



Salem Wind Port

Salem, Massachusetts

Single Environmental Impact Report

May 15, 2023

submitted to
Executive Office of Energy and Environmental Affairs

submitted by **Crowley Wind Services, Inc.**

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SECRETARY'S CERTIFICATE



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November 30, 2022

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
EXPANDED ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Salem Wind Port
PROJECT MUNICIPALITY : Salem
PROJECT WATERSHED : North Coastal
EEA NUMBER : 16618
PROJECT PROPONENT : Crowley Wind Services, Inc.
DATE NOTICED IN MONITOR : October 24, 2022

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61-62L) and Section 11.06 of the MEPA Regulations (301 CMR 11.00), I have reviewed the Expanded Environmental Notification Form (EENF) and hereby determine that this project **requires** the submission of an Environmental Impact Report (EIR). In accordance with Section 11.06(8) of the MEPA regulations, the Proponent requested that I allow a Single EIR to be submitted in lieu of the usual two-stage Draft and Final EIR process. I hereby grant the request to file a Single EIR, which the Proponent should submit in accordance with the Scope included in this Certificate.

Project Description

As described in the Expanded Environmental Notification Form (EENF), the project consists of the development of an offshore wind turbine marshalling facility where prefabricated wind turbine generator (WTG) components and materials will be delivered, assembled and transported to an offshore wind farm location. Construction of the facility will be undertaken through the following activities:

- An existing 705-foot (ft) long, 40-ft wide pile-supported wharf located along the southeast shoreline will be demolished and a new 659-ft long by 78-ft wide wharf (“Loadout Wharf”) will be constructed in its place with a new bulkhead seaward of the existing sheetpile bulkhead. The Loadout Wharf will be used to load WTG components onto vessels to be transported to an offshore wind farm location.
- An existing 160-ft long by 9-ft wide pier attached to the jetty pier will be demolished and replaced by a new 405-ft long by 150-ft wide pile supported pier and a 280-ft long by 65-ft wide trestle (“Delivery Pier”) where unassembled WTG components will be unloaded from delivery vessels onto shore.
- A 416-ft long by 78-ft wide pre-assembly and loadout platform will be constructed on land adjacent to the proposed Loadout Wharf.
- The upland portion of the site will be structurally improved and covered with dense graded aggregate to support its use as laydown space for heavy machinery and WTG components.
- A triple-wide office trailer will be installed in the parking lot in the northern part of the site.
- A 3,000-sf storage shed will be constructed in the northern part of the site.
- A single-wide office trailer will be installed near the Loadout Wharf.

Two laydown areas, at the northern and southern ends of the site, will be used to store WTG components. Components will be moved between the piers and laydown areas across a transition yard connecting the laydown areas. To support the weight associated with the assembly, staging and loading of WTG components and mooring of vessels, the existing 705-ft pile-supported wharf will be reconstructed; a heavy lift platform will be constructed adjacent to the wharf and bulkhead; and the laydown areas will be reinforced with dense graded aggregate material. A portion of the northern part of the site will be used as a parking lot with 198 spaces. Two vacant buildings in the northern part of the site with a combined area of 12,130 sf will be demolished.

To provide navigational access to the site, approximately 80,190 cubic yards (cy) of sediment will be dredged from a 21.3-acre area adjacent to the Delivery Pier and Loadout Wharf to provide a 32-ft deep (Mean Lower Low Water or MLLW) basin and a 34-ft deep berth along the Loadout Wharf. In addition, a 10-ft wide area adjacent to the proposed pier and wharf will be dredged to a depth of - 36 ft MLLW for the placement of scour protection. According to the EENF, dredged material will be disposed of at the Massachusetts Bay Disposal Site (MBDS) which is located approximately 15 nautical miles southeast of the site outside of State jurisdictional waters.

The project will support the City of Salem’s (City’s) cruise ship port activities by allowing cruise ships to dock at the Loadout Wharf when not in use for loading of WTG components. In addition, dredging necessary for the project will also accommodate cruise ships navigating to the site and docking in the berth area. The project will use land area and facilities previously proposed in connection with the construction of the Salem Harbor Station Redevelopment Project (EEA# 14937) and the City’s Salem Port Expansion Project (EEA# 14234). A Certificate on the Final EIR (FEIR) for the Salem Harbor Station Redevelopment Project was issued on May 17, 2013 with a determination that the project adequately and

properly complied with MEPA. The City submitted a Notice of Project Change (NPC) in July 2013 which described proposed port development activities at its Blaney Street site adjacent to the southern end of the Salem Harbor Station site (now the site of the proposed wind turbine marshalling facility under review). The City filed an EIR in February 2014 which described additional port development activities proposed to be undertaken at the Salem Harbor Station site to accommodate cruise ship berthing, including improvements to the existing pier and a walkway connection between the proposed berth and the Blaney Street site. The City's EIR was filed under both EEA# 14234 and EEA# 14937 because work was proposed at both locations. A Certificate on the City's FEIR (EEA# 14234/14937) was issued on April 4, 2014 with a determination that the project adequately and properly complied with MEPA. According to the Proponent, the proposed Loadout Wharf may be used as a berth to accommodate the City's planned passenger cruise ship terminal; the Single EIR should provide information about potential cruise ship activity at the project site, including environmental impacts and mitigation measures.

Project Site

The 64.2-acre project site is located in northeast Salem and includes 42.3 acres of land and 21.9 acres of water. The upland portion of the site is bordered to the east and south by Salem Harbor, to the north by Fort Avenue and the South Essex Sewerage District wastewater treatment plan and to the west by Derby Street. The north and south sections of the project site on land are largely separated by a 22.7-acre property on which is located the Salem Harbor Power Station (EEA# 14937), which began operation in 2017 and remains in operation today.¹ The approximately 65-acre land area, including the project site and the Salem Harbor Power Station site, was formerly occupied by a coal-fired power plant that was demolished in 2014. Two vacant buildings with a combined square footage of 12,100 sf used by the former power plant are located at the northern end of the site.

The upland portion of the site includes 26.1 acres of filled tidelands, of which 17.4 acres are in private tidelands and 8.7 acres in Commonwealth tidelands. The entire project site is located in the Salem Designated Port Area (DPA), one of ten areas established by the Commonwealth where water-dependent industrial activity is promoted through state funding, planning, policy, and regulation. An approximately 970-ft long 64-ft wide channel used for discharging cooling water from the former coal-fired plant is located between the upland area east of the Salem Harbor Power Station and the jetty pier on which the Deliver Pier will be built. Wetland resource areas located on the project site include Coastal Bank, Coastal Beach, Land Under the Ocean (LUO) and Designated Port Area (DPA). As shown on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM) numbers 25009C0419G and 25009C0438G (both maps dated July 16, 2014), the upland part of the site is located within a Zone AE with a Base Flood Elevation (BFE) of 10 ft NAVD 88 and areas seaward of the shoreline are located in a VE Zone (BFE of 13 ft NAVD 88). According to the EENF, the FIRMs were developed prior to raising the site in connection with construction of the existing power plant and the extent of the floodplain is more limited than shown. The floodplain on the site is

¹ The power plant was formerly known as Footprint Power generating facility.

regulated under the Wetlands regulations (310 CMR 10.00) as Land Subject to Coastal Storm Flowage (LSCSF).

According to the Division of Marine Fisheries (DMF), Salem Harbor provides foraging habitat for alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), rainbow smelt (*Osmerus mordax*), American eel (*Anguilla rostrata*), white perch (*Morone americana*), Atlantic tomcod (*Microgadus tomcod*), Atlantic cod (*Gadus morhua*) and American lobster (*Homarus americanus*), and also provides habitat for spawning and juvenile life stages for winter flounder (*Pseudopleuronectes americanus*). The site is in the vicinity of mapped shellfish habitat for soft shell clam (*Mya arenaria*), northern quahog (*Mercenaria mercenaria*) razor clam (*Ensis directus*) and blue mussel (*Mytilus edulis*); however, these mapped shellfish habitats are in an area where shellfish harvest is prohibited. Eelgrass (*Zostera marina*) was mapped adjacent to the site by the Massachusetts Department of Environmental Protection (MassDEP) in 2016.

According to the EENF, the project site is within a quarter-mile of 394 historic resources and 14 historic areas, including: 211 properties and six historic areas listed in the Massachusetts Historical Commission's (MHC's) Inventory of Historic and Archaeological Assets of the Commonwealth; 81 sites and four historic areas listed on the National Register of Historic Places; and 89 resources in National Register of Historic Places/Local Historic Districts. Notable historical resources within 0.1 miles of the site include Memorial Park (SAL.994), the House of Seven Gables (SAL.3425) and Nathaniel Hawthorne's Birthplace (SAL.3429). According to the Board of Underwater Archaeology (BUAR), Salem Harbor is archaeologically sensitive due to its long history as a significant port with at least 13 documented shipwrecks between 1790-1900. As described below, the Single EIR should include an analysis of impacts associated with the operation of the site on neighboring areas.

The project site within one mile of several Environmental Justice (EJ) populations designated as Minority; Income; Minority and Income; and Minority and English Isolation. The site is located within five miles of additional EJ populations in Salem, Beverly, Danvers, Peabody, Lynn and Marblehead designated as Minority; Income; Minority and Income; Minority and English Isolation; and Minority, Income and English Isolation. As described below, the EENF identified the "Designated Geographic Area" (DGA) for the project as one mile around EJ populations and described public involvement efforts undertaken to date.

Environmental Impacts and Mitigation

Potential environmental impacts of the project include the creation of 3.77 acres of impervious area; alteration of 21.3 acres (929,349 sf) of LUO, 1,365 linear feet (lf) of Coastal Bank and approximately 3.68 acres (160,420 sf) of LSCSF; generation of 440 New average daily trips (adt); use of 3,300 gallons per day of water; and generation of 3,000 gpd of wastewater. Greenhouse Gas (GHG) emissions and other air pollutants are associated with on-site energy use and transportation.

Measures to avoid, minimize and mitigate impacts include the use of an environmental bucket and turbidity curtain to minimize water quality impacts from in-water activities; the use of slow-start pile-driving to minimize turbidity and noise; conducting in-water work outside of

time-of-year windows; construction of a stormwater management system with Best Management Practices (BMPs); implementation of Transportation Demand Management (TDM) measures to encourage use of alternate modes of travel; use of marine vessels rather than trucks to transport materials to and from the site; and installation of electric vehicle (EV) charging stations. A full list of mitigation measures should be described in the Single EIR.

Permitting and Jurisdiction

The project is undergoing MEPA review and is subject to preparation of a mandatory EIR pursuant to 301 CMR 11.03(3)(a)(1)(b) of the MEPA regulations because it requires Agency Actions and involves the alteration of 10 or more acres of any other wetlands (LUO). It also requires preparation of an EIR under 301 CMR 11.06(7)(b) because the site is located within a DGA of EJ populations. The project exceeds ENF thresholds at 301 CMR 11.03(1)(b)(1), direct alteration of 25 or more acres of land; 301 CMR 11.03(3)(b)(1)(a), alteration of a coastal bank; 301 CMR 11.03(3)(b)(1)(e), New fill or structure in a VE Zone; 301 CMR 11.03(3)(b)(3), dredging of 10,000 cy or more of sediment; and 301 CMR 11.03(3)(b)(6), construction, reconstruction or Expansion of an existing solid fill structure of 1,000 or more sf base area or of a pile-supported or bottom-anchored structure of 2,000 or more sf base area, except a seasonal, pile-held or bottom-anchored float, provided the structure occupies flowed tidelands or other waterways. The project requires a 401 Water Quality Certification (WQC) and a Chapter 91 (c.91) License from MassDEP. It is subject to the MEPA GHG Emissions Policy and Protocol and requires a Public Benefit Determination (PBD).

The project requires an Order of Conditions from the Salem Conservation Commission (or in the case of an appeal, a Superseding Order of Conditions from MassDEP). It requires an Individual Permit from the Army Corps of Engineers (ACOE) and a National Pollutant Discharge Elimination System Construction General Permit (NPDES CGP) from the U.S. Environmental Protection Agency (EPA).

According to the EENF, the Proponent anticipates that the project will receive Financial Assistance from the Massachusetts Clean Energy Center (CEC); it also requires a c. 91 License for most of the project site. Therefore, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

Request for Single EIR

The EENF included a request that I allow a Single EIR in accordance with 301 CMR 11.06(8). The MEPA regulations at 301 CMR 11.06(8) indicate that a Single EIR may be allowed provided I find that the EENF:

- a) describes and analyzes all aspects of the project and all feasible alternatives, regardless of any jurisdictional or other limitation that may apply to the Scope;
- b) provides a detailed baseline in relation to which potential environmental impacts and mitigation measures can be assessed; and,

- c) demonstrates that the planning and design of the project use all feasible means to avoid potential environmental impacts.

For any Project for which an EIR is required in accordance with 301 CMR 11.06(7)(b), I must also find that the EENF:

- d) describes and analyzes all aspects of the Project that may affect Environmental Justice Populations located in whole or in part within the Designated Geographic Area around the Project; describes measures taken to provide meaningful opportunities for public involvement by Environmental Justice Populations prior to filing the expanded ENF, including any changes made to the Project to address concerns raised by or on behalf of Environmental Justice Populations; and provides a detailed baseline in relation to any existing unfair or inequitable Environmental Burden and related public health consequences impacting Environmental Justice Populations in accordance with 301 CMR 11.07(6)(n)1.

Consistent with this request, the EENF was subject to an extended comment period under 301 CMR 11.05(8).

Review of the EENF

The EENF described existing site conditions, provided a project description and conceptual plans and identified alternatives to the project. It included estimates of the project's impacts to wetlands and land alteration and identified potential measures to mitigate these impacts. Consistent with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency, the EENF contained an output report from the MA Climate Resilience Design Standards Tool prepared by the Resilient Massachusetts Action Team (RMAT) (the "MA Resilience Design Tool").² The Single EIR should provide additional information as set forth in the Scope below.

SCOPE

General

The Single EIR should follow Section 11.07 of the MEPA regulations for outline and content and provide the information and analyses required in this Scope. It should demonstrate that the Proponent will pursue all feasible measures to avoid, minimize and mitigate Damage to the Environment to the maximum extent feasible.

Project Description and Permitting

The Single EIR should identify any changes to the project since the filing of the EENF. It should identify and describe state, federal, and local permitting and review requirements associated with the project and provide an update on the status of each of these pending actions. The Single EIR should include a clear and comprehensive update to the project description

² https://resilientma.org/rmat_home/designstandards/

which describes all fill, structures and uses at the site under proposed conditions, and provide an analysis of how the project will comply with all applicable statutory and regulatory standards and requirements. The Single EIR should include detailed site plans for existing and post-development conditions at a legible scale; however, all project components should be described in the project narrative and analyzed with respect to regulatory requirements. The Single EIR should compare this project against the previously proposed development of the site under the Salem Port Expansion Project (EEA# 14234/14937) and describe how this project will implement, modify or replace any previously proposed activities.

Plans included in the EENF identified areas north and south of the turning basin which are labeled as “proposed optional Phase 2” dredging areas; however, a Phase 2 is not fully identified or described in the EENF. According to the Proponent, dredging in Phase 2 may be conducted separately from the project to support the City’s plans for providing access to the site for passenger cruise ships. However, the EENF indicated that these plans are not yet developed and that the City’s plans are distinct from the offshore wind support operations proposed by the Proponent. The Proponent acknowledges, however, that the proposed dredging (even in the first phase) will support both operations and that the Proponent will need to coordinate with the City on dredge locations and timing. In light of these potential points of overlap between the two phases of dredging identified by the Proponent, the Single EIR should provide additional information about Phase 2, including any plans by the City that would require dredging or other activities not fully described in the EENF. It should estimate the area and dredge volume associated with Phase 2, describe c. 91 regulatory standards for dredging projects within and outside DPAs and discuss whether future dredging could also facilitate operations of the proposed offshore wind turbine marshalling facility. It should address the need for MEPA review of Phase 2 dredging and whether the Proponent or the City would be responsible for submitting future MEPA filings. Because the total dredge area, including this project and a future “optional” phase, clearly exceeds EIR thresholds, the Single EIR should include a clear commitment by the Proponent or City to submit an NPC when the future phase is determined.

The proposed project is an industrial use that directly abuts residential areas, including an EJ population abutting the site to the west, and historical districts and properties. According to the Proponent, the size and weight of the WTG components require that they be offloaded from vessels, transported across the site and loaded onto transport vessels in a slow, methodical, and careful manner, and the primary noise-generating activities will primarily occur along the shoreline away from the adjacent residential neighborhood. The area directly adjacent to the neighborhood will be used primarily for the storage of blades, which will minimize the intensity of activity in that area. However, due to the unique nature of the proposed use of the site, it is not clear what the level of noise, vibration, odor and visual (including lighting) impacts of the project will be on adjacent residential areas and historical and archaeological resources. The Single EIR should provide a detailed description of operations at the facility and the associated impacts. It should describe the type of equipment and methods that will be used to move WTG components, the frequency and duration of such activity and the impacts associated with engines, equipment and movement of materials throughout the hours of operation of the facility. Plans included in the EENF indicate that a vegetated buffer between the project site and the residential area will be provided; the Single EIR should provide a detailed analysis of how the vegetated

buffer, and any additional mitigation measures that may be necessary, will minimize operational impacts on adjacent areas.

Alternatives Analysis

The EENF reviewed a No Build Alternative and a Maximum Build Alternative. According to the EENF, under a No Build Alternative the project site would remain unused in its current condition, which includes 4.61 acres of impervious area, two vacant buildings, a 695-ft long pier along the shoreline of the southern part of the site, a 60-ft by 6-ft pier along the jetty pier and the approximately 18-acre turning basin maintained to a depth of 32 ft MLLW. The No Build Alternative would avoid impacts associated with construction of new piers and wharves and dredging, but would leave the site undeveloped, albeit with water-dependent industrial uses suited for the DPA.

The Maximum Build Alternative would include the same use as proposed in the Preferred Alternative, but with expanded infrastructure to accommodate larger vessels and upland activities. The existing discharge channel and a cove at the southern end of the site would be filled using 41,390 cy of fill material to provide an additional 2.8 acres (122,290 sf) of upland space for WTG assembly operations. A loadout wharf of approximately 885 lf (200 lf longer than the Preferred Alternative) would extend along the new shoreline created by filling the cove area. An additional 107,370 cy of sediment would be dredged from an approximately 8.7-acre (area of 380,000 sf) area north and south of the turning basin to provide an expanded space for large vessels to dock at the site and maneuver within the turning basin. The dredged material would also be disposed of at the MBDS. The Maximum Build Alternative would add 4.77 acres of impervious area to the existing impervious area of 4.61 acres and alter approximately 29 acres of LUO (compared to 21.3 acres under the Preferred Alternative) associated with dredging, placement of fill and pier construction. According to the EENF, the Maximum Build Alternative provides operational benefits for the proposed facility; however, it is infeasible due to its higher cost, uncertainty regarding the permissibility of the proposed filling and the longer construction period, which would not allow WTG assembly operations to commence within a timeline that would meet windfarm construction deadlines.

As described above, the Preferred Alternative involves construction of a new wharf and pier, adding structural reinforcing material for land-based activities and dredging within an existing navigation channel and turning basin to support the use of the site for WTG assembly. The project involves the redevelopment of the DPA with a water-dependent industrial use consistent with the DPA Master Plan, and will provide infrastructure to encourage other water-dependent industrial uses, such as docking of cruise ships. According to the Proponent, the site is ideal for the proposed use because it has adequate upland space for storage, a maintained navigational channel and navigation to the site is not constrained by vertical obstacles, such as bridges, which would prevent transport of large structures to and from the site.

Environmental Justice

The project site within one mile of EJ populations designated as Minority; Income; Minority and Income; and Minority and English Isolation. Within these census tracts, Spanish and Spanish Creole are identified as being spoken by 5% or more of residents who also identify as not speaking English very well.

Effective January 1, 2022, all new projects in a Designated Geographic Area (DGA, as defined in 301 CMR 11.02, as amended) around EJ populations are subject to new requirements imposed by the Chapter 8 of the Acts of 2021: *An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy* (the “Climate Roadmap Map”) and amended MEPA regulations at 301 CMR 11.00.³ Two related MEPA protocols—the MEPA Public Involvement Protocol for Environmental Justice Populations (the “MEPA EJ Public Involvement Protocol”) and MEPA Interim Protocol for Analysis of Project Impacts on Environmental Justice Populations (the “MEPA Interim Protocol for Analysis of EJ Impacts”)—are also in effect for new projects filed on or after January 1, 2022.⁴ Under the new regulations and protocols, all projects located in a DGA around one or more EJ populations must take steps to enhance public involvement opportunities for EJ populations, and must submit analysis of impacts to such EJ populations in the form of an EIR. The EENF indicated that the DGA for the project is one mile.

Public Engagement

The Proponent prepared an EJ Screening Form, which was distributed to a list of community-based organizations (CBOs) and tribes/indigenous organizations (the “EJ Reference List”) provided by the MEPA Office. Since the beginning of 2022, the Proponent has held nine meetings with neighborhood groups in EJ populations in the vicinity of the site and local community and environmental groups since the beginning of 2022. Spanish language interpreters were provided by the Proponent at two of the meetings with local residents. The Single EIR should provide an update on public outreach conducted since the filing of the EENF and provide a plan for future outreach to EJ populations in the DGA.

Enhanced Analysis

The EENF included a baseline assessment of any existing “unfair or inequitable Environmental Burden and related public health consequences” impacting EJ Populations in accordance with 301 CMR 11.07(6)(n)(1) and the MEPA Interim Protocol for Analysis of EJ Impacts. The baseline assessment included a review of the data provided by the Department of Public Health (DPH) EJ Tool applicable to the DGA regarding “vulnerable health EJ criteria”; this term is defined in the DPH EJ Tool to include any one of four environmentally related health indicators that are measured to be 110% above statewide rates based on a five-year rolling average.⁵ According to the EENF, the data surveyed indicate that the City of Salem as a whole, and census tracts within the DGA, exceed the criteria for Low Birth Weight, Childhood Lead

³ MEPA regulations have been amended to implement Sections 55-60 of the Climate Roadmap Act, and took effect on December 24, 2021. More information is available at <https://www.mass.gov/service-details/information-about-upcoming-regulatory-updates>.

⁴ Available at <https://www.mass.gov/service-details/eea-policies-and-guidance>.

Exposure and Childhood Asthma Emergency Department Visits. Based on the DPH data, EJ populations in the DGA are impacted by existing “unfair or inequitable” environmental burdens and related public health consequences, such that further analysis of the project’s impacts is warranted.

The EENF indicated that the following sources of potential pollution exist within the DGA, based on data available in the DPH EJ Tool:

- Three major air and waste facilities, including one facility with an air operating permit, one large quantity waste generator and one facility that use a large quantity of toxic chemicals
- Ten M.G.L. c. 21E sites
- Eleven “Tier II” toxics use reporting facilities
- Thirty-five sites with Activity and Use Limitations (AULs)
- One wastewater treatment plant
- Six underground storage tanks (USTs)
- One EPA toxic release inventory site
- Massachusetts Bay Transportation Authority (MBTA)-operated services, including one commuter rail station, a ferry terminal and 45 bus stops.

In addition, according to the output report from the MA Resilience Design Tool included in the EENF, the project site has a high exposure to sea level rise/storm surge, urban flooding due to extreme precipitation and extreme heat. EJ populations within the DGA are likely also exposed to these climate risks.

Although not required by the MEPA Interim Protocol for Analysis of EJ Impacts, the EENF surveyed environmental indicators tracked through the U.S. EPA’s “EJ Screen,” which compares the indicators by U.S. census block to the MA statewide average. The EENF indicated that the following indicators are elevated at 80th percentile or higher of statewide average within the identified EJ populations (census blocks):

Indicator	Exposure v. Risk	Percentile as Compared to MA Statewide Average
NATA Respiratory Hazard Index Ratio	Risk/Hazard	81
Lead Paint (% of housing built before 1960)	Potential Exposure	83
Traffic Proximity and Volume Count of vehicles (average annual)	Proximity/Quantity	86
Proximity to TSDFs (Hazardous waste Treatment, Storage, and Disposal Facilities)	Proximity/Quantity	80
Proximity to NPLs (National Priority List / Superfund sites)	Proximity/Quantity	83

Other environmental indicators related to air quality (Particulate Matter 2.5, Ozone, Diesel Particulate Matter, and Air Toxics Cancer Risk) do not appear to be elevated at 80th percentile or higher in EPA EJ Screen.

While the DPH and EPA data show that there is some indication of an existing unfair or inequitable burden (in particular, exposure and proximity to hazardous substances), the EENF asserts that the project will not result in disproportionate adverse effects, or increase the risks of climate change, on the EJ populations by materially exacerbating such existing burdens. The EENF assert that the project's construction period impacts, including noise and dust generated by excavation and demolition and emissions from construction vehicles and construction worker vehicles, will be temporary and minimized by the use of mitigation measures. As described below, the Proponent will implement noise and dust control measures, establish designated truck routes for construction vehicles and minimize impacts from worker vehicles through scheduling of construction activities and implementation of TDM measures. The project will benefit EJ populations by working with local colleges and non-profits to create job-training programs to develop a local workforce for offshore wind development projects.

The Single EIR should provide a supplemental EJ analysis. As described above, the Single EIR should provide a detailed assessment of potential impacts to EJ populations adjacent to the site from operation of the site. Given the elevated public health indicators and climate risks in the surrounding neighborhoods, the Single EIR should discuss whether any of the project impacts, such as emissions from marine vessels and truck traffic, will specifically impact EJ neighborhoods, and whether all feasible measures have been considered to reduce such impacts. The Single EIR should provide an estimate of emissions of air pollutants associated with vessels delivering WTG components to the site and transporting assembled product off-site, including emissions from docked vessels. It should review the potential for ship-to-shore electricity to minimize the use of onboard generators and motors to produce electricity for docked vessels. The Single EIR should describe whether vessel traffic will pass adjacent to EJ populations located along the coast, and if so, what the extent of that traffic is likely to be. As noted in the Traffic and Transportation section below, while the overall traffic impacts of the project appear modest (total of 440 adt), the number of truck trips and potential routes of travel were not discussed. The Single EIR should quantify the number of diesel truck trips the project will generate both during the construction period and permanent operations, and describe the anticipated routes of travel for such traffic. If diesel truck traffic will be routed adjacent to any EJ populations where air related environmental indicators are elevated above 80th percentile of statewide average (NATA Respiratory Hazard Index Ratio and Traffic Proximity), the Single EIR should discuss the feasibility of re-routing traffic away from those locations. The Single EIR should also assess the extent of increase in air pollutants (such as Diesel PM, PM 2.5, and NOx) at any intersections adjacent to these EJ neighborhoods, as compared to existing traffic volumes at that intersection, and discuss whether this increase will materially affect compliance with National Ambient Air Quality Standards (NAAQS) or other relevant risk management criteria.

The Single EIR should analyze the performance of the stormwater management system to ensure that flooding risks to surrounding communities are minimized in light of future climate conditions. It should analyze any other relevant short-term and long-term environmental or public health impacts of the project, including construction period activities. If any disproportionate adverse effects or increased risks of climate change are identified, the Single EIR must include a discussion of proposed mitigation and include such measures in draft Section 61 findings. I note that generalized project benefits should not be analyzed to "net out" project

impacts, unless the benefit serves to mitigate the specific impact analyzed, or to or reduce any existing Environmental Burdens identified for the EJ population. Particular focus should be given to benefits that serve to promote the equitable distribution of Environmental Burdens and Environmental Burdens, in accordance with “Environmental Justice Principles” as defined in 301 CMR 11.02.

Tidelands

The project site includes 21.9 acres of flowed tidelands, 26.1 acres of filled tidelands and 16.2 acres of land not located on tidelands. Activities in tidelands require a c. 91 License. Because the entire site is located within the DPA, the project must consist of primarily water-dependent industrial uses. According to MassDEP, the proposed facility is a water dependent use pursuant to 310 CMR 9.12(2) because it requires direct access to and location in tidal waters. Furthermore, the project meets several criteria for water dependent industrial uses stipulated at 310 CMR 9.12(2)(b) including but not limited to: 310 CMR 9.12(2)(b)2 – commercial passenger vessel operations; 310 CMR 9.12(2)(b)5 – facilities related to the construction, serving, maintenance and repair of marine structures (i.e., off-shore wind turbines) and 310 CMR 9.12(2)(b)7 – fill, structures and uses associated with the operation of a DPA.

In addition to dredging, project components subject to c. 91 licensing include construction of the wharf and pier, placement of fill and riprap in connection with construction of the Loadout Wharf and placement of fill and structures, including the pre-assembly and loadout platform, on the upland portion of the site. The Loadout Wharf and Delivery Pier will be constructed using 36-inch diameter steel pipe piles, which will generally be spaced 18 ft apart on the Loadout Wharf and approximately 16 ft apart on the Delivery Pier. The pre-assembly and loadout platform will also be constructed on 36-inch diameter steel pipe piles spaced 11 ft apart. The pilings for all structures will be driven to bedrock to provide support for the heavy loads that will be placed on these structures.

The City completed a Municipal Harbor Plan (MHP), which includes a DPA Master Plan, in 2008. The MHP is in the process of being updated but has not yet been submitted for approval. According to CZM, the project will be subject to the requirements of the updated MHP if it is approved before the c. 91 license for the project is issued. According to the EENF, the City has confirmed that the project is consistent with the recommendations of the updated plan because offshore wind is identified as a preferred use for the site. As noted by CZM, improved public access to the waterfront is identified as a goal in the draft updated MHP, so long as it is balanced with the safety and needs of water-dependent industrial use. The Single EIR should demonstrate that the project will comply with the requirements of the 2008 Plan and the updated MHP, including how the project will support cruise ship visits, provide open space for public access and describe any safety and security requirements that may be applicable for uses to the project site.

Public Benefit Determination

The project proposed activities within tidelands subject to the provisions of *An Act Relative to Licensing Requirements for Certain Tidelands* (2007 Mass. Acts ch. 168) and the

Public Benefit Determination (PBD) regulations (301 CMR 13.00). Consistent with Section 8 of the legislation, I must conduct a Public Benefit Review as part of the review of EIR projects located on tidelands that entail new use or modification of an existing use. The EENF described the benefits of the project as supporting the offshore wind industry, redeveloping a site within the DPA for water-dependent industrial uses, construction of infrastructure for water-dependent industrial uses and providing jobs for area residents.

The PBD regulations, at 301 CMR 13.04(1), include a presumption that water-dependent projects provide adequate public benefit. The Single EIR should provide an updated review of the project's benefits in accordance with the PBD regulations. review the project's benefits. I will issue a PBD concurrently with the Single EIR or within 30 days of the issuance of the Certificate on the Single EIR.

Wetlands and Water Quality

Wetlands Alteration

The project will alter 21.3 acres of LUO in connection with placement of fill, dredging and construction of pile-supported piers and wharves, 1,365 lf of Coastal Bank associated with new piers and approximately 3.68 acres of LSCSF due to construction of the loadout platform and placement of structural fill. The EENF described the design of the pier and proposed dredging activities, identified associated impacts to wetland resource areas and mitigation measures, and reviewed the project's compliance with applicable standards of the Wetlands Regulations. The EENF did not identify an eelgrass bed that has been mapped by MassDEP adjacent to the area proposed to be dredged. The Single EIR should include the results of a survey conducted by the Proponent to delineate the area where eelgrass is present and evaluate potential impacts and identify proposed mitigation measures. The Single EIR should include a response to DMF's recommendation that no dredging occur within 250 ft of any eelgrass.

The project will impact 1,365 lf of Coastal Bank where new piers and drainage structures will be constructed along the shoreline. According to the EENF, the new bulkhead proposed in the location of the Loadout Wharf will provide more stability to the Coastal Bank. The Delivery Pier will be constructed over the Coastal Bank on the jetty pier and will not directly impact the bank. According to the EENF, Coastal Bank at the project site does not supply sediment to beaches, dunes or barrier beaches or provide habitat for rare species; therefore, these performance standards are not applicable to the project. Approximately 14,450 cy of fill material will be placed in in an area between existing and proposed bulkheads to provide a base for riprap armoring below the seaward edge of the Loadout Wharf. The riprap will be placed at a 3:2 (horizontal:vertical) slope to provide scour protection.

According to the EENF, the placement of fill within LSCSF will not alter flood pathways that would cause adverse effects on adjacent properties; however, no analysis was provided to support this assertion. The Single EIR should provide an analysis of how structures and fill proposed to be located in the floodplain may alter flood pathways and affect areas adjacent to the site. The analysis should include a description of how the site floods under current conditions, with arrows indicating flow pathways based on topography, and how the fill will redirect

floodwaters once the fill is placed on the site. The Proponent should consult with CZM and MassDEP prior to preparing the analysis.

Dredging and Dredged Material Disposal

The project includes both maintenance and improvement dredging in the turning basin, which is located within the DPA. During the review period, the Proponent provided additional detail regarding the areas to be dredged and proposed depth of dredging in each area. Approximately 15.7 acres (684,120 sf) of the turning basin will be dredged to its historically maintained depth of -32 ft MLLW plus two ft of overdredge. Berthing areas of approximately 5.3 acres (231,841 sf) adjacent to the Loadout Wharf and Delivery Pier, which are located within the turning basin, will be deepened to a depth of -34 ft MLLW plus two feet of overdredging. Finally, a ten-ft wide area along the proposed wharf and pier will be dredged to a depth of -36 ft MLLW, plus two feet of overdredge, to accommodate scour protection material at the base of the structures. The Single EIR should include the detailed information about the areas to be dredged and proposed depth of dredging in each area summarized above, provide a plan showing the areas to be dredged to each depth and quantify the volume and area of maintenance and improvement dredging. According to the EENF, impacts to water quality and LUO will be mitigated by minimizing the spread of suspended sediments by using a clamshell dredge with an environmental bucket to remove sediment and by installing turbidity curtains around the areas where dredging and pile installation are being conducted. In addition, dredging will be conducted in accordance with time-of-year (TOY) restrictions identified by DMF, which has recommended in-water work be avoided from February 15 to June 30 to avoid impacts to winter flounder and anadromous species. The Single EIR should describe impacts to marine habitat and identify potential mitigation measures. As requested by CZM, the Single EIR should provide an analysis of potential changes to wave height associated with deepening the channel and identify any necessary mitigation measures to minimize impacts.

According to the EENF, the turning basin was most recently dredged to a depth of -32 ft MLLW in 2006-2007, at which time a total of 339,039 cy of sediment was removed. The sediment was approved for disposal at the MBDS by the ACOE and the Proponent anticipates that the material proposed to be dredged will also be found suitable for offshore disposal. This disposal location is entirely within federal waters, though a WQC is still needed (together with the ACOE individual permit) for this disposal. The EENF included a proposed Sampling and Analysis Plan (SAP) that has been submitted to MassDEP and ACOE for review. The proposed SAP includes collection of 12 samples which will be composited into four samples for testing and analysis of grain size and chemical properties such as total organic carbon (TOC), pH, and conductivity, and concentrations of contaminants such as polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), metals, chlorinated pesticides, extractable petroleum hydrocarbons (EPHs) and volatile organic compounds (VOCs). The ACOE's determination of suitability for disposal at MBDS will also include analyses of water quality, bioassays with fish and invertebrate species, and animal tissue testing. The EENF did not identify an alternative disposal method for the sediment if it is determined to be wholly or partly unsuitable for offshore disposal. If the ACOE determines that sediment must be disposed of at an alternative location, the Proponent must file an NPC prior to approval of sediment disposal by MassDEP in the WQC. The Single EIR should provide a conceptual description of potential alternative locations

for sediment disposal, should ACOE approval be denied, and an update on the SAP, including the results of any sampling that may be conducted prior to submitting the Single EIR.

Stormwater

The EENF described existing drainage conditions, provided a conceptual description of the proposed stormwater management system and reviewed how the system will be designed to comply with the SMS to the extent practicable. Under existing conditions, stormwater runoff from the southern portion of the site flows to a swale on the adjacent power plant site. Runoff from the swale undergoes treatment by a water quality structure and is then discharged through a 48-inch outfall. There are no drainage structures in the northern part of the site.

In the northern part of the site (Laydown Area B), the ground surface will be graded toward the shoreline where runoff will be collected by a trench drain and directed to a water quality structure and a proposed outfall with a tidegate. In the southern part of the site (Laydown Area A), the ground will be sloped toward a vegetated swale and a series of catch basins along the power plant property line, then discharged through an existing outfall. Runoff from the southernmost part of the site adjacent to abutting properties will be collected by a vegetated swale with a catch basin, and directed to a new outfall in the southeast corner of the site. According to the EENF, the project will comply with the SMS requirement that 80 percent of Total Suspended Solids (TSS) be removed from stormwater prior to discharge. However, as allowed under the SMS, the project will seek a waiver from the requirement that post-development discharge rates not exceed pre-development rates because the site is located in LSCSF. According to the EENF, the existing soils at the site include urban fill with marine clays which do not permit infiltration; therefore, the project will not be able to meet the infiltration requirement of the SMS. The Single EIR should confirm whether the site is a land use with a higher potential pollution load per the SMS and provide information and calculations in support of the proposed stormwater management system design including plans of stormwater management system components and proposed outfalls. According to the EENF, 8.36 acres of the site will be covered in impervious area; however, as noted above, the soils are not suited to infiltration. The Single EIR clarify whether the site was modelled as mostly impervious or pervious. As described below, the Single EIR should include a discussion of how the stormwater system is anticipated to perform under future climate conditions.

Traffic and Transportation

The EENF included a transportation study which described the impact of project-generated vehicular traffic on the local roadway system during the construction period and when the facility is operational. It described existing and proposed roadway conditions, roadway and intersection volumes and roadway safety issues. The analysis reviewed future conditions and vehicular operations under 2022 Baseline, Construction Period and Design Conditions. The project's transportation impacts were evaluated within a study area including the following intersections:

- Sgt. James Ayube Memorial Drive at Bridge Street;
- Sgt. James Ayube Memorial Drive at Bridge Street/Apartment Building Driveway;

- Bridge Street at Webb Street;
- Webb Street at Essex Street;
- Fort Avenue at Memorial Drive/Derby Street;
- Derby Street at Webb Street/Site Driveway; and,
- Fort Avenue at Site Driveway.

Vehicular access to the site will be provided by the existing entrance to the power plant located on Fort Avenue. Automatic traffic recorder (ATR) counts and turning movement counts (TMC) were collected in September 2022 to establish 2022 Baseline traffic conditions in the study area.

According to the EENF, 150 workers will be employed at the site during the period of peak construction activity. The analysis assumed that all 150 workers will travel to the site in separate cars during the peak periods, and that construction trucks will travel to and from the site outside of peak hours. Therefore, the Construction Period condition is based on the addition of 150 trips to 2022 Baseline conditions during both the AM and PM peak periods.

Trip generation associated with operation of the facility was estimated using trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th edition, using Land Use Codes (LUC) 170 (Utility). Employees of the facility will generate 440 adt, including 82 during the AM peak period and 86 during the PM peak period. The Design condition was established by adding employee trips generated during the operation of the site to 2022 Baseline conditions. According to the analysis, project-generated traffic under both Construction and Design conditions will not have a significant effect on roadway operations in the study area.

As requested by the City, the Single EIR should provide an analysis of No Build 2029 and Build 2029 conditions for the operations-phase traffic. No Build conditions should be established using a background traffic growth rate as well as the addition of traffic generated by development projects in the area, including the Leefort Terrace development.

A Construction Management Plan (CMP) will be developed by the Proponent to manage construction-period traffic. The CMP will establish designated truck routes for construction vehicles, designate periods for the delivery of materials to the site, and identify on-site waiting and staging areas for construction vehicles so that neighboring residential streets are not used for these purposes. The Proponent will minimize the number of construction truck trips by prioritizing the use of barges to deliver materials to the site. The EENF included a Transportation Demand Management (TDM) program that will be implemented to encourage alternative travel modes to minimize vehicle trips to and from the site. Proposed TDM measures include:

- A transportation coordinator will be designated who will oversee implementation of the TDM program;
- Shift times will be established that occur outside of peak hours;
- Preferential parking spaces will be provided for low-emission vehicles and carpools/vanpools;
- Electric-vehicle (EV) charging stations will be provided in the employee parking lot;

- “No Idling” signs will be installed to discourage idling by delivery vehicles; and,
- A bicycle storage facility will be provided and the Proponent will work with the City to add a bikeshare station at the site.

Climate Change

Adaptation and Resiliency

Effective October 1, 2021, all MEPA projects are required to submit an output report from the MA Resilience Design Tool to assess the climate risks of the project. Based on the revised output report provided by the Proponent during the review period, the project has a high exposure rating based on the project’s location for sea level rise/storm surge and urban and riverine flooding associated with extreme precipitation. Based on the 10- to 30-year useful life and the self-assessed criticality identified for the project, the MA Resilience Design Tool recommends a planning horizon of 2050 and a return period associated with a 100-year (1 percent chance) storm event for sea level rise/storm surge and a return period associated with a 10-year (10 percent chance) storm event for extreme precipitation when designing the wharf, pier and office trailer, and a planning horizon of 2030 and a return period associated with a 20-year (5 percent chance) storm event for sea level rise/storm surge and a return period associated with a 5-year (20 percent chance) storm event for extreme precipitation when designing the storage shed.

