



November 3, 2022

New Jersey Department of Environmental Protection
Division of Land Use Regulation
Attn: Application Support
501 East State Street
Station Plaza 5, 2nd Floor
Trenton, New Jersey 08609

**RE: New Jersey Department of Environmental Protection Waterfront Development
Individual Permit – Application
Atlantic Shores Offshore Wind – Geotechnical Investigation Project**

Dear Application Support:

Atlantic Shores Offshore Wind, LLC ("Atlantic Shores"), a 50/50 joint venture (JV) between EDF-RE Offshore Development, LLC (an indirect wholly owned subsidiary of EDF Renewables, Inc.; referred to herein as "EDF Offshore") and Shell New Energies US LLC ("Shell New Energies"), is proposing to evaluate the substrate at eight sampling locations in the back bay waters of Great Thorofare in Atlantic City, Atlantic County, New Jersey.

On behalf of Atlantic Shores, Environmental Design & Research (EDR) respectfully submits this permit application for a Waterfront Development Individual Permit for up to four boring sample locations with a maximum 6-inch radius and up to four cone penetrometer tests (CPT) with a maximum 1 ¾-inch radius. Four of the sampling locations will only include a soil boring with samples taken at regular depth intervals for analysis and four of the sampling locations will only include a CPT sounding which will be advanced to a depth of approximately 150 feet. Approximately 120 samples will be obtained in total from the eight sampling locations.

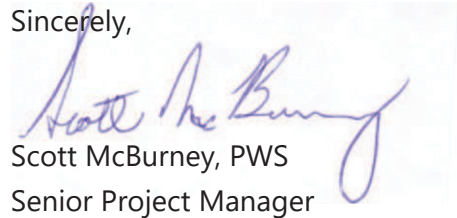
This application includes the following documents:

1. Completed and signed Land Use Regulation Application form.
2. Compliance statement demonstrating policies in N.J.A.C. 7:7-6.23(a) 1 through 6, N.J.A.C. 7:7-9.2(F), N.J.A.C. 7:7-9.6(B)3 and N.J.A.C. 7:7-9.7(B)4 are satisfied.
3. Property Owner Certification Form.
 - a. Email Confirmation of No Sign-Off Requirement from New Jersey Department of Environmental Protection
4. Public Notice Form.
5. Proof of Public Notification.
 - a. Newspaper ad.
 - b. Local government officials' notification.
 - c. Municipal Clerk notification of application copy.

6. Site plans/reference mapping and figures.
7. Photograph log and Photograph Location Map.

Should you have any questions, please do not hesitate to contact me at 833.337.0010 ex. 427 or smcburney@edrdpc.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Scott McBurney", is written over a light blue rectangular background.

Scott McBurney, PWS
Senior Project Manager

Waterfront Development Individual Permit Application

Geotechnical Investigation Project

Atlantic City, Atlantic County, New Jersey

Prepared for:



Atlantic Shores Offshore Wind, LLC
Dock 72
Brooklyn, NY 11205

Prepared by:



Environmental Design & Research, D.P.C.

217 Montgomery Street, Suite 1100
Syracuse, New York 13202

www.edrdpc.com

October 2022



State of New Jersey
Department of Environmental Protection
 Division of Land Resource Protection
Application Form for Permit(s)/Authorization(s)
 501 E. State Street Mail Code 501-02A P.O. Box 420
 Trenton, NJ 08625-0420
 Phone #: (609) 777-0454 Web: www.nj.gov/dep/landuse



Please print legibly or type the following: Complete all sections and pages unless otherwise noted.

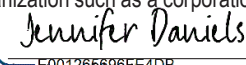
Initial Application ☒ Response to DLUR Deficiency ☐ Extension / Modification ☐ Is this project a NJDOT Priority 2 Repair Project? Yes ☐ No ☐

1. Applicant Name:	Mr./Ms./Mrs. <u>Jennifer Daniels - Development Director</u>	E-Mail: <u>Jennifer.Daniels@atlanticshoreswind.com</u>
Address:	<u>1 Dock 72, Floor 7</u>	Daytime Phone: <u>781.964.4293</u> Ext. <u> </u>
City/State:	<u>Brooklyn, NY</u>	Zip Code <u>11205</u> Cell Phone: <u> </u>
2. Agent Name:	Mr./Ms./Mrs. <u>Scott McBurney</u>	E-Mail: <u>smcburney@edrdpc.com</u>
Firm Name:	<u>Environmental Design & Research</u>	Daytime Phone: <u>267.476.9500</u> Ext. <u> </u>
Address:	<u>121 Midland Road</u>	Zip Code <u>18940</u> Cell Phone: <u>267.476.9500</u>
City/State:	<u>Wrightstown, PA</u>	
3. Property Owner:	Mr./Ms./Mrs. <u> </u>	E-mail: <u> </u>
Address:	<u> </u>	Daytime Phone: <u> </u> Ext. <u> </u>
City/State:	<u> </u>	Zip Code <u> </u> Cell Phone: <u> </u>
4. Project Name:	<u>Cardiff Back Bay Geotechnical Investigation Project</u>	Address/Location: <u>N/A</u>
Municipality:	<u>Atlantic City</u>	County: <u>Atlantic</u> Zip Code <u>N/A</u>
Block(s):	<u>N/A</u>	Lot(s): <u>N/A</u>
N.A.D. 1983 State Plane Coordinates (feet)	E(x): <u>499861.42</u> N(y): <u>195233.41</u>	Not Longitude/Latitude
Watershed:	<u>Great Egg Harbor</u>	Subwatershed: <u>Great Egg Harbor</u>
Nearest Waterway:	<u>Great Thorofare</u>	
5. Project Description:	<u>The purpose of this investigation and Waterfront Development Individual Permit application</u> <u>is to collect specific geotechnical information in the area identified on the Project Location Map to determine the</u> <u>substrate suitability to support horizontal directional drill.</u>	

Provide if applicable: Previous LUR File # (s): Waiver request ID # (s):

A. SIGNATURE OF APPLICANT (required):

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining and preparing the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment. If the applicant is an organization such as a corporation, municipal entity, home-owners association etc., the party responsible for the application shall sign on behalf of the organization.

