Proposed revetment installation and outfall extension in Lake Michigan at 1401 Sheridan Road, North Chicago, IL 60064.

Abbvie, 1401 Sheridan Road, Department 720, Building P1, North Chicago, IL 60064 has applied for an Illinois Department of Natural Resources, Office of Water Resources permit for revetment installation and outfall extension in Lake Michigan at 1401 Sheridan Road, North Chicago, IL 60064.

The applicant’s current shore protection consists of a revetment. The applicant proposes to install a revetment and extend an existing outfall. Approximately 550 ft of armor stone will be installed in certain areas across the shoreline. The new armor stone revetment across the shoreline will have a crest elevation of approximately 590 ft. The existing outfall is proposed to be extended by 20 ft to accommodate the proposed revetment construction. The proposed project will be reviewed using the Department’s Part 3704 Rules. A location map and plans are attached to this notice.

No work is to start on this project unless and until such a time that the permit is issued.

Plans for the work may be seen at the Office of Water Resources, Chicago Office, 100 W. Randolph Street 15th floor, Chicago, Illinois 60601. Inquiries and requests to review the plans may be directed to James Kessen of the Chicago Office at (312) 793-0990 or james.kessen@illinois.gov. An expanded version of the public notice can be viewed at http://www.dnr.illinois.gov/WaterResources/Pages/PublicNotices.aspx. You are invited to send comments regarding the work to the Chicago Office by August 10, 2022.

July 11, 2022
April 28, 2022

Ms. Kathleen Chernich
Senior Project Manager
U.S. Army Corps of Engineers
Chicago District Regulatory Branch
231 South LaSalle Street
Suite 1500
Chicago, IL 60604

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

Mr. Darren Gove
Illinois Environmental Protection Agency
Division of Water
1021 North Grand Avenue East
Springfield, IL 62794

Subject: Proposed Shoreline Protection and Slope Stabilization
Lake Michigan at 1401 Sheridan Road, North Chicago, Illinois 60064
Section 404/401, Section 10, and IDNR Navigable Waterway Permit Application

Dear Kathy, James, and Darren

The attached letter report provides information that supports the attached permit application for the proposed slope and shoreline protection structure at 1401 Sheridan Road, North Chicago, Illinois. The proposed work includes approximately 550 feet of armor stone revetment along the Lake Michigan shoreline including the construction of a stabilized 2H:1V slope at the toe of bluff. It also includes a minor extension of an existing water outfall to accommodate the proposed stone revetment reconstruction.

The project owner contact for this site is Harrison Garo If you have any questions regarding this permit report, please contact Bill Weaver

Sincerely,

Samuel Shaffer
Project Engineer

William J. Weaver, P.E., D.WRE
Vice President – Sr. Principal Engineer

Attachments
Attachment A – Joint Application Form
Attachment B – List of Neighboring Properties
Attachment C – Permit Plans

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1.0 Project Introduction and Setting

The industrial property located at 1401 Sheridan Road in North Chicago, Illinois has experienced significant bluff toe and shoreline erosion and structure damage. A location map for the project site is provided on the plan cover sheet in Attachment C. The elevated Lake Michigan levels and significant wave storms that have occurred for several years have damaged the existing lakefront structures and caused extensive erosion on the land side of these structures.

The work proposed as part of this application includes the installation of an armor stone revetment for approximately 550 linear feet of shoreline. The toe of slope bluff will be stabilized with the construction of a 2H:1V slope fill west of the stone revetment. The existing revetment stone crest elevation ranges from approximately 585.0 to 592.0 NAVD88. Proposed revetment stones will be placed up to approximately elevation 592 NAVD88.

Following is an aerial photograph of the Project location:
Following are photographs of the existing slope and revetment failure conditions (photo locations are shown on the permit plans):
The existing armor stone revetment within the proposed project limits has experienced extensive failure. As a result, the upland bluff slopes are unstable and failing. Without a competent armor stone revetment, the slopes will continue to be unstable, and failures will progress. Photograph locations are provided above and on the Permit Plans provided in Appendix C.

2.0 Proposed Shoreline Restoration

The project will include construction of a properly designed armor stone revetment along the shoreline areas designated in the proposed plans provided in Attachment C. The revetment will be placed to provide a stable slope behind and above the structure. The revetment height is designed to manage anticipated wave runup to prevent upland erosion for the design wind wave event. The original stone revetment was constructed of undersized stone and was not high enough to resist wave runup overtopping.

