Part 1 CTDEEP PERMIT APPLICATION

Structures, Dredging and Fill Permit
Section 401 Water Quality Certification

Connecticut Department of
Energy & Environmental Protection
Bureau of Water Protection & Land Reuse
Office of Long Island Sound Programs

Permit Application for Programs Administered by the Office of Long Island Sound Programs

IMPORTANT - Please refer to the instructions (DEEP-OLISP-INST-100) for completing this application form to ensure that all required information is provided. Print or type all information within the form, providing additional pages as necessary.

CPPU USE ONLY

App #: _____

Doc #: _____

Check #: _____

_____

_

Part I: Permit Type and Fee Information

Check only one of the boxes below identifying the applicable state permit program(s). You must submit the initial fee indicated below and a copy of the published notice of permit application and the completed Certification of Notice Form with this application.

Type of Permit	Initial Fee
☐ **Structures, Dredging & Fill** *CGS sec. 22a-361 [#1085]*	$660.00
☒ **Structures, Dredging & Fill and 401 Water Quality Certificate** *[#1632]*	$660.00
☐ **Structures, Dredging & Fill, and Tidal Wetlands** *CGS sec. 22a-361 & sec. 22a-32 [#438]*	$660.00
☐ **Structures, Dredging & Fill, and Tidal Wetlands and 401 Water Quality Certificate** *[#417]*	$660.00
☐ **401 Water Quality Certificate** *33 U.S.C. 1341* ***(For Federal Use Only)*** *[#1195]*	None

Note: The fee for municipalities is 50% of the above listed rates. Additional fees based on the water area occupied by the project will be invoiced. The application will not be processed without the initial fee. The fee shall be non-refundable and shall be paid by check or money order to the Department of Energy and Environmental Protection.

Town where site is located: City of New London

Brief Description of Project: Includes demolition of select buildings and structures, site grading, heavy lift area creation, filling between the piers, dredging and seabed preparation, stormwater and utility upgrades, associated avoidance and mitigation measures. Please see the attached for detail.

The public notice of application must be published ***prior*** to submitting an application, as required in CGS section 22a-6g. A copy of the published notice of application and the completed Certification of Notice Form must be included as Attachment AA to this application. Your application will **not** be processed if Attachment AA is not included.

Date of Publication: **As Provided in Attachment AA**

☐ Check here, in addition to one of the boxes above, if your application is being submitted pursuant to CGS sec. 22a-361(a)(2)(d) to address a violation.

Part II: Applicant Information

- *If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, registrant's name shall be stated **exactly** as it is registered with the Secretary of State. Please note, for those entities registered with the Secretary of State, the registered name will be the name used by DEEP. This information can be accessed at the Secretary of State's database (CONCORD). (**www.concord-sots.ct.gov/CONCORD/index.jsp**)*
- *If an applicant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).*
- *If there are any changes or corrections to your company/facility or individual mailing or billing address or contact information, please complete and submit the Request to Change Company/Individual Information to the address indicated on the form. If there is a change in name of the entity holding a DEEP license or a change in ownership, contact the Office of Planning and Program Development (OPPD) at 860-424-3003. For any other changes you must contact the specific program from which you hold a current DEEP license.*

1. Applicant Name: Connecticut Port Authority

Mailing Address: **455 Boston Post Road, Suite 204**

City/Town: **Old Saybrook** State: **CT** Zip Code: **06475**

Business Phone: **860-577-5174** ext. **N/A**

Contact Person: **John Henshaw** Title: **CPA Executive Director**

*E-mail: **jhenshaw@ctportauthority.com**

*By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject application. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify DEEP if your e-mail address changes.a) Applicant Type (check one):

☐ individual ☐ federal agency ☒ state agency ☐ municipality ☐ tribal

☐ *business entity (*If a business entity complete i through iii):

i) check type: ☐ corporation ☐ limited liability company ☐ limited partnership ☐ limited liability partnership ☐ statutory trust ☐ Other: _____

ii) provide Secretary of the State business ID #:_____This information can be accessed at database (CONCORD). (**www.concord-sots.ct.gov/CONCORD/index.jsp**)

iii) ☐ Check here if your business is **NOT** registered with the Secretary of State's office.

b) Applicant's interest in property at which the proposed activity is to be located:

☒ site owner ☐ option holder ☒ lessee

☐ easement holder ☐ operator ☐ other (specify): Lease agreement documentation for New London Parcel G10-245-3A included in Attachment B. CPA is owner of all other subject properties.

☐ Check if any co-applicants. If so, attach additional sheet(s) with the required information as requested above.

Note: If the applicant is not the owner, submit written permission from the owner as Attachment B.

2. List billing contact, if different than the applicant.

Name:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.

Contact Person: Title:

E-mail:

Part II: Applicant Information (continued)

3. List primary contact for departmental correspondence and inquiries if different than applicant.

Name: **Connecticut Port Authority**
Mailing Address: **455 Boston Post Road, Suite 204**
City/Town: **Old Saybrook** State: **CT** Zip Code: **06475**
Business Phone: **860-577-5174** ext.
Contact Person: **Joseph R. Salvatore** Title: **CPA Program Manager**
*E-mail: **Joseph.Salvatore@CT.gov**

4. List Site Owner, if different than applicant:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.
Contact Person: Title:
E-mail:

5. List Facility Owner, if different than applicant:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.
Contact Person: Title:
E-mail:

6. List attorney or other representative, if applicable.

Firm Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.
Attorney: Title:
E-mail:

7. List all engineer(s), surveyor(s) and/or other consultant(s) employed or retained to assist in preparing the application and designing or constructing the activity.

Name: **AECOM**
Mailing Address: **500 Enterprise Drive, Suite 1A**
City/Town: **Rocky Hill** State: **CT** Zip Code: **06067**
Business Phone: **860-263-5821** ext.
Contact Person: **Michael Garbolski, P.E.** Title: **Project Manager**
E-mail: **michael.garbolski@aecom.com**
Service Provided: **Owner Representative and Environmental Permitting**
☒ Check if additional Applicant Information sheets are included, and label and attach them to this sheet.

8. A pre-application meeting with Office of Long Island Sound Program (OLISP) staff is strongly recommended prior to application submission. Please note the meeting date and OLISP staff person's name:

Staff Name: **M. Grzyiniski; B. Thompson, B. Golembiewski** Meeting Date: **11/18,1/19 - 10/20**

Part III: Project Information

1. Describe the proposed regulated work and activities in a detailed narrative, including the number and dimensions of structures. Refer to both the instructions and Appendix A of the instructions (Activity Specific Instructions).

Please see attached narrative (Part III.1).

2. **a.** Describe the construction activities involved for the project in detail, including methods, sequencing, equipment, and any alternative construction methods that might be employed.

Please see attached narrative (Part III.2).

b. Describe any erosion and sedimentation or turbidity control installation and maintenance schedule and plans in detail.

Please see attached narrative (Part III.2).

c. Indicate the length of time needed to complete the project and identify any anticipated time period restrictions.

Please see attached narrative (Part III.2).

Part III: Project Information (continued)

3. Describe the purpose of, the need for, and intended use of the proposed activities. (For example, private recreational boating, marina, erosion protection, public infrastructure, etc.)

Please see attached narrative (Part III.3).

4. Identify and describe all coastal or aquatic resources on the site by checking the appropriate box and describe the expected impact on these resources. You may add addenda as necessary as Attachment M.

Coastal/Aquatic Resources	On-site	Adjacent	Describe Expected Impact
Coastal bluffs and escarpments	☐	☐	
Rocky Shorefront	☒	☒	**Minimal impacts from stormwater outfall drainage upgrades - See attached narrative (Part III.4)**
Beaches and Dunes	☒	☒	**No anticipated impact - See attached narrative (Part III.4)**
Intertidal Flats	☐	☐	
Tidal Wetlands	☐	☐	
Fresh Water Wetlands and Watercourses	☐	☐	
Estuarine Embayments	☐	☐	
Coastal Hazard Areas	☒	☒	**Modification of existing impervious surfaces in these onsite areas**
Developed Shorefront	☒	☒	**Permanent impact (shore stabilization) - See attached narrative (Part III.4)**
Islands	☐	☐	
Near shore Waters	☒	☒	**Structural fill placement (Central Wharf Area creation); Dredging and Seabed Preparation: See attached narrative (Part III.4)**
Offshore Waters	☒	☒	**Structural fill placement (Central Wharf Area creation); Dredging and Seabed Preparation: See attached narrative (Part III.4)**
Shorelands	☐	☒	**No anticipated SPII impacts (Mitigation)**
Shellfish Concentration Areas	☐	☒	**No anticipated impact - See attached narrative (Part III.4)**
Wildlife Resources and Habitat	☒	☒	**Permanent impact due to habitat conversion - See attached narrative (Part III.4)**
Benthic (bottom) Habitat	☒	☒	**Temporary & permanent impacts - See attached narrative (Part III.4)**
Indigenous aquatic life, including shellfish and finfish	☒	☒	**Temporary & permanent impacts - See attached narrative (Part III.4)**
Submerged Aquatic Vegetation	☐	☐	

Part III: Project Information (continued)

5. Identify whether the proposed activities will impact the following categories. If so, describe the expected impact, adding addenda as necessary as Attachment M.

Categories	Yes	No	Describe Expected Impact
Prevention or alleviation of shoreline erosion and coastal flooding	☒	☐	**Proposed shoreline stabilization and mitigation measures will reduce shoreline erosion potential of unconsolidated material. See Attachment M9.**
Use and development of adjoining uplands	☒	☐	**Currently developed areas of the Admiral Shear State Pier and CVRR Pier will be redeveloped.**
Use and development of adjacent lands and properties	☒	☐	**To the extent practicable, the Project has sought to utilize existing adjacent lands and properties.**
Improvement of coastal and inland navigation for all vessels, including small craft for recreational purposes	☒	☐	**The Project has been redesigned to avoid adverse navigational impacts to adjacent water dependant users.**
Pollution control	☒	☐	**Improvements to site drainage and stormwater management.**
Water quality	☒	☐	**Temporary impact may occur due to in-water activities.**
Water circulation and drainage	☒	☐	**Placement of fill between piers will affect water circulation.**
Recreational use of public water	☐	☒	**Public access to the facility waterfront is currently limited.**
Management of coastal resources	☐	☒	**Proper management anticipated. See Attachment M9.**
Public health and welfare	☐	☒	**N/A - See Attachment M9.**
The protection of life and property from flood, hurricane and other natural disasters	☐	☒	**Proper management anticipated. See Attachment M9.**

6. Identify and evaluate any potential beneficial and adverse impacts to:

a. navigation: (include federal and local navigation channels and distance to nearby docks)

Please see attached narrative (Part III.6).

b. public access to, and public use of, public trust lands and waters waterward of mean high water:

Please see attached narrative (Part III.6).

Part III: Project Information (continued)

7. Describe how the proposed work will be a water-dependent use(s) of the property or will physically support water-dependent use(s) of the property, such as marinas, recreational and commercial fishing, boating facilities, shipyards and boat building facilities. Please do not include private recreation docks in this category. Include how upland facilities, such as sanitary facilities, designated parking, boat repair and sales, winter storage, etc., will support water-dependent uses on-site.

Through this Project, it is the goal of CPA to create infrastructure in Connecticut that will serve as a long-term regional wind turbine generator (WTG) port facility while at the same time continuing to support other existing long-term breakbulk operations for steel, coil steel, lumber, copper billets, as well as other cargo. Accordingly and consistent with its mission, CPA proposes the State Pier Infrastructure Improvements (SPII, or Project) at the State Pier Facility.

As presented and described throughout the application materials, the proposed State Pier Infrastructure Improvements will result in overall improvements to onshore and in-water facilities, allowing increased access and opportunities to accommodate vessels at the site. Project layout has been redesigned to avoid potentail conflict with adjacent vessel traffic.

Upland facilities will include buildings, site infrastructure (lighting, security fencing), utilities and storage areas designed to support the regional WTG operations and continued support of the above-noted cargo operations. The upland facilities onsite directly support the State Pier Facility's water-dependent operations.

In-water improvements will facilitate navigation between the State Pier Facility and the New London Harbor / Thames River Federal Navigation Channel for WTG-support and other vessels. In addition, increases to the bearing capacity, increased pier size, increased water depths, and overall improvements will allow for a wider range of vessels to utilize the State Pier Facility location. Given increased vessel traffic and shipping commerce opportunities in Connecticut, these improvements allow a greater range of access for vessels.

Offshore wind energy development is a water-dependent use. Retrofitting the existing State Pier Facility so it can serve as a regional WTG offshore wind support port will require continued direct water-dependent activities including: sub-component delivery via maritime cargo transport vessels; delivery of assembled main components (e.g., foundations, monopiles, turbines, blades) to lease areas via installation vessels; and, construction, support, and maintenance vessel berthing.

The proposed State Pier Facility upgrades will directly support the construction, operation, and maintenance of planned and future offshore wind energy development projects in Long Island Sound and the Southern New England Bight, while also providing capacity to support other breakbulk operations.

8. Identify and evaluate the potential adverse impacts of the proposed work upon future water-dependent development opportunities and activities.

Please see attached narrative (Part III.8).

9. Discuss the alternatives to the proposed project which were considered and indicate why they were rejected.

In addition to taking no action, feasible alternatives capable of meeting the purpose and need of the project were considered. Additional details and discussion of the various onsite and offsite alternatives is presented in Attachent M7.

Part III: Project Information (continued)

10. After all measures to eliminate or minimize adverse impacts have been incorporated in the proposed project, describe why any adverse impacts that remain should be deemed acceptable by OLISP.

Select unavoidable impacts to natural resources will occur as a result of SPII. Implementation of a wide range of avoidance, minimization, best management practices (BMPs) and mitigation measures have been incorporated into the project, as described herein, to significantly reduce anticipated Project impacts (temporary, Project, temporal and cumulative impacts).

Construction period impacts will be temporary in nature and will not have long-term effects on biological resources or human use in the area. In-water work includes demolition and removal of select structures, improvements of structures that are in poor physical state, and construction work to increase site access opportunities. Unavoidable impacts associated with placement of permanent fill within the Central Wharf area will be appropriately mitigated, in consultation with DEEP and other regulatory agencies, as described herein.

Direct long term benefits of the project include a significant financial investment in the local economy, numerous short- and long-term employment opportunities, and long-term inputs to the local tax base. The primary indirect benefit of SPII is offsetting a reliance on fossil fuel energy sources, as the Project will support the development of offshore wind energy sources. As noted above, mitigation measures will be implemented to restore and enhance local and regional ecological resources.

11. a. Is any portion of the work for which authorization is being sought now complete or under construction?

☐ Yes ☒ No ***If No, skip to question #12***.

b. Specify what parts of the proposed work have been completed or are under construction.

c. Indicate when such work was undertaken or completed. Identify completed portions on the plans submitted.

d. When did you acquire interest in this property?

e. Were you responsible for the unauthorized activity as a result of actions taken before the acquisition of the property? ☐ Yes ☐ No If Yes, explain.

Part III: Project Information (continued)

f. Did you know or have reason to know of the unauthorized activity? ☐ Yes ☐ No If Yes, explain.

g. Is this application associated with an enforcement action pending with DEEP? ☐ Yes ☐ No

If Yes, explain:

12. Is there or will there be any federal and/or state funding of this project? ☒ Yes ☐ No If Yes, explain.

Estimated budgeted Project costs are $157M. Partial Project funding sources include: $25.5M in CT General Obligation Bond Funds allocated to the CPA; $22.5M Deepwater Wind commitment to the state/New London-CPA, facilitated by DECD negotiations with BSW (now Northeast Offshore [NEO]). $30M in additional CPA escrow funding. NEO to provide $70M in Base Case funding. Attainment of schedule delivery milestones will further affect funding streams.

☒ Check here if additional Project Information sheets are necessary, and label and attach them to this sheet.

Part IV: Site and Resource Information

1. SITE NAME AND LOCATION

Name of Site : **State Pier Facility, New London**

Street Address or Location Description: **200 State Pier Road**

City/Town: **New London** State: **CT** Zip Code: **06320**

Tax Assessor's Reference: Map **See Attachment K** Block Lot

Latitude and longitude of the exact location of the proposed activity in degrees, minutes, and seconds or in decimal degrees: Latitude: **41.359373** Longitude: **-72.091748**

Method of determination (check one):

☒ GPS ☒ USGS Map ☐ Other (please specify):

If a USGS Map was used, provide the quadrangle name:

2. INDIAN LANDS: Will the activity which is the subject of this application be located on federally recognized Indian lands? ☐ Yes ☒ No

3. COASTAL AREA: Is the project site located in a municipality within the coastal area? (check town list in the instructions) ☒ Yes ☐ No

4. ENDANGERED OR THREATENED SPECIES: According to the most current "State and Federal Listed Species and Natural Communities Map", will the activity which is the subject of this application, including all impacted areas, be located within an area identified as a habitat for endangered, threatened or special concern species?

☒ Yes	☐ No	Date of Map: **June 2020**

Part IV: Site Information (continued)

If yes, complete and submit a *Request for NDDB State Listed Species Review Form* (DEEP-APP-007) to the address specified on the form, **prior** to submitting this application. **Please note NDDB review generally takes 4 to 6 weeks and may require additional documentation from the applicant.** A **copy** of the completed *Request for NDDB State Listed Species Review Form* **and** the CT NDDB response ***must*** be submitted with this completed application as Attachment C.

For more information visit the DEEP website at www.ct.gov/deep/nddbrequest or call the NDDB at 860-424-3011.

5. **AQUIFER PROTECTION AREAS:** Is the site located within a mapped Level A or Level B Aquifer Protection Area, as defined in CGS section 22a-354a through 22a-354bb?

☐ Yes ☒ No If **yes**, check one: ☐ Level A **or** ☐ Level B

If **Level A**, are any of the regulated activities, as defined in RCSA section 22a-354i-1(34), conducted on this site? ☐ Yes ☐ No

If **yes**, and your business is **not** already registered with the Aquifer Protection Program, contact the local aquifer protection agent or DEEP to take appropriate actions.