DocuSigned by:

 Signature of Applicant
Development Director
 Position/Title (If not individual property owner)
October 7, 2022
 Date
Jennifer Daniels
 Print Name

Signature of Applicant
 Position/Title (If not individual property owner)
 Date
 Print Name

A. PROPERTY OWNER'S CERTIFICATION

I hereby certify that the undersigned is the **owner of the property** upon which the proposed work is to be done. This endorsement is certification that the owner/easement holder grants permission for the conduct of the proposed activity. In addition, written consent is hereby given to allow access to the site by representatives or agents of the Department for the purpose of conducting a site inspection(s) or survey(s) of the property in question.

In addition, the undersigned property owner hereby certifies:

1. Whether any work is to be done within an easement? Yes ☐ No ☐
(If answer is "Yes" – Signature/title of responsible party is required below)
2. Whether any part of the entire project will be located within property belonging to the State of New Jersey? Yes ☒ No ☐
3. Whether any work is to be done on any property owned by any public agency that would be encumbered by Green Acres? Yes ☐ No ☐
4. Whether this project requires a Section 106 (National Register of Historic Places) Determination as part of a federal approval? Yes ☐ No ☒

DocuSigned by:

Jennifer Daniels

Signature of Owner

October 7, 2022

Date

Jennifer Daniels, Development Director

Print Name/Title

Signature of Owner/Easement Holder

Date

Print Name/Title

B. APPLICANT'S AGENT

I, Jennifer Daniels, the Applicant/Owner and _____, co-Applicant/Owner authorize to act as my agent/representative in all matters pertaining to my application the following person:

Scott McBurney, PWS

Name of Agent

Senior Project Manager/Wetland Service Leader

Occupation/Profession of Agent

DocuSigned by:

Jennifer Daniels

Signature of Applicant/Owner

Signature of co-Applicant/Owner

AGENT'S CERTIFICATION:

I agree to serve as agent for the above-referenced applicant:

Scott McBurney

Signature of Agent

Environmental Design & Research

Name of Firm

C. STATEMENT OF PREPARER OF PLANS, SPECIFICATIONS, SURVEYOR'S OR ENGINEER'S REPORT

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining and preparing the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment.

Signature

Erich Christiansen, P.E.

Print Name

Principal/Department Manager, Terracon

Position & Name of Firm

24GE04226600

Professional License #

October 27, 2022

Date

D. STATEMENT OF PREPARER OF APPLICATION, REPORTS AND/OR SUPPORTING DOCUMENTS (other than engineering)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining and preparing the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment.

Signature

Scott McBurney, PWS

Print Name

Senior Project Manager, EDR

Position & Name of Firm

N/A

Professional License #

September 30, 2022

Date



Effective October 5, 2021, applications for most land use authorizations and permits **must** be submitted electronically through [NJDEP Online](https://www.nj.gov/dep/landuse/contact.html). Such applications include general permits, individual permits, water quality certificates, freshwater wetland transition area waivers, and associated flood hazard area verifications. Paper applications will **NOT** be accepted for the aforementioned types of authorizations and permits.

Paper applications **will be** accepted for Letters of Interpretations, modifications to existing permits/authorizations, extension requests for existing permits/authorizations, applicability determinations, Highlands Area applications, stand-alone Flood Hazard Verifications, and consistency determinations. If an application type is not listed on this form and you are unsure if a paper application is acceptable please contact the Division at <https://www.nj.gov/dep/landuse/contact.html>. For more information, please visit https://www.nj.gov/dep/landuse/eservices/lur_auth_permits.html.

FEE CALCULATION TIPS:

- Whenever the calculation requires an acreage figure (including the Stormwater calculations), you will need to round **UP** to the nearest whole number, for example: 0.25 acres gets rounded up to one (1) acre or 2.61 acres gets rounded up to three (3) acres.
- The stormwater review fee is applied only one time per project, maximum of \$20,000, regardless of multiple applications.

APPLICATION(S) FOR: Please check each permit/authorization that you are applying for and fill in the calculated fee (for each) in the "Fee Paid" column

	Coastal Applications	Fee Amount	Fee Paid
<input type="checkbox"/>	Modification of a Coastal GP	\$500	
<input type="checkbox"/>	Minor Technical Modification of a Coastal Wetland Permit	\$500 x _____ # of items to be revised	
<input type="checkbox"/>	Minor Technical Modification of a CAFRA IP	\$500 x _____ # of items to be revised	
<input type="checkbox"/>	Minor Technical Modification of a Waterfront IP	\$500 x _____ # of items to be revised	
<input type="checkbox"/>	Major Technical Modification of a Coastal Wetland Permit	0.30 x _____ original fee = Fee (Minimum \$500)	
<input type="checkbox"/>	Major Technical Modification of a CAFRA IP	0.30 x _____ original fee = Fee (Minimum \$500)	
<input type="checkbox"/>	Major Technical Modification of a Waterfront IP	0.30 x _____ original fee = Fee (Minimum \$500)	
<input type="checkbox"/>	Zane Letter (Waterfront Development Exemption)	\$500	
<input type="checkbox"/>	CAFRA Exemption Request	\$500	
<input type="checkbox"/>	CZM General Permit Extension	\$240 x _____ # of GPs to be extended	
<input type="checkbox"/>	Waterfront Development Individual Permit – Extension (Waterward of MHWL)	0.25 x _____ original fee = Fee (Maximum \$3,000)	
<input type="checkbox"/>	Meadowlands District Water Quality Certificate	\$5,000 + (\$2,500 x _____ # acres regulated area disturbed)	
<input type="checkbox"/>	Individual Permit Equivalency/CERCLA	No Fee	