- The size of the armor stone is based on an evaluation of the wave climate that attacks the face of the structure using Coastal Engineering Manual and Goda (2000) computation procedures. The design parameters that determine the stone size include incident wave attack for a variety of 200-year wind wave storms and attack directions, stone density, and wave characteristics such as wavelength, period, and lakebed slope.
- The armor stones will be placed to form a two-layer thick blanket based on the Mean stone size. The actual stone weights will range in size at about 75% to 125% of the median stone weight. A 1.5’ thick bedding layer of core stone, comprised of stones ranging in size from fist
to football size, is placed under the large armor stone. A geotextile fabric will underly the core stone.

The drawings included in Attachment C depict the ordinary high-water mark (OHWM) for the existing and proposed condition. The OHWM for this area is elevation 583.0 (IGLD85). It is likely that the ordinary high water is lower. If the old armor stone had been constructed with larger stones placed higher, the ordinary high-water line would be expected to be lower. As illustrated in aerial photos that predate 2018, erosion didn’t occur in the restoration areas until after 2017 when Lake Michigan levels attained record or near record levels. Prior to that time, the ordinary high water occurred on the face of armor stones. No vegetation, rack lines or other features that would imply a higher OHWM appear to have been present.

Qualitative Assessment of the habitat near the project area: The project area along the shoreline location that is being restored is comprised of armor stone revetment and eroding earthen slope. This revetment has failed due to inadequate stone size and placement, and the stones are strewn on the lakebed. The lakebed is regularly disturbed by wave attack and reflections from the failing revetment. The areas upland of the revetment are comprised of grassland. Wave overtopping regularly attacks the failing revetment in the plan area. As a result, no plant or other habitat are present. The nearest ravine is 7,300 feet to the south at Great Lakes Harbor, and 9,000 feet to the north near Waukegan Harbor. There are no known nearby reefs or shoals or other habitat features present at the project site.

A Joint application form is provided in Attachment A. A list of adjacent property owners is provided in Attachment B. The permit plans are provided in Attachment C.
Attachment A

Joint Application Form
**JOINT APPLICATION FORM FOR ILLINOIS**

**ITEMS 1 AND 2 FOR AGENCY USE**

<table>
<thead>
<tr>
<th>1. Application Number</th>
<th>2. Date Received</th>
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**3. and 4. (SEE SPECIAL INSTRUCTIONS) NAME, MAILING ADDRESS AND TELEPHONE NUMBERS**

<table>
<thead>
<tr>
<th>3a. Applicant’s Name:</th>
<th>3b. Co-Applicant/Property Owner Name (if needed or if different from applicant):</th>
<th>4. Authorized Agent (an agent is not required):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harrison M Garo</td>
<td>Company Name (if any): Abbbie</td>
<td>Bill Weaver</td>
</tr>
<tr>
<td></td>
<td>Address: 1401 Sheridan Rd Dept 720, Building P1 North Chicago, IL 60064</td>
<td>Company Name (if any): AECOM</td>
</tr>
<tr>
<td></td>
<td>Email Address:</td>
<td>Address: 303 E Wacker Dr Suite 1400 Chicago, IL 60601</td>
</tr>
<tr>
<td></td>
<td>Applicant’s Phone Nos. w/area code:</td>
<td>Email Address:</td>
</tr>
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<td>Applicant’s Phone Nos. w/area code:</td>
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<tr>
<td></td>
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<td>Fax:</td>
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**STATEMENT OF AUTHORIZATION**

I hereby authorize, William J. Weaver, to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

03 MAY 2022

Date

**5. ADJOINING PROPERTY OWNERS (Upstream and Downstream of the water body and within Visual Reach of Project)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Mailing Address</th>
<th>Phone No. w/area code</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Charles A Sheridan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. North Shore Sanitary District</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
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**6. PROJECT TITLE:**

**Shoreline Protection**

**7. PROJECT LOCATION:**

North Chicago, Illinois

<table>
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<tr>
<th>LATITUDE: 42.33713</th>
<th>LONGITUDE: -87.82783</th>
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<tr>
<td>°N</td>
<td>°W</td>
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<table>
<thead>
<tr>
<th>UTM</th>
<th>Northing: 4687540</th>
<th>Easting: 431804</th>
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**STREET, ROAD, OR OTHER DESCRIPTIVE LOCATION**

