
Remarks: (Explain alternative procedures here or in a	senarate r		•			
	a separate r	epon.)				
Relied primarily upon vegetation and landsca	ipe positio	n due to dry	/ time of se	eason, and m	nostly urbanland	/fill for substrate.
VEGETATION Use scientific names of plar	nts.					
	Absolute	Dominant	Indicator	Dominan	ice Test Workshee	ət
Tree Stratum (Plot size: 9 m)	% Cover	Species	Status	Number of Do	ominant Species that	
1					FACW, or FAC:	0 (A)
2				Total Num	ber of Dominant	
3				Species A	Across all Strata:	0 (B)
4					minant Species that	
5				are OBL,	FACW, or FAC:	0.00% (A/B)
Conling/Chrub stratum (Dist size) 4.6 m	<u> </u>	= Total Cover		Drevelan	oo Indox Morkoba	
Sapling/Shrub stratum (Plot size: 4.6 m)			Total % C	ce Index Workshe	et
2				OBL spec		= 0
3				FACW sp		
4				FAC spec		
5				FACU sp		= 0
	0	= Total Cover		UPL spec	cies 0 x 5	i = 0
Herb stratum (Plot size: 1 m sq)			Column te	`) <u> </u>
1 Ambrosia trifida			FAC	Prevalence	ce Index = B/A =	
2 Artemisia vulgaris			UPL			
3 Melilotus albus			FACU		ytic Vegetation Ind	
4 Arctium minus			FACU		d test for hydrophyti	-
5 <u>Lotus corniculata</u> 6			FACU		nance test is >50% alence index is ≤3.0	
7						
8					hological adaptatio orting data in Rema	
9					rate sheet)	
10				Probl	ematic hydrophytic	vegetation*
	0	= Total Cover		(expla		č
Woody vine stratum (Plot size: 1 m sq 1)				s of hydric soil and wetl esent, unless disturbed	and hydrology must be or problematic
2				Hydr	ophytic	
	0	= Total Cover		vege prese	tation ent? <u>N</u>	_
Remarks: (Include photo numbers here or on a separ	rate sheet)					

SOIL

Profile Des	cription: (Descr	ibe to th	ne depth needed	to docu	iment th	ne indica	tor or confirm	the absence	of indicators.)	
Depth	Matrix			dox Feati					-	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	e	Remarks	
	Concentration, D	= Deplet	ion, RM = Reduc	ed Matri	x, MS =	Masked			PL = Pore Lining, M = N	latrix
Hydric So	oil Indicators:								tic Hydric Soils:	
Hist	tisol (A1)		Sar	ndy Gleye	ed Matrix	(S4)	Coast	Prairie Redox	(A16) (LRR K, L, R)	
Hist	tic Epipedon (A2)		Sar	ndy Redo	ox (S5)		Dark S	Surface (S7) (L	.RR K, L)	
Bla	ck Histic (A3)		Stri	pped Ma	trix (S6)		5 cm I	Nucky Peat or	Peat (S3) (LRR K, L, R)	
Hyd	drogen Sulfide (A	4)	Loa	my Mucł	ky Minera	al (F1)	Iron-N	langanese Mas	sses (F12) (LRR K, L, R	.)
Stra	atified Layers (A5)	Loa	my Gley	ed Matri	x (F2)	Very S	Shallow Dark S	urface (TF12)	
2 cr	m Muck (A10)		Dep	pleted Ma	atrix (F3))	Other	(explain in rem	narks)	
	pleted Below Darl	< Surface		dox Dark	• •					
	ck Dark Surface (· · · ·	pleted Da						
	ndy Mucky Minera			lox Depr					/tic vegetation and wetla	
	m Mucky Peat or	• •		юх Вері	00010110	(10)	nyaroic		esent, unless disturbed o plematic	or
	-)			•		pior		
	Layer (if observe	ed):					Li velui e e	- 11		
Type: gr Depth (inche	ravel, ballast, fill es): not determ	nined					Hydric s	oil present?		
	es). <u>Hot detern</u>	inteu								
Remarks:										
Area ma	pped as urban	land, a	and 2-4 feet hig	gher in e	elevatio	on than	adjacent wet	land swales.		
HYDROLO										
-	drology Indicato									
Primary Indi	cators (minimum	of one is	s required; check	all that a	apply)		Seco	ondary Indicato	rs (minimum of two requ	uired)
Surface	Water (A1)			Aquatic I	Fauna (B	13)		Surface Soil	Cracks (B6)	
High Wa	ater Table (A2)			True Aqu	uatic Plar	nts (B14)		Drainage Pat	terns (B10)	
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C1	1)	Dry-Season V	Water Table (C2)	
Water M	larks (B1)			Oxidized	l Rhizosp	heres on	Living Roots	Crayfish Burr	ows (C8)	
Sedimer	nt Deposits (B2)			(C3)			ge.e.	Saturation Vis	sible on Aerial Imagery (C	9)
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4)	Stunted or St	ressed Plants (D1)	
Algal Ma	at or Crust (B4)			- Pocont I	ron Podu	uction in T	illed Soils	Geomorphic	Position (D2)	
	oosits (B5)			(C6)	Ion Redu			FAC-Neutral		
	on Visible on Aeria	Imager	/ (B7)	• •	ck Surfac	e (C7)				
	Vegetated Conca	• •		•						
,					r Well Da	. ,	`			
	tained Leaves (B9)		Other (E	xpiain in	Remarks)	_		
Field Obser Surface wat		Yes	No	х	Depth (i	inchee).		Wetland	ł	
Water table	•	Yes	No	<u>X</u>	Depth (i			hydrolo		
Saturation p	•	Yes	No		Depth (i	,	0	present		
	pillary fringe)					,				
Describe red	corded data (strea	am gaug	e, monitoring we	ll, aerial	photos,	previous	inspections), if	available:		
			-							
Demonst										
Remarks:										
	higher in eleva									

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:	12	
Investigator(s): J Mengler, V Mosca		Se	ction, Towns	14E, S26			
Landform (hillslope, terrace, etc.): swa	ale	Loc	al relief (co	ncave, convex	, none):	swale	
Slope (%): Lat: 41.661704	1	Long:	-87.5973	341	Datum:		
Soil Map Unit Name: orthents, clayey, undulating				VI Classificatio	on: PFC	1/EMCd	
Are climatic/hydrologic conditions of the site typical fo	r this time c	of the year?	Y (If no, explain i	in remarks)		
Are vegetation, soilY, or hydrol	ogy	significantly	disturbed?	Y Are "norr	mal circumstances"		
Are vegetation, soil, or hydrol				N present?		Y	
SUMMARY OF FINDINGS					d, explain any ans	wers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present?		Is the sa	mpled area	within a wet	land? Y		
Wetland hydrology present? Y			-		Wetland 9		
Remarks: (Explain alternative procedures here or in a	separate r		•	-			
	i separate n	epon.)					
Relied primarily upon vegetation and landsca	pe positio	n due to dry	time of se	eason, and r	nostly urbanland	/fill for substrate.	
VEGETATION Use scientific names of plan	its						
	Absolute	Dominant	Indicator	Domina	nce Test Workshe	et	
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Species	Status	Number of D	ominant Species tha	•	
1					FACW, or FAC:	1 (A)	
2				Total Nur	nber of Dominant		
3				Species /	Across all Strata:	<u> </u>	
4					ominant Species that		
5				are OBL,	FACW, or FAC:	100.00% (A/B)	
Openities (Ohmethis teachangel (Distributions) 4.0 mm		= Total Cover		Durali		- 4	
Sapling/Shrub stratum (Plot size: 4.6 m)				nce Index Worksho Cover of:	eet	
2				OBL spe		1 = 0	
3					pecies 100 x 2		
4				FAC spe	·	3 = 0	
5				FACU sp		4 = 0	
	0	= Total Cover		UPL spe	cies 0 x s	5 = 0	
Herb stratum (Plot size: 1 m sq)			Column	totals 100 (A) 200 (B)	
1 Phragmites australis	100	Y	FACW	Prevalen	ice Index = B/A =	2.00	
2							
3					nytic Vegetation In		
4					d test for hydrophyl	•	
5 6					inance test is >50% alence index is ≤3.0		
6 7						5	
8					phological adaptation		
9					irate sheet)		
10					lematic hydrophytic	vegetation*	
	100	= Total Cover		(expl		J	
Woody vine stratum (Plot size: 1 m sq)			*Indicator	rs of hydric soil and wet	land hydrology must be	
1				р	resent, unless disturbed		
2				-	rophytic		
	0	= Total Cover		-	etation ent? Y		
Remarks: (Include photo numbers here or on a separ	ate sheet)			1		-	

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix			dox Featu						
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks		
		I								
		l'								
		1								
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	łł			╂───┦		┨────┤				
	ĮĮ	i'		↓ /		┨───┤	<u> </u>			
	ĮĮ		 	└───┘		<u> </u>	<u> </u>			
	ļ!	 '		Ļ!						
	L	I								
*Type: C = 0	Concentration, D :	= Deplet	ion, RM = Reduc	ed Matri	x, MS =	Masked	Sand Grains. **Lo	cation: PL = Pore Lining, M = Matrix		
Hydric Sc	oil Indicators:						Indicators for Pro	oblematic Hydric Soils:		
Hist	tisol (A1)		Sar	ndy Gleye	ed Matrix	x (S4)	Coast Prairie	Redox (A16) (LRR K, L, R)		
Hist	tic Epipedon (A2)		Sar	ndy Redo	ox (S5)		Dark Surface	(S7) (LRR K, L)		
Blac	ck Histic (A3)		Stri	ipped Ma	trix (S6)		5 cm Mucky F	eat or Peat (S3) (LRR K, L, R)		
Hyd	drogen Sulfide (A4	4)	Loa	amy Muck	ky Miner	al (F1)	Iron-Mangane	se Masses (F12) (LRR K, L, R)		
	atified Layers (A5)		Loa	amy Gleye	ed Matrix	x (F2)		Dark Surface (TF12)		
	m Muck (A10)			pleted Ma		. ,	Other (explain			
	pleted Below Dark	k Surfac		dox Dark	. ,	,	、 .	- ,		
	ck Dark Surface (A		· · <u> </u>	pleted Da		. ,	the second by	· · · · · · · · · · · · · · · · · · ·		
	ndy Mucky Minera			dox Depr				drophytic vegetation and wetland t be present, unless disturbed or		
	m Mucky Peat or I					(• -)	nyurology mus	problematic		
	Layer (if observe		')			1		P		
	ravel, ballast, fill	auj.					Hydric soil pres	ent?		
Depth (inche		nined					iljuite con p.c.			
Remarks:										
Nemarka.										
Area ma	apped as urban	land a	and located be	tween c	iravel n	arking r	had and road			
/ 104 114	pped de di sall	iuna, c		Ween g	nuvoi r	anning i				
HYDROLO	OGY									
	/drology Indicato	ors:								
-	icators (minimum		s required; check	all th <u>at a</u>	(ylqqe		Secondary			
	Water (A1)							ndicators (minimum of two required)		
	ater Table (A2)				⊏auna (B	13)	-			
X Saturatio					Fauna (B uatic Plar	-	Surfac	ce Soil Cracks (B6)		
	JII (AJ)		_	True Aqu	uatic Plar	nts (B14)	Surfac X Draina	ce Soil Cracks (B6) age Patterns (B10)		
			_	True Aqu Hydroge	uatic Plar n Sulfide	nts (B14) Odor (C1	Surfac X Draina I) Dry-S	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2)		
	larks (B1)			True Aqu Hydroge Oxidized	uatic Plar n Sulfide	nts (B14) Odor (C1	Surfac X Draina I) Dry-S Living Roots Crayfi	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8)		
Sedimer	larks (B1) nt Deposits (B2)			True Aqu Hydroger Oxidized (C3)	uatic Plar n Sulfide I Rhizosp	nts (B14) Odor (C1 oheres on	I) Crayfi Living Roots Satura	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9)		
Sedimer Drift Dep	larks (B1) nt Deposits (B2) posits (B3)		-	True Aqu Hydroger Oxidized (C3)	uatic Plar n Sulfide I Rhizosp	nts (B14) Odor (C1	I) Surface X Drains Dry-S Living Roots Crayfi Satura (C4) Sturte	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1)		
Sedimer Drift Dep Algal Ma	larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)			True Aqu Hydrogen Oxidized (C3) Presence Recent In	uatic Plar n Sulfide I Rhizosp e of Redu	nts (B14) Odor (C1 oheres on uced Iron	I) Surface X Draina Dry-S Living Roots Crayfi Satura (C4) Stunte iilled Soils Geom	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2)		
Sedimer Drift Dep Algal Ma Iron Dep	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)			True Aqu Hydroger Oxidized (C3) Presence Recent In (C6)	uatic Plar In Sulfide I Rhizosp e of Redu ron Redu	nts (B14) Odor (C1 oheres on uced Iron uction in T	I) Surface X Draina Dry-S Living Roots Crayfi Satura (C4) Stunte iilled Soils Geom	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1)		
Sedimer Drift Dep Algal Ma Iron Dep Inundatio	farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria			True Aqu Hydroger Oxidized (C3) Presence Recent In (C6) Thin Mud	uatic Plar In Sulfide I Rhizosp e of Redu ron Redu ck Surfac	nts (B14) Odor (C1 oheres on uced Iron uction in T	I) Surface X Draina Dry-S Living Roots Crayfi Satura (C4) Stunte iilled Soils Geom	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2)		
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca	ive Surfac		True Aqu Hydrogel Oxidized (C3) Presence Recent In (C6) Thin Muc Gauge o	uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da	nts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9)	I) Surface X Draina Dry-S Living Roots Crayfi (C4) Stunte iilled Soils FAC-I	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2)		
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9)	ive Surfac		True Aqu Hydrogel Oxidized (C3) Presence Recent In (C6) Thin Muc Gauge o	uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da	nts (B14) Odor (C1 oheres on uced Iron uction in T	I) Surface X Draina Dry-S Living Roots Crayfi (C4) Stunte iilled Soils FAC-I	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2)		
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9) rvations:	ive Surfac	ce (B8)	True Aqu Hydrogel Oxidized (C3) Presence Recent In (C6) Thin Muc Gauge o Other (E	uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ron Redu ck Surfaco or Well Da xplain in	nts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks	Surface X Drains Dry-S Living Roots Crayfi (C4) Stunte (C4) Geom FAC-1)	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) iorphic Position (D2) Neutral Test (D5)		
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wate	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca Stained Leaves (B9) rvations: ter present?	ve Surfac	ce (B8)	True Aqu Hydrogel Oxidized (C3) Presence Recent In (C6) Thin Muc Gauge o Other (E	uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in Depth (i	nts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches):	Surface X Draina Dry-S Living Roots Crayfi (C4) Sturte iilled Soils Geom FAC-I	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2) Neutral Test (D5)		
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wate Water table	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca stained Leaves (B9) rvations: ter present?	ve Surfac) Yes Yes	Ce (B8)	True Aqu Hydrogel Oxidized (C3) Presence Recent In (C6) Thin Muc Gauge o Other (E) X	uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches):	Surface X Draina Dry-S Living Roots Crayfi (C4) Sturte iilled Soils Geom FAC-I	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2) Neutral Test (D5)		
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wate Water table Saturation p	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca stained Leaves (B9) rvations: ter present?	ve Surfac	ce (B8)	True Aqu Hydrogel Oxidized (C3) Presence Recent In (C6) Thin Muc Gauge o Other (E) X	uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in Depth (i	nts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches):	Surface X Draina Dry-S Living Roots Crayfi (C4) Sturte iilled Soils Geom FAC-I	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2) Neutral Test (D5)		
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wate Water table Saturation p (includes ca	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Concar by Vegetated Concar concar present Concar present? present? present? present? present? present? present? present? present? present? present? present?	Yes Yes Yes Yes	Ce (B8)	True Aqu Hydrogel Oxidized (C3) Presence Recent II (C6) Thin Muc Gauge o Other (E X X	uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches):	Surface X Draina Dry-S Living Roots Crayfi (C4) Sturte iilled Soils Geom FAC-I	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2) Neutral Test (D5)		
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely X Water-S Field Obser Surface wate Water table Saturation p (includes ca	Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Concar by Vegetated Concar concar present Concar present? present? present? present? present? present? present? present? present? present? present? present?	Yes Yes Yes Yes	Ce (B8)	True Aqu Hydrogel Oxidized (C3) Presence Recent II (C6) Thin Muc Gauge o Other (E X X	uatic Plar in Sulfide I Rhizosp e of Redu ron Redu ck Surfac or Well Da xplain in Depth (i Depth (i	nts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches):		ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2) Neutral Test (D5)		
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Project/Site Lake Calumet CTA Red Line Extension	City/0	County:	Cook	<u> </u>	Sampling Date:	8/19/2015
Applicant/Owner: CTA/MWRD		State:	Illir	nois S	Sampling Point:	13
Investigator(s): J Mengler, V Mosca		s	ection, Towns	ship, Range:	T37N, R	14E, S26
Landform (hillslope, terrace, etc.): sw	ale	Lo	ocal relief (co	ncave, convex,	none):	swale
Slope (%): Lat: 41.661704	4	Long:	-87.5973	341 I	Datum:	
Soil Map Unit Name: orthents, loamy, nearly level			NV	VI Classification	n: I	none
Are climatic/hydrologic conditions of the site typical for	or this time o	of the year?	Y (If no, explain ir	remarks)	
Are vegetation , soil Y , or hydro	logy	significantl	y disturbed?	Y Aro "norm	nal circumstances"	
	logy		roblematic?	N present?	al circumstances	Y
SUMMARY OF FINDINGS				(If needed	d, explain any ansv	vers in remarks.)
Hydrophytic vegetation present? Y					· · ·	·
Hydric soil present?		Is the s	ampled area	within a wetla	and? N	
Wetland hydrology present? N			-	tland site ID:		
Remarks: (Explain alternative procedures here or in a	a senarate r		.,			
	a separate re	epon.)				
Relied primarily upon vegetation and landsca	ape positio	n due to di	ry time of se	eason, and m	ostly urbanland	/fill for substrate.
L VEGETATION Use scientific names of plar	nts					
	Absolute	Dominant	Indicator	Dominan	ce Test Workshe	et
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Species	Status	Number of Do	minant Species that	
1					FACW, or FAC:	2 (A)
2				Total Num	ber of Dominant	
3				Species A	cross all Strata:	<u> </u>
4				Percent of Do	minant Species that	
5				are OBL,	FACW, or FAC:	33.33% (A/B)
	0	= Total Cove	r			
Sapling/Shrub stratum (Plot size: 4.6 m)				ce Index Workshe	eet
1				Total % C		1- 10
3				OBL spec FACW sp		
4			·	FAC spec		
5				FACU spe		
	0	= Total Cove	r	UPL spec		
Herb stratum (Plot size: 1 m sq)			Column to	otals 60 (A) 190 (B)
1 Polygonum lapathifolium	10	Y	FACW	Prevalence	ce Index = B/A =	3.17
2 Carduus nutans	10	Y	FACU			
3 Medicago lupulina	10	Y	FACU	Hydrophy	vtic Vegetation In	dicators:
4 Helianthus annuus	10	Y	FACU		I test for hydrophyt	•
5 Acnida altissima	10	Y	OBL		nance test is >50%	
6 Lotus corniculata	10	Y	FACU	Preva	llence index is ≤3.0)*
/					nological adaptatio	
8					orting data in Rema ate sheet)	arks or on a
9 10					,	wagatatian*
	60	= Total Cove	er	(expla	ematic hydrophytic ain)	vegetation
Woody vine stratum (Plot size: 1 m sq)			<u> </u>	,	land hydrology syst h
1					esent, unless disturbed	land hydrology must be I or problematic
2				-	ophytic	
	0	= Total Cove	r	veget		
				prese	ent? N	_
Remarks: (Include photo numbers here or on a separ	rate sneet)					