	Consistency Determination	Fee Amount	Fee Paid
<input type="checkbox"/>	Water Quality Certificate (NOTE: No fee required under the coastal program when reviewed in conjunction with a WFD permit)	\$5,000 + (\$2,500 x _____ # acres regulated area disturbed)	
<input type="checkbox"/>	Federal Consistency	No Fee	

	Applicability Determinations	Fee Amount	Fee Paid
<input type="checkbox"/>	Coastal Applicability Determination	No Fee	No Fee
<input type="checkbox"/>	Flood Hazard Applicability Determination	No Fee	No Fee
<input type="checkbox"/>	Highlands Jurisdictional Determination	No Fee	No Fee
<input type="checkbox"/>	Executive Order 215	No Fee	No Fee

	Letter of Interpretation	Fee Amount	Fee Paid
<input type="checkbox"/>	LOI Presence Absence	\$1,000.00	
<input type="checkbox"/>	LOI Footprint of Disturbance (3 Maximum)	\$1,000.00 each	
<input type="checkbox"/>	LOI Delineation < 1.00 Acres	\$1,000.00	
<input type="checkbox"/>	LOI Verification	\$1,000 + (\$100 x _____ # of acres of the site)	
<input type="checkbox"/>	LOI Partial Site Verification	\$1,000 + (\$100 x _____ # of acres of the site subject to LOI)	
<input type="checkbox"/>	LOI Extension Presence/Absence, Footprint, Delineation < 1 acre (Re-Issuance)	\$500	
<input type="checkbox"/>	LOI Extension Line Verification (Re-Issuance)	0.50 x _____ original fee (Minimum \$500)	

	Freshwater Wetlands Authorizations	Fee Amount	Fee Paid
<input type="checkbox"/>	FWGP Administrative Modification	No fee	
<input type="checkbox"/>	FWGP Minor technical modification	\$500.00	
<input type="checkbox"/>	FWGP Major technical modification	\$500.00	
<input type="checkbox"/>	Individual Permit Administrative Modification	No Fee	
<input type="checkbox"/>	Individual Permit Minor Technical Modification	\$500.00	
<input type="checkbox"/>	Individual Permit Major Technical Modification	0.30 x _____ original fee (Minimum \$500)	
<input type="checkbox"/>	TAW Administrative Modification	No Fee	
<input type="checkbox"/>	TAW Minor Technical Modification	\$500.00	
<input type="checkbox"/>	TAW Major Technical Modification	0.30 x _____ original fee (Minimum \$500)	
<input type="checkbox"/>	FWGP Extension	\$500 x _____ # of items to be extended	
<input type="checkbox"/>	Individual Permit/Open Water Permit Extension	0.30 x _____ original fee (Minimum \$500)	
<input type="checkbox"/>	TAW Extension	\$500 x _____ # of items to be extended	
<input type="checkbox"/>	Freshwater Wetlands Exemption	\$500.00	
<input type="checkbox"/>	TAW Exemption	\$500.00	
<input type="checkbox"/>	Permit Equivalency/CERCLA	No Fee	

APPLICATION(S) FOR: Please check each permit/authorization that you are applying for and fill in the calculated fee (for each) in the "Fee Paid" column

	Flood Hazard Area Authorizations	Fee Amount	Fee Paid
<input type="checkbox"/>	FHA GP Administrative Modification	No Fee	No Fee
<input type="checkbox"/>	FHA GP Minor technical modification	\$500 x _____ # of project elements to be revised	
<input type="checkbox"/>	FHA GP Major technical modification	0.30 x _____ original fee (Minimum \$500)	
<input type="checkbox"/>	FHA Individual Permit Administrative Modification	No Fee	No Fee
<input type="checkbox"/>	FHA Individual Permit Minor Technical Modification	\$500 x _____ # of project elements to be revised	
<input type="checkbox"/>	FHA Individual Permit Major Technical Modification	0.30 x _____ original fee (Minimum \$500)	
<input type="checkbox"/>	FHA Verification Administrative Modification	No Fee	No Fee
<input type="checkbox"/>	FHA Verification Minor Technical Modification	\$500 x _____ # of project elements to be revised	
<input type="checkbox"/>	FHA Verification Major Technical Modification	0.30 x _____ original fee (Minimum \$500)	
<input type="checkbox"/>	FHA GP Extension	\$240	
<input type="checkbox"/>	FHA Individual Permit Extension	0.25 x _____ original fee	
<input type="checkbox"/>	FHA Verification Extension of Methods 1, 2, 3, 5, or Riparian Zone Only	\$240	
<input type="checkbox"/>	FHA Verification Extension of Methods 4 or 6	0.25 x _____ original fee	
<input type="checkbox"/>	FHA Individual Permit Equivalency/CERCLA	No Fee	No Fee

NOTE: Flood Hazard verifications may be submitted via a paper application **ONLY** when not submitted in conjunction with any permit/authorization required to be submitted electronically.

	Flood Hazard Area Verifications	Fee Amount	Fee Paid
<input type="checkbox"/>	Verification-Delineation of Riparian Zone Only	\$1,000	
<input type="checkbox"/>	Verification-Method 1 (DEP Delineation) *	\$1,000	
<input type="checkbox"/>	Verification-Method 2 (FEMA Tidal Method) *	\$1,000	
<input type="checkbox"/>	Verification-Method 3 (FEMA Fluvial Method) *	\$1,000	
<input type="checkbox"/>	Verification-Method 4 (FEMA Hydraulic Method)	\$4,000 + (\$400 x per 100 linear feet)	
<input type="checkbox"/>	Verification-Method 5 (Approximation Method) *	\$1,000	
<input type="checkbox"/>	Verification-Method 6 (Calculation Method)	\$4,000+(\$400 x per 100 linear feet)	