<table>
<thead>
<tr>
<th>Sheridan Rd</th>
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</table>

<table>
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<tr>
<th>LEGAL DESCRIB</th>
<th>QUARTER</th>
<th>SECTION</th>
<th>TOWNSHIP NO.</th>
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<tbody>
<tr>
<td>WATERWAY</td>
<td>NE</td>
<td>33</td>
<td>45</td>
<td>12</td>
</tr>
</tbody>
</table>
8. PROJECT DESCRIPTION (include all features):
The proposed work as part of this project includes the installation of approximately 390 feet of armor stone revetment. Armor stone size is approximately 3 to 5 tons. Stone aggregate fill will be placed west of the revetment stone to create a stable 2H:1V slope. An existing outfall pipe will be extended approximately 10' to accommodate the proposed revetment. See attached letter report for additional details.

9. PURPOSE AND NEED OF PROJECT:
To address shoreline erosion and stabilize the toe of the bluff slope.

10. REASON(S) FOR DISCHARGE:
Clean armor stone will be placed in Lake Michigan to protect existing shoreline and stabilize toe of bluff slope. See attached plans for details.

11. TYPE(S) OF MATERIAL BEING DISCHARGED AND THE AMOUNT OF EACH TYPE IN CUBIC YARDS FOR WATERWAYS:
TYPE: Clean armor stone, clean core stone, and crushed stone fill
AMOUNT IN CUBIC YARDS: 1,700 CYD

12. SURFACE AREA IN ACRES OF WETLANDS OR OTHER WATERS FILLED (See Instructions)
0.26 AC

13. DESCRIPTION OF AVOIDANCE, MINIMIZATION AND COMPENSATION (See instructions)
Stone placement required to protect the Lake Michigan shoreline from aggressive wave attack. An existing outfall will be extended to accommodate the stone revetment. Refer to letter report that this form is attached to for further details.

14. Date activity is proposed to commence
Summer 2022

Date activity is expected to be completed
Spring 2023

15. Is any portion of the activity for which authorization is sought now complete? Yes [X] No
Month and Year the activity was completed

NOTE: If answer is "YES" give reasons in the Project Description and Remarks section. Indicate the existing work on drawings.

16. List all approvals or certification and denials received from other Federal, interstate, state, or local agencies for structures, construction, discharges or other activities described in this application.

17. CONSENT TO ENTER PROPERTY LISTED IN PART 7 ABOVE IS HEREBY GRANTED.
Yes [X] No

18. APPLICATION VERIFICATION (SEE SPECIAL INSTRUCTIONS)
Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

________________________
Signature of Applicant or Authorized Agent

________________________
Signature of Applicant or Authorized Agent

03 May 2022

Date

□ Corps of Engineers
□ IL Dep't of Natural Resources
□ IL Environmental Protection Agency
□ Applicant's Copy

Revised 2010

SEE INSTRUCTIONS FOR ADDRESS
Attachment B

List of Neighboring Properties
Attachment B – List of Neighboring Properties

**North of Project Site**

Charles A Sheridan, TTEE

K Development LLC

**South of Project Site**

North Shore Sanitary District

United States

C/O Federal Bureau of Investigation
Candace Fryburger, Trustee

Karen A Anger, Trustee
Attachment C

Permit Plans
SOIL EROSION AND SEDIMENT CONTROL PLANS AND DETAILS

SOIL EROSION AND SEDIMENT CONTROL PLANS AND DETAILS

AGENCY.

REQUIRED AS DIRECTED BY THE ENGINEER, ENFORCEMENT OFFICER, OR OTHER GOVERNING M. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE PROPERTY L. IF INSTALLED SOIL EROSION AND SEDIMENT CONTROL MEASURES DO NOT MINIMIZE SEDIMENT LEAVING THE DEVELOPMENT SITE, ADDITIONAL MEASURES MAY BE REQUIRED.

PERIODS. THE ENFORCEMENT OFFICER, OR APPROVED REPRESENTATIVE, MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES. PERIODIC INSPECTION OF DEWATERING SYSTEMS SHOULD BE MADE DURING THE OPERATIONAL PERIOD. THE ENFORCEMENT OFFICER, OR APPROVED REPRESENTATIVE, MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.