The recommended return periods from the Tool appear to be based on a “medium” assessment of the criticality of the pier, wharf and office trailer and a “low” assessment of the criticality of the warehouse, based on user inputs. It is also unclear why the storage shed is subject to a shorter planning horizon. I note that the standard recommendations provided by the Tool for long-lived structures with a 11- to 50-year planning horizon include a 100- to 200-year return period (as of a future planning year) for sea level rise/storm surge and a 25-year to 50-year return period for extreme precipitation.⁵

According to the EENF, the site will be raised by two feet to elevation 12 ft NAVD 88. However, plans included in the EENF show that the northern part of the site will be raised from approximately 10 ft NAVD 88 along the shoreline to 14 ft NAVD 88 adjacent to the existing electrical substation; in the southern part of the site, the Loadout Wharf, Delivery Pier and land areas immediately adjacent to these structures will be constructed to elevation 12 ft NAVD 88, and areas landward of the Loadout Wharf will gradually slope down to approximately 10 to 11 ft NAVD 88 in the southwestern portion of the site. According to the EENF, landscape berms will be constructed on the site to minimize the risk of flooding to the surrounding neighborhood; however, the EENF did not detail the location or height of such structures. The Single EIR should clarify the proposed ground surface elevations under existing and proposed conditions, including the location and height of any berms intended to provide flood protection to adjacent properties. According to the output of the MA Resilience Design Tool, the projected water surface elevation in 2050 (associated with a 100-year storm event) will range from a minimum of

⁵ See https://eea-nescaum-dataservices-assets-prd.s3.amazonaws.com/cms/GUIDELINES/V1.2_SECTION_4.pdf (pp. 12 and 23).

11.5 ft NAVD 88 to a maximum of 13.5 ft NAVD 88 and the wave action water elevation in 2050 will range from 11.5 ft NAVD 88 to 21.2 ft NAVD 88.

According to the EENF, equipment and utilities will be kept as far away from the areas of potential flooding and storm surge to the maximum extent practicable; however, equipment to be stored and used on the site can be adapted to future conditions and additional fill placed to raise the elevation of the site, if necessary. The Single EIR should describe the extent to which operations at the site under future climate conditions may be impacted by sea level rise/storm surge and flooding and any potential adaptation measures that may be necessary in the future. As noted by CZM, the data used by the Tool may not account for the fill previously placed on the project site; this factor should be assessed in the analysis of future climate conditions. The Single EIR should address how the elevation of any first-floor spaces and critical infrastructure compares to the anticipated wave action water elevation in 2050 associated with the 100-year storm, based on the Tool outputs provided with the EENF. The Single EIR should discuss, with quantitative modeling to the extent practicable, whether the stormwater management system will attenuate peak flows and meet pollutant loading requirements based on future climate conditions, including, at minimum, the 24-hour rainfall volume associated with the 2050 10-year storm (6.1 inches), based on Tool outputs. The Single EIR should also compared results based on the 25-year and 50-year storm as of 2050 and 2070, to the extent data are available.

Construction Period

All construction and demolition activities should be managed in accordance with applicable MassDEP's regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017). The Single EIR should confirm whether asbestos is present in the buildings to be demolished and include a commitment to properly manage and dispose of asbestos containing materials. The project should include measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management) and emissions of air pollutants from equipment, including anti-idling measures in accordance with the Air Quality regulations (310 CMR 7.11). I encourage the Proponent to require that its contractors use construction equipment with engines manufactured to Tier 4 federal emission standards, or select project contractors that have installed retrofit emissions control devices or vehicles that use alternative fuels to reduce emissions of VOCs, carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD). If oil and/or hazardous materials are found during construction, the Proponent should notify MassDEP in accordance with the Massachusetts Contingency Plan (310 CMR 40.00). All construction activities should be undertaken in compliance with the conditions of all State and local permits. I encourage the Proponent to reuse or recycle construction and demolition (C&D) debris to the maximum extent. The Proponent should consult BUAR's comment letter for procedures that should be followed if underwater archaeological resources are encountered during construction.

Mitigation and Draft Section 61 Findings

The Single EIR should include a separate chapter summarizing all proposed mitigation measures including construction-period measures. This chapter should also include a

comprehensive list of all commitments made by the Proponent to avoid, minimize and mitigate the environmental and related public health impacts of the project, and should include a separate section outlining mitigation commitments relative to EJ populations. The filing should contain clear commitments to implement these mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation. The list of commitments should be provided in a tabular format organized by subject matter (traffic, water/wastewater, GHG, environmental justice, etc.) and identify the Agency Action or Permit associated with each category of impact. Draft Section 61 Findings should be separately included for each Agency Action to be taken on the project. The filing should clearly indicate which mitigation measures will be constructed or implemented based upon project phasing to ensure that adequate measures are in place to mitigate impacts associated with each development phase.

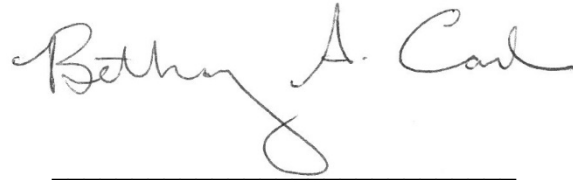
To ensure that all GHG emissions reduction measures adopted by the Proponent in the Preferred Alternative are actually constructed or performed by the Proponent, the Proponent must provide a self-certification to the MEPA Office indicating that all of the required mitigation measures, or their equivalent, have been completed. The commitment to provide this self-certification in the manner outlined above shall be incorporated into the draft Section 61 Findings included in the Single EIR.

Responses to Comments

The Single EIR should contain a copy of this Certificate and a copy of each comment letter received. It should include a comprehensive response to comments on the EENF that specifically address each issue raised in the comment letter; references to a chapter or sections of the Single EIR alone are not adequate and should only be used, with reference to specific page numbers, to support a direct response. This directive is not intended to, and shall not be construed to, enlarge the Scope of the Single EIR beyond what has been expressly identified in this certificate.

Circulation

The Proponent should circulate the Single EIR to each Person or Agency who previously commented on the EENF, each Agency from which the Project will seek Permits, Land Transfers or Financial Assistance, and to any other Agency or Person identified in the Scope. Per 301 CMR 11.16(5), the Proponent may circulate copies of the EIR to commenters in CD-ROM format or by directing commenters to a project website address. Pursuant to 301 CMR 11.16(5), the Proponent may circulate copies electronically. However, the Proponent must make a reasonable number of hard copies available to accommodate those without convenient access to a computer and distribute these upon request on a first-come, first-served basis. Copies of the Single EIR should be made available for review at the Salem Public Library.



November 30, 2022

Date

Bethany A. Card

Comments received:

11/21/2022 Department of Conservation and Recreation (DCR)
 11/21/2022 Massachusetts Department of Environmental Protection (MassDEP)/Waterways
 Regulation Program (WRP)
 11/21/2022 Jeff Cohen, Salem City Council
 11/21/2022 Salem State University
 11/21/2022 The Salem Partnership
 11/22/2022 Fara Courtney
 11/22/2022 Michael J. Harrington
 11/22/2022 National Marine Fisheries Service (NMFS)
 11/22/2022 Salem Alliance for the Environment
 11/22/2022 Salem Chamber of Commerce
 11/22/2022 Senator Joan B. Lovely, Second Essex District
 11/23/2022 Avangrid Renewables
 11/23/2022 Boston Harbor Now
 11/23/2022 Board of Underwater Archaeological Resources (BUAR)
 11/23/2022 City of Salem
 11/23/2022 Massachusetts Office of Coastal Zone Management (CZM)
 11/23/2022 Massachusetts Department of Environmental Protection (MassDEP)/Northeast
 Regional Office (NERO)
 11/23/2022 Division of Marine Fisheries (DMF)
 11/23/2022 Massachusetts Bays National Estuary Partnership
 11/23/2022 New England for Offshore Wind
 11/23/2022 Roberta Crosbie
 11/23/2022 Salem Sound Coastwatch

BAC/AJS/ajs

PROJECT NARRATIVE

Chapter 1

PROJECT DESCRIPTION

CHAPTER 1: PROJECT SUMMARY

1.1 INTRODUCTION

This Single Environmental Impact Report (SEIR) is submitted on behalf of Crowley Wind Services, Inc. (the “Proponent” or “Crowley”). Crowley is responsible for project management, shipping services, engineering, and logistics for emerging utility-scale offshore wind (OSW) projects in the United States. Crowley specializes in Jones Act-compliant vessels for delivering wind turbine generator (WTG) components and other essential materials to project sites, as well as providing onshore support for WTG construction, supply chain expertise, and other services.

Crowley is submitting this Single Environmental Impact Report (SEIR) in response to the Secretary’s Certificate on the Expanded Environmental Notification Form (EENF), that was issued November 30, 2022. This SEIR expands on the EENF, provides responses to requests for additional information and analyses, and provides responses to comments received during the public comment period. Each section in this chapter provides a brief summary of what has been updated since the EENF was filed, and provides chapter references to these updates.

1.2 PROJECT OVERVIEW

Crowley entered into an agreement with the City of Salem in September 2022 to establish a public-private partnership in order to develop Salem Harbor as the Commonwealth’s second purpose-built OSW construction staging port. The partnership is backed by agreements with two OSW developers. The completed facility will be used to support the installation of approximately two gigawatts (GW) of OSW power in the waters south of Cape Cod. There is a potential to utilize the property afterward for work on another existing OSW lease area south of Cape Cod.

Crowley purchased 42.3 acres of property at 67 Derby Street, Salem (the “Project Site”), which is located next to the 22.7-acre property of the Salem Harbor Power Development LP site, formerly known as Footprint Power Plant (see Figure 1-1, Locus Map). Crowley will create an OSW marshalling terminal where turbine components will be partially assembled and deployed to OSW farms (the “Project”). Freighters, barges, and other marine vessels will be used to deliver the components to the marshalling facility and to transfer the partially-assembled turbines to OSW project locations for full assembly and installation.

This Project will be a key component in achieving the Commonwealth’s goals for transitioning to renewable energy as well as the City of Salem’s goals for economic development and tourism. It will bring important economic and social benefits through job opportunities and workforce development programs in a Commonwealth gateway city containing several environmental justice communities. This new facility will provide

excellent deep-water access without any navigational height or width restrictions, which are major requirements for an OSW marshalling facility not found in many ports along the east coast. These attributes make Salem one of the only facilities that can support the assembly of future floating OSW turbines, which will be necessary as the industry expands into the Gulf of Maine. In a report commissioned and published by the Massachusetts Clean Energy Center (MassCEC) in 2022¹, analysis of the floating wind installation process and review of available waterfront and port properties indicated that there are very few port facilities capable of supporting floating OSW turbine assembly in the northeast – and that Salem Harbor is, in fact, the only port in Maine, New Hampshire, and northern Massachusetts that can support these activities, with relatively limited redevelopment requirements, in time to support potential Gulf of Maine projects in the latter 2020s and beyond.

The Project will provide the infrastructure needed for vessel access, berthing, and laydown yards to support the marshalling and assembly of wind turbine components that will help meet the goals of the City of Salem and the Commonwealth. The Project will also serve double duty by continuing to support cruise ship visitations to the Salem Harbor, which will support the City's tourism, increase public access to the historic waterfront, and bring additional economic benefits.

1.3 PROJECT SITE

The Project is located in Salem Neck, a peninsula in the northeast corner of the City of Salem (see Figure 1-2, Aerial View of Project Site). The existing site is a remediated waterfront property in the Salem Harbor Designated Port Area (DPA) (see Figure 1-3, Salem Harbor Designated Port Area). The 42.3-acre Project Site is bordered by Derby Street to the west, Fort Avenue and the South Essex Sewerage District wastewater treatment plant to the north, and Salem Harbor to the east and south, including the Salem Wharf facility bordering the southern edge of the Project Site. There is a buffer of trees and other vegetation within the Project Site along Derby Street and Fort Avenue (see Figure 1-4, Existing Conditions Photograph Key, and Figures 1-5 through 1-8, Existing Conditions Photographs). Directly across Salem Harbor from the northeastern side of the Project Site is Winter Island where the Salem Harbormaster's office is located. The area across Derby Street from the Project Site on the southern and southwestern sides is the Derby Street Historic District and is mostly residential with some notable historical sites, including the House of the Seven Gables and Nathaniel Hawthorne's Birthplace. Park areas including David Beattie Park and Irzyk Park are in proximity to the western edge of the Project Site. The Bentley Academy Innovation School and Salem Community Child Care are located on the northern side of Salem Neck. There is a residential area on the other side of Fort Avenue near the north and northwestern edges of the Project Site.

¹ MassCEC, Massachusetts Offshore Wind Ports and Infrastructure Assessment: North Shore, April 2022

The site development history dates to the 1790s and includes several industrial development and land reclamation projects that have resulted in the current site configuration. Up until recently, the property was the site of a 750-megawatt (MW) coal and oil-fired power plant that encompassed the original 65-acre parcel. The coal plant was demolished in 2014 and a site environmental remediation effort was undertaken. A natural gas-fired power plant was constructed in the middle of the 65-acre site and began operating in 2017. Salem Harbor Power Development LP currently controls the power plant site. The Project Site surrounds the power plant on all sides except for the side facing Derby Street.

The upland portions of the Project Site are mostly flat and vacant industrial land, and include two dilapidated shed structures, remnant foundations, concrete pads and paved areas, and two stockpiles of crushed rock fill leftover from the power plant demolition project (see Figure 1-6). There are also two small transformer buildings: one found along the water in the southern side of the Project Site, and one found in the rear of the property in the western corner of the Project Site. The existing Project Site is approximately 96% impervious.

The property contains approximately 6,100 linear feet (LF) of waterfront composed of sloped riprap banks and steel sheet pile walls along Salem Harbor (see Figures 1-7 and 1-8). Structures along the shoreline include a 695-foot-long pile-supported wharf with a concrete apron formerly used to offload bulk coal and oil, and an approximately 970-foot-long by 64-foot-wide channel that widens to 150 feet at the opening used by the former power plant to discharge cooling water into Salem Harbor (see Figure 1-7). The channel is bounded by the upland property to the northwest and a filled jetty pier with sloped riprap on all sides to the southeast. The jetty pier is approximately 1,380 feet long and varies in width from 40 feet to 100 feet. A 60-foot-long by 6-foot-wide pile-supported timber fishing pier is located along the southern side of the jetty pier. The State Turning Basin (the "Basin") is approximately 18 acres and -32 feet in depth (mean lower low water, MLLW). The Basin extends 500 feet out into Salem Harbor and meets the federal navigation channel, which also has a -32-foot depth (MLLW) and extends seaward from Salem Harbor around Winter Island to the north.

1.4 PROJECT DESCRIPTION

The main objective of the Project is to create an OSW marshalling terminal to facilitate the receiving, storage, assembly, and shipment of WTGs and their components. This terminal is designed to support various OSW projects that are currently being developed, as well as future projects. The terminal will be focused on vessel accommodation, WTG assembly, and storage of turbine components. Freighters, barges, and other vessels will be used to deliver the OSW components to the marshalling facility. The WTG components will then be assembled on large transfer vessels and transported to OSW projects. To support these efforts, renovations and improvements are proposed for the upland, shoreline, and watershed areas of the Project Site. These additions and improvements collectively describe the proposed work (see Figure 1-9, Project Site Plan and Figure 1-10, Project Site Rendering).

Upland Improvements

Two laydown yards totaling 29.2 acres on the south and north areas of the Project Site will be developed to store towers, nacelles, and blades for WTG construction. A 1.9-acre transition yard will connect the two laydown yards and will be used for transporting equipment and terminal circulation. To make these upland areas suitable for the storage and transportation of WTG components, ground improvements and dense graded aggregate will be needed. A small portion of the Project Site in the northwest corner will be maintained for parking up to approximately 178 vehicles and for a small, double-wide, office trailer. There will be a small 3,000 square foot (SF) storage shed located in the northern section of Laydown Yard B and a single-wide office trailer near the loadout wharf. The overall Project Site will have utilities and systems added including electricity, lighting, and water/fire and stormwater controls. The planned Project Site will be 95% impervious.

Pier and Shoreline Improvements

The wharfs and adjacent bulkheads will support heavy lift operations and the mooring of Wind Turbine Installation Vessels (WTIVs), feeder barges, ocean going tugs, freighters, and other support vessels. The existing 685-foot long, pile-supported wharf will be reconstructed to support the loading of the WTG components. A heavy lift platform adjacent to the wharf and bulkhead will be constructed for pre-assembly, staging, and loadout of turbines onto vessels. A new 685-foot-long pile-supported delivery pier to receive incoming turbine components and support Heavy Transport Vessels (HTVs) will be constructed along the existing jetty pier.

Dredging and Dredge Material Disposal

Approximately 80,190 cubic yards (CY) of maintenance and improvement dredging to elevation -32 feet (MLLW) including a 2-foot overdredge within an approximately 21.3-acre area will occur in the Basin and along the loadout wharf and delivery pier. To accommodate the large vessels with full loads needed for the Project throughout the tidal cycle, the existing berth along the 685-foot wharf will be dredged to -34 feet (MLLW) with a 2-foot overdredge. The dredge material will be tested and analyzed prior to dredging and is expected to be approved for disposal at the Massachusetts Bay Disposal Site (MBDS). Should the sampling results not allow for offshore disposal, the Sampling Analysis Plan (SAP) does include sufficient analysis of constituents to allow a determination of upland disposal in accordance with Massachusetts Department of Environmental Protection (MassDEP) requirements for dredge sampling and could include onsite processing and treatment before being placed onsite as fill or offsite processing and treatment before being disposed of an upland landfill.

1.5 ALTERNATIVES ANALYSIS

Crowley evaluated three scenarios for the Project Site: (1) No Build, (2) Preferred (the “Project”), and (3) Maximum Build alternatives, which are summarized below and discussed further in Chapter 2.

1.5.1 NO BUILD ALTERNATIVE

The No Build Alternative would maintain existing conditions at the Project Site and would not yield site improvements or community benefits to the local area and to the City of Salem. Stormwater discharges would not be improved, resilience measures would not be implemented, OSW farm construction would be delayed or deferred, and employment opportunities would be lost.

1.5.2 PREFERRED ALTERNATIVE

The Preferred Alternative (the “Project”) has three main components: (1) upland work, (2) pier construction, and (3) dredging. The upland area of the Project Site will include a storage shed, two office trailers, and several acres for moving the components around the Project Site, and parking. An approximately 31.1-acre portion of the Project Site will be used to store the components (Laydown Yards A and B). Improvements to the pier include a reconstructed pile-supported delivery pier, a new 660-foot-long pile-supported loadout wharf, and reinforcing existing onshore infrastructure to support the storage and assembly of wind turbine components. Dredging will include approximately 80,190 CY of maintenance and improvement dredging in the Basin and along the piers. This will also allow the City to resume cruise ship operations.

Stormwater runoff quality would be improved, increased Project Site elevations would enhance on-site and off-site resilience to rising sea levels, up to 123 jobs would be created during the construction phase and also up to 200 jobs during the operations phase and construction of OSW farms providing renewable energy would be supported. One-time impacts to the marine environment would occur from dredging and pier construction, which would be mitigated through various measures. Modest amounts of traffic would be generated during the construction and operational phases of the Project affecting local streets.

1.5.3 MAXIMUM BUILD ALTERNATIVE

The Maximum Build Alternative is the same as the Preferred Alternative, with the addition of an expanded dredged area and a longer loadout wharf and berth to accommodate larger ships and more efficient turning movements. The cove at the south end of the existing wharf would be filled, and the loadout wharf and laydown yards would be expanded over this filled area. The former cooling water discharge

channel would be filled to increase the laydown yards and maneuverability of the vehicles that transport the wind turbine components between the two laydown yards and the delivery pier and loadout wharf.

The Maximum Build Alternative would have the same impacts and near-term benefits as the Preferred Alternative, plus additional environmental impacts from project components. There would be one-time mitigated impacts to the marine environment from the additional dredging and some permanent loss of benthic habitat with the filling of the discharge channel and “cove” areas. Stormwater and traffic impacts would be similar to the Preferred Alternative. Job creation would be similar to the Preferred Alternative.

1.5.4 SUMMARY

The following Table 1-1 summarizes the project components and impacts to the environment in each of the alternatives.

Table 1-1, Project Alternatives

Item	No Build Alternative	Preferred Alternative (the “Project”)	Maximum Build Alternative
Project Site (acres)	42.3	42.3	44.8
Impervious coverage (percent)	96	95	97
Buildings (Gross Square Footage, GSF)	12,100	5,650	5,650
Pier/Wharf Length (LF)	905	1,345	1,545
Wetlands Impacts – Temporary (SF)	0	0	0
Wetlands Impacts – Permanent (SF)	0	950,500	1,369,900
Dredging Area (SF)	0	929,350	1,257,100
Dredge Volume (CY)	0	80,190	187,560
In-Water Fill Area (SF)	0	17,900	122,290
In-Water Fill (CY)	0	6,420	50,510
Traffic (ADT)	0	774	774

1.6 PUBLIC AND COMMUNITY BENEFITS

The Project's benefits include, but are not limited to:

- Improvement in channels, wharves, and port facilities to support existing and future maritime uses in Salem Harbor and the recommendations of the Salem Municipal Harbor Plan (MHP);
- Improvement in stormwater management to improve and protect water quality in Salem Harbor;
- Investment in a new and promising industry for the City of Salem with workforce development and training in the OSW industry, including partnerships with high schools like Salem High School, local colleges, nonprofits, and academies to provide Global Wind Offshore (GWO) Training and other training programs;
- Creation of up to 123 full-time equivalent (FTE) jobs during construction of the Project and up to 200 jobs during the terminal's operation phase;
- Establishment of a community benefits agreement between the Proponent and the City of Salem to preserve the City's long-term interests, including identifying local supply chain opportunities, workforce development, increasing public access to the waterfront by supporting cruise ships visits, and developing partnerships with residents and community organizations;
- Investment in renewable energy to further the Commonwealth of Massachusetts' clean energy and climate goals in order to address climate change impacts and pollution from traditional fossil fuel energy sources; and
- Enables the Commonwealth to remain at the forefront of the OSW industry and to take full advantage of the nation's rapidly growing OSW industry on the East Coast, especially as the industry matures and new technologies, such as floating OSW, become more common.

1.7 SUSTAINABILITY

Crowley is committed to designing and constructing the Project in an environmentally sustainable manner and one that dramatically improves our renewable energy mix by supporting the construction of OSW farms. The Project is located on filled tidelands and on a peninsula. Given the Project Site's location and its proposed use for transferring large wind turbine components and placing them in the large laydown yards, the best flood mitigation measure that can be taken in the site design is raising the Project Site grade. Further, this will help, in combination with other district scale measures, to mitigate flood impacts in the surrounding neighborhoods. The Project Site is also adaptable since there is only one building

that will not contain critical equipment and can be easily moved if needed. The Project Site can continue to adapt to rising sea levels by adding additional fill in the upland areas and moving the open warehouse structure to areas with less flood risk.

Project site design and resiliency mitigation measures, including those listed below, will be pursued to reduce the environmental impacts associated with the Project.

1.7.1 PROJECT SITE DESIGN AND RESILIENCY

- Incorporation of state-recommended Resilient Massachusetts Action Team (RMAT) design criteria in the design of flood resilience measures to account for future sea level rise, setting Design Flood Elevation (DFE) more than two feet above the current 100-year base flood elevation (BFE) of elevation (El.) 10 North American Vertical Datum of 1988 (NAVD88);
- Utilizing efficient design and construction practices to minimize Project Site area to the maximum extent practicable and avoid unnecessary impacts to coastal resource areas and buffer zone areas along Salem Harbor; and
- Raising the existing grade and reinforcing existing waterfront infrastructure to address future sea level rise and flooding to improve resiliency.

1.7.2 STORMWATER

- Inspection and maintenance of existing storm drainage systems that outlet into the Salem Harbor;
- Proposed stormwater utilities will include stormwater treatment devices such as deep sump catch basins and proprietary water quality structures to remove Total Suspended Solids and accommodate overflow stormwater collection; and
- Install and/or repair of backflow prevention devices on existing storm drain outlets into the Salem Harbor to prevent saltwater intrusion and storm surge into drainage systems that can erode utility infrastructure and disturb collected sediments within catch basin sump collection systems.

1.7.3 TRANSPORTATION

- A Travel Demand Management Program will include several measures to make the Project more resilient such as preferential parking for low-emission vehicles and for vanpools and carpools, vehicle charging stations, and no idling signage.
- The provision of bicycles facilities will encourage workers to utilize alternative modes of transportation and reduce auto emissions, including working with the City to explore a nearby Bluebike station.

1.8 ENVIRONMENTAL JUSTICE POPULATIONS

The Project is in proximity to neighborhoods defined as Environmental Justice (EJ) Populations based on the Massachusetts EEA 2020 EJ Map Viewer, which is derived from 2020 Census Block Groups. Within a 5-mile radius of the Project Site, there are 94 Census block group that trigger five EJ criteria. These criteria are Minority; Income; Income and Minority; Minority and English Isolation; and Minority, Income, and English Isolation. Within a 1-mile radius there are twelve Census block group that trigger four EJ criteria. These criteria are Minority; Income; Income and Minority; and Minority, Income, and English Isolation. The Project Site however is not in an EJ area.

The Project is in a historically industrial area along the Salem Harbor Waterfront in a DPA. The area presently contains a major natural gas-fired power plant, which will continue operating under this Project, and the Project Site is bordered by a municipal wastewater treatment plant to the north. Residential neighborhoods are in proximity to the Project Site on the west side of Derby Street, and the property of Bentley Academy Innovation School borders Fort Avenue, located northwest of the Project Site.

The Project is anticipated to provide several economic and environmental benefits to both EJ and Non-EJ populations. Environmental benefits of the Project include improving the existing wharf and harbor in Salem Harbor, implementing a new stormwater management system to protect water quality in Salem Harbor, and raising and reinforcing existing infrastructure at the Project Site to address future sea level rise and flooding. Economic benefits to the community include job opportunities with a new and exciting industry in OSW, collaboration with colleges, nonprofits, and academies to provide workforce training and development in the OSW industry, and the creation of a community benefits agreement with the Proponent and the City of Salem in order to engage residents and community organizations in the Project while also preserving the community's long-term interests. On a broader scale, the Project will help the Commonwealth meet its clean energy goals and will further the integration of renewable energy into the United States' energy grid. These efforts will help reduce pollution from fossil fuels and slow the progression of climate change-related impacts, two important concerns for communities, and especially for traditionally marginalized communities and EJ populations.

1.9 COMMUNITY AND AGENCY OUTREACH

The Proponent has been engaging in outreach efforts alongside the City throughout the local community since the announcement of the Project and is working with Regina Villa Associates, Inc., a Boston-based public outreach, communications, and marketing firm, on these outreach efforts. The Proponent has met with local and state government agencies, neighborhood associations, and community groups to discuss the Project and has received positive feedback on the Project since it was announced. Meetings held since May 2022 are described in Table 3-2, Environmental Justice Population, Community, and Agency Outreach.

A select number of meetings have provided Spanish translation services in order to increase accessibility and further EJ principles.

Prior to the Proponent's involvement in the Project Site, the City had initiated a community-wide discussion around the potential reuse potential of the property through an update to the Salem MHP and DPA Master Plan. The City hosted dozens of public forums and one-on-one meetings with stakeholders, and leveraged online tools including an interactive map and surveys which provided additional opportunities for feedback on the future use of the DPA. These online tools were hosted on the Project website, shared via mail blast, and discussed during public meetings. The "Priorities for the Footprint Property Survey" received approximately 650 responses and identified local priorities for the reuse of the approximately 42 acres of privately owned land around the new power plant. The interactive mapping tool, which received 698 visits and 127 comments, asked users to help craft the future of the waterfront by using the icons to make note of something they like, an idea or suggestion, and comments. The map covered the entire planning area, including the DPA. The results of these online engagement tools were discussed with Harbor Planning Committee (HPC) members and the public.

On February 24, 2020, an MHP update meeting was held with the City of Salem and various consultants to discuss the progress made on the design and future use of the Project Site as part of the Salem MHP, and to review the results of the online survey efforts. Responses show that residents are most supportive of OSW and are excited to introduce this industry to the community. OSW/renewable energy was the most supported marine industrial use among respondents. Public access was the most important priority among respondents for the site, and public access has been maintained in the design of the Project Site. See Attachment A, Salem MHP Update Presentation, which is the presentation from the February 2020 MHP meeting and contains the results of the community survey.

After the EENF was filed on October 16, 2022, the Proponent sent notices about it to 32 different local advocacy groups. Several of these groups submitted EENF comment letters to MEPA, which are included in this SEIR. All these groups will also be notified about the filing of the SEIR. As described in Chapter 3, there have been many neighborhood meetings that include EJ communities since the EENF was filed, and there will be future meetings and outreach to EJ communities. The most recent meeting was held on May 2, 2023 at the Salem Academy in the Point Neighborhood.

1.10 MEPA HISTORY

The Project is subject to Massachusetts Environmental Policy Act (MEPA) review as it exceeds Environmental Notification Form (ENF) review thresholds at 11.03(1)(b)1, 11.03(3)(b)1.a, 11.03(3)(b)1.e, 11.03(3)(b)3, and 11.03(3)(b)6., and exceeds EIR threshold at 11.03(3)(a)1.b. In addition, the Project requires a Chapter 91 license, 401 Water Quality Certification, Coastal Zone Management Consistency Review, and anticipates state and federal funding. An Expanded ENF (EENF) was submitted to the Executive Office of Energy and Environmental

Affairs (EEA) to initiate review of the Project under MEPA. The EENF included an expanded analysis of dredging work, including an alternatives analysis, and a description of anticipated wetland impacts and proposed mitigation. As the Project is within a mile of identified EJ Populations, the EENF contained an expanded analysis of environmental and health impacts. The Secretary issued a Certificate on the EENF on November 30, 2022 that granted the Proponent's request to file a Single EIR (SEIR).

In accordance with the Secretary's Certificate on the EENF, Crowley is submitting this SEIR. The SEIR accelerates the permitting process to allow Project construction to begin in late summer 2023, in accordance with an approved fast-track schedule with MassDEP, which will help meet the Commonwealth's OSW goals for renewable energy and reduction of GHG emissions. Under the fast-track schedule, MassDEP will begin review of the Chapter 91 license application, but will not start the public comment period until MEPA issues the Certificate on the SEIR.

1.11 UPDATES TO SEIR

There have not been any changes since the filing of the EENF to infrastructure design, including the piers, wharfs, bulkheads, dense graded aggregate (DGA). This SEIR addresses minor design changes since the filing of the EENF, including repositioned buildings within the Project Site, updated stormwater management system layout (outfalls remain the same), and revised landscaped areas. None of the design changes have resulted in different environmental impacts from those noted in the EENF. This SEIR also reflects updated or expanded information regarding several analyses, as described below.

Chapter 2, Alternatives Analysis, provides minor updates within the analysis of the environmental impacts and mitigation for the three alternatives. It expands on the Maximum Build Alternative with additional details and its compliance with Chapter 91 regulations.

Chapter 3, Environmental Justice, contains updated maps and data to reflect the EEA Updated 2020 EJ Map Viewer and a synopsis of additional public meetings held since the EENF submittal and anticipated meetings. In addition, an enhanced EJ analysis identified and prepared mitigation measures to specific impacts to EJ communities, including: vessel emissions, ship-to-shore electricity, air quality and pollution from construction and diesel trucks, stormwater management, and short- and long-term environmental and public health impacts. An analysis of how the vegetated buffer minimizes operational impacts on adjacent areas is also addressed in this chapter.

Chapter 4, Tidelands, provides additional detail regarding water-dependent industrial uses (WDIUs). The chapter also includes more information regarding the Project's compliance with the Approved 2008 Salem Municipal Harbor Plan (MHP) and Designated Port Area (DPA) Master Plan and Proposed 2023 Municipal Harbor Plan (the "2023 MHP") and the Designated Port Area Master Plan (the "2023 DPA Master Plan").

Chapter 5, Public Benefits, expands upon the public benefits will be realized with the construction and operation of the Project.

Chapter 6, Wetlands, updates the wetland resource areas within the Project Site and the Project's compliance with the respective performance standards. Appendix L, Project Plans, also reflects updated wetland resource areas. Also within this chapter are a synopsis of the eelgrass survey undertaken to determine if the eelgrass identified in historic mapping results provided by the MassDEP in Mass Mapper were present; an analysis of wave height impacts; and an assessment of the marine habitat, potential Project impacts, and mitigation measures.

Chapter 7, Dredging and Disposal, details the locations, depths, and areas of dredging; reflects updates to the Sampling and Analysis Plan (SAP) and Phase 1 Sampling Analysis; describes mitigation measures; and provides a description of the alternative dredging disposal methods that will be considered.

Chapter 8, Infrastructure, updates the Project's stormwater management system layout and provides additional detail regarding the Project's compliance with MassDEP Stormwater Management Standards, handling of future stormwater, and the proposed electrical and telecommunication services.

Chapter 9, Traffic and Transportation, revises Project Site traffic estimates using an updated estimate of employees, provides an updated intersection capacity analyses reflecting 2029 no-build and build conditions, and includes estimates of future roadway and traffic conditions with and without the Project.

Chapter 10, Climate Change, expands upon the Project's flood design and grading and summarizes an analysis of the Project Site's performance under future climate conditions.

Chapter 11, Construction Period, describes minimizations and mitigations of construction impacts, which are also detailed in Attachment B, Construction Management Plan.

Chapter 12, Historic Resources provided clarifications on the historic resources and areas, and expanded on the discussion about shadow impacts on historic resources.

Chapter 13, Mitigation and Draft Section 61 Findings, summarizes the mitigation measures by subject matter and provides estimated costs and schedules and includes draft Section 61 findings for each state agency that will issue permits for the Project.

Chapter 14, Response to Comments, provides responses to the 22 comment letters received by the MEPA Office regarding the EENF.

Chapter 15, Circulation List, updates the distribution list to include all commenters on the EENF plus additional local non-profit and advocacy groups.

1.12 CONSTRUCTION OPERATIONAL IMPACTS & MITIGATION

During the construction period, the Project will entail impacts on-site such as noise, light, and vibration due to construction and demolition efforts. The Proponent will implement mitigation efforts to these impacts to reduce emissions and pollution, including using land-side construction equipment compliant with the highest Tier emission standards level available, traffic control, and active communication. These impacts and mitigations are detailed in Chapter 11, Construction Period, and Attachment B, Construction Management Plan.

1.13 SUMMARY OF REQUIRED PERMITS, APPROVALS

Table 1-2 lists the permits, approvals, and status of filings required for the Project. Since the filing of the EENF, three approvals (Chapter 91 Permit, Amended 401 Water Quality Certification, and MARAD FONSI) have been added, one has been removed (USACE FONSI), and one has been changed (USACE General Permit to Individual Permit).

The Project will need to permit and start construction of upland and shoreline work by the end of summer 2023 and then permit and start dredging the Basin later to meet the start date for operations in early 2026. Therefore, a Chapter 91 License and a 401 Water Quality Certification (WQC) will be needed from MassDEP by the end of summer 2023. Since the dredge sampling and testing cannot be completed until the end of 2023, an amended 401 WQC and a Chapter 91 dredge permit will not be applied for until January 2024.

Table 1-2, Anticipated Project Approvals

Agency	Approval	Status
Local		
Salem Conservation Commission	<ul style="list-style-type: none"> Wetlands Protection Act Form 5 – Order of Conditions 	Submitted 2/4/2023
Salem Planning Board	<ul style="list-style-type: none"> Planned Unit Development Special Permit Flood Hazard Overlay District Special Permit Stormwater Management Special Permit 	
City Engineer	<ul style="list-style-type: none"> Drainage Alteration Permit 	
Salem Historical Commission	<ul style="list-style-type: none"> Waiver of Demolition Delay Ordinance (any structures over 50 years old) 	
City Council	<ul style="list-style-type: none"> Inflammables Permit (storage of fuel onsite), rezoning of R2 parcels and discontinuance of public way (India Street) 	
State		

Agency	Approval	Status
Executive Office of Energy and Environmental Affairs	<ul style="list-style-type: none"> • MEPA Certificate on Expanded Environmental Notification Form • MEPA Certificate on Single Environmental Impact Report 	Issued 11/30/2022
Massachusetts Department of Environmental Protection	<ul style="list-style-type: none"> • Chapter 91 License • Chapter 91 Permit • 401 Water Quality Certification • Amended 401 Water Quality Certification 	Submitted 4/3/2023
Massachusetts Office of Coastal Zone Management	<ul style="list-style-type: none"> • Coastal Zone Management Federal Consistency Review 	
Massachusetts Historical Commission	<ul style="list-style-type: none"> • No Adverse Effects on Historic Properties (Section 106 and State Chapter 254) 	
Federal		
U.S. Army Corps of Engineers	<ul style="list-style-type: none"> • Individual Permit (U.S. Army Corps of Engineers [USACE] Individual Section 10, 103 and 404) • Section 408 Navigation Review 	Submitted 1/10/2023
Federal Aviation Administration	<ul style="list-style-type: none"> • Determination of No Hazard to Air Navigation for Permanent or Temporary Structures 	
U.S. Environmental Protection Agency	<ul style="list-style-type: none"> • National Pollutant Discharge Elimination System (NPDES) Construction General Permit • NPDES Multi-sector General Permit Stormwater General Permit 	
Maritime Administration (MARAD)	<ul style="list-style-type: none"> • Finding of No Significant Impact (FONSI) 	

1.14 PROJECT TEAM

Table 1-3 below contains contact information for the Project Team of the Salem Wind Port Project.