*Fee not applicable to (1) SFH

	Stormwater Review Fee (Maximum Fee = \$20,000)	Fee Amount	Fee Paid
<input type="checkbox"/>	Stormwater Review (Fee is calculated by adding the base fee to the specific elements below)	\$3,000 Base Fee	
	Review of Groundwater Calculations	+ \$250 x _____ # acres disturbed	
	Review of Runoff Quantity Calculations	+ \$250 x _____ # acres disturbed	
	Review of Water Quality Calculations	+ \$250 x _____ # acres impervious surface	
	Total	Stormwater Review Fee	

	Highlands Authorizations*	Fee Amount	Fee Paid
<input type="checkbox"/>	Pre-application Meeting	\$500.00	
<input type="checkbox"/>	Resource Area Determination Boundary Delineation < one acre	\$500.00	
<input type="checkbox"/>	Resource Area Footprint of Disturbance	\$500 + (\$50 x _____ # of acres of the site)	
<input type="checkbox"/>	Resource Area Determination Verification (> one acre)	\$750 + (\$100 x _____ # of acres of the site)	
<input type="checkbox"/>	Resource Area Determination Extension	0.25 x _____ original fee (Minimum \$250)	
<input type="checkbox"/>	Preservation Area Approval (PAA)		
<input type="checkbox"/>	PAA with Waiver (Specify type below)		
	Waiver Type:		
<input type="checkbox"/>	HPAAGP 1/ Habitat Creation/Enhance	No Fee	No Fee
<input type="checkbox"/>	HPAAGP 2 Bank Stabilization	\$500	
<input type="checkbox"/>	HPAA Extension	\$1,000	

*Highlands Applicability Determinations (HAD Exemptions) use a different form available at www.nj.gov/dep/landuse/forms.html

TOTAL FEE:	
CHECK NUMBER:	

APPLICANT NAME: Atlantic Shores

FILE # (if known): _____

APPLICATION FORM - APPENDIX I

Section 1: Please provide the following information for the overall project site. All area measurements shall be recorded **in acres to the nearest thousandth** (0.001 acres).

<u>PROPOSED:</u>	<u>PRESERVED</u>	<u>UNDISTURBED</u>	<u>DISTURBED</u>
RIPARIAN ZONE	N/A	N/A	N/A
CZMRA FORESTED (CZMRA IP – Only)	N/A	N/A	N/A
E & THABITAT Endangered and/or Threatened	0	0	0
FRESHWATER WETLANDS	N/A	N/A	N/A

Section 2: Please provide the following information for each permit/authorization requested pursuant to the Freshwater Wetlands Protection Act. All area measurements shall be recorded **in acres to the nearest thousandth** (0.001 acres). Use additional sheets if necessary

PERMIT TYPE	Coastal GP 23	WETLAND TYPE Emergent, Forest, Shrub, Etc.	N/A	RESOURCE CLASSIFICATION Ordinary, Intermediate, Exceptional, EPA, Etc.	Beach
<u>PROPOSED DISTURBANCE:</u>		<u>WETLANDS</u>		<u>TRANSITION AREA</u>	<u>SOW</u>
FILLED		N/A		N/A	N/A
EXCAVATED		N/A		N/A	N/A
CLEARED		N/A		N/A	N/A
TEMPORARY DISTURBANCE		N/A		N/A	0.01acre

PERMIT TYPE		WETLAND TYPE Emergent, Forest, Shrub, Etc.		RESOURCE CLASSIFICATION Ordinary, Intermediate, Exceptional, EPA, Etc.	
<u>PROPOSED DISTURBANCE:</u>		<u>WETLANDS</u>		<u>TRANSITION AREA</u>	<u>SOW</u>
FILLED					
EXCAVATED					
CLEARED					
TEMPORARY DISTURBANCE					

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Appendix D.	Property Owner Certification Form
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1.0 PROJECT DESCRIPTION

Atlantic Shores Offshore Wind, LLC (Atlantic Shores), a 50/50 joint venture (JV) between EDF-RE Offshore Development, LLC (an indirect wholly owned subsidiary of EDF Renewables, Inc.; referred to herein as “EDF Offshore”) and Shell New Energies US LLC (“Shell New Energies”), is proposing to evaluate the substrate at eight sampling locations in the back bay waters of the Great Thorofare in Atlantic City, Atlantic County, New Jersey. Four sampling locations will only include a soil boring and four sampling locations will only include cone penetrometer testing (CPT). These waters are defined as New Jersey State Waters and Waters of the United States. All four sampling locations will include a soil boring to be conducted in November or December 2022.

The equipment to conduct the sampling will be mobilized by utilizing a boat to push a 20' x 45' barge into position at each of the planned borehole locations. The boat has GPS on board in order to accurately identify the correct boring location. The barge will be anchored in place by two spuds, which are approximately 24 inches in diameter and 38 feet in length and will be lowered approximately 2 to 4 feet into the mudline. The use of spuds will allow the barge to move vertically with the tides. Each spud will be marked to track the vertical movement of the barge during sampling activities. The barge will remain in place until the boring or CPT sounding has been completed and will then be advanced to the next sampling location. The barge will be mobilized out of Salem, New Jersey. The crew will board a pusher boat at a local marina each workday to advance to the barge for sampling activities, which will occur between 7AM and 5PM.

The four soil boreholes will be drilled vertically using a combination of a roller bit and mud rotary drilling techniques. The geotechnical drilling rig will be track mounted and utilized from the barge. It is estimated that approximately 10 to 15 feet of hollow stem with a maximum 4-inch diameter and matching roller bit will be drilled first to provide surface casing for borehole stability. Casing will be advanced from the rig on the barge deck into the mudline. Borehole advancement below the hollow stem augers will utilize mud-rotary methods, with a maximum borehole diameter of approximately 6-inches. Drilling fluid for the four soil boreholes will consist of fresh water and a sodium bentonite viscosifier such as Baroid Quick-Gel® and Baroid Quick-Trol®. The drilling fluid will be contained in a recirculation tank at the surface. Drilling fluid within the four boreholes will be displaced to the tank upon completion of drilling by tremie grouting from the bottom of the four boreholes, in accordance with New Jersey Department of Environmental Protection (NJDEP) requirements. No discharge will occur onsite. Soil sampling will be performed at 5-foot intervals using a combination of split-barrel Standard Penetration Test (SPT) sampling (ASTM D1586), 3-inch diameter thin-wall tube sampling (ASTM D1587), and split-barrel samples with 2.5-inch liners (ASTM D3550). The maximum target depth of the soil borings is 100 feet.