SOIL

Depth	Matrix				dox Feat					
(Inches)	Color (moist)	%	Color (n	noist)	%	Type*	Loc**	Text	ure	Remarks
		l								
		l	┨─────							
										
					Γ	Γ				
			<u> </u>		1					
			┨────		+					
		Ĺ		<u> </u>	<u> </u>					
	Concentration, D	= Deplet	tion, RM =	Reduc	ced Matri	ix, MS =	Masked			tion: $PL = Pore Lining, M = N$
Hydric So	oil Indicators:									lematic Hydric Soils:
Hist	tisol (A1)		_	Sar	ndy Gley	ed Matrix	x (S4)	Coas	st Prairie Re	edox (A16) (LRR K, L, R)
Hist	tic Epipedon (A2))		Sar	ndy Redo	ox (S5)		Dark	Surface (S	7) (LRR K, L)
Bla	ck Histic (A3)		_	Stri	ipped Ma	atrix (S6)		5 cm	Mucky Pea	at or Peat (S3) (LRR K, L, R)
	drogen Sulfide (A	4)			amy Muc	. ,			•	Masses (F12) (LRR K, L, R
	atified Layers (A5		_		amy Gley	-			-	ark Surface (TF12)
	m Muck (A10))	-							
	· · · ·	. Cumfa a	- (444) -		pleted Ma		,		r (explain ir	rienarks)
	pleted Below Darl		e (ATT) _		dox Dark		. ,			
	ck Dark Surface (. ,	-		pleted Da		. ,	*Indica	tors of hydi	ophytic vegetation and wetla
Sar	ndy Mucky Minera	ıl (S1)	-	Re	dox Depr	ressions	(F8)	hydro	logy must b	e present, unless disturbed
5 cr	m Mucky Peat or	Peat (S3	3)							problematic
							T			
	Layer (if observ	ed):								
estrictive	Layer (if observer ravel, ballast, fill	ed):						Hydric	soil presei	nt?
estrictive /pe: gr epth (inche	ravel, ballast, fill					-		Hydric	soil presei	nt?
estrictive /pe: gi epth (inche emarks:	ravel, ballast, fill	nined	and a gra		arking p		feet hig		-	
estrictive /pe: gi epth (inche emarks: Area ma	ravel, ballast, fill es): <u>not determ</u> pped as urban	nined	and a gra	avel pa	arking p	- bad 2-4	feet hig		-	
estrictive ype: guepth (inche emarks: Area ma	ravel, ballast, fill es): <u>not determ</u> pped as urban	land, a	and a gra	avel pa	arking p	- 	feet hig		-	
estrictive /pe: _gr epth (inche emarks: Area ma YDROL(etland Hy	ravel, ballast, fill es): <u>not determ</u> pped as urban DGY	land, a					feet hig	her than su	rrounding	
estrictive (pe:gi epth (inche emarks: Area ma YDROL(fetland Hy rimary Indi	ravel, ballast, fill es): <u>not determ</u> pped as urban DGY rdrology Indicato	land, a			call that a	apply)		her than su	rrounding	wetland. icators (minimum of two requ
estrictive (pe: gr epth (inche emarks: Area ma YDROL(etland Hy imary Indi Surface	ravel, ballast, fill es): not determ pped as urban OGY rdrology Indicato icators (minimum Water (A1)	land, a			<u>all that a</u> Aquatic	<u>apply)</u> Fauna (B	313)	her than su	condary Ind	wetland. icators (minimum of two requ Soil Cracks (B6)
estrictive ype: gi epth (inche emarks: Area ma YDROLO /etland Hy rimary Indi Surface High Wa	ravel, ballast, fill es): not determ pped as urban OGY rdrology Indicato icators (minimum Water (A1) ater Table (A2)	land, a			<u>all that a</u> Aquatic True Aq	<u>apply)</u> Fauna (B uatic Plar	313) nts (B14)	her than sur Sec	condary Ind Surface	wetland. icators (minimum of two requ Soil Cracks (B6) e Patterns (B10)
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estrictive ype: gi epth (inche emarks: Area ma YDROLO /etland Hy rimary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-S ield Obser urface wat	ravel, ballast, fill es): not determ pped as urban OGY drology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria / Vegetated Conca itained Leaves (B9 rvations: er present?	al Imager Ne Surfa Yes	s required:	; check	c all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp e of Redu iron Redu ick Surfac or Well Da Explain in	a13) ints (B14) odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches):	her than sur Sec) Living Roots _ (C4) _ illed Soils _	condary Ind Surface Drainag Dry-Sea Crayfish Saturati Stunted Geomor FAC-Ne	wetland. icators (minimum of two requ Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C or Stressed Plants (D1) phic Position (D2) utral Test (D5) tland
estrictive ype: gi epth (inche emarks: Area ma YDROLO /etland Hy rimary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Inundatio Sparsely Water-S ield Obser urface wat /ater table	ravel, ballast, fill es): not determ pped as urban OGY rdrology Indicato (cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B9 rvations: er present? present?	al Imager Nors: of one is of other of one is of other of othe	s required:	<u>; check</u>	c all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E X X	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp e of Redu lron Redu ck Surfac or Well Da Explain in Depth (a13) nts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches):	her than sur Sec) Living Roots _ (C4) _ illed Soils _	condary Ind Surface Drainag Dry-Sea Crayfish Saturatio Stunted Geomor FAC-Ne	wetland. icators (minimum of two requ Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C or Stressed Plants (D1) phic Position (D2) utral Test (D5) tland irology
estrictive ype:gi epth (inche emarks: Area ma YDROL(YDROL(YDROL(YDROL(YDROL(Area ma YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(YDROL(ravel, ballast, fill es): not determ pped as urban OGY rdrology Indicato (cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria (Vegetated Conca tained Leaves (B9 rvations: present? present?	al Imager Ne Surfa Yes	s required:	; check	c all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp e of Redu lron Redu ck Surfac or Well Da Explain in Depth (a13) ints (B14) odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches):	her than sur Sec) Living Roots _ (C4) _ iilled Soils _)	condary Ind Surface Drainag Dry-Sea Crayfish Saturatio Stunted Geomor FAC-Ne	wetland. icators (minimum of two requ Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C or Stressed Plants (D1) phic Position (D2) utral Test (D5) tland
estrictive ype: gi epth (inche emarks: Area ma YDROLO /etland Hy rimary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Inundatio Sparsely Water-S Field Obser urface wat /ater table aturation p ncludes ca	ravel, ballast, fill es): not determ pped as urban OGY drology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria / Vegetated Conca itained Leaves (B9 rvations: er present? present? present? present? present?	al Imager of one is of other of one is of other of other of other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other	s required: y (B7) ce (B8)	Check	Aquatic True Aq Hydroge Oxidizec (C3) Presenc (C6) Thin Mu Gauge c Other (E X X X	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp te of Redu lron Redu lron Redu ck Surfac or Well Da Explain in Depth (Depth (a13) hts (B14) odor (C1 oheres on uced Iron uced Iron uced Iron ata (D9) Remarks inches): inches): inches):	her than sur Sec) Living Roots _ (C4) _ iilled Soils _) 0	condary Ind Surface Drainag Dry-Sea Crayfish Saturatio Stuned Geomor FAC-Ne	wetland. icators (minimum of two requ Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C or Stressed Plants (D1) phic Position (D2) utral Test (D5) tland irology sent? N
estrictive ype: gi epth (inche emarks: Area ma YDROLO /etland Hy rimary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Inundatio Sparsely Water-S Field Obser urface wat /ater table aturation p ncludes ca	ravel, ballast, fill es): not determ pped as urban OGY rdrology Indicato (cators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria (Vegetated Conca tained Leaves (B9 rvations: present? present?	al Imager of one is of other of one is of other of other of other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other oth	s required: y (B7) ce (B8)	Check	Aquatic True Aq Hydroge Oxidizec (C3) Presenc (C6) Thin Mu Gauge c Other (E X X X	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp te of Redu lron Redu lron Redu ck Surfac or Well Da Explain in Depth (Depth (a13) hts (B14) odor (C1 oheres on uced Iron uced Iron uced Iron ata (D9) Remarks inches): inches): inches):	her than sur Sec) Living Roots _ (C4) _ iilled Soils _) 0	condary Ind Surface Drainag Dry-Sea Crayfish Saturatio Stuned Geomor FAC-Ne	wetland. icators (minimum of two requ Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C or Stressed Plants (D1) phic Position (D2) utral Test (D5) tland irology sent? N
estrictive ype: gi epth (inche emarks: Area ma YDROLO /etland Hy rimary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Inundatio Sparsely Water-S Field Obser urface wat /ater table aturation p ncludes ca	ravel, ballast, fill es): not determ pped as urban OGY drology Indicato icators (minimum Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria / Vegetated Conca itained Leaves (B9 rvations: er present? present? present? present? present?	al Imager of one is of other of one is of other of other of other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other other oth	s required: y (B7) ce (B8)	Check	Aquatic True Aq Hydroge Oxidizec (C3) Presenc (C6) Thin Mu Gauge c Other (E X X X	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp te of Redu lron Redu lron Redu ck Surfac or Well Da Explain in Depth (Depth (a13) hts (B14) odor (C1 oheres on uced Iron uced Iron uced Iron ata (D9) Remarks inches): inches): inches):	her than sur Sec) Living Roots _ (C4) _ iilled Soils _) 0	condary Ind Surface Drainag Dry-Sea Crayfish Saturatio Stuned Geomor FAC-Ne	wetland. icators (minimum of two requ Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C or Stressed Plants (D1) phic Position (D2) utral Test (D5) tland irology sent? N

Project/Site Lake Calumet CTA Red Line Extension	City/C	County:	Cook	Sampling	Date:	8/13/2015
Applicant/Owner: CTA/MWRD		State	: Illin	ois Sampling	Point:	14
Investigator(s): J Mengler, V Mosca			Section, Towns	ship, Range:	T37N, R14	E, S26
Landform (hillslope, terrace, etc.): swa	le	L	ocal relief (co	ncave, convex, none):		swale
Slope (%): Lat: 41.659598		-	-87.5944			
Soil Map Unit Name: urban land- orthents, clayey, com	plex, nearly			VI Classification:	no	ne
Are climatic/hydrologic conditions of the site typical for				If no, explain in remarks	3)	
Are vegetation, soilY, or hydrold		-		Y Are "normal circun		
Are vegetation , soil , or hydrolo				N present?	Islances	Y
SUMMARY OF FINDINGS		,,		(If needed, explain	any answe	rs in remarks.)
Hydrophytic vegetation present? Y				· ·		
Hydric soil present?		Is the	sampled area	within a wetland?	Y	
Wetland hydrology present? Y			-	tland site ID: We		_
	concrete re	-	-,			
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
Relied primarily upon vegetation and landscap	pe positior	n due to d	Iry time of se	eason, and mostly ur	banland/fi	Il for substrate.
VEGETATION Use scientific names of plant	te					
	Absolute	Dominant	Indicator	Dominance Test	Worksheet	
Tree Stratum (Plot size: 9 m)	% Cover	Species	Status	Number of Dominant Si		
1				are OBL, FACW, or		1 (A)
2				Total Number of Do	minant –	
3			_	Species Across all	Strata:	1 (B)
4				Percent of Dominant Sp	pecies that	
5				are OBL, FACW, or	r FAC:	100.00% (A/B)
	=	Total Cove	er			
Sapling/Shrub stratum (Plot size: 4.6 m)				Prevalence Index	Workshee	t
1				Total % Cover of:	0 v 1 -	0
2				OBL species FACW species	0 x 1 = 100 x 2 =	
4				FAC species	$\frac{100}{0}$ x 3 =	
5				FACU species	0 x 4 =	
	0 =	Total Cove	er	UPL species	0 x 5 =	
Herb stratum (Plot size: 1 m sq)				Column totals	100 (A)	200 (B)
1 Phragmites australis	100	Y	FACW	Prevalence Index	= B/A =	2.00
2						
3				Hydrophytic Vege	etation Indi	cators:
4				Rapid test for		vegetation
5				X Dominance tes		
6				X Prevalence inc	2ex is ≤3.0*	
/				Morphological		
8				supporting dat separate shee		ks or on a
10				·	,	a actation*
···	100 =	Total Cove	er	Problematic hy (explain)		egetation
Woody vine stratum (Plot size: 1 m sq)					cil and watton	d bydrology myst bo
1				-	soil and wetlar ss disturbed of	nd hydrology must be r problematic
2				Hydrophytic		
	0 =	Total Cove	er	vegetation present?	V	
Demonster (Include of the second second	4a al 0			present?	ř	
Remarks: (Include photo numbers here or on a separa	ate sneet)					