Table 1-3, Project Team

Team Member	Contact Information
Proponent	Crowley Wind Services, Inc. 225 Dyer Street Providence, RI 02903 Contact: John Berry John.Berry@crowley.com (562) 743-1535
Planning and Permitting	Fort Point Associates, Inc. A Tetra Tech Company 31 State Street, 3 rd Floor Boston, MA 02109 Contact: Richard Jabba, AICP rjabba@fpa-inc.com (617) 279-4386
Transportation	MDM Transportation Consultants, Inc. 28 Lord Road, Suite 280 Marlborough, MA 01752 Contact: Daniel Dumais, P.E. ddumais@mdmtrans.com (508) 303-0370
Local Zoning	Correnti Kolick LLP 70 Washington Street, Suite 316 Salem, MA 01970 Contact: Joseph C. Correnti, Esquire jcorrenti@CDLawyers.com (978) 744-0212(

Team Member	Contact Information
Local Environmental Permitting	<p>Susan St. Pierre Consulting Services Salem, MA 01970</p> <p>Contact: Susan St. Pierre, AICP sst.pierre@comcast.net (781) 439-2461</p>
Design and Engineering	<p>AECOM Technical Services, Inc. 605 3rd Avenue, 2nd Floor New York, NY 10004</p> <p>Contact: David Simpson david.a.simpson@aecom.com (732) 697-8750</p>
Site Investigation and Environmental Loads	<p>GZA GeoEnvironmental, Inc. 188 Valley Street, Suite 300 Providence, RI 02909</p> <p>Contact: James J. Marsland, P.E. James.marsland@gza.com (401) 427-2743</p>
Dredge Planning and Maintenance	<p>Anchor QEA, LLC 300 East Lombard Street, Suite 1510 Baltimore, MD 21202</p> <p>Contact: Karin Olsen PG, AICP kolsen@anchorqea.com (443) 465-9783</p>
Community Outreach and Stakeholder Engagement	<p>Regina Villa Associates 51 Franklin Street, Suite 400 Boston, MA 02110</p> <p>Contact: Nancy Farrell nfarrell@reginavilla.com 617-357-5772</p>

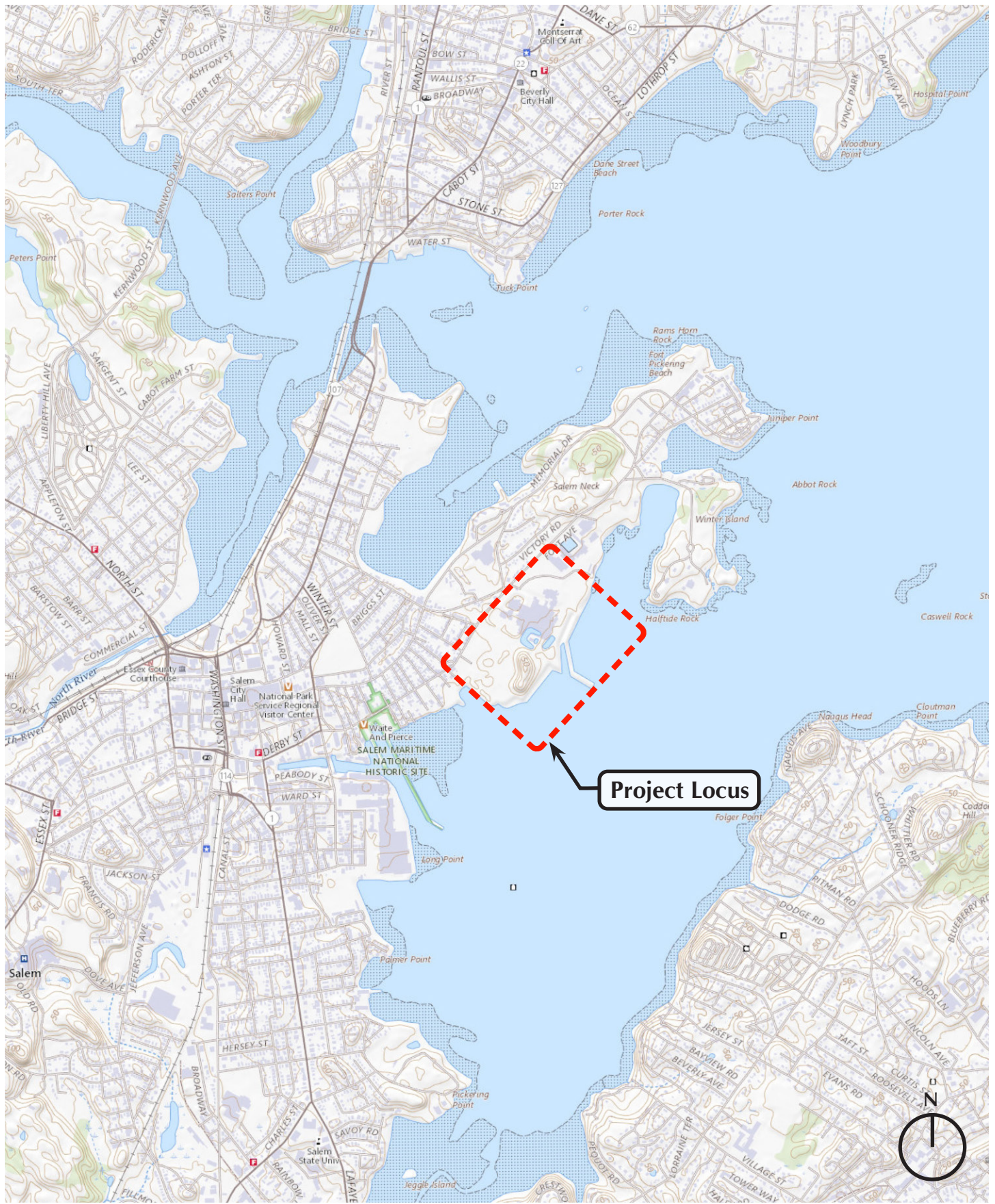










Photo 1: View looking northeast down Fort Avenue outside the Salem Harbor Power Development facility



Photo 2: View looking northeast down Derby Street near the intersection with India Street



Photo 3: View looking northeast from the southeastern edge of the Salem Harbor Power Development facility



Photo 4: View looking northeast towards the northeastern corner of the Project Site



Photo 5: View looking southwest towards the western side of the Salem Harbor Power Development facility



Photo 6: View looking south down the former discharge channel

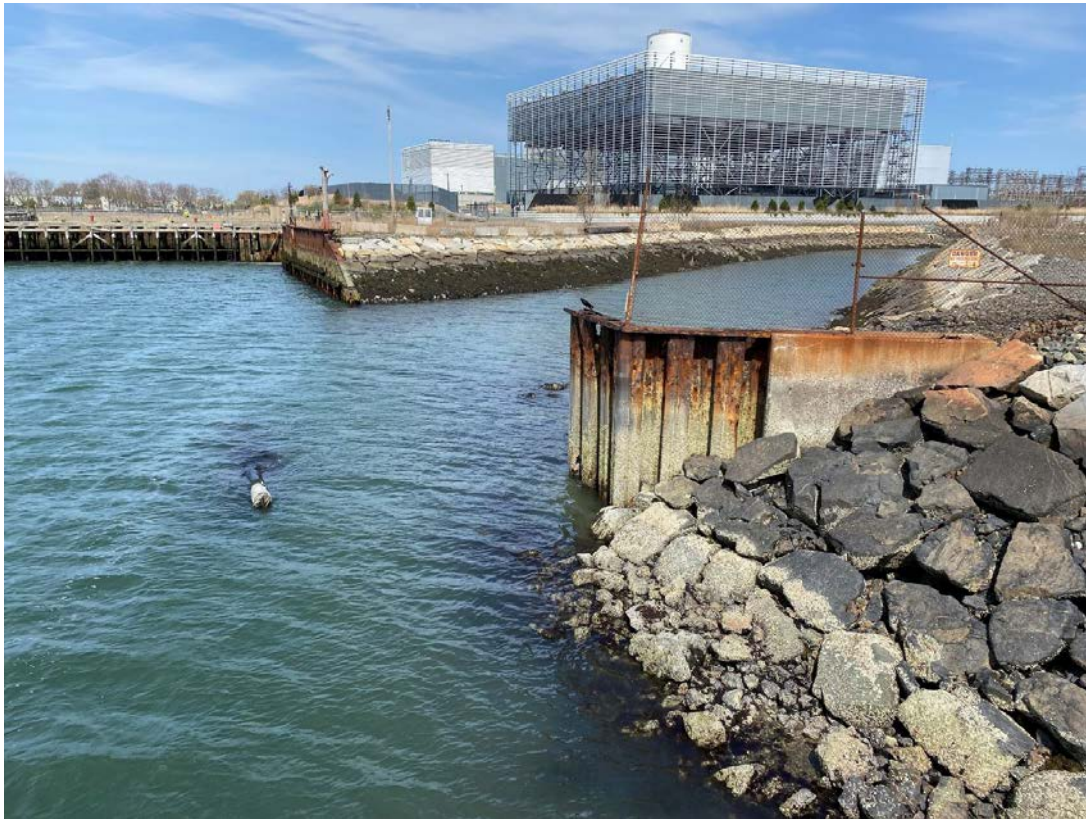
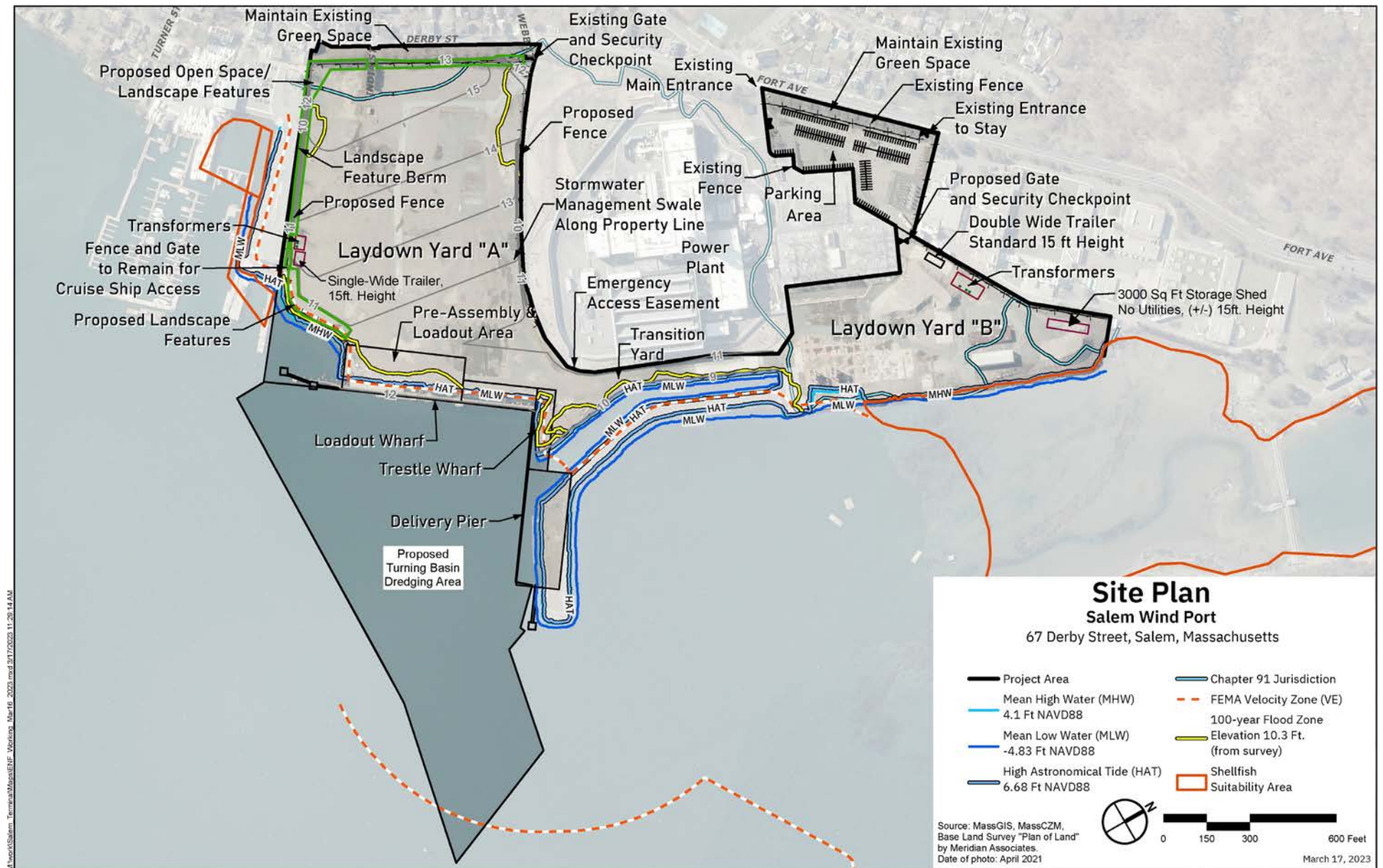


Photo 7: View looking west towards the existing wharf and bulkhead from the east jetty



Photo 8: View looking southwest from the southern end of the wharf





Chapter 2

ALTERNATIVES ANALYSIS

CHAPTER 2: ALTERNATIVES ANALYSIS

2.1 INTRODUCTION

Crowley Wind Services (the “Proponent” or “Crowley”) entered into an agreement with the City of Salem in September 2022 to establish a public-private partnership to develop Salem Harbor as a purpose-built OSW marshalling terminal. The completed facility will support the installation of approximately two gigawatts (GW) of offshore wind (OSW) power in the waters south of Cape Cod. There is a potential to utilize the property afterward to support this OSW farm, another existing OSW lease area south of Cape Cod, and potential floating OSW farms in the Gulf of Maine.

The Project will create an OSW marshalling terminal where turbine components will be partially assembled and deployed to OSW farms (the “Project”). Freighters, barges, and other marine vessels will deliver the components to the marshalling facility and transfer the partially assembled turbines to OSW project locations for full assembly and installation.

The Project will provide the infrastructure needed for vessel access, berthing, and laydown yards to support the marshalling and assembly of wind turbine components that will help meet the renewable energy goals of the City of Salem and the Commonwealth. The Project will also support cruise ship visitations to the Salem Harbor, which will strengthen the City’s tourism and bring additional economic benefits.

2.2 ALTERNATIVES REVIEWED

Crowley evaluated three scenarios for the Project Site: (1) No Build, (2) Preferred (the “Project”), and (3) Maximum Build alternatives, which are summarized below. A comparison of the alternatives and their impacts is presented in Section 2.3, Comparison of Alternatives.

2.2.1 NO BUILD ALTERNATIVE

Under the No Build Alternative, the Project Site would remain in its existing condition. This Alternative would not include any improvement to the physical condition of the piers and wharves or to the environmental conditions of the Project Site; and the physical connections to the water would remain in a dilapidated condition and not useable for berthing large vessels.

The Salem Harbor would remain in its current condition, with the existing harbor being underutilized and not utilized to its full potential as a Designated Port Area. The Project Site would remain approximately 96% impervious, including two buildings and various concrete pads. The existing stormwater runoff would continue to sheet flow untreated into the harbor with no improvement for its treatment or mitigation of the existing erosion issues. The existing site would remain at risk to

storm damage from coastal storm flooding, which is expected to worsen due to estimated future sea level rise. Under these existing conditions, the Project Site would not generate any local job opportunities and importantly, would not be able to accommodate cruise ship calls.

In summary, a No Build Alternative would maintain existing conditions at the Project Site and would not yield site improvements or community benefits to the local area and to the City of Salem. Stormwater discharges would not be improved, resilience measures would not be implemented, OSW farm construction would be delayed or deferred, and employment opportunities would be lost.

2.2.2 PREFERRED ALTERNATIVE

The Preferred Alternative (the “Project”) will meet the Commonwealth’s goals to support OSW development along the Massachusetts coast in a timely manner and the City’s goals for economic and tourism development. This Project has three main components: (1) upland work, (2) pier construction, and (3) dredging. Improvements include a reconstructed 660-foot-long pile-supported loadout wharf, a new 685-foot-long pile-supported delivery pier, and reinforcing existing onshore infrastructure to support the storage and assembly of wind turbine components. Approximately 80,190 cubic yards (CY) of maintenance and improvement dredging in the State Turning Basin (the “Basin”) and along the piers is needed to provide sufficient water depth for the deep-draft vessels that will be transporting OSW components to and from the Project Site. An approximately 29.2-acre portion of the Project Site will be used to store the components (Laydown Yards A and B). The upland area of the Project Site will include a single-wide trailer and a triple-wide trailer to support workers and manage the site, and an approximately 3,000 SF shed for materials and ancillary equipment. There will also be several acres for moving the components around the Project Site, and a worker parking lot. The wharfs and adjacent bulkheads will support heavy lift operations and the mooring of Wind Turbine Installation Vessels (WTIVs), feeder barges, ocean going tugs, freighters, and other support vessels. Dredging and pier construction will also allow the City to resume cruise ship operations, which will bring additional tourism revenue to the area and increase public access to the historic waterfront.

2.2.3 MAXIMUM BUILD ALTERNATIVE

The Maximum Build Alternative is the same as the Preferred Alternative with the addition of an expanded dredged area, a larger laydown yard created by filling the former power plant discharge channel and cove on the south side of the property, and a longer loadout wharf and berth to accommodate larger ships and more efficient turning movements.

Expanded Dredge Area

The existing Basin would be enlarged on the north and south sides to allow larger cruise ships and improve maneuverability of these and other large vessels. A total of approximately 107,370 CY of dredge material would be removed from an approximately 109,950 SF area on the north side of the Basin and a 222,800 SF area on the south side of the Basin. These two areas would be dredged to -32 feet (mean lower low water, MLLW) using a mechanical dredge that places the material into bottom-opening scows. Based on the previous test results of sampling locations near these two areas and the recent Phase 1 test results, the dredged material from the expanded area is expected to be suitable for offshore disposal at the Massachusetts Bay Disposal Site (MBDS).

Laydown Yard and Loadout Wharf Expansion

The former discharge channel and the cove on the south side of the Project Site would be filled with approximately 44,090 CY of dredged material to create approximately 123,450 SF of additional laydown yards. The waterside of each of these filled areas would be contained by a combination of stone riprap and steel sheet piling. The main loadout wharf would be extended approximately 200 linear feet (LF) south and would include an additional 48,000 SF of laydown and loadout areas to support the transfer of heavy OSW components. The extended loadout wharf would improve its capacity to berth longer or multiple vessels transporting OSW components and cruise ships. The former discharge channel would increase the laydown yards by approximately 75,450 SF. It will also increase the maneuverability of the vehicles that transport the wind turbine components between the two laydown yards, the delivery pier, and the loadout wharf. All of the expanded areas would be covered with dense graded aggregate.

The Maximum Build Alternative has operational benefits over the Preferred Alternative; however, it is not feasible at this time due to the higher cost as well as the timeline and uncertainty of regulatory approvals. The Maximum Build Alternative could not be constructed within the timeline and budget necessary to accommodate the needs of the initial leaseholder. In the future, the City, through the Salem Harbor Port Authority, will work closely with Crowley to understand whether elements of the Maximum Build Alternative will be needed to allow the Project Site to continue to best serve the OSW industry, particularly as potential floating OSW projects are anticipated to begin construction in the Gulf of Maine.

2.3 COMPARISON OF ALTERNATIVES

The alternatives analysis identifies a range of development options that could potentially occur at the Project Site. Table 2-1, Project Alternatives summarizes the project components and impacts to the environment in each alternative. The No Build

Alternative has relatively few impacts as there would not be any construction at or use of the existing facility. The Preferred Alternative include impacts to wetland resource areas, mainly due to dredging and to some extent, filling to construct the pile-supported loadout wharf and delivery pier. The Maximum Build Alternative shows a slightly larger Project Site than the Preferred Alternative due to substantial filling of approximately 2.5 acres of tidal waters to expand laydown yards and the loadout wharf. Dredge volume is also double that of the Preferred Alternative.

Table 2-1, Project Alternatives

Item	No Build Alternative	Preferred Alternative (the "Project")	Maximum Build Alternative
Project Site (acres)	42.3	42.3	44.8
Impervious coverage (%)	96	95	97
Buildings (Gross square Footage, GSF)	12,100	5,650	5,650
Pier/Wharf Length (LF)	905	1,345	1,545
Wetlands Impacts (SF – temporary)	0	0	0
Wetlands Impacts (SF – permanent)	0	950,500	1,369,900
Dredging Area (SF)	0	929,350	1,257,100
Dredge Volume (CY)	0	80,190	187,560
In-Water Fill Area (SF)	0	17,900	122,290
In-Water Fill (CY)	0	6,420	50,510
Traffic (ADT)	0	774	774

2.4 ENVIRONMENTAL IMPACTS AND MITIGATION

2.4.1 IMPACTS OF NO BUILD ALTERNATIVE

As the Project Site and Salem Harbor would both remain in its existing condition under the No Build Alternative, the piers and wharves would remain in a dilapidated condition and not useable for berthing large vessels. The existing stormwater management system at the Project Site would remain as it currently exists today, with no improvement for treatment before being discharged into Salem Harbor or mitigation of the existing sedimentation issues, therefore negatively impacting downgradient habitats and wetland resource areas. As the existing site would not have any resilience measures implemented, it would remain at risk to storm damage from coastal storm flooding, which is expected to worsen due to estimated future sea level rise. Until a new project is proposed and improvements made, the deteriorating infrastructure would impact the coastal habitats and wetland resources.

2.4.2 IMPACTS OF PREFERRED ALTERNATIVE

In the Preferred Alternative, stormwater runoff quality will be improved, on-site and off-site resilience to rising sea levels will be enhanced through increasing Project Site elevations, up to 123 jobs will be created during the construction phase and also up to 200 jobs during the operations phase. There will be one-time impacts to the marine environment from dredging and pier construction, which will be mitigated through various measures. Modest amounts of traffic will be generated during the construction phase and to a lesser extent during the operational phase of the Project. Chapter 13 contains additional detail regarding the environmental impacts and mitigation of the Preferred Alternative.

2.4.3 IMPACTS OF MAXIMUM BUILD ALTERNATIVE

The Maximum Build Alternative would have the same impacts and near-term benefits as the Preferred Alternative plus additional environmental impacts from project components. As compared to the Preferred Alternative, the Maximum Build Alternative would provide greater opportunities for larger ships and utilization of the loadout wharf, due to the expanded Basin and greater area for laydown yards with the filling of the discharge channel and cove area in the southeast portion of the Project Site. At the same time, there would be one-time mitigated impacts to the marine environment from the additional dredging and permanent loss of benthic habitat with the filling of the discharge channel and “cove” areas. Stormwater and traffic impacts would be similar to the Preferred Alternative.

2.5 PHASE 2 DREDGING ANALYSIS

A summary and detailed plans of the Phase 2 dredging that would occur as part of the Maximum Build Alternative was presented in the EENF and in the previous section. As requested in the Scope of the Secretary’s Certificate on the EENF, the following section provides additional details of the Phase 2 dredging areas and volumes, associated impacts, compliance with Chapter 91 regulations, and how the dredging would support the Project. As described in Section 2.5.2, the Phase 2 Dredging outside of the Basin will be undertaken by the Salem Harbor Port Authority.

2.5.1 PHASE 2 DREDGING AREAS AND VOLUME

Phase 2 dredging would occur outside the north and south sides of the Basin. The purpose of dredging beyond the Basin is to expand the turning area and improve the maneuverability of ships berthing at the marshalling terminal. It would especially help to minimize ship assists with visiting cruise ships, which are expected to be longer than the vessels transporting OSW components to and from the marshalling terminal. The size and dredge volumes of the proposed dredge areas are detailed in Table 2-2, Phase 2 Dredge Areas.

Table 2-2, Phase 2 Dredge Areas

Item	North Area	South Area	Total
Dredge Volumes (CY)	39,230	68,140	107,370
Dredge Area (SF)	109,947	222,800	332,747
Dredge Dimensions (approximate length by width, feet)	1,850 x 150	850 x 150	NA

2.5.2 CHAPTER 91 COMPLIANCE OF PHASE 2 DREDGING

The Phase 2 dredging project would comply with the standards for dredging at 310 CMR 9.40. This section of the Chapter 91 regulations requires dredging projects to meet specific requirements for resource protection, operational requirements for dredging and dredged materials disposal, and notification of dredging and disposal activities.

Approximately 107,370 CY of dredge material within a 332,747 SF area would be removed from Salem Harbor. The entire Phase 2 dredge area, except for a small portion (8,550 SF), is located outside of the DPA. Based on previous sampling and dredging activities, the dredged material is expected to test acceptable for disposal at the MBDS.

In compliance with the regulations at 310 CMR 9.40(1)(a)2., the Phase 2 dredging would be greater than 20 feet below mean low water and would serve a state purpose by supporting commercial navigation (i.e. cargo vessel and cruise ship visits) and tourism to the region as well as the proposed OSW marshalling terminal, one of the only ports in the region capable of supporting OSW development. The expanded dredge area is adjacent to the DPA, which will also be dredged to support the development of the OSW marshalling terminal. The dredge area expands beyond the DPA to increase the navigational area and maneuverability of the anticipated large and long cruise ships and would minimize ship assists and the time to maneuver ships to and from their berths within the Basin.

In compliance with the regulations at 310 CMR 9.40(2), dredging would occur outside of the Time of Year restriction period between March 15 and June 15 or as otherwise directed and approved by the DMF. Impacts to aquatic resources, including fisheries resources, shellfish beds, and submerged aquatic vegetations would be minimized by dredging with an environmental clamshell bucket, using turbidity curtains, and other appropriate best management practices. A mapped eelgrass bed is located approximately 30 feet south of the south dredging area, and would need to be reviewed by the DMF for appropriate mitigation measures.

In compliance with the regulations at 310 CMR 9.40(3), the dredging would not exceed that area reasonably necessary to accommodate the navigation requirements of the proposed ships that would maneuver in the expanded Basin. The dredging would not extend to areas near marshes and would be the same depth of the existing adjacent Basin (-32' MLLW). The expanded Basin would be approximately 160 feet wider and would comply with the regulations regarding its wide opening and short entrance channel. The mechanical dredging method would comply with the regulations assuming the material had fine grain size and tested acceptable for depositing it in open water.

In compliance with the regulations at 310 CMR 9.40(4), the permittee would abide by the regulations as well as defer to the US Army Corps of Engineers (USACE) for proper disposal regulations and requirements as they and the US EPA have jurisdiction for disposal of dredge materials at the MBDS.

In compliance with the regulations at 310 CMR 9.40(5), the permittee would notify the Department before commencing dredging. As stated above, USACE will have jurisdiction over disposal of the material.

2.5.3 FUTURE MEPA FILINGS

This section provides additional details and references the plans for Phase 2 dredging, based on input from the City of Salem and Salem Harbor Port Authority. This Phase 2 dredging work would be undertaken by the City of Salem or the Salem Harbor Port Authority but is included here as a related activity. Should the City determine that different areas or volumes need to be dredged to support development of the port, they will be responsible for any future filings with MEPA, including a Notice of Project Change (NPC).

Chapter 3

ENVIRONMENTAL JUSTICE

CHAPTER 3: ENVIRONMENTAL JUSTICE

3.1 INTRODUCTION

The Project is in a historically industrial area along the Salem Harbor Waterfront and is located within a state Designated Port Area (DPA). The Project Site is located next to a natural gas-fired power plant that was constructed and began operating in 2017. The Project Site is bordered by a sewage treatment plant to the north. Residential neighborhoods are in proximity to the Project Site on the west side of Derby Street, and the property of Bentley Academy Innovation School borders Fort Avenue, located northwest of the Project Site. The waterside area of the Project Site is located within and adjacent to the State Turning Basin (the “Basin”). The watershed portion of the Project Site within Salem Harbor is mostly used for recreational and commercial purposes. Salem Wharf is located in Salem Harbor on the southern side of the Project Site, which serves a seasonal ferry that travels between Salem and Boston. The wharf and pier infrastructure currently on the Project Site is in poor condition and not used.

The Project Site is not located within an Environmental Justice (EJ) community but is directly adjacent to an EJ community along Derby Street and encompassing the Bentley Academy Innovation School and the residential areas along Szetela Lane, Lee Fort Terrace, and Settlers Way.

The Project includes development of a marshalling terminal that will allow large vessels to deliver and store wind turbine generator (WTG) components to the Project Site, and allow partially assembled WTG components to be loaded onto vessels that will transport them to wind farm locations off the Massachusetts coast. This Project will further the integration of renewable energy into the United States’ energy grid, help reduce dependence on polluting fossil fuels, and slow the progression of climate change-related impacts, which are important concerns for traditionally marginalized communities.

3.2 EJ CHARACTERISTICS NEAR THE PROJECT SITE AND OUTREACH EFFORTS

The Project is in proximity to neighborhoods defined as EJ Populations based on the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) Updated 2020 EJ Map Viewer, which is derived from 2020 Census Block Groups. See Figure 3-1, Environmental Justice Populations, 1-Mile. As defined by the Commonwealth, EJ is based on the principle that all people have a right to be protected from environmental hazards and live in and enjoy a clean and healthy environment. EJ is equal protection and meaningful involvement of all people with respect to development, implementation and enforcement of environmental laws, regulations, and policies, as well as the equitable distribution of environmental benefits.

Within a five-mile radius of the Project Site, there are 94 Census block group that trigger seven EJ criteria. These criteria include Minority; Income; English Isolation; Minority and Income; Income and English Isolation; Minority and English Isolation; and Minority, Income, and English Isolation. See Figure 3-2, Environmental Justice Populations, 5-Miles. Within a one-mile radius there are 15 Census block group that trigger five EJ criteria. These criteria include Minority; Income; English Isolation; Minority and Income; and Minority, Income, and English Isolation. See Figure 3-1, Environmental Justice Populations, 1-Mile. Since the Proposed Project does not meet or exceed air quality review thresholds under 301 CMR 11.03(8)(a)-(b) or generate 150 or more new average daily trips of diesel vehicle traffic over a duration of one year or more, only the EJ Populations within one mile of the Project Site are included in the evaluation of potential project-related impacts.

3.2.1 CHARACTERISTICS OF EJ POPULATIONS

Each of the EJ criteria were evaluated within one mile of the Project Site using the EEA EJ Maps Viewer. The EJ criteria are as follows:

- The annual median household income is not more than 65% of the statewide annual median household income;
- Minorities comprise 40% or more of the population;
- 25% or more of households lack English language proficiency; or
- Minorities comprise 25% or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150% of the statewide annual median household income.

Table 3-1 summarizes the characteristics of the EJ population within one mile of the Project Site. Bolded values in the table represent the EJ criteria met for the EJ communities within one mile of the Project Site.

Table 3-1, Summary of EJ Characteristics within One Mile

Block group (Essex County, Massachusetts)	EJ Criteria	Total Minority Population	Median Household Income	% of MA Median Income	Households with Language Isolation
Block Group 1, Census Tract 2042	Minority and Income	38.3%	\$25,587	30.3%	1.8%
Block Group 1, Census Tract 2043	Income	19.1%	\$44,095	52.3%	0.0%
Block Group 1, Census Tract 2045	Minority	24.9%	\$94,205	111.6%	1.9%

Block group (Essex County, Massachusetts)	EJ Criteria	Total Minority Population	Median Household Income	% of MA Median Income	Households with Language Isolation
Block Group 1, Census Tract 2174.02	Minority and Income	27.6%	\$40,476	42.7%	0.0%
Block Group 2, Census Tract 2042	Minority	53.3%	\$0	0.0%	8.4%
Block Group 2, Census Tract 2043	Minority and Income	76.7%	\$18,693	22.2%	20.0%
Block Group 2, Census Tract 2045	Income	20.2%	\$45,655	54.1%	1.1%
Block Group 2, Census Tract 2174.02	Income	16.4%	\$45,676	54.1%	1.1%
Block Group 3, Census Tract 2041.01	Minority	26.0%	\$78,828	93.4%	0.0
Block Group 3, Census Tract 2043	Minority, Income, and English Isolation	79.6%	\$40,750	48.3%	41.3%
Block Group 3, Census Tract 2044	English Isolation	14.9%	\$98,214	116.4%	36.7%
Block Group 4, Census Tract 2042	Minority	27.7%	\$59,324	70.3%	0.0%
Block Group 4, Census Tract 2046	Minority	24.6%	\$106,090	125.7%	3.8%
Block Group 5, Census Tract 2042	Income	16.9%	\$54,219	64.3%	0.0%

3.2.2 LANGUAGES SPOKEN

Crowley Wind Services, Inc. (the “Proponent” or “Crowley”) has been working with Community Based Organizations (CBOs) to ensure meaningful engagement with EJ Populations. Crowley has identified languages spoken by 5% or more of residents who identify as not speaking English “very well” to conduct public involvement activities. There is one language, in addition to English, spoken within the one-mile radius of the Project Site, which is Spanish or Spanish Creole. See Figure 3-3,

Languages Spoken. Crowley is committed to conducting written and oral translation and interpretive services in Spanish during community outreach efforts.

3.2.3 EJ SCREENING FORM AND ADVANCED NOTIFICATION

In accordance with 301 CMR 11.05(4) the Massachusetts Environmental Policy Act (MEPA) EJ Screening Form was sent to the CBOs, tribal groups, and other relevant parties on the MEPA distribution list on August 16, 2022. The distribution list shared by MEPA was expanded upon by the Proponent to include additional CBOs and relevant stakeholders on this advanced notification. The EJ Screening Form was translated into Spanish since this was the only additional language identified to be spoken by 5% or more of the population within one mile of the Project Site. See Attachment C, EJ Screening Form Advanced Notification, to see the EJ screening form and the distribution list.

3.2.4 PUBLIC INVOLVEMENT ACTIVITIES

In accordance with MEPA Public Involvement Protocol for Environmental Justice Populations, Crowley has been conducting formal and informal community processes with permitting agencies, neighboring residents, and a variety of advocacy groups since the beginning of 2022. Since the Expanded Environmental Notification Form (EENF) was filed in October 2022, Crowley has held additional public meetings that invited, informed, and discussed the Project with the public. The following Table 3-2 list those meetings and dates held before and after the EENF was filed. The dates of future meetings with neighborhood groups within EJ communities have not yet been determined at the time of this writing.

Table 3-2, Environmental Justice Population, Community, and Community Outreach Efforts

Date	Participants	Description
February 2, 2022	Project Team and Salem Rotary Club	Introductory Meeting with the Salem Rotary Club
May 25, 2022	Salem Chamber of Commerce	Introductory Meeting with the Salem Chamber of Commerce
May 25, 2022	Project Team and Derby Street Neighborhood residents	Derby Street Neighborhood Meeting
June 14, 2022	Project Team and Willows Neighborhood residents	Willows Neighborhood Meeting
June 15, 2022	Project Team and Salem City Council	City Council Update

June 16, 2022	Project Team and the City of Salem	Charrette/design meeting with the City of Salem
June 16, 2022	Project Team and the Town of Marblehead	Meeting with the Town of Marblehead
June 22, 2022	Project Team and members of the public	Public Meeting: Kickoff and Introduction*
June 27, 2022	Project Team and Point Neighborhood residents	Point Neighborhood Meeting*
July 19, 2022	Project Team, Salem Conservation Commission, and members of the public	Request for Determination of Applicability for Geotechnical Borings and Dredge Sampling
July 27, 2022	Project Team and the EEA	EOEEA Briefing
August 9, 2022	Project Team and the MEPA Office	MEPA Pre-Filing Meeting
September 8, 2022	Project Team and Salem Alliance for the Environment (SAFE)	Meeting about the Project with SAFE
September 14, 2022	Project Team and Salem Neighborhood Improvement Advisory Council	Meeting about the Project with the Salem Neighborhood Improvement Advisory Council
September 15, 2022	Project Team and the City of Salem	Charrette/design and community outreach meeting with the City of Salem
September 16, 2022	Project Team and The Salem Partnership	Meeting about the Project with The Salem Partnership
Meetings held since submittal of the EENF on October 17, 2022		
November 7, 2022	Project Team, resource agencies, and the public	MEPA site visit
November 9, 2022	Project Team and members of the public	Meeting with residents of adjacent neighborhood associations on project impacts
November 10, 2022	Project Team and members of the public	Meeting with members of the public interested in environmental and permitting aspects of project
November 14, 2022	Project Team, resource agencies, and the public	Remote MEPA public meeting on the EENF
November 16, 2022	Project Team and members of the public	Public Meeting: Design and progress update*

December 16, 2022	Project Team and Bessom Associates Neighborhood	Meeting about the project with members of Bessom Associates Neighborhood in Marblehead
February 9, 2023	Project team and Salem State University staff	Meeting between project team and Salem State University Staff with a focus on workforce development opportunities and collaboration between entities
March 8, 2023	Project Team and members of the public	Meeting with various stakeholders interested in workforce development aspect of project
March 13, 2023	Project Team and Derby Street residents	Meeting with the Historic Derby Street Neighborhood Association on site plans and neighborhood impacts
April 11, 2023	Project Team and Salem Willows residents	Meeting with the Salem Willows Neighborhood Association
May 2, 2023	Project Team and members of the public	Hybrid project meeting for the Point Neighborhood to discuss environmental impacts, project progress, workforce opportunities, and next steps*

*Spanish translation services were provided

3.3 ASSESSMENT OF EXISTING UNFAIR OR INEQUITABLE BURDEN HEALTH CRITERIA

The Proponent has utilized additional resources through the Massachusetts Department of Public Health (MassDPH) EJ Tool to determine other potential sources of pollution within the boundaries of EJ communities. The MassDPH EJ Tool exhibits four vulnerable health criteria. These criteria include Heart Attack Hospitalization per 10,000, Pediatric Asthma Emergency Department (ED) Visits Rate per 10,000, Elevated Blood Lead Prevalence per 1,000, and Low Birth Weight per 1,000. Elevated Blood Lead Prevalence per 1,000 and Low Birth Weight per 1,000 are derived from 2010 census tract data. EJ communities within these vulnerable health areas could be viewed as exhibiting vulnerable health EJ criteria and therefore potentially bearing an unfair or inequitable environmental burden and related public health consequences. The EJ criterion is met if local levels are equal to or greater than 110% of the state prevalence.

3.3.1 HEART ATTACK (MUNICIPALITY)

According to MassDPH, heart attack hospitalization is a criterion used to identify EJ Populations with vulnerable health characteristics because exposure to air pollution can increase the risk for heart attack and other forms of heart disease, and it is indicative of a serious chronic illness that can lead to disability, decreased quality of life, and premature death. Individuals living in EJ areas with higher-than-average heart attack hospitalization rates may be more vulnerable to adverse environmental exposure. The City of Salem does not meet the vulnerable health criteria for heart attack rates. Salem has an age adjusted rate of 23.6 heart attacks per 10,000 with 61.4 case counts from 2013-2017, while the Massachusetts statewide rate is higher at 26.4 per 10,000.

3.3.2 CHILDHOOD ASTHMA (MUNICIPALITY)

According to MassDPH, childhood asthma is a criterion used to identify vulnerable health EJ Populations because people of color and low-income individuals are at an increased risk for asthma exacerbations due to increased exposure to asthma triggers, and uncontrolled asthma can impact an individual's overall health and wellbeing. Asthma has been directly linked to air pollution, exposure to environmental contaminants, and poor housing conditions. The City of Salem meets this vulnerable health criteria, with a crude rate of 102.7 pediatric asthma ED visits per 10,000 with 43.8 case counts from 2013-2017. The Massachusetts statewide rate was 83.1 pediatric asthma ED visits per 10,000.

3.3.3 CHILDHOOD BLOOD LEAD (CENSUS TRACT)

According to MassDPH, childhood lead exposure is used to identify vulnerable health EJ Populations because lead exposure disproportionately affects lower income communities and communities of color. Childhood exposure to relatively low levels of lead can cause severe and irreversible health effects, including damage to a child's mental and physical development. Within one mile of the Project Site, four census tracts are triggered for having elevated blood lead presence with a total of 12 cases from 2015-2019. The Massachusetts statewide rate was 16.1 per 1,000. Census Tracts with higher-than-average elevated blood lead prevalence rates are included in Table 3-3, Elevated Blood Lead Prevalence Per 1,000, 2015-2019.

Table 3-3, Elevated Blood Lead Prevalence Per 1,000, 2015-2019

2010 Census Tract	Community Case Count	Statewide Rate per 1,000	Community Rate per 1,000
25009204200	2.6	16.1	26.5
25009204400	1.4	16.1	25
25009204500	3.2	16.1	42.2
25009204600	4.8	16.1	33.6
Total	12		

Massachusetts Department of Public Health – Bureau of Environmental Health, 2022

3.3.4 LOW BIRTH WEIGHT (CENSUS TRACT)

According to MassDPH, low birth weight (LBW) is a criterion used to identify vulnerable health EJ Populations because exposure to environmental contaminants can increase the chance of delivering a LBW baby, and LBW is a significant indicator of both infant and maternal health. Women of color and women of low income have a higher risk of delivering a LBW baby. LBW can increase the risk of infant mortality and morbidity, childhood health issues, developing cognitive disorders, developmental delay, and chronic diseases as an adult such as cardiovascular diseases and type 2 diabetes. Within one mile of the Project Site, two census tracts were triggered for being LBW vulnerable with a total of 2.9 cases from 2011-2015. The Massachusetts statewide rate was 216.8 per 1,000. Census Tracts with LBW rates are included in Table 3-4, Low Birth Weight Rate Per 1,000, 2011-2015.

Table 3-4, Low Birth Weight Rate Per 1,000, 2011-2015

2010 Census Tract	Community Case Count	Statewide Rate per 1,000	Community Rate per 1,000
25009204300	1.8	216.8	362.9
25009204500	1	216.8	308.6
Total	2.9		

Massachusetts Department of Public Health – Bureau of Environmental Health, 2022

3.3.5 OTHER POTENTIAL SOURCES OF POLLUTION

The Project Site surrounds the Salem Harbor Power Development LP site, a natural gas-fired power plant. This power plant contributes to the existing pollution levels in the area surrounding the Project Site. The Proponent has also consulted the MassDPH EJ Tool to survey other potential sources of pollution within the boundaries of the EJ Populations. Within approximately one mile of the Project Site, there is: one Large Quantity Toxic User, one Toxics Release Inventory site, two Large Quantity

Generators, 10 M.G.L. c. 21E Sites, 11 Tier II Toxics Use Reporting Facilities, 35 MassDEP Sites with activity and use limitations (AULs), and six Underground Storage Tanks. Adjacent to the Project Site, there is one Air Operating Permit and one of the two Large Quantity Generators associated with the Salem Harbor Power Station. The area is served by the multiple modes of transportation provided by the Massachusetts Bay Transportation Agency (MBTA). Within a mile of the Project Site, there are 45 MBTA bus stops and a commuter rail line connecting Salem to Boston's North Station. There is also Salem Wharf, located directly adjacent to the southern side of the Project Site, with a seasonal ferry that runs between Boston and Salem during the summer season.

3.3.6 U.S. ENVIRONMENTAL PROTECTION AGENCY EJ SCREEN

The Proponent also consulted the U.S. EPA's EJ Screening and Mapping Tool (or "EJ Screen"), which provides percentile ranking by census block group, compared against statewide averages, for 11 environmental indicators. The Proponent used the environmental indicators to assess potential environmental exposures that may further create unfair or inequitable environmental burdens on EJ Populations near the Project Site.

The EJ Screen assessed a one-mile radius around the Project Site and reported an approximate population of 15,024 people (Attachment D, EPA EJ Screen Report). For Massachusetts, the Project Site falls within the 40th percentile for Particulate Matter (PM_{2.5}) at 6.58 ug/m³, the 62nd percentile for Ozone at 39.7 ppb, the 63rd percentile for Diesel PM at 0.292 ug/m³, the 56th percentile for Air Toxics Cancer Risk at 20 lifetime risk per million, the 81st percentile for Air Toxics Respiratory Hazard Index at 0.3, the 86th percentile for Traffic Proximity with 3,800 daily vehicles/meter, the 83rd percentile for Lead Paint with 0.8 = fraction pre-1960, the 83rd percentile for Superfund Proximity with 0.22 sites/km, the 70th percentile for Risk Management Plan Facility Proximity with 0.79 facilities/km, the 80th percentile for Hazardous Waste Proximity with 6.4 facilities/km, the 67th percentile for Underground Storage Tanks with 3.2 counts/km² and the 38th percentile for the Wastewater Discharge with 0.00028 toxicity weighted concentration/meter.

3.4 ANALYSIS OF PROJECT IMPACTS TO DETERMINE DISPROPORTIONATE ADVERSE EFFECTS

3.4.1 NATURE AND SEVERITY OF PROJECT IMPACT

There may be potential temporary air quality impacts during the construction of the terminal and its components. These temporary impacts may include dust from demolition and site excavation and emissions from construction equipment,

increased vehicular traffic to and from the Project Site, and building, road, and harbor construction and renovation. Crowley will follow local construction regulations and best practices to minimize these air quality impacts in the surrounding community.