The CPT sounding will be conducting using direct push equipment in accordance with ATSM D5578. Measurements will be obtained by the instrumented equipment. CPT sounding locations will have a maximum 1 ¾-inch radius and will be advanced to a depth of approximately 150 feet.

Approximately 120 samples will be obtained in total for the eight sampling locations.

1.1 Project Purpose

Atlantic Shores has identified onshore interconnection cable route options and the purpose of this investigation and authorization under a Waterfront Development Individual Permit (N.J.A.C. 7:7-2.4) is to collect specific geotechnical information to inform the necessary engineering assessments that will determine the substrate suitability for an HDD crossing of the Great Thorofare. The need for an individual waterfront development permit was determined to be required for this project due to the proximity of mapped clam and submerged aquatic vegetation (SAV) habitat.

2.0 POTENTIAL IMPACTS

The direct temporary impact area will be limited to the radius and depth of the boreholes, CPT soundings and the barge anchoring spuds with limited indirect impacts occurring as a result of sediment suspension during boring activities and subsequent settling which is not anticipated to extend a significant distance from the sampling location. It is assumed that the natural sediment movement from tides and wind, and subsequent currents, will quickly fill the boring locations to natural grade. All eight (8) sample locations will be conducted in the deepest part of Great Thorofare, which is anywhere from 4 to 16 feet in depth (NOAA 2022). Sample locations are provided in Appendix A and a Photo Log is provided in Appendix E.

3.0 N.J.A.C. 7:7 6.23 COMPLIANCE STATEMENTS

Although this application is for a Waterfront Development Individual Permit because of the location of mapped shellfish and SAV, the applicable policies under subchapter 6, which covers general permits is applicable to the proposed project which includes surveying activities. A demonstration of compliance with these policies are provided in this section.

"This general permit authorizes geotechnical survey borings including survey borings or excavations constructed for the purpose of obtaining information on subsurface conditions, for the purpose of determining the presence or extent of contamination in subsurface soils or groundwater, and for obtaining seismic information, provided the following conditions are met."

3.1 N.J.A.C. 7:7 6.23(A)1

"Borings and related site disturbance shall not be located in shellfish habitat (N.J.A.C. 7:7- 9.2), submerged vegetation habitat (N.J.A.C. 7:7-9.6) or endangered or threatened wildlife or plant species habitats (N.J.A.C. 7:7-9.36)".

Borings, CPT soundings and related site disturbance will occur within proximity to shellfish habitat mapped in 1963 (USFWS 1963) and submerged aquatic vegetation (SAV) habitat mapped in 1979 (NJDEP 1979) but will be located within the existing navigation channel which is not likely suitable habitat for shellfish or SAV due to the depth of the water column, turbidity, and marine vessel traffic. As a result, permanent impacts to shellfish or SAV and/or their habitat are not anticipated.

Given preliminary screening, these activities are not anticipated to occur within any endangered/threatened wildlife or plant species habitat. The United States Fish & Wildlife Service (USFWS)

Information for Planning and Consultation (IPaC) was consulted to determine federally endangered/threatened wildlife/plant species or their habitat that could potentially occur within the Project Area.

The USFWS documented two federal listed species within proximity to the Project Area:

- Red Knot (*Calidris canutus rufa*)
- Monarch Butterfly (*Danaus plexippus*)

These two species and their associated habitat occur onshore; however, the proposed borings and CPT soundings will occur within the back bay waters of the Great Thorofare in Atlantic City. Therefore, the proposed sampling will not have any impact on suitable habitat for either of the two species.

Furthermore, the NJDEP GeoWeb Mapper was consulted to determine state endangered/threatened wildlife/plant species or their habitat that could potentially occur within the Project Area.

NJDEP documented five state listed species within proximity to the Project Area:

- Osprey (*Pandion haliaetus*)
- Black Skimmer (*Rynchops niger*)
- Black-crowned Night Heron (*Nycticorax nycticorax*)
- Least Tern (*Sternula antillarum*)
- Yellow-crowned Night Heron (*Nyctanassa violacea*)

These five species and their associated habitat include riparian corridors and open water; however, the proposed borings and CPT soundings will occur within the existing navigation channel of Great Thorofare, which ranges in depth from 4 to 16 feet across the Project Area. Therefore, the proposed borings and CPT soundings will not have any impact on suitable habitat for any of the five listed species.

3.2 N.J.A.C. 7:7 6.23(A)2

"Borings and related site disturbance shall comply with wild and scenic river corridors, (N.J.A.C. 7:7-9.44), wetlands (N.J.A.C. 7:7-9.27), and wetlands buffers (N.J.A.C. 7:7- 9.28)".

The borings and CPT soundings are proposed to occur in the back bay waters of the Great Thorofare in Atlantic City, which are considered New Jersey State Waters and Waters of the United States. Borings and CPT soundings will not occur in wild and scenic river corridors, wetlands, or wetland buffers. Therefore, the proposed activities should comply with the applicable policies.

3.3 N.J.A.C. 7:7 6.23(A)3

"Borings for remedial investigation shall be permitted, constructed, and completed in accordance with the Well Construction and Maintenance; Sealing of Abandoned Well rules, N.J.A.C. 7:9D, and N.J.A.C. 7:26E-1.5(b) and 4 of the Technical Requirements for Site Remediation."

The proposed borings and CPT soundings are for geotechnical purposes only, not remedial investigations; therefore, the proposed activities should comply with this applicable policy.