For more information on the Aquifer Protection Area Program visit the DEEP website at www.ct.gov/deep/aquiferprotection or contact the program at 860-424-3020.

6. **SHELLFISH COMMISSION:** Does your town have a shellfish commission? ☐ Yes ☒ No

If yes, you must submit a completed *Shellfish Commission Consultation Form* (DEEP-OLISP-APP-101D) with this application as Attachment D.

7. **HARBOR MANAGEMENT COMMISSION:** Does your town have a Harbor Management Commission?

☒ Yes ☐ No New London Port Authority functions as the City's Harbor Management Commission.

If yes, you must submit a completed *Harbor Management Commission Consultation Form* (DEEP-OLISP-APP-101E) with this application as Attachment E.

8. **DEPARTMENT OF AGRICULTURE/BUREAU OF AQUACULTURE:** If the subject site is located in a specific area as explained in Part IV, item 8 of the application instructions (DEEP-OLISP-INST-100), you must submit a completed *Department of Agriculture/Bureau of Aquaculture Consultation Form* (DEEP-OLIS-APP-101F) as Attachment F.

9. **CONSERVATION OR PRESERVATION RESTRICTION:** Will the activity which is the subject of this application be located within a conservation or preservation restriction area? ☐ Yes ☒ No

If Yes, proof of written notice of this application to the holder of such restriction or a letter from the holder of such restriction verifying that this application is in compliance with the terms of the restriction, must be submitted as Attachment G.

10. Indicate the number and date of issuance of any previous state coastal permits or certificates issued by DEEP authorizing work at the site and the names to whom they were issued.

Permit/COP Number	*Date Issued*	*Name of Permittee/Certificate Holder*
201914361/GSN003536	**04/07/2020**	**Connecticut Port Authority**
201910828-COP	**10/07/2019**	**Connecticut Port Authority**
201807463-COP	**06/27/2018**	**Connecticut Port Authority**
201402416-MG	**03/27/2014**	**CT Department of Transportation**
199800073-GW	**01/15/1998**	**CT Department of Transportation**

SD-M-87-302	**11/13/1987**	**Admiralty Group, Ltd.**
SD-83-198	**11/25/1983**	**ConnDOT - Bureau of Waterways**

Part IV: Site Information (continued)

11. Identify any changes in conditions of the site (including ownership, development, use, or natural resources) since the issuance of the most recent state permit or certificate authorizing work at the site.

The following land use documentation has been recently updated for the site:

- State Land Transfer: A Quit-Claim Deed was fully executed on March 2, 2020, which transferred ownership of 32 acres of real property from the CT Department of Transportation (DOT) to the CPA. Documentation was recorded at the New London City Clerk's Office on March 12, 2020.

- New England Central Railroad, Inc (NECR)/Genesee & Wyoming (G&W) Lease Agreement: On March 11, 2020, the CPA and NECR entered into a 12-year lease agreement (with option to renew) for CPA to lease 4.9 acres of NECR/G&W property (New London Parcel ID G10-245-3A) for Project purposes. Documentation was recorded at the New London City Clerk's Office on March 17, 2020.

12. a. Identify and describe the existing municipal zoning classification of the site.

Waterfront Commercial/Industrial (1) (WCI1). WCI1 zoning encourages water dependent and water related industrial and major commercial use where appropriate and feasible, public access, along appropriate portions of the Thames River waterfront consistent with the objectives of the CT Coastal Management Act and the New London Municipal Coastal Program and Plan of Conservation and Development.

b. Identify and describe the existing land use(s) on and adjacent to the site.

Existing land use on and adjacent to the site is developed industrial land and an adjacent public access boat launch. Industrial uses include maritime freight delivery, commercial vessel berthing areas, and transition to land-based transportation/distribution network. The Project has been redesigned to account for vessel navigation concerns raised by an adjacent water-dependent user (Cross Sound Ferry) who provides ferry service to various regional destinations.

13. Provide the name of the waterbody at the site of proposed work: **Thames River**

14. Provide the elevation of the applicable regulatory limit for your project referenced to NAVD88. Refer to the instructions for more information.

☐ Tidal Wetlands Limit = _____ ☒ Coastal Jurisdiction Limit = **2.1'**

15. How was the regulatory limit identified above determined? Please check one of the following:

☒ **DEEP-calculated elevation**

☐ **Self-calculated elevation** (If a self-calculated elevation is used, please provide the additional information and calculations per the instructions.)

☐ **Mean High Water elevation** (use only if project is upstream of a tide gate, dam or weir) (If a MHW elevation is used, provide a discussion of the location of the tide gate, dam or weir.)

If other than a DEEP calculated elevation was used to calculate the CJL, please provide the additional information and calculations per the instructions and label and attach them as Attachment M.

16. Provide the elevations of the mean high water and mean low water at the site and the reference datum used. Refer to the instructions regarding elevation datum.

MHW = **0.92'** MLW = **-1.65'** Datum = **NAVD88**

☐ Check here If NAVD88 is not referenced, and provide an orthometric conversion table in Attachment M.

Part V: Supporting Documents

The supporting documents listed below must be submitted with the application and labeled as indicated. The specific information required in each attachment is described in the *Instructions for Completing a Permit Application for Programs Administered by the Office of Long Island Sound Programs* (DEEP-OLIS-INST-100). Check the box by the attachments listed to indicate that they have been submitted.

☒	Attachment AA:	a copy of the published notice of permit application, as described in the instructions, attached to a completed "Certification of Notice Form (DEEP-APP-005A
☒	Attachment A:	Executive Summary; summarize the information contained in the complete application which must include a description of the proposed regulated activities and a synopsis of the environmental and engineering analyses of the impact of such activities. Include a list of the titles of all plans, drawings, reports, studies, appendices, or other documentation which are attached as part of the application.
☒	Attachment B:	If the applicant is not the owner, submit written permission from the owner as Attachment B.
☒	Attachment C:	**Copy** of the completed *Request for NDDB State Listed Species Review Form* (DEEP-APP-007) **and** the NDDB response, if applicable.
☐	Attachment D:	*Shellfish Commission Consultation Form* (DEEP-OLIS-APP-101D), if applicable.
☒	Attachment E:	*Harbor Management Commission Consultation Form* (DEEP-OLIS-APP-101E), if applicable.
☒	Attachment F:	*Department of Agriculture/Bureau of Aquaculture Consultation Form* (DEEP-OLIS-APP-101F), if applicable.
☐	Attachment G:	Conservation or Preservation Restriction Information, if applicable.
☒	Attachment H:	*Applicant Compliance Information Form* (DEEP-APP-002).
☒	Attachment I:	Provide plans of the project as Attachment I. They must be 8 1/2" x 11" scaled plans of the site and proposed work, with the datum of the measurements noted, including: a. A Vicinity Map; b. A Tax Assessor's Map showing the Map, Block and Lot #, subject property and immediately adjacent properties; c. Plan Views showing existing and proposed conditions, including vessel berthing arrangement, based on a site survey prepared by a licensed surveyor; and d. An Elevation or Cross-Section View showing existing and proposed conditions, including vessel berthing arrangement, based on a site survey prepared by a licensed surveyor. **Please refer to Attachment I of the instructions for identification and discussion of required plan components.**
☒	Attachment J:	Photographs showing existing conditions of the site.
☒	Attachment K:	Land owner information, including names and mailing addresses, for all land owners of record for any property located five hundred feet (500) or less from the property lines of the subject property, certification that a copy of the Notice of Application was sent to each identified property owner and names and addresses of any known claimants of water rights adjacent to the project and owners or lessees of shellfish grounds or franchises within the area which work is proposed.
☒	Attachment L:	*Applicant Background Information Form* (DEEP-APP-008) (if applicable).
☒	Attachment M:	Other Information: Any other information the applicant deems relevant or is required by DEEP.
☒	Attachment N:	*US. Army Corps of Engineers Consultation Form* (DEEP-OLISP-APP-101N)

Part VI: Applicant Certification

The applicant(s) *and* the individual(s) responsible for actually preparing the application must sign this part. An application will be considered insufficient unless *all* required signatures are provided.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute.

I certify that this application is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I certify that I have complied with all notice requirements as listed in section 22a-6g of the General Statutes."

Signature of Applicant	October 22, 2020 Date
John Henshaw - CT Port Authority Name of Applicant (print or type)	**CPA Executive Director** Title (if applicable)
Signature of Preparer (if different than above)	Date
See Attached Name of Preparer (print or type)	Title (if applicable)

☒ Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this application (i.e., professional engineers, surveyors, soil scientists, consultants, etc.)

Note: Please submit the completed Application Form, Fee, and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Please remember to publish notice of the permit application **prior** to submitting your completed application to DEEP. Send a copy of the published notice to the chief elected official of the municipality in which the regulated activity is proposed and provide DEEP with a copy of the published notice, as described in the instructions, attached to a completed *Certification of Notice Form* (DEEP-APP-005A) as Attachment AA to this application.

Also send a copy of the notice to the Chairman of the Shellfish Commission and to the Chairman of the Harbor Management Commission in the municipality in which the regulated activity is proposed, where applicable. Refer to the Shellfish Commission and Harbor Management Commission lists for contact information.

Submit one complete application copy to the U.S. Army Corps of Engineers, Regulatory Division, 696 Virginia Road, Concord, MA, 01742.

If you are submitting a tidal wetlands application, mail complete application copies to the municipal CEO, Shellfish Commission and Conservation Commission.

Part VI: Applicant Certification

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I certify that this application is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I certify that I have complied with all notice requirements as listed in section 22a-6g of the General Statutes."

See first signature page	**----------**
Signature of Applicant	Date
John Henshaw - CT Port Authority	**CPA Executive Director**
Name of Applicant (print or type)	Title (if applicable)
Michael T. Garbolski	**10/28/2020**
Signature of Preparer (if different than above)	Date
Michael Garbolski, P.E.	**AECOM Project Manager, Owner's Rep.**
Name of Preparer (print or type)	Title (if applicable)

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Note: Please submit the completed Application Form, Fee, and all Supporting Documents to:

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DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

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Signature of Applicant	Date
John Henshaw - CT Port Authority	**CPA Executive Director**
Name of Applicant (print or type)	Title (if applicable)
Dennis Lowry	**10/28/2020**
Signature of Preparer (if different than above)	Date
Dennis Lowry	**AECOM Sr. Project Mgr./Wetland Ecologist**
Name of Preparer (print or type)	Title (if applicable)

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John Henshaw - CT Port Authority	**CPA Executive Director**
Name of Applicant (print or type)	Title (if applicable)
	**10/28/2020**
Signature of Preparer (if different than above)	Date
Kris van Naerssen, PWS	**AECOM Ecologist**
Name of Preparer (print or type)	Title (if applicable)

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Name of Applicant (print or type)	Title (if applicable)
	**10/28/2020**
Signature of Preparer (if different than above)	Date
Timothy P. O'Sullivan, MS, PWS	**AECOM Wetland and Wildlife Biologist**
Name of Preparer (print or type)	Title (if applicable)

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Name of Applicant (print or type)	Title (if applicable)
	**10/28/2020**
Signature of Preparer (if different than above)	Date
Josh Singer, P.E.	**Moffatt & Nichol, Design Engineer**
Name of Preparer (print or type)	Title (if applicable)

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Part II.7. List all engineers, surveyors, and/or other consultants employed or retained to assist in preparing the application and designing or constructing the activity.

Name: K2 Management, Inc.
Mailing Address: 203 Crescent Street, Suite 205, Waltham, MA 02453
Contact: William Follett
Phone: 207-807-5489
Email: bfo@k2management.com
Service Provided: Project Management

Name: Moffatt & Nichol, Inc.
Mailing Address: 180 Wells Avenue, Suite 302, Newton, MA 02459
Contact: Joshua Singer, P.E.
Phone: 617-299-7330
Email: jsinger@moffattnichol.com
Service Provided: Lead Design Engineer / Engineer of Record

Name: Martinez Couch and Associates, LLC
Mailing Address: 1084 Cromwell Avenue, Rocky Hill, CT 06067
Contact: Richard E. Couch, P.E.
Phone: 860-436-4364
Email: couchre@martinezcouch.com
Service Provided: Environmental Permitting (Including Initial Consultations)

Name: GM2, Inc.
Mailing Address: 115 Glastonbury Blvd., Glastonbury, CT 06033
Contact: Christopher Sedgwick, LS
Phone: 860-659-1416
Email: csedgewick@gm2inc.com
Service Provided: Terrestrial Survey

Name: Steele Associates Marine Consultants, LLC
Mailing Address: 94 Gifford Street, Falmouth, MA 02540
Contact: Eric Steele
Phone: 508 540-0001
Email: info@steeleassociates.net
Service Provided: Hydrographic Survey

Name: CR Environmental, Inc.
Mailing Address: 639 Boxberry Hill Rd, East Falmouth, MA 02536
Contact: Chip Ryther
Phone: 508 563-7970
Email: chip@crenvironmental.com
Service Provided: Marine Surveys

Part III.1. Describe the proposed regulated work and activities in a detailed narrative, including the number and dimensions of structures.

The proposed State Pier Infrastructure Improvement (SPII or Project) includes onshore site work and in-water activities in the Thames River. For the purposes of this application, activities are separated into demolition/removal activities and construction/installation/improvement activities. As described herein, the Project will be completed in phases – generally moving from upland areas to in-water work.

While the following narrative is presented as two distinct phases, some overlap may occur between the Phase 1 and Phase 2. In addition, select actions listed as Phase 1 activities may actually occur during Phase 2. For example, if deemed appropriate by the contractor, the fill movement from the uplands into the central wharf may be completed as one action during Phase 2, rather than as two separate actions (i.e. stockpiling in Phase 1 and fill placement in Phase 2). Work activities will only progress once applicable permits are obtained.

Phase 1 work generally consists of the on-shore improvements and activities at the site, as well as select in-water activities. Work will include demolition of buildings, excavation, grading and installation of a stormwater management system and utilities. The site will be leveled and graded to accommodate future uses. Specifically, the entire upland portion of the site will be provided with a level, compacted gravel surface for use by any cargo handling and storage activities. Select in-water activities, such as derelict structure removal and bulkhead oversheeting, which have been authorized through the COP/GP process will be conducted under Phase 1.

Phase 2 work generally consists of the in-water and over-water improvements such as dredging, fill placement and marine structure construction for creation of the new Central Wharf area and heavy-lift pad. Anticipated SPII components are discussed in more detail below.

Phase 1 Work (Uplands and NE Bulkhead)

Onshore Demolition Activities

- Demolition of various existing buildings (including the Administration Building and Warehouse 1) and site utilities in upland area.
- Demolition of a segment of State Pier Road, including the bridge and bridge abutment.
- Offsite relocation of NOAA station.
- Removal of existing onsite rail tracks.

In-Water and Over-Water Demolition Activities

- Demolition of existing berthing dolphins (currently not used: dolphin demolition work permitted separately under CT DEEP OLISP Certificate of Permission [COP: 201910828-COP issued 10/07/19] and USACE CT General Permit [CT GP] process [NAE-2018-02161 issued 11/01/19]).
- Demolition of Northeast Annex timber pile supported concrete deck on east side of Admiral Shear State Pier along shoreline (±6,300 sf: Northeast Annex pile and superstructure demolition work permitted separately under CT DEEP COP / USACE GP process [see authorization numbers above]).

Onshore Improvements

- Cutting of the onsite hill (±190,000 CY). These soils will be used as fill between the two piers during Phase 2 activities.
- Overall grading and compaction of the site and installation of a gravel surface.

- Installation of retaining wall or earth embankment to maintain existing State Pier Road.
- Installation of new drainage and stormwater treatment system to meet stormwater quality requirements.
- Onshore installation of an anchored heavy-lift relieving platform on the existing Northeast Bulkhead (±700 lf impact along existing bulkhead: bulkhead work permitted separately under CT DEEP COP / USACE GP process [see authorization numbers above]).
- Installation of fendering and bollards at Northeast Bulkhead.
- Installation of new electrical utilities. High mast light poles will be installed. Electrical equipment may include electrical substations, transformers and powered racks for nacelles.
- Installation of new fire protection mains, hydrants and potable water supply lines.
- Installation or upgrade of sanitary sewers.
- Installation of perimeter security fencing and gate.
- New roadway entrance to the site.

Phase 2 Work (Waterfront Works: State Pier / CVRR Pier / Central Wharf)

<u>In-Water, Over-Water and On-Shore Improvements</u>

- Demolition of approximately 420 linear feet (~84,000 SF) of State Pier to facilitate construction of the heavy lift pile supported area and bulkhead at the State Pier East Berth (approximately 78,000 sf).
- Demolition of additional segments (~34,000 SF) of the west face of State Pier concrete deck to facilitate fill placement between the piers (approximately 24,000 sf).
- Demolition of two areas at the east face and southeast corner of State Pier to facilitate mooring bollard installation (each area approximately 1,500 sf).
- Dredging of Turning Basin including approaches to both berths. Dredging to -39.8' NAVD88 (-36' MLLW + 2' overdredge), matching the existing New London Federal Channel depths. This includes removal of approximately 55,000 CY of material, including overdredge, generated from approximately 241,000 SF[1]. The majority of this material will be generated in the northern portion of the turning basin.
- Dredging of vessel berthing areas to -41.8' NAVD88 (-38' MLLW + 2' overdredge) for berthing layout and up to -66.8' NAVD88 (-63' MLLW + 2' overdredge) to accommodate the seabed preparation work described below. Dredging to be completed at the proposed Northeast Berth (Up to ~240,000 SF; ±222,000 CY) and East Berth (Up to ~210,000 SF; ±122,000 CY) proximate to the new heavy lift areas.
- Seabed preparations would be completed after the above dredging to allow for berthing of vessels equipped with jack up legs (or similar) at the Northeast Bulkhead and East Berth heavy lift areas. Jack-up pockets will be constructed by filling the dredged pockets with crushed stone or gravel, to provide a stable jacking platform and to protect the seafloor from damage during install vessel jacking operations. Dredging and rock pad design utilizes a tiered approach, with stone pad thickness of 13' to 27' (maximum; in the eastern portions). Up to 107,000 CY of crushed stone would be placed in each pocket. The East Berth seabed preparation would be completed first and the Northeast Bulkhead seabed preparation work would be constructed at a later stage. This stone bed will be maintained throughout the duration of WTG operations.
- Installation of longitudinal steel sheeting or protected slope at CVRR pier.