SOIL	
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Depth	Matrix			dox Feat			itor or confirm the abse	
(Inches)	Color (moist)	%	Color (moist)	<u>w</u>	Type*	Loc**	Texture	Remarks
(/								
			+	-				
		 			+			
		 		<u> </u>				+
				1				
			<u> </u>			1		
		L		L	<u> </u>	<u> </u>		
21		= Deplet	tion, RM = Reduc	ed Matr	ix, MS =	Masked		ation: PL = Pore Lining, M = Matrix
-	oil Indicators:		_					blematic Hydric Soils:
	tisol (A1)				ed Matrix	x (S4)		edox (A16) (LRR K, L, R)
	tic Epipedon (A2))	Sar	ndy Redo	эх (S5)		Dark Surface (S	
	ck Histic (A3)			••	atrix (S6)			at or Peat (S3) (LRR K, L, R)
Hyc	Irogen Sulfide (A	4)	Loa	amy Muc	ky Miner	al (F1)	Iron-Manganes	e Masses (F12) (LRR K, L, R)
Stra	atified Layers (A5)	Loa	amy Gley	ed Matri	x (F2)	Very Shallow D	ark Surface (TF12)
2 cr	m Muck (A10)		Der	pleted M	atrix (F3)	Other (explain i	n remarks)
Dep	pleted Below Dark	k Surfac	e (A11) Rec	dox Dark	Surface) (F6)		
Thie	ck Dark Surface (A12)	Der	pleted Da	ark Surfa	ace (F7)	*Indicators of hvo	rophytic vegetation and wetland
Sar	ndy Mucky Minera	al (S1)	Rec	dox Depi	ressions	(F8)		be present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	3)				, ,,	problematic
Restrictive	Layer (if observ	ed):				T		
	ravel, ballast, fill	,					Hydric soil prese	nt?
Depth (inch		nined			-		-	
		land, a	and located at I	base of	i roadw	ay emba	ankment and along ra	ailroad
HYDROL								
-	drology Indicato							
-	-	of one is	s required; check	all that	apply)		Secondary Inc	dicators (minimum of two required
	Water (A1)		_		Fauna (B	,		e Soil Cracks (B6)
High Wa	ater Table (A2)			True Aq	uatic Plai	nts (B14)	X Drainaç	e Patterns (B10)
X Saturatio	on (A3)			Hydroge	en Sulfide	e Odor (C1	1) Dry-Sea	ason Water Table (C2)
Water N	larks (B1)		_	Oxidized	d Rhizosp	oheres on	Living Roots Crayfisl	n Burrows (C8)
Sedimer	nt Deposits (B2)			(C3)			u	ion Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Presenc	e of Red	uced Iron	(C4) Stunted	or Stressed Plants (D1)
Algal Ma	at or Crust (B4)			- Pecent	Iron Redu	uction in T	Tilled Soils Geomo	rphic Position (D2)
-	oosits (B5)			(C6)	IION NGG			eutral Test (D5)
	on Visible on Aeria	al Imager	v (B7)	-	ick Surfac	ce (C7)		
	Vegetated Conca			-	or Well Da			
	tained Leaves (B9			- ~		Remarks	•1	
Field Obser)				Kennanke)	
Surface wat		Yes	No	Х	Depth ((inches):	We	etland
Water table	•	Yes	No	X		(inches):		drology
Saturation p		Yes	X No		Depth (inches):	0 pr	esent? Y
	pillary fringe)							
Describe re	corded data (strea	am gaug	je, monitoring we	II, aerial	photos,	previous	inspections), if available	:
_ _								
Remarks:								
Saturatio	on within draina	age swa	ale along highe	er grour	nd, wet	mud an	nong old tires.	

Project/Site Lake Calumet CTA Red Line Extension	City/C	County:	Cool	(Sampling Date:	8/19/2015
Applicant/Owner: CTA/MWRD		Sta	ite: Illir	nois	Sampling Point:	15
Investigator(s): J Mengler, V Mosca			Section, Town	ship, Range:	T37N R	14E S26
Landform (hillslope, terrace, etc.): dite	ch		Local relief (co	ncave, conve	x, none):	ditch
Slope (%): Lat: 41.660019)	Long:	-87.595	429	Datum:	
Soil Map Unit Name: urban land-orthents clayey comp				VI Classificatio	on:	none
Are climatic/hydrologic conditions of the site typical fo	r this time of	f the year	·? Y	(If no, explain	in remarks)	
Are vegetation, soil Y, or hydrol	ogy	significa	intly disturbed?	Y Aro "por	mal circumstancos"	
			problematic?	N present?		Y
SUMMARY OF FINDINGS	··	-		(If neede	ed, explain any ansv	vers in remarks.)
Hydrophytic vegetation present? Y					· · ·	, , , , , , , , , , , , , , , , , , ,
Hydric soil present?		ls th	e sampled area	a within a wet	land? Y	
Wetland hydrology present? Y			-		Wetland 11	
Remarks: (Explain alternative procedures here or in a	senarate re		, , . ,			
	i separate re	pon.)				
Relied primarily upon vegetation and landsca	pe positior	n due to	dry time of se	eason, and i	mostly urbanland	/fill for substrate.
VEGETATION Use scientific names of plan	its					
	Absolute	Domina	ant Indicator	Domina	nce Test Workshe	et
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover	Specie		Number of D	ominant Species that	
1					, FACW, or FAC:	1 (A)
2				Total Nur	mber of Dominant	
3				Species	Across all Strata:	1 (B)
4				Percent of D	ominant Species that	
5				are OBL	, FACW, or FAC:	100.00% (A/B)
	=	Total Co	over	<u> </u>		
Sapling/Shrub stratum (Plot size: 4.6 m 1 Salix interior)		FACW		nce Index Workshe Cover of:	et
2			FACVV	OBL spe		= 0
3	·			FACW s		
4				FAC spe		
5				FACU s		
	0 =	Total Co	over	UPL spe		5 = 0
Herb stratum (Plot size: 1 m sq)			Column	totals 100 (A) <u>200</u> (B)
1 Phragmites australis	100	Y	FACW	Prevaler	nce Index = B/A =	2.00
2						
3					hytic Vegetation In	
4					id test for hydrophyt	•
5					ninance test is >50% valence index is ≤3.0	
6 7						
8					phological adaptatio porting data in Rema	
9	·······				arate sheet)	anto or on a
10					plematic hydrophytic	vegetation*
	100 =	Total Co	over		lain)	J
Woody vine stratum (Plot size: 1 m sq)			*Indicato	ors of hydric soil and wet	and hydrology must be
1				F	present, unless disturbed	
2				-	rophytic	
	0 =	Total Co	over	-	etation sent? Y	
Remarks: (Include photo numbers here or on a separ	ate sheet)					

SOIL	
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Depth	Matrix				dox Feat				
(Inches)	Color (moist)	%	Color	(moist)	%	Type*	Loc**	Texture	Remarks
					-				
$\Gamma_{\text{MDO}} = 0$	Concentration, D	- Doploi	tion DM	- Dodu	and Matr	iv MS -	Maakad	Sand Crains	**Location: PL = Pore Lining, M =
		- Depie		- Redu	ceu mau	IX, IVIS –	IVIASKEU -		-
•	bil Indicators:			0			(0.1)		or Problematic Hydric Soils:
	tisol (A1)					ed Matrix	(54)		rairie Redox (A16) (LRR K, L, R)
	tic Epipedon (A2)				ndy Rede	. ,			irface (S7) (LRR K, L)
	ck Histic (A3)				••	atrix (S6)			ucky Peat or Peat (S3) (LRR K, L,
Hyd	Irogen Sulfide (A	4)		Loa	amy Muc	ky Miner	al (F1)	Iron-Ma	nganese Masses (F12) (LRR K, L
Stra	atified Layers (A5)		Loa	amy Gley	ed Matri	x (F2)	Very Sh	allow Dark Surface (TF12)
2 cr	m Muck (A10)			De	pleted M	atrix (F3))	Other (e	explain in remarks)
Dep	pleted Below Darl	Surfac	e (A11)	Re	dox Dark	Surface	(F6)		
Thio	ck Dark Surface (A12)		De	pleted D	ark Surfa	ice (F7)	*Indicator	s of hydrophytic vegetation and we
Sar	ndy Mucky Minera	l (S1)		Re	dox Dep	ressions	(F8)		y must be present, unless disturbe
5 cr	m Mucky Peat or	Peat (S3	3)						problematic
	-		,				1		
estrictive	I aver (It observ	eq).							
	Layer (if observ ravel ballast fill	ed):						Hydric so	il present?
vpe: gi epth (inche emarks: Area ma inches d	ravel, ballast, fill es): not determ pped as urban ue to gravel ar	land, a	and loca	ated ald	ong roa	- - d at bas	se of a r	-	I present? kment. Probe refusal within
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Project/Site Lake Calumet CTA Red Line Extension	City/C	County:	Cook	Sampling	Date:	8/19/2015
Applicant/Owner: CTA/MWRD		State	: Illir	nois Sampling	Point:	16
Investigator(s): J Mengler, V Mosca		s	Section, Towns	ship, Range:	T37N R14	E S27
Landform (hillslope, terrace, etc.): dito	ch	L	ocal relief (co	ncave, convex, none):		ditch
Slope (%): Lat: 41.667542		-	-87.6020			
Soil Map Unit Name: urban land-orthents clayey comp	lex, nearly le			VI Classification:	no	ne
Are climatic/hydrologic conditions of the site typical for	-		Y (If no, explain in remarks	3)	
Are vegetation, soilY, or hydrol				Y Are "normal circun		
Are vegetation , soil , or hydrol				N present?	Islances	Y
SUMMARY OF FINDINGS		51		(If needed, explain	any answe	rs in remarks.)
Hydrophytic vegetation present? Y				· · ·		,
Hydric soil present?		Is the s	sampled area	within a wetland?	Y	
Wetland hydrology present? Y			-	tland site ID: Wet		-
	aoparata ra	-	-,			
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
Relied primarily upon vegetation and landsca	pe positior	n due to d	ry time of se	eason, and mostly ur	banland/fi	ll for substrate.
VEGETATION Use scientific names of plan	te					
	Absolute	Dominant	Indicator	Dominance Test	Worksheet]
Tree Stratum (Plot size: 9 m)	% Cover	Dominant Species	Indicator Status	Number of Dominant Sp		
1		·		are OBL, FACW, or		1 (A)
2				Total Number of Do	minant –	
3				Species Across all		1 (B)
4				Percent of Dominant Sp	becies that	
5				are OBL, FACW, or	r FAC:	100.00% (A/B)
	0 =	Total Cove	er			
Sapling/Shrub stratum (Plot size: 4.6 m)				Prevalence Index	Worksheet	ſ
1				Total % Cover of:	0	0
2				OBL species FACW species	0 x 1 = 100 x 2 =	
3				FAC species	$\frac{100}{0}$ x 2 =	
5				FACU species	$\frac{0}{0} \times 4 =$	
	0 =	Total Cove	er	UPL species	0 x 5 =	
Herb stratum (Plot size: 1 m sq)				Column totals	100 (A)	200 (B)
1 Phragmites australis	100	Y	FACW	Prevalence Index	= B/A =	2.00
2						
3				Hydrophytic Vege	etation Indic	ators:
4				Rapid test for		vegetation
5				X Dominance tes		
6				X Prevalence inc	2ex is ≤3.0*	
/				Morphological		
8				supporting dat separate shee		s or on a
10				·	,	a actation*
	100 =	Total Cove	 er	Problematic hy (explain)	γατορτιγτίς να	syelalion
Woody vine stratum (Plot size: 1 m sq)				*Indicators of hydric s		d bydrology myst bo
1				-	ss disturbed or	
2				Hydrophytic		
	0 =	Total Cove	er	vegetation present?	v	
Demonstrative de state service a				present?	Ť	
Remarks: (Include photo numbers here or on a separa	ate sneet)					