3.4 N.J.A.C. 7:7 6.23(A)4

"Disturbance shall be limited to that which is necessary to access and conduct the geotechnical borings".

- i. *"Disturbance to vegetation shall be limited to a maximum width of five feet for access".*

The soil boreholes for the project will be advanced to a maximum of six (6) inches in (outer) diameter and up to 100 feet deep. The CPT soundings will be advanced to a maximum of one-and-three quarters (1 ¾) in (outer) diameter and up to 150 feet deep. Direct disturbance will be limited to the diameter of the borings, CPT soundings and footprint of the barge anchoring spuds with negligible deposition from the boring and CPT soundings occurring within a few feet of each sample location. No onshore vegetation will be affected as a result of this investigation since it will occur entirely within Great Thorofare. Additionally, impact to SAV is not anticipated due to the minor footprint of the proposed activities and limited, if any, SAV habitat because of the water column depth of the existing navigation channel (NOAA 2022).

3.5 N.J.A.C. 7:7 6.23(A)5

"Borings and related site disturbance shall not be conducted during the following time periods":

- i. *"During the migration of anadromous fish from April 1 thru June 30 (inclusive)";*

The proposed locations of the borings and CPT soundings are in the back bay waters of the Great Thorofare in Atlantic City. Borings, CPT soundings and barge anchoring spuds at each location will be temporary and will not cause significant sediment loading in waters within the immediate vicinity of the sampling location. It is not anticipated that this geotechnical investigation will have any impact on the migration of anadromous fish due because it will be conducted outside of the timing restriction of April 1 through June 30 (November or December 2022).

- ii. *"During the period from March 1 thru June 30 and from October 1 thru November 30 (inclusive), within and adjacent to waters on the Delaware River System from the mouth of bay to Delaware Memorial Bridge and tidal Maurice River, identified as American shad migratory pathways;"*

The proposed location of the borings and CPT soundings are not within or adjacent to waters on the Delaware River System from the mouth of bay to Delaware Bridge and tidal Maurice River; therefore, this timing restriction does not apply.

- iii. *"During the period from April 1 thru June 30 and from September 1 thru November 30 (inclusive), within and adjacent to waters on the Delaware River System from the Delaware*

Memorial Bridge to the New York State line and tidal portions of Rancocas and Raccoon Creeks, identified as American shad migratory pathways”.

The proposed location of the borings and CPT soundings are not within or adjacent to waters of the Delaware River System from the Delaware Memorial Bridge to the New York State line and tidal portions of Rancocas and Raccoon Creeks; therefore, this timing restriction does not apply.

3.6 N.J.A.C. 7:7 6.23(A)6

“Bore holes shall be backfilled to the original surface level with appropriate, noncontaminated, soil material”.

- v. “Sand may not be used for backfilling in either freshwater or coastal wetlands. Restoration of all bore holes must maintain the hydrologic integrity of the wetlands. To avoid the potential for draining a wetland by puncturing a hard-pan or confining layer, all borings must be sealed with grout or bentonite in accordance with the Department's Water Monitoring Management Program rules, N.J.A.C. 7:9-6”.*

This investigation will be conducted in the back bay waters of Great Thorofare in Atlantic City; however, there will be no back-filing in either freshwater or coastal wetlands nor will there be any impact to the hydrologic integrity of wetlands due to the location within the existing waterway/navigation channel. Draining will not occur and it is assumed that the natural sediment movement from tides and currents, will quickly fill the boring and CPT sounding locations to existing grade.

- vi. “Water used to flush a boring may be discharged to the ground provided the boring is not conducted in proximity to a stream or in an area of hazardous waste or acid producing soils. When the boring is performed in proximity to a stream, and water or drilling fluid is used to remove soil from the hole, the sediment-laden water shall not be allowed to flow overland such that it would enter the stream. Soil erosion and sediment control measures shall be used as necessary to contain/filter excess water. Drilling fluid shall be contained when working adjacent to a fish-populated watercourse during the relevant restricted period, and in any other situation where containment represents the only method of ensuring that there is no impact to adjacent streams”.*

Drilling fluid for the boring will consist of fresh water and a sodium bentonite viscosifier such as Baroid Quick-Gel® and Baroid Quick-Trol®. Tremie grout will be utilized to seal the borings from the bottom of the boring. A mud tub will be located on the barge deck to recirculate the drilling fluid. Excess mud and fluids will be placed in drums for off-site disposal, none will be discharged to the waters of Great Thorofare.

4.0 N.J.A.C. 7:7 9.0 COMPLIANCE STATEMENTS

The applicable policies under subchapter 9 and demonstration of compliance are provided in this section. Policies that do not apply to the proposed activities are not listed.

4.1 N.J.A.C. 7:7 9.2(F)

"Maintenance dredging (defined at N.J.A.C. 7:7-12.6) within shellfish habitat is conditionally acceptable, provided the disturbance to shellfish habitat is minimized to the greatest extent possible."

The proposed sediment sampling is not maintenance dredging and will only involve an approximately 6-inch diameter boring and 1 ¾-inch diameter CPT sounding into the sediment at specific locations in the deepest part of Great Thorofare, an existing navigation channel. This method of sampling will minimize the disturbance to potential shellfish habitat to the greatest extent practicable.

4.2 N.J.A.C. 7:7 9.6(B)3

"Maintenance dredging (defined at N.J.A.C. 7:7-12.6) of previously authorized, existing navigation channels maintained by the State or Federal government provided that there is no practicable or feasible alternative to avoid the vegetation and that impacts to the habitat area are minimized to the maximum extent practicable."

The proposed sediment sampling is not maintenance dredging and will only involve an approximately 6-inch diameter boring and 1 ¾-inch diameter CPT sounding into the sediment at specific locations in the deepest part of Great Thorofare, an existing navigation channel. The depth of the channel along the extent of the project is approximately 4 to 16 feet, which is not suitable habitat for the proliferation of SAV. As a result, it is anticipated that this method of sampling will minimize the disturbance to SAV habitat to the greatest extent practicable.