[1] Proposed Turning Basin has a larger overall total footprint than the dredge area identified above (many existing areas are already below the design depth within the ~460,000 SF Turning Basin area).

- Installation of king pile bulkhead between the State Pier and the CVRR Pier, extending into the CVRR pier, tying into the new longitudinal sheet pile wall/slope along the CVRR pier.
- Filling approximately 7.4 acres (~322,000 SF) between the CVRR Pier and State Pier to create the new Central Wharf operational area (±400,000 CY) which is located adjacent to the heavy lift area at the proposed East Berth. Approximately 308,600 CY will be placed below MHHW (+1.21 ft. NAVD88) and the balance will be placed above this elevation to raise the Central Wharf to finish grades. Relative to the DEEP New London Coastal Jurisdiction Line (CJL) elevation of +2.1 ft. NAVD88, approximately 315,900 CY of fill would be placed between the piers for Central Wharf creation.
- Installation of a series of ~3' wide stone columns, or comparable technology, in the filled area of the new Central Wharf created between the piers and at the East Berth Heavy Lift area.
- Installation of steel sheet pile to enclose the State Pier heavy lift platform and filling approximately ~33,600 SF between the existing State Pier riprap slope and the proposed sheet pile wall along its East Face[2]. Approximately 15,000 CY will be placed below MHHW (+1.21 ft. NAVD88) for the East Face Heavy Lift area creation. An additional 600 CY of East Face Heavy Lift area fill would be placed between MHHW and the CJL elevation of 2.1 ft NAVD88.
- Installation of steel toewall system at the base of the State Pier heavy lift platform. ~1,115 LF of toewall is proposed at and adjacent to the heavy lift platform.
- Installation of upgraded fendering and mooring bollards at the State Pier East Face Berth.
- Installation of a toewall to protect an existing eelgrass bed from dredging activities. Toewall will consist of up to ~170 ft of combination sheet pile (to extend ~1 ft above mudline).
- Installation of high mast lights at the State Pier Facility.
- Installation of cold ironing infrastructure.
- Installation of piles and associated gangway to support ConnDOT Chester-Hadlyme ferry overwintering at the Northwest Bulkhead area.

Existing conditions and proposed activities are detailed on site plans in Attachment I. A table summarizing anticipated Project activities and impact quantities is included below.

Suitable dredge materials and upland soils will be used for fill between the two existing piers. The CPA has conducted soil and sediment characterization studies to ensure the materials proposed for use as fill between the two existing piers are suitable. The results of the sediment investigations have been provided in Attachment M2. Additional quantities of offsite fill material may be required. Other fill sources may include unrelated dredge projects or offsite sources.

In addition, sediment dredged from the site may require offsite upland disposal or upland beneficial reuse for logistical reasons. If geotechnical characteristics, Project sequencing or other factors such as onsite space dictate, offsite disposal of select dredged materials may be required. Offsite disposal of any such unsuitable sediment would be disposed of at an approved facility in compliance with all applicable regulatory requirements.

Project Permit Authorizations

The CPA has been granted authorizations for select Project elements under the CT DEEP Land & Water Resources Division (formerly Office of Long Island Sound Programs: OLISP) Certificate of Permission[3] (COP) program and associated authorizations from USACE (i.e. approval under General

[2] Engineering design is progressing. The East Berth Heavy Lift area may be constructible using a toe wall and associated pile supports, thus eliminating a need for structural solid-fill placement atop the riprap slope. Conservatively, and for permitting purposes, placement of this fill has been assumed.

[3] https://www.ct.gov/deep/cwp/view.asp?a=2705&q=323580&deepNav_GID=1635

Permit [GP: Coastal GP 2] of the USACE CT GP Program)[4]. These programs have specific eligibility requirements and allow for the general repair, maintenance and/or removal of certain existing structures. As described herein, the following permit phasing approach is anticipated:

Phase 1 Project Elements
The anticipated construction and permitting timelines for the *Phase 1* Project components (in-water demolition and bulkhead oversheeting work) is presented in the table below. The COP/GP 2 applications noted below were prepared under separate cover and cover select *Phase 1* Project Elements. These applications were submitted to the agencies on September 10, 2019 and have been authorized by CT DEEP LWRD (201910828-COP) and USACE (NAE-2018-02161).

CPA has received authorization under the CT DEEP *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities*[5], (Application No. 201914361 / Permit No. GSN003536), and would obtain other applicable authorizations, as applicable, prior to initiation of Project construction activities in upland areas. Additional detail on the anticipated stormwater handling and treatment methodologies are included in this stormwater filing.

Construction Element	***Anticipated Schedule***	***Separate COP/CT GP Applications***
Phase 1 Activities: Terrestrial Components		
Demolition of existing upland structures (including foundations)	February 2021 to June 2021	No
Upland / land-side construction, including (but not limited to): • Grading, compaction and leveling of uplands. Upland stockpiling would occur until in-water placement is possible • In-pier reinforcement of the CVRR Pier • Raising the elevation of the CVRR Pier (task to be primarily completed under Phase 2) • Fill and raise elevation of the NECR Parcel • Installation of the NE bulkhead land side supporting structures • Installation of dead-man anchorage system for Northeast Bulkhead oversheeting • Installation of pile supported, concrete heavy lift platform directly inshore of Northeast Bulkhead (land side piling) • Installation of in-ground utilities and bollards • Installation of new drainage and stormwater treatment system to meet stormwater quality requirements. • Temporary Office Installations	February 2021 to November 2021	No

[4] https://www.nae.usace.army.mil/portals/74/docs/regulatory/StateGeneralPermits/CT/Connecticut_General_Permits-August_2016.pdf
[5] https://www.ct.gov/deep/cwp/view.asp?A=2721&Q=558612

Construction Element	***Anticipated Schedule***	***Separate COP/CT GP Applications***
Phase 1 Activities: In-Water & Above-Water Elements (Demolition and Existing Structure Improvement)		
In-water demolition and structure improvements, including: • Northeast Bulkhead – Sheet Pile Oversheeting (February - June 2021) • Northeast Annex - Demolition of derelict Pile-Supported Deck Platform (February - June 2021) • Mooring Dolphin Demolition (February – April 2021)	February 2021 to December 2021 (*No Prohibited In-Water Work June through September)	Yes: CT DEEP Authorization 201910828-COP issued 10/07/2019 USACE Authorization NAE-2018-02161 issued 11/01/2019

Phase 2 Project Elements

- The remaining Project elements described herein (i.e. all remaining non-Phase 1 Project components [including dredging and fill components]) would be completed under Phase 2 *Waterfront Works*, using authorizations anticipated from DEEP under the *Structures, Dredging & Fill (SDF) and Clean Water Act (CWA) Section 401 Water Quality Certificate* and authorizations anticipated from USACE under the CWA Section 404 / Rivers and Harbors Act Section 10 programs, as outlined in this JPA submittal, in addition to those received via the pending USACE Section 408 / Congressional channel deauthorization processes.
- Authorization for the potential Living Shoreline installation (which is further discussed in Attachment M8 as potential compensatory mitigation for Project impacts) may also be pursued in the future under the DEEP OLISP COP program and/or as a condition of the SDF authorization.

Compensatory Mitigation for Unavoidable Impacts

As described in this application, the Project has been designed to include avoidance and impact minimization measures wherever feasible. For unavoidable project impacts, such as proposed fill from the pier footprint expansion, compensatory mitigation will be pursued.

The CPA will continue to develop an appropriate mitigation strategy with the regulatory agencies. CPA anticipates that the compensatory mitigation plan will include the following components (please note that mitigation plan elements may change based on additional agency input):

- Living Shoreline Creation and Habitat Enhancement.
- In-Lieu Fee / Mitigation Bank Payments.
- Funding Off-Site Stream Continuity / Diadromous Fisheries Restoration Projects through CT DEEP Inland Fisheries Program.
- Potential Winter Flounder Habitat Shelf Provision. Additional NMFS input required.

Detail pertaining to the compensatory mitigation plan elements is presented in Attachment M8.

Table 1 – Project Dredge and Fill: Areas and Volumes (Relative to CT DEEP CJL)

Location / Activity	Navigational Dredging[+]	Seabed Preparation Areas Vessel Berth Dredging and Stone Pad Installation[+**]	Wharf Creation: Fill Placement[***]
Turning Basin[*a]	241,000 SF 55,000 CY	N/A	N/A
Northeast (Delivery Vessel) Berth[b]	70,000 SF 98,000 CY	170,000 SF 124,000 CY[++]	N/A
East Face (Installation Vessel) Berth[c] and Heavy Lift Area[****]	N/A	210,000 SF 122,000 CY[++]	33,600 SF 15,600 CY[***]
Central Wharf Area (Between Existing Piers)	N/A	N/A	322,000 SF 315,900 CY[***]
Activity Total	**311,000 SF** **153,000 CY**	**380,000 SF** **246,000 CY[++]**	**355,600 SF** **331,500 CY[***]**

[+] Approximate areas and volumes presented for dredging and stone pad placement have been updated to include sideslope construction and deeper berth pocket design depths.

[++] Dredge material volume presented in table above; backfill volumes are slightly less. Up to 107,000 CY of crushed stone would be installed at the East Berth and 107,000 CY of crushed stone at the Northeast Berth for seabed preparation / jack-up pad creation work. It is anticipated that the East Berth seabed preparation work would be completed first and the Northeast Bulkhead seabed preparation work would be constructed at a later stage.

[*] Dredging will include removal of material above -39.8' NAVD88 (-36' MLLW plus a two-foot overdredge) to address navigational concerns. Approximately three-quarters of this dredge material would be generated in the northern third of the turning basin. The proposed Turning Basin has a larger overall total footprint (~460,000 SF) than the dredging work area identified above (i.e. many existing areas of the Turning Basin are already below the design depth).

[**] Crushed stone will be placed to protect seafloor from vessel spud cans and to create a stable lifting platform. NE Berth rock pad to be installed at later stage.

[***] Approximate fill volumes represent material placed below Coastal Jurisdiction line (Elevation +2.1' NAVD88). Total Fill at Central Wharf to +9' NAVD88 ~400,000 CY. Fill relative to the Mean Higher High Water Line (MHHW: +1.21' NAVD88 in New London) is 308,600 CY at the Central Wharf Area and 15,000 CY at the East Face Heavy Lift Area (See note below).

[****] Engineering design is progressing. The East Berth Heavy Lift Area may be constructible using a toe wall and associated pile supports, thus eliminating a need for structural solid-fill placement atop the existing embankment. Conservatively, and for permitting purposes, placement of this fill has been assumed.

[a] Dredging to -38' MLLW (-36' plus 2' overdredge)/-39.8' NAVD88.

[b] Dredging to -40' MLLW (-38' plus 2' overdredge)/-41.8' NAVD88 in "dredging only" berthing areas. Tiered Jack-Up Pad area dredging to -52 MLLW (-50' plus 2' overdredge)/-53.8' NAVD88 in shallower section; and to -65 MLLW (-63' plus 2' overdredge)/-66.8' NAVD88 in deeper, eastern section. Feature also referred to as the "Northeast Bulkhead Berth".

[c] Tiered Jack-Up Pad area dredging to -52 MLLW (-50' plus 2' overdredge)/-53.8' NAVD88 in shallower section; to -65 MLLW (-63' plus 2' overdredge)/-66.8' NAVD88 in deeper, eastern section. Feature also referred to as the "East Berth".

Part III.2.a. Describe the construction activities involved for the project in detail, including methods sequencing equipment, and any alternative construction methods that may be employed.

The project will be divided into two phases. Phase One will be constructed first and primarily focuses on improvements to the upland portion of the site with some minor in-water work associated with the Northeast Bulkhead. Phase Two involves the majority of in-water improvements to the Admiral Shear State Pier, the proposed East Berth at State Pier, CVRR Pier, and the area between the piers (i.e. the creation of the new "Central Wharf" area). As noted above, CT DEEP COPs and USACE General Permits have been issued for select Project components (201910828-COP and NAE-2018-02161, respectively).

While the following narrative is presented as two distinct phases, some overlap may occur between the Phase 1 and Phase 2. In addition, select actions listed as Phase 1 activities may actually occur during Phase 2. For example, if deemed appropriate by the contractor, the fill movement from the uplands into the central wharf may be completed as one action during Phase 2, rather than as two separate actions (i.e. stockpiling in Phase 1 and fill placement in Phase 2). Work activities will only progress once applicable permits are obtained.

PHASE ONE (Upland Areas and NE Bulkhead)

This work includes improvements to the upland portions of the site. It is anticipated that the Phase One work will be land based, with the exception of the steel sheet pile bulkhead installation at the Northeast Bulkhead, the demolition of the mooring dolphins, and the demolition of the "Northeast Annex". The driving of the steel sheet pile may be completed from a barge during this phase. The dolphin removal will be based from a barge. The steel sheet pile will likely be vibrated fully into place with a vibro-hammer. The stiffening members (pipe piles or H-piles) of the bulkhead combination wall will likely be vibrated into place and then an impact hammer used for the final seating of the structural member (typically 10 to 15 ft). Anticipated equipment has been estimated for each activity based on similar project experience. The selected contractor will choose the final equipment to be used for each activity.

Anticipated work components included in this phase include:

<u>Uplands</u>

1. *Demolition of various buildings* – Buildings scheduled for demolition will be inspected and inventoried for hazardous materials prior to the commencement of this work. An itemized list and hazardous materials report will be included in the bid documents. In addition, the bid documents will contain a distinct building demolition specification section that will outline required procedures during demolition activities as well as approved disposal locations. This activity will be completed using large excavators and cranes. Concrete will be recycled onsite where possible, with suitable materials potentially reused onsite. Unsuitable demolished material will be trucked to an approved offsite disposal facility.

2. *Demolition of the north-south section of State Pier Road* – This section of roadway, including a reinforced concrete retaining wall and a section of bridge (with abutments), will be selectively demolished using large excavators or cranes. The northern limit of this north-south roadway section demolition is the intersection with the east-west section of State Pier Road.

3. *Removal of the existing railroad* – The existing tracks currently providing rail access to the State Pier will be removed. Existing track on portions of the State Pier itself will be left in place. The rail track and associated ties and ballast will be removed to the northern fence line of the

facility, just north of Warehouse 2. The track will be reconstructed at a later date in response to market demand and in a configuration to be determined by the facility operator, incorporating the 286k Gross Rail Load capacity standard. Typically this Phase 1 demolition work will be completed using excavators and dump trucks.

4. *Grade site to meet elevation of head of Admiral Shear State Pier (proposed elevation of +9.0' NAVD88)* – The existing site grades range from approximately +4.0' to +28.0' NAVD88. The site will be graded to elevation +9.0' NAVD88 to match the existing elevation at the head of the Admiral Shear State Pier. The northeast portion of the site contains a hill comprised of approximately 190,000 CY of predominantly sandy material. Suitable clean upland materials will be placed in the area between the State and CVRR Pier during Phase 2 activities. Typically this work will be completed using large front-end loaders, dump trucks and earth grading and compaction equipment. As noted above, this work could progress as a Phase 2 activity - without requiring an intermediate stockpiling step.

5. *Installation of site storm water collection and treatment system* – A new storm water system will be installed in the upland areas onsite. This work includes the installation of trench drains, grated inlets, manholes, reinforced concrete pipe (RCP), precast concrete treatment units and new outfalls through new and existing bulkheads. Typically this work will be completed using large front-end loaders, excavators, dump trucks and earth grading equipment. While the majority of this site work would be completed under Phase 1, select in-water actions, such as outfall construction, would be completed during Phase 2. The use of temporary treatment systems and other BMPs are anticipated, as outlined in additional detail in the Project's CT DEEP Construction Stormwater filing (Application No. 201914361/ Permit No. GSN003536).

6. *Installation of concrete retaining wall to laterally support altered vehicle entry configuration* – The north-south section of State Pier Road will be demolished as a part of this project scope. A new retaining wall will be installed along the southern side of the remaining eastern section of this roadway. This wall (potentially an earthen embankment or precast wall) will serve to retain the fill of the remaining section of roadway. Typically this work will be completed using cast-in-place or precast concrete, excavators, dump trucks and earth grading equipment. Excavation at the base of the wall will be completed by excavators.

7. *Installation of potable and fire suppression water systems to meet site needs* – A new water system will be installed on the site. This system will service both the potable and fire suppression water needs. This system will be below grade and will be installed using large front-end loaders, excavators, dump trucks and earth grading equipment.

8. *Installation of perimeter fencing and associated lighting and security* – The site will have a new security fence installed around its perimeter. This fence may be lit and may include observation cameras. It will be a chain link fence installed by drilling in the fence post and installation of fence mesh between the posts.

9. *Installation of new high mast lighting grid* – The site will be lit by high mast lights. The existing location of the high mast lights will interfere with proposed operations; therefore, a new grid of lights is required. Design will conform with OSHA requirements as well as local City Ordinances. These poles will be supported by large in ground concrete foundations. This activity will be completed using large excavators and cranes as well as cast-in-place concrete trucks and pumps.

10. *Installation of electrical service to meet site requirements* – The site electrical service will be upgraded to meet the requirements of the terminal. This electrical infrastructure will be installed

largely below grade using large front-end loaders, excavators, dump trucks and earth grading equipment.

11. *Installation of elevated outlet racks for nacelles* – The turbine nacelles stored and staged on the site require an electrical plug in. Resilient concrete platforms will be constructed to ensure that the nacelles and the associated outlets are 2 feet above the FEMA 100-year flood elevation of +11.0 ft NAVD88. This activity will be cast-in-place and completed using large excavators and concrete trucks.