To avoid or minimize the effects of fugitive dust and exhaust emissions from construction vehicles, appropriate mitigation measures will be employed, such as the use of diesel retrofitted equipment and wetting down areas during construction. To avoid, mitigate, or minimize temporary construction-period noise pollution impacts, the Project will comply with the City of Salem Noise Control Ordinance. Efforts will be made to minimize the noise impact of construction activities, including appropriate mufflers on all equipment such as air compressors and welding equipment, maintenance of intake and exhaust mufflers, turning off idling equipment, replacing specific operations and techniques with less noisy ones, and other appropriate noise reduction measures. Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting, routing plans for trucking and deliveries, and control of noise and dust in a comprehensive construction management plan (CMP) (see Attachment B, Construction Management Plan). Designated truck routes will be established to govern where construction trucks access and egress the Project Site to minimize construction related traffic. Designated truck routes for construction vehicles will minimize impacts from worker vehicles through scheduling of construction activities and implementation of transportation demand measures. The contractor will use best management practices (BMPs) for upland and in-water work as necessary, such as turbidity curtains, time-of-year (TOY) restrictions, and slow start pile driving to minimize noise.

The Project is not expected to result in potential permanent adverse environmental or public health impacts that may affect EJ populations. Additional analyses about emissions from vessels, use of diesel trucks, lighting, and noise impacts revealed that there will be minimal environmental impacts on both EJ and non-EJ communities within one mile of the Project Site (see Sections 3.7, Enhanced EJ Analysis).

3.4.2 COMPARABLE IMPACTS ON ENVIRONMENTAL JUSTICE AND NON-ENVIRONMENTAL JUSTICE POPULATIONS

The Project Site is not located within an EJ community, but there are both EJ and non-EJ populations within a one-mile radius of the Project Site. However, the associated impacts from the construction and operation of the Project Site once completed would have a similar impact on both EJ and non-EJ communities. Mitigation efforts, which are described in further detail in Chapter 13, Mitigation, will benefit both EJ and non-EJ communities. The associated economic benefits from increased jobs and

economic activity in Salem Harbor would also bring similar benefits to EJ and non-EJ communities.

3.4.3 PROJECT BENEFITS

The development of the Project Site will turn a large, vacant, and underutilized portion of Salem's waterfront into a productive and viable terminal that will replace dilapidated structures with a new and modern facility, which is being designed to last 50 years or more. The Project will improve the existing wharf infrastructure and raise certain existing portions of the Project Site an additional two feet to 12 feet NAVD88 so that flooding and sea level rise concerns are addressed. The new stormwater drainage system will improve the water quality and habitat of Salem Harbor, which is enjoyed by all those the recreate on and along this valuable community resource.

The Project is also expected to create approximately 123 full-time jobs during the approximately two-year construction period and approximately 200 full time jobs when the operation begins. Major efforts are being undertaken to create training programs for the offshore wind (OSW) workforce within the community. The Proponent is working with local colleges, non-profits, and academies to provide Global Wind Offshore (GWO) certified training and commits to fair and safe work practices. Increasing employment opportunities within Salem will bring benefits to both EJ and non-EJ communities.

This Project is a major next step for increasing OSW energy in the Commonwealth and for the country as a whole to reduce dependence on fossil fuels and its associated impacts on climate, the environment, and public health. Clean renewable energy is an environmental benefit as defined by 301 CMR 11.02, and while there will not be renewable energy directly produced on the Project Site, the wind terminal marshaling and construction services on the site will be an important part in meeting the state's renewable energy targets and achieving this environmental benefit, both for EJ and non-EJ communities.

3.5 ANALYSIS OF PROJECT IMPACTS TO DETERMINE CLIMATE CHANGE EFFECTS

3.5.1 RMAT TOOL IDENTIFIED RISKS

The Proponent examined the Resilient Massachusetts Action Team Climate Resilience Design Standards Tool ("RMAT Tool") to determine if the Project Site and nearby EJ Populations are at a potentially greater risk of increased flooding, storm surge, and extreme precipitation due to climate change. The RMAT Tool integrates statewide climate change projections into conceptual planning and design of project

with physical assets to help inform and guide planning and design of infrastructure. See Attachment E for the RMA Tool Report.

According to the RMA Tool, the Project Site is at high risk of sea level rise and storm surge over the Project's expected life of approximately 30 years. The Project Site is currently exposed to the 1% annual coastal flood event per the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), and the Project Site is located within the 0.1% annual coastal flood event within the Project's useful life.

Rainfall is expected to increase at the Project Site, as an accelerated trend in precipitation events has been measured in recent decades for the Northeastern United States. The Project Site is classified as being moderately exposed to precipitation-related urban flooding over its expected lifetime because maximum annual daily rainfall exceeds 10 inches over the course of the Project's useful life and existing impervious area at the Project Site is greater than 50%.

The Project Site is classified as having a high exposure to extreme heat due to expected changes in future climate conditions. It is expected that there will be a 10-30 day increase in the number of days with temperatures over 90 degrees Fahrenheit within the Project's useful life.

While the RMA Tool provides important information about future climate conditions, the tool is not entirely accurate for existing and proposed conditions of the Project Site. The existing flood zone has changed as the Project Site has been regraded in recent years, so the current FEMA FIRM flood zone, which shows the entire Project Site in the floodplain, no longer applies. The most recent FEMA report, which was produced in 2014, delineates Flood Zone AE up to Elevation 10 NAVD88 within the site. While this contained most of the Project Site in 2014, the Project Site has been elevated since the publishing of this report, limiting the flood zone effectively to a portion of the Project Site closer to the shoreline. In addition, the elevation of the Project Site will be raised an additional two feet as part of the Project, which will help mitigate the impacts of sea level rise, storm surge, and flooding as identified in the RMA Tool.

3.5.2 CLIMATE ADAPTATIONS

Rising sea levels are expanding the floodplain and an increase in the frequency and intensity of storm events leads to heightened flood risk in the City of Salem. The City expects to see up to a 5.4-inch increase in rainfall through 2050 and increased temperatures. The Project is adapting to future sea level rise and storm events by increasing the elevation of the Project Site to 12 feet NAVD88, which is two feet higher than the existing base flood elevation (BFE). Landscape berms will also be incorporated on the Project Site to reduce flood risk to the surrounding neighborhood, including nearby EJ populations.

The Project Site is one of two flood pathways to Derby Street, which represents a flood risk to residents and other buildings on Derby Street and surrounding neighborhoods. Because of the Project Site's location on a peninsula and its existing conditions, it is difficult to adapt the Project Site to prevent the effects of offsite flooding and coastal storm surge. The design and function of the Project Site will keep this in mind by having critical equipment and utilities away from potential flooding and storm surge areas to the maximum extent practicable. The equipment that will be stored on the Project Site does not need to be protected from flooding, so the use of the Project Site is resilient to future climate change and is able to adapt to potential flooding and storm surge. In addition, the Project Site can be adaptable to future flooding and sea level conditions and, if necessary, additional fill can be added to raise the elevation of the Project Site.

3.6 PUBLIC ENGAGEMENT UPDATES AND ENHANCEMENTS

Crowley has continued its public outreach and engagement since filing the EENF on October 31, 2022. Section 3.2.5 lists all community meetings that sought public input about the project, its impacts, and possible remedies in Table 3-2. Further, Crowley will continue the public engagement through the permitting and construction process, and will include additional project updates and community meetings, similar to those it has conducted over the past year as detailed in Table 3-2.

3.7 ENHANCED EJ ANALYSIS

The Secretary's Certificate on the EENF requested that mitigation measures to specific impacts to EJ communities from the Project be identified and prepared as part of this Single Environmental Impact Report (SEIR). This section addresses the following issues and discusses if there are any impacts that would disproportionately effect EJ communities within one mile of the Project Site.

1. Vessel Emissions;
2. Ship to Shore Electricity;
3. Air Quality Impacts from Vessels along Traffic Route;
4. Diesel Truck Trips: Construction and Operations;
5. Air Quality Impacts along Truck Routes;
6. Air Pollution at Construction Truck Route Intersections;
7. Stormwater Management System Analysis; and
8. Short and Long-Term Environmental and Public Health Impacts.
9. Improved Vegetative Buffer

3.7.1 VESSEL EMISSIONS

In accordance with the Secretary's Certificate on the Project's EENF outlining the scope for the SEIR, the Proponent has prepared an analysis of Greenhouse Gas (GHG) and pollutant emissions for vessel activity associated with the operation of the Project

Site. The following assessment uses the 2022 Port Emissions Inventory Guidance methodology published by the US Environmental Protection Agency (USEPA).¹ The vessels evaluated in the assessment are derived from conversations with Proponent's current knowledge of potential vessels that could be used for transport operations.

The vessel emissions estimates are based on a 54-turbine offshore wind project staged during a single 12-month period. This scenario requires 54 turbines, 162 blades, and 162 tower sections to be delivered to the Project Site and shipped to the offshore installation site. Emissions are estimated for the vessels' propulsion and auxiliary engines during transit into and out of port and hotelling time during port calls. The following vessels were assessed under these assumptions.

1. Inbound Freight – Delivery of the wind turbine components is expected to be completed by heavy lift freighters from various international points of origin. For the purpose of this analysis, the J1800 class *Jumbo Jubilee* is the ship selected for assessment as it exemplifies the characteristics of vessels used for inbound shipments. Wind turbine blades will arrive on freighters stacked with approximately nine per vessel trip, with a total of 18 port calls. Towers will arrive stacked six per vessel, with a total of 27 port calls per year. Nacelles will be delivered with approximately four per vessel with a total of 14 port calls per year. The number of delivery trips totals to 59. Each port call is assumed to last a duration of 24 hours with the vessel running on diesel auxiliary engines.
2. Outbound Freight Option 1, Wind Turbine Installation Vessel (WTIV) – After component assembly on land, partially assembled wind turbines, towers, and blades will be shipped out to the offshore installation site. Option 1 assumes the use of special purpose WTIVs. The *Seajacks Charybdis*, which is currently under construction and will be the first Jones Act-compliant WTIV, is used as the basis for analysis of this option. Four wind turbine generators would be carried to the offshore installation site per WTIV trip for a total of 14 port calls. Each port call is assumed to last a duration of 48 hours with the vessel running on diesel auxiliary engines.
3. Outbound Freight Option 2, Tug/Barge Combination – An alternative scenario for outbound freight is the use of a standard tug/barge combination. The tug assessed under Option 2 is the Crowley Marine Services *Ocean Sky*. A single wind turbine generator would be delivered to the offshore install site per tug trip, for a total of 54 trips. Each port call is assumed to last a duration of 24 hours with the vessel plugged into shoreside power.

¹ [Port Emissions Inventory Guidance: Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions \(EPA-420-B-22-011, April 2022\)](#)

Transit into port for all vessels will be a distance of five nautical miles at a speed of five knots. The elapsed time for each transit into or out of port is one hour. Emissions calculations are based on characteristics of each vessel using information provided by the Proponent, which include engine category and tier, fuel type, transit speed, total installed propulsion factor, and load factor. See Table 3-5 for an inventory of the characteristics of each vessel. The narrative that follows describes the calculation workflow, which is presented in greater detail in Attachment F, Vessel Emissions Calculation Tables.

Table 3-5, Vessel Characteristics

Vessel	Engine Category	Engine Tier	Fuel Type	Propulsion Engine Total Power (kW)	Propulsion Engine Operating Power (kW)	Propulsion Engine Load Factor	Auxiliary Engine Total Power (kW)
Jumbo Jubilee (heavy lift freighter)	C3	I	MDO	9000	252	3%	190
Seajacks Charybdis (WTIV)	C3	III	MDO	12800	358	3%	320
Ocean Sky (tug)	C2	II	MDO	8113	508	6%	190

Emissions Calculation Workflow

The workflow for estimating vessel emissions begins with calculating emissions for the transit operating mode, which are based on the propulsion engine operating power. Propulsion engine operating power is measured in kilowatts and calculated using the propeller law formula, requiring input of the vessel's total installed propulsion power, expected transit speed, and maximum speed. The result is used to derive the propulsion engine load factor, which is expressed as a percentage and calculated by dividing the propulsion engine operating power by the total installed propulsion power. Load factors under 20% are given a load low adjustment factor for each pollutant that accounts for the typical increase in emission per unit of energy as engine load decreases. Each low load adjustment factor is assigned a corresponding emission factor that is expressed in grams per kilowatt hour for each pollutant. Total emissions per round trip for each pollutant are calculated by multiplying propulsion engine operating power, time in transit per trip round, low load adjustment factor, and emission factor. The result is annualized by multiplying the emissions in grams per round trip for each pollutant by the total number of round trips per year and converting the unit from grams to tons.

The emissions for the hotelling mode are calculated using an assigned emission factor for vessel auxiliary engines, then aggregating emissions to the per port call level by multiplying the emission factor, auxiliary engine operating power, and time at port per trip. The results are annualized by multiplying by the number of port calls per year and converting the result's expressed unit from grams to tons. The total annual estimated vessel emissions for each pollutant are the sum of emissions estimates for the transit and hotelling operating modes.

Total Emissions Estimates

Table 3-6 provides the estimates for the total annual emissions of NO_x, PM₁₀, PM_{2.5}, HC, CO, N₂O, CO₂, and SO₂ for each vessel. See Attachment F, Vessel Emissions Calculation Tables, for a complete inventory of the assumptions and calculations used to derive the results.

Table 3-6, Annual Emissions Estimates by Vessel

Vessel	NO _x	PM ₁₀	PM _{2.5}	HC	CO	N ₂ O	CO ₂	SO ₂	Unit
Jumbo Jubilee (heavy lift freighter)	4.79	0.08	0.08	0.31	0.56	0.01	258.86	0.21	tons/ year
Seajacks Charybdis (WTIV)	0.96	0.05	0.05	0.16	0.34	0.01	182.64	0.13	tons/ year
Ocean Sky (tug)	1.02	0.02	0.02	0.13	0.22	0.00	63.17	0.08	tons/ year

EJ Analysis

Vessels will be approximately one mile or more from the shoreline during the majority of transit except as vessels approach and maneuver to the wharfs and piers at the Project Site. Vessels will transit past one census block group identified as an EJ Community in Beverly as they travel through Salem Sound and will be within one mile of 15 census block groups identified as EJ Communities while hotelling at the Project Site. There are also several non-EJ census block groups proximate to the Project Site. Thus, a discontinuous profile of emissions from hotelling will be the largest contributor of pollutants in proximity to EJ and non-EJ Communities alike. Hotelling emissions per port call are presented in Table 3-7 and are expressed in pounds due to scale of emissions at this assessment level. While hotelling is a larger overall contributor of emissions than the transit operating mode for the *Jumbo Jubilee* and the *Seajacks Charybdis*, emissions will be dispersed over a period of 24 to 48 hours in very low concentrations. Under the *Ocean Sky* outbound freight option, vessels are expected to be plugged into ship-to-shore power and will not be running propulsion or auxiliary engines during hotelling, thereby producing no direct emissions. Accordingly, vessel activity associated with the Project Site under all vessel scenarios is not anticipated to have a significant or undue impact on EJ Communities.

Table 3-7, Per Port Call Emissions Estimate by Vessel during Hotelling

Vessel	NO _x	PM ₁₀	PM _{2.5}	HC	CO	N ₂ O	CO ₂	SO ₂	Unit
Jumbo Jubilee (24-hour port call)	122.65	1.90	1.74	4.02	11.06	0.29	6,994	4.26	lbs/ port call
Seajacks Charybdis (48-hour port call)	88.04	6.39	5.88	13.55	37.25	0.98	23,559	14.37	lbs/ port call
Ocean Sky (24-hour port call)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	lbs/ port call

3.7.2 SHIP TO SHORE ELECTRICITY

The Proponent will accommodate the potential connection of ship-to-shore electricity to minimize the use of onboard generators and motors to produce electricity for docked vessels. Use of ship-to-shore power will facilitate connection of marine vessels to shore electricity to allow for engine shutdowns that will limit air pollution.

The Proponent understands that connecting ships to shore power will eliminate emissions, such as CO₂, NO_x, SO_x, and particle discharge, noise, and vibration from ships. The Project design includes electric conduits along the wharfs for connections to vessels that can be shore powered while they are berthed. Conduits must be connected to electrical systems that includes transformers and frequency converters to match the grid power, voltage and frequency to the ship's onboard power system. The Proponent will utilize ship-to-shore power to the extent possible, which will be determined by the types, sizes, and availability of the specialized ships, including its own fleet of tugs, that are needed to transport the OSW components to and from the Project Site. Furthermore, connections to shore power will help reduce emissions to vessels, which must adhere the stringent emission reduction requirements of North American Emissions Control Area required by International Convention for the Prevention of Pollution from Ships (MARPOL).

3.7.3 AIR QUALITY IMPACTS FROM VESSELS ALONG TRAFFIC ROUTE

Vessels traveling to and from the Project Site will navigate within the Federal Navigation Channel (the "Salem Channel"). Their route extends approximately three miles seaward from the Basin within Salem Harbor in a northeast direction through the Salem Channel to approximately one-half mile off the Beverly coast and then

turns in an easterly direction away from the coast. Based on the vessel emissions analysis described above, there are approximately 186 vessel trips per year equivalent to one every other day. One EJ community is located within a mile from the vessel route: Block Group 2, Census Tract 2176.01 in Beverly is approximately one-half mile away. Due to its distance from the edge of this neighborhood, no impacts are expected from the vessels traveling to and from the Project Site.

3.7.4 DIESEL TRUCK TRIPS: CONSTRUCTION AND OPERATIONS

In accordance with the Secretary's Certificate on the Project's EENF outlining the scope for the SEIR, the Proponent has quantified the number of diesel truck trips that would be generated during construction and operations, and the related truck routes. The delivery of facility construction materials will prioritize barge transport rather than on-road transport to reduce/minimize roadway impacts. Materials to be transported to the Project Site by truck for site stabilization, earthwork, aggregate, paving and terminal building materials will be limited to major routes that include Route 114, Bridge Street, and Webb Street, as depicted on Figure 9-15. The average number of daily diesel truck trips during construction is estimated at 85 trips (43 trucks in and out) with no disproportionate impact to EJ populations.

Based on Institute of Transportation Engineers (ITE) data for a Utility use under permanent operations with 114 employees, the Salem Wind Port is estimated to result in approximately eight total truck trips per day (four entering and four exiting) over a 24-hour period. Consistent with the construction period, truck trips be limited to major routes that include Route 114, Bridge Street, and Webb Street as depicted on Figure 9-15, which will not disproportionately impact the EJ populations. Due to the nature of the Project Site use, the Project's day to day truck activity beyond construction impacts is anticipated to be minimal with little to no articulated trucks/diesel generated vehicle trips anticipated. The non-passenger vehicle trips will primarily be single unit trucks, as well as daily package carriers including UPS, FedEx, Amazon. These types of vehicles are already delivering to the immediate project area today and will not result in any material increase in area trip activity.

A CMP will be prepared to address details of the overall construction schedule, working hours, number of construction workers, worker transportation, parking, number of construction vehicles, and routes. The construction truck traffic/diesel generated vehicle trips to and from the Project Site will avoid local neighborhood streets except for local origin/destination trips and will use designated permitted truck routes including Route 114, Bridge Street, and Webb Street. Development related construction trip activity will be temporary and will include traffic and noise and is not expected to disproportionately effect nearby EJ populations. The Proponent will continue to work with the City and other state agencies to mitigate the impacts of diesel truck trips on area roadways and EJ populations. Additional details of traffic impacts are in Chapter 9 and Attachment G.

3.7.5 AIR QUALITY IMPACTS ALONG TRUCK ROUTES

The EENF Certificate requested that if any truck traffic is routed adjacent to any EJ populations where air related environmental indicators are elevated above 80th percentile of statewide average (National Air Toxics Assessment Respiratory Hazard Index Ratio and Traffic Proximity), the SEIR should discuss the feasibility of rerouting traffic away from those locations. The US EPA's EJ Screen was researched for all EJ populations along the construction route within one mile of the Project Site. The Air Toxics Respiratory Hazard Index at each EJ Block Group along the construction route was compared to the state percentile. None of the air related indicators were above the 80th percentile of the statewide average. As a result, rerouting diesel truck traffic away from these locations will not be necessary as the proposed route will not disproportionately affect EJ populations. Furthermore, rerouting is not an option since the limited amount of other available streets are not suitable for a designated truck traffic route and may cause additional emissions due to substantially more intersections, longer route, and increased travel time.

3.7.6 AIR POLLUTION ALONG CONSTRUCTION TRUCK ROUTE INTERSECTIONS

In accordance with the Secretary's Certificate on the Project's EENF outlining the scope for the SEIR, the Proponent has prepared a mesoscale air quality analysis of indirect sources of pollutants along construction truck route intersections that are adjacent to EJ neighborhoods within one mile of the Project Site. This analysis was performed to determine the possible disproportionate effects diesel trucks would have on the EJ populations during both construction and future operating periods. It also includes an air quality mesoscale analysis of intersections in this area. As described below, the air quality analysis demonstrates that the Project truck traffic volumes during construction and operations will not have an adverse impact on regional air quality or within the EJ community (see Attachment O, Air Quality Analysis).

Air Quality Analysis Methodology

The construction and operations mesoscale analyses were performed for diesel particulate matter (DPM/PM₁₀) and nitrogen dioxide (NO_x) and fine particulate matter (PM_{2.5}). Specifically, calculations were performed to compare area-wide NO_x, PM_{2.5} and DPM/PM₁₀ emissions, and NO_x, PM_{2.5} and DPM/PM₁₀ emissions of non-EJ community versus EJ community was also assessed and compare to Essex County data for both the construction and future operations mesoscale analyses. The analysis was based on the traffic study by MDM Transportation Consultants as described in Chapter 9, and addressed nine roadway links along Fort Avenue, Webb Street, Bridge Street. Seven of these links were in EJ communities. The analysis also relied on the EPA MOVES 3 Model, which accounts for average daily traffic volumes, including daily diesel truck trips.

Project Construction Results

The results indicated that although there were high emissions during construction periods for each of the pollutants, there was a substantial decrease in the area-wide numbers between 2014 and 2029, which is primarily due to more stringent EPA diesel truck emissions standards. The total Project Construction NO_x emissions represents an insignificant area-wide increase of NO_x emissions. The analysis revealed similar results for PM_{2.5} and DMP/PM₁₀ pollutants.

Project Operational Results

The mesoscale analysis for the operations compared existing average daily traffic volumes (2022) with 2029 No-Build, 2029 Build, and 2029 Build with Mitigation average daily traffic volumes on area roadways. In each of the three comparisons with the existing traffic, the emissions for NO_x, PM_{2.5}, and DMP/PM₁₀ were substantially lower. Similar to the construction emissions, the improvements are due primarily with stricter EPA standards for new motor trucks.

The analysis also presents mitigation measures for both construction and operational phases of the Project. They include making deliveries during off-peak travel periods, prioritizing delivery of materials by barge to limit vehicle traffic, and installing “No Idling” signs to reduce the amount of air pollution emitted.

Microscale Intersection Analysis

An air quality analysis for intersections in the Project study area during operations was conducted. For the area where the level of service (LOS) is expected to deteriorate to D and the proposed project causes a 10% increase in traffic, or where the level of service is E or F and the project contributes to a reduction in LOS. For such intersections, a microscale air quality analysis is required to examine air quality concentrations at sensitive receptors near the intersection.

The analysis compared the Existing (2023), No-Build and Build (2029) LOS at four intersections as determined by the overall delay at each intersection. From this data it was determined that Project traffic is not projected to cause the LOS to deteriorate to D, E, or F at the studied intersections. As a result, the Project is expected to cause a negligible increase in air quality impacts in EJ and non-EJ populations (see Attachment O, Air Quality Analysis).

3.7.7 STORMWATER MANAGEMENT SYSTEM ANALYSIS

The proposed stormwater management system has been analyzed as part of the Project design to minimize flooding risks to surrounding communities in light of future climate conditions. Most of the Project Site, except for the parking area in the northwest corner, will be raised and graded away from adjacent properties. In the southern portion of the Project Site, stormwater will flow towards a drainage swale, be treated, and then discharged into Salem Harbor. In the northern portion of the

Project Site, stormwater will flow towards Salem Harbor to a drain, be treated, and then discharged to Salem Harbor. The parking lot will remain the same and flow towards existing drains connected to the Salem Harbor Power Development LP site stormwater network near the entrance at Fort Avenue, eventually discharging to Salem Harbor. The entire stormwater system has been designed in accordance with the MA DEP Stormwater Management Standards. See Chapter 8, Infrastructure for details regarding the stormwater system design and analysis. The flooding analysis described in Chapter 10 determined that any flooding on the Project Site will not impact adjacent properties, and therefore will not impact the adjacent EJ community located on the west side of Derby Street (see Attachment H, Flooding Analysis).

3.7.8 SHORT AND LONG-TERM ENVIRONMENTAL AND PUBLIC HEALTH IMPACTS

The Proponent has analyzed the short and long term environmental and public health impacts, including construction related impact of the Project. Based on the analysis described below, these impacts will not disproportionately impact the identified EJ communities.

Approximately half of the census tracts within one-mile radius of the Project Site are EJ populations, and only one census track with an EJ population is next to the Project Site.

Short Term Impacts – Construction

Potential impacts during construction would be from dust, lights, noise, traffic, and diesel truck emissions. Each of these impacts are summarized below.

Dust

During construction, there may be some dust generated as part of the site improvements to raise the grade. Appropriate dust control measures, such as gravel points of entry/egress, will be implemented as part of the CMP.

Lighting

No lighting impacts are expected during the construction phase. Work hours will be generally from 7 am to 5 pm. Some construction areas may need localized lights on days with short daylight hours during the fall and winter months, but no light impacts to nearby neighborhoods will occur. There will be very limited night work, and only on an as-needed basis. If work is done at night, it will be done in specific areas so as not to impact the entire Project Site.

Noise

Some noise impacts are expected during the construction period. In particular, noise will be generated during the pile driving periods, and most of this work will occur along the shoreline, away from adjacent properties.

Traffic

Limited increased traffic to and from the Project Site will occur during construction of the new facility, although, where feasible, deliveries by barge will be mandated. Truck routes have been established and will be enforced during construction through the preparation of a Transportation Management Plan (TMP). Once construction at the Project Site is completed and normal operations begin, the Project is not expected to have any significant traffic impacts.

Diesel Truck Emissions

As described above in Section 3.7.6, there will be diesel truck trips along the construction truck route, which passes along and through seven EJ and five non-EJ communities within a mile of the Project Site. These trips will generate a minor amount of emissions along the route, but will not negatively impact the EJ and non-EJ communities. The Proponent has been working with contractors to determine options for using barges to deliver materials via water instead of over land, which will minimize use of fossil fuels, and minimize traffic and emissions.

Long Term Impacts – Operations

The Project's operations will include landside support vehicles and vehicles with workers traveling daily to the Project Site, vessels traveling either to deliver or pick up OSW components, or other vessels to assist with operations. Cranes and specialized vehicles will move OSW components to and from vessels and within the Project Site. These activities will generate some impacts to the nearby neighborhoods, none of which cannot be mitigated, as described below. In summary, there will not be disproportionate impacts the EJ communities within one mile of the Project Site.

Lighting

Lighting impacts are being addressed through the Project's design. The design team is working on lighting to keep the Occupational Safety and Health Administration (OSHA) minimum lighting levels at night for safety and security. The lights will also have newer technology where they are only bright when in the area and will be dimmer when not working in the vicinity. The Proponent is also implementing lights that are focused and will not bleed light out to the Salem Harbor or the adjacent neighborhood. Therefore, no light impacts are expected on the any of the adjacent communities.

Noise

Noise generated during operations is expected to be minimal and located mainly along the wharfs where most of the OSW components will be loaded and unloaded

between the transportation vessels and the wharf and pier. No noise impacts to adjacent communities are expected during the operation of the facility.

Traffic

Traffic analyses were conducted for all vehicles under different scenarios, including no build and build scenarios under current and future developments. The analysis concluded that although there will not be material impacts to traffic or loss of level of service (LOS) at the study area intersections, the Project should still incorporate traffic reduction measures as part of TMP (see Chapters 9 and 13 for a complete list of transportation demand management measures).

Vessel Emissions

A vessel emissions study revealed that potential vessels used to deliver OSW components will not result in emission that would impact EJ communities (see Section 3.7.1). A review of the vessel traffic route concluded that vessel traffic will pass within one-third of a mile of one EJ community, but due to its limited number of trips per year and distance from this EJ community, these vessels will have minimal air quality impacts to EJ communities along the navigation route.

No other construction, operational, or climate change impacts have been identified that would impact EJ communities within one mile of the Project Site. The Project's benefits of supporting the City of Salem's economic and tourism goals, local job training and retention, utilization of a vacant port asset, increase in the City's tax base, and improvements to the landscaping around the Project Site greatly outweigh the minor impacts from the Project, which will not disproportionately affect EJ populations.

3.7.9 IMPROVED VEGETATED BUFFERS

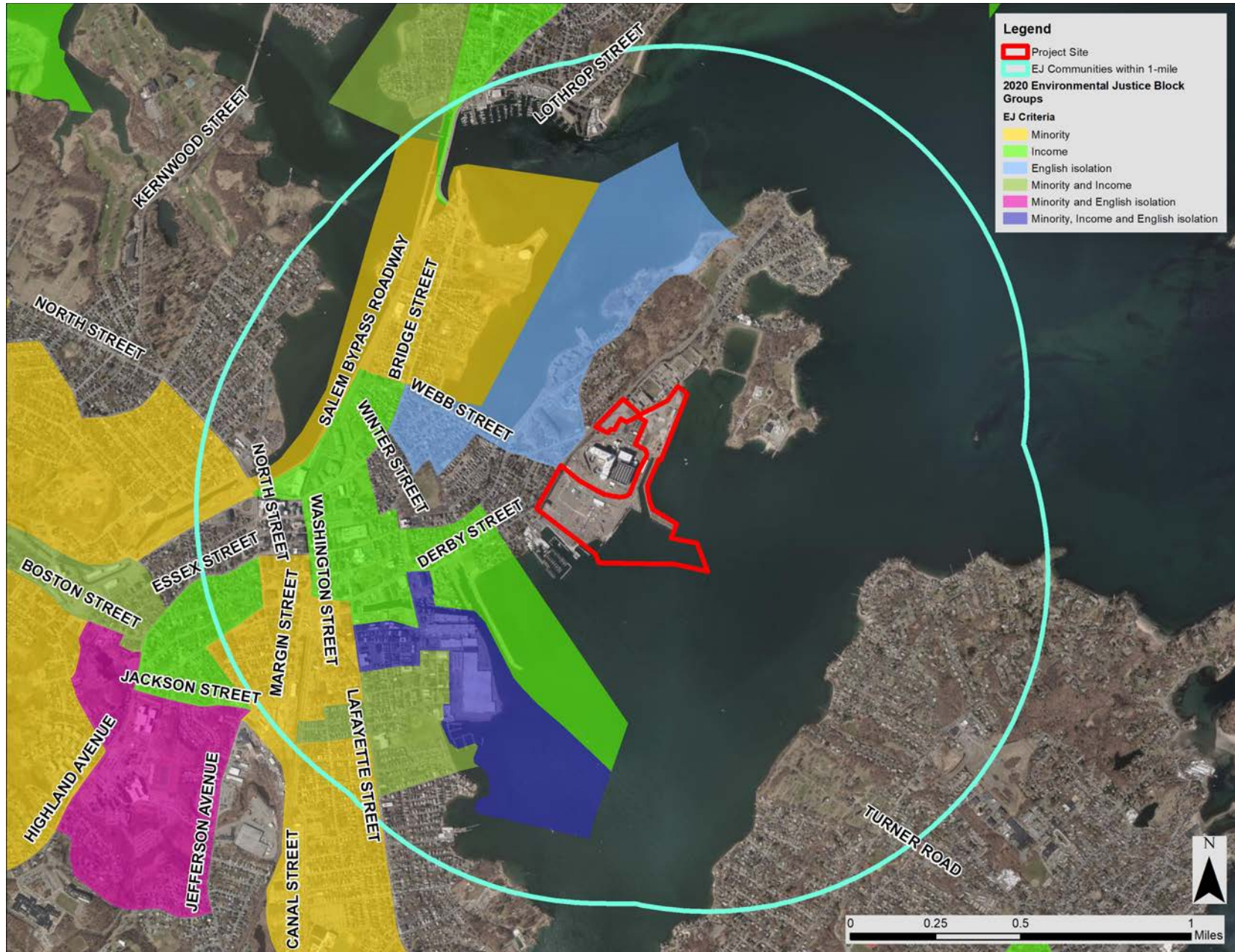
The existing vegetated buffer along Derby Street and the Salem Wharf parking lot will be substantially improved to minimize impacts to adjacent properties during the operations as described below.

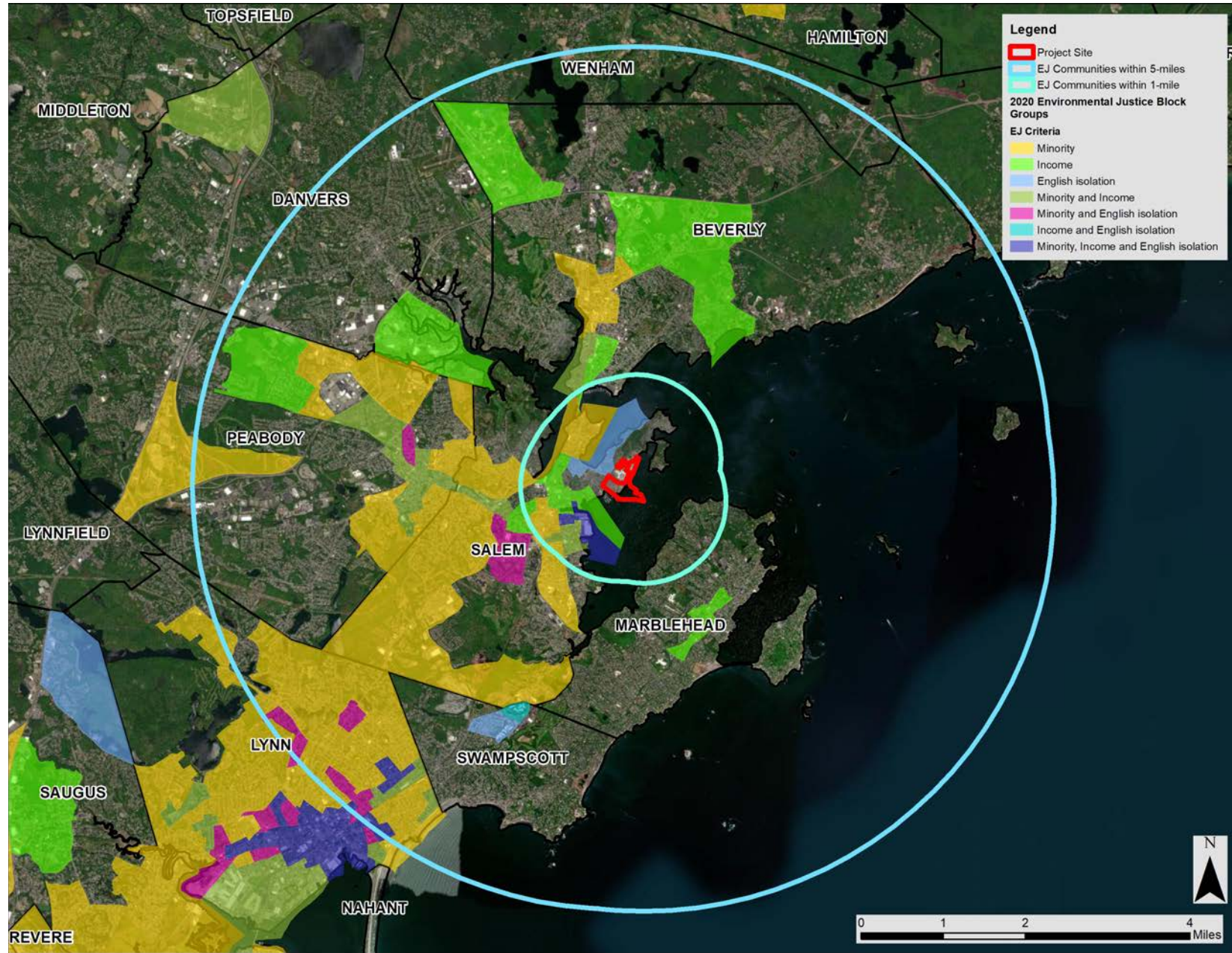
The operations will be set back from the property lines with landscaped buffers along the west and south sides of the Project Site. The existing tree-lined open space along Derby Street will be maintained and expanded approximately 20 feet wider with additional landscape buffer areas. An approximately 20-foot wide buffer with trees and other vegetation will be constructed on the south side of the property along the Salem Wharf ferry parking lot. It will consist of a vegetative drainage swale and water quality features, shade trees, evergreen trees, understory trees, shrubs, and grasses. The Project will construct an approximately 30-foot wide vegetated access path between the cruise ship berth and the Salem Wharf ferry parking lot. The existing tree-lined space along Fort Avenue will be maintained. For additional details about the landscaping for these areas, see Sheets L200, L201, and L300 in Attachment L, Project Plans.

In total, the Project will add more than 50,000 square feet of landscaped open space along Derby Street and the Salem Wharf ferry parking lot. The proposed buffer and existing buffer expansion will result in an overall increase in vegetated areas and canopies for the Project Site, which will provide shaded, cool areas for recreational space along Derby Street. These appropriate buffers will provide additional physical and visual separation between the adjacent Derby Street neighborhood and the proposed water-dependent industrial use, and will help minimize site impacts during operations of the Project Site.

The buffers will help mitigate the Project's impact due to stormwater runoff improve water quality while providing additional pervious open space along Derby Street and the Salem Wharf parking lot. The Project will also improve grading along the proposed vegetated buffer to the Salem Wharf parking lot and enhance drainage along the existing stormwater swale with a series of deep sump area drains to capture any incidental runoff directed towards the adjacent property. The Project will not adversely affect adjacent parcels or wetlands or waters of the Commonwealth such as direct discharge of untreated stormwater.

These landscaped buffers will mitigate visual and noise impacts between the Project Site and the Derby Street neighborhood, while also allowing for public access and recreational benefits. The proposed buffers will help mitigate noise impacts during operations along the south and west sides of the Project Site to the neighborhood. Visually, the buffers will help screen the Project Site fence line along Derby Street and the Salem Wharf ferry parking lot with proposed vegetative plantings.





Salem, Massachusetts

Figure 3-2
Environmental Justice Populations, 5-miles
Source: MA Executive Office of Energy and Environmental Affairs, 2022



Chapter 4

TIDELANDS

CHAPTER 4: TIDELANDS

4.1 INTRODUCTION

Crowley Wind Services, Inc. (the “Proponent” or “Crowley”) proposes to construct a marshalling terminal to support the assembly of offshore wind (OSW) terminal components at the proposed terminal, 67 Derby Street, Salem, located along Salem Harbor. The approximately 42.3-acre Project Site is currently comprised of mostly flat, vacant land with several long wharves, two pile-supported piers, and a mix of sheet pile and rock riprap coastal engineered structures. The Project Site is located within the Salem Harbor Designated Port Area (DPA) and has a history of water-dependent industrial uses (WDIUs) over the past 100 years, mainly the transfer of coal and energy generation.

The Project will provide substantial investment in the Project Site’s infrastructure that will create a major wind farm marshalling terminal as well as reestablish Salem as a cruise port. The existing conditions of this site’s infrastructure vary from poor to critical condition: the wharf is not safe for berthing large vessels, and the berthing and use of the approximately 18-acre State Turning Basin (the “Basin”) is limited due to shoaling. To improve the Project Site for use as a wind turbine marshalling terminal, the Project will construct a pile-supported loadout wharf and a pile-supported jetty delivery pier, add fill and stabilize the existing upland areas to support the storage and movement of heavy wind turbine components including blades, nacelles, and towers, and add utilities, including stormwater drainage and outfalls, which are all considered WDIUs within this DPA. Several small buildings, which are accessory uses in the DPA, will also be constructed.

The Proponent will be requesting a license to make site improvements for use as a wind turbine marshalling terminal. The Project will also be requesting a permit to dredge portions of the Basin located adjacent to the Project Site.

The following sections describe Chapter 91 jurisdiction and the Project’s compliance with the regulations.

4.2 CHAPTER 91 JURISDICTION

The Project Site consists of filled (formerly flowed) tidelands and flowed tidelands on private and Commonwealth tidelands (see Figure 4-1, Chapter 91 Jurisdiction). Approximately 17.4 acres are filled private tidelands, 8.7 acres are filled Commonwealth tidelands, 21.9 acres are flowed tidelands, and 16.2 acres of Project Site are not subject to Chapter 91 jurisdiction. The Chapter 91 presumptive jurisdiction line is based on MassGIS data and the high-water mark from three historic survey plans that were georeferenced on MassGIS data. The historic high-water mark reflects the most landward high-water marks of the Perley map, 1700; the U.S. Coast Survey, 1850 (T-303); and the U.S. Coast and Geodetic Survey, 1902 (T-2603).