4.3 N.J.A.C. 7:7 9.7(B)4

"The placement of structures within 50 feet of any authorized navigation channel is discouraged, unless it can be demonstrated that the proposed structure will not hinder navigation."

The proposed sediment sampling will require temporary anchoring of a barge in Great Thorofare. The barge will move to the next boring location upon completion of sampling. The duration of the barge occupying a given area will only be a maximum of few hours. Since only small vessels transit Great Thorofare, navigation is not anticipated to be hindered.

5.0 SOURCES

ASTM D1586-11. Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils.

ASTM D1587-00. Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes.

ASTM D3550/D3550M-17. Standard Practice for Thick Wall, Ring-Lined, Split Barrel, Drive Sampling of Soils.

ASTM D5778. Standard Test Method for Electronic Friction Cone and Piezocone Penetration Testing of Soils.

NJDEP 1979. New Jersey Submersed Aquatic Vegetation Distribution. Map 030. Available: https://www.nj.gov/dep/landuse/download/map_030.jpg

NOAA 2022. Nautical Chart #12316 Intracoastal Waterway. New Jersey, Little Egg Harbor to Cape May. Available: <https://www.charts.noaa.gov/PDFs/12316.pdf>

USGS. 2019. Sediment Sample Surveys: Vibracoring. Available: https://pubs.usgs.gov/pp/p1634/jf_vbcor.htm (Accessed March 2020).

USFWS 1963. Distribution of Shellfish Resources in Relation to the New Jersey Intracoastal Waterway. Little Egg Harbor to Longport. Map 001. Available: https://www.nj.gov/dep/landuse/download/Map_001.jpg

APPENDIX A

Figures and Site Plan

USGS Project Location Map



2022 Geotechnical Survey Area – Cardiff Back Bay Geotechnical Investigation Area

Atlantic City, Atlantic County
New Jersey

**Waterfront Development
Individual Permit**

Geotechnical Boring



0 500 1,000 2,000
Feet

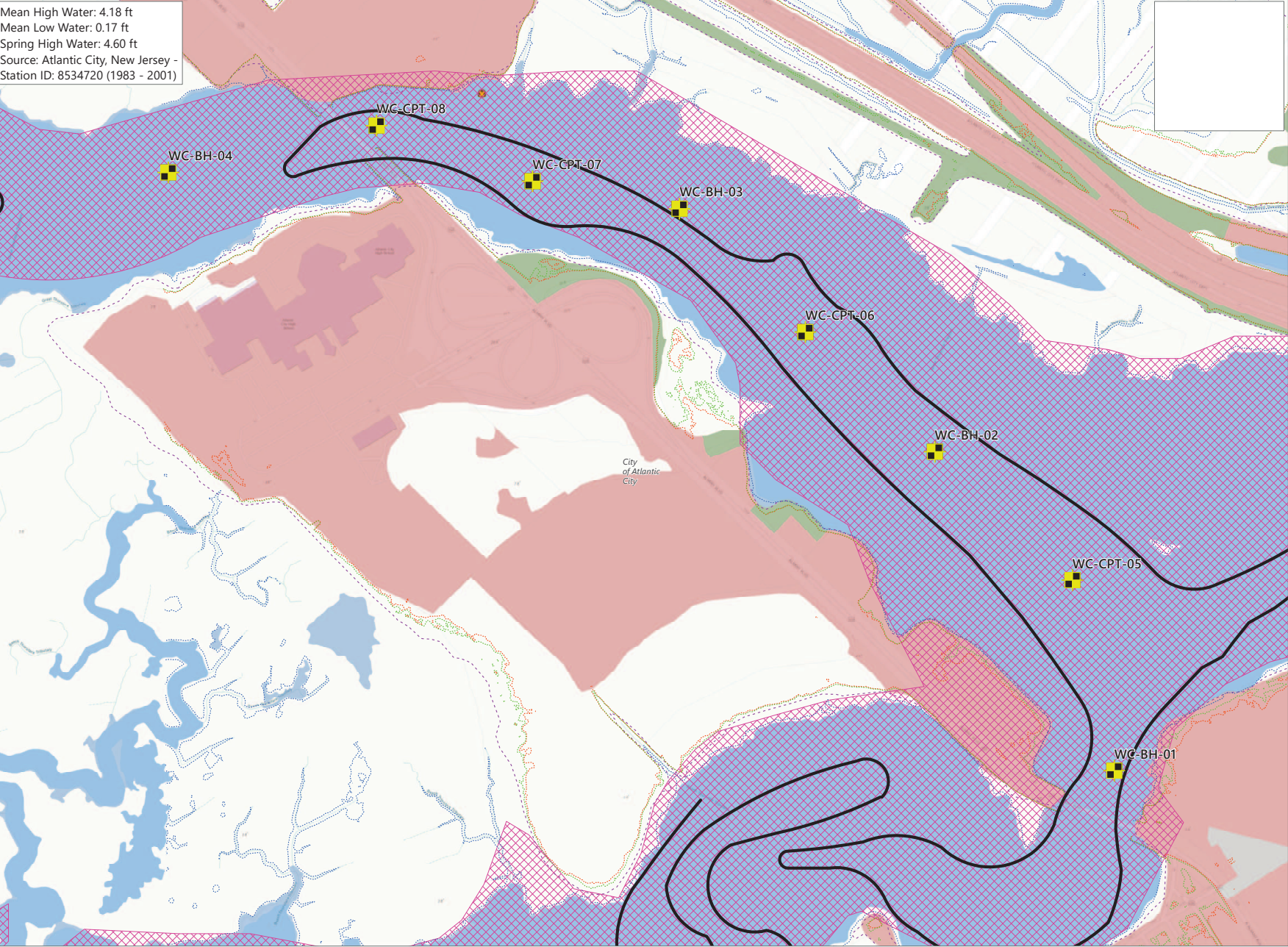
Prepared October 5, 2022
Basemap: Esri ArcGIS Online "USA Topo Maps" map service.