12. *Installation of electrical infrastructure to facilitate cold ironing of import and install vessels (hotel loads only with room to expand to international standard)* – Vessels berthing at this facility will not operate under self-power. Instead the vessels will be cold ironed. The required infrastructure will be installed below grade (conduit and duct banks), however any new major electrical infrastructure, such as substations or transformers will be installed above grade in accordance with resiliency requirements for critical infrastructure. The installed infrastructure will support the cold ironing international standard. Electric supply for the hotel loads of the vessels will be brought to the bulkheads and the vessels will be plugged in to this shore power supply. The installation activity will be completed using large excavators, concrete trucks and pumps.

13. *Installation of dense graded aggregate top surface* – The finished surface of the proposed terminal will be dense graded aggregate in lieu of pavement. This surface is more forgiving under the required heavy loads. This surface is installed after all inground infrastructure is in place and compaction is complete. This work will be completed using large dump trucks, earth moving equipment and compaction machines.

<u>Northeast Bulkhead</u>

1. *Demolition of existing pile supported platform at western end of Northeast Bulkhead* (i.e. Northeast Annex demolition) – The existing Northeast Annex structure is in poor condition and requires removal so that the proposed terminal loading can be achieved. This concrete deck structure will be removed and the timber piles cutoff at the mudline. This work will be completed using cranes, excavators, and hydraulic pile cutters. The Northeast Annex pile and superstructure demolition work has been permitted and authorized separately under the CT DEEP COP / USACE GP process.

2. *Installation of energy absorbing fenders and bollards at Northeast Bulkhead* – These elements will be installed so that the vessels can safely berth at the bulkhead. This work will be anchored into the supporting structure as described above and will be completed using typical equipment for appurtenances requiring no excavation.

3. *Demolition of existing mooring dolphins* – In order to facilitate access to the bulkhead, the four existing mooring dolphins located to the south of the Northeast Bulkhead will be demolished. The concrete caps will be cut off using hydraulic pile cutters. The caps will then be strapped and removed by a large barge mounted crane. The remaining sections of the piles will be removed in their entirety to facilitate fine dredging in the turning basin. The dolphin demolition work has been permitted and authorized separately under the CT DEEP COP / USACE CT GP process.

4. *Installation of anchored combination sheet pile wall bulkhead directly outshore of existing Northeast Bulkhead* – The proposed new bulkhead at this location consists of a combination wall with a tie back system to accommodate the heavier desired loads. This type of wall uses both typical Z-pile type sheets as well as pipe piles driven on the channelward side of the

existing sheets with flowable fill poured between the existing and proposed sheets to create a robust stiff bulkhead that can facilitate heavy lift operations. The wall is tied back to a steel sheet pile anchor wall located approximately 50 feet inland. The pipe piles may be vibrated in the majority of the way, with an impact hammer used over the last 10 to 15 feet to ensure full load bearing capacity. The pipe piles may also be fully vibrated in place, depending on soil conditions and piles utilized. The sheets between the pipes will likely be fully vibrated into place. The fill in the upland area is to be removed to the existing tie rod elevation (approximately MHHW) to facilitate the installation of the wale and the new tie rod assemblies. Once the tie rods are installed, they are tensioned and buried. Fill is then installed over the tie rods and compacted to finished grade. This work will be completed using a hydraulic vibratory hammer attached to a crane. Large excavators and earth moving and grading equipment will also be used. The oversheeting work at the Northeast Bulkhead has been permitted and authorized separately under the CT DEEP COP / USACE CT GP process.

5. *Installation of pile supported concrete platform directly inshore of existing bulkhead* – This pile supported platform will allow for the handling of heavy loads directly inshore of the bulkhead. This structure consists of 30-inch pipe piles driven into the existing upland fill to the bedrock elevation (up to approximately 120 ft below grade). The piles are then topped with a +/- 3 ft thick concrete slab. This slab is then covered with approximately 2-3 ft of crushed gravel (terminal surface). This work will be completed from land using a hydraulic impact hammer attached to a crane. Large excavators and earth moving and grading equipment will also be used. This work would be confined to upland areas onsite.

PHASE 2 (Waterfront Works)

The Phase 2 work will occur out shore of the upland bulkheads on the Admiral Shear State Pier, the CVRR Pier, and the area between the two piers (i.e. the creation of the new “Central Wharf” area).

<u>Admiral Shear State Pier Demo – Select Demolition</u>

Demolition of sections of the existing Admiral Shear *State Pier.* – A center portion of the Admiral Shear State Pier, beginning 235 ft from the southern end of State Pier extending 400 ft inshore, will be demolished the full width of the pier. This area will be demolished to facilitate the construction of the proposed East Berth and heavy lift area in addition to a small portion of the new “Central Wharf” area. Two small lengths (approximately 45 LF each) may be demolished to facilitate the construction of mooring structures, one on the east side of the existing pier, north of the proposed demolished section, and one at the southeast corner of State Pier. The inshore portion of the western pile supported apron superstructure of the Admiral Shear State Pier will be demolished. This demolition will allow for even placement of fill in this footprint. Without this demolition, this area would not be accessible for fill compaction. This compaction is critical to ensure the overall footprint of fill between the piers is stable and uniformly compacted. This activity will likely be completed land; specifically, from the middle of the existing earth-filled section of the pier. This demolition will be completed using equipment such as cranes or excavators. Turbidity curtains and/or floating booms will be placed as necessary to contain any debris that may fall into the water during this operation.

<u>Admiral Shear State Pier/CVRR Pier/"Central Wharf” Creation</u>

1. *Installation of anchored king pile combination bulkhead between State and CVRR Piers* – The proposed new bulkhead at this location consists of a combination wall and will be installed to create the southern terminus of the new “Central Wharf” area. This type of wall uses typical Z

type sheets as well as pipe piles to create a robust stiff bulkhead that can facilitate heavy lift operations. These members are typically alternated over the wall length (1 pipe pile – 2 sheets – 1 pipe pile, etc). The wall is tied back to a deadman sheet pile wall located approximately 50 feet to the north. This deadman is located below final grade within the fill area. The Z sheets are vibrated fully into place. The pipe piles will likely be vibrated in the majority of the way and then an impact hammer used over the last 10 to 15 feet to ensure they are fully seated in the load bearing soils / rock. This bulkhead will fully enclose the approximately 7.4 acre (~322,000 SF) area between the piers. This kingpile bulkhead extends from the southwest corner of the Admiral Shear State Pier, runs the full width between the two piers and returns into the CVRR pier to tie into the proposed longitudinal sheet pile wall / slope in the CVRR pier. This work will likely be completed from a barge utilizing a large crane and pile hammers.

2. *Installation of Heavy Lift platform directly inshore of new East Berth bulkhead (pile supported, solid fill option)* – This pile supported platform will allow for the handling of heavy loads directly inshore of the bulkhead. Prior to placement of fill to create the East Berth Heavy Lift Area, steel sheeting would be driven to fully enclose the State Pier heavy lift area. Fill would be placed behind this sheeting, atop the existing riprap slope area (riprap would be removed to facilitate stone column placement). An approximately 0.7 acres (~30,500 SF) in-water work area is anticipated. Approximately 15,000 CY will be placed below MHHW (+1.21 ft NAVD88) for the East Face Heavy lift area creation (with an additional ~600 CY of fill between MHHW and CJL). This structure consists of 30-inch pipe piles driven within the newly placed fill between the piers and driven to the bedrock elevation (up to approximately 130 ft below grade). The piles are then topped with a +/- 3 ft thick concrete slab. This slab is then covered with approximately 2-ft of crushed gravel (terminal surface). This work will be completed using a hydraulic impact hammer attached to a crane. Large excavators and earth moving and grading equipment will also be used. This work will likely be land based and completed from the newly placed fill between the piers (aka the new "Central Wharf" area) and heavy lift area.

   Installation of Heavy Lift platform directly inshore of new East Berth bulkhead (pile supported, no fill option) - As noted in Part III.1, above, East Berth Heavy Lift engineering design is progressing and the need for placement of structural solid-fill atop the riprap slope may be avoided. However for permitting purposes, placement of this fill has been assumed. If the solid fill placement can be avoided, the requirement for pipe pile placement would remain. Under this construction scenario, a toe wall comprised of steel pipe piles (42" diameter) with Z section sheet piles would need be installed along ~600 ft of the East Berth Bulkhead face for Heavy Lift area construction. The toewall would be driven via crane and vibratory hammer for the sheets and a combination of a vibratory and impact hammer to drive the pipe piles.

3. *Installation of Toe wall east of the existing State Pier structure* - In order to protect the existing State Pier structure in the area north and south of the Heavy lift platform, a toe wall is proposed. The proposed dredging adjacent to the State Pier Facility would otherwise cause undermining of the existing piles and sheets of the existing structures. The proposed toe wall will be comprised of either a combination wall with pipe piles and Z sheets, similar to the toe wall in front of the Heavy Lift Platform, or may simply be all Z sheets. These walls will likely be installed from a crane barge utilizing a vibratory hammer, with an impact hammer potentially used for the pipe piles.

4. *Northeast Bulkhead Toewall Extension* – Construction of a toe wall is proposed in order to protect an existing eelgrass bed from side-slope sloughing and other dredging activities. The toe wall would extend northeast of the NE Bulkhead and would consist of up to ~170 ft of combination sheet pile wall. The wall is comprised of steel pipe piles (est. dia. 48") with Z section sheet piles. The toewall would extend approximately 1 ft above the adjacent (upper) surface elevation. Work would be completed using a barge mounted crane. The crane will use

a vibratory hammer for the sheeting installation and a combination of vibratory and impact hammer to drive the pipe piles.

5. *Turning basin and access dredging* – In order to allow vessels to access the berths and sufficiently turn around, a larger turning basin is proposed that connects the berths and provides access to the adjacent Federal Channel. This proposed turning basin would be dredged to -39.8' NAVD88 (-36' MLLW + 2' overdredge), the authorized depth of the adjacent Federal Channel. Approximately 55,000 CY of material may be generated from the turning basin area, with the bulk of this material coming from the shoal areas at the north. It is anticipated that a barge based mechanical dredge or a hydraulic cutterhead dredge will be used for this work, in accordance with regulatory requirements. It is intended, and desired by design, that the spoils will be placed within the area between the piers as fill (depending on construction phasing and material properties). The contractor will be required to dewater any excess material that is not placed between the piers and destined for offsite removal. This dewatering operation will occur prior to trucking it to an approved land-based disposal or beneficial re-use facility if offsite disposal is required. Due to the anticipated minimal effectiveness and logistical issues associated with the use of turbidity curtains or similar technologies in large, flowing rivers, such as the Thames; the use of turbidity curtains is not anticipated to envelop the dredge areas. The Project will have a provision that the contractor have turbidity curtains available for use if the water quality monitoring program indicates that this technology or similar would be necessary and useful to control elevated turbidity associated with dredging operations. Turbidity curtains are proposed around the existing eelgrass bed located at the northeast portion of the site. Additional detail regarding the potential use of turbidity curtains to isolate the dredging area from the main channel of the river to meet water quality standards is provided in the dredging BMP section below.

6. *Dredge at Northeast Bulkhead and East Berth to accommodate delivery and installation vessels* – The finish-grade mudline directly outshore of the bulkheads will be dredged deeper than the adjacent Federal Channel and turning basin to accommodate the expected maximum draft of the design vessel during all tides. These areas and their side slope areas are shown on the accompanying permit drawings. Accounting for the side slopes, the total area impacted for the berths are approximately 240,000 SF and 210,000 SF for the NE bulkhead and East Berth, respectively. These areas will be dredged to -41.8' NAVD88 (-38' MLLW + 2' overdredge) for berthing and up to -66.8' NAVD88 (-63' MLLW + 2' overdredge) to accommodate the rock pad installation described below. In conjunction with the rock pad area dredge spoils (which area further described in the seabed preparation text below), approximately 344,000 CY of material may be generated from the berthing areas (up to 222 C,000 CY from the Northeast Berth and up to 122,000 CY from the East Berth). It is anticipated that a barge based mechanical or hydraulic dredge will be used for this work, in accordance with regulatory requirements. It is intended, and desired by design, that the spoils will be placed within the area between the piers as fill (depending on construction phasing and material properties). Project sequencing or sediment characteristics may require that a subset of this material be disposed of offsite. If required, disposal would occur in accordance with disposal facility requirements. The contractor will be required to dewater this material prior to trucking it to an approved land-based disposal or beneficial re-use facility if offsite disposal is required. In addition, suitable clean upland soils will be placed between the piers, as noted below.

7. *Seabed preparation for jack-up installation vessel* (Both Berths) – The installation vessel that will visit the terminal operates using jack up legs. These legs are lowered into the mudline and the vessel is then jacked-up via the legs so that it is supported on these legs out of the water column. In order to provide a stable jacking platform and to protect the substrate from damage during install vessel jacking operations, the area below the installation vessel landing area will be prepared for use of jack-up legs. This is done by dredging pocket below the vessel dredge

area up to 25 ft. deep (i.e. up to -66.8' NAVD88 [-63' MLLW + 2' overdredge]; anticipated pocket dimensions presented in Attachment I plans). This pocket is then filled with crushed stone or gravel (up to ~107,000 CY per jack-up pocket). This seabed preparation occurs within the dredged vessel footprint. This work will be accomplished using a barge based mechanical dredge and placement bucket.

8. *Placement of fill between the CVRR Pier and the Admiral Shear State Piers to match the elevation of State Pier* – Prior to placement of any fill between the piers, the steel sheet kingpile bulkhead and/or a turbidity curtain will be in place. Either the bulkhead, the turbidity curtain, or a combination thereof will fully enclose the area between the piers prior to the placement of fill. Additional measures to control the waters discharged to the Thames River and associated turbidity will also be employed, as described below.

   In order to create the required space for the terminal to act as a fully operational WTG port facility, the approximately 7.4 acre (~322,000 SF) Central Wharf area between the piers will be filled. The existing mudline in this area ranges from approximately -8.0' to -34.0' NAVD88. Approximately 400,000 CY of fill is required to bring this area up to the proposed final elevation of +9.0' NAVD88. A portion of this fill volume (~308,600 CY) will be placed below MHHW (1.21 ft. NAVD88) and the balance will be placed to raise the Central Wharf to finish grades. Relative to the DEEP New London CJL elevation of +2.1 ft. NAVD88, approximately 315,900 CY of fill would be placed between the piers for Central Wharf creation.

   A portion of the proposed dredge materials (underlying sand and gravel) may be suitable for offshore disposal (additional regulatory coordination/testing would be required to confirm suitability criteria are met); however, this material would be beneficially reused as onsite structural fill within the Central Wharf area. Sediments that are unsuitable from a geotechnical (i.e. select silty sediments) or Project sequencing perspective may be disposed of or reused in offsite upland applications (upland reuse or disposal facility criteria would be met as applicable).

   Onsite soils, including up to ~190,000 CY of material from the existing hill in the NE upland region of the site and other suitable upland soils, would be placed as fill between the piers. It is anticipated that up to 210,000 CY of sand and silty material fill will come from the Project dredge spoils, including dredging for the berthing pockets, rock pads and turning basin. Suitable offsite materials would be imported for use as additional fill, as required (potentially 150,000 CY). Upland fill materials will be loaded into dump trucks and deposited into area between the piers. Dredged materials will likely be hydraulically placed between the two piers, although mechanical placement may also occur.

   Fill will be placed between the two piers via barge, truck and/or hydraulic placement. Placement of fill transported over uplands will occur from the inshore bulkhead at the Central Wharf, State Pier and CVRR Pier. Prior to any fill placement, the area between the piers will be closed off via the new southern bulkhead and/or a turbidity curtain spanning the full width between the two piers. These barriers will prohibit water with suspended solids (due to soil placement in the water column) from entering the main waterway.

   In addition to these physical barriers, a pumping system with treatment provisions may be used. The selected contractor will be responsible for implementing treatments to meet applicable permit discharge criteria. This pumping system would be used to pump water out from between the two piers as the fill is being placed. The intent of this pumping system is to control the location of the flow of water out from between the two piers and prevent overflow of this water from between the two piers due to fill placement. The pumping system consists of a pump, an intake pipe, a filtration chamber, and an outfall pipe. The water is pumped from between the two piers into the intake pipe. It is then passed through the filtration chamber where sediments

/ suspended solids are substantially removed, and then waters are returned into the Thames River. The contractor may also use alternative methods to achieve the required water quality levels of outflow into the Thames River.

The pump, piping and filtration chamber will be sized so that the rate of water removal from between the piers will exceed the rate of water being displaced by fill placing operations. The contract documents will provide specifications for this operation. Pumping system details will be provided to DEEP for approval prior to implementation.

The fill will be placed in the wet, until it achieves an elevation approximately 2 ft above MHHW. The fill may be compacted at various points during this in-water placement. Once the fill reaches this elevation it will be further placed in approximately 6 inch lifts and compacted. Installation of dewatering wells within the Central Wharf fill area, or comparable treatments during the infill process, may also be used in compliance with permit discharge provisions.

Stone columns, or comparable technology, will likely be placed within the newly created Central Wharf Area and/or East Berth Heavy Lift Area. This soil improvement method allows for higher loading than compacted soils. If compaction does not reach the required loading criteria, the stone columns will be installed. The installation of stone columns consists of drilling approximately 3 ft diameter holes in a prescribed grid in the newly placed fill between the piers. The holes are filled with crushed gravel as the rig drills the hole, replacing the drilled hole with crushed stone. This creates stiff elements within the filled area, which transfers the loads down to the rock layer, achieving the desired high loading capacity. A total of 20 to 25% of the above-noted areas may receive these stone columns. Both vibro-compaction and stone column installation operations are fully land based. No water access or equipment is required.