The historic low water mark (HLWM) was determined from the U.S. Coast Survey, 1854 (H-254) plan that was georeferenced by the Massachusetts Coastal Zone Management (MCZM) Program. The HLWM runs along the shoreline in the northern part of the Project Site and traverses approximately halfway through the southern portion of the Project Site. The discharge channel and the Basin and portions of the eastern and southern edges of the filled tidelands are considered to be Commonwealth tidelands since they are located seaward of the historic mean low water line. The mean high water (MHW) is 4.10' (NAVD88), the mean low water (MLW) is -4.83', and the mean low lower water (MLLW) is -5.16'.

4.2.1 HISTORIC LICENSES

State authorizations for fill and structures within Chapter 91 jurisdiction were researched using a database from Massachusetts Department of Environmental Protection (MassDEP or the "Department"), files at Fort Point Associates, and the on-line web sites at the South Essex Registry of Deeds. Authorizations were found for the existing structures including pile-supported piers and deck, filling, dredging, and stormwater structures. Authorizations for structures and fill were issued between 1809 and 2013. See Table 4-1, Chapter 91 Authorizations within the Project Site, and Table 4-2, Legislative Authorizations within the Project Site. These approvals authorized the property owner to maintain, repair, dredge, construct walls, foundations, and piers, and fill in and over the tidelands at the Project Site and in the waters of Salem Harbor. These licenses authorize all of the fill and structures on tidelands within the Site.

Table 4-1, Chapter 91 Authorizations within the Project Site

License No.	Date Issued	Authorization
168	6/28/1873	To construct a wharf partly on piles and partly on solid in Salem Harbor
186	10/31/1873	To construct a wharf partly on piles and partly on solid in Salem Harbor
392	1/7/1924	To construct and maintain a seawall and pile wharf and to dredge and make fill solid
436	6/5/1924	To build a pile and bulkhead and fill solid back the same, and to construct pile dolphins and walks connecting the same. Reinforce existing wall of Phillips Wharf, runways, and dolphins
924	4/24/1886	To construct a pile and timber wharf in and over tide waters of Salem Harbor
1065	5/2/1888	Extension and widening of portion of Philadelphia & Reading Coal & Iron Company Pier in and over tidewaters of Salem Harbor

License No.	Date Issued	Authorization
1069	9/3/1929	To build and maintain extensions to an existing seawall and to a loading platform, to drive piles to build and maintain dolphins, to fill solid and dredge
1089	11/12/1929	Build walkways and two 10-pile dolphins
1239	3/13/1890	To widen and extend Phillips Wharf on piles in and over tide waters of Salem Harbor
1288	5/3/ 1931	To make repairs and additions to existing dolphins and to place and maintain a float held in position by piles
1507	7/11/1933	To replace damaged piles, to drive additional piles, to remove a pile dolphin and the connection platform, and to place ten feet of riprap in four locations
1570	3/30/1934	To install two 5-pile dolphins
1852	10/31/1895	To fill solid portions of "Pennsylvania Pier" in Salem Harbor at Phillips Wharf
2042	2/7/1939	To add piles to existing 16-pile turning dolphin – total 24 piles
2068	4/17/1939	Construct and maintain a 20-pile turning dolphin and remove existing dolphin
2769	5/28/1945	To place additional piles in dolphins # 1 and # 12 and to reconstruct and place additional piles in mooring dolphin # 14
3098	10/26/1948	To construct and maintain a screen well and pump house and an adjoining building, and to build and maintain a dike and fill solid; dredge intake channel
3298	1/16/1951	To construct and maintain a bulkhead and to reconstruct and alter a wharf and turning dolphin. Maintain existing sheet piling solid fill
3458	06/18/1952	To install a buried ground connection and cable in Salem Harbor
3581	5/10/1911	To fill a portion of flats (coal pocket) with solid fill in Salem Harbor
3624	4/12/1954	To maintain a screen well and pump house and an adjoining building, a dike and solid fill and a discharge weir to provide for discharge water, also an intake channel as dredged

License No.	Date Issued	Authorization
3834	4/2/1956	To construct and maintain a screen well and pump house for units Nos. 3 and 4 and build a temporary cofferdam
3835	4/2/1956	To fill solid a portion of Cat Cove and construct dike
3849	5/7/1956	To construct and maintain a dike and fill solid in Salem Harbor
4090	6/23/1958	To construct and maintain a turning dolphin, fender dolphin and walkway to maintain existing sheet piling, mooring dolphin and two walkways
5589	10/1/1969	To construct and maintain a temporary cofferdam, screen well and pump house for unit 4, relocate a portion of an existing discharge channel with riprap slopes, place stone revetment, construct a sheet steel bulkhead, and dredge and fill Salem Harbor
321	5/20/1977	To maintain as built: fisherman's wharf; walkways; oil boom; foam barriers; retaining wall; and maintain minor changes to structures authorized under License No. 5589
324	5/20/1977	To reconstruct and stabilize an existing dock structure by installing four fender dolphins, new oil unloading platform, new sheet pile bulkhead, walkways and extend existing oil boom in Salem Harbor
10066	1/10/2005	To install and maintain emission control equipment and maintain existing structures on filled tidelands
EFSB 13-1 (1)	2/25/2014	Allow gas-fired power generating station as a non-water-dependent use in a DPA

Source: MassDEP Waterways, 2022-2023.

Note 1. The Energy Facility Siting Board (EFSB) issued a Certificate on 2/25/2014 that stated the Variance issued by MassDEP on 11/1/2013 includes an equivalent of a license.

Table 4-2, Legislative Authorizations within the Project Site

Legislature	Authorization
Chapter 16 Acts of 1809	Incorporate Salem India Wharf Corporation
Chapter 111 Acts of 1847	An act to authorize Stephen C. Phillips to extend a wharf or wharves

Legislature	Authorization
Chapter 169 Acts of 1861	An Act to Incorporate Phillips Wharf Corporation of Salem
Chapter 194 Acts of 1872	An Act to authorize the Eastern Railroad company to build a wharf in Salem
Chapter 209 Acts of 1872	An Act in addition to an act to incorporate the Phillips Wharf Corporation

4.3 COMPLIANCE WITH CHAPTER 91 REGULATIONS

This section describes the Project's compliance with the following applicable standards of the Chapter 91 Regulations (see Figure 4-2, Chapter 91 Compliance).

4.3.1 APPLICABLE CHAPTER 91 STANDARDS

310 Code of Massachusetts Regulations (CMR) 9.11(3)(c)2 – Statement Regarding Proper Public Purpose, Public Rights, MCZM Consistency, and Conformity to an Approved Municipal Harbor Plan

As described below, under 310 CMR 9.31(2), the Project serves a proper public purpose because it is a water-dependent use project. The Project is not detrimental to the rights, access, or use of the tidelands by the public. The Project conforms with the applicable provisions of the Approved 2008 Salem Municipal Harbor Plan (MHP) and Designated Port Area (DPA) Master Plan pursuant to 310 CMR 9.34(2), and is consistent with the policies of the MCZM Program pursuant to 310 CMR 9.45 as described below.

310 CMR 9.12 – Water-Dependent Use

Under the provisions of 310 CMR 9.12, a project is considered a WDIU if it meets the use standards under 310 CMR 9.12(2)(b). The proposed uses of the Project include WDIUs listed in 310 CMR 9.12(2)(b)1 marine terminals and related facilities for the transfer between ship and shore, and the storage of, bulk materials or other goods transported in waterborne commerce; 310 CMR 9.12(2)(b)2 facilities associated with commercial passenger vessel operations; 310 CMR 9.12(2)(b)6 facilities for tug boats, barges, dredges, or other vessels engaged in port operations or marine construction; 310 CMR 9.12(2)(b)7. Any water-dependent use listed in 310 CMR 9.12(2)(a)9. Through 14., provided the Department determines such use to be associated with the operation of a Designated Port Area; and 310 CMR 9.12(2)(b)11 facilities for the manufacture, servicing, maintenance, data collection, and other functions related to coastal or offshore structures, buoys, autonomous underwater vehicles or vessels, and for the development of new technologies and systems for these structures, buoys,

vehicles or vessels, provided that the facility requires transfer between ship and shore or the withdrawal and/or discharge of large volumes of water.

The Project complies with these standards by creating a marshalling terminal for the transfer of OSW turbine components by tug boats, barges, and other vessels that will deliver them to and from the Site and to the OSW farms, and for commercial passenger vessels (cruise ships) to berth and transfer passengers.

310 CMR 9.31(2) – Proper Public Purpose

The standards at 310 CMR 9.31(2)(a) state that no license shall be issued by the Department for any project on tidelands unless the project serves a proper public purpose which provides greater benefit than detriment to the rights of the public in said lands in accordance with the provisions of this standard. Pursuant to the standard at 310 CMR 9.31(2)(a), the project is presumed to provide a proper public purpose if it is a water-dependent use project. Therefore, the Project meets this standard because it is a water-dependent use project.

310 CMR 9.32 - Categorical Restrictions on Fill and Structures

The project is eligible for a license if it is restricted to fill and structures which accommodate specific uses depending on its location within and outside of a DPA. Of the Site's 42.3 acres, approximately 0.5 acres of tidelands are outside of the DPA, and will have additional fill added. The remaining portion of the Project Site is within the DPA (see Figure 4-1). As described below, the Project complies with the applicable standards pursuant to 310 CMR 9.32(1)(a) and 310 CMR 9.32(1)(b) regarding fill and structures on Tidelands outside of and within the DPA.

In compliance with 310 CMR 9.32(1)(a), fill and structures outside of DPAs are allowed on previously filled tidelands. Fill and structures will be placed above MHW. In compliance with 310 CMR 9.32(1)(b)1, a building for accessory uses includes one office that will be located within Laydown Yard B. In compliance with 310 CMR 9.32(1)(b)1.a, fill will stabilize the shoreline along and underneath the proposed pile-supported piers. In compliance with 310 CMR 9.32(1)(b)1.c, parking within the DPA will be limited to persons employed by or doing business with the WDIU over flowed tidelands.

310 CMR 9.33(1) - Environmental Protection Standards

The Project will comply with applicable environmental regulatory programs of the Commonwealth, including the Massachusetts Wetlands Protection Act (WPA) and MassDEP Stormwater Management Standards. The Applicant has submitted a Notice of Intent (NOI) to the Salem Conservation Commission. Along with the Chapter 91 License/Permit application, the Proponent will submit a 401 Water Quality

Certification application to MassDEP. A Federal Consistency Review will be filed with the Massachusetts Office of Coastal Zone Management (MCZM). The Massachusetts Historical Commission (MHC) and Bureau of Underwater Archaeological Resources were notified about this Project as part of the Expanded Environmental Notification Form (EENF) process. The BUAR noted in their comment letter that they expect the project is unlikely to adversely affect submerged aquatic resources. MHC did not submit comments to the EENF.

310 CMR 9.34 – Conformance with Municipal Zoning and Harbor Plans

The Project Site is located on private and Commonwealth filled and flowed tidelands and therefore the Project must conform to the standards of 310 CMR 9.34(1) regarding compliance with applicable zoning ordinances. The Chapter 91 Form G Municipal Zoning Certificate that states the Project is not in violation of the local zoning ordinances and bylaws will be submitted to the City of Salem Zoning Officer along with the Application and sent to MassDEP upon receipt of zoning compliance.

The Project Site is located within the planning area of the Approved 2008 Salem MHP and DPA Master Plan, and therefore, the Project is subject to the standards for complying with a municipal harbor plan. The 2008 Salem MHP recommended maintaining the current levels of WDIUs, which at the time, included the power plant and use of its berths for coal deliveries. The 2008 Salem MHP also contemplated changes in the marine industry and infrastructure needed to support future energy production. The Project is consistent with these recommendations as it will support offshore energy needs as well as substantially improve the Project Site's infrastructure for WDIUs. All the proposed uses are consistent with the standards for WDIUs and DPAs. The proposed offices and shed structures are integral to the port operations and are considered Accessory Uses in accordance with 310 CMR 9.12(3)(a). All these uses are also consistent with the 2008 Salem MHP.

The City of Salem recently submitted the *Proposed 2023 Municipal Harbor Plan* (the "2023 MHP") and the *Designated Port Area Master Plan* (the "2023 DPA Master Plan") to the MassDEP and MCZM for their review and approval. The Project is consistent with these two plans. The Industrial Port section of the 2023 MHP states that a signature component of this plan is the support for the change in uses within the DPA from energy production to an environmentally sustainable and climate resilient port while accommodating community needs and compatibility with port uses. Furthermore, the 2023 MHP states that Salem is one of the few ports in the country with the physical characteristics necessary for marshalling of both fixed-bottom and floating offshore wind turbines. It also states that the 2023 MHP seeks to enable this type of project while providing protections and guidance to ensure the long term compatibility with the community.

The 2023 DPA Master Plan focuses WDIUs on renewable energy and expanded cruise ship/ferry activity, and provides for public access only as deemed appropriate by MassDEP but does not discourage or preempt the transition of the Project Site to WDIUs. The 2023 DPA Master Plan also recommends incorporation of community noise abatement, visual protections, public access, and climate resiliency where possible without conflicts to WDIUs. The Project is a WDIU that supports renewable energy (offshore wind turbines) and provides an improved berth for cruise ships and OSW vessels, and a pedestrian accessway for passengers. The Project also provides additional landscaping and buffer area along Derby Street and the ferry terminal parking lot to minimize noise and visual impacts to the neighborhood.

310 CMR 9.35 – Standards to Preserve Water-Related Public Rights

The Project conforms to the Standards to Preserve Water-Related Public Rights at 310 CMR 9.35. In accordance with this standard, the project must preserve any rights held by the Commonwealth in trust for the public to use tidelands along with any public rights for access that are associated with such use. To comply with this general standard, the Project meets the applicable standards for access to waterways and tidelands set forth in 310 CMR 9.35(2) through (4) as described below.

Pursuant to 310 CMR 9.35(2), the Project does not interfere with public rights of navigation. The Project improves navigation by providing new berthing areas and facilities and by making the Basin deeper and allowing larger ships to access the site.

The Project will not extend beyond the length required to achieve safe berthing, generate water-borne traffic that would substantially interfere with other existing or future water-borne traffic, adversely affect the depth or width of an existing channel, or impair in any other substantial manner the ability of the public to pass freely upon the waterways and to engage in transport or loading/unloading activities. The loading wharf and delivery jetty improvements will not interfere with the public rights of navigation and will improve navigation access. The berths are the minimum size necessary to safely accommodate the proposed uses. There is currently little waterborne traffic, and the provision of these new facilities will increase vessel traffic to the port through the existing established deep draft navigation channels without interfering with smaller vessel traffic. The proposed dredging, which is for a WDIU, will not significantly interfere with navigation by recreation vessels.

Pursuant to 310 CMR 9.35(3)(a), the Project does not interfere with public rights to access the flowed tidelands within the Project Site for the purposes of fishing, fowling, and navigation, and does not pose an obstacle to the public's ability to pursue such activities.

Pursuant to 310 CMR 9.35(3)(b)2.b, the WDIU Project is located in part on Commonwealth tidelands and shall provide public passage thereon by such means

as are consistent with the need to avoid undue interference with the water dependent use in question.

There will be restricted public access to the waterfront on the Project Site, which will be only for cruise ship passengers. To ensure the safety of the public and those working within the port's facility, and to comply with regulations promulgated by the Department of Homeland Security and the international ship and port security code, public access to the industrial use portions of the Project will not be allowed. The public will be able to access the landscaped areas along Derby Street and the ferry terminal parking lot.

In compliance with 310 CMR 9.35, the public access portion of the Project will be managed with appropriate signage, a security fence and gate located next to the ferry terminal parking lot, and a management plan with reasonable rules and regulations.

310 CMR 9.36 – Standards to Protect Water-Dependent Uses

The Project conforms to the Standards to Protect Water-Dependent Uses of 310 CMR 9.36. In accordance with 310 CMR 9.36, a project must preserve the availability and suitability of tidelands that are in use for water-dependent purposes, or which are reserved primarily as a location for maritime industry or other specific types of water-dependent uses. The Project meets the applicable specific provisions of these standards as described below.

In compliance with 310 CMR 9.36(1), the Project will be preserving the availability for water-dependent uses by improving access to and use of the Project Site for WDIUs with new berths, wharf, pier, and laydown yards. The proposed OSW marshalling facility use is consistent with the requirements of the 2008 Salem MHP as described in the section above.

In compliance with 310 CMR 9.36(2), the Project will not limit existing or future water-dependent uses on the Project Site or access to abutting littoral or riparian property owner's right to approach their properties. Landside access will be provided through existing roads and access ways off Derby Street and Fort Avenue. The proposed loading wharf on the south side of the Project Site will be more than 25 feet from the abutting property line and will not interfere with the riparian rights of the abutter, which is the City of Salem. The Proponent has been coordinating with the Salem Harbor Port Authority to help improve the port and support the City's long term economic and tourism goals.

In compliance with 310 CMR 9.36(3), the Project will not significantly disrupt any water-dependent use in operation within proximate vicinity of the Project Site. Construction and use of the berthing facilities will not affect any offsite water dependent uses.

In compliance with 310 CMR 9.36(4), the Project will not displace any water-dependent uses in operation that have occurred on the site for the previous five years. There have not been any vessel uses at the Project Site for the past five years.

In compliance with 310 CMR 9.36(5), all fill and structures will be for water-dependent industrial uses. The structures, fill, and uses that support the operation of OSW marshalling terminal are WDIUs. The pedestrian access path that will support the cruise ship operations, are also considered a WDIU. Therefore, no WDIUs will be displaced or interfered with by the Project.

310 CMR 9.37 - Engineering and Construction Standard

The Project will comply with the standards of 310 CMR 9.37. In compliance with 310 CMR 9.37(1), a Registered Professional engineer will certify that the fill and structures are structurally sound as designed and constructed. The Project will restrict the ability to dredge any channels. In compliance with 310 CMR 9.37(3), the proposed wharf reconstruction and underlying seawalls will be compatible with existing seawalls and revetments in terms of its design, size, function, and materials. A minor amount of new fill will need to be permitted in accordance with the standards at 310 CMR 9.32.

310 CMR 9.40 – Standards for Dredging and Dredged Material

The Project will comply with the standards at 310 CMR 9.40. This section of the Chapter 91 regulations requires dredging projects to meet specific requirements for resource protection, operational requirements for dredging and dredged materials disposal, and notification of dredging and disposal activities.

Dredging activities will be timed to minimize impacts on the and land under ocean resource areas. Approximately 80,190 CY of dredge material will be removed from the Basin. Based on previous sampling and dredging activities, the dredged material is expected to test clean and will be disposed of at the MBDS.

The Project will comply with specific applicable provisions of Chapter 91 regulations, 310 CMR 9.40, as follows:

- The Project includes dredging of the Basin, which is in the Salem DPA, to a depth greater than 20 feet;
- The dredge area has been designed to reasonably accommodate the navigational requirements of the Project and provide adequate water circulation;
- The dredged area within the Basin is connected to and is dredged to the same depth (-32', MLLW) as the adjacent federal channel and shall not exceed that

which is reasonably necessary to accommodate the safe navigation of project vessels. To ensure safe berthing and clearance of the Wind Turbine Installation Vessels (WTIVs) at all tide ranges at the loadout wharf, the adjacent berth will be dredged two feet deeper than the Basin;

- Dredging will occur within the limits and side slopes of the existing Basin;
- Dredging operations will utilize a mechanical clam shell dredge due to the expected silt and clay material, and the use of a bottom-opening scow to transport and dispose of the fine grain material at the Massachusetts Bay Disposal Site (MBDS); and
- The Applicant will submit appropriate notices about the ocean disposal, ensure transport vessels are appropriately loaded, and the material is deposited within the confines of the MBDS.

4.4 CONSISTENCY WITH COASTAL ZONE MANAGEMENT POLICIES

The Project is consistent with the applicable MCZM Program Policies as described below.

4.4.1 WATER QUALITY

Water Quality Policy #2

Ensure the implementation of nonpoint source pollution controls to promote the attainment of water quality standards and protect designated uses and other interests.

The Project will improve the Project Site's stormwater drainage system that currently allows stormwater to sheet flow without treatment into the receiving waters by providing new storm drains and treatment structures, which will meet the State's stormwater management standards.

The Project will implement best management practices (BMPs) during construction to ensure that erosion and sedimentation are minimized. As appropriate, erosion and sedimentation controls, such as coir logs, siltation fences, and turbidity curtains, will also be used during construction.

4.4.2 HABITAT

Habitat Policy #1

Protect coastal, estuarine, and marine habitats—including salt marshes, shellfish beds, submerged aquatic vegetation, dunes, beaches, barrier beaches, banks, salt ponds, eelgrass beds, tidal flats, rocky shores, bays, sounds, and other ocean habitats—and coastal freshwater streams, ponds, and wetlands to preserve critical

wildlife habitat and other important functions and services including nutrient and sediment attenuation, wave and storm damage protection, and landform movement and processes.

The Project includes structures that will affect coastal bank and land under ocean resource areas in Salem Harbor. BMPs will be implemented during construction of both the landside and waterside structures to minimize any potential impacts to the resources of Salem Harbor. To the extent practicable, the dredging operations will minimize turbidity and impacts to nearby habitats, including the documented eelgrass bed located approximately 180 feet south of the Basin, with the use of appropriate BMPs, such as turbidity curtains, and time-of-year (TOY) restrictions. Pier construction will utilize BMPs such as slow-start pile driving to minimize impacts to finfish. Furthermore, the existing site, which provides minimal treatment of the stormwater runoff, will have a new stormwater drainage system that will improve the water quality and habitats of the downgradient wetland resources.

4.4.3 COASTAL HAZARDS

Coastal Hazard Policy #1

Preserve, protect, restore, and enhance the beneficial functions of storm damage prevention and flood control provided by natural coastal landforms, such as dunes, beaches, barrier beaches, coastal banks, land subject to coastal storm flowage, salt marshes, and land under the ocean.

Coastal Hazard Policy #2

Ensure that construction in water bodies and contiguous land areas will minimize interference with water circulation and sediment transport. Flood or erosion control projects must demonstrate no significant adverse effects on the project site or adjacent or downcoast areas.

The Project has been designed to minimize interference with water circulation and sediment transport. The proposed delivery pier on the north side of the Basin will be pile-supported to allow water to circulate under and through the pier instead of constructed a solid-fill pier. The main loadout pier on the west side of the Basin will be reconstructed in the same footprint of the existing pier, pile supported, and not extend any further seaward to minimize impacts to the water circulation. Dredging within the existing dredge footprint of the Basin will not significantly impact the coastal bank or adjacent or downcoast areas. Dredging land under ocean, which is deeper than 32' below MLLW, will not impact the functions of storm damage prevention or flood control.

4.4.4 PUBLIC ACCESS

Public Access Policy #1

Ensure that development (both water-dependent or nonwater-dependent) of coastal sites subject to state waterways regulation will promote general public enjoyment of the water's edge, to an extent commensurate with the Commonwealth's interests in flowed and filled tidelands under the Public Trust Doctrine.

This WDIU project within the Salem DPA will improve navigational access to and use of the proposed industrial use for OSW projects. The Project will also improve public access and berthing for cruise ships and will provide a connecting walkway for passengers to access and egress the cruise ships. Due to public safety and security concerns, general pedestrian access will not be allowed on the Project Site except within the buffer zones along Derby Street and the ferry terminal parking lot.

4.4.5 GROWTH MANAGEMENT

Growth Management Principle #3

Encourage the revitalization and enhancement of existing development centers in the coastal zone through technical assistance and financial support for residential, commercial, and industrial development.

The Project, which may be funded, in part, with public funds, will support industrial development that will help revitalize a WDIU, and the local and regional economy with jobs and associated terminal support businesses, especially those in the marine trades and vessel-related industries in the region.

4.4.6 PORTS AND HARBORS

Ports and Harbors Policy #1

Ensure that dredging and disposal of dredged material minimize adverse effects on water quality, physical processes, marine productivity, and public health and take full advantage of opportunities for beneficial reuse.

Dredging for the Project will be conducted in accordance with local, state, and federal regulations to ensure that it minimizes impacts to the environmental resources as well as the public's health. Previously tested dredge material from this Basin was determined to be suitable for disposal at the MBDS. It is expected that the material to be dredge will also be suitable for disposal at the MBDS, in compliance with state and federal regulations. Dredging operations will be conducted to minimize impacts to the water quality and fish and benthic habitat, including observation of the TOY

restriction period, use of an environmental clamshell bucket, turbidity curtains, and other BMPs.

Ports and Harbors Policy #4

For development on tidelands and other coastal waterways, preserve and enhance the immediate waterfront for vessel-related activities that require sufficient space and suitable facilities along the water's edge for operational purposes.

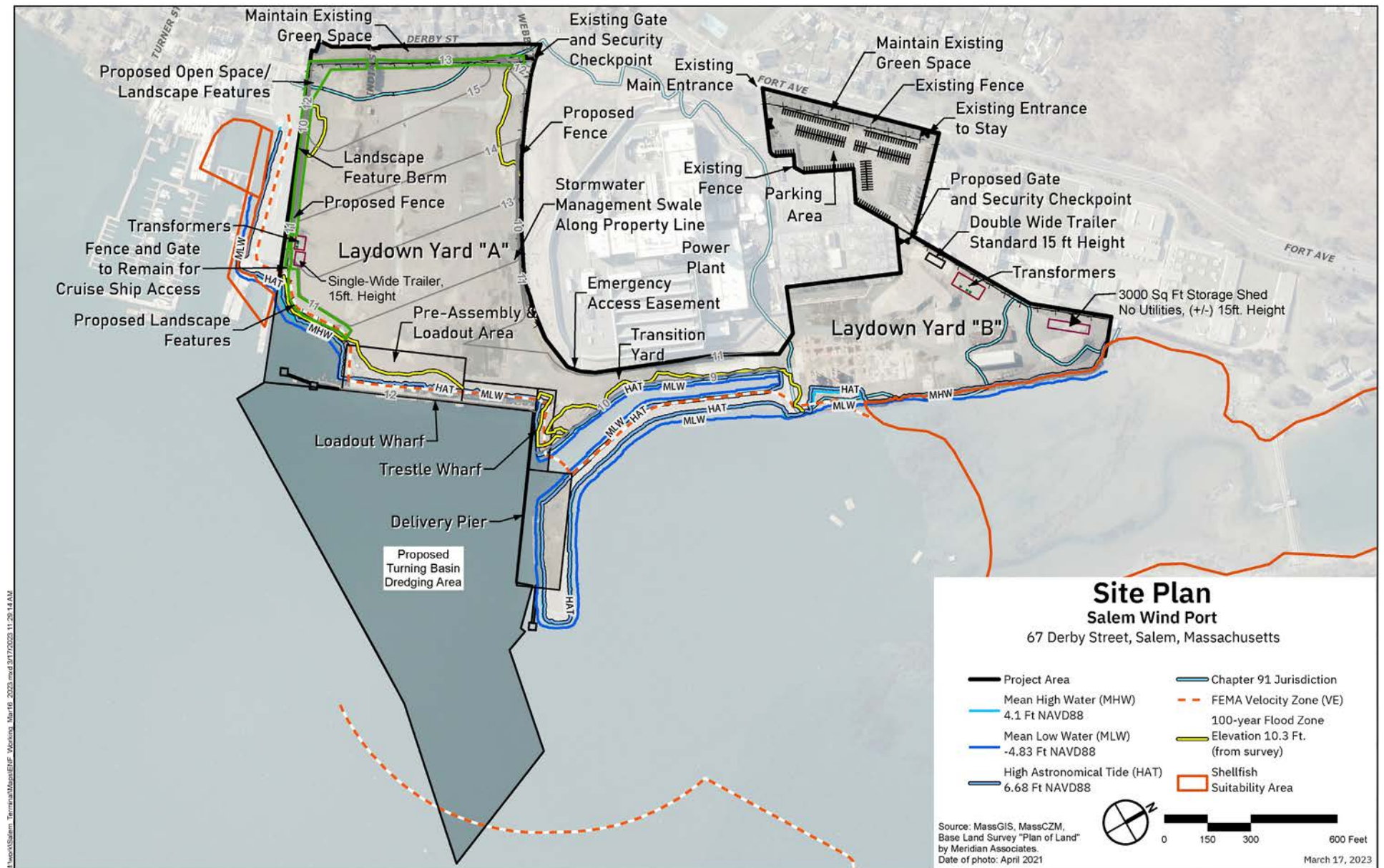
This project requires the use of industrial vessels along the shoreline and structures to support their use and transfer of large OSW turbine components. The Project constructs wharves and piers to support transfer of these OSW components. The berths and Basin will also be dredged to improve navigation and access for these vessels.

Ports and Harbors Policy #5

Encourage, through technical and financial assistance, expansion of water dependent uses in Designated Port Areas and developed harbors, re-development of urban waterfronts, and expansion of physical and visual access.

The Project is expected to be supported by several federal, state, and local funding sources and technical assistance, which will protect existing and future water-dependent industrial uses within the Salem DPA. The Project will redevelop an industrial waterfront as a WDIU that will support the City of Salem's port and economic development and tourism goals. This urban waterfront, which has supported the City's growth over the past 100 years, will continue with new modern and resilient infrastructure that is designed to last for the next 50 years.





Chapter 5

PUBLIC BENEFIT DETERMINATION

CHAPTER 5: PUBLIC BENEFITS

5.1 PUBLIC AND COMMUNITY BENEFITS

As described below, the Project will provide substantial public benefits to the community, City of Salem, and the Commonwealth of Massachusetts both during construction and operational phases.

Renewable Energy Goal

The Project will help support the Commonwealth of Massachusetts' goal for renewable energy as expressed in the *Massachusetts 2050 Decarbonization Roadmap*, which states that offshore wind (OSW) is one of its key components. Once developed, this Project will be a strategic asset that will support the development of future OSW projects due to its deep water access and unrestricted height for the large vessels shipping the OSW components, and for the large land area that is needed to store and move the massive OSW components within the laydown yards. The generation of electricity at OSW farms will also help reduce greenhouse gas emissions, which is another key goal of the Commonwealth that this Project supports by assembling and delivering OSW components to the wind farms.

Economic, Tourism, and Job Development for the City of Salem

The Project will support the City of Salem's and the Salem Harbor Port Authority's economic and tourism goals and enables the Commonwealth to remain at the forefront of the OSW industry and to take full advantage of the nation's rapidly growing OSW industry on the East Coast, especially as the industry matures and new technologies, such as floating OSW, become more common. Investment will be made in a new and promising industry for the City of Salem with workforce development and training in the OSW industry, including partnerships with high schools like Salem High School, local colleges like Salem State University, nonprofits, and academies to provide Global Wind Offshore (GWO) Training and other training programs. The Project will support approximately 123 jobs during construction and up to 200 jobs when it is in full operation. The reconstructed wharf will allow cruise ships of up to 650 feet long with up to a 20-foot draft to berth and bring in hundreds of tourists that support the local economy and increase public access to the historic waterfront each year. Cruise ship visitations and scheduling will be coordinated with the Salem Harbor Port Authority to ensure that port is safe and secure, and maximize the use of the improved berths at the Project Site and the existing berths at the Salem Wharf off Blaney Street.

Municipal Harbor Plan Consistency

The Project, which is a water-dependent industrial use within the Salem Designated Port Area (DPA), is consistent with the City of Salem's Approved 2008 Salem Municipal Harbor Plan (MHP) and Designated Port Area (DPA) Master Plan and the draft 2023 Salem MHP and DPA

Master Plan. It reflects the City's commitment to further developing the DPA and conforms with the 2023 MHP's preference of OSW use for this Project Site (see also Section 4.3.1, Applicable Chapter 91 Standards).

Port and Infrastructure Improvements

The Project will improve the State Turning Basin (the "Basin"), wharves, and port facilities to support existing and future maritime industrial uses in Salem Harbor and the recommendations of the Salem MHP. Substantial investment will be made to this existing facility, which needs new infrastructure to use the wharfs for both OSW vessels and cruise ships. These improvements will revitalize a currently vacant site and underutilized infrastructure, and set the stage for port uses over the next several decades.

Public Open Space

The existing tree-lined open space along Derby Street and Fort Avenue will be maintained and expanded as described below. The Project will add more than 50,000 square feet (SF) of landscaped open space along Derby Street and the southern border along the Salem Wharf parking lot. This space will provide a buffer between the Project Site and the neighborhood along Derby Street and the public areas at Salem Wharf parking area.

Environmental Protection

The Project will improve stormwater management to increase and protect water quality in Salem Harbor. The regrading of this Project Site, which has a long history of industrial use, will help mitigate stormwater impacts, treat stormwater runoff, improve water quality of Salem Harbor.

5.2 COMPLIANCE WITH PUBLIC BENEFIT DETERMINATION REGULATIONS

The Project will comply with applicable environmental regulatory programs of the Commonwealth, including the Massachusetts Environmental Policy Act (MEPA), Massachusetts Wetlands Protection Act (WPA) and Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Standards. Chapter 91 applications will be submitted to MassDEP to improve the Project Site for use as a wind turbine marshalling terminal and for dredging. The Applicant has submitted a Notice of Intent (NOI) to the Salem Conservation Commission and a 401 Water Quality Certification application to MassDEP for fill and dredging. A Federal Consistency Review will be filed with the Massachusetts Office of Coastal Zone Management (MCZM). The Massachusetts Historical Commission (MHC) and Bureau of Underwater Archaeological Resources were given notice of this Project during the MEPA review process and raised no concerns.

Chapter 6

WETLANDS

CHAPTER 6: WETLANDS

6.1 INTRODUCTION

The Project Site is located on the shoreline in the northwest corner of Salem Harbor. The Wetlands Protection Act (WPA) and the City of Salem's Wetland Protection and Conservation Ordinance regulates work at the Project Site at 310 CMR 10.00. This chapter describes the wetland resources at the Project Site, potential impacts, and compliance with the performance standards. It also describes the findings of an eelgrass survey of a previously identified eelgrass bed south of the State Turning Basin (the "Basin") and addresses marine habitat and mitigation measures.

6.2 WETLAND RESOURCES

There are six state wetland resource areas on the Project Site. These areas include Land Subject to Coastal Storm Flowage (LSCSF), Coastal Bank, Coastal Beaches, Land Under the Ocean (LUO) in Designated Port Areas (DPAs), LUO, and Land Containing Shellfish. In addition, the City of Salem Wetlands Protection and Conservation Regulations protect these same six wetland resource areas and land within 100 feet of LSCSF. The Project Site also includes a regulated 100-foot Buffer Zone, which, while not a resource area, is protected under the WPA and the Bylaw. The mean high water (MHW) line and mean low water (MLW) line are located at Elevation (El.) 4.10 NAVD88 and El. -4.83 NAVD88, respectively. The boundaries of each resource area is described below. See Wetlands Resources Plan in Attachment L, Project Plans.

6.2.1 LAND SUBJECT TO COASTAL STORM FLOWAGE

LSCSF is "land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record, or storm of record, whichever is greater" (310 CMR 10.04). There are two Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) that cover the Project Site; Map No. 25009C0419G and Map No. 25009C0438G, both effective July 16, 2014. The FEMA 100-year Flood Zone is at El. 10 NAVD88 based on the FIRM (see Figure 6-1, FEMA 100-Year Flood Zone).

These flood maps were based on site elevations prior to the demolition of the coal fired power plant and construction of the new gas-fired power plant, which occurred in 2017 and resulted in an increased elevation across most of the Project Site. The 100-year flood zone used for resource area delineation is based on the Flood Insurance Study (No. 250009CV001C) at El. 10 NAVD88 and is plotted on the existing site elevations from a recent survey (see Wetland Resource Areas in

Attachment L, Project Plans). This 100-year flood zone runs mainly along the water side of the Project Site. The LSCSF extends seaward from this line to the MHW line along the entire waterfront except where there is a Velocity (VE) Zone at El. 13 NAVD88. Most of the shoreline, including the jetty pier, are mapped as VE Flood Zones and extend approximately 20 feet from the shore as shown on Figure 6-1.

6.2.2 COASTAL BANK

Coastal Bank is defined at 310 CMR 10.30(2) as “the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action or other wetland.” The Top of Coastal Bank, as defined by Massachusetts Department of Environmental Protection (MassDEP) DWW Policy 92-1, is the top of or the first major break in the face of the coastal bank.

Coastal Bank extends around the entire waterside edge of the Project Site and is a manmade shoreline consisting of sloped riprap revetments and the vertical sheet pile seawalls. The line representing the Coastal Bank on the Wetland Resources Plan in Attachment L is the Top of Bank as defined above.

100-Foot Buffer Zone to Coastal Bank

Per 310 CMR 10.30(6), the Buffer Zone extends 100 feet inland from the Top of Bank.

6.2.3 COASTAL BEACHES

Coastal Beaches are defined in 310 CMR 10.27(2) as “unconsolidated sediment subject to wave, tidal and coastal storm action which forms the gently sloping shore of a body of salt water and includes tidal flats. Coastal beaches extend from the mean low water line landward to the dune line, coastal bank line or the seaward edge of existing human-made structures, when these structures replace one of the above lines, whichever is closest to the ocean.”

Several small areas of Coastal Beach are found along the northeast portion of the Project Site adjacent to Cat Cove.

6.2.4 LAND CONTAINING SHELLFISH

Land Containing Shellfish is defined in 310 CMR 10.34(2) as “land under the ocean, tidal flats, rocky intertidal shores, salt marshes and land under salt ponds when any such land contains shellfish.” The shellfish included under this regulation are Bay scallops (*Argopecten irradians*), blue mussels (*Mytilus edulis*), ocean quahogs (*Arctica islandica*) Oysters (*Crassostrea virginica*), quahogs (*Mercenaria merceneria*), razor clams (*Ensis directus*), sea clams (*Spisula solidissima*), sea scallops (*Placopecten magellanicus*), and soft-shell clams (*Mya arenaria*).

This resource area is within the Project Site on the northeast side and outside of the Project Site along the southwest corner near the Salem Wharf (see Figure 1-9, Project Site Plan). These two areas are outside of the scope of work and are not expected to be impacted by the Project. Furthermore, this resource area is mapped as Prohibited, which means that shellfish cannot be harvested for human consumption.

6.2.5 LAND UNDER THE OCEAN IN DESIGNATED PORT AREAS

The LUO resource area is defined in 310 CMR 10.25(2) as:

Land extending from the mean low water line seaward to the boundary of the municipality's jurisdiction and includes land under estuaries.

The LUO resource area at the Project Site was identified as the area seaward of MLW (-4.83 NAVD88). All land seaward of this elevation on the Project Site is regulated as LUO (see Wetlands Resources Plan in Attachment L, Project Plans).

6.2.6 BUFFER ZONES

A Buffer Zone is associated with wetland resources present on the Project Site, including Coastal Bank as defined above in section 6.2.2. Land within 100 feet landward of a Coastal Bank is defined under the WPA regulations as Buffer Zone.

Local 100-foot Buffer Zone

In addition to the above listed resource areas, the City of Salem Wetlands Protection and Conservation Regulations regulate a 100-foot Buffer Zone which protects land extending 100 feet horizontally outward from the boundary of all the resource areas subject to protection under the Salem Wetlands Ordinance except for Riverfront Area, Land Under Waters, Land Containing Shellfish, Fish Runs, Land Subject to Tidal Action, and DPAs. Within the Buffer Zone, the ordinance establishes a 25-foot no disturb and a 50-foot mitigation zone. The Buffer Zone itself is not a resource area. The Project Site is located within the Salem DPA and therefore, the regulations for the local 100-foot Buffer Zone do not apply.

6.3 WETLAND IMPACTS, COMPLIANCE, AND MITIGATION

6.3.1 IMPACTS

Impacts to the wetland resource areas from the Project activities are associated with dredging activities in the Basin, construction of a new pier and wharf, and upland soil improvements in LSCSF. Approximately 23 acres of resource area, consisting of the LSCSF, Coastal Bank, LUO in DPAs, and LUO will be altered by the Project. The

Project has been designed to avoid and minimize impacts to the resource areas wherever possible.

Temporary and permanent impacts, including improvements, to the Project Site's wetland resource areas are described below in Table 6-1. As shown on the Wetlands Resource Plan in Attachment L, many of the wetland resource areas overlap and are partially or wholly within the limits of LSCSF.

Table 6-1, Wetland Resource Area Impacts

Resource Area	Project Work	Temporary Impacts	Permanent Impacts
Land Subject to Coastal Storm Flowage	Improvements to soil structure to accommodate heavy loads, removal of jetty pier and improvements to the existing wharf	0 SF	160,420 SF
Coastal Bank	Removal of portions of the existing jetty pier, storm drain outfall installation, and stabilization of bank under the loadout wharf	0 LF	1,210 LF
Coastal Beaches	None	0 SF	0 SF
Land Containing Shellfish	None	0 SF	0 SF
Land Under the Ocean	Improvement and maintenance dredging, pile driving to support new pier and wharf, and stabilization of bulkheads	0 SF	950,500 SF
Land Under the Ocean in DPAs	Improvement and maintenance dredging, pile driving to support new pier and wharf, and stabilization of bulkheads	0 SF	950,500 SF
100-Foot Buffer Zone	Removal of existing jetty pier, shoreline improvements, Improvements to soil structure to accommodate heavy loads	0 SF	441,240 SF

6.3.2 COMPLIANCE WITH WETLAND PROTECTION ACT PERFORMANCE STANDARDS

This section describes the compliance of each of the Project activities in WPA jurisdiction with the applicable regulatory performance standards for the respective resource areas.