SEDIMENTATION. DISCHARGES SHALL BE ROUTED THROUGH AN APPROVED ANIONIC POLYMER DEWATERING SYSTEM OR A SIMILAR MEASURE AS APPROVED BY THE ENFORCEMENT OFFICER. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS.

STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT TRAP OR BASIN.

SLOPES STEEPER THAN 3H:1V SHALL BE STABILIZED WITH APPROPRIATE MEASURES AS APPROVED BY THE ENFORCEMENT OFFICER.

ALL STOCKPILES SHALL HAVE APPROPRIATE MEASURES TO PREVENT EROSION. STOCKPILES SHALL NOT BE PLACED IN FLOOD PRONE AREAS OR EMBANKMENTS HAVING SLOPES GREATER THAN OR EQUAL TO 3H:1V, AND APPROVED BY THE ENGINEER, SHALL BE STABILIZED WITH SOD, MAT, OR BLANKET IN COMBINATION WITH SEEDING.

DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE END OF ACTIVE HYDROLOGIC DISTURBANCE OR REDISTURBANCE.

15. SOIL EROSION AND SEDIMENT CONTROL MEASURES INSTALLED BY THE CONTRACTOR SHALL BE MAINTAINED TO CONTROL SEDIMENT DISCHARGES DURING THE CONTRACT PERIOD UNTIL FINAL STABILIZATION. THIS INCLUDES MAINTENANCE OF PERIODIC STORMWATER CONTROL MEASURES AND A STABILIZED CONSTRUCTION ENTRANCE, AS SHOWN ON THE CONSTRUCTION PLANS, SHALL BE LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING THE PROJECT SITE FROM OR TO A PUBLIC RIGHT OF WAY, DESIGNATED BUFFERS.

16. TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.

17. UNLESS OTHERWISE REQUESTED BY THE CONTRACTOR, TEMPORARY SEDIMENT CONTROL MEASURES AND PERIMETER CONTROLS SHALL BE REPAIRED AND REPLACED TO REFLECT ANY SIGNIFICANT CHANGES IN THE SOIL EROSION AND SEDIMENT CONTROL MEASURES USED ON SITE.

18. THE CONTRACTOR SHALL PROVIDE APPROPRIATE MEASURES TO PREVENT THE DELIVERY OF SEDIMENT TO ANY WATER BODY. THE CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER THAT PREVENTS THE IMPACT OF SEDIMENTATION TO THE SITE DURING EACH WORK PERIOD. FINAL STABILIZATION IS DEFINED AS; GREATER THAT 80% VEGETATIVE COVERAGE ON ALL DISTURBED AREAS NOT PERMANENTLY STABILIZED BY AGGREGATE OR OTHER MEANS.

19. THE CONTRACTOR SHALL PROVIDE APPROPRIATE MEASURES TO MINIMIZE THE IMPACT OF THE WORK ON THE SITE TO A LEVEL THAT IS MINIMALLY DISTURBING TO THE ENVIRONMENT, INCLUDING THE PROTECTION OF THE WETLANDS, RESIDENTIAL AREAS, AND THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS SET FORTH BY THE ILLINOIS EPA.

20. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM ANY SUB-CONTRACTORS WHO MAY PERFORM WORK ON THIS PROJECT, OF THE REQUIREMENTS IN IMPLEMENTING AND MAINTAINING THESE EROSION CONTROL PLANS AND THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS SET FORTH BY THE ILLINOIS EPA.

21. THE CONTRACTOR SHALL PROVIDE APPROPRIATE MEASURES TO MINIMIZE THE IMPACT OF THE WORK ON THE SITE TO A LEVEL THAT IS MINIMALLY DISTURBING TO THE ENVIRONMENT, INCLUDING THE PROTECTION OF THE WETLANDS, RESIDENTIAL AREAS, AND THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS SET FORTH BY THE ILLINOIS EPA.

22. AREAS OR EMBANKMENTS HAVING SLOPES GREATER THAN 3H:1V, AND APPROVED BY THE ENGINEER, SHALL BE STABILIZED WITH SOD, MAT, OR BLANKET IN COMBINATION WITH SEEDING.

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