9. *Raising elevation of remaining horizontal surface of the CVRR Pier to match that of the State Pier* – The existing elevation of the CVRR ranges between 4.0' and 5.5' NAVD88. In order to create the required large level area, the elevation of the eastern +/- 150 ft. will be raised to elevation +9.0' NAVD88. this will be accomplished utilizing land based excavation equipment including excavators, trucks, and dozers. The edge of the raised area will run parallel to the existing western edge of the CVRR pier, offset approximately 30-50 ft from the existing edge of the pier. The edge of this raised area will need to be supported, either by a protected slope or by installing a cantilevered steel sheet pile wall. The slope or wall will run the full longitudinal length of the CVRR pier. The area to the east of the slope/wall will be filled to elevation +9.0' NAVD88 and the area to the west of the wall will remain at its existing elevation. The exposed height of this element will therefore be approximately 4.0 to 4.5 ft. The footprint of this will be fully within the existing CVRR pier footprint. If a wall is utilized, the steel sheet pile will be vibrated into place using a vibro-hammer. This work will be completed using a barge or land-based crane, and large earth moving equipment.

10. *Installation of dense graded aggregate top surface* – The finished surface of the proposed terminal will be dense graded aggregate in lieu of pavement. This surface is more forgiving under the required heavy loads. This surface is installed after all inground infrastructure is in place and compaction is complete. This work will be completed using large dump trucks, earth moving equipment and compaction machines.

11. *Installation of energy absorbing fenders and bollards* – These elements will be installed so that the vessels can safely berth at the bulkhead. This work will be anchored into the supporting structure as described above and will be completed using typical equipment for appurtenances requiring no excavation.

12. *Installation of pipe-pile area for Chester Hadlyme ferry berthing* – In support of an agreement between CPA and ConnDOT for the overwinter storage the Chester-Hadlyme ferry, a berth will be provided in the nearshore waters immediately south of the existing Northwest bulkhead. The ferry storage will consist of 36" diameter pipe piles driven into the substrate. A gangway and associated concrete landing slab (15 ft. x 15 ft. x 2 ft. deep) will be installed for ferry access.

Part III.2.b. Describe any erosion and sedimentation or turbidity control installation and maintenance schedule and plans in detail.

Proposed Stormwater System

A new site stormwater collection and treatment system will be installed in the upland portions of the site. CPA anticipates that components will include the installation of trench drains, grate inlets, manholes, reinforced concrete pipe (RCP), water treatment units (vortechnics or similar), rain gardens and/or other stormwater storage/treatment options, and outfalls through the bulkhead. This work will be completed using front-end loaders, excavators, dump trucks and earth grading equipment. The site currently lacks a functioning stormwater treatment system. Through the installation of the improved stormwater engineering/water quality infrastructure (including vortechnics and other technologies), the Project will be improving the quality of the site's runoff dramatically.

Construction Phase Soil Erosion Control and Mitigation Measures

A soil erosion control plan has been developed as part of the Construction Activities permitting (Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities - Application No. 201914361 / Permit No. GSN003536). As part of the soil erosion control and stormwater measures for the site, a stormwater system will be installed, as outlined above. In addition, construction phase plans have been developed that identify the types, quantity and specifications for stormwater control measures that will be implemented during construction.

The intent of the erosion control plan is to minimize soil erosion and sedimentation throughout the extent and duration of the project. This will be performed by implementing erosion control best management practices (BMPs) that: 1) control soil detachment, 2) control water movement, and 3) control sediment deposition. The plan has been developed using criteria from the "*2002 Connecticut Guidelines for Soil Erosion and Sediment Control*".

The erosion control plan for construction will include a variety of stormwater and erosion control measures for the upland portion of the site. Among other BMPs, these measures may include silt fencing, straw bales, slope breakers, rip rap, geotextile filters, water bars, and stabilized construction entrances as well as the use of turbidity control curtains, floating absorbent booms and adherence to the relevant Water Quality Monitoring Plan criteria during in-water applications. Typical BMPs for erosion control measures are provided in Attachment I (Project Plans).

Turbidity Control and Mitigation Measures (Conceptual)

Turbidity control measures will be utilized and implemented during the fill placement between the two piers (i.e. "Central Wharf" area creation). The project intent is to install the steel sheet pile bulkhead between the piers prior to the placement of this fill. However, there may be a period of time prior to the closure of this bulkhead when fill will be placed. In this instance, a turbidity curtain would be used to seal off the Central Wharf area where fill is being placed.

The exact turbidity mitigation and monitoring program will be finalized as the full design of the Project progresses and the specific activities and needs are identified. The CPA anticipates the implementation of a turbidity monitoring as part of the demolition and dredging phases of the

Project. Site controls and BMPs will be put in place to minimize impacts to the water column. Turbidity curtains would be available to the Project during dredging construction activities as noted below.

Due to the anticipated minimal effectiveness and logistical issues associated with the use of turbidity curtains or similar technologies in large, flowing rivers, such as the Thames; the regular use of turbidity curtains is not anticipated during dredging operations to enclose dredging work areas. However, as noted above, the use of turbidity curtains is proposed around the existing eelgrass bed located at the northeast portion of the site while in-water Project work is ongoing. The Project will incorporate a provision that turbidity curtains be available for use if the water quality monitoring program indicates that this technology would be necessary and useful to control elevated turbidity associated with dredging or other in-water construction operations.

A conceptual turbidity control and monitoring program is presented below

The potential to create turbidity and impact water column quality will be minimized by adherence to dredging BMPs. Dredging BMP examples are provided below.

- As indicated by the water quality program monitoring results, turbidity curtains may be installed during dredging activities or other activities that may significantly disturb the sediment surface. The new "Central Wharf" area would be filled only after being isolated from the Thames River via kingpile bulkhead installation and/or through the use of turbidity curtain extending between the CVRR Pier and the Admiral Shear State Pier.
- Barges, if needed, will be watertight and regularly inspected to confirm water-tightness during dredging operations and dredged material transport.
- Mechanical dredging operations will utilize an environmental bucket (or equivalent) during dredging operations. Alternatively, hydraulic dredging methods may be employed with CT DEEP review and approval.
- Efforts will be made to avoid grounding of barges, and water levels will be allowed to rise before attempting to free grounded vessels.
- Use of equipment appropriate for the water depth of the work area.
- Minimizing bucket bites.
- Maintaining bucket closure unless prohibited by debris.
- Maintaining expeditious movement of the closed bucket to the receiving barge after completing a cut to reduce water leakage from the bucket into the river, to the extent practicable. The dredge operator shall not intentionally drain the dredge bucket over the water column.
- Re-handling or stockpiling material on the river bottom will not be permitted.
- Limiting tug propeller revolutions per minute.
- Work on slopes will proceed from top of slope to toe of slope, where practical.
- Utilization of precision dredge and bucket guidance systems (e.g., integrated with real-time kinematic differential global positioning systems [RTK – DGPS]), will allow the operator to deploy/retrieve the dredge bucket with a high level of operational accuracy.
- Use of an experienced environmental dredging operator capable of implementing appropriate BMPs to limit re-suspension will be required.
- The operator will not fill the dredge bucket beyond its stated capacity.

- The operator will optimize the rate of bucket descent and retrieval during operations in order to reduce sediment re-suspension.
- The operator will perform single "bites" with the bucket, and each bucket will be brought to the surface and emptied into the watertight barge between "bites".
- The operator will not overfill barges with the dredged sediments.
- Oil absorbent booms will be available for deployment in an emergency situation.
- As noted above, silt curtains / turbidity curtains are anticipated in association with the Central Wharf area fill (unless the kingpile wall fully encloses this area prior to fill placement). In addition, silt curtains / turbidity curtains may be utilized around the active dredge area, if the water quality monitoring program indicates a need to deploy.
- As noted above, turbidity curtains are proposed around the existing eelgrass bed located at the northeast portion of the site.
- If used, turbidity (silt) curtains will be long enough to cover the full length of the water column, with an allowance for tidal flux (approximately 2-4 feet [ft]). The curtains will be anchored to structures and / or the mudline, as detailed in Attachment I.
- Near-shore silt curtains will be anchored using a multi-point anchoring system and affixed to a mechanical winch system to ensure that they are not moved out of position by tidal action, vessel wakes, etc.

Dredging will be conducted during the permitted timeframes, as determined during the final Project permitting process. Anticipated allowable in-water work windows are noted in the Section III-2.c response, below. During dredging and in-water construction activities, real-time measurements of turbidity will be used to trigger mitigation/response actions. The water quality monitoring program will also include ongoing visual inspections for evidence of solids transport that may not be monitored by the turbidity measurements.

During dredging and in-water construction activities, water monitoring would be conducted and responses to increased turbidity observed during monitoring may include one or more of the following:

- A water column monitoring decision tree will be developed to help inform the monitoring effort and ensure environmental compliance. An initial turbidity measurement will be taken at several points immediately adjacent to the dredge area outside of the double curtain to establish a baseline "active dredging operation" level. If, during dredge operations, the turbidity levels adjacent to the dredge area are less than the control limits (100 NTU above background; or as identified by DEEP / USACE) and there is no visible plume present, then the operations can continue as planned. Buoys may be utilized to perform continuous monitoring.
- A turbidity curtain system would be available for use and would be employed during dredging if the water quality monitoring results require its use. Site environmental staff will take regular measurements around the dredge area (immediately outside of the active work area) to measure turbidity levels. Ambient (background) turbidity levels would be determined from the up-current monitoring station and down current compliance data would be collected at the down-current location, at pre-determined distances appropriate for the site conditions (i.e. 300-feet up-stream / downstream).
- If the turbidity levels adjacent to the dredge area are greater than the control limits and a visible plume is observed, the dredging can be continued, but the BMPs would need to be inspected/upgraded as applicable.

- Monitoring will continue and focus on the data collected from the fixed buoy 300 feet down current of the dredge area. If these exceedances are sustained for a period of 30 minutes or more, the next level of monitoring will be triggered. If the turbidity levels at the 300-foot monitoring location are less than 100 NTU above background (or alternate value for the Thames River, as identified by regulators), then the operations will continue, and the buoys will perform the monitoring. All BMPs in place will continue to be monitored. If the turbidity levels at the 300-foot monitoring location are greater than 100 NTU above background (or alternate value for the Thames River, as identified in the permit process) and a visible plume is observed, dredging will be paused in order to adjust the operations and potentially modify BMPs.
- Additionally, monitoring will be shifted approximately 600 feet down current. If the measured turbidity at the limit of the 600-meter down current sampling station exceeds the specified 100 NTU over background control limit (or alternate value for the Thames River, as identified by regulators) and a visible plume is observed, then monitoring will continue (30 minute intervals) to see if the plume dissipates or persists. In the event sustained turbidity measurements indicate that the 100 NTU (or alternate) criterion has been exceeded at the limit of the 600-foot down current station, project operations will cease until the causes for the plume are evaluated and corrective actions are implemented.

Turbidity sensors will be deployed at each location towards the bottom water column (approximately three feet from the sediment surface) based on low tide conditions. The diurnal tidal range at the site is approximately 3.05 feet, so depending on the current phase of the tide, the height of the instrumentation would need to be adjusted appropriately in order to avoid contact with the river bottom. Site environmental staff will monitor the predicted tides for the day and plan the monitoring approach accordingly.

The instrumentation will either be operated by dedicated on-water staff or be installed on floating buoy platforms. Both approaches will facilitate rapid relocation, as necessary. Turbidity readings will be recorded, compiled, and made available virtually real-time to the site environmental staff. Data from the turbidity sensors also will be downloaded and placed in redundant storage in a field laptop computer. Readings will be recorded once every 30 minutes at each turbidity monitoring stations.

The turbidity monitoring approach has the benefit of alerting the site environmental staff on a real time basis when exceedance criteria are met or exceeded. The turbidity control limits will be set using a rolling average and a trigger value based initially on 100 NTU above background (or alternate value for the Thames River, as determined by regulators). Note that the rolling average for turbidity will not be implemented at the 600-foot down current location.

Turbidity/TSS monitoring will be performed via a water quality sonde operated by site staff or mounted to an automated sampling buoy. The average value of the up-current (background) location will be compared to the rolling average value of the down current location for the same period. The monitoring limit will be based on 100 NTUs above the upstream (background) level, assuming a 1 mg/L to 1 NTU correlation between TSS and turbidity. Sampling activities are initially triggered when turbidity outside the second turbidity curtain is >100 NTUs above background (or alternate value for the Thames River, as determined by the regulators).

Typically during monitoring activities, it is not uncommon to get occasional one-time spikes that cannot be tied to activities in the water (e.g., the sensor makes contact with the bottom, biofouling). If this happens regularly (that is, more frequently than twice per day), the sensor will be inspected and cleaned, repaired, or replaced.

Turbidity readings will be reported in the daily reports by the site environmental staff. If there is an exceedance as described above, the dredge contractor and the site environmental staff will conference immediately.

If after employing BMPs, an exceedance of the turbidity criteria of 100 NTUs above ambient conditions (assuming a 1 mg/L to 1 NTU correlation between TSS and turbidity; or corresponding alternate value as identified) is reported environmental staff will attempt to determine if the cause for the exceedance is related to the Project construction. If the source of the turbidity or visible plume can be traced back to the marine construction (bulkhead improvements or dredging action), as determined by mapping of the plume through navigating in a zig-zag pattern and/or longitudinally through the plume, additional response actions may be employed. Actions will be coordinated with permitting agencies, as required. Potential mitigation measures may include:

- Reducing the dredging operations removal rate or otherwise adjusting the specific dredging operations.
- Temporarily suspending dredging operations until the source of the exceedance can be determined and remedied.
- Installing turbidity curtains around the dredge area.
- If turbidity curtains have already been established around the dredging operation(s) where the confirmed exceedance was obtained, an additional turbidity curtain layer could be established around the dredging operation in question.
- Suspend operations until site conditions (tide, wind, or other factors), improve.

Action will be taken when turbidity measurements indicate that the 100 ppm TSS over ambient condition (or alternate appropriate value for the Thames River) is being exceeded outside the second turbidity curtain and if exceeded at the down-current compliance point located at the 600-foot down-current location.

Depending upon the situation in which the exceedance is identified and investigated by the environmental monitor, a single mitigation measure may be used to correct the issue or a combination of measures may be implemented. Mitigation measures will be coordinated with the site environmental staff. As more data are obtained as part of the real-time turbidity monitoring, additional mitigation measures may be developed and implemented, or the additional measures suspended if values are significantly lower.

The CPA anticipates submitting a "*Water Quality Monitoring Plan*", including a "*Turbidity Mitigation and Monitoring Plan*", prior to the start of in-water construction activities. CPA will continue working with DEEP and USACE to ensure that regulatory concerns are appropriately addressed, and that any DEEP- or USACE-identified water-quality monitoring action levels are incorporated into the plan.

Part III.2.c. Indicate the length of time needed to complete the project and identify any anticipated time period restrictions.

The construction would be competed in two (2) phases, "Phase 1: Uplands and NE Bulkhead" work and "Phase 2: Waterfront Works". As noted above, some overlap between the phases may occur. Construction is anticipated to start in February 2021. The final Project schedule will be determined by multiple factors, including regulatory approvals, contracting and other variables. Regardless of schedule changes, if any are ultimately required, adherence to the following time of year restrictions is anticipated.

To protect spawning species, and as based on initial input from CT DEEP Inland Fisheries, NOAA NMFS and CT Bureau of Aquaculture, a "no in-water-work" window is anticipated in June through September, annually[1]. In addition, the CPA anticipates that the Project would have a Time-of-Year (TOY) window which allows for dredging activities between October 1 through January 31, annually.

To address concerns relative to potential Peregrine Falcon (*Falco peregrinus*) nesting, CT DEEP Natural Diversity Data Base (NDDB) has indicated that no Project construction activities should occur during the period of April 1 to June 30; or, if required, work during this timeframe should occur in accordance with the CT DEEP NDDB-approved Project Peregrine Falcon Protection Plan (NDDB # 201901490 REVISED: see Attachment C).

Based on language included in the USACE CT GP, CPA anticipates that the following schedule and mitigation considerations may also be applicable to the Project: "*Piles should either be installed between November 1 and March 15 OR must use a soft start each day of pile driving, building up power slowly from a low energy start-up over a period of 20-40 minutes to provide adequate time for fish and marine mammals to leave the vicinity. The buildup of power should occur in uniform stages to provide a constant increase in output. Bubble curtains can be used to reduce sound pressure levels during vibratory or impact hammer pile driving.*"

Further details regarding the anticipated Project schedule are presented below.

<u>Phase 1 Work (Uplands and NE Bulkhead)</u>

- Upland demolition and regrading, February 2021 to October 2021.
- Upland construction, February 2021 to November 2021 (Phase 2 Uplands construction into 2022).
- In-water work (under COP / GP2 authorizations): Northeast Bulkhead oversheeting, Northeast Annex Demolition, Mooring Dolphin Demolition, February 2021 to June 2021.

<u>Phase 2 Work (Waterfront Works: State Pier / CVRR Pier / Central Wharf)</u>

- Pier Work (Pier demolition, sheeting and elevation improvements, heavy lift area construction, pier-side mooring structure installation, etc.), February 2021 to August 2022.
- Install King Pile bulkhead (and complete associated demolition work) at south end of Admiral Shear State Pier and CVRR Pier, February 2021 through September 2021.
- Dredging of NE bulkhead berth and jack-up pocket and transport of dredged material for onsite re-use/offsite disposal (as needed), October 2021 to December 2021.
- Dredging of Turning Basin and transport of dredged material for onsite re-use/offsite disposal (as needed), December 2021 to January 2022.

[1] CPA understands that select, confined in-water Project activities may progress behind sheeting and/or turbidity curtains once established, if within this period.

- Dredging of jack-up pocket at East Berth and transport of dredged material for onsite re-use/offsite disposal (as needed), January 2022.
- Filling of newly created Central Wharf area between the existing Admiral Shear State Pier and the CVRR Pier. Work includes placement of suitable onsite dredged materials, materials from the onsite uplands and additional offsite fill, compaction, stone column installation, aggregate surface installation, September 2021 to November 2022.
- Install temporary offices, September 2021 to May 2022.
- Utilities demolition, June 2021 to July 2021 and installation, July 2022 to October 2022.

The entire project is expected to be completed over a 2-year period and construction is anticipated to be finished in 2022.

Part III.3. Describe the purpose of, the need for, and intended use of the proposed activities.