ATLANTIC SHORES
offshore wind

EDR

Site Plan

Mean High Water: 4.18 ft
Mean Low Water: 0.17 ft
Spring High Water: 4.60 ft
Source: Atlantic City, New Jersey -
Station ID: 8534720 (1983 - 2001)



2022 Geotechnical
Survey Area –
Cardiff Back Bay
Geotechnical
Investigation Area

Atlantic City, Atlantic County
New Jersey

Waterfront Development
Individual Permit

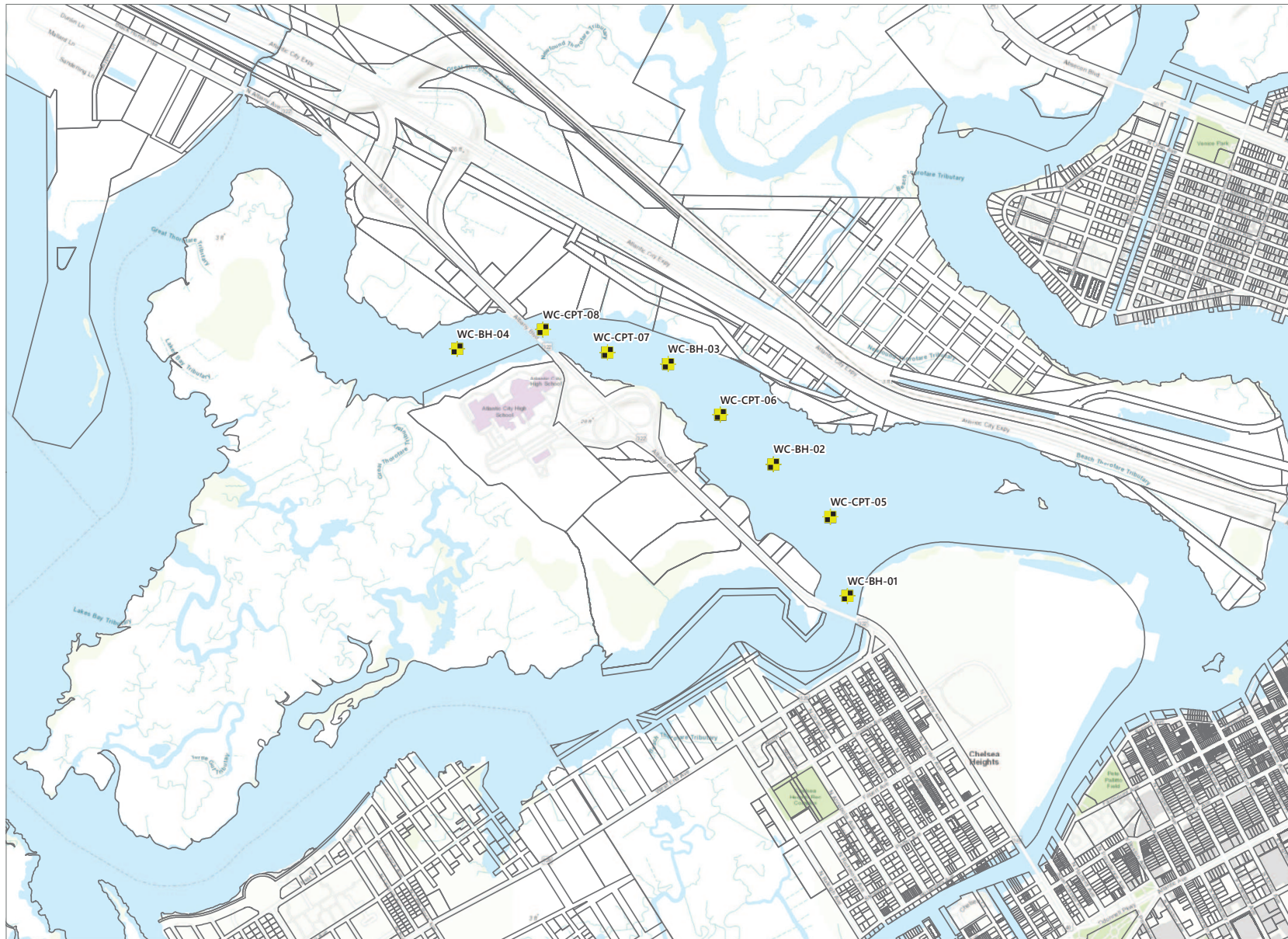
- Geotechnical Boring
- Wreck
- Mean High Water Contour
- Mean Low Water Contour
- Spring High Water Contour
- NJDEP Upper Wetlands Boundary
- Submerged Aquatic Vegetation (1979)
- Hard Clam - High Value Commercial (1963)
- Land Cover
 - Barren Land
 - Forest
 - Urban
 - Water
- Municipal Boundary



Version	Date
Version 1	9/29/2022
Version 2	10/05/2022

Prepared October 5, 2022
Base map: Esri ArcGIS Online "World Topographic Map" map service.
This historic map of both the Submerged Aquatic Vegetation Distribution - Atlantic
City (1979) and Distribution of Shellfish Resources - Little Egg Harbor to
Longport (1963) have been georeferenced and digitized to produce the Submerged
Aquatic Vegetation and Hard Clam Areas. These not intended to
depict survey accurate information.



Tax Parcel Map



2022 Geotechnical Survey Area – Cardiff Back Bay Geotechnical Investigation Area

Atlantic City, Atlantic County
New Jersey

**Waterfront Development
Individual Permit**

-  Geotechnical Boring
-  Tax Parcel Boundary



0 250 500 1,000
Feet

Prepared October 5, 2022
Basemap: Esri ArcGIS Online "World Topographic Map" map service.

ATLANTIC SHORES
offshore wind

EDR