SOIL	
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16

(Inches)	<u>Matrix</u>			Re	dox Feat	ures				
	Color (moist)	%	Color	moist)	%	Type*	Loc**	Тех	ture	Remarks
	–		<u> </u>		L					
	ncentration, D	= Deple	tion, RM	= Redu	ced Matri	ix, MS =	Masked			ion: PL = Pore Lining, M = Ma
Hydric Soil	Indicators:									ematic Hydric Soils:
Histiso	ol (A1)			Sa	ndy Gley	ed Matrix	x (S4)	Co	ast Prairie Re	dox (A16) (LRR K, L, R)
Histic	Epipedon (A2))		Sa	ndy Redo	ox (S5)		Da	k Surface (S	7) (LRR K, L)
Black	Histic (A3)			Str	ipped Ma	atrix (S6)		5 c	m Mucky Pea	t or Peat (S3) (LRR K, L, R)
Hydro	gen Sulfide (A	4)		Loa	amy Muc	ky Miner	al (F1)	Iror	n-Manganese	Masses (F12) (LRR K, L, R)
Stratif	ied Layers (A5)		Loa	amy Gley	ed Matri	x (F2)	Ver	y Shallow Da	rk Surface (TF12)
2 cm l	Muck (A10)			De	pleted M	atrix (F3))	Oth	er (explain in	remarks)
	ted Below Darl	k Surfac	e (A11)		dox Dark				· ·	,
	Dark Surface (pleted Da		. ,			
	/ Mucky Minera	,			dox Depr					ophytic vegetation and wetlan
	Mucky Peat or		3)			00010110	(10)	nyai	ology must b	e present, unless disturbed of problematic
	-		5)				r			problematio
	ayer (if observ	ed):						المراجع ال	!!	40
pe: grav epth (inches)	vel, ballast, fill): not detern	nined				-		пуал	c soil presen	
emarks:		lineu				-				
	oed as urban					1 1 1	~			
	e to gravel ar		and loca	ted ald	ong road	d at bas	se of a r	oad emba	nkment. P	robe refusal within 2-4
inches due	e to gravel ar		and loca	ited alo	ong road	d at bas	se of a r	oad emba	nkment. P	robe refusal within 2-4
inches due	e to gravel ar	nd fill.	and loca	ited alo	ong road	d at bas	se of a r	oad emba	nkment. P	robe refusal within 2-4
inches due	e to gravel ar	nd fill.					se of a r			robe refusal within 2-4
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inches due YDROLOC etland Hydr imary Indica	e to gravel ar GY ology Indicato tors (minimum ater (A1)	nd fill.			all that	<u>apply)</u> Fauna (B	:13)		econdary Indi	cators (minimum of two requines Soil Cracks (B6)
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inches due YDROLOG Yetland Hydr rimary Indica Surface Wa High Water Saturation Water Marl	e to gravel ar GY ology Indicato tors (minimum ater (A1) r Table (A2) (A3) ks (B1)	nd fill.			all that a Aquatic True Aq Hydroge	<u>apply)</u> Fauna (B uatic Plar en Sulfide	113) hts (B14) : Odor (C1	<u>S</u>	econdary Indi Surface Drainage Dry-Seas Crayfish	cators (minimum of two requi Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8)
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inches due YDROLOG Tetland Hydr rimary Indica C Surface Wa High Water Saturation Water Marl Sediment D Drift Depos	e to gravel ar SY ology Indicato tors (minimum ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3)	nd fill.			a all that a Aquatic True Aq Hydroge Oxidized (C3) Presenc	apply) Fauna (B uatic Plar en Sulfide d Rhizosp te of Redu	113) nts (B14) Odor (C1 oheres on uced Iron) Living Roots (C4)	econdary Indi Surface X Drainage Dry-Seas Crayfish Saturatic	cators (minimum of two requin 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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inches due YDROLOG retland Hydr rimary Indica Surface Wa High Water Saturation Water Marl Sediment D Drift Depos Algal Mat o Iron Depos	e to gravel ar GY ology Indicato tors (minimum ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5)	nd fill.	<u>s require</u>		a all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6)	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp re of Redu Iron Redu	13) nts (B14) Odor (C1 oheres on uced Iron uction in T) Living Roots (C4)	econdary Indi Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomor	cators (minimum of two requin Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9 or Stressed Plants (D1)
inches due YDROLOG Yetland Hydr rimary Indica C Surface Wa High Water Saturation Water Marl Sediment E Drift Depos Algal Mat o Iron Depos Inundation	e to gravel ar ology Indicato tors (minimum ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) Visible on Aeria	nd fill. ors: of one i	<u>s require</u> y (B7)		a all that a Aquatic True Aq Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp e of Redu Iron Redu ck Surfac	113) nts (B14) Odor (C1 oheres on uced Iron uction in T) Living Roots (C4)	econdary Indi Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomor	cators (minimum of two requin 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)
inches due YDROLOG Yetland Hydr rimary Indica C Surface Wa High Water Saturation Water Marl Sediment D Drift Depos Algal Mat o Iron Depos Inundation Sparsely V	e to gravel ar SY ology Indicato tors (minimum ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) Visible on Aeria egetated Conca	nd fill. ors: of one i of one i ve Surfa	<u>s require</u> y (B7)		a all that a Aquatic True Aq Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge o	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp de of Redu lron Redu ck Surfac or Well Da	113) ts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9)) Living Roots (C4) illed Soils	econdary Indi Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomor	cators (minimum of two requin 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)
inches due inches due inches due inches due indexter indexter Vater Mari Sediment D Drift Depos Algal Mat o Iron Depos Inundation Sparsely V Water-Stai	e to gravel ar SY ology Indicato tors (minimum ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) Visible on Aeria egetated Conca ned Leaves (B9)	nd fill. ors: of one i of one i ve Surfa	<u>s require</u> y (B7)		a all that a Aquatic True Aq Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge o	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp de of Redu lron Redu ck Surfac or Well Da	113) nts (B14) Odor (C1 oheres on uced Iron uction in T) Living Roots (C4) illed Soils	econdary Indi Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomor	cators (minimum of two requin 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)
inches due YDROLOG Yetland Hydr rimary Indica C Surface Wa High Water Saturation Water Marl Sediment D Drift Depos Algal Mat o Iron Depos Inundation Sparsely W Water-Stail Seld Observa	e to gravel ar Gravel ar Gology Indicator tors (minimum ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) Visible on Aeria egetated Conca ned Leaves (B9 ations:	al Imager vve Surfa	<u>s require</u> y (B7) ce (B8)		a all that a Aquatic True Aq Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge c	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp re of Redu lron Redu ck Surfac or Well Da Explain in	113) hts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks) Living Roots (C4) illed Soils	econdary Indi Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomorg FAC-Net	cators (minimum of two requin Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9 or Stressed Plants (D1) ohic Position (D2) utral Test (D5)
inches due YDROLOG Yetland Hydr rimary Indica C Surface Wa High Water Saturation Water Marl Sediment I Drift Depos Algal Mat o Iron Depos Inundation Sparsely Water-Stail ield Observa urface water	e to gravel ar SY ology Indicato tors (minimum ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) Visible on Aeria egetated Conca ned Leaves (B9 ations: present?	al Imager il Imager ive Surfa) Yes	<u>s require</u> y (B7)	d; check	a all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp te of Redu fron Redu ck Surfac or Well Da Explain in	113) hts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches):) Living Roots (C4) illed Soils	econdary Indi Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomorp FAC-Net	cators (minimum of two requin Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9 or Stressed Plants (D1) ohic Position (D2) utral Test (D5)
inches due YDROLOG Yetland Hydr imary Indica C Surface Wa High Water Saturation Water Marl Sediment D Drift Depos Algal Mat o Iron Depos Inundation Sparsely Wa Water-Stair eld Observa Vater table pr	e to gravel ar SY ology Indicato tors (minimum ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) Visible on Aeria egetated Conca ned Leaves (B9 ations: present? esent?	Il Imager Ne Surfa Yes Yes	<u>s require</u> y (B7) ce (B8) <u>X</u>	d; check	a all that a Aquatic True Aq Hydroge Oxidized (C3) Presenc Recent I (C6) Thin Mu Gauge c	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp te of Redu lron Redu ck Surfac or Well Da cxplain in Depth (113) hts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches): inches):) Living Roots (C4) illed Soils) 0-2	econdary Indi Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomorg FAC-Net	cators (minimum of two requin Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9 or Stressed Plants (D1) ohic Position (D2) utral Test (D5)
inches due IYDROLOG Vetland Hydr rimary Indica X Surface Wa High Water Saturation Water Marl Sediment D Drift Depos Algal Mat o Iron Depos Inundation Sparsely Ve	e to gravel ar SY ology Indicato tors (minimum ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) Visible on Aeria egetated Conca ned Leaves (B9 ations: present? esent?	al Imager il Imager ive Surfa) Yes	<u>s require</u> y (B7) ce (B8)	d; check	a all that a Aquatic True Aq Hydroge Oxidizec (C3) Presenc Recent I (C6) Thin Mu Gauge c Other (E	apply) Fauna (B uatic Plar en Sulfide d Rhizosp d Rhizosp te of Redu lron Redu ck Surfac or Well Da cxplain in Depth (113) hts (B14) Odor (C1 oheres on uced Iron uction in T ce (C7) ata (D9) Remarks inches):) Living Roots (C4) illed Soils	econdary Indi Surface X Drainage Dry-Seas Crayfish Saturatic Stunted Geomorg FAC-Net	cators (minimum of two requi Soil Cracks (B6) Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9 or Stressed Plants (D1) ohic Position (D2) utral Test (D5)

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	nty: Cook Sampling Date:			8/19/2015	
Applicant/Owner: CTA/MWRD		Stat	te: Illir	nois Sampling	Sampling Point:		
Investigator(s): J Mengler, V Mosca			Section, Town	ship, Range:	T37N R14E S27		
Landform (hillslope, terrace, etc.):	itch		Local relief (co	ncave, convex, none):		ditch	
Slope (%): Lat: 41.6690	78		-87.602				
Soil Map Unit Name: urban land-orthents clayey con	plex, nearly			VI Classification:	no	ne	
Are climatic/hydrologic conditions of the site typical			? Y	(If no, explain in remarks	S)		
Are vegetation, soilY, or hydr	ology	significa		Y Are "normal circun			
Are vegetation , soil , or hydr		-		N present?	IIslances	Y	
SUMMARY OF FINDINGS		<u> </u>		(If needed, explain	any answei	s in remarks.)	
Hydrophytic vegetation present? Y				· · ·		,	
Hydric soil present?		Is the	e sampled area	within a wetland?	Y		
Wetland hydrology present? Y			-	tland site ID: We			
	a concreto r		,				
Remarks: (Explain alternative procedures here or in	a separate r	eport.)					
Relied primarily upon vegetation and landsc	ape positio	on due to	dry time of se	eason, and mostly ur	banland/fi	I for substrate.	
VEGETATION Use scientific names of pla	nts						
	Absolute	Domina	nt Indicator	Dominance Test	Worksheet	1	
<u>Tree Stratum</u> (Plot size: 9 m)	% Cover			Number of Dominant Sp			
1		·		are OBL, FACW, or		1 (A)	
2				Total Number of Do	minant		
3				Species Across all		1 (B)	
4				Percent of Dominant Sp	pecies that		
5				are OBL, FACW, or	r FAC:	100.00% (A/B)	
	0	= Total Co	ver				
Sapling/Shrub stratum (Plot size: 4.6 m	_)			Prevalence Index	Worksheet		
1				Total % Cover of:	0 v 1 -	0	
2				OBL species FACW species	0 x 1 = 100 x 2 =		
4		• •		FAC species	$\frac{100}{0}$ x 3 =		
5				FACU species	0 x 4 =		
	0	= Total Co	ver	UPL species	0 x 5 =		
Herb stratum (Plot size: 1 m sq)	•		Column totals	100 (A)	200 (B)	
1 Phragmites australis	100	Y	FACW	Prevalence Index	= B/A =	2.00	
2			_				
3				Hydrophytic Vege	etation India	ators:	
4				Rapid test for		vegetation	
5				X Dominance tes			
6	<u> </u>			X Prevalence inc	2ex is ≤3.0*		
8				Morphological		N.	
9				supporting dat separate shee		s or on a	
10				Problematic hy	,	actation*	
	100	= Total Co	ver	(explain)		gotation	
Woody vine stratum (Plot size: 1 m sq)	-		*Indicators of hydric s	soil and wetlen	d hydrology must be	
1	-				ss disturbed or		
2			_	Hydrophytic			
	0	= Total Co	ver	vegetation present?	V		
Pomorko: (Includo abote aumbora bare er er	voto obsisti			present:	<u> </u>		
Remarks: (Include photo numbers here or on a sepa	a ale sneet)						

SOIL	
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Profile Des	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix				dox Feat						
(Inches)	Color (moist)	%	Color (n	noist)	%	Type*	Loc**	Tex	ture	Remarks	
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix											
Hydric So	oil Indicators:							Indicate	ors for Probl	lematic Hydric Soils:	
Hist	tisol (A1)			Sar	ndy Gleye	ed Matrix	(S4)	Coa	ast Prairie Re	edox (A16) (LRR K, L, R)	
	tic Epipedon (A2)		-		ndy Redo		、 ,			7) (LRR K, L)	
	ck Histic (A3)		_		pped Ma					it or Peat (S3) (LRR K, L, R)	
	· · ·	4)				. ,			-		
	Irogen Sulfide (A		_		my Mucl	•			-	Masses (F12) (LRR K, L, R)	
	atified Layers (A5)	_		my Gley		. ,		-	ark Surface (TF12)	
	m Muck (A10)				pleted Ma	. ,		Oth	er (explain in	i remarks)	
Dep	pleted Below Dark	k Surfac	e (A11)	Rec	lox Dark	Surface	(F6)				
Thie	ck Dark Surface (A12)	_	Dep	pleted Da	ark Surfa	ice (F7)	*Indic	ators of hydr	ophytic vegetation and wetland	
Sar	ndy Mucky Minera	al (S1)		Red	dox Depr	essions	(F8)			e present, unless disturbed or	
5 cr	m Mucky Peat or	Peat (S3	3)					,	0,	problematic	
Restrictive	Layer (if observ	ed).									
	ravel, ballast, fill	cu).						Hydric	soil presen	11?	
Depth (inche		nined						inguine			
Remarks:	·										
Remarks.											
Area ma	pped as urban	land, a	and locat	ed alo	ng railr	oad em	bankm	ent. Probe	e refusal wi	ithin 2-4 inches due to	
gravel a					0						
Ŭ											
HYDROL											
-	drology Indicato										
Primary Indi	cators (minimum	of one is	s required	check	all that a	apply)		<u>Se</u>	econdary Indi	icators (minimum of two required)	
X Surface	Water (A1)				Aquatic	Fauna (B	13)		Surface	Soil Cracks (B6)	
High Wa	ater Table (A2)				True Aq	uatic Plar	nts (B14)		X Drainage	e Patterns (B10)	
Saturatio	on (A3)				Hydroge	n Sulfide	Odor (C	1)	Dry-Sea	son Water Table (C2)	
	larks (B1)							Living Roots		Burrows (C8)	
	nt Deposits (B2)				(C3)	11112050				on Visible on Aerial Imagery (C9)	
	posits (B3)				•	e of Redu	uced Iron	(C4)		or Stressed Plants (D1)	
· ·					•			· · ·			
- Č	at or Crust (B4)					ron Redu	iction in T	illed Soils		phic Position (D2)	
· ·	osits (B5)				(C6)				FAC-Ne	utral Test (D5)	
Inundatio	on Visible on Aeria	I Imager	y (B7)		Thin Mu	ck Surfac	ce (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	rvations:										
Surface wat	•	Yes	Х	No			inches):	0-2		tland	
Water table	•	Yes		No	Х	Depth (-	rology	
Saturation p		Yes	X	No		Depth (i	inches):	0	pre	sent? Y	
	pillary fringe)					1 .	<u> </u>				
Describe re	corded data (strea	am gaug	ge, monitor	ing we	II, aerial	photos,	previous	inspections)	, if available:		
Remarks:											
i terriarito.											

Project/Site Lake Calumet CTA Red Line Extension	City/0	County:	Cook Sampling Date:			8/19/2015
Applicant/Owner: CTA/MWRD		State:	Illir	ois	Sampling Point: 18	
Investigator(s): J Mengler, V Mosca		Section, Township, Range: T37N R14				R14E S27
Landform (hillslope, terrace, etc.): dite	ch	Lo	Local relief (concave, convex, none):			ditch
Slope (%): Lat: 41.667289)	Long:	-87.600	100	Datum:	
Soil Map Unit Name: urban land-orthents clayey comp	lex, nearly	level	NV	VI Classificatio	on:	none
Are climatic/hydrologic conditions of the site typical for	r this time o	f the year?	Y (lf no, explain	in remarks)	
Are vegetation, soil Y, or hydrol	ogy	significantly	disturbed?	Y Are "nor	mal circumstances	"
Are vegetation, soil, or hydrol				N present?		Y
SUMMARY OF FINDINGS				(If neede	ed, explain any ans	wers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present?		Is the s	ampled area	within a wet	land? Y	
Wetland hydrology present? Y			•		Wetland 14	
Remarks: (Explain alternative procedures here or in a	senarate re			-		
Relied primarily upon vegetation and landsca	pe positio	n due to dr	y time of se	eason, and r	mostly urbanlan	d/fill for substrate.
VEGETATION Use scientific names of plan	ts.					
	Absolute	Dominant	Indicator	Domina	nce Test Workshe	eet
Tree Stratum (Plot size: 9 m)	% Cover	Species	Status	Number of D	ominant Species that	at
1					, FACW, or FAC:	3 (A)
2				Total Nur	nber of Dominant	
3				Species	Across all Strata:	<u> </u>
4					ominant Species that	
5				are OBL	, FACW, or FAC:	100.00% (A/B)
Sopling/Shrub stratum (Dist size: 4.6 m)	0	= Total Cover		Brovalo	nce Index Worksh	a a t
Sapling/Shrub stratum (Plot size: 4.6 m)					Cover of:	leet
2				OBL spe		1 = 0
3					pecies 100 x	
4				FAC spe	·	3 = 0
5				FACU sp		4 = 0
	0	= Total Cover		UPL spe	cies 0 x	5 = 0
Herb stratum (Plot size: 1 m sq))			Column	totals 100 (A	A) 200 (B)
1 Phragmites australis	100	Y	FACW	Prevaler	nce Index = B/A =	2.00
2						
3					nytic Vegetation I	
4					id test for hydrophy	•
5 6					iinance test is >50⁰ alence index is ≤3	
7						
8					phological adaptati porting data in Rem	N. N
9					arate sheet)	
10				Prob	lematic hydrophyti	c vegetation*
	100	= Total Cover		(exp		č
Woody vine stratum (Plot size: 1 m sq))			*Indicato	rs of hydric soil and we	etland hydrology must be
1 Vitis riparia	20	Y	FACW		present, unless disturbe	ed or problematic
2 Convolvulus sepium	15	Y	FAC	-	rophytic etation	
	35	= Total Cover	-	-	sent? Y	
Remarks: (Include photo numbers here or on a separa	ate sheet)			1		_
	,					