The Connecticut General Assembly funded construction of the Admiral Shear State Pier over 100 years ago to facilitate business and commerce in the state. The mission of the facility today remains essentially the same as at inception. With the Central Vermont Railroad (CVRR) Pier, the State Pier Facility contains approximately 4,000 linear feet of dockage along its two main piers, on-dock rail connectivity to the New England Central Railroad (now owned by Genesee & Wyoming) system, 102,000 square feet of warehouse space, deep water access, and direct connection to the interstate highway system. The site, in its entirety, is generally known as the State Pier Facility (or State Pier Complex), which not only includes waterfront features such as piers and quay walls but also includes upland areas straddling State Pier Road and land north of the Gold Star Bridge.

In 2011, the *State Pier Needs and Deficiency Planning Study* was commissioned by the Connecticut Department of Transportation (CTDOT) to identify site-related and infrastructure repairs and improvements that would better position the facility to capture emerging East Coast shipping opportunities and accommodate some of the logistical needs associated with the $5 billion in cargo flow annually in Connecticut.

The 2011 study concluded that State Pier's niche among East Coast ports was to remain primarily a break-bulk port capable of handling a variety of cargo types (lumber, paper, pulp, salt, steel, etc.) but with future Marine Highway container potential. The study also concluded the State Pier Facility should be operated as efficiently as possible by taking advantage of its rail connections in order to expand its market reach. The study further concluded the facility needed to efficiently accommodate cargo movements, storage, and multimodal throughput to assure quick vessel turnaround times. Maximizing the flexibility of the port facility was seen as the key to enhanced utilization and efficiency.

The existing State Pier Facility was found generally to be in good condition relative to similar New England ports with some exceptions. Some of State Pier's greatest constraints are the limited near-dock surface area available for cargo moves, limited laydown area and poor surface conditions. Dredging to achieve uniform depths for both piers and the poor structural and overall condition of the CVRR Pier are deficiencies that need to be remedied.

The State Pier Facility Master Plan, developed in 2011, called for a number of improvements to the facility in order to accommodate future growth in the marine shipping market and to address the shortcomings of the existing site. Recommended improvements at the facility included:

- Improved vehicular access and circulation;
- Restored and enhanced rail connectivity;
- Dredging and dredged material disposal;
- Enhanced vessel accommodations;
- Upland grading and surface improvements;
- Structural improvements to piers, bulkheads, and quay walls; and,
- Stormwater controls and treatment measures.

In 2018, CPA released a document entitled “Connecticut Maritime Strategy” (included as JPA Attachment M13). The document outlines CPA’s current strategic objectives, which includes capitalizing on Connecticut’s geographic location between New York and Boston by expanding and marketing the State Pier Facility’s capacity for break-bulk and other goods to attract more commercial traffic whether through imports, exports or domestic movements of goods. This

document further recognizes emerging opportunities associated with the offshore wind energy industry in the northeastern United State and the potential to maximize under-utilized state assets.

CPA's principal source of revenue is generated from its lease with the Facility's terminal operator. Accordingly, payments to CPA are calculated by combining monthly lease payments as well as a percentage of the lessee's assessable revenue. Therefore, it is in CPA's best interest to ensure that the State Pier Facility is designed to allow it to provide additional capability for existing uses (such as the processing of more traditional break-bulk cargoes), while also accommodating new opportunities, such as the recently emerging offshore wind industry in the northeast United States. The redesign and substantial upgrading of the State Pier Facility, proposed through the Project, will allow for the accommodation of a wider range of cargo opportunities and is consistent with CPA's updated 2018 strategies document.

Located in New London Harbor along the Thames River, the State Pier Facility is strategically situated in far eastern Connecticut, exhibits the necessary pre-qualifying port and navigation channel attributes and is uniquely positioned to support the emerging wind energy sector that is gaining momentum in New England.

Through this Project, it is the goal of CPA to create infrastructure in Connecticut that will serve as a long-term wind turbine generator (WTG) port facility serving the northeast coast of the United States while at the same time continuing to support other existing long-term breakbulk operations for steel, coil steel, lumber, copper billets, as well as other cargo.

The proposed State Pier Infrastructure Improvements (SPII, or Project) are being designed to address shortcomings identified in the Master Plan to upgrade facilities that are in need of repair, improve conditions on the site, and to enhance the State Pier Facility in order to accommodate additional shipping and vessel opportunities in the State of Connecticut.

Wind Energy

A critical emerging market in the northeast, and globally, is that of the offshore wind industry. Connecticut, as well as other states in the region, has turned to offshore wind energy to supply a growing portion of their energy needs. This driving factor will create new and expanded demand for port facilities to support the construction and maintenance of wind power projects for the foreseeable future. Driving this industry, and thus the need for the currently proposed improvements at the State Pier Facility in New London, are the following factors:

- The offshore wind industry in the northeast of the United States has recently begun to take shape.
- Multiple states have passed legislation mandating offshore wind power be included in their energy portfolio (MA, NY).
- Over 1,500 MW of power purchasing agreements have been awarded to various offshore wind developers (MA, RI, CT) in recent years.
- These new offshore wind farms will be commercial scale (over 300 MW).
- New York and New Jersey recently awarded power purchase agreements for over 2,800 MW of offshore wind projects.
- This Project aligns with the Lamont Administration's plans to expand the use of carbon-free energy sources and commitment to procure 2 GW of offshore wind in the coming years.
- The infrastructure upgrades planned by the Project will allow the facility to take advantage of this long-term growing market.

Offshore wind turbine blades are very long and require port facilities with significant laydown area. Other components such as nacelles and tower sections are exceptionally heavy and require port heavy-load capacity. Due to the size and weight of the components, they are almost exclusively transported over water. Currently, there are no manufacturing facilities in the northeast U.S. capable of producing the required components. Therefore, the components will be imported to the port facility via import vessel. A major focus of the Project is to provide a facility that meets the high specifications required to support the marine cargos associated with the offshore wind industry.

The infrastructure improvements planned for the Facility will enhance its capabilities for conventional cargos but will also allow it to serve as a regional WTG port. WTG ports require a facility that allows for the import, staging, preassembly, and loadout of offshore wind maritime cargo.

As a regional WTG port, the main components that will be delivered to this facility are turbines, blades and tower sections. The typical size and weight of these components is shown below. The size and weight of these components require that a WTG port facility have a bearing capacity of between 3,000 to 5,000 pounds per square foot (psf).

Typical Size and Weight of Major Offshore Wind Components

Component	Length (ft)	Width/Diameter (ft)	Weight (tons)
Turbine	70	27	500 – 1,000
Tower Section*	120	20	225 - 350
Blade	265	20	20 – 50

*typically, 3 tower sections are preassembled at a WTG port prior to load-out and transit to install site.

Components arrive to the facility on import vessels with an approximate Length Overall (LOA), beam and draft of 600 ft, 180 ft, and 35 ft, respectively. These components are then moved from the vessel to the uplands or storage area via shipboard or large crawler cranes and self-propelled modular transporters (SPMTs). Once on the uplands, the components are staged to facilitate preassembly. Preassembly of a WTG consists of final assembly and testing of the turbine or nacelle as well as the assembly and testing of the 3 large tower sections using multiple large crawler cranes. Once the preassembly is complete, the components are loaded onto a purpose-built installation vessel. The installation vessels utilize jack-up legs that allow them to work in offshore waters. These legs are raised during transit and can reach heights in excess of 300 ft.

For the past 25 to 30 years, offshore wind developers have been successfully installing offshore wind turbines in the North and Baltic Seas. The installation of these turbines has been supported by regional WTG ports located on the coasts of Denmark, Germany, the Netherlands and the United Kingdom. These ports provide vital marine and upland infrastructure for the staging, preassembly and loadout of offshore wind components.

This lengthy and successful period of transportation and installation of large offshore wind components in Europe has defined the specific requirements for a WTG port facility. The main requirements are listed below:

- Location – transit distance from the facility to the installation site via installation vessel should be no more than 40 to 100 nautical miles. The installation vessel also serves as the transit vessel - transporting the preassembled WTG components between the port and the install

site. Keeping the transit distance within this outer bound provides for more efficient use of this specialty vessel.

- Air Draft Restrictions – The WTG facility should have no overhead structures (bridges) between it and the turbine installation site. This is due to a combination of the height of the installation vessel jack-up legs (+/- 300 ft) and the +/-300 ft height of the fully assembled WTG towers during transit.
- Deep Draft at Bulkhead and Direct Access to Deep Water Channel – The vessel used at the WTG ports typically require a berth with water depths of +/-30 – 40 feet and direct access to a deep-water channel leading to open water.
- Heavy Loading Criteria – WTG ports require a live-load rating ranging between 2,000 psf to 5,000 psf.
- Upland footprint – A minimum of approximately 30 acres is required to stage and preassemble the offshore wind components.
- Berthing Space – A minimum of approximately 1,400 LF of bulkhead is required to simultaneously berth an import and installation vessel.

In addition, certain design parameters are required to accommodate anticipated near-term and future facility uses of the State Pier Facility. Specifically, the adjacent, improved upland area needs to be flexible in order to accommodate:

- The continued handling and storage of compatible general cargoes;
- Various WTG components to be handled onsite, also accounting for the anticipated future increases in wind turbine size and weight. These turbines are currently designed at 12 MW per unit, with forecasts for increases of 15 to 18 MW per unit;
- The planned sequential use of the facility by Gateway and various WTG operators, which will stage components in different manner due to alternative upland equipment each operator will use;
- The anticipated sourcing of WTG subcomponents and other general cargo domestically, thereby requiring rail service within close proximity of the heavy lift wharf capacity.

A regional WTG port facility is required for the successful installation of offshore wind farms off the coast of the northeast US. Once complete, the State Pier Facility will serve as a critical piece of infrastructure to support the WTG industry in the U.S. The enhanced capabilities of the facility will also provide a more functional and capable facility for traditional breakbulk cargo operations for steel, coil steel, lumber, copper billets, as well as other cargo.

Traditional Cargoes and Regional Rail Consideration

In this Project, the majority of existing onsite rail infrastructure will be removed to accommodate the construction activities of the project. The CPA and Gateway Terminals are currently assessing options for reinstallation of reconfigured rail track to be installed at a later date in response to market demand.

Currently there is no regular cargo calling at the State Pier that requires rail service. Lumber, steel and salt shipments are moved by over-the-road tractor trailers. The current configuration of the rail tracks on the State Pier is not optimal to the handling of break-bulk cargo in the full buildout plan of the facility infrastructure improvements. These tracks were installed during the reconstruction of the State Pier in the late 1990s in order to replace the depressed tracks that served the State Pier Warehouse when cargo was offloaded from ships using cargo nets.

Genessee & Wyoming (G&W) Railroad operate one third of the freight rail lines in Connecticut and, through their associated entity the New England Central Railroad (NECR), control the rail service into the State Pier Facility in the Port of New London which includes facilities (public and private) on the entire Thames estuary, including the State Pier. There are three active rail lines in and next to the State Pier property. It is technically feasible to extend all three lines into the State Pier Facility after the Project is built, should there be a business demand. In recent years, the cargo business into the State Pier requiring rail service has been a "spot" business, meaning an ad-hoc request for rail service.

It is more reasonable to consider alternative rail track configurations and layouts for future import and export scenarios. Specifically, export products that may be exported from the New England region in general, and to New London in particular, are:

- Breakwater stone
- Crushed gravel
- Heavy Lift components
- Lumber from Canada and the Northwestern US
- Steel products

These exports may also be handled by existing local private facilities in the Port of New London. These private facilities would need infrastructure improvements, dredging and capital funds to implement these kinds of improvements to accommodate this service.

The Project does not "design out" the ability of reconfiguration of future rail infrastructure to serve import and export cargo service. In fact, rail standards have evolved and contemporary requirements will need to be incorporated, specifically meaning horizontal and vertical geometry of the rail tracks to meet the proposed elevated grade of the site. The newest 3-axle locomotives and railcar configurations will also need to be considered, as well as modern 286k Gross Rail Load standard. The Amtrak rail bridge just to the north of the State Pier Facility poses vertical constraints to the height of rail car transit which also needs to be considered.

During the period when the facility is not actively engaged in support of offshore wind projects (wind project support anticipated to be approximately March through November of a given year [assuming suitable weather conditions prevail]), the facility will have capacity for traditional break-bulk cargoes. The anticipated initial tenants are expected to enter into a ten-year lease agreement at the facility, with an option to extend for an additional seven years. Upon completion of this project, the facility will be well suited for all manner of cargoes and will have two berths with heavy-lift capacity, key assets in the marine shipping industry within the North Atlantic region.

The Connecticut Port Authority and NECR/G&W have executed a 10-year lease agreement on the adjacent 5.5 acre parcel to the west of the facility warehouses. This lease will allow for storage of offshore wind components on the parcel (New London Parcel G10-245-3A). Terms of the agreement require that the CPA invest in rehabilitation of NECR's existing twin freight rail line which are located in the northern rail yard, beneath the Gold Star Bridge. The removal of track at the State Pier site will be compensated by these improvements to the NECR tracks which will be available for immediate use. This cultivates the development of a new rail/water application and mitigates the CT State Pier restrictions during its modification and subsequent offshore wind assignment that there would be no public and only limited private cargo facilities.

Project Benefits

Additional details on select benefits anticipated from the Project are presented below:

New London Impact

- Ørsted/Eversource have a long-standing public commitment to make payments to the City of New London of $750,000 per year for the first two years of its operations at the upgraded State Pier facility. In addition to this commitment, Ørsted/Eversource have engaged regularly with the Mayor/City of New London in the development of longer-term Host Community Agreement (HCA). Once completed, the HCA will provide additional financial benefits to the City for the duration of the Orsted/Eversource tenancy at the facility (minimum of 10 years). The specific terms of the HCA are expected to be made public once completed and executed.

- The CPA will commit 10% of its share of the revenue from the State Pier Facility to the City of New London, as well as provide the city an annual impact fee to the City.

- Expanded operations will bring additional activity along the New London waterfront area, boosting local businesses who provide goods and services in the vicinity of the port and throughout the region.

Regional Impact

- Economic expansion at State Pier Facility means short-, medium-, and long-term benefits to Southeast Connecticut and adjacent areas.

- In the short-term, jobs will be created as the infrastructure improvements start across the facility, requiring labor and technical expertise from the local workforce.

- The multi-year presence of the offshore wind industry will encourage an increase in regional manufacturing and jobs, as subsidiary industries are drawn to the region.

- In the long-term, the infrastructure improvements made to State Pier Facility will allow a wider range of cargo to utilize the upgraded port facilities.

Statewide Impact

- The infrastructure upgrades to State Pier Facility will allow accommodation of new cargo types requiring heavy lift capabilities.

- Increased ship calls and cargo flow translates into increased economic activity and revenue generation for the CPA, which will have increased capacity for investing in maritime projects to drive economic growth throughout the state.

Clean Energy

- This Project aligns with the Lamont Administration's plans to expand the use of carbon-free energy sources, and commitment to procure 2GW of offshore wind in the coming years.

- The Project offers the ability to significantly reduce offshore wind energy costs for Connecticut and the North East region through improved logistics, with New London serving as a regional hub.

Part III.4. Identify and describe all coastal and aquatic resources on the site by checking the appropriate box and describe the expected impact on these resources.

The following table provides an expanded description of the expected impacts on coastal and aquatic resources on or adjacent to the site. A more thorough discussion of the affected resource areas are provided in Attachment M1 of the permit application.

Coastal/Aquatic Resources	On-site	Adjacent	Comments
Rocky Shorefront	X	X	This coastal resource is located on-site and adjacent to the site. SPII has been designed to avoid direct and indirect impacts to this coastal resource. The bottom (invert) of the proposed 60" conveyance outfall (OF-3) is anticipated at -3.1 feet (NAVD88). Approximately 500 SF of construction-related impacts to Rocky Shorefront are anticipated in association with the OF-3 construction.
Beaches and Dunes	X	X	This coastal resource is located on-site and adjacent to the site. SPII has been designed to avoid direct and indirect impacts to this coastal resource.
Coastal Hazard Area	X	X	This coastal resource category is mapped on-site and adjacent to the site. It includes land inundated during coastal storm events, or subject to erosion caused by such events, and includes areas within the Federal Emergency Management Agency (FEMA) zones AE, VE, and X indicated on Flood Insurance Rate Maps 09011C0501J and 09011C0502J, effective 08/05/2013. The upland portions of the Project Area are mapped as zone AE (elevation 11') and zone X and are currently occupied by existing infrastructure and impervious surfaces. The existing piers are mapped as zone VE (elevation 14'). The former storage area and administrative building parking is mapped as zone X. The Project will result in altered grades (some reduced; some raised) in the mapped flood zones.
Developed Shorefront	X	X	This coastal resource area is located on-site and adjacent to the site. This category includes the existing harbor conditions which exhibit highly engineered and developed areas. Shoreline stabilization measures will result in permanent impacts to 4,546 linear feet of the existing developed shorefront area. Specifically, the proposed activities include reconstruction at the northeast bulkhead, and installation of the heavy lift area within the Admiral Shear State Pier existing footprint. Minor improvements to the existing northwest bulkhead are also anticipated. As more fully described in Attachment M1, temporary impacts to local vistas and viewpoints are anticipated; however, CPA does not expect significant year-round alterations to existing vistas. Temporary visual impacts associated with tower assembly would be seasonal and would vary in nature and duration. The upgraded State Pier Facility is anticipated to be utilized in such as a way as to be consistent with the port's established long term usage and is consistent with the character of a working port facility.