The planned work occurs within LSCSF, LUO, Coastal Bank, LUO in DPAs, and the 100-Foot Buffer to Coastal Bank. The following details of resource area compliance are presented from the furthest landside resource area (LSCSF) to the resource areas furthest seaward (LUO).

No areas of the Project Site are identified as Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife by the Natural Heritage and Endangered Species Program, as identified by procedures established under 310 CMR 10.37 (Natural Heritage Areas, 14th Edition, 2017).

Land Subject to Coastal Storm Flowage

There are no regulatory performance standards for LSCSF under 310 CMR 10.00. The Project Site will be elevated to approximately 2 feet above the base flood elevation (BFE), which will help to reduce flooding and storm damage on the Project Site from coastal storms. The overall area of LSCSF will be reduced after the Project Site is regraded and raised.

Coastal Bank

There will be some permanent impacts to Coastal Bank with the reconstruction of the wharf, pier, and transition yard. The coastal bank, which consists mainly of vertical sheet piling, sloped riprap, and stone block walls, is failing in some areas along the existing main wharf and will have new riprap and steel sheet piling to stabilize them. Table 6-2 below describes how the Project will comply with performance standards for Coastal Bank as presented in 310 CMR 10.30.

Table 6-2, Compliance with Performance Standards for Coastal Bank (310 CMR 10.30)

COASTAL BANK PERFORMANCE STANDARD	COMPLIANCE WITH PERFORMANCE STANDARD
310 CMR 10.30(6): Any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.	The Project will not have any adverse effects to the stability of the Coastal Bank. Work done on and around the Coastal Bank will include drainage installation and construction of the jetty

COASTAL BANK PERFORMANCE STANDARD	COMPLIANCE WITH PERFORMANCE STANDARD
	pier in order to accommodate delivery of the OSW turbine components and the vessels that will be docking at and near the Coastal Bank. Work on the loadout wharf will improve the stability of the existing coastal bank, which will be stabilized by riprap and sheet piling. This new work will increase the stability of the coastal bank, which is failing.
310 CMR 10.30(7): Bulkheads, revetments, seawalls, groins or other coastal engineering structures may be permitted on such a coastal bank except when such bank is significant to storm damage prevention or flood control because it supplies sediment to Coastal Beaches, coastal dunes, and barrier beaches.	The proposed work on the Coastal Bank will include sheet pile bulkheads and riprap seawalls. The existing Coastal Bank is armored with sheet pile and riprap and does not supply sediment to Coastal Beaches, coastal dunes, or barrier beaches.
310 CMR 10.30 (8): Notwithstanding the provisions of 310 CMR 10.30(3) through (7), no project may be permitted with which will have an adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.	There are no specified habitat sites of rare vertebrate or invertebrate species on or near the Project Site.

Coastal Beaches

There are expected to be no impacts to Coastal Beaches as a result of the Project. Table 6-3 below shows how the Project complies with the performance standards for Coastal Beaches as described in 310 CMR 10.27.

Table 6-3, Compliance with Performance Standards for Coastal Beaches (310 CMR 10.27)

COASTAL BEACHES PERFORMANCE STANDARD	COMPLIANCE WITH PERFORMANCE STANDARD
310 CMR 10.27(3): Any project on a coastal beach, except any project permitted under 310 CMR 10.30(3)(a), shall not have an adverse effect by increasing erosion, decreasing the volume or changing the form of any	The Project will not have any impacts on Coastal Beaches within the Project Site.

COASTAL BEACHES PERFORMANCE STANDARD	COMPLIANCE WITH PERFORMANCE STANDARD
such coastal beach or an adjacent or downdrift coastal beach.	
<p>310 CMR 10.27(4): Any groin, jetty, solid pier, or other such solid fill structure which will interfere with littoral drift, in addition to complying with 310 CMR 10.27(3), shall be constructed as follows:</p> <p>(a) It shall be the minimum length and height demonstrated to be necessary to maintain beach form and volume. In evaluating necessity, coastal engineering, physical oceanographic and/or coastal geologic information shall be considered.</p> <p>(b) Immediately after construction any groin shall be filled to entrapment capacity in height and length with sediment of grain size compatible with that of the adjacent beach.</p> <p>(c) Jetties trapping littoral drift material shall contain a sand by-pass system to transfer sediments to the downdrift side of the inlet or shall be periodically redredged to provide beach nourishment to ensure that downdrift or adjacent beaches are not starved of sediments.</p>	<p>There are no solid fill structures proposed with the Project within Coastal Beaches.</p>
<p>310 CMR 10.27(5): (5) Notwithstanding 310 CMR 10.27(3), beach nourishment with clean sediment of a grain size compatible with that on the existing beach may be permitted.</p>	<p>There is no beach nourishment proposed within the Project in the Coastal Beaches.</p>
<p>310 CMR 10.27(6): In addition to complying with the requirements of 310 CMR 10.27(3) and (4), a project on a tidal flat shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water-dependent, have no adverse effects, on marine fisheries and wildlife habitat caused by:</p> <p>(a) alterations in water circulation;</p> <p>(b) alterations in the distribution of sediment grain size; and</p>	<p>There are no tidal flats on the Project Site, so there will be no impacts to tidal flats as a result of the Project.</p>

COASTAL BEACHES PERFORMANCE STANDARD	COMPLIANCE WITH PERFORMANCE STANDARD
(c) changes in water quality, including, but not limited to, other than natural fluctuations in the levels of dissolved oxygen, temperature or turbidity, or the addition of pollutants.	
310 CMR 10.27(7): Notwithstanding the provisions of 310 CMR 10.27(3) through (6), no project may be permitted which will have any adverse effect on specified habitat sites or rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.	There are no specified habitat sites of rare vertebrate or invertebrate species on the Project Site.

Land Under the Ocean

There will be both temporary and permanent impacts to the LUO resource area as a result of dredging activities and the construction of a new pier and wharf, and these are the same impacts to the DPA. Table 6-4 details how the Project will comply with the performance standards for LUO, as described in 310 CMR 10.25.

Table 6-4, Compliance with Performance Standards for Land Under the Ocean (310 CMR 10.25)

LAND UNDER THE OCEAN PERFORMANCE STANDARD	COMPLIANCE WITH PERFORMANCE STANDARD
<p>310 CMR 10.25(3): Improvement dredging for navigational purposes affecting land under the ocean shall be designed and carried out using the best available measures so as to minimize adverse effects on such interests caused by changes in:</p> <p>(a) bottom topography which will result in increased flooding or erosion caused by an increase in the height or velocity of waves impacting the shore;</p> <p>(b) sediment transport processes which will increase flood or erosion hazards by affecting the natural replenishment of beaches;</p> <p>(c) water circulation which will result in an adverse change in flushing rate, temperature, or turbidity levels; or</p>	<p>Improvement dredging of the LUO will be conducted with best management practices (BMPs) in order to prevent adverse effects. The dredging will be conducted in water that is approximately 32 feet below MLW, and therefore will not result in an increase in the height or velocity of waves that would cause flooding or erosion (see also Section 6.5 for additional details). Dredging several feet deeper within area the has been historically dredged to 32 feet below MLW for many decades to similar depths will not affect sediment transport processes or water circulation that could increase flood or erosion hazards by affecting the natural</p>

LAND UNDER THE OCEAN PERFORMANCE STANDARD	COMPLIANCE WITH PERFORMANCE STANDARD
<p>(d) marine productivity which will result from the suspension or transport of pollutants, the smothering of bottom organisms, the accumulation of pollutants by organisms, or the destruction of marine fisheries habitat or wildlife habitat.</p>	<p>replenishment of beaches or flushing rate, turbidity level, or temperature. BMPs to mitigate impacts to marine productivity include the use of turbidity curtains to control sedimentation, following time of year restrictions as designated by the Massachusetts Division of Marine Fisheries (DMF) to protect fisheries and marine wildlife, and slow start pile driving practices in order to minimize impacts to marine fisheries and habitats within the LUO resource area.</p>
<p>310 CMR 10.25(4): Maintenance dredging for navigational purposes affecting land under the ocean shall be designed and carried out using the best available measures so as to minimize adverse effects on such interests caused by changes in marine productivity which will result from the suspension or transport of pollutants, increases in turbidity, the smothering of bottom organisms, the accumulation of pollutants by organisms, or the destruction of marine fisheries habitat or wildlife habitat.</p>	<p>Maintenance dredging of the LUO will be conducted with BMPs in order to prevent adverse effects. These efforts include the use of turbidity curtains to control sedimentation, following time-of-year restrictions (TOY), use of an environmental clamshell bucket, and slow start pile driving requirements as designated by the DMF to protect fisheries and marine wildlife.</p>
<p>310 CMR 10.25(5): Projects not included in 310 CMR 10.25(3) or (4) which affect nearshore areas of land under the ocean shall not cause adverse effects by altering the bottom topography so as to increase storm damage or erosion of coastal beaches, coastal banks, coastal dunes, or salt marshes.</p>	<p>The Project is subject to the regulations for work in DPAs pursuant to 310 CMR 10.25.</p>
<p>310 CMR 10.25(6): (6) Projects not included in 310 CMR 10.25(3) which affect land under the ocean shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water-dependent, have no adverse effects, on marine</p>	<p>The Project is subject to the regulations for work in DPAs pursuant to 310 CMR 10.25.</p>

LAND UNDER THE OCEAN PERFORMANCE STANDARD	COMPLIANCE WITH PERFORMANCE STANDARD
fisheries habitat or wildlife habitat caused by: (a) alterations in water circulation; (b) destruction of eelgrass (<i>Zostera marina</i>) or widgeon grass (<i>Rupia maritima</i>) beds; (c) alterations in the distribution of sediment grain size; (d) changes in water quality, including, but not limited to, other than natural fluctuations in the level of dissolved oxygen, temperature or turbidity, or the addition of pollutants; or (e) alterations of shallow submerged lands with high densities of polychaetes, mollusks or macrophytic algae.	
310 CMR 10.25(7): Notwithstanding the provisions of 310 CMR 10.25(3) through (6), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.	There are no specified habitat sites of rare vertebrate or invertebrate species on the Project Site.

Land Under Ocean in Designated Port Areas

There will be both temporary and permanent impacts to the LUO in DPAs resource area as a result of dredging activities and the construction of a new pier and wharf, and these are similar to the impacts discussed in the Land Under the Ocean section. Table 6-5 below details how the Project will comply with the performance standards for DPAs set forth in 310 CMR 10.26.

Table 6-5, Compliance with Performance Standards for Designated Port Areas (310 CMR 10.26)

DESIGNATED PORT AREA STANDARD	COMPLIANCE WITH PERFORMANCE STANDARD
310 CMR 10.26(3): Projects shall be designed and constructed, using best practical measures, so as to minimize adverse effects on marine fisheries caused by changes in: (a) water circulation;	Activities in the DPA on the Project Site will follow BMPs and a construction management plan in order to minimize the impact of construction-related activities on water circulation and water quality, including the level of

(b) water quality, including, but not limited to, other than natural fluctuations in the level of dissolved oxygen, temperature or turbidity, or the addition of pollutants.	dissolved oxygen, temperature, turbidity, and the addition of pollutants. These practices may include, but are not limited to, sedimentation control measures such as turbidity curtains, following time of year restrictions, slow start pile driving, and use of an environmental clamshell bucket for maintenance dredging.
310 CMR 10.26(4): Projects shall be designed and constructed, using the best practical measures, so as to minimize adverse effects on storm damage prevention or flood control caused by changes in such land's ability to provide support for adjacent coastal banks or adjacent coastal engineering structures.	The Project is designed to improve the existing shoreline and wharf infrastructure to support the Project's goals while also minimizing flooding and storm damage on the Project Site. The Project Site is on a peninsula in a flood zone, so controlling flooding and future sea level rise on the Project Site is a challenge. However, the design will not be impacting the ability of the land on the Project Site to provide support for adjacent coastal banks or coastal engineering structures and should improve the strength of the existing shoreline and landward infrastructure. See Section 10.2, Flood Analysis, which addresses potential impacts to adjacent properties.

WPA Buffer Zone to Coastal Bank

Work within the WPA Buffer Zone to Coastal Bank (which at the Project Site overlaps LSCSF) includes site grading, pier construction, and stormwater management. While no performance standards are associated with the Buffer Zone, the WPA recognizes the role the Buffer Zone plays in protecting the interests of the WPA. The Project will utilize all necessary BMPs to ensure that activities in the Buffer Zone do not impact overlapping or adjacent resource areas during the construction period or long term. In addition, those portions of the Buffer Zone work that occur within areas of LSCSF are specifically designed to improve waterfront conditions.

6.4 EELGRASS SURVEY FINDINGS AND MITIGATION

6.4.1 INTRODUCTION

On November 28, 2022, Megalodon Environmental, LLC (Megalodon) performed an assessment of approximately 0.25 acres of eelgrass (*Zostera marina*) habitat in Salem Harbor with the support of Fort Point Associates (FPA) and Burnham Marine. The

survey assessment aimed to determine if the eelgrass identified in historic mapping results provided by the MassDEP in Mass Mapper were present. Figure 6-2, MassDEP Eelgrass Survey Data shows the location of the eelgrass bed that MassDEP identified in 2016. The assessment area is adjacent to the Salem Harbor Power Development LP facility on the south side of the dredged basin in shallow water with a depth of approximately -8 feet at MLW.

The methodology and survey approach was submitted by Megalodon to the DMF for review prior to conducting the field assessment. The survey methodology included the review of aerial photographs and MassDEP eelgrass data in Mass Mapper prior to conducting dive surveys to determine the presence or absence of eelgrass in the identified area. The Megalodon diver dove along the established transects, based on 2016 MassDEP data, to establish the current edge of the eelgrass bed. The edge of the eelgrass bed is defined as the location where sediment was free from eelgrass blades. The diver placed anchored floats adjacent to the determined eelgrass edge to assist the topside boat team in obtaining georeferenced point locations. Once the diver exited the water, the team utilized an EOS Positioning System Arrow 100 to determine georeferenced points surrounding the eelgrass edge identified by the diver. In addition to determining the eelgrass edge, two linear transects were conducted between the 2016 MassDEP mapped area and the slope of the existing dredged Basin to understand if the eelgrass site has expanded towards the proposed dredge area since the 2016 MassDEP survey. See Attachment I: Eelgrass Survey for the full Megalodon report.

6.4.2 SURVEY RESULTS

The results of the survey assessment will be utilized to effectively inform mitigation measures employed by the Proponent to ensure the impact on the existing eelgrass bed is minimized. The survey determined that the current eelgrass patch is approximately 7,650 square feet (ft²) (729 square meters, m²). Utilizing the georeferencing data and the ground-truthing operations of the diver, Megalodon delineated the eelgrass bed. Figure 6-3, Eelgrass Survey Data: 2016 and 2023, shows the delineated Megalodon results to be very similar in shape and location to the 2016 MassDEP eelgrass layer. The diver did not observe any other eelgrass in the survey area, including the two linear transects conducted to the edge of the Basin and during the initial search for the subject eelgrass bed. The eelgrass bed is approximately 180 feet south of dredge area.

6.4.3 MITIGATION

FPA consulted with the DMF, who determined that, providing BMPs, the dredging activities could occur within 100 feet from the eelgrass bed. The Project will utilize two key mitigation measures to minimize the Project impact on the eelgrass bed: 1)

employment of turbidity curtains, and 2) use of environmental clamshell buckets during dredge operations. Both mitigation measures aim to control turbidity and sedimentation, which influences the health of eelgrass beds.

6.5 WAVE HEIGHT IMPACTS

The Project will be dredging the existing Basin, which has a design elevation of -32 feet mean lower low water (MLLW) and also is the same depth as the Federal Navigation Channel that extends approximately three miles from the Basin into Salem Sound. Some areas within the Basin have shoaled since it was last dredged approximately 20 years ago. Based on recent bathymetric surveys, some parts of the Basin will need to be dredged several feet deeper to ensure safe navigation and berthing of the OSW vessels and cruise ships.

Wave heights are dependent on wind speeds, water depths and wavelengths as the wave approaches the shoreline. Relatively small storm wave typically found in Salem Harbor are not impacted by the 30-foot plus deep waters of the Basin. Dredging the Basin several feet deeper, therefore, will not result in any changes to the wave heights and therefore there is no need to mitigate impacts.

6.6 MARINE HABITAT, IMPACTS, AND MITIGATION

6.6.1 MARINE HABITAT

The marine habitat consists of marine resources within the intertidal and subtidal resource areas within the Project Site. The intertidal zone extends from the MLW line to MHW, which runs entirely along engineered structures consisting of vertical sheet piles and sloped riprap. The subtidal habitat extends seaward from MLW to the extent of the Basin, which contains the DPA resource area.

According to DMF, "Salem Harbor provides forage habitat for a variety of fish and invertebrate species including but not limited to alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), rainbow smelt (*Osmerus mordax*), American eel (*Anguilla rostrata*), white perch (*Morone americana*), Atlantic tomcod (*Microgadus tomcod*), Atlantic cod (*Gadus morhua*) and American lobster (*Homarus americanus*). It is also habitat for the forage, spawning, and early development of winter flounder (*Pseudopleuronectes americanus*). Areas near the project site have been mapped as shellfish habitat by DMF for soft shell clam (*Mya arenaria*), northern quahog (*Mercenaria mercenaria*), razor clam (*Ensis directus*) and blue mussel (*Mytilus edulis*) within shellfish growing area N18.1, classified as Prohibited for shellfish harvest." See DMF Letter in Chapter 14, Response to Comments. The Project Site is also near an eelgrass bed located south of the Basin, outside of the DPA, as documented by the recent survey in Section 6.4 above. Eelgrass beds provide shelter and forage areas for marine fish and invertebrate species.

6.6.2 IMPACTS

Potential impacts to the marine habitat may result from dredging and sedimentation, which could potentially affect eelgrass beds, shellfish areas, and winter flounder spawning. Direct impacts to shellfish and eelgrass beds have been avoided through project design. Temporary impacts could occur due to sedimentation if not mitigated. The following list identifies potential impacts to these resources within the marine habitat due to dredging activities:

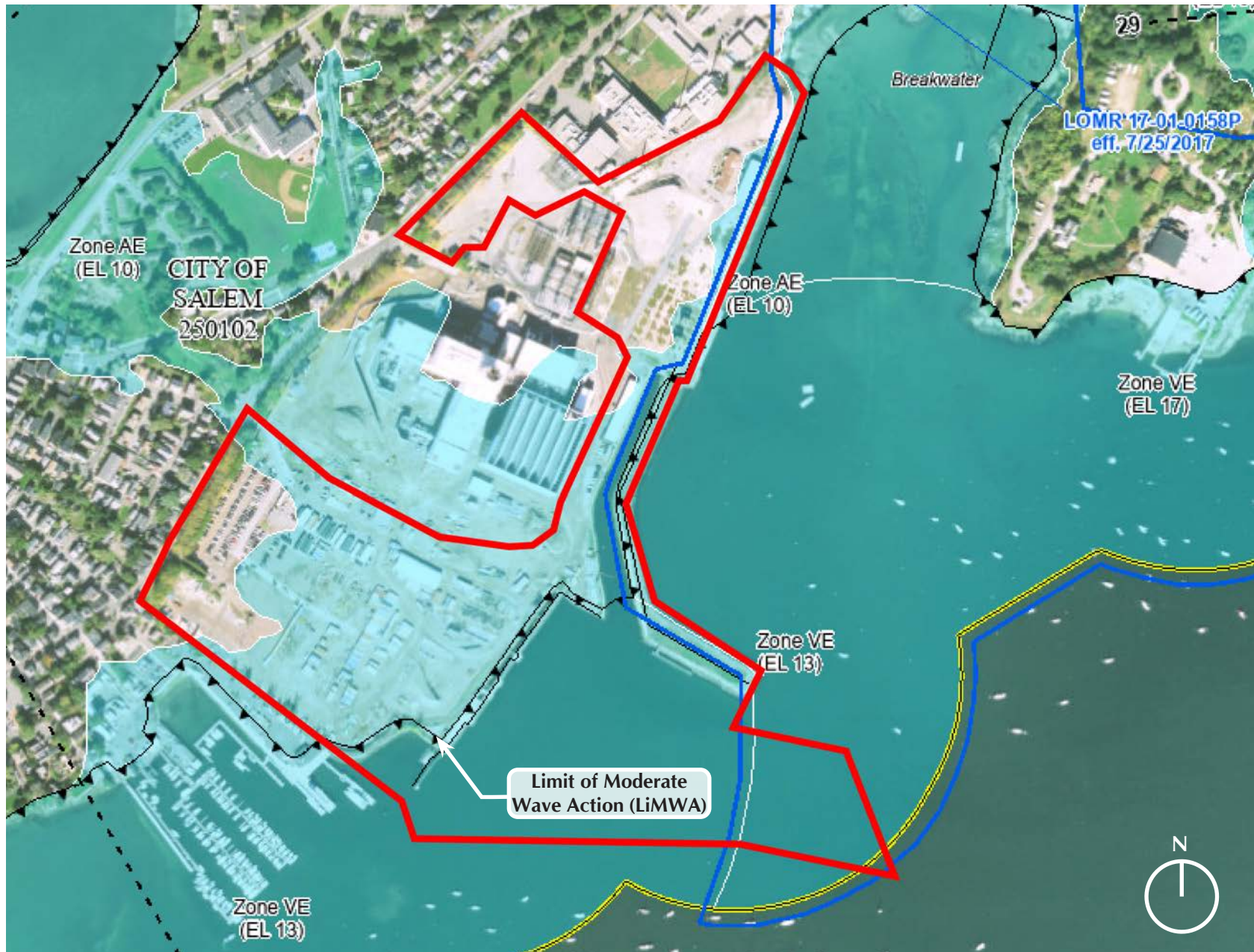
- Resuspension of sediments;
- Turbidity that would impact eelgrass growth that supports fish and invertebrate species; and
- Winter flounder dispersal which affects feeding, foraging, and spawning.

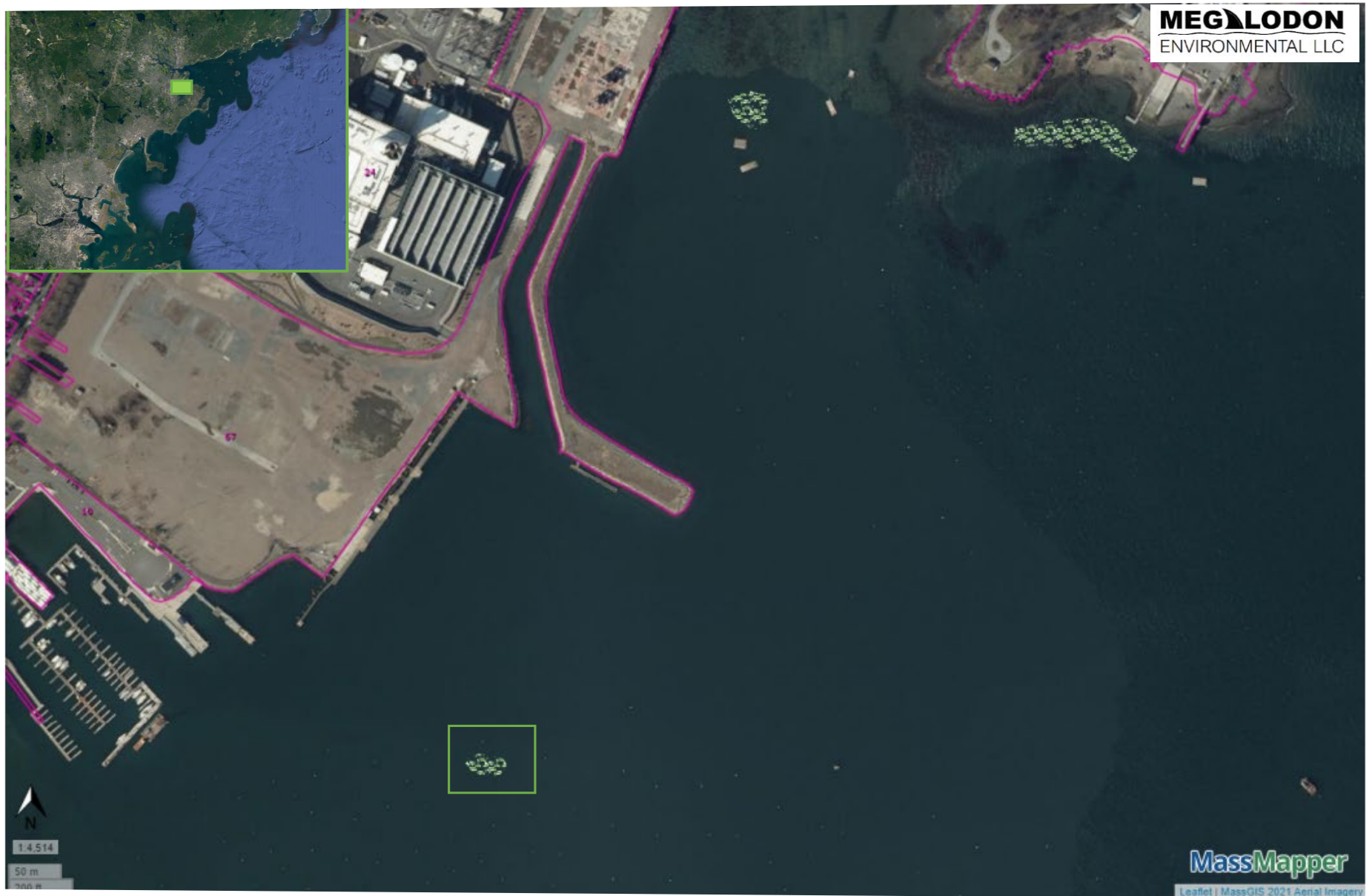
The proposed dredging will occur within the DPA, which has been previously disturbed with dredging and construction of engineered shoreline structures, including pile-supported piers, seawalls, and riprap revetments along the shoreline.

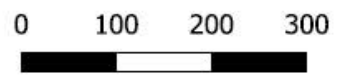
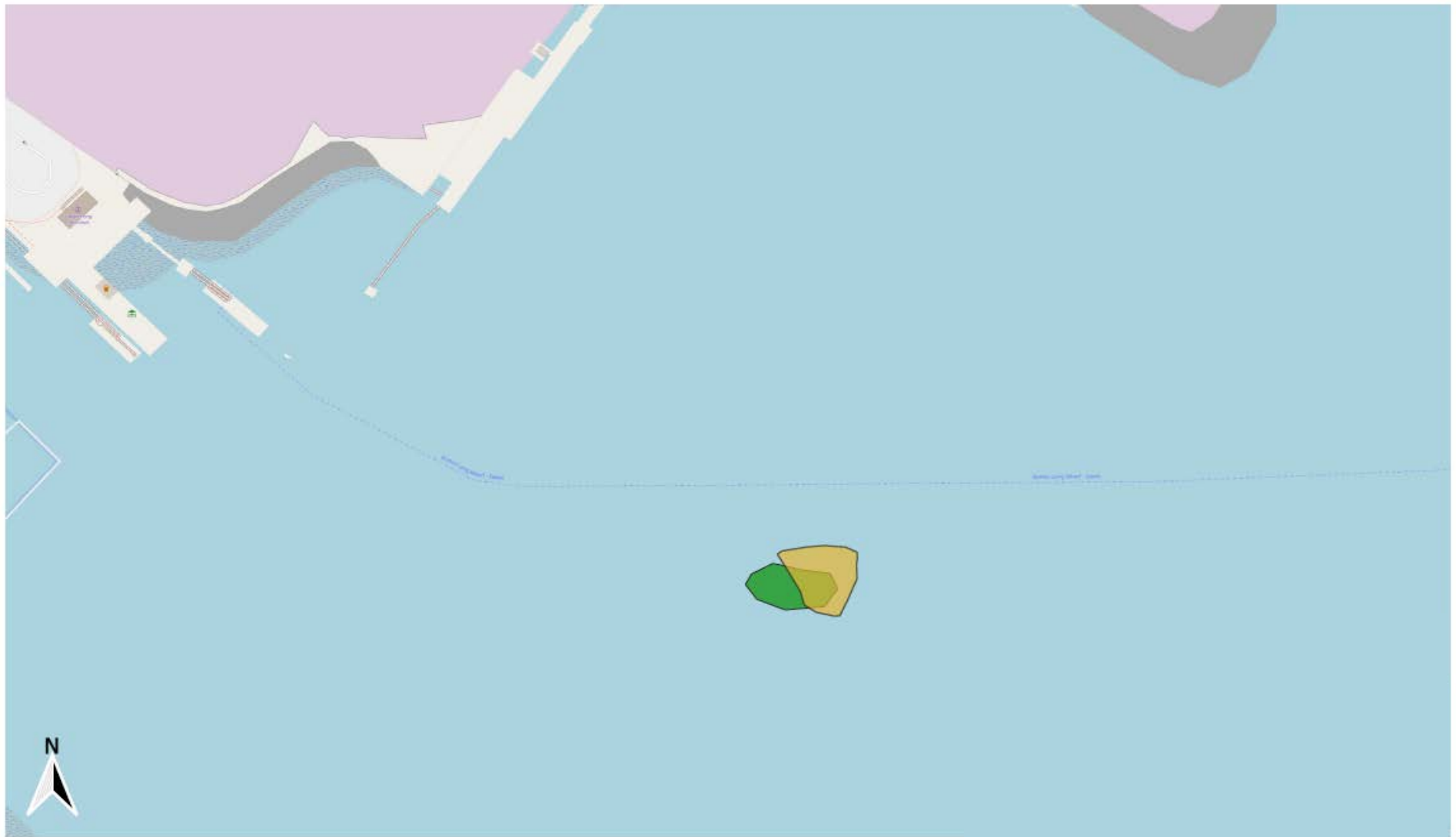
6.6.3 MITIGATION

Mitigation measures to reduce or prevent impacts to the marine habitat include:

- Observance of TOY restriction periods as required by the DMF, which will allow winter flounder spawning to occur without interruption.
- Use of an environmental clamshell bucket, which will minimize resuspension of sediments and turbidity during dredging operations.
- Employment of bottom-mounted, full-depth turbidity curtains to contain waters that have higher concentrations of suspended particulates due to dredging.







Salem Harbor Eelgrass Assessment conducted on January 28th 2023

- Eelgrass Habitat 2023
- MASS DEP Eelgrass2015_2017

MEGALODON
ENVIRONMENTAL LLC

Chapter 7

DREDGING AND DISPOSAL

CHAPTER 7: DREDGING AND DISPOSAL

7.1 INTRODUCTION

To achieve the objectives and full operational capabilities of the marshalling terminal, certain areas need to be dredged within the State Turning Basin (the “Basin”) and adjacent to the reconstructed loadout wharf and new delivery pier. This dredging is required to accommodate many different vessels that will be entering, exiting, and docking around the Project Site, including Wind Turbine Installation Vessels (WTIVs), Heavy Transport Vessels (HTVs), barges, freighters, and tugs.

The Basin has been dredged repeatedly since the site was used to deliver bulk coal in the 1920s and once since the Salem Harbor DPA was established in 1978. Past dredging in this area is described in further detail in Section 7.2 below. The proposed Project dredging will be a combination of maintenance dredging in previously dredged areas and improvement dredging along and within the berths.

Dredge material sampling has occurred at this location as part of previous dredging activities. The first phase of dredge samples have been collected and analyzed (see Attachment K, Phase 1 Sampling Analysis). Additional samples will be collected and tested this year before dredging commences at the Project Site in compliance with Massachusetts Department of Environmental Protection (MassDEP) and U.S. Army Corps of Engineers (USACE) regulations.

The adjacent Federal Navigation Project (the main entrance channel to Salem Harbor) has also been dredged several times since it was created in 1905. The USACE is currently planning to dredge the Federal Navigation Channel within the next two years, which will help support navigational access to the port.

7.2 HISTORY OF DREDGING

As part of the development of Salem Harbor for industrial and maritime uses, the area in and around the Project Site has been dredged regularly over the past 100 years. The first documented dredging occurred at Salem Harbor in 1924, with dredging occurring in the berthing area and approach channel to achieve a maximum depth of 26 feet below mean low water (MLW) (Chapter 91 License No. 392). In 1927, License No. 1100 was issued to permit the dredging of 3,000 cubic yards (CY) of material at the head of the Salem Terminal Corporation Dock. Two years later, License No. 1069 was issued to allow dredging to create a 25-foot-deep channel to connect to an existing berthing area. In 1935, License No. 2694 was approved to allow 5,000 CY of material at the dock at the head of the wharf to be dredged. License No. 3747 was issued five years later to allow the re-dredging of 20,000 CY of material from the berthing area and approach channel.

The Project Site was purchased for the creation of the Salem Harbor Generating Station in 1947, and one year later, License No. 3098 was issued to allow dredging to a depth of elevation -16 feet in front of the intake screens as part of the operation of the power station. In 1951, License No. 4976 was issued for the dredging of 130,000 CY of material in the approach channel and berthing area, changing the depth in the approach channel and berthing area to -25 feet and -30 feet, respectively. License No. 3624 was issued to re-dredge the area in front of the intake structure in 1954, and two years later, License No. 5299 was issued to permit dredging in the intake channel. License No. 5419 was issued in 1958 to re-dredge the berthing area and approach channel to the same depths as dredged in 1951. In 1969, License No. 5589 was issued to allow dredging in the area in front of the intake screens to an elevation of -20 feet. The New England Power Company was issued two permits, one from the Massachusetts Division of Waterways (Permit No. 5906) and one from the USACE (Permit No. MA-SALE-73-50), in 1973 to conduct maintenance dredging to an elevation of -32 feet at the Basin, including the areas of the navigation channel and berthing area. In 2002, USGen New England, Inc., Salem Harbor Station, received approval with License No. 9383 to dredge 42,199 CY in the Basin, which includes the berthing area and approach channel, to return this area to an elevation of -32 feet. The adjacent federal navigation project was dredged in 2006-2007. This effort resulted in the dredging of 339,039 CY of material. Dredge material from the most recent past two dredging activities was disposed of at the offshore Massachusetts Bay Disposal Site (MBDS).

7.3 PROJECT DREDGING

The Project's maintenance and improvement dredging will remove approximately 80,190 CY of material (see Table 7-1, Dredge Locations, Depths, and Areas and Figure 7-1, Dredging Plan). Maintenance dredging occurs in areas that have been dredged at least once as part of the function and operation of the Project Site, as previously described in Section 7.2. Improvement dredging occurs in areas of the harbor that are deeper than previously authorized or have never been dredged.

Table 7-1, Dredge Locations, Depths, and Areas

Dredge Location	Depth		Area (SF)	Area (Acres)
Turning Basin	-32' MLLW, 2' Overdredge		652,447	14.97
Loadout Wharf & Delivery Pier berths	-34' MLLW, 2' Overdredge		231,841	5.32
Loadout Wharf & Delivery Pier Scour Protection	-36' MLLW, 2' Overdredge		12,588	0.29
		Subtotal	896,876	20.59
		Side Slopes	32,474	0.74
		Total	929,350	21.33

The proposed berth areas will be dredged to -34 feet with a 2-foot overdredge to accommodate WTIVs and HTVs, and other deep draft vessels along the loadout and delivery wharfs. The proposed scour protection pocket dredging area is in front of the proposed loadout wharf and delivery pier, and will be dredged to -36 feet with a 2-foot overdredge 10 feet outboard from the wharf walls. This depth is slightly deeper than the rest of the maintenance dredging to allow scour protection measures to be placed along the wharf to maintain the stability of the steel sheet pile bulkhead and Coastal Bank. The remaining areas within the Basin will be dredged to -32 feet with a 2-foot overdredge, which will return the Basin to the elevation of the last maintenance dredging depths that occurred in 2002 and make it consistent with the authorized depth of the federal channel.

Dredging will comply with time-of-year (TOY) restrictions associated with the protection of marine habitats and fish. The Proponent will work with the Massachusetts Division of Marine Fisheries (DMF) to determine the TOY period and mitigation measures needed to protect marine resources. Based on the EENF comment letter from the Division of Marine Fisheries, a TOY restriction for winter flounder spawning is expected from February 15 to June 30.

7.4 DREDGING SAMPLING PLAN

A Draft Sampling and Analysis Plan (SAP) was submitted to the MassDEP and the USACE in August 2022 for review and approval. Although MassDEP comments on the SAP, they rely on the USACE Suitability Determination since they and the USEPA manage the disposal of material at the MBDS in accordance with Section 103 of the Clean Water Act. The USACE approved the SAP on October 25, 2022 (see Attachment J: Sampling and Analysis Plan).

Dredge samples and analyses are required to assess the environmental conditions of the sediment and determine where they can be disposed of. The total dredge area described in the SAP has been split into four dredging units (DUs). These DUs address the sampling areas for the Project and the potential improvement dredge areas located on the north and south sides of the existing Basin that are part of the Maximum Build Alternative. To see more detailed information about the SAP, analysis procedure, and quality control processes, also see Attachment J.

The field investigation and sample core collection at 15 locations was conducted December 13 through 15, 2022 to obtain continuous, minimally disturbed sediment, to the extent possible. Laboratory quality control samples were analyzed with each batch, which were tested for physical and chemical properties. A summary of the physical and chemical testing program is provided in Attachment K, Phase 1 Sampling Analysis. Based on the results of the Phase 1 sediment sampling, additional coordination with USACE-New England District will be conducted to determine the Phase 2 sampling program.

7.5 MATERIAL CHARACTERIZATION

An analysis of sediments is needed to determine the location, number, and types of samples to be taken at the proposed dredge areas. Prior sampling results from the Basin in 2002 and adjacent area on the south side near Salem Wharf in 2009 have resulted in approval of the dredge material to be disposed of at the MBDS, which is located approximately 15 nautical miles southeast of the Project Site. The proposed sampling locations are representative of the prior dredged areas and are expected to have similar results.

7.6 CONSTRUCTION METHOD AND SEQUENCE OF ACTIVITIES

The basic construction method and sequence is set forth below. Prospective contractors bidding on the dredge and shoreline work may have their own method and sequence of activities based on their experience and evaluation of the Site and proposed plans. Additional details on means and methods can be provided when a contractor is selected. Dredging operations will be coordinated with the appropriation agencies including the Salem Harbor Port Authority, the USACE, and the US Coast Guard.

A bottom anchored turbidity curtain will be deployed and secured around the area to be dredged in advance of any work in accordance with requirements by the DMF. Depending on the location of work, the turbidity curtain will be stayed by spud piles or by tie-offs to nearby land fixtures.

Sediment will be dredged using an excavator or crane equipped with an environmental clam shell bucket. The dredged material will be transferred into a hopper barge or scow in preparation for transport, likely to MBDS.

7.7 MITIGATION MEASURES

The “environmental type,” clam shell bucket will be equipped with rubber seals and overlapping sides to minimize the quantity of sediment that will flow into the water column when the dredged sediment is conveyed into the accompanying collection barge or scow. The bucket will close around the bottom sediment and the operator will be notified by a signal that the bucket is sealed. If the bucket does not seal, then the operator will investigate for obstructions and take appropriate action to allow the bucket to seal before raising it through the water column. This type of operation will result in a reduction in the amount of turbidity during dredging operations as compared to a standard bucket.

Turbidity monitoring will be conducted in association with the dredging work to assess the potential for ongoing impacts associated with sediment disturbance, in particular to ensure no adverse impacts to nearby eel grass beds.

Dredging will comply with time-of-year (TOY) restrictions associated with the protection of marine habitats and fish. The Proponent will work with the Massachusetts Division of Marine Fisheries (DMF) to determine the TOY period and mitigation measures needed to protect marine resources. Based on the EENF comment letter from the Division of Marine Fisheries, a TOY restriction for winter flounder spawning is expected from February 15 to June 30.

Specific methods to measure turbidity, such as use of suspended solids analyzers and establishment of control points and background conditions, will be determined as part of the contractor selection process.

After marine area activities are completed, the turbidity barrier will remain in place until water quality within the turbidity barrier meets water quality certification requirements and turbidity barrier removal is approved by the onsite engineering representative.

7.8 DREDGING DISPOSAL ALTERNATIVES

The most critical issues typically affecting disposal options are: 1) type and level of contaminants in dredged material; 2) the volume of material to be disposed; and 3) identifying potential offshore and/or upland disposal facilities which can accommodate such dredge disposal material. The following section provides a description of the alternative disposal methods that will be considered for the dredge material.

1. **Unconfined Offshore Disposal** – This method of disposal uses clamshell bucket excavation, with material loaded to a scow, which would then be transported to the MBDS, where the material would be deposited through the water column. Because dredged material taken from this location in the past qualified for ocean placement, dredged material taken from the Project Site is proposed to be suitable for placement at MBDS.

Dredge sampling and subsequent analysis of the physical and chemical properties of the samples will show whether the material meets the conditions for ocean placement under the Marine Protection, Research, and Sanctuaries Act (MPRSA) Section 103. Dredge sampling was conducted prior to the last maintenance dredging in 2002, as described previously in Section 7.2. Samples taken in that time met the limiting permissible concentration (LPC) for ocean placement as designated under MPRSA Section 103, and all of the dredged material was placed at MBDS.