SOIL	
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SOIL									Sa	mpling Point:	18
Profile Des	cription: (Descr	ibe to th	ne depth i	needeo	l to docı	ument th	ne indica	tor or confirm	he abser	ice of indicato	 rs.)
Depth	Matrix		_	Re	dox Feat	ures					
(Inches)	Color (moist)	%	Color (r	noist)	%	Type*	Loc**	Texture	•	Re	marks
*Type: C = (Concentration, D	= Denlet	tion RM =	: Redu	L Ded Matri	iv MS =	Masked	Sand Grains	**Locat	ion: Pl = Pore	Lining, M = Matrix
	oil Indicators:	- Depict	1011, T (W) =	Reduc		ix, ino –	Maskeu			ematic Hydric	-
•	tisol (A1)			Sai	ndy Gleye	ed Matrix	(S4)			dox (A16) (LRF	
	tic Epipedon (A2)		-		ndy Redo		(01)			7) (LRR K, L)	, _,,
	ck Histic (A3)		-		pped Ma					t or Peat (S3) (LRR K, L, R)
	Irogen Sulfide (A	4)	-		amy Mucl	• •		Iron-Ma	anganese	Masses (F12)	(LRR K, L, R)
Stra	atified Layers (A5)	-	Loa	amy Gley	ed Matrix	x (F2)	Very S	hallow Da	rk Surface (TF	12)
2 cr	n Muck (A10)		_	De	pleted Ma	atrix (F3))	Other (explain in	remarks)	
Dep	leted Below Dark	c Surface	e (A11)	Re	dox Dark	Surface	(F6)				
Thic	ck Dark Surface (A12)	_	De	pleted Da	ark Surfa	ice (F7)	*Indicato	rs of hydro	ophytic vegetat	ion and wetland
San	ndy Mucky Minera	l (S1)	_	Re	dox Depr	ressions	(F8)			e present, unle	
5 cr	n Mucky Peat or	Peat (S3	3)							problematic	
	Layer (if observ	ed):									
Type: gr Depth (inche	ravel, ballast, fill es): not determ	nined				-		Hydric so	oil presen	t?	
Remarks:		intea				-					
	pped as urban	land, a	ind locat	ed be	tween g	gravel ro	oads.	Probe refusal	within 2	-4 inches due	e to gravel and
fill.											
HYDROLO											
-	drology Indicato										
	cators (minimum	of one is	s required	; check				Seco	-		m of two required)
X Surface	()					Fauna (B			-	Soil Cracks (B6)	
	iter Table (A2)				-	uatic Plar			-	Patterns (B10)	(22)
Saturatio	. ,				-Hydroge	en Sulfide	Odor (C	1)	- 1	son Water Table	(C2)
	larks (B1)					l Rhizosp	heres on	Living Roots	- '	Burrows (C8)	ial Imagony (CO)
	nt Deposits (B2) posits (B3)				(C3)		uced Iron	(C4)	-	or Stressed Plan	ial Imagery (C9)
	it or Crust (B4)				-				-	ohic Position (D2	
- č	. ,				Recent I (C6)	Iron Redu	iction in T	illed Soils	- '	utral Test (D5)	.)
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7)						ck Surfac	e (C7)		-		
	Vegetated Conca				-	or Well Da					
	tained Leaves (B9		()				Remarks)			
Field Obser	,)						,	T		
Surface wate	er present?	Yes	Х	No		Depth (i	,	0-2		land	
Water table	•	Yes		No No	Х	Depth (i	,		-	rology	\mathbf{v}
Saturation p (includes ca	pillary fringe)	Yes	<u> </u>	No		Depth (i	nunes).	0	pres	sent?	Y

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

Remarks:

Project/Site Lake Calumet CTA Red Line Extension	City/C	County:	Cook		Sampling Date:	8/19/2015		
Applicant/Owner: CTA/MWRD		Stat	te: Illin	iois	Sampling Point:	19		
Investigator(s): J Mengler, V Mosca			Section, Township, Range: T37N R			R14E S27		
Landform (hillslope, terrace, etc.): dite	ch		Local relief (cor	ncave, convex	(, none):	ditch		
Slope (%): Lat: 41.667289)	Long:	-87.600	100	Datum:			
Soil Map Unit Name: urban land-orthents clayey comp	lex, nearly l			VI Classificatio	on:	none		
Are climatic/hydrologic conditions of the site typical fo	r this time of	f the year	?Y (lf no, explain i	in remarks)			
Are vegetation , soil Y , or hydrol	ogy	significar	ntly disturbed?	Y Are "per	mal circumstances"			
			problematic?	N present?		Y		
SUMMARY OF FINDINGS				(If neede	ed, explain any ans	wers in remarks.)		
Hydrophytic vegetation present? N					· ·			
Hydric soil present?		Is the	e sampled area	within a wet	land? N			
Wetland hydrology present? N			es, optional we					
Remarks: (Explain alternative procedures here or in a	separate re		<i>*</i> 1	-				
Relied primarily upon vegetation and landsca	pe positior	n due to	dry time of se	eason, and r	nostly urbanland	/fill for substrate.		
VEGETATION Use scientific names of plan	ts.							
	Absolute	Domina	nt Indicator	Domina	nce Test Workshe	et		
Tree Stratum (Plot size: 9 m)	% Cover	Species		Number of D	ominant Species tha	ł		
1 Morus alba	40	Y	FAC		, FACW, or FAC:	3 (A)		
2 Acer negundo	20	Y	FAC	Total Nun	nber of Dominant			
3				Species /	Across all Strata:	<u> </u>		
4				Percent of De	ominant Species that			
5				are OBL,	, FACW, or FAC:	<u>50.00%</u> (A/B)		
	60 =	= Total Co	ver	<u> </u>				
Sapling/Shrub stratum (Plot size: 4.6 m) 1 Prunus serotina	15	V	FACU	Total % (nce Index Worksho	eet		
2	15	Y	FACU	OBL spe		1 = 0		
3				FACW s				
4				FAC spe				
5				FACU sp				
	15 =	Total Co	ver	UPL spe		5 = 0		
Herb stratum (Plot size: 1 m sq))			Column	totals 100 (A) <u>330</u> (B)		
1 Eupatorium rugosum	10	Y	FACU	Prevalen	nce Index = B/A =	3.30		
2 Arctium minus	10	Y	FACU					
3 Geum laciniatum	5	Y	FACW		nytic Vegetation In			
4				· · ·	d test for hydrophy	•		
5 6					iinance test is >50% alence index is ≤3.0			
6 7								
8					phological adaptation			
9					arate sheet)			
10					lematic hydrophytic	vegetation*		
	25 =	Total Co	ver	(expl				
Woody vine stratum (Plot size: 1 m sq)				*Indicator	rs of hydric soil and wet	land hydrology must be		
1				р	resent, unless disturbed			
2				-	rophytic			
	0 =	= Total Co	ver	-	etation ent? N			
Remarks: (Include photo numbers here or on a separa	ate sheet)			1		-		

SOIL	
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Profile Des	cription: (Descr	ibe to th	ne depth neede	d to docu	ument th	e indica	tor or confirm	n the abser	nce of indic	ators.)	
Depth	Matrix		Re	dox Feat	ures						
(Inches)	Color (moist)	%	Color (moist)	(moist) % Type* Loc**				ire	Remarks		
*Type: C = (Concentration, D	= Denlei	tion RM = Redu	red Matri	v MS =	Masked	Sand Grains	**Locat	ion: PL = P	ore Lining, M = Matrix	
	bil Indicators:	- Depier			x, 1010 -	Maskeu				-	
•			6.0		ad Matrix	(04)			ematic Hyd		
	tisol (A1) tic Epipedon (A2)			ndy Gleye		(54)			. , .	LRR K, L, R)	
		ndy Redo					7) (LRR K,	•			
	ck Histic (A3)			ipped Ma	. ,				•	3) (LRR K, L, R)	
	Irogen Sulfide (A			amy Mucl	•	. ,		•	•	12) (LRR K, L, R)	
	atified Layers (A5)	Loa	amy Gley	ed Matri	x (F2)			irk Surface	(TF12)	
2 cr	n Muck (A10)		De	pleted Ma	atrix (F3)		Other	(explain in	remarks)		
Dep	pleted Below Darl	k Surfac	· · ·	dox Dark							
Thio	ck Dark Surface ((A12)	De	pleted Da	ark Surfa	ce (F7)	*Indicat	*Indicators of hydrophytic vegetation and wetland			
San	ndy Mucky Minera	al (S1)	Re	dox Depr	ressions	(F8)		hydrology must be present, unless disturbed or			
5 cr	m Mucky Peat or	Peat (S3	3)						problemati	C	
Restrictive	Layer (if observ	ed):									
Type: gr	avel, ballast, fill				_		Hydric s	soil presen	it?		
Depth (inche	es): not determ	nined								_	
Remarks:											
Aree me	nnad an urban	lond o	and located be	•		ada	Droha rafuar	d within 0	1 inches	due te arevel end	
	pped as urban	land, a	and located be	tween g	graverno	Jaus.	Prope relusa	ai within ∠	-4 inches	due to gravel and	
fill.											
HYDROLO	DGY										
Wetland Hy	drology Indicate	ors:									
Primary Indi	cators (minimum	of one is	s required; checl	all that a	apply)		<u>Sec</u>	ondary Indi	cators (min	imum of two required	
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface	Soil Cracks	(B6)	
High Wa	ter Table (A2)			True Aq	uatic Plar	nts (B14)	_	Drainage Patterns (B10)			
Saturatio	on (A3)			- Hydroge	n Sulfide	Odor (C1	1) —	Dry-Season Water Table (C2)			
	larks (B1)			-			Living Roots		Burrows (C8		
	nt Deposits (B2)			(C3)	i Kilizosp	neres on			•	Aerial Imagery (C9)	
	posits (B3)			-	e of Redu	uced Iron	(C4)		or Stressed	••••	
	it or Crust (B4)			-					phic Position		
	osits (B5)			(C6)	ron Reau	iction in 1	illed Soils		utral Test (D		
'	on Visible on Aeria	Imagen			ck Surfac	e (C7)				5)	
	Vegetated Conca			-		. ,					
	-			- ~	or Well Da	```					
	tained Leaves (B9)		Other (E	xplain in	Remarks)				
Field Obser Surface wat		Yes	No	х	Depth (i	nchee).		Wei	tland		
Water table	•	Yes	No	<u>X</u>	Depth (i	,			rology		
Saturation p	•	Yes	No		Depth (i	,		-	sent?	Ν	
(includes ca	pillary fringe)				<u> </u>	-					
Describe red	corded data (stre	am gaug	ge, monitoring we	ell, aerial	photos,	previous	inspections), i	f available:			
Remarks:											

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

Project/Site Lake Calumet CTA Red Line Extension	City/C	County:	Cook	Sampling	Date:	8/19/2015	
Applicant/Owner: CTA/MWRD		State	: Illir	nois Sampling	Sampling Point: 20		
Investigator(s): J Mengler, V Mosca			Section, Towns	ship, Range:	T37N R14E S27		
Landform (hillslope, terrace, etc.): dite	ch	L	ocal relief (co	ncave, convex, none):		ditch	
Slope (%): Lat: 41.671562		-	-87.607				
Soil Map Unit Name: urban land-orthents clayey comp	lex, nearly le			VI Classification:	no	ne	
Are climatic/hydrologic conditions of the site typical for	-		Y (If no, explain in remarks	5)		
Are vegetation, soilY, or hydrol				Y Are "normal circun			
Are vegetation , soil , or hydrol				N present?	Islances	Y	
SUMMARY OF FINDINGS		,,		(If needed, explain	any answe	rs in remarks.)	
Hydrophytic vegetation present? Y				, · · ·		,	
Hydric soil present?		Is the	sampled area	within a wetland?	Y		
Wetland hydrology present? Y			-	tland site ID: We		-	
	aoparata ra	-	-,				
Remarks: (Explain alternative procedures here or in a	separate re	eport.)					
Relied primarily upon vegetation and landsca	pe positior	n due to d	ry time of se	eason, and mostly u	banland/fi	ll for substrate.	
VEGETATION Use scientific names of plan	te						
	Absolute	Dominant	Indicator	Dominance Test	Worksheet]	
Tree Stratum (Plot size: 9 m)	% Cover	Dominant Species	Indicator Status	Number of Dominant S			
1		·		are OBL, FACW, o		1 (A)	
2				Total Number of Do	- minant		
3				Species Across all		1 (B)	
4				Percent of Dominant S	becies that		
5				are OBL, FACW, o	r FAC:	100.00% (A/B)	
	0 =	Total Cove	er				
Sapling/Shrub stratum (Plot size: 4.6 m)				Prevalence Index	Workshee	ſ	
1				Total % Cover of:	0	0	
2				OBL species FACW species	0 x 1 = 100 x 2 =		
3				FACW species	$\frac{100}{0}$ x 2 =		
5				FACU species	$\frac{0}{0} \times 4 =$		
	0 =	Total Cove	er	UPL species	0 x 5 =		
Herb stratum (Plot size: 1 m sq)				Column totals	100 (A)	200 (B)	
1 Phragmites australis	100	Y	FACW	Prevalence Index	= B/A =	2.00	
2							
3				Hydrophytic Vege	etation Indi	ators:	
4				Rapid test for		vegetation	
5				X Dominance te			
6				X Prevalence inc	dex is ≤3.0*		
/				Morphological			
8				supporting dat separate shee		s or on a	
10				·	,	a actation*	
	100 =	Total Cove	 er	Problematic hy (explain)	yaropriytic V	syelalion	
Woody vine stratum (Plot size: 1 m sq)				*Indicators of hydric	acil and watlan	d bydrology myst bo	
1					ss disturbed or		
2				Hydrophytic			
	0 =	Total Cove	er	vegetation present?	V		
Demonstra (Include of states and the set				present?	Ť		
Remarks: (Include photo numbers here or on a separa	ate sneet)						

SOIL	
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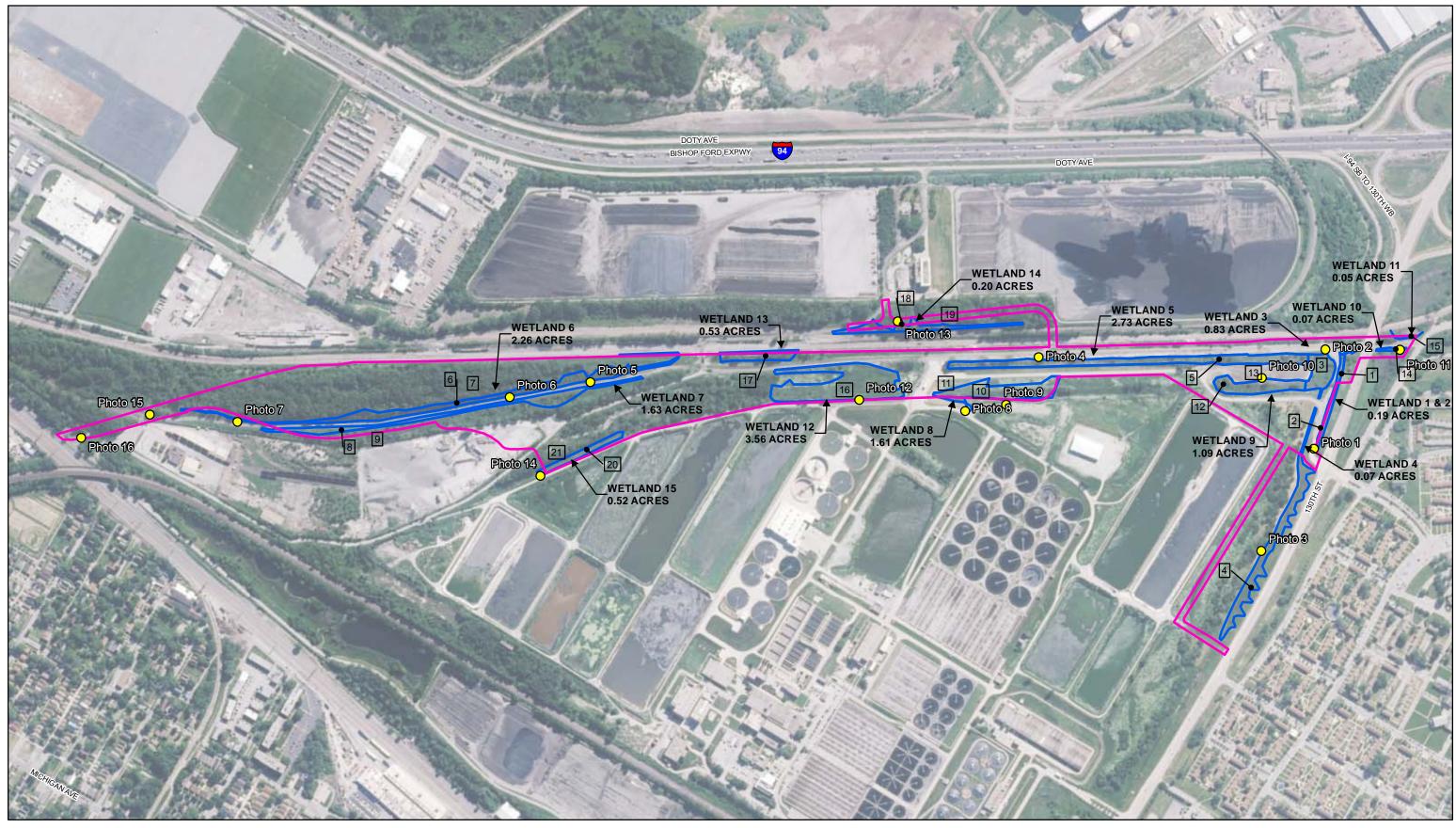
Profile Des	cription: (Descr	ibe to th	ne depth neede	to docu	ument th	e indica	tor or confirm	the abser	nce of indicators.)		
Depth	Depth <u>Matrix</u>		Re	dox Feat	ures						
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textu	re	Remarks		
*Tvpe: C = 0	Concentration, D	= Deplet	tion. RM = Redu	ced Matri	ix. MS =	Masked	Sand Grains.	**Locat	ion: PL = Pore Lining, M = Matrix		
	oil Indicators:								ematic Hydric Soils:		
-	tisol (A1)		Sa	ndy Gley	ed Matrix	(S4)			-		
	tic Epipedon (A2)			ndy Redo		((01)		Coast Prairie Redox (A16) (LRR K, L, R) Dark Surface (S7) (LRR K, L)			
	ck Histic (A3)			ipped Ma	. ,			5 cm Mucky Peat or Peat (S3) (LRR K, L, R)			
	. ,	4)		•••	. ,			•			
	Irogen Sulfide (A			amy Muc	•	• •		Ū	Masses (F12) (LRR K, L, R)		
	atified Layers (A5)		amy Gley		. ,		Very Shallow Dark Surface (TF12)			
	m Muck (A10)			pleted Ma	. ,		Other	(explain in	remarks)		
	pleted Below Darl			dox Dark							
	ck Dark Surface (. ,		pleted Da			*Indicat	ors of hydro	ophytic vegetation and wetland		
	ndy Mucky Minera			dox Depr	ressions	(F8)	hydrolo		e present, unless disturbed or		
5 cr	m Mucky Peat or	Peat (S3	3)						problematic		
	Layer (if observ	ed):									
	avel, ballast, fill				-		Hydric s	oil presen	t?		
Depth (inche	es): not detern	nined			-						
Remarks:											
Area ma	nned as urban	land a	and along stee	n road (emhank	ment	Probe refus	al within 3	2-4 inches due to gravel		
and fill.		ianu, e	and along stee	produt	cinbain	differnt.	T TODE TETUS				
HYDROLO											
-	drology Indicato						_				
	cators (minimum	of one is	s required; check	call that a	apply)		Seco	ondary Indi	cators (minimum of two required		
X Surface	Water (A1)			Aquatic	Fauna (B	13)	_		Soil Cracks (B6)		
High Wa	iter Table (A2)			- '	uatic Plar	• •			e Patterns (B10)		
Saturatio	on (A3)			Hydroge	en Sulfide	Odor (C1	1)	Dry-Seas	son Water Table (C2)		
Water M	larks (B1)			Oxidized	d Rhizosp	heres on	Living Roots	Crayfish	Burrows (C8)		
Sedimer	nt Deposits (B2)			(C3)			_	Saturatio	n Visible on Aerial Imagery (C9)		
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4)	Stunted of	or Stressed Plants (D1)		
Algal Ma	t or Crust (B4)			- Recent I	ron Redu	iction in T	illed Soils	Geomorp	phic Position (D2)		
Iron Dep	osits (B5)			(C6)				FAC-Neu	utral Test (D5)		
Inundatio	on Visible on Aeria	I Imager	y (B7)	Thin Mu	ck Surfac	e (C7)		_			
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	-	or Well Da						
Water-S	tained Leaves (B9)	· · ·			Remarks)				
Field Obser	· ·	/		-			/				
Surface wat		Yes	No	х	Depth (i	inches):		Wet	land		
Water table	present?	Yes	No	Х	Depth (i	inches):		hyd	rology		
Saturation p		Yes	X No		Depth (i	nches):	0	pres	sent? Y		
	pillary fringe)										
Describe red	corded data (stre	am gaug	ge, monitoring we	ell, aerial	photos,	previous	inspections), if	available:			
Remarks:											
I											

Project/Site Lake Calumet CTA Red Line Extension	City/	County:	Cool	ĸ	Sampling Date:	8/19/2015			
Applicant/Owner: CTA/MWRD			te: Illir	nois	Sampling Point:	21			
Investigator(s): J Mengler, V Mosca			Section, Town	ship, Range:	T37N	R14E S27			
Landform (hillslope, terrace, etc.): di	tch		Local relief (co	ncave, convex	(, none):	ditch			
Slope (%): Lat: 41.67156	2	Long:	-87.607	147	Datum:				
Soil Map Unit Name: urban land-orthents clayey complex, nearly level NWI Classification: none									
Are climatic/hydrologic conditions of the site typical f	or this time of	of the year	? Y	(If no, explain i	in remarks)				
Are vegetation , soil Y , or hydro	ology	significa	ntly disturbed?	Y Are "per	mal circumstance	~ "			
	ology		problematic?	N present?		Υ			
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)									
Hydrophytic vegetation present? N									
Hydric soil present?		Is the	e sampled area	a within a wet	land? N				
Wetland hydrology present? N			/es, optional we						
Remarks: (Explain alternative procedures here or in	a conarato r		,, -p						
Remarks. (Explain alternative procedures here of in	a separate r	eport.)							
Relied primarily upon vegetation and landsc	ape positio	n due to	dry time of se	eason, and r	mostly urbanlar	d/fill for substrate.			
VEGETATION Use scientific names of pla	nts								
		Domino	nt Indiantar	Domina	nce Test Worksh	eet			
<u>Tree Stratum</u> (Plot size: 9 m)	Absolute % Cover	Domina Specie			ominant Species th				
1		·			, FACW, or FAC:	2 (A)			
2	·			Total Nur	mber of Dominant				
3					Across all Strata:	4 (B)			
4				Percent of D	ominant Species th	at			
5				are OBL,	, FACW, or FAC:	50.00% (A/B)			
	0	= Total Co	over						
Sapling/Shrub stratum (Plot size: 4.6 m)				nce Index Works	heet			
1 Rhamnus cathartica	80	Y	FAC		Cover of:				
2 Morus alba 3	20	Y	FAC	OBL spe					
3				FACW s FAC spe	·	(2 = 0) (3 = 300)			
	·			FACU spe		4 = 120			
·	100	= Total Co	over	UPL spe		$x_{5} = 0$			
Herb stratum (Plot size: 1 m sq)			Column		A) 420 (B)			
1 Glechoma hederacea	15	Y	FACU	Prevaler	nce Index = $B/A =$	3.23			
2 Arctium minus	15	Y	FACU						
3				Hydroph	nytic Vegetation I	ndicators:			
4				Rapi	id test for hydroph	ytic vegetation			
5					inance test is >50				
6				Prev	alence index is ≤3	3.0*			
7					phological adaptat				
8 9	·				oorting data in Rer arate sheet)	narks or on a			
9 10	·								
····	30	= Total Co	over	Prob (exp	elematic hydrophyl Iain)	ic vegetation*			
Woody vine stratum (Plot size: 1 m sq)	1000100		<u> </u>	,	attand built at a second			
1 *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic									
2					rophytic				
	0	-	etation						
				pres	sent? N	_			
Remarks: (Include photo numbers here or on a sepa	rate sheet)								

SOIL	
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Profile Des Depth	cription: (Descr Matrix	ibe to th	ne depth ne		to doc		ne indica	tor or confir	m the abser	nce of indicators.)		
(Inches)	Color (moist)	%	Color (mo		%	Type*	Loc**	Text	ure	Remarks		
(1101100)		70		<i>(</i>)	70	Type	200	TCA	uic	remarks		
*Type: C = (Concentration, D	= Deplet	ion RM = F	Reduc	ed Matr	ix MS =	Masked	Sand Grains	**I ocat	ion: PL = Pore Lining, M = Matr		
	oil Indicators:									ematic Hydric Soils:		
-	tisol (A1)			Sar		ed Matrix	v (SA)					
	. ,			-			x (04)		Coast Prairie Redox (A16) (LRR K, L, R) Dark Surface (S7) (LRR K, L)			
	tic Epipedon (A2)			-	idy Redo	. ,			•	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	ck Histic (A3)			- '	•••	atrix (S6)			•	t or Peat (S3) (LRR K, L, R)		
Hyc	Irogen Sulfide (A	4)		Loa	my Muc	ky Miner	al (F1)		-	Masses (F12) (LRR K, L, R)		
Stra	atified Layers (A5)		Loa	my Gley	ed Matri	x (F2)	Very	Very Shallow Dark Surface (TF12)			
2 cr	m Muck (A10)			Dep	oleted M	atrix (F3))	Othe	er (explain in	remarks)		
Dep	pleted Below Dark	k Surface	e (A11)	Rec	lox Dark	Surface	e (F6)					
Thi	ck Dark Surface (A12)		Dep	leted D	ark Surfa	ace (F7)	*leadia				
	ndy Mucky Minera			_ `		ressions	• •		*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or			
	m Mucky Peat or	• •	s)	_			(-)	nyare	blogy must b	problematic		
	-		<i>'</i>)							problemade		
	Layer (if observer	ea):						Uudria		*2		
Type: gi Depth (inch	ravel, ballast, fill es): not determ	nined				-		пуалс	soil presen			
		inicu				-						
Remarks:												
Area ma	oped as urban	land, a	and along	steei	o road	embanł	kment.	Probe refu	sal within	2-4 inches due to gravel		
and fill.			and along	01001								
HYDROL												
-	drology Indicato											
Primary Indi	cators (minimum	of one is	s required; o	check	all that	apply)		<u>Se</u>	condary Indi	cators (minimum of two required		
Surface	Water (A1)				Aquatic	Fauna (B	313)	-	Surface	Soil Cracks (B6)		
High Wa	ater Table (A2)				True Aq	uatic Plar	nts (B14)		Drainage	e Patterns (B10)		
Saturatio	on (A3)				Hydroge	en Sulfide	Odor (C1	1)	Dry-Sea	son Water Table (C2)		
	larks (B1)				Ovidized	d Dhizoen	heres on	Living Roots	Cravfish	Burrows (C8)		
	nt Deposits (B2)				(C3)	11112050	neres on	Living Roots	Saturation Visible on Aerial Imagery (C9)			
	posits (B3)				•	e of Red	uced Iron	(C4)		or Stressed Plants (D1)		
·	. ,				•			-		phic Position (D2)		
	at or Crust (B4)					Iron Redu	uction in T	illed Soils				
	oosits (B5)				(C6)			-	FAC-Ne	utral Test (D5)		
	on Visible on Aeria					ick Surfac						
Sparsely	Vegetated Conca	ve Surfa	ce (B8)		Gauge	or Well Da	ata (D9)					
Water-S	tained Leaves (B9)			Other (E	Explain in	Remarks)				
Field Obser	rvations:											
Surface wat	er present?	Yes		No	Х	Depth (,		_	tland		
Water table	•	Yes		No	X	Depth (,		-	rology		
Saturation p		Yes		No	Х	Depth (inches):		pre	sent? N		
	pillary fringe)							lines4	16 an (- 11 - 11 - 1			
Describe ree	corded data (strea	am gaug	le, monitorir	ig we	II, aerial	pnotos,	previous	inspections),	ir available:			
Remarks:												





Photograph Locations

Exhibit: 10

Exhibit Title:

Aerial Date: 2014



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

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

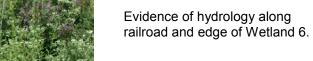
Project Number: 15-0218

Hey and Associates, Inc. Engineering, Ecology and Landscape Architecture Project Name: CTA Red Line Extension



Photograph 5:

Wetland 6 along railroad looking south.



Photograph 6:



Project Number: 15-0218

Hey and Associates, Inc. Engineering, Ecology and Landscape Architecture Project Name: CTA Red Line Extension



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





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:Exhibit:Representative Photographs#10



Existing trash piles in Wetland 10.

Photograph 11:



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



Engineering, Ecology and Landscape Architecture

Project Name: **CTA Red Line Extension**



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**

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

.

CONTRACT 84-270-2P

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

APPENDIX A - TABLE OF CONTENTS

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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

6

5108502

Name of Applicant Metropolitan Sanitary District of Greater Chicago

Effective Date _____ 10 June 1985

Expiration Date (If applicable) 10 June 1988

DEPARTMENT OF THE ARMY PERMIT

Referring to written request dated <u>24</u> January 85 for a permit to:

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

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

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

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

is hereby authorized by the Secretary of the Army: to construct a municipal sludge drying facility

in a wetland near the Little Calumet River

at W¹₂ of Section 27, T37N, R14E, near 130th and Indiana Avenue, Chicago, Cook County, Illinois

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

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

subject to the following conditions:

I. General Conditions:

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

ENG FORM 1721, Sep 82

(ER 1145-2-303)

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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.

2.

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

t. That this permit may not be transferred to a third party without prior written notice to the District Engineer, either by the transferee's written agreement to comply with all terms and conditions of this permit or by the 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.

The following Special Conditions will be applicable when appropriate:

STRUCTURES IN OR AFFECTING NAVIGABLE WATERS OF THE UNITED STATES:

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

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

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

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

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

MAINTENANCE DREDGING:

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

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

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

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

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

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

DISPOSAL OF DREDGED MATERIAL INTO OCEAN WATERS:

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

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

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

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

PERMITTEE

BY AUTHO FINC Ρ R. I.TC FRANK

DISTRICT ENGINEER, U.S. ARMY, CORPS OF ENGINEERS Transferee hereby agrees to comply with the terms and conditions of this permit.

TRANSFEREE

DATE

Δ.

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DEPARTMENT OF THE ARMY CORPS OF ENGINEERS

NOTICE OF AUTHORIZATION

10 June 19 85

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

 AT W2 of Section 27, T37N, R14E, near 130th Street and Indiana Avenue Chicago, Cook County, Illinois
 HAS BEEN ISSUED TO Metropolitan Sanitary District ON 10 June 19 85 of Greater Chicago
 ADDRESS OF PERMITTEE 100 East Erie Street
 Chicago, Illinois 60629

PERMIT NUMBER 5108502

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

ENG Form 4336 Jul 70

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

····		JOINT A	PPLICAT	ION FORM				
1. Application Number (1	to be assigned by Agency	r)	2. Date				ency use only Received)	
· .		- '	24	Jan.	85			
4. Name and address of a	spplicant		Day	Month 5. Name, addı	Year ess, and tit	le of authorized	l'agent	······································
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Creater Chicag 100 East Erie St	treet	· .			J/A	- 201		
Chicago, Ill. 50 Telephone no. during)629 g business bours					usiness hours		
λ/c ()	5868			A/C ()	· · · · · · · · · · · · · · · · · · ·		
6. Describe in detail th		- ts purpose, an	d intended		onal space is	needed, attach	additional support	rt
information to each a								
			See Af	ttachment				
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7. Names, addresses, and property if different	i telephone numbers of a t from applicant.	all adjoining	and potenti	ally affected p	coperty owner	s, including th	e owner of subject	
			None					
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8. Location of activity	<u> </u>	<u> </u>		W.(S.I.J.L	Description:			
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	er descriptive location		`	Tax As	See and the second	ription (if kno		
Chicago	owa							
Cook	Illinois	60628		Map No		Subdiv. No.	Lot No.	
County	State	-	ip Code		Wet land			
		reh 108	5				. l'oveniter	1.5
9. Date activity is pro	posed to commence			- Date activit	y is expected	to be complete	d	
10. Is any portion of the	e activity for which au	thorization is	s sought nov	w complete?	Yes	No If answer	is "Yes" give re	asons in
	th and Year the activity						the existing work	
 List all approvals o discharges, deposits 	r certifications require, or other activities de Illinois Department of	escribed in D	his applicat	tion. If this f	orm is being	used for concur	rent application	to the
Issuing Agency	Type Approval		Identificati	*		Application		f Approva
lione			•	•				
	· .		t		•			
, `			<i>v</i>					
12. Has any agency denie	d approval for the acti If "Yes", explain in rem	vity describe	d herein or	for any activit	y directly r	elated to the ac	tivity described	berein.
	contract 18 des		as: SI	udge Uryir	ig Area	- West at	Calumet	•
	ge Treatment P					. .		
•		•.			•			
14. Application is hereb contained in the app	lication, and that to t	the best of my	knowledge :	and belief, such	information	at I am familiar is true, comple	with the informate, and accurate.	tion
I further certify th	hat I possess the author	ity to undert	ake the pro	posed activities	• 2 <u>1 £</u>			
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JOINT APPLICATION FORM

INFORMATION

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

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

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

INSTRUCTIONS

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

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

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

Dredging and Fill Activities - Describe the location, type, composition and quantity of material to be dredged/filled, method of dredging/filling, and method of transportation to disposal/fill site. Also describe the disposal/fill site by including location, quantity of material 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 therein.

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

- 1.
- z.
- 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.
- a. Ecological and Natural Resource Impacts
- (permanent and temporary) (1) Fish and wildlife populations (include threatened and
- Aquatic habitat (include shellfish and benthic life)
- (3) Vegetation habitat
- Wetland area (marshes, bogs, swamps, etc.) (4) (5)
- 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)
 (d) Air quality and noise
 (7) Soil erosion and siltation

- Social and Economical Imp (permanent and temporary) ь. Lapaces
- (1) Aestherics
- Cultural values
 - Cultural values
 (a) Historic and archaeological sites
 (b) Other (national rivers, vilderness areas, recreation areas, parks, monuments, vild 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
- (3)
- (4) (5)
- (6)
- (7) (8)
 - Land use
 - (a) Conservation
 - (a) Conservation
 (b) Prime and unique farmlands
 (c) Food production
- (d) Existing and potential use (zoning and planning) (9)
 - Economic

 - (a) Energy needs
 (b) Employment (regional growth)
 (c) Tax base (property values)

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

Dravings: Each sheet of drawings submitted should contain a <u>title block</u> in the lower right hand corner identifying the proposed activity and contain the name of the body of water, river mile (if spplicable), 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:

- 1.
- 3.
- Project site Name of waterway All applicable boundary lines Name of and distance to local town, community ۸.,
- or other identifying location.

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

- 1. Existing shoreline and the normal water surface elevation (if Mean Sea Level datum is not used,
- adjustment should be indicated) Adjuscent property lines and ownership as listed in item 7 of the application form 2.
- 3.
- Principal dimensions of the structure or work and extent of encroschment into the waterway (as measured from a fixed structure or object)
- 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 1.

- Distance between proposed activity and mavigation channel, when applicable
- Floodway/Floodplain lines if established and if known
- Graphic or numerical scale A mote describing the proposed method of revegetion or stabilization of disturbed areas
- 2. Graphic or numerical scales (horizontal and vertical)
- North arrow

- Names of all roads in the vicinity of the site

 - 6. 7. Graphic or numerical scale North arrow

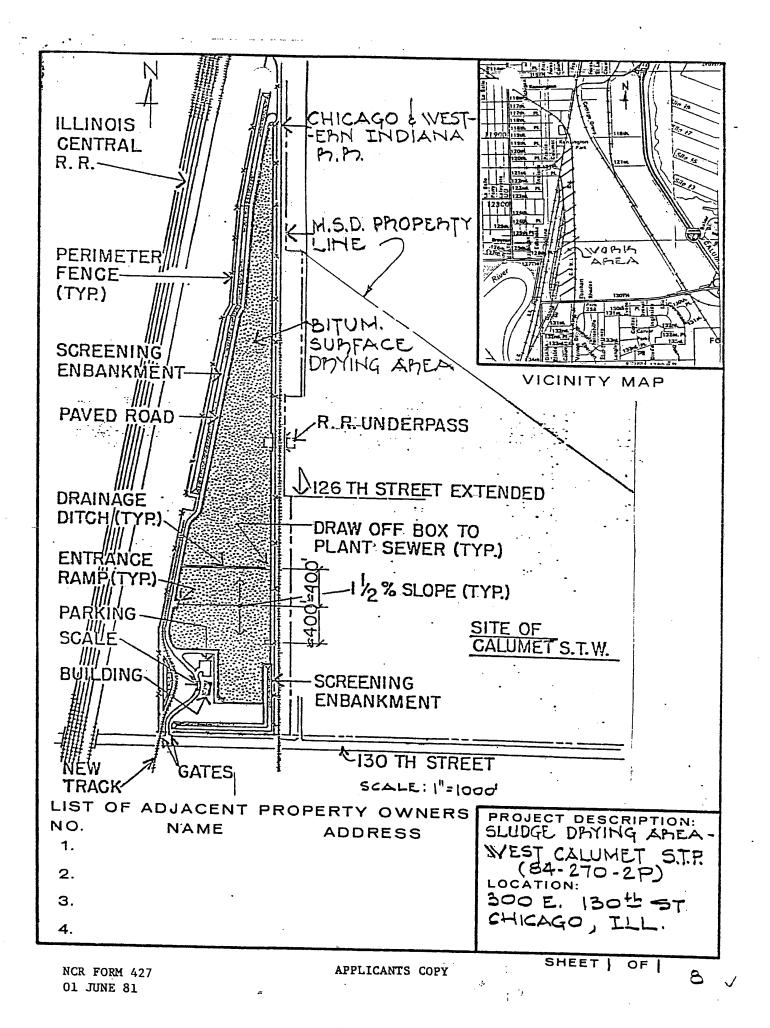
 - 4.
- 5.' 6.

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 hox.

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NICHOLAS J. MELAS BOARD OF COMMISSIONER JOANNE H. ALTER PRESIDENT NELLIE L. JONES JAMES C. KIRIE DIS MAR THIU T P H 1.5600 <u>enn</u> RICHARD J. TROY 11

May 29, 1985

THOMAS S. FULLER GLORIA MAJEWSKI NICHOLAS J. MELAS AURELIA PUCINSKI LOUIS S. VIVERITO

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).

-2-

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	2 5		
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 $7\frac{1}{2}$ acres, a wet zone of $4\frac{1}{2}$ acres and an upland support area of $3\frac{1}{2}$ 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 15¹/₂-acre development area be removed from the sludge drying area contract, and be developed into a quality wetland on the basis of the following schedule:

- completion of preliminary design - September 1985,

- completion of design contract documents - January 1986,

- and award and construction - summer 1986.

-3-

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

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Frank E. Dalton Chief Engineer

FED:mt Enclosures GT: bcc: Barbolini DiVita Kelly File

بالمنحة النابع فدخائفهم لنابله النااعاتية واجتاعيا عاري

Illinois Environmental Protection Agency 2200 Churchill Road. Springfield. IL 62706

217/782-0610

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

March 22, 1985

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

Gentlemen:

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

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

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

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

The applicant shall not cause:

- a. violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C: Water Pollution Rules and Regulations;
- b. water pollution as defined and prohibited by the Illinois Environmental Protection Act: and
- c. interference with water use practices near public recreation areas or water supply intakes.

Illinois Environmental Protection Agency 2200 Churchill Road, Springfield, IL 62706

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.
- 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.

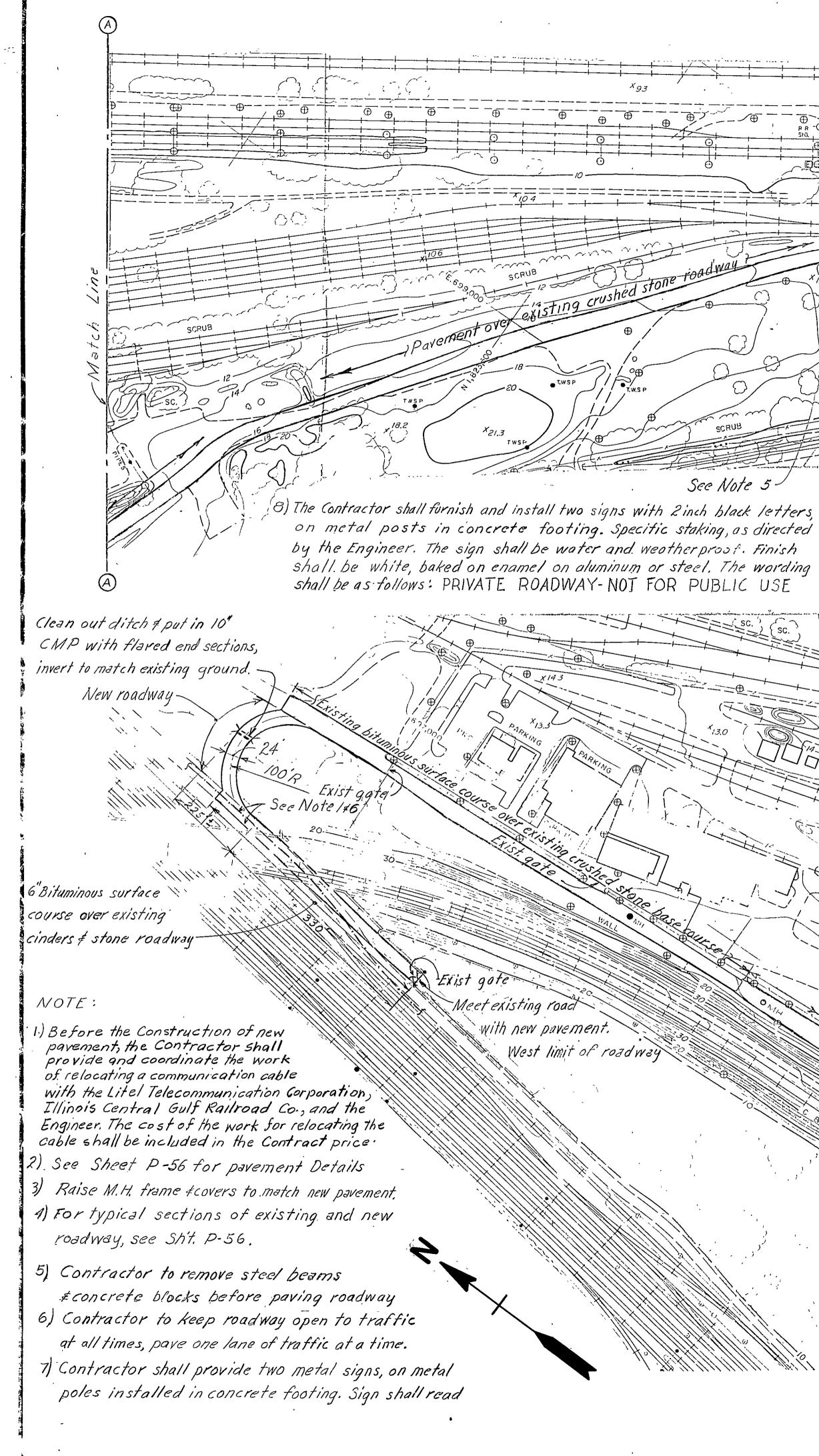
Very truly yours amo Thomas G. McSwiggin, P.E

Manager, Permit Section Division of Water Pollution Control

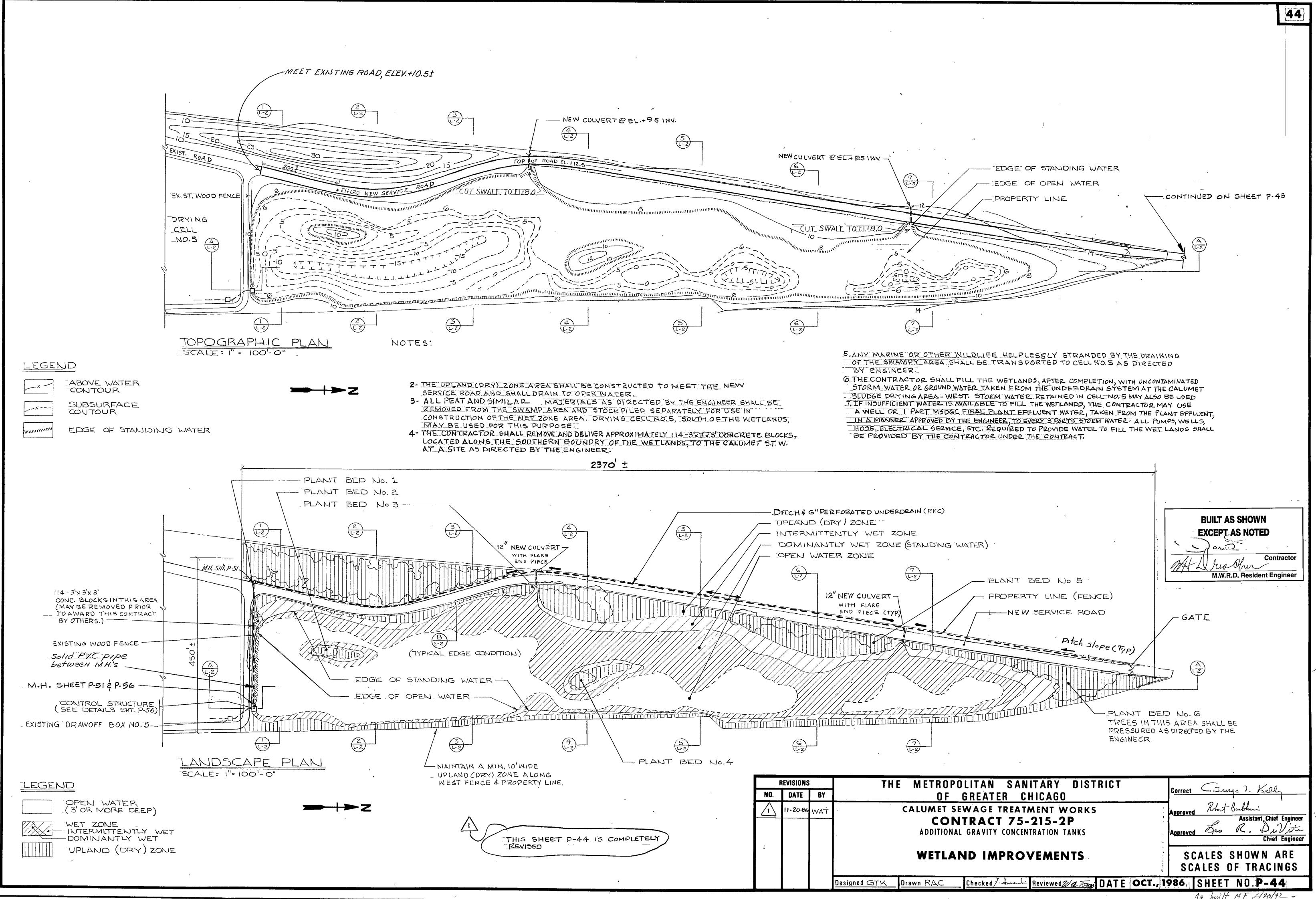
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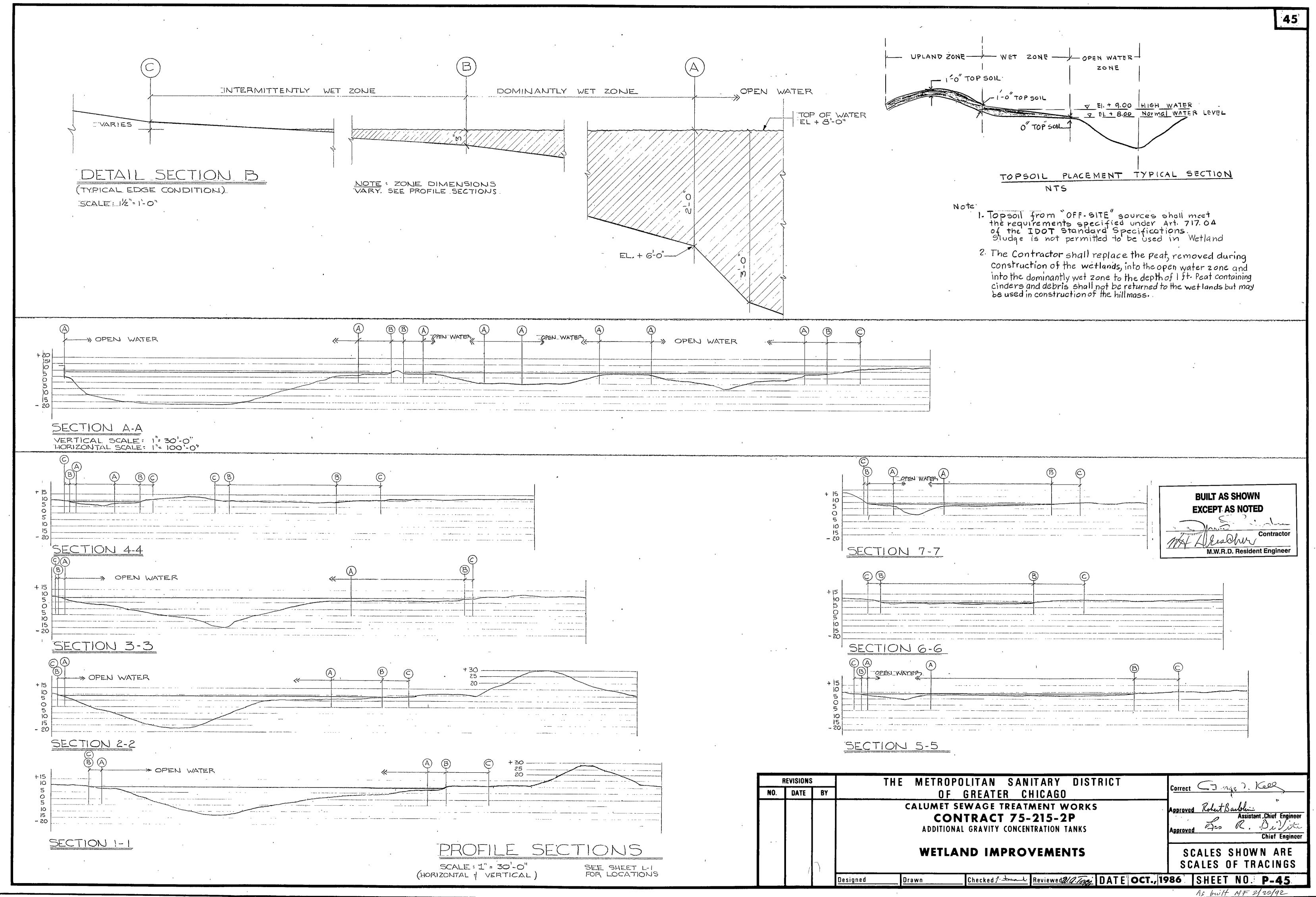
Attachment

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



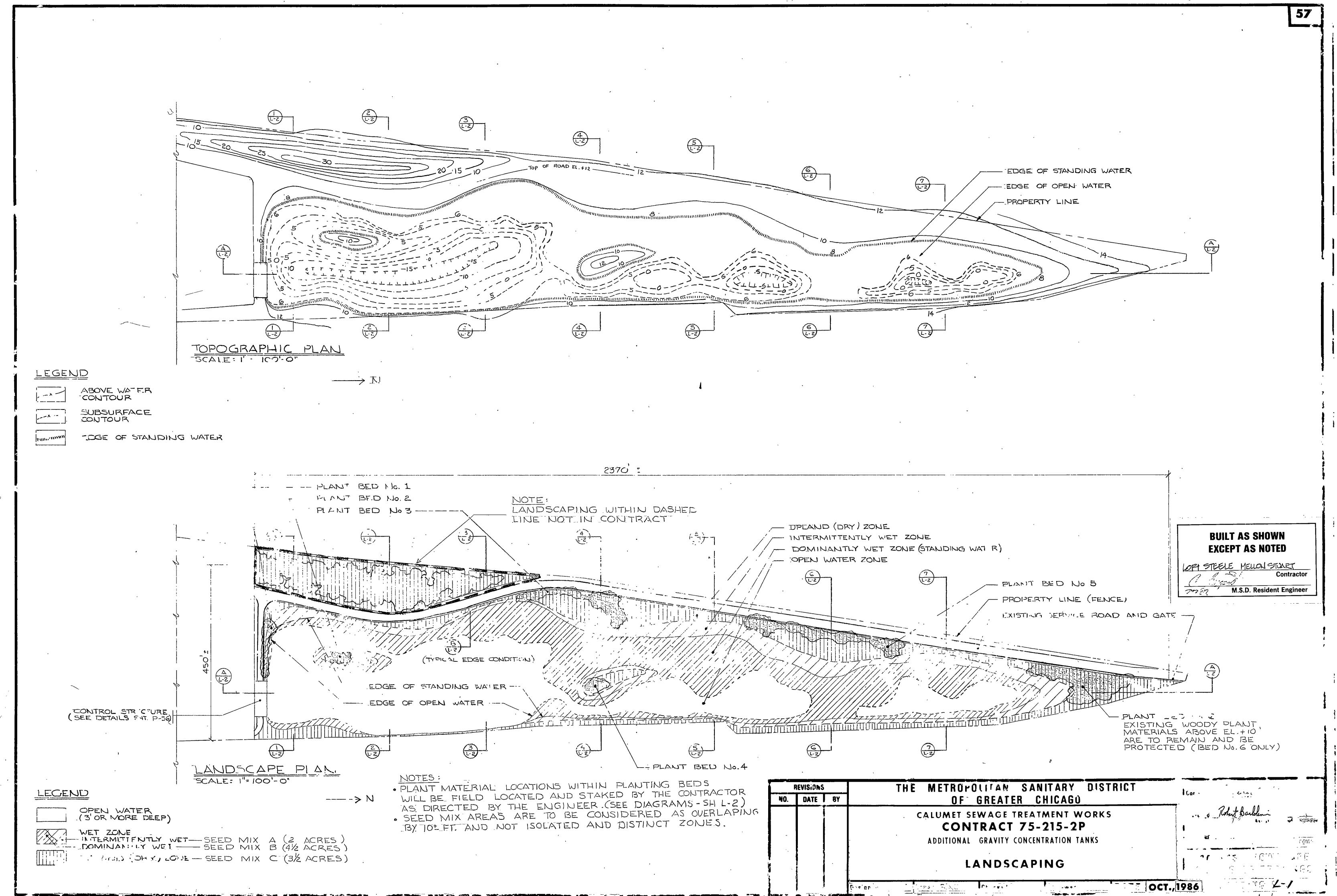
43 ISLAND CONRAIL - R - R / R -SERVICE Limit of new roadway ×14.2 Electrical duct line UNDER CONSTRUCTION SCRUB New roadway Existing roadway to be 10"CMP. culvert w/ flared East limit of new roadway end sections, invert to repaved see detail Sht. P-56 match existing ground - \cap \bigcirc 6 ELEVATOR (A) Limit of new roadway Exist. gate x 13.2 New roadway Fill in corner of Jagoon BUILT AS SHOWN -Relocate fence & provide 26 gate **EXCEPT AS NOTED** Relocate utility poles Limit of new roadway Contracto Hoscher M.W.R.D. Resident Engineer THE METROPOLITAN SANITARY DISTRICT กะบราบเจะ Correct Oblant J. McCarthy NO. DATE BY OF GREATER CHICACO Engr. of Process Design 1210ved Robert Barblini CALUMET SEWAGE TREATMENT WORKS Assistant Chief Engineers **CONTRACT 75-215-2P** norm of Ers R. Chief Engineer ADDITIONAL GRAVITY CONCENTRATION TANKS WORLES SHOWN ARE SERVICE ROAD TO CALUMET-WEST i00' (SCALE: I"= 100'-0" SCALES OF TRACINGS unless noted Reviewed W. a. Essi DATE SHEET NO P-43 Drawn RK. Checked Designed KK



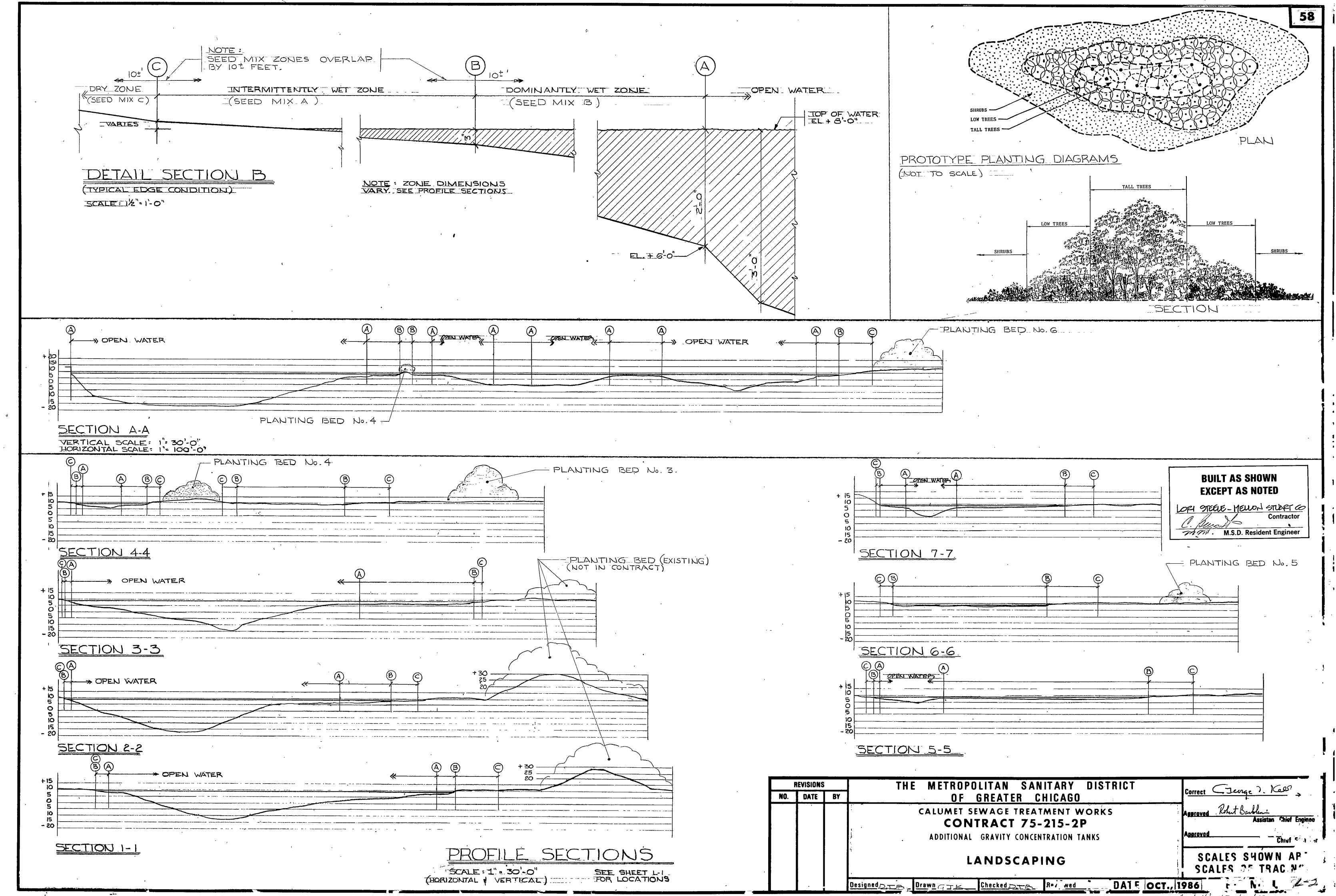


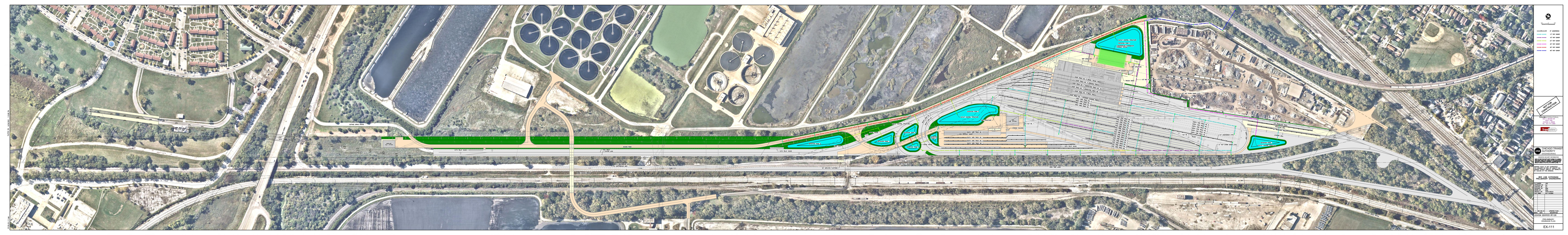
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Kensington Marsh - Drainage Runoff from Proposed Rail Yard

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 Even			ent	nt 50 Year Storm Event				100 Year Storm Event			
	Volume	Peak Flow	Storm	Volume	Peak Flow	Storm	Volume	Peak Flow	Storm Duration	Volume	Peak Flow
Duration	CF	CFS	Duration	CF	CFS	Duration	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 <u>mfratinardo@transitchicago.com</u> or Robin

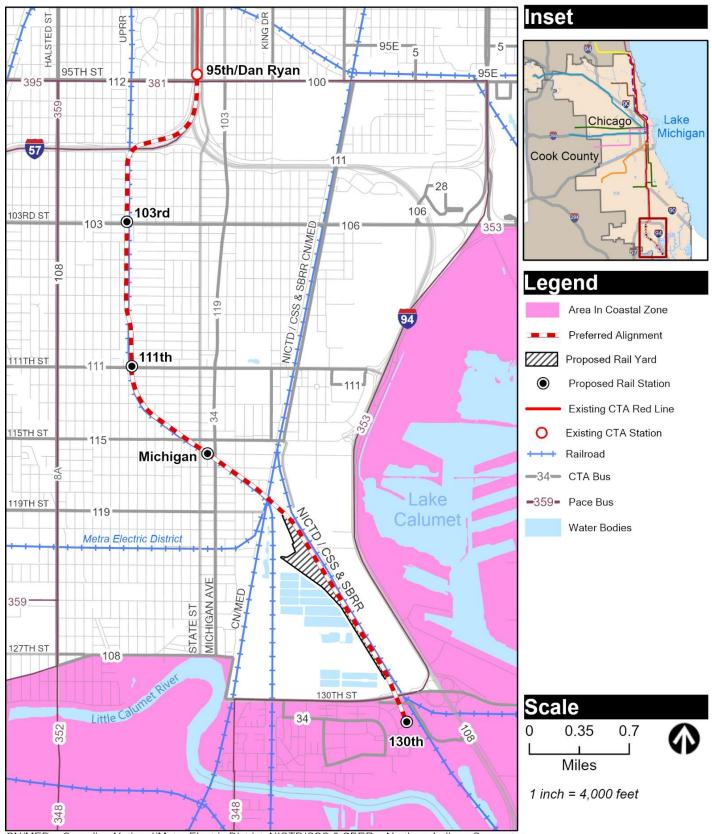
Martel at <u>rmartel@wightco.com</u> or 312.261.5730. If preferred, we can set up a virtual meeting to discuss any clarifications or questions you have regarding this request.

Regards,

Marlise Fratinardo Senior Project Manager, Planning Chicago Transit Authority

<u>Enclosures</u>: **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



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 <u>https://www.transit.dot.gov/funding/grant-programs/capital-investments/about-program</u>. 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

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

cc: Kelley Brookins, Regional Administrator, TRO-5



IDNR Response to Illinois Coastal Management Federal Consistency Review Letter

October 8, 2021





BJ Pritzker, Governor Colleen Callahan, Illinois Department of Natural Resources Director 160 N. LaSalle St., Suite S-703 • Chicago, Illinois 60601 • 312-814-1405 • www.dnr.illinois.gov/cmp

October 8, 2021

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

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

Dear Ms. Fratinardo,

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

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

Sincerely,

Tarro P. Carry

James P. Casey