Coastal/Aquatic Resources	On-site	Adjacent	Comments
Nearshore waters	X	X	This coastal resource area is present on-site and adjacent to the site. This includes the water and substrate located between mean high water and a depth along the 10-meter contour. Permanent and temporary impacts will occur in the nearshore waters in association with the Project. Approximately 3.92 acres (~170,700 SF) plus sideslopes of nearshore waters will be dredged and a portion will be prepared as rock pad for jack-up installation vessels. Approximately 6.17 acres (~268,800 SF) of nearshore waters would be impacted by wharf fill activities. Placement of this fill includes Central Wharf area creation as well as the East Berth Heavy Lift area. 36-inch piles would be installed for ferry overwinter storage near the Northwest bulkhead. Temporary impacts to water quality may occur as a result of dredging activities but would be mitigated by BMP implementation. In-water work will be completed in accordance with DEEP-established water quality monitoring conditions.
Offshore Waters	X	X	This coastal resource area is present on-site and adjacent to the site. This area includes the water and substrate located below the 10-meter contour. Permanent and temporary impacts will occur in the nearshore waters in association with the Project. Approximately 10.17 acres (~443,000 SF) plus sideslopes of offshore waters will be dredged and a portion will be prepared as rock pad for jack-up installation vessels. Approximately 1.93 acres (~84,100 SF) of offshore waters would be impacted by fill activities. Temporary impacts to water quality may occur as a result of dredging activities but would be mitigated by BMP implementation. In-water work will be completed in accordance with DEEP-established water quality monitoring conditions.
Shellfish Concentration Areas		X	This coastal resource area is mapped adjacent to the site. Harvest of shellfish within the project area is prohibited due to potential for public health risks. No state-managed, town-managed, recreational, or natural shellfish beds are mapped within the project area. “Conditionally restricted-relay” and “Prohibited” shellfish classification areas are located north of the Gold Star Bridge, including three New London-managed shellfish beds (“Prohibited” Bed NL3 is located immediately north of the bridge). Temporary impacts to water quality may occur as a result of dredging activities but would be mitigated by BMP implementation. In-water work will be completed in accordance with DEEP-established water quality monitoring conditions. Additional information pertaining to shellfish resources in the Project vicinity is presented in JPA Attachment F.

Coastal/Aquatic Resources	On-site	Adjacent	Comments
Wildlife Resources and Habitat	X	X	This coastal resource area has been identified on-site and adjacent to the site. Attachment M1 provides documentation regarding this resource and potential affects. Increased noise, water turbidity, vessel traffic, and overall human presence associated with dredging and construction activities will likely displace passerine birds, shorebirds, waterfowl, and fish on a temporary basis. Patches of existing terrestrial vegetation located throughout the site that will be removed and/or converted during construction provide very limited valuable habitat value. The Project has been designed to avoid direct impacts to an existing eelgrass bed. Due to ongoing site activities, permanent negative impacts to this resource (outside of the Central Warf area creation) are not expected.
Benthic (bottom) Habitat	X	X	This resource area has been identified on-site and adjacent to the site. A summary of macroinvertebrate sampling and eelgrass survey is included in Attachment M1B which documents site specific surveys completed in summer 2019. The Project design avoids an existing eelgrass bed identified during these surveys. Permanent impacts to benthic habitat will occur as a result of shoreline stabilization (NE bulkheads) and construction of the heavy lift area (i.e. installation of fill in the Central Wharf area). Temporary impacts will occur as a result of dredging at the northeast berth and at the installation vessel berth. Additionally, temporary impacts to water quality may occur as a result of dredging activities. Approximately 7.4 acres (~322,000 SF) of fill will be placed between the existing piers atop the nearshore and offshore benthos as described above. An additional 0.7 acres (~30,500 SF) of fill placement may occur east of the Admiral Shear State Pier for creation of the new Heavy Lift area.
Indigenous aquatic life, including finfish and shellfish	X	X	This coastal resource has been identified on-site and adjacent to the site. Attachment M1 provides documentation and discussion of affects to this resource. Permanent impact to approximately 7.4 acres (~322,000 SF) of river bottom at the Central Wharf will occur via fill placement would and no longer provide aquatic habitat for indigenous aquatic life. An additional 0.7 acres (~30,500 SF) of fill placement may occur east of the Admiral Shear State Pier for creation of the new Heavy Lift area. Project dredging of approximately 15.9 acres (~691,000 SF including sideslopes) will affect mobile aquatic species, which will be temporarily displaced during active dredging operations, but are expected to return post dredging. Rapid recolonization of the benthic community is expected following dredge activities. Additionally, temporary impacts to water quality may occur as a result of dredging activities. In-water work will be completed in accordance with DEEP-established water quality monitoring conditions. Finfish species of interest, including blueback herring (*Alosa aestivalis*), winter flounder (*Pseudopleuronectes americanus*), and sturgeon (*Acipenser* spp.) may be affected as discussed in the Essential Fish Habitat Assessment in Attachment M5. Anticipated mitigation measures are discussed in Attachment M8.

Part III.6. Identify and evaluate any potential beneficial and adverse impacts to:

a. navigation (include federal and local navigation channels and distance to nearby docks)

In-Harbor Navigational Considerations

Existing New London Federal Navigation Project (FNP)
As depicted on the National Oceanic and Atmospheric Administration (NOAA) Chart 13213 – New London Harbor and Vicinity – and as described on the United States Army Corps of Engineers (USACE) New London Harbor Navigation Project website[1], the proposed SPII Project would be located adjacent to and partially overlapping areas of the current New London Federal Navigation Project (FNP) footprint. A depiction of the FNP components nearest to the Project are included in Attachment I (Project plans).

The New London Harbor FNP is comprised of the following elements in the SPII Project area:

- The 3.8-mile-long, 600 foot wide, Thames River Federal Channel (main ship channel), stretching from Long Island Sound to the State Pier at the northern end of the harbor. The majority of this channel has an authorized depth of 40 feet; however, the main ship channel segment closest to (directly east of) the SPII is officially authorized to a depth of 36 feet[2]. The deepening of the channel to 40 feet (from its previous depth of 33 feet) was completed in 1976 by the Department of the Navy. Per the New London Harbor Navigation Project website, USACE is responsible for maintaining the channel 40 feet deep and 500 feet wide, if required for military and commercial vessel traffic.

- A 6,000-foot-long waterfront channel, 23 feet deep and a minimum of 400 feet wide. This channel stems from the main ship channel and provides access to the City of New London waterfront, including the Fort Trumbull, Shaw Cove, and the New London pier areas.

- Two branch channels, each 23 feet deep. The eastern branch channel, known as the Long Dock Branch Channel, which is located between the State Pier and the Central Vermont Railroad Pier (CVRR Pier, formerly "Long Dock"), is 100 feet wide and 1,000 feet long. The western branch channel, known as the Winthrop Cove Branch Channel, which is located between the CVRR Pier and New London shoreline is 250 feet wide and 1,500 feet long.

- A 23-foot maneuvering area is located west of the main ship channel and south of State Pier.

In addition to the above FNP features, a triangular 40-foot anchorage basin is depicted immediately east of State Pier on select USACE drawings (i.e. 2018 USACE New London Harbor Condition Survey and the USACE New London Civil works Map[3]), though this feature is not described on the above-noted USACE New London Harbor Navigation Project website. Based on correspondence with U.S. Navy and USACE[4] personnel, CPA understands that this area was created by the U.S.

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[1] https://www.nae.usace.army.mil/Missions/Civil-Works/Navigation/Connecticut/New-London-Harbor/ Accessed 03/26/2019.
[2] https://www.nae.usace.army.mil/Portals/74/docs/Navigation/CT/NLH/NLH_2015_CS_40.PDF. New London Harbor Condition Survey (03/2018). Accessed 02/12/2020.
[3] https://www.nae.usace.army.mil/Portals/74/docs/Navigation/CT/NLH/NLHMap.pdf. Accessed 04/19/2019.
[4] M. Habel (CENAE-PD-N) email correspondence with J. Salvatore (CPA) of 02/10/2020.

Navy, is not maintained by the USACE as an FNP component and that this 40-foot anchorage feature will be removed from the USACE project master plot (Survey) depicting the SPII vicinity.

Continued operations of the existing federally-funded dredged and maintained navigation channels and basins are anticipated, with the exception of the creation of the Project's "Central Wharf" area. Specifically, a section of the Long Dock Branch Channel will be eliminated by bulkhead installation and associated fill placement between the CVRR Pier and the Admiral Shear State Pier. Placement of fill is proposed along a majority of the branch channel's length and across its full 100-foot width. This work will require channel deauthorization, as detailed below.

No direct impacts to the Thames River Federal Channel (main ship channel) will occur under the Project, though Section 408 coordination will be required, due to dredging work encroachment near this FNP channel's buffer zone (three-times the authorized channel depth).

FNP Impacts: Section 408 Coordination and Channel Deauthorization
The CPA understands that Section 408 coordination, as well as deauthorization of the directly impacted federal branch channel area (a portion of the Long Dock Branch Channel) must occur prior to USACE issuance of permits under the Rivers and Harbors Act Section 10 and Section 404 Clean Water Act. Deauthorization requires an Act of Congress and Presidential approval. Section 408 review and channel deauthorization coordination have been initiated with the USACE and with the local Connecticut Congressional office.

Please see Attachment I, Sheet 11 for additional information regarding the proposed channel deauthorization and Section 408 review areas.

FNP Deauthorization
According to the U.S, Code 33 Section 579d, deauthorization of inactive federal projects is required when a water resources development project authorized by Congress is no longer viable for construction (due to an authorizing purpose that is no longer relevant or feasible). Based on email correspondence received from USACE, the CPA understands that the Long Dock Branch Channel was authorized in the early 1900s with subsequent related project authorizations received in 1972. As the proposed filling of this channel would alter the federal project, this particular segment of channel must be deauthorized through a submission to Congress and signed into law.

Deep draft FNPs are authorized individually by law. Since a non-federal entity (the CPA) desires to change the channel, the proponent must make a request through a congressional delegation and simultaneously work with the local USACE district to implement the desired change. USACE Headquarters is asked to draft legislative language for the deauthorization. This deauthorization language is then inserted into the next Water Resources Development Act (WRDA) bill or other appropriate legislation. The CPA has initiated this process.

On behalf of the Project, Congressman Joseph Courtney's office requested technical assistance from the USACE related to this matter on April 18, 2019. The Congressman's office has crafted the deauthorization bill language relative to the Project improvements utilizing technical input received from USACE and has submitted it for insertion into the WRDA 2020 legislation. CPA is continuing to coordinate with the Congressman and adjoining stakeholders regarding the proposed FNP deauthorization. A revised deauthorization area was submitted by the CPA in early 2020 (as reflected in Attachment I) and these deauthorization area limits are currently incorporated into the WRDA bill making its way through congress.

Section 408 Coordination

The purpose of federal Section 408 review is to ensure that the Congressionally-authorized benefits of USACE Civil Works projects (including FNPs) are not undermined by an alteration proposed by others (i.e. the Civil Works Project's usefulness will not be impaired), and to ensure that the proposed alteration is not injurious to the public interest (e.g., flood risk management, coastal storm damage reduction, navigation, etc.). Section 408 is the vehicle that grants permission for a non-federal party to alter or encroach on a civil works project.

The CPA is coordinating with the USACE regarding the Section 408 process for Project dredging activities proposed in close proximity to the FNP channel areas. Specifically, CPA understands that the SPII dredging and/or side-slopes that will encroach within the main ship channel FNP buffer zone may require Section 408 review. This buffer zone is three times the authorized channel depth, or 108 linear feet (3x36') from the edge of the main ship channel in the SPII vicinity. The CPA has initiated the Section 408 review process with USACE.

Harbor Navigation: Anticipated Physical Impacts

The four existing mooring dolphins located approximately 200 to 650 feet east of the Admiral Shear State Pier will be removed. The removal of these structures will facilitate vessel berthing and vessel maneuvering through the former Navy anchorage area. Approval for this dolphin removal / demolition work has been received under the DEEP COP and USACE CT GP processes[5] (authorizations 201910828-COP and NAE-2018-02161, respectively).

The proposed structural improvements at the State Pier Facility will be installed within the existing footprint of the complex with the exception the following activities:

- Installation of a southern bulkhead and associated placement of associated fill between the Admiral Shear State Pier and the CVRR Pier (i.e. creation of the new "Central Wharf" area).
- Dredging at the Northeast Bulkhead Berth and associated seabed preparation for jack-up vessels (installation of crushed gravel within deeper dredge pockets for vessel spud cans).
- Dredging adjacent to the new East Berth Heavy Lift area and associated seabed preparation for jack-up vessels (installation of crushed gravel within deeper dredge pockets for vessel spud cans). The proposed East Berth Heavy Lift area will be constructed largely within the existing confines of the current Admiral Shear State Pier footprint.

The filling between the two piers will prohibit vessels from berthing on the west side of the Admiral Shear State Pier and on the east side of the CVRR Pier. This newly filled area will not adversely affect vessel navigation outside the overall State Pier Facility footprint.

The mudline in the Northeast Bulkhead vicinity slopes sharply downwards eastward towards the main federal channel. The proposed Northeast Bulkhead dredging will require 1V:3H side slopes on its eastern and southern extents but not at its northern limits, due to proposed turning basin bathymetry. The northeastern corner of this proposed delivery vessel dredge area will have the closest distance to the existing federal main ship channel. The distance from the western extent of the Thames River Federal Channel (main ship channel) to the northeastern corner to the installation vessel berth will match current conditions. Distance from the main ship channel to an average moored installation will be approximately 242'. This will change based on vessel dimensions.

The closest distance from the installation vessel dredge pocket sideslopes proposed at the new

[5] CPA submitted a COP *de minimus alteration* request to DEEP and USACE on 02/11/2020 to address activities planned under the current dolphin removal work scope (i.e. full pile removal).

East Berth area to the Thames River Federal Channel (main ship channel) is anticipated to be approximately 50 feet. The existing eastern edge of the Admiral Shear State Pier (which will approximate the eastern limits of the new SPII pier) is located approximately 325 feet from the main ship channel at its closest point. When berthed at the East Berth location, the install vessel would be located approximately 185 feet from the western extent of the main ship channel[6].

Harbor Navigation: Anticipated Operational Impacts

Overview

The State Pier Facility currently provides break bulk handling operation for structural steel, reinforcing steel, coil steel, salt, lumber, plywood, copper billets, as well as other cargo. Once constructed, SPII will result in a significant upgrade in the facility's ability to accept and process typical break bulk cargos, and an ability to receive and handle cargo, equipment, and wind turbine generating (WTG) components more typically associated with wind energy projects. Additional information pertaining to the continuation of current onsite activities, as well as anticipated WTG-support activities that will be possible after the proposed upgrades, is presented below.

Over $157M in capital expenditure commitments from multiple sources will go towards the proposed development of State Pier Facility. These investments will transform the State Pier Facility into a world-class, state-of-the-art port with heavy lift capabilities and create platforms for heavy cargo.

In 2019, Gateway Terminal was awarded the contract to operate and manage the State Pier Facility. Gateway will serve as the terminal operator under the 20-year agreement which took effect May 1, 2019. A Memorandum of Understanding (MOU) and accompanying term sheet (both dated May 2019), and Project contractual agreements that were reached in February 2020 between the State of Connecticut (CPA), Gateway and Ørsted/Eversource (operating as Northeast Offshore [NEO]; previously the Bay State Wind [BSW] joint venture) provide for a two-phased effort at the State Pier Facility. First, a three-year development project will be completed to upgrade the facility infrastructure, in order to enhance the facility's functionality including addition of heavy-lift capabilities (i.e. the SPII elements described herein). Second, following the successful completion of construction activities described herein, NEO will enter into a 10-year facility and tenancy lease agreement with Gateway (with an option to extend for 7-years) granting the NEO joint venture use of State Pier Facility for WTG assembly and staging (further described below).

Under current operations, most cargo ships docking at the State Pier Facility utilize the east side of the existing Admiral Shear State Pier, with only occasional use of either the west side of the Admiral Shear State Pier or the east side of CVRR Pier. Therefore, the west side of Admiral Shear State Pier and the east side of CVRR Pier areas are not critical to the long-term operation of the facility. Post construction, cargo ships and wind power project support vessels (WTG "delivery" and "installation" or "jack-up" vessels) are anticipated to primarily utilize the Heavy Lift areas created at the eastern side of the Admiral Shear State Pier and at the northeast quay.

The expanded work and storage space created at the new "Central Wharf" area via the placement of materials between the piers is expected to provide significant operational improvements over existing conditions. Additionally, installation of the heavy-lift areas that allow for the use of cranes is expected to substantially improve the State Pier Facility's ability to process and store all manner of

[6] Distances to the main ship channel will vary based on actual vessel dimensions. Provided dimensions are reflective of some of the largest installation vessels currently in operation.

break bulk cargo, including wind project components such as tower sections, nacelles and blades. The new State Pier Facility will have one of the highest lift capacities for an East Coast port.

Wind Support Operations

With respect to wind energy project support, it is anticipated there will be times of the year when no significant wind-related construction activities, or offshore "campaigns", are underway. During these times, CPA anticipates the facility may be utilized by standard break bulk contractors. When wind support operations are not ongoing, State Pier Facility operations and in-harbor navigational uses will be conducted largely the same as during pre-construction, current conditions.

During the period of time when offshore campaigns are underway, and the facility is actively engaged in support of wind projects, which is anticipated to be approximately March through November annually (assuming suitable weather conditions), turbine structure assembly would be ongoing and the installation and delivery vessels would be present onsite periodically. Structure assembly and install and delivery vessels presence would be temporary and seasonal in nature.

As noted below, a variety of vessels are required to support the delivery and installation of offshore WTG components. As offshore wind turbines have increased in size, so have the vessels required to install them. Approximate dimensions for current, typical bulk-cargo vessels and anticipated WTG-support operations are presented below. CPA notes that an average of approximately one to two cargo ships per month are currently calling on the State Pier Facility. Further, the CPA anticipates that vessel traffic will increase as a result of these proposed SPII upgrades, resulting in increased local and regional jobs and other onshore economic benefits.

One example of anticipated contributions to the local economy involves the fact that the use of local pilot and tugboat services is anticipated during install vessel during berthing operations. As detailed below, the positioning system technology available on the latest installation vessels are state of the art and are highly effective at vessel maneuverability. These vessels may be able to berth without the use of tugs; however, as part of Project agreements, the use of local tugboat services for docking is anticipated.