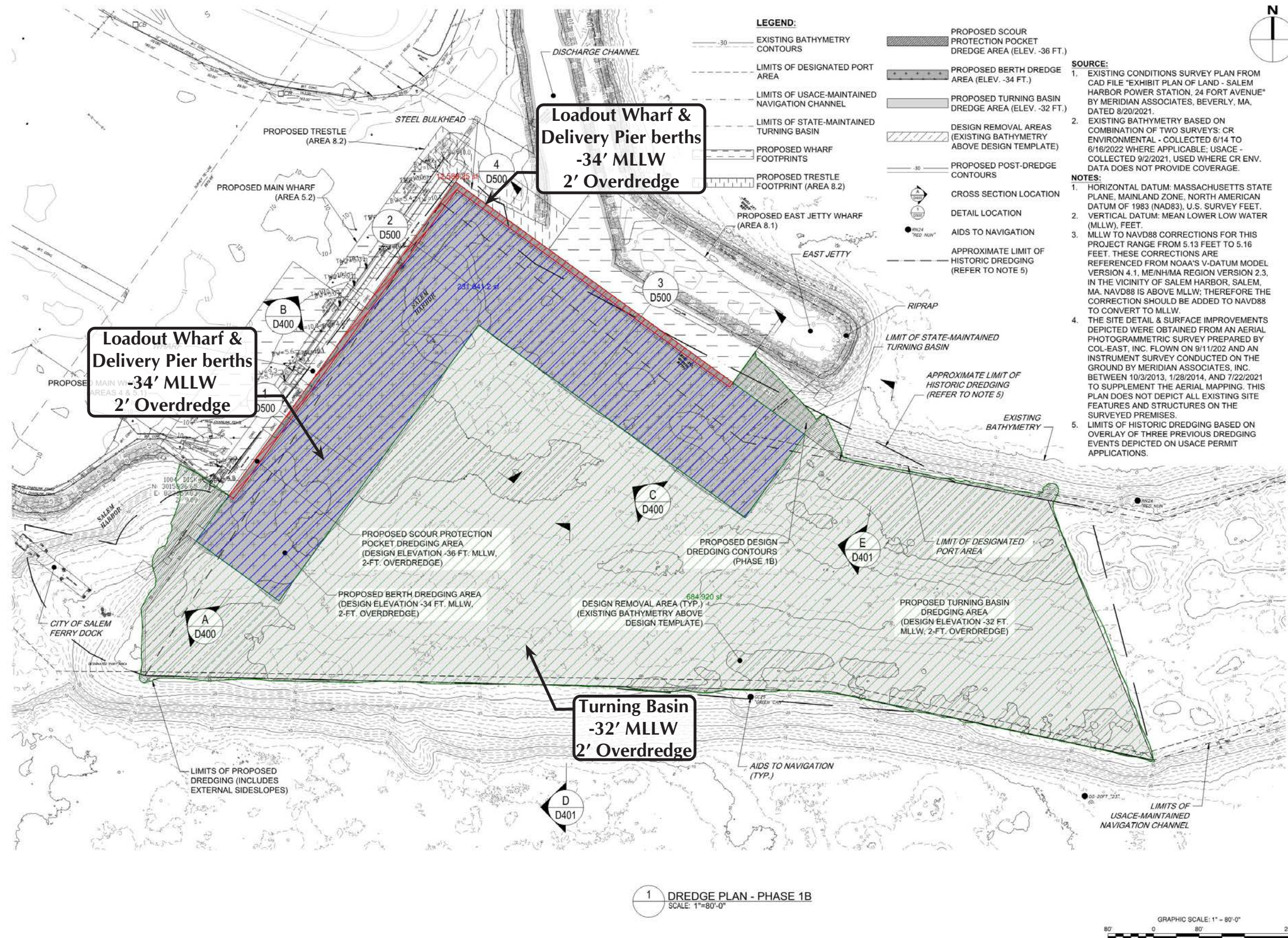
As this disposal method requires material to be handled only once, with the material not having to be dewatered or taken on to land, this method is typically the least disruptive and least expensive method, which will be the most desirable for the Project. A report of appropriate information such as dredge material volume and points of origin and destination would be submitted to MassDEP.

2. **Confined Upland Disposal, Onsite** – The method of disposal would place approximately 41,390 CY of dredged material into two confined areas: the former discharge channel and the cove on the south side of the site. Both areas would be contained by riprap and are included in the Maximum Build Alternative described in Chapter 2. The approximately 38,800 CY of other material to be dredge would need to be disposed of at an upland offsite area.

To fill the cove and channel, the dredged material will need to be placed on barges and then reloaded into either the cove or channel. It would also require the dewatering of the material to a condition whereby the material can be transported to the disposal location. Should the sampling results not allow for offshore disposal, the SAP does include sufficient analysis of constituents to allow a determination of upland disposal in accordance with MassDEP requirements for dredge sampling and could include onsite processing before being placed in either the channel or cove.

3. **Upland Disposal, Offsite** – This option requires the transporting of dredged sediments via barge to an off-site upland location for dewatering, loading of dried sediments into trucks, and transportation to and placement of sediments at an appropriate upland disposal facility, such as at a permitted landfill facility as daily cover. Once the disposal facility has been selected, the Applicant would obtain a letter from the facility operator indicating that the material is acceptable, and such letter would be provided to MassDEP.

The need for the Contractor to dewater and handle sediments multiple times before placement at the upland site results in significant additional costs and a longer construction period. In addition, the hauling of sediments to an appropriate facility would create a significant burden on local traffic. Assuming a typical truck load capacity of ± 20 CY, the hauling of $\pm 80,190$ CY of sediment would generate approximately $\pm 4,010$ truck trips from the site. Other impacts may include nuisance odors generated from the dewatering of dredge sediments along with the amount of time that sediments would need to remain on-site to sufficiently dry out prior to hauling off-site.



Chapter 8

INFRASTRUCTURE

CHAPTER 8: INFRASTRUCTURE

8.1 INTRODUCTION

The Project Site will be serviced with City of Salem municipal utilities including sanitary sewer which is treated by the South Essex Sewerage District and water supplied by the Salem and Beverly Water Supply Board. This chapter addresses the Project's compliance with the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Standards, estimates existing and proposed water usage and sewer flows, provides information on proposed electric connections and addresses existing soil conditions.

8.2 STORMWATER

8.2.1 EXISTING STORMWATER SYSTEM

The existing Project Site is comprised of approximately 96% impervious surfaces. Note that the Expanded Environmental Notification Form (EENF) stated the existing Project Site was approximately 11% impervious, which was based only on the amount of existing concrete/paved surfaces. However, the updated calculation also includes the existing dense packed gravel as impervious area. Stormwater from the southern portion of the Project Site flows overland to an existing swale within the Salem Harbor Power Development LP site. At locations within the swale, area drains collect stormwater. Stormwater is then conveyed by a 30-inch pipe to water quality structures. Finally, treated stormwater is then conveyed and discharged at a 48-inch outfall, which is located along the northern portion of the existing discharge channel and is shared by the evaporative discharge from the adjacent Salem Harbor Power Development LP site. An additional 48-inch outfall is also located along the southern portion of the discharge channel, which carries stormwater flows from the Salem Harbor Power Development LP site. There is currently no structural stormwater infrastructure in the northeastern and southeastern portions of the Project Site, and as a result, stormwater in these areas sheet flows into Salem Harbor.

Figure 8-1, Stormwater Plan shows the overall stormwater infrastructure networks for the existing and proposed conditions at the Project Site, specifically noting the stormwater outfalls to Salem Harbor. Refer to Sheets V100 to V105 within Attachment L, Project Plans, for detailed plans showing existing conditions.

8.2.2 PROPOSED STORMWATER SYSTEM

The proposed Project Site will contain approximately 95% impervious cover after it is regraded with dense graded aggregate (DGA) and the concrete decks are constructed. Note that the EENF stated that the proposed conditions at Project Site would be approximately 21% impervious, which was based only on the amount of concrete/paved surfaces. The updated calculation also includes the proposed DGA as impervious area. The existing stormwater flow patterns found on the site will be maintained by the proposed grading but will be routed through improved water quality structures. Along with water quality structures, the proposed new stormwater

systems will include a swale, piping, tide gates, deep sump area drains, deep sump catch basins, a trench drain, manholes, and headwall outfalls.

Laydown Yard A will be pitched at 0.5% to drain the Project Site towards the existing stormwater swale along the property line abutting the Salem Harbor Power Development LP site. The Project will improve grading along the existing stormwater swale with a series of deep sump area drains to capture any incidental runoff directed towards the adjacent property. Stormwater will then be conveyed via proposed and existing piping to the northern existing 48" outfall along the discharge channel. Proposed grading and a series of area drains will capture runoff to the southern property line of the Project Site. Stormwater is then conveyed towards a proposed tide gate and outfall to Salem Harbor along the southeast corner of the Project Site. Refer to Sheets C300 and C301 within Attachment L, Project Plans, for detailed plans showing proposed grading and stormwater infrastructure within Laydown Yard A.

Laydown Yard B will be graded downslope towards the shoreline, and stormwater will be captured by a trench drain through the center of the laydown yard. The trench drain is then routed towards a proposed drainage manhole and then piped towards a water quality structure and proposed outfall with a tide gate. The existing Parking Area will continue to drain towards an existing catch basin that is connected to the Salem Harbor Power Development LP site stormwater network. The Transition Yard connecting Laydown Yard A and Laydown Yard B will drain to the existing catch basin in place and connect into the stormwater network that outfalls into the drainage channel. Refer to Sheet C305 within Attachment L, Project Plans, for details showing proposed grading and stormwater infrastructure within Laydown Yard B. Proposed stormwater treatment measures for each upland area are noted in Table 8-1.

Table 8-1, Proposed Stormwater System Treatments

Location	Proposed Stormwater System Treatment
Laydown Yard A	Proposed deep sump area drains, an existing water quality structure, and a proposed tide gate within a manhole in upland location
Laydown Yard B	Proposed water quality structure and tide gate within manhole in upland location
Parking Area	The existing stormwater system with water quality structures in place
Transition Yard	Existing catch basins with connections to existing pipes before receiving treatment.

8.2.3 COMPLIANCE WITH DEP STORMWATER STANDARDS

The following section describes Project compliance with MassDEP Stormwater Management Standards, as outlined in the Wetlands Regulations.

Standard 1: No new stormwater conveyances may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

Compliance: The Project conforms to this standard and provides treatment of all upland stormwater runoff before discharge to Salem Harbor. Stormwater at the existing Project Site generally originates from the paved surfaces and compacted gravel areas, flows overland, and eventually discharges at the northern existing 48-inch outfall along the discharge channel into the Salem Harbor with treatment via deep sump catch basins and water quality structures. The proposed drainage areas, which will be similar to existing drainage areas, will be collected through both existing and proposed stormwater infrastructure, such as a stormwater swale, deep sump catch basins, deep sump area drains, piping, water quality structures, tide gates, manholes, and piped outfalls and discharged to Salem Harbor. The site design will maintain the existing flow patterns within each Laydown Yard. No additional asphalt is proposed to be constructed beyond the existing limits, and parking lot construction will only entail repaving with 2-inch bituminous concrete overlay of existing parking areas. The Parking Area runoff flows overland toward an existing catch basin, existing drainage network, including the existing water quality structure, eventually reaching the existing northern 48-inch outfall along the discharge channel. The wharf and bulkhead and jetty wharf have isolated, or de minimis, areas where scuppers discharge stormwater directly to Salem Harbor, as found on Drawing C101 in Attachment L, Project Plans, and do not achieve the 80% total suspended solids (TSS) removal. These scuppers are considered de minimis stormwater discharges under Standard 4 of the MassDEP Stormwater Standards as physical site conditions along these structures preclude installation of a TSS treatment practice prior to discharge. The Project will not adversely affect adjacent parcels or wetlands or waters of the Commonwealth such as direct discharge of untreated stormwater.

Standard 2: Peak Rate Attenuation - Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

Compliance: This Standard is requested to be waived as the Project Site is located within Land Subject to Coastal Storm Flowage (LSCSF) per Standard 2. The post-development peak rate comparison to existing rates is not necessary for coastal areas as defined in 310 CMR 10.04.

Standard 3: Recharge - Loss of annual recharge to groundwater shall be eliminated and at a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This standard is met when the stormwater management system is designed to infiltrate the required recharge volume in accordance with the DEP Stormwater Handbook.

Compliance: The intent of this Standard is to ensure that the recharge volume under post-development conditions is at least as much as the recharge volume under pre-development conditions. Although the existing Project Site contains 96% impervious area, there is no infiltration currently provided on-site. The soils are marine clay with historic fill. The Natural Resources Conservation Service classifies marine clay and fill soils into one hydrologic group: Urban Land, with characteristics of D soils with

hydric soils and subsoil not practical for infiltration, precluding on-site groundwater recharge.

Standard 4: Water Quality – Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). The standard is met with pollution prevention plans, stormwater BMPs sized to capture required water quality volume, and pretreatment measures.

Compliance: This Standard will be met by the Project as the existing stormwater management system will be improved as compared to the existing conditions as a redevelopment project. Stormwater runoff from the proposed site drainage area will be collected and pretreated through deep sump catch basins and area drains with additional treatment provided with existing and proposed water quality structures. The water quality structures will be Stormceptor hydrodynamic separators. Additional mitigation measures include the 30-foot edge planting zone and pervious pavement walkway located in the southeast corner of the Project Site near the entry gate from Salem Wharf parking lot.

These existing and proposed water quality structures will remove 49% and 80% TSS respectively prior to discharge to Salem Harbor as found in the Attachment M, Stormwater Report. With additional deep sump catch basins, these stormwater networks provide 62% and 85% TSS removal, respectively, and improve the level of water quality treatment prior to discharge over the existing conditions. The water quality flow rate has been calculated according to the Massachusetts Stormwater Handbook guidance. The stormwater management system has been designed with landscaping to reduce stormwater runoff.

Suitable practices for source control and pollution prevention will be identified in a long-term pollution prevention plan, and thereafter implemented and maintained by the property owner.

Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs) - Source control and pollution prevention shall be implemented in accordance with the Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable or provide specific structural BMPs determined by the Department to be suitable for such uses.

Compliance: The Project will not be considered a land use with higher pollutant load. The Project Site does not have areas that are subject to an individual National Pollutant Discharge Elimination System (NPDES) permit or the NPDES Multi-Sector General Permit or other applicable uses.

Standard 6: Critical Areas - Stormwater discharges to critical areas require the use of specific source control and pollution prevention measures and specific structural stormwater best management practices determined by DEP to be suitable for managing discharges to such areas.

Compliance: According to the Massachusetts Year 2018/2020 Integrated List of Waters, Salem Harbor is listed as a category 5 waterway requiring a total maximum

daily load (TMDL) with a listed impairment of fecal coliform and Enterococcus. The Project Site will not generate impairments subject to TMDL.

Standard 7: A Redevelopment Project is Required to Meet Standards 1-6 only to the Maximum Extent Practicable - Remaining standards shall be met as well as the project shall improve the existing conditions.

Compliance: The Project Site is considered a Redevelopment Project. Proposed project design components represent a considerable improvement for water quality over existing conditions and will meet Standards 1-6 to the extent practicable.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan shall be Implemented.

Compliance: The Construction Pollution Prevention and Erosion & Sedimentation Control Plan will be prepared to address erosion and sedimentation during construction. The sediment control measures incorporated into the Project will include the placement of siltation barriers and the installation of silt sacks in catch basins during the construction period. Sediment control measures will be placed around stockpiles of loose materials. The measures will be inspected and maintained until the disturbed areas are stabilized. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared in compliance with the EPA's NPDES Construction General Permit.

Standard 9: A Long-Term Operation and Maintenance Plan Shall be Implemented.

Compliance: A stormwater maintenance protocol will be established for the on-site drainage improvements. The goal of the Stormwater Operation and Maintenance Plan is not only to protect off-site wetlands and water resources abutting the Project Site, but also to protect those resources in the region that may be affected by project-related activities. The proposed Project Site drainage improvements include a swale, deep sump catch basins, area drains, water quality structures, tide gates, manholes, piped outfalls, and the pipe network. The proposed water quality treatment measures will result in improved removal efficiency of the TSS load in runoff from the Project Site. An effective stormwater drainage maintenance program will ensure that the removal of TSS from the stormwater runoff continues for the life of the facility by the owner.

Standard 10: Prohibition of Illicit Discharges – Illicit discharges to the stormwater management system are prohibited.

Compliance: The Proponent acknowledges that illicit discharges are prohibited and will acknowledge this in the stormwater maintenance procedures and service logs. All outside manholes and access covers will be clearly marked as “drainage” and “sewer” with no unsecured or open access areas.

8.3 FUTURE STORMWATER MODELING

The proposed stormwater system was also modeled for its performance for future storm events. The system was modelled to the extent of future rainfall data projections that have been published. This methodology projects a 24 hour 10-year storm event in 2050 will yield 6.1 inches of rainfall based on Attachment E, RMA2 Tool Output. The projected future discharges generated for pre-development and post-development conditions, are calculated in Table 8-3 below, in comparison to the current 10-year storm event.

Table 8-2, Projected Future Pre-Development and Post-Development Peak Runoff Discharge

Parameter	Current 10-year Recurrence (CFS)	2050 10-year Recurrence (CFS)
Pre-Development Discharge to Salem Harbor	95.19	118.78
Post-Development Discharge to Salem Harbor	95.19	118.78

The stormwater system will meet pollutant loading requirements but will not attenuate flows as this requirement is waived for coastal project under the MassDEP Stormwater Standards. The 10-year volume of runoff is collected by the stormwater system on Laydown Yard A and is released over 24-hours. The future stormwater modeling report is also included in Attachment M, Stormwater Report.

8.4 WATER SYSTEM

Water consumption on the Project Site is expected to be a maximum of 3,300 gallons per day (gpd), based on the Project's estimated sewage generation and number of full-time employees post-construction. A factor of 1.1 (conservative) is applied to the average daily wastewater flows to estimate average daily water use.

Water is supplied from the water filtration plant in Beverly. There is an existing 16-inch water main within Fort Avenue that currently services the Project Site. The proposed system will have 8-inch water main diameter loop and fire hydrant branches for fire protection on-site.

The domestic water service connections are at the loadout wharf and office trailers. All domestic connections will have an approved water meter.

8.5 WASTEWATER SYSTEM

The Project's sewage generation rates as presented in Table 8-4, Estimated Sewage Discharge, were estimated using the Massachusetts State Environmental Code (Title V) 310 CMR 15.203. The proposed development will accommodate up to 200 full-time employees on a typical day for peak post-construction operations.

Table 8-3, Estimated Sewage Discharge

Proposed Use	Use Description	Unit Flow (gpd)	Sewage Flow (gpd)
Off-Shore Wind Staging	200 full-time employees	15 gpd / person	3,000 gpd

There is an existing 84-inch gravity intercepting sanitary sewer service main within Fort Avenue. Based on the domestic demand of sewage flow, it is estimated there is sufficient capacity in the existing 10-inch service line. Office trailers will be connected to an existing gravity sewer lateral on-site. Sewage is treated at the adjacent property operated by the South Essex Sewerage District.

8.6 ELECTRICAL AND TELECOMMUNICATION SERVICES

The Project Site is serviceable with electric, telephone, and cable services. The existing overhead electrical power on-site will be removed but the existing underground electric will remain. The proposed underground electrical improvements include the installation of conduits to service new light poles and two substations, with pad-mounted transformers, on-site. Power will be conveyed through medium voltage duct banks, manholes, pullboxes, and other structures. Conduits for future shore power will be provided with stubs for connections to a switchgear. Lighting and communications infrastructure will consist of low and medium voltage ductbanks, fiberglass conduits, communication pullboxes, and high mast light poles. All proposed utility connections will be coordinated with each respective utility provider.

8.7 NATURAL GAS SYSTEM

The Project Site does not require natural gas service.

8.8 SOIL CONDITIONS AND DESIGN

GZA Environmental, Inc. performed subsurface geotechnical testing between June and November 2022. They will continue with ongoing assessments in Spring 2023 and then provide recommendations.

Based on the recent subsoil explorations and ground penetration radar testing performed for this Project, the subsurface conditions consist of urban fill overlying compressible deposits containing organics overlying marine clays and silts. Due to the variable density of the urban fill and the compressible nature of the soils containing organics and marine clay, conventional site clearing and grubbing are not suitable for laydown yards for this Site. Therefore, ground improvement to the soils, consisting of 24-inch to 60-inch depth of DGA, is needed to support the heavy OSW components that will be stored within the two Laydown Yards. The proposed ground improvements in each Laydown Yard are outlined in Table 8-5. The amount of imported DGA is estimated to be an order of magnitude 100,000 cubic yards (CY) for the upland area.



Chapter 9

TRAFFIC AND TRANSPORTATION

CHAPTER 9: TRAFFIC AND TRANSPORTATION

9.1 INTRODUCTION

MDM Transportation Consultants, Inc. (MDM) has prepared this traffic impact assessment (TIA) for the Project to be located at 67 Derby Street in Salem, Massachusetts. The location of the Project Site relative to adjacent roadways is shown in Figure 9-1, Site Location. This TIA documents baseline traffic conditions along major roadways providing access to the Project Site, estimates traffic generation characteristics of the proposed facility during the peak construction activity period and under post-construction operating conditions, and provides a qualitative assessment of traffic impacts relative to baseline conditions. Access/egress improvements, elements of a transportation demand management (TDM) program, and framework for a construction management plan (CMP) are also identified to support the proposed operational needs of the facility while minimizing impact to adjacent roadways.

Key findings of the TIA are as follows:

- **Baseline Traffic Volumes.** The weekday daily traffic volume on Fort Avenue adjacent to the Project Site is approximately 3,230 vehicles per day (vpd) on a weekday. Peak hour traffic flow on Fort Avenue ranges from approximately 198 to 314 vehicles per hour (vph) representing 6% to 10% of daily traffic flow. Vehicle flow patterns are oriented southbound in the morning and northbound in the evening, indicative of commuter travel.
- **Trip Generation – Peak Construction Activity.** Construction activity at the Project Site will include approximately 123 workers at the peak of construction with activity significantly lower during the beginning and end of the construction period. The construction period is a temporary condition (18 months) that will generate traffic on area roadways associated with construction worker and truck related trips. Much of the marine construction work and all of the dredging activities will take place from barges, and materials will be supplied by water. Accordingly, on-road truck traffic to/from the Project Site will be limited to aggregate, concrete, and similar building materials at much smaller volume that would otherwise occur without the barge operations. Under the peak construction activity scenario, the facility is conservatively estimated to generate approximately 123 entering vehicle trips during the weekday morning period and 123 exiting vehicle trips during the weekday evening period. These trips levels are expected to occur at the height of construction activity prior to typical commuter travel periods and do not account for carpooling, other alternative travel modes, and staggered work hours which may reduce actual vehicle demands at peak construction.
- **Trip Generation – Typical Post-Construction Operations.** New traffic generated by the Project following the construction period is estimated to reflect typical/average employment levels at the facility. Trips for this scenario are estimated using trip

rates published in the Institute of Transportation Engineers (ITE) Trip Generation¹ for Land Use Code (LUC) 170 – Utility applied to 200 full time equivalent employees. Based on ITE, the proposed facility is estimated to generate approximately 142 vehicle trips during the weekday morning peak hour, 150 vehicle trips during the weekday evening peak hour, and approximately 774 (two-way) vehicle trips on a weekday.

- **Adequate Roadway Capacity & Operations.** Relative traffic increases for the Project during the peak of construction and operations of the facility as the Salem Wind Port represents an inconsequential change in area roadway volumes - a level of change that will be adequately accommodated below roadway capacity with level of service (LOS) C or better operations expected at key “gateway” intersections serving the Project Site.

In summary, MDM finds that incremental traffic associated with the proposed development is not expected to materially degrade operating conditions at the study intersections once operational or during the construction period. Consequently, no off-site roadway improvements are warranted to accommodate the development project during the construction period or following full operation of the terminal. Recommended access/egress improvements, elements of a TDM program, and framework for a future CMP will support the proposed operational needs of the facility while minimizing on-site and adjacent roadway impacts.

9.2 PROJECT DESCRIPTION

The Project Site is an approximate 42.3-acre tract of land located at 67 Derby Street in Salem, Massachusetts. The Project Site was historically part of the Footprint Power Plant and is currently an undeveloped parcel adjacent to and surrounding the Power Station. The Project will support the operation of offshore wind (OSW) turbine assembly and transport with projected employment levels of up to 60 persons on non-vessel days and up to 200 persons on vessel days with a typical day operation of 114 full-time equivalent (FTE) employees. Construction-period employment is estimated at 200 persons at the peak of construction. The preliminary Project Site layout sketch prepared by Fort Point Associates is presented in Figure 9-2, Preliminary Site Layout.

9.3 BASELINE TRAFFIC & SAFETY CHARACTERISTICS

This section provides a description of study area roadways as well as an overview of roadway traffic volumes, alternative transportation facilities, and intersection crash history are provided below.

¹Trip Generation, 11th Edition; Institute of Transportation Engineers; Washington, DC; 2021.

9.3.1 ROADWAYS

Fort Avenue

Fort Avenue is classified by the Massachusetts Department of Transportation (MassDOT) as an Urban Collector roadway under Local (City) Jurisdiction. Fort Avenue is generally a northeast- southwest roadway in the project area which connects Webb Street to the southwest with Bay View Avenue to the northeast. The roadway in the immediate project area provides one lane of travel in each direction. The posted speed limit is 25 miles per hour (mph) northbound and 30 mph southbound. Sidewalks are provided along the northern side of Fort Avenue and a bike cycle track is provided along the southern side of Fort Avenue adjacent to the Project Site. Land use along Fort Avenue in the immediate project area include a mix of land uses including residential homes, a fire station and a park, a school, the Salem Harbor Power Station, and a sewage facility.

Derby Street

Derby Street is classified by the MassDOT as an Urban Minor Arterial roadway under Local (City) Jurisdiction. Derby Street is generally a north-south roadway in the project area which connects Washington Street to the south with Fort Avenue to the north. The roadway in the immediate project area provides one lane of travel in the eastbound direction with a posted speed limit of 20 mph. Within the study area, sidewalks are provided along both sides of Derby Street and a bike cycle track is provided along the eastern side of the roadway between Webb Street and Fort Avenue. Land use along Derby Street in the immediate project area include the Salem Harbor Power Development site, residential homes, and a park.

Webb Street

Webb Street is classified by the MassDOT as an Urban Minor Arterial roadway under Local (City) Jurisdiction. Webb Street is generally an east-west roadway in the Project area which connects Bridge Street to the west with Fort Avenue to the east. The roadway in the immediate project area provides one lane of travel in each direction. The posted speed limit is 25 mph in both directions. Sidewalks are provided along both sides of Webb Street. A multi-use path is also provided proximate and parallel to Webb Street between Derby Street and Bridge Street. Land uses along Webb Street include a mix of land uses including residential homes, a beach, commercial properties, a park, and the Salem Harbor Power Development site.

9.3.2 BASELINE TRAFFIC DATA

9.3.2.1 BASELINE TRAFFIC DATA METHODOLOGY

Traffic-volume data used in this study were obtained by mechanical and manual methods in September 2022. Automatic traffic recorder counts (ATRs) were conducted along Fort Avenue while manual turning movement counts (TMCs) were conducted at the existing study intersections. Traffic data were collected during the weekday morning (6:00 to 9:00 AM) and weekday evening (3:00 to 6:00 PM) peak periods.

These hours represent the combination of busiest activity periods of the Project Site and adjacent roadway network. A review of MassDOT permanent count station data for the area indicated that September represents average traffic month conditions. Review of historical traffic data also indicates that traffic volumes have rebounded to normal compared to pre-Covid-19 pandemic conditions; therefore, no seasonal or pandemic adjustment of the data was required. The weekday morning and weekday evening peak hour traffic volumes for the study intersections are shown in Figure 9-3, 2022 Baseline Condition, Weekday Morning Peak Hour Volumes and Figure 9-4, 2022 Baseline Condition, Weekday Evening Peak Hour Volumes. Traffic count data, MassDOT permanent count station data, and pandemic adjustment calculations are provided in Attachment G, Transportation Attachments.

9.3.2.2 DAILY TRAFFIC VOLUMES

Traffic-volume data used in this study were obtained using an ATR along Fort Avenue to the north of Derby Street over a 24-hour period in September 2022. These data are summarized in Table 9-1.

Table 9-1, Baseline Traffic Volume Summary – Fort Avenue North of Derby Street

Time Period	Daily Volume (vpd) ¹	Percent Daily Traffic ²	Peak Hour Volume (vph) ³	Peak Flow Direction ⁴	Peak Hour Directional Volume (vph)
Weekday Morning Peak Hour	3,230	6%	198	53% SB	105
Weekday Evening Peak Hour	3,230	10%	314	55% NB	174

¹Two-way daily traffic expressed in vehicles per day without adjustment.

²The percent of daily traffic that occurs during the peak hour.

³Two-way peak-hour volume expressed in vehicles per hour.

⁴NB = Northbound, SB = Southbound

As summarized in Table 9-1, the weekday daily traffic volume on Fort Avenue near Derby Street is approximately 3,230 vpd on a weekday. Peak hour traffic flow on Fort Avenue ranges from approximately 198 to 314 vph representing 6% to 10% of daily traffic flow. Vehicle flow patterns are oriented southbound in the morning and northbound in the evening, indicative of commuter travel.

9.3.3 INTERSECTION CRASH HISTORY

In order to identify crash trends and safety characteristics for Project area intersections, crash data were obtained from MassDOT for the City of Salem for the five-year period covering 2017-2021 (the most recent full year of data currently available from MassDOT). A summary of the crash data with crash rates for the Project area intersections with reported crashes is provided in Table 9-2 with detailed data provided in Attachment G, Transportation Attachments. **Table 9-2, Intersection Crash Summary (2017 Through 2021)**¹

Data Category	Study Location				
	Bridge Street at Essex Bridge	Bridge St at Sgt James Dr	Bridge St at Webb St	Webb St at Essex St	Fort Ave at Derby St
Traffic Control	Signalized	Signalized	Signalized	Signalized	Unsignalized
Crash Rate ²	0.26	0.17	0.12	0.81	0.25
MassDOT Avg. Rate ³	0.73	0.73	0.73	0.73	0.57
Year:					
2017	2	0	2	3	0
2018	3	3	0	4	1
2019	5	4	0	1	0
2020	2	1	1	1	0
2021	2	0	1	3	1
Total	14	8	4	12	2
Type:					
Angle	1	3	1	10	1
Rear-End	10	3	3	0	1
Head-On	1	0	0	1	0
Sideswipe	0	2	0	1	0
Single Vehicle	1	0	0	0	0
Other/Unknown	1	0	0	0	0
Severity:					
P. Damage Only	9	5	3	7	1
Personal Injury	5	3	1	5	1
Fatality	0	0	0	0	0
Conditions:					
Dry	10	7	2	11	2
Wet	2	1	2	0	0
Snow	0	0	0	1	0
Not Reported/Other	2	0	0	0	0
Time:					
7:00 to 9:00 AM	3	1	1	0	0
4:00 to 6:00 PM	5	2	1	2	1
Rest of Day	6	5	2	10	1

¹Source: MassDOT Crash Database

²Crashes per million entering vehicles

³District 4 Average Crash Rate

Crash rates were calculated for the study intersections as reported in Table 9-2. These rates quantify the number of crashes per million entering vehicles. MassDOT has determined the official District 4 (which includes the City of Salem) crash rate to be 0.73 for signalized intersections and 0.57 for unsignalized intersections. This rate represents MassDOT's "average" crash experience for District 4 communities and serves as a basis for comparing reported crash rates for the study intersections. Where calculated crash rates notably exceed the district average, some form of safety countermeasures may be warranted. A review of Highway Safety Improvement Project (HSIP) locations was also conducted.

As summarized in Table 9-2:

- *Bridge Street at Essex Bridge/Sgt. James Ayube Memorial Drive.* Fourteen (14) crashes were reported for the Bridge Street/Sgt. James Ayube Memorial Drive intersection resulting in a crash rate of 0.26, which is well below the MassDOT District 4 average of 0.73. The reported crashes included one (1) angle/sideswipe type collisions, ten (10) rear-end type collision, one (1) head-on type collisions, one (1) single vehicle type collision and one (1) not reported. The majority (64%) of the crashes resulted in personal injury type collision with the majority (71%) of the crashes under dry roadway.
- *Bridge Street at Sgt. James Ayube Memorial Drive/Apartment Driveway.* Eight (8) crashes were reported for the Bridge Street/Sgt. James Ayube Memorial Drive/Apartment Driveway intersection resulting in a crash rate of 0.17, which is well below the MassDOT District 4 average of 0.73. The reported crashes included five (5) angle/sideswipe type collisions and three (3) rear-end type collisions. The majority (63%) of the crashes resulted in personal injury type collision with the majority (88%) of the crashes under dry roadway. No fatalities were reported during the study period.
- *Bridge Street at Webb Street.* Four (4) crashes were reported for the Bridge Street/Webb Street intersection resulting in a crash rate of 0.12, which is well below the MassDOT District 4 average of 0.73. The reported crashes included one (1) angle/sideswipe type collisions and three (3) rear-end type collisions. The majority (75%) of the crashes resulted in personal injury type collision with half (50%) of the crashes under dry roadway. Two of the reported crashes involved pedestrians in crosswalks. No fatalities were reported during the study period.
- *Webb Street at Essex Street.* Twelve (12) crashes were reported for the Webb Street/Essex Street intersection resulting in a crash rate of 0.81, which is slightly above the MassDOT District 4 average of 0.73. The reported crashes included eleven (11) angle/sideswipe type collisions and one (1) head-on type collision. The majority (58%) of the crashes resulted in personal injury type collision with the majority (92%) of the crashes under dry roadway. No fatalities were reported during the study period.

- *Fort Avenue at Derby Street.* Two (2) crashes were reported for the Fort Avenue/Derby Street intersection resulting in a crash rate of 0.25, which is well below the MassDOT District 4 average of 0.57. The reported crashes included one (1) angle/sideswipe type collisions and one (1) rear-end type collision. One (50%) of the crashes resulted in personal injury type collision with both (100%) of the crashes under dry roadway. No fatalities were reported during the study period.

In summary, all of the study intersections, with the exception of Webb Street at Essex Street, experienced crash rates that were below the MassDOT District 4 average and none of the intersections are listed by MassDOT as HSIP crash locations. No fatalities were reported during the study period. No immediate safety countermeasures are warranted based on the crash history at the study intersections.

9.3.4 ALTERNATIVE TRANSPORTATION FACILITIES

The Massachusetts Bay Transportation Authority (MBTA) operates the Newburyport/Rockport commuter rail with a stop at the Salem Depot Station located approximately one mile from the Project Site. Additionally, the MBTA operates bus routes within the City of Salem with the closest bus stop to the Project Site located approximately $\frac{3}{4}$ of a mile away on Route 451 North Beverly Station – Salem Depot route. Specific route and schedule information is provided in Attachment G, Transportation Attachments. The Salem Wharf is located on the west side of the Project Site in Salem Harbor, where a seasonal ferry operates between Salem and Boston.

Adjacent to the Project Site, there is an existing bike cycle track along Derby Street and Fort Avenue extending from Webb Street to Columbus Avenue. Likewise, a multi-use path is also provided proximate and parallel to Webb Street between Derby Street and Bridge Street. There are sidewalks along the western side of Fort Avenue, both sides of Derby Street, and both sides of Webb Street. The existing local sidewalk system provides connections to the extensive sidewalk system and bikeways in the study area.

9.4 CONSTRUCTION PERIOD TRAFFIC VOLUMES

The construction period is a temporary condition that will generate traffic on area roadways associated with employee and truck related trips. The following is a summary of the expected impacts of construction traffic and measures to be used to reduce any potential negative impacts during the construction period. Once the Project Site is constructed, the traffic for the Project will be associated with day-to-day operations of the Salem Wind Port. Much of the marine construction work and all of the dredging activities will take place from barges, and materials will be supplied by water.

The construction activity at the Project Site is anticipated to typically occur outside the peak commuter travel periods. However, to present a conservative analysis basis, this evaluation assumes that employee activity occurs concurrently with the peak of the area roadways. Construction worker parking is anticipated to be established in a designated area on-site with

access/egress exclusively via the existing Fort Avenue driveway that serves Salem Harbor Power Development.

Construction activities generating traffic will primarily be limited to site preparation and pier construction. Activity on Fort Avenue and Derby Street may include construction at/near the Project Site driveways and necessary utility work. It is anticipated that traffic patterns on Fort Avenue will be maintained during construction and that no roadway closures or detours will be required during the construction period.

Crowley Wind Services, Inc. (the “Proponent” or “Crowley”) will establish truck routes that include Route 114, Bridge Street, and Webb Street, which will serve as the sole access/egress gate for trucks and material. Construction staging areas will be provided entirely on-site for all material deliveries. The Project will be subject to a CMP that will memorialize and support the proposed operational needs of the facility’s construction period activity while minimizing impacts to adjacent roadways and residents. An analysis of peak hour construction period impacts on area roadways at the height of construction is provided below.

9.4.1 TRIP GENERATION – PEAK CONSTRUCTION PERIOD

Crowley anticipates construction activity at the Project Site will generate a peak of approximately 123 workers with significantly lower activity during the beginning and end of the construction period. To present a conservative (worst case) scenario, trip generation for the facility’s construction impact is estimated based on a peak construction scenario.

Table 9-3 summarizes the empirically derived trip estimates for the offshore wind facility under a peak construction scenario of 123 workers. It is assumed that construction truck activity will occur outside the peak hours with primarily access/egress via the Webb Street/Fort Avenue driveway.

Table 9-3, Trip-Generation Summary (Peak Construction Operations)

Study Period/Direction	Peak Construction Site Trips ¹
<i>Weekday Morning Peak Hour</i>	
Entering	123
Exiting	Negl.
Total	123
<i>Weekday Evening Peak Hour</i>	
Entering	Negl.
Exiting	123
Total	123

¹Based on 123 construction workers with vehicle occupancy of 1.0 workers per vehicle. Analysis conservatively assumes that all workers will arrive and depart during the peak hour of the adjacent street.

As summarized in Table 9-3, under the peak construction activity scenario, the Project Site is conservatively estimated to generate approximately 123 entering vehicle trips

during the weekday morning period and 123 exiting vehicle trips during the weekday evening period. These trips levels are expected to occur at the height of construction activity and are expected to largely occur before typical commuter hours. These trip estimates also conservatively do not account for carpooling, other alternative travel modes, and staggered work hours which may reduce actual vehicle demands at peak construction.

9.4.2 TRIP DISTRIBUTION – CONSTRUCTION PERIOD

The peak hour construction trip activity will be employee-related; therefore, the distribution for projected construction traffic is based on Journey to Work Census data. Primary routes to/from the Project Site associated with construction employee related trips are likely to use major area routes including Route 114 and Route 1A, with all construction employees directed to use the Fort Avenue entrance. This methodology indicates a primary employee trip distribution of 85% to/from Bridge Street to the south and 15% to/from the north as shown in Figure 9-5, Trip Distribution (Construction Trips). Trip distribution calculations are provided in Attachment G, Transportation Attachments.

Any truck trips associated with the construction of the Project Site are expected to occur outside of peak periods. Additionally, construction equipment and supplies may be delivered to the Project Site via barge if possible. The construction truck deliveries to the Project Site will be limited to primary commercial truck routes which include Route 114 and Route 1A. These roadways are well established commercial truck routes and provide the most direct and efficient means of travel to the Project Site, with allowable truck routes and hours of operation to be established through a CMP for the project.

Development-related trips for the Project Site are assigned to the roadway network using the ITE trip-generation estimates shown in Table 9-3 and the distribution pattern for the construction employees as shown in Figure 9-5. Construction employee-related trips at each intersection approach for the weekday morning and weekday evening during the peak of construction activity are quantified in Figure 9-6, Site-Generated Trips (Construction Period - 150 Employees), Weekday Morning Peak Hour, and Figure 9-7, Site-Generated Trips (Construction Period - 150 Employees), Weekday Evening Peak Hour.

9.4.3 CONSTRUCTION PERIOD TRAFFIC VOLUMES

Construction condition traffic volumes are derived by adding the incremental traffic increases for the Project Site's construction activity to the Baseline conditions. The 2022 Construction Period traffic-volume networks for the weekday morning and weekday evening during the peak of construction activity are quantified in Figure 9-8, Construction Period Condition, Weekday Morning Peak Hour Volumes, and Figure 9-9, Construction Period Condition, Weekday Evening Peak Hour Volumes.

9.5 POST-CONSTRUCTION PERIOD (DESIGN YEAR) TRAFFIC VOLUMES

Design Year traffic conditions are developed by adding additional site-generated trips associated with the proposed development as the Salem Wind Port to the Baseline traffic volumes within the study area. The Project will support operation of offshore wind turbines with projected employment levels of up to 60 persons on non-vessel days and up to 200 persons on vessel days with a typical day operation of 114 FTE employees. Specific methodologies and assumptions used to estimate trips and trip distribution are discussed below.

9.5.1 PROJECT SITE TRAFFIC ESTIMATES

The trip generation estimates for the proposed development of the Project Site are provided for the weekday morning and weekday evening periods, which correspond to the critical analysis periods for the proposed use and adjacent street traffic flow. For planning purposes, the new traffic generated by the project was estimated using trip rates published in ITE's *Trip Generation* for LUC 170 – Utility. Table 9-4 presents a summary of the site trip generation for the proposed use of the Project Site. Trip generation calculations are provided in Attachment G, Transportation Attachments.

Table 9-4, Trip-Generation Summary – ITE Basis

Peak Hour/Direction	Utility (200 Employees) ¹
<i>Weekday Morning Peak Hour</i>	
Entering	124
Exiting	18
Total	142
<i>Weekday Evening Peak Hour</i>	
Entering	21
Exiting	129
Total	150
<i>Weekday Daily (24-Hour)</i>	774

¹Based on ITE Trip Generation 11th Edition trip rates for LUC 170 – Utility applied to 200 Employees.

As summarized in Table 9-4, the proposed development is estimated to generate approximately 142 vehicle trips (124 entering and 18 exiting) during the weekday morning peak hour and 150 vehicle trips (21 entering and 129 exiting) during the weekday evening peak hour. On a daily basis, the development is estimated to generate approximately 774 vehicle trips on a weekday with 50% entering and 50% exiting.

9.5.2 TRIP DISTRIBUTION

As the vast majority of peak hour trip activity will be employee-related, the distribution for projected traffic for the proposed facility is based on Journey to work patterns along the adjacent roadway system and populations of the adjacent communities. This methodology indicates a primary employee trip distribution of 60% to/from Bridge Street to the south, 25% to/from Derby Street to the south, and 15% to/from the north as shown in Figure 9-10, Trip Distribution. Trip distribution calculations are provided in Attachment G, Transportation Attachments.

Development-related trips for the proposed development are assigned to the roadway network using the ITE trip-generation estimates shown in Table 9-4 and the distribution patterns described above. Development-related trips at each intersection approach for the weekday morning and weekday evening are quantified in Figure 9-11, Site-Generated Trips, Weekday Morning Peak Hour, and Figure 9-12, Site-Generated Trips, Weekday Evening Peak Hour.

9.5.3 DESIGN YEAR TRAFFIC CONDITIONS

Design Year conditions for the weekday morning and weekday evening peak hours include Baseline traffic volumes and site-generated trips. The resulting Design Year traffic volumes for typical operations of the proposed development as the Salem Wind Port are quantified in Figure 9-13, Design Year Condition, Weekday Morning Peak Hour Volumes, and Figure 9-14, Design Year Condition, Weekday Evening Peak Hour Volumes.

9.6 OPERATIONS ANALYSIS

This section provides an overview of operational analysis methodology as well as an assessment of driveway operations under Baseline, peak Construction Period, and projected Design Year conditions with the Salem Wind Port in place.

9.6.1 ANALYSIS METHODOLOGY

Intersection capacity analyses are presented in this section for the Baseline, Construction Period, and Design Year traffic-volume conditions. Capacity analyses, conducted in accordance with Executive Office of Energy and Environmental Affairs (EEA)/MassDOT guidelines, provide an index of how well the roadway facilities serve the traffic demands placed upon them. The operational results provide the basis for recommended access and roadway improvements in the following section if required.

Capacity analysis of intersections is developed using the Synchro[®] computer software, which implements the methods of the Highway Capacity Manual 6th Edition (HCM6). The resulting analysis presents a LOS designation for individual intersection movements. The LOS is a letter designation that provides a qualitative measure of operating conditions based on several factors including roadway geometry, speeds, ambient traffic volumes, traffic controls, and driver characteristics. Since the LOS of a traffic facility is a function of the traffic flows placed upon it, such a facility may

operate at a wide range of LOS, depending on the time of day, day of week, or period of year. A range of six levels of service are defined on the basis of average delay, ranging from LOS A (the least delay) to LOS F (delays greater than 50 seconds for unsignalized movements). The specific control delays and associated LOS designations are presented in Attachment G, Transportation Attachments.

9.6.2 ANALYSIS RESULTS

The LOS analyses were conducted for the Baseline, Construction Period, and Design Year conditions for the study intersection. Construction period employment is estimated at approximately 123 persons at the peak of construction; however, as a conservative measure the construction analysis assumes a peak construction scenario of 150 workers. The project under Build conditions assumes an employment level of 200 workers. The results of the intersection capacity analyses are summarized below in Table 9-5 and Table 9-6. Detailed analysis results are presented in Attachment G, Transportation Attachments.

Table 9-5, Intersection Capacity Analysis Results (Weekday Morning Peak Hour)

Period	Approach	2022 Baseline			Construction Period ⁴			2029 No-Build			2029 Build ⁵		
		v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
Sgt. James Ayube Mem. Drive at Bridge Street	Westbound	0.34	7	A	0.34	7	A	0.38	8	A	0.37	8	A
	Northbound	0.63	23	C	0.63	23	C	0.66	24	C	0.67	25	C
	Southbound	0.73	12	B	0.76	12	B	0.77	13	B	0.79	13	B
	Total	0.73	13	B	0.76	14	B	0.77	15	B	0.79	15	B
Sgt. James Ayube Mem. Drive at Bridge Street/ Apartment Dwy	Eastbound	0.03	11	B	0.03	13	B	0.03	13	B	0.03	14	B
	Westbound	0.76	26	C	0.80	31	C	0.87	37	D	0.91	43	D
	Northbound	0.40	19	B	0.74	17	B	0.73	20	B	0.74	18	B
	Southbound	0.53	18	B	0.49	17	B	0.52	18	B	0.50	18	B
Total	0.76	20	C	0.80	20	C	0.87	20	C	0.91	24	C	
Bridge Street at Webb Street	Westbound	0.43	16	B	0.46	19	B	0.47	17	B	0.52	20	B
	Northbound	0.73	17	B	0.81	19	B	0.78	19	B	0.82	21	C
	Southbound	0.45	10	A	0.64	14	B	0.51	12	B	0.68	15	B
	Total	0.75	14	B	0.81	17	B	0.78	16	B	0.82	18	B
Webb Street at Essex Street	Eastbound	0.24	5	A	0.38	6	A	0.31	6	A	0.42	7	A
	Westbound	0.32	6	A	0.33	6	A	0.44	8	A	0.48	8	A
	Northbound	0.22	9	A	0.23	10	A	0.29	11	B	0.30	12	B
	Southbound	0.25	6	A	0.26	7	A	0.28	6	A	0.29	7	A
Total	0.32	6	A	0.38	7	A	0.44	7	A	0.48	8	A	
Fort Avenue at Memorial Drive/ Derby Street	Eastbound	0.05	10	A	0.05	10	A	0.05	10	A	0.06	10	B
	Westbound	0.15	11	B	0.20	13	B	0.17	11	B	0.23	13	B
	Northbound	0.07	5	A	0.07	< 5	A	0.07	< 5	A	0.07	< 5	A
	Southbound	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A
Derby Street at Webb Street/ Site Driveway	Eastbound	0.01	12	B	0.01	12	B	0.01	12	B	0.01	13	B
	Westbound	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A
	Northbound	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A
Fort Avenue at Site Driveway	Westbound	0.00	9	A	0.00	9	A	0.00	9	A	0.03	10	B
	Northbound	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A
	Southbound	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A

¹Volume-to-capacity ratio

²Average control delay per vehicle (in seconds)

³Level of service

⁴Construction period assumes 150 employees at the peak of construction.

⁵Build conditions assume operations with 200 employees added to the No-Build condition.

Table 9-6, Intersection Capacity Analysis Results (Weekday Evening Peak Hour)

Period	Approach	2022 Baseline			Construction Period ⁴			2029 No-Build			2029 Build ⁵		
		v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
Sgt. James Ayube Mem. Drive at Bridge Street	Westbound	0.33	6	A	0.34	6	A	0.36	7	A	0.38	7	A
	Northbound	0.62	23	C	0.62	24	C	0.66	25	C	0.66	25	C
	Southbound	0.73	12	B	0.77	12	B	0.81	13	B	0.81	13	B
	Total	0.73	13	B	0.77	13	B	0.81	15	B	0.81	15	B
Sgt. James Ayube Mem. Drive at Bridge Street/ Apartment Dwy	Eastbound	0.04	10	A	0.03	10	A	0.04	10	B	0.03	11	B
	Westbound	0.63	20	C	0.74	25	C	0.68	23	C	0.77	28	C
	Northbound	0.59	13	B	0.64	16	B	0.61	13	B	0.66	16	B
	Southbound	0.49	13	B	0.54	17	B	0.49	13	B	0.51	15	B
Total	0.73	15	B	0.74	18	B	0.68	15	B	0.77	18	B	
Bridge Street at Webb Street	Westbound	0.37	15	B	0.61	20	B	0.41	16	B	0.57	21	C
	Northbound	0.73	17	B	0.76	20	B	0.78	18	B	0.79	21	C
	Southbound	0.66	14	B	0.73	18	B	0.79	18	B	0.89	24	C
	Total	0.73	15	B	0.76	19	B	0.79	18	B	0.89	22	C
Webb Street at Essex Street	Eastbound	0.17	<5	A	0.19	<5	A	0.22	<5	A	0.22	<5	A
	Westbound	0.24	<5	A	0.39	6	A	0.32	6	A	0.42	6	A
	Northbound	0.10	7	A	0.15	10	A	0.16	8	A	0.17	11	B
	Southbound	0.17	5	A	0.20	7	A	0.20	6	A	0.22	8	A
	Total	0.24	<5	A	0.39	6	A	0.32	5	A	0.42	6	A
Fort Avenue at Memorial Drive/ Derby Street	Eastbound	0.01	9	A	0.01	10	A	0.01	10	A	0.01	10	B
	Westbound	0.13	10	A	0.14	10	A	0.15	9	A	0.16	10	B
	Northbound	0.02	<5	A	0.02	<5	A	0.02	<5	A	0.02	<5	A
	Southbound	0.00	<5	A	0.00	<5	A	0.00	<5	A	0.00	<5	A
Derby Street at Webb Street/ Site Driveway	Eastbound	0.01	12	B	0.01	12	B	0.01	12	B	0.01	12	B
	Westbound	0.00	<5	A	0.00	<5	A	0.00	<5	A	0.00	<5	A
	Northbound	0.00	<5	A	0.00	<5	A	0.00	<5	A	0.00	<5	A
Fort Avenue at Site Driveway	Westbound	0.00	11	B	0.27	13	B	0.00	11	B	0.24	13	B
	Northbound	0.00	<5	A	0.00	<5	A	0.00	<5	A	0.00	<5	A
	Southbound	0.00	<5	A	0.00	<5	A	0.00	<5	A	0.00	<5	A

¹Volume-to-capacity ratio

²Average control delay per vehicle (in seconds)

³Level of service

⁴Construction period assumes 150 employees at the peak of construction.

⁵Build conditions assume operations with 200 employees added to the No-Build condition.

As summarized in Table 9-5 and Table 9-6, the proposed development is not expected to materially impact study area intersections and will not result in any material changes in traffic operations in the study area during the Construction Period or projected Design conditions with the Salem Wind Port in place compared to Baseline conditions. Relative traffic increases for the Project represents an inconsequential change in area roadway volumes - a level of change that falls well within normal day-to-day fluctuations in traffic entering and exiting the study intersections and is immaterial to traffic operations in the area. Additionally, the incremental traffic increases at the study intersections during the construction period will be adequately accommodated below-capacity with LOS C or better operations expected. Accordingly, no roadway improvements are warranted to accommodate the projects construction activity or operations of the Salem Wind Port.

9.7 FUTURE TRAFFIC VOLUME NETWORKS

Evaluation of the proposed development impacts requires the establishment of a future baseline analysis condition. This section estimates future roadway and traffic conditions with and without the proposed development. To be consistent with EEA/MassDOT guidelines, a seven-year planning horizon was selected.

To determine the impact of Site-generated traffic volumes on the roadway network under future conditions, baseline traffic volumes in the study area were projected to a future year condition. Traffic volumes on the roadway network at that time, in the absence of the development (that is, the No-Build condition), would include existing traffic, new traffic due to general background traffic growth, and traffic related to specific development by others that is currently under review at the local and/or state level. Consideration of these factors resulted in the development of No-Build traffic volumes. Anticipated Site-generated traffic volumes were then superimposed upon these No-Build traffic-flow networks to develop future Build conditions.

The following sections provide an overview of future No-Build traffic volumes and projected Build traffic volumes.

9.7.1 BACKGROUND TRAFFIC GROWTH

Background traffic includes demand generated by other planned developments in the area as well as demand increases caused by external factors. External factors are general increases in traffic not attributable to a specific development and are determined using historical data.

Historical Area Growth

Nearby permanent count station data published by MassDOT indicates a -0.3% growth rate. For purposes of this evaluation, a 1% compounded annual growth rate was used (7.2% increase over a 7-year horizon). This growth rate is higher than historic rates and is also expected to account for any small fluctuation in hourly traffic as may occur from time to time in the study area and traffic associated with other potential small developments or vacancies in the area. MassDOT permanent count

station data and background growth calculations are provided in the Attachment G, Transportation Attachments.

Development-Related Growth

Development of future No-Build traffic volumes also considers traffic generated from specific area developments. Based on consultation with the City of Salem and review of Massachusetts Environmental Policy Act (MEPA) files there are two site-specific development projects in the area that may increase baseline traffic at the study intersections as follows:

- *Lee Fort Terrace*. This is a 124-unit residential complex to be located between Szetela Lane and Fort Avenue that would replace an existing 50-unit elderly housing development. The project will include 65 senior units and 59 non-age restricted units. Traffic associated with project build-out were estimated from the TIA prepared by Vanasse & Associates, Inc, dated March 2022. Site-specific trip monitoring for the project is provided in the Attachment G, Transportation Attachments.
- *Salem Non-Profit Center*. This is a redevelopment of a 14,869-sf office building and surface parking lot located at 73-89 Lafayette Street and 9 Peabody Street to include a 38,860-sf health center, 48 age-restricted affordable housing units, a 2,200-sf bank, and 500 sf of commercial office space. Traffic associated with project build-out were estimated from the Traffic Impact Study (TIS) prepared by Nitsch Engineering dated March 1, 2022. Site-specific trip tracings for the project provided in the Attachment G, Transportation Attachments.

9.7.2 2029 NO-BUILD TRAFFIC VOLUMES

To account for future traffic growth in the study area future No-Build traffic volumes are developed by increasing the 2022 Baseline volumes by 7.2% (1% compounded annually for 7 years) as well as site specific traffic from Lee Fort Terrace and Salem Non-Profit Center. Future 2029 No-Build traffic volumes are included in the Attachment G, Transportation Attachments.

9.7.3 CONSTRUCTION PERIOD IMPACT

The construction period is a temporary condition that will generate traffic on area roadways associated with employee and truck related trips. Once the Project Site is constructed, the traffic for the project will be associated with day-to-day operations of the Salem Wind Port. Much of the marine construction work and all of the dredging activities will take place from barges and materials will be supplied by water.

The Proponent anticipates construction activity at the Project Site will generate a peak of approximately 123 workers with significantly lower activity during the beginning and end of the construction period. The construction period analysis conducted in the EENF assumed a peak construction period of approximately 150 workers. With the proposed reduction in construction period activity the findings of the TIA remain

valid, the proposed development is not expected to materially impact study area intersections and will not result in any material changes in traffic operations in the study area during the Construction Period.

9.7.4 2029 BUILD CONDITIONS – POST-CONSTRUCTION PERIOD

2029 Build traffic conditions are developed by adding additional site-generated trips associated with the proposed development as the Salem Wind Port to the 2029 No-Build traffic volumes within the study area. The Project has projected employment levels of up to 60 persons on non-vessel days and up to 200 persons on vessel days with a typical day operation of 114 FTE employees. While the on-site employment is expected to be significantly less on an average day, the analysis in the subsequent section of this report uses the peak day employment level of 200 for analysis purposes. Specific methodologies and assumptions used to estimate trips and trip distribution are discussed below.

Project Site Traffic Estimates

The trip generation estimates for the proposed development of the Project Site are provided for the weekday morning and weekday evening periods, which correspond to the critical analysis periods for the proposed use and adjacent street traffic flow. For planning purposes, the new traffic generated by the project was estimated using trip rates published in ITE's *Trip Generation* for LUC 170 – Utility. Table 9-4 presents a summary of the site trip generation for the proposed use of the Project Site based on a vessel day with 200 persons. Trip generation calculations are provided in the Attachment G, Transportation Attachments.

As summarized in Table 9-4, the proposed development is estimated to generate approximately 142 vehicle trips (124 entering and 18 exiting) during the weekday morning peak hour and 150 vehicle trips (21 entering and 129 exiting) during the weekday evening peak hour. On a daily basis, the development is estimated to generate approximately 774 vehicle trips on a weekday with 50% entering and exiting. While the proposed development is assumed to support employment levels up to 200 persons, peak hour trips reflect that not all of the employees enter and exit the Project Site during the same peak hour period.

Trip Distribution

As the vast majority of peak hour trip activity will be employee-related, the distribution for projected traffic for the proposed facility is based on Journey to work patterns along the adjacent roadway system and populations of the adjacent communities. This methodology indicates a primary employee trip distribution of 60% to/from Bridge Street to the south, 25% to/from Derby Street to the south, and 15% to/from the north. Trip distribution calculations and network are provided in the Attachment G, Transportation Attachments.

Development-related trips for the proposed development are assigned to the roadway network using the ITE trip-generation estimates shown in Table 9-4, and the distribution patterns described above. Development-related trips at each intersection

approach for the weekday morning and weekday evening are provided in the Attachment G, Transportation Attachments.

2029 Build Traffic Conditions

2029 Build conditions for the weekday morning and weekday evening peak hours include No-Build traffic volumes and site-generated trips. The resulting 2029 Build traffic volumes for typical operations of the proposed development as the Salem Wind Port are included in the Attachment G, Transportation Attachments.

The next section provides an overview of operational analysis methodology as well as an assessment of driveway operations under Baseline, No-Build, and Build conditions with the Salem Wind Port in place.

9.7.5 OPERATIONS ANALYSIS

Analysis Methodology

Intersection capacity analyses are presented in this section for the Baseline, 2029 No-Build, and 2029 Build traffic-volume conditions. Capacity analyses, conducted in accordance with EEA/MassDOT guidelines, provide an index of how well the roadway facilities serve the traffic demands placed upon them. The operational results provide the basis for recommended access and roadway improvements in the following section if required.

Capacity analysis of intersections is developed using the Synchro[®] computer software, which implements the methods of the HCM6. The resulting analysis presents a LOS designation for individual intersection movements.

The LOS is a letter designation that provides a qualitative measure of operating conditions based on several factors including roadway geometry, speeds, ambient traffic volumes, traffic controls, and driver characteristics. Since the LOS of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of LOS, depending on the time of day, day of week, or period of year. A range of six levels of service are defined on the basis of average delay, ranging from LOS A (the least delay) to LOS F (delays greater than 50 seconds for unsignalized movements). The specific control delays and associated LOS designations are presented in the Attachment G, Transportation Attachments.

Analysis Results

LOS analyses were conducted for the Baseline, 2029 No-Build, and 2029 Build conditions for the study intersections. The results of the intersection capacity analyses are summarized below in Table 9-7 and Table 9-8. Detailed analysis results are presented in the Attachment G, Transportation Attachments.

Table 9-7, Future Intersection Capacity Analysis Results (Weekday Morning Peak Hour)

		2022 Baseline			2029 No-Build Condition			2029 Build Condition		
Period	Approach	v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	v/c	Delay	LOS
Sgt. James Ayube Mem. Drive at Bridge Street	Westbound	0.34	7	A	0.38	8	A	0.37	8	A
	Northbound	0.63	23	C	0.66	24	C	0.67	25	C
	Southbound	0.73	12	B	0.77	13	B	0.79	13	B
	Total	0.73	13	B	0.77	15	B	0.79	15	B
Sgt. James Ayube Mem. Drive at Bridge Street/ Apartment Dwy	Eastbound	0.03	11	B	0.03	13	B	0.03	14	B
	Westbound	0.76	26	C	0.87	37	D	0.91	43	D
	Northbound	0.40	19	B	0.73	20	B	0.7	18	B
	Southbound	0.53	18	B	0.52	18	B	0.50	18	B
	Total	0.76	20	C	0.87	20	C	0.91	24	C
Bridge Street at Webb Street	Westbound	0.43	16	B	0.47	4	B	0.52	20	B
	Northbound	0.73	17	B	0.78	19	B	0.82	21	C
	Southbound	0.45	10	A	0.51	12	B	0.68	15	B
	Total	0.75	14	B	0.78	16	B	0.82	18	B
Webb Street at Essex Street	Eastbound	0.24	5	A	0.31	6	A	0.42	7	A
	Westbound	0.32	6	A	0.44	8	A	0.48	8	A
	Northbound	0.22	9	A	0.29	11	B	0.30	12	B
	Southbound	0.25	6	A	0.28	6	A	0.29	7	A
	Total	0.32	6	A	0.44	7	A	0.48	8	A
Fort Avenue at Memorial Drive/ Derby Street	Eastbound	0.05	10	A	0.05	10	A	0.06	10	B
	Westbound	0.15	11	B	0.17	11	B	0.23	13	B
	Northbound	0.07	5	A	0.07	<5	A	0.07	<5	A
	Southbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Derby Street at Webb Street/ Site Driveway	Eastbound	0.01	12	B	0.01	12	B	0.01	13	B
	Westbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
	Northbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Fort Avenue at Site Driveway	Westbound	0.00	9	A	0.00	9	A	0.03	10	B
	Northbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
	Southbound	0.00	<5	A	0.00	<5	A	0.00	<5	A

¹Volume-to-capacity ratio²Average control delay per vehicle (in seconds)³Level of service

Table 9-8, Future Intersection Capacity Analysis Results (Weekday Evening Peak Hour)

		2022 Baseline			2029 No-Build Condition			2029 Build Condition		
Period	Approach	v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	v/c	Delay	LOS
Sgt. James Ayube Mem. Drive at Bridge Street	Westbound	0.33	6	A	0.36	7	A	0.37	7	A
	Northbound	0.62	23	C	0.66	25	C	0.66	25	C
	Southbound	0.73	12	B	0.81	13	B	0.81	13	B
	Total	0.73	13	B	0.81	15	B	0.81	15	B
Sgt. James Ayube Mem. Drive at Bridge Street/ Apartment Dwy	Eastbound	0.04	10	A	0.04	10	B	0.03	11	B
	Westbound	0.63	20	C	0.68	23	C	0.77	25	C
	Northbound	0.59	13	B	0.61	13	B	0.66	16	B
	Southbound	0.49	13	B	0.49	13	B	0.51	15	B
	Total	0.73	15	B	0.68	15	B	0.77	18	B
Bridge Street at Webb Street	Westbound	0.37	15	B	0.41	16	B	0.57	21	C
	Northbound	0.73	17	B	0.78	18	B	0.79	21	C
	Southbound	0.66	14	B	0.79	18	B	0.89	24	C
	Total	0.73	15	B	0.79	18	B	0.89	22	C
Webb Street at Essex Street	Eastbound	0.17	< 5	A	0.22	< 5	A	0.22	< 5	A
	Westbound	0.24	< 5	A	0.32	6	A	0.42	6	A
	Northbound	0.10	7	A	0.16	8	A	0.17	11	B
	Southbound	0.17	5	A	0.20	6	A	0.22	8	A
	Total	0.24	< 5	A	0.32	5	A	0.42	6	A
Fort Avenue at Memorial Drive/ Derby Street	Eastbound	0.01	9	A	0.01	10	A	0.01	10	B
	Westbound	0.13	10	A	0.15	9	A	0.16	10	B
	Northbound	0.02	< 5	A	0.02	< 5	A	0.02	< 5	A
	Southbound	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A
Derby Street at Webb Street/ Site Driveway	Eastbound	0.01	12	B	0.01	12	B	0.01	12	B
	Westbound	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A
	Northbound	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A
Fort Avenue at Site Driveway	Westbound	0.00	11	B	0.00	11	B	0.24	13	B
	Northbound	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A
	Southbound	0.00	< 5	A	0.00	< 5	A	0.00	< 5	A

¹Volume-to-capacity ratio²Average control delay per vehicle (in seconds)³Level of service

As summarized in Table 9-7 and Table 9-8, the proposed development is not expected to materially impact study area intersections and will not result in any material changes in traffic operations in the study area under Build conditions with the Salem Wind Port in place compared to No-Build conditions. Relative traffic increases for the proposed project represents an inconsequential change in area roadway volumes - a level of change that falls well within normal day-to-day fluctuations in traffic entering and exiting the study intersections and is immaterial to traffic operations in the area. Additionally, the incremental traffic increases at the study intersections during the construction period will be adequately accommodated below-capacity with LOS C or better operations expected. Accordingly, the results and conclusion as outlined in the Transportation Section of the Expanded Environmental Notification Form (EENF) dated October 17, 2022, remain valid; no roadway improvements are warranted to accommodate the operations of the Salem Wind Port.

9.8 CONCLUSIONS AND RECOMMENDATIONS

Trip generation for the Project Site is projected to be moderate with approximately 86 new vehicles per hour or less during commuter peak hours. MDM finds that incremental traffic associated with the proposed development is not expected to materially impact operating conditions at the study intersections. The consideration of No Build 2029 and Build 2029 conditions in the analysis of operations-phase traffic generation did not project large volumes of traffic volumes beyond typical daily traffic fluctuations. Additionally, there will be no degradation in the LOS at any of the study intersections due to the project by employees during the peak construction period. Therefore, no additional off-site roadway improvements are warranted to accommodate the development project.

MDM recommends the following access/egress improvements, a Traffic Management Plan, and a CMP that support the proposed operational needs of the Project while minimizing impact to adjacent roadways.

9.8.1 PROJECT SITE ACCESS/EGRESS IMPROVEMENTS

- *Driveway Design.* The driveway alignment, widths, and curb radii would be designed to achieve (a) approximate perpendicular orientation with Fort Avenue and Derby Street; and (b) curb radii as required to accommodate the design vehicle for the Project Site.
- *Signs and Markings.* A STOP sign (R1-1) and STOP line pavement marking is recommended on the driveway approaches to Fort Avenue and Derby Street. The sign and pavement marking shall be compliant with the Manual on Uniform Traffic Control Devices (MUTCD).
- *Pedestrian Connections.* The Site Plan should incorporate sidewalks that connect the proposed trailer to the on-site surface parking areas as well as the existing sidewalk systems on Fort Avenue, Derby Street, and Webb Street. Crosswalks and ADA compliant ramps should be provided where applicable.

- *Bicycle Amenities.* The Proponent should locate secure weather-protected bicycle racks to encourage and facilitate this mode of transportation to/from the Project Site.

9.8.2 TRANSPORTATION DEMAND MANAGEMENT (TDM) PROGRAM

TDM programs include a series of measures that are designed to encourage the use of alternative modes of travel to single-occupant vehicles (SOVs) by influencing the choice of travel modes. These elements are consistent with the MassDEP directive to use all reasonable and feasible mitigation actions to reduce auto emissions. The benefits that are derived from an effective TDM program include less congestion on the roadway network; improved air quality; reduced parking demands and the need for construction of new parking spaces; and health benefits through walking and bicycling. A preliminary list of potential TDM program elements for both construction and operational periods may include the following:

- *On-site Employee Transportation Coordinator.* The Proponent will designate a contact that will serve as transportation coordinator responsible for disseminating relevant TDM information and documentation of TDM information as part of a TDM Program Manual.
- *Shift Hours.* The proposed industrial use at the Project Site includes shift times that result in primary trip patterns to/from the Project Site that occur outside of traditional commuter periods.
- *Preferential Parking for Low-Emission Vehicles.* Preferential parking locations for employees and patrons who use low-emission vehicles will be considered; charging stations for electric vehicles will also be considered during the Site Plan development process.
- *Preferential Parking for Carpools and Vanpools.* The Proponent will designate preferential parking locations for employees who use carpools and vanpools. The parking spaces will be designated with signs. Employees will be encouraged to carpool and vanpool.
- *Vehicle Charging Stations.* Electric vehicle charging stations/outlets should be provided for use of employees and visitors. Specific number of space and EV-ready spaces will be further evaluated during the Site Plan review process.
- *No Idling Signage.* Installation of "No Idling" signs at the Project Site's delivery vehicle parking and loading areas to reduce the amount of greenhouse gasses emitted.
- *Pedestrian Infrastructure.* The development will incorporate walkway striping that connect the parking areas to the public sidewalk system at the main Project Site entranceway and proposed building.

- *Bicycle Facilities.* Bike storage facilities for the Project will be provided on-site. The Proponent will also work with the City to explore the potential of adding a Bluebike station near the Project Site. Historically, a Bluebike station has been placed at the adjacent Ferry Terminal on a seasonal basis.

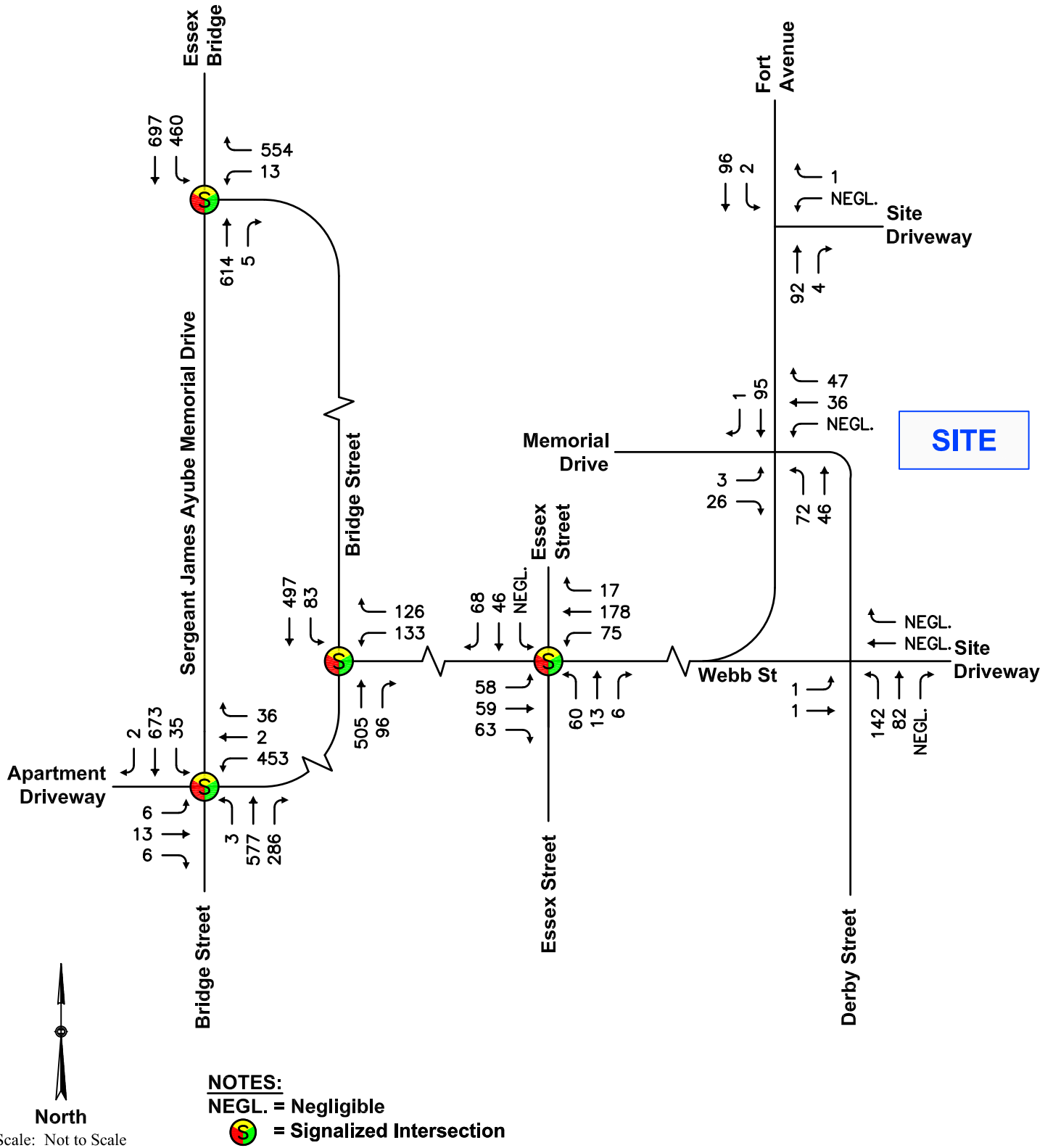
9.8.3 CONSTRUCTION MANAGEMENT PLAN (CMP)

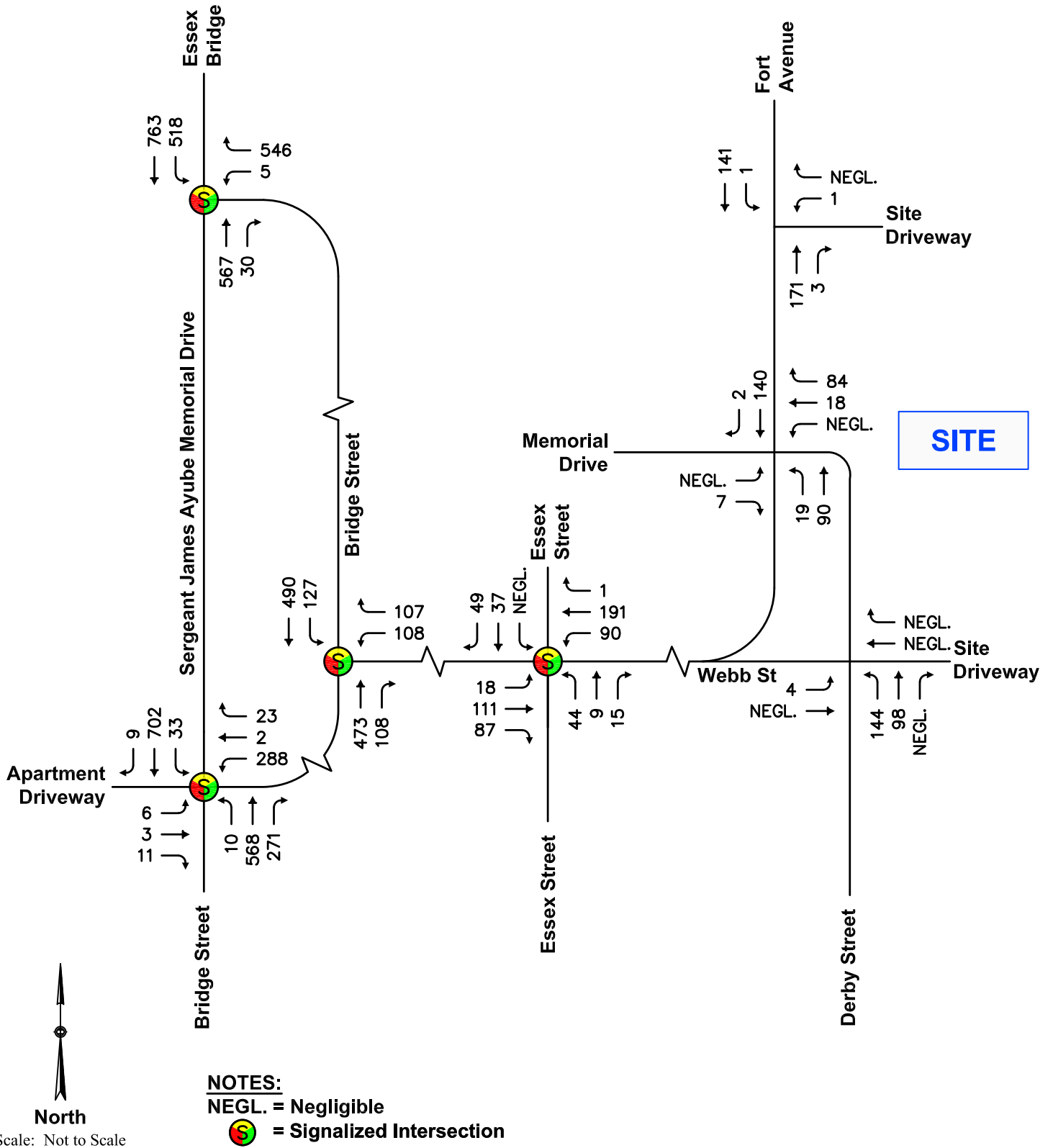
The Proponent will be required to implement a construction management plan to accommodate the specific needs of the Project Site and to provide coordination with the City officials throughout the construction period. The Proponent will also coordinate with the City of Salem with regards to the length of the construction period and any construction permits which may be required. The construction management plan is expected to include but not be limited to the following:

- Designated parking for construction employees will be on-site and accessed via the Fort Avenue primary driveway.
- Construction periods and material deliveries will be designated to coincide with off peak travel periods of the area roadways – specifically to avoid peak school arrival/dismissal periods.
- The delivery of facility construction materials will prioritize barge transport rather than on-road transport to reduce/minimize roadway impacts. Materials to be transported to the Project Site by truck for site stabilization, earthwork, aggregate, paving and building materials will be limited to major routes that include Route 114, Bridge Street, and Webb Street as depicted on Figure 8-15, Construction Truck Route Map. The Proponent is reaching out to marine contractors that can deliver aggregate by barge and reduce truck trips.
- The Proponent will establish waiting and staging areas on-site for all material deliveries and the management of truck traffic via the Webb Street gate.

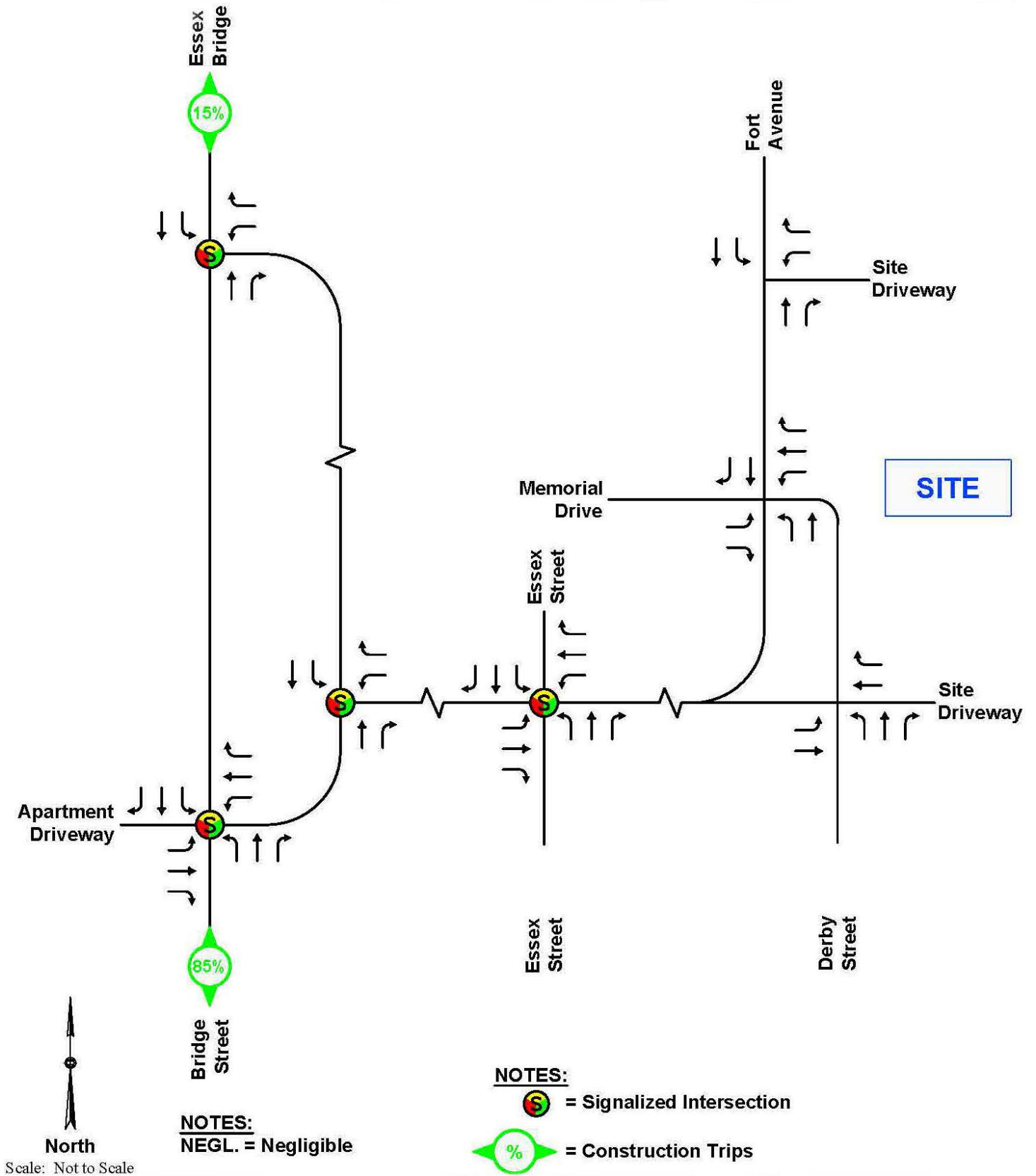