Delivery Vessels

WTG delivery vessels comprise the bulk of the vessel calls in wind turbine staging and installation ports. These delivery vessels bring WTG components to the staging ports from a world-wide manufacturing supply chain. There are currently a limited number of ports suitable for WTG staging and installation operations in close proximity to the offshore wind projects. Current estimates indicate that approximately 60 to 80 delivery vessels would call on the State Pier Facility annually in support of wind operations.

Delivery vessels bringing components to New London will vary widely depending on the specific cargo, port of origin and the shipping market. The typical WTG delivery vessels will be similar in size or slightly smaller than those vessels that currently call at the State Pier Facility. Examples of these types of vessels are provided below.

Installation Vessels

The WTG installation vessels employed in the offshore wind industry are purpose-built to work in the challenging offshore environment. The state-of-the-art installation vessels required to work in this environment are some of the most advanced commercial vessels in the world. These vessels employ a multi thruster-based propulsion and positioning system that makes them capable of precise positioning and maneuvering. Installation vessels are equipped with a minimum DP2 system that provides redundancy in propulsion, generating and control systems. Current estimates

indicate that approximately 20 to 40 installation vessels would call on the State Pier Facility annually, in support of wind operations.

Currently the largest installation vessel in operation is the Seajacks Scylla, this vessel is a Gusto MSC NG14000X class vessel. Example installation vessel dimensions are presented below. **These dimensions are representative of existing vessels. Vessels calling on the Facility will differ in size and typical vessel dimensions may change in the future.**

Approximate Vessel Sizes - Current Cargo Vessels & Potential WTG Support Vessels				
Vessel Class / Description	**Approximate Vessel Length**	**Approximate Vessel Width**	**Approximate Vessel Draft**	**Notes**
Typical Cargo Vessels - Common vessel types supporting existing State Pier Facility bulk cargo industry.				
Typical Open Hatch Jib Crane Bulker	~200m (~656 ft)	~33m (~108 ft)	~7.3m (~24 ft.)	"NAESS Intrepid" as an example vessel.
Typical Gantry Bulker	~188m (~617 ft.)	~29m (~95 ft.)	~11.3m (~37 ft.)	"IBIS Arrow" as an example vessel.
WTG Delivery Vessels - Example Vessels.				
Example Delivery Vessel #1	~145m (~476 ft.)	~27m (~89 ft.)	~7.2m (~24 ft.)	"Jumbo Javelin" as an example vessel.
Example Delivery Vessel #2	~179m (~587 ft.)	~28m (~92 ft.)	~7.1m (~23 ft.)	"Warnow Jupiter" as an example vessel.
Example Delivery Vessel #3	~100m (~328 ft.)	~21m (~69 ft.)	~4.8m (~16 ft.)	"Jumbo Fairlift" as an example vessel.
Example Delivery Vessel #4	~185m (~608 ft.)	~25m (~83 ft.)	~10.7m (~35 ft.)	Ørsted-provided example vessel.
WTG Installation Vessel - Example Vessel (Largest Current Operational Install Vessel Presented).				
Large Example Installation Vessel: Gusto MSC NG14000X class vessel – Configuration 1	~170m (~558 ft.)	~55m (~180 ft.)	~9.1m (~30 ft.)	"Seajacks Scylla" as an example vessel. Vessel size including blade racks and helicopter deck. With blades loaded, a section of the vessel becomes wider. The loaded vessel width is determined by the overhanging wind turbine blade length, which is WTG dependent. Blade lengths may be ~77m (~250 ft.) or potentially greater.
Large Example Installation Vessel: Gusto MSC NG14000X class vessel – Configuration 2 (Hull Dimensions Only)	~139m (~456 ft.)	~50m (~164 ft.)	~9.1m (~30 ft.)	"Seajacks Scylla" as an example vessel. Dimensions of vessel hull only; without blade or other overhangs.

The following generalized sequence is anticipated during times of year when the facility is actively engaged in support of wind-related projects:

- Delivery vessels would arrive onsite periodically and berth at the northeast bulkhead.
- Components (nacelles, tower sections, blades) would be offloaded from the vessel using the heavy-lift improved areas.
- Components would be transported onsite using SPMTs and other appropriate transport equipment and arranged in the upland and pier cargo storage areas.
- Tower sections would be moved from their storage locations and be assembled at the new heavy lift area at the eastern portion of the Central Wharf.
- The assembled towers would subsequently be loaded onto an installation vessel. The installation vessel would leave the facility, typically loaded with four to six assembled towers, blades and nacelles and transit to the offshore installation area.
- The expected installation vessel cycle time, which includes; load out, transit install and return to port is approximately ten days.

Other Harbor Users

Aside from the periodic presence of installation and delivery vessels onsite and their transit via the federal navigational channel (in accordance with applicable maritime rules of the road), no significant navigational impacts are anticipated from the facility's operations. The Project has been specifically redesigned to avoid potential navigational conflicts with the adjacent Cross Sound Ferry (CSF) operations.

General Maritime Traffic

As documented herein, the CPA has solicited Project input from the general public, including a Public Information Meeting held on September 17, 2019 in New London. CPA's outreach has also included discussions with regional ferry service operators, such as CSF, the Mayor of New London, the New London Port Authority, the Groton Harbormaster, the Connecticut State Pilot's Commission, U.S. Coast Guard, U.S. Navy, local fishermen and others. A navigational stakeholders' meeting was held on November 6, 2019 at Fort Trumbull, New London, CT. CPA provided members of the local maritime community an update on the Project's East Face berthing revisions at a recent CT Pilots Association meeting. Please see CT DEEP Application Part III.8 and JPA Attachment E, Attachment M11) for additional detail regarding these conversations and stakeholder meetings.

Throughout the planning process, the CPA has conducted outreach and coordinated discussions regarding minimizing the potential adverse impacts to port usage, operations and related navigational conflicts with other harbor users. Discussions at the November 6, 2019 navigational stakeholders meeting indicated that aside from the periodic presence of installation and delivery vessels onsite and their transit via the main federal navigational channel (in accordance with applicable maritime Rules of the Road[7]), no significant navigational impacts are anticipated from the facility's WTG vessel operations transiting the harbor. The potential for overnight departures and arrivals of the installation vessel was also discussed at the navigational stakeholders meeting.

As outlined in CT DEEP Application Part III.8, participants at the November 6, 2019 navigational stakeholders meeting arrived at an understanding that potential in-harbor navigational concerns are

[7] https://www.navcen.uscg.gov/pdf/navRules/navrules.pdf. Accessed December 4, 2019.

manageable and would be alleviated using standard vessel planning, communication and traffic coordination between all involved parties, i.e. CSF, USCG, USN, local Pilots and WTG vessel operators. As noted herein, the Project has been revised to relocate the Installation Vessel berth to the East side of the existing State Pier. This new berth location currently services the large bulk carriers that presently call on the State Pier Facility and therefore will not require other local waterway users to substantially alter their existing transit patterns. CPA anticipates general maritime community support regarding this revised berthing arrangement.

As discussed with DEEP on July 2, 2019, during construction the Project will mark-out work areas with suitable marine buoys. These high visibility buoys (as well as silt curtains when in use) will demarcate the limits of in-water work within this working-waterfront area. Buoys will be placed to avoid potential interference with CSF ferry vessel navigation. In addition, a *Notice to Mariners* will be issued for New London Harbor via the U.S. Coast Guard and/or New London Harbormaster to appraise vessel operators in the State Pier Facility vicinity of the ongoing construction activities.

Under the current State Pier Facility Berthing alignment, CPA anticipates no adverse economic impacts to other harbor users.

Regional Ferry Operator

In addition to the above-noted meetings, the CPA and Project representatives have met on multiple occasions to discuss the proposed SPII with CSF owners and managers. CSF operates interstate ferry, local tugboat and excursion cruises from the western bank of Winthrop Cove. CSF had previously drafted two letters (dated August 27, 2019 and November 13, 2019) detailing their concerns with the potential for SPII activities to impacts CSF operations.

CPA has reviewed the Project design at the southern extent of the CVRR Pier in order to address concerns raised by CSF. The SPII was initially proposed utilizing a delivery vessel berth at the Northeast Quay and an installation vessel berth at the south side of the newly proposed Central Wharf area (i.e. at the southern terminus of the area to be created between the CVRR Pier and the Admiral Shear State Pier). Based on stakeholder comments and concerns voiced during the design, outreach and permitting process, it became apparent that the initially proposed installation vessel berth location had potential to create navigational conflicts with other commercial vessel (ferry, cruise and tug) movements. Therefore, CPA designed and analyzed alternate facility layouts, in order to avoid potential navigational conflicts with abutting harbor users.

As a resolution, the installation vessel berth area has been moved from the southern terminus of the Central Wharf and the redesigned SPII now includes installation vessel berthing on the east side of the Admiral Shear State Pier. The redesigned (East Berth) Project design is reflected herein. This east berth location for the installation vessel berth currently services the large bulk carriers that presently call on the State Pier Facility and will therefore not require other local waterway users to substantially alter their existing transit patterns or otherwise cause undue burden on these operators. Additional information pertaining to CSF is presented in DEEP Application Part III.8.

Fishermen

Project planning discussions have also raised concerns expressed on behalf of fishermen who currently berth at the CVRR Pier. These fishermen had tenancy arrangements with the prior State Pier operator (Logistec). The current facility operator has noted that the fishing vessel leases at the CVRR Pier will expire in 2020 and has indicated that alternate berthing arrangements will be required at that time.

The CPA, the Renaissance City Development Association (RCDA) and City of New London have entered an agreement to have CPA's consultant, AECOM, conduct a study to review and inspect potentially suitable local dockage facilities, including those at the Fort Trumbull peninsula. The study will investigate and assess the condition of additional offsite facilities and make a recommendation as to which facility can best accommodate the fishing vessels. AECOM initiated this study in July 2020.

The study will be conducted with the goal of exploring enhanced berthing locations for commercial fishermen in the Port of New London, including the fishermen relocating from the State Pier. Findings of this study will influence the potential outcomes, including infrastructure needs and/or relocation of the State Pier fishermen. Ultimately, the study and subsequent actions would be undertaken to avoid adverse impacts to local fishermen.

Airspace Navigational Considerations

The proposed Project is situated approximately 2.1 nautical miles northeast of Groton Airport [KGON] which is located in Groton[8]. Aircraft approach to Groton Airport Runway 15/33 is roughly aligned with the SPII. The runway is a visual approach runway though there appear to be no Instrument flight rules (IFR) published approaches for the runway.

Due to the anticipated height of structures that will be present onsite during WTG support operations at the State Pier Facility (i.e. >200' above ground level) and owing to the Project's proximity to the Groton Airport, coordination with the Federal Aviation Administration (FAA) will be required. The presence of these onsite structures (i.e. construction cranes, WTG-assembly cranes, assembled WTG tower sections, etc.) will be fluctuating, seasonal and temporary in nature.

Temporary construction and WTG-support activities will be coordinated with the FAA by the port operator / construction contractor in accordance with 14 CFR Part 77 - *Safe, Efficient Use, and Preservation of the Navigable Airspace*[9]. Notification will be made by these parties under the FAA's construction evaluation framework outlined in CFR Part 77.9, by providing FAA with a *Notice of Proposed Construction or Alteration* (FAA Form 7460-1)[10] for a Temporary Off-Airport Activity (Cranes / Towers)[11]. A minimum 45-day notification period is required, and would be provided, prior to commencement of qualifying activities. Due to the nature of the WTG assembly/staging activities anticipated on site, additional time has been requested by FAA to facilitate their evaluation of the proposed activities (i.e. regulatory coordination time of 3 months or more). FAA approvals under this program are valid for 18 months and are renewable.

[8] https://ctairports.org/airports/groton-newlondon/. Accessed November 7, 2019.
[9] https://www.faa.gov/airports/central/engineering/part77/#who. Accessed November 7, 2019.
[10] https://oeaaa.faa.gov/oeaaa/external/portal.jsp. Accessed December 3, 2019.
[11] Additional Project Notification guidance and clarifications provided via email by Mr. David Maddox of the FAA in mid-November 2019.

b. public access to, and public use of, public trust lands and waters waterward of mean high water:

As noted herein, the State Pier Facility was historically, and is currently, operated as a MARSEC secure facility that does not allow upland access to the general public. The CPA anticipates that this will remain the case onsite following construction of the SPII. No vessels currently berth between the pier areas on a regular basis, so adverse impacts to typical marine operations or public access to the areas between the piers are not anticipated in association with the proposed project.

The area to be filled under the SPII currently provides only limited public access, due to site safety restrictions, MARSEC requirements, and commercial activities which limits existing access to the Winthrop Point upland parcels and associated shorelines. Though the proposed SPII would affect public access and use of the waters located between the Admiral Shear State Pier and CVRR Pier, the overall use of public trust lands will not be changed significantly, due to the currently existing access and the vastness of adjacent access opportunities to public trust lands and waters.

The City of New London[12] and Southeastern Connecticut Council of Governments[13] parcel maps depict a portion of the waters located immediately east, south and west of the existing Admiral Shear State Pier physical footprint under CPA ownership. While "*public trust area comprises submerged lands and waters waterward of the mean high water line in tidal coastal, or navigable waters of the state of Connecticut*"[14] the CPA understands that Public Trust Doctrine concerns associated with SPII construction would be further addressed during this CT DEEP Land and Water Resources Division (LWRD) permitting process.

Public access to the Thames River Boat Launch and/or parking areas will not be affected during the construction phase of the Project. Therefore, CPA does not anticipate incorporating any boat launch enhancements or improvements as part of the overall mitigation package for the Project.

A detailed discussion regarding the Project's compliance with CT General Statutes pertaining to public access and public trust lands and waters, including information relative to *CGS Section 22a-92(c)(1)(B)* and 22a-93[15] is included in Attachment M9 of this JPA.

[12] http://ci.new-london.ct.us/content/7429/7431/7441/default.aspx Accessed 04/22/2019.
[13] https://seccog.org/gis-viewer. Accessed 03/26/2019.
[14] https://www.ct.gov/deep/cwp/view.asp?a=2705&q=323792. Accessed 04/22/2019.

Part III.8. Identify and evaluate potential adverse impacts of the proposed work upon future water-dependent development opportunities and activities:

The Project is proposed in order to improve, upgrade and enhance water-dependent uses and facilities at the site. As noted herein, the SPII includes an expansion and significant structural upgrades to water-dependent facilities at the State Pier Facility. The proposed improvements have, to the extent practicable, been explicitly planned and designed to avoid negatively impacting future water-dependent development opportunities or activities both onsite and offsite

Upon Project completion, future water-dependent opportunities in the region will be enhanced, as the State Pier Facility will be able to accommodate a wider range of vessels than it currently can. In addition, the upgraded facility will be uniquely positioned to handle a variety of heavy cargoes and will boast key assets in the marine shipping industry such as heavy lift capabilities. Once installed, New London's State Pier Facility will possess one of the heaviest-load capacities on the East Coast and will have two distinct heavy lift areas. These upgrades will be crucial in allowing the State Pier Facility to be well suited for handling all manner of cargoes in the future and in distinguishing itself as a unique, modern port facility for years to come.

As noted above and elsewhere in this JPA, potential adverse impacts of the project have been avoided, minimized and mitigated to the extent possible. Navigational and other concerns were identified and evaluated (and subsequently mitigated where appropriate) during the Project's planning process. In addition to the information below, JPA Section DEEP-OLIS-APP-100, Part III.6 includes details regarding other potential considerations regarding navigation by other harbor users.

Water Dependent Activities: Other Entities

CPA and Project representatives have discussed the proposed SPII efforts and remain in ongoing discussions with multiple adjacent water-dependent users and related organizations, including:

- The New London Port Authority (acting as the New London Harbor Management Commission)
- The Groton Harbormaster
- The CT State Pilot / Pilots Association
- Cross Sound Ferry (CSF)
- U.S. Coast Guard
- U.S. Navy

Harbor Management Commission consultation documentation is included in JPA Attachment E. Attachment M11 includes documentation of consultation with the U.S. Coast Guard.

As part of Project planning efforts, multiple meetings have been held to discuss potential navigational and other concerns with the general public, local stakeholders and adjacent water dependent users. Individuals from the organizations noted above, the CPA and other Project representatives gathered to discuss the Project on November 6, 2019. Additional discussions regarding the Project have occurred during regularly scheduled meetings of the CT Pilots Association. Additional detail on the November 2019 meeting is provided in DEEP OLIS Application Part III.6 and in the meeting minutes which are included in Attachment M12.

In short, no unsurmountable navigational concerns were raised at these meeting, with a consensus being that proper Project and facility construction planning, vessel operations planning and timing,

adherence to the navigational *Rules of the Road*[1], and active communications between parties would be appropriate. An understanding was reached that implementation of these items would be critical in avoiding navigational conflicts between the various harbor users. In response to a subsequent USCG Sector Long Island request, Project team members met with USCG personnel on October 29, 2020 to further discuss the Project and agreed to conduct additional navigational studies regarding anticipated post-construction WTG vessel operations.

In addition to the above-noted navigational meetings, the CPA and Project representatives have met on multiple occasions to discuss the proposed SPII with CSF representatives. CSF operates from the western bank of Winthrop Cove and offers interstate ferry services which are designated as part of the Maritime Highway[2] (Marine Highway 295). CSF had previously expressed concerns with the initial Project design alignment, due to the potential for navigational conflicts between WTG support vessels and CSF ferry, cruise and tugboat traffic, particularly in the area immediately south of the proposed SPII Central Wharf area.

Project representatives have worked with CSF personnel to alleviate these concerns. Additional detail regarding this coordination is included in Attachment M12. The CPA has redesigned the Project berthing alignment since learning of these initial CSF concerns. The current Project alignment, which includes the installation vessel berthing at the Facility's East Berth (rather than at the southern portion of the new Central Wharf Area), is reflective of this solution.

[1] https://www.navcen.uscg.gov/pdf/navRules/navrules.pdf. Accessed December 4, 2019.
[2] https://www.maritime.dot.gov/sites/marad.dot.gov/files/docs/grants-finances/marine-highways/3061/marine-highway-route-descriptions-8-14-2019.pdf. Accessed February 26, 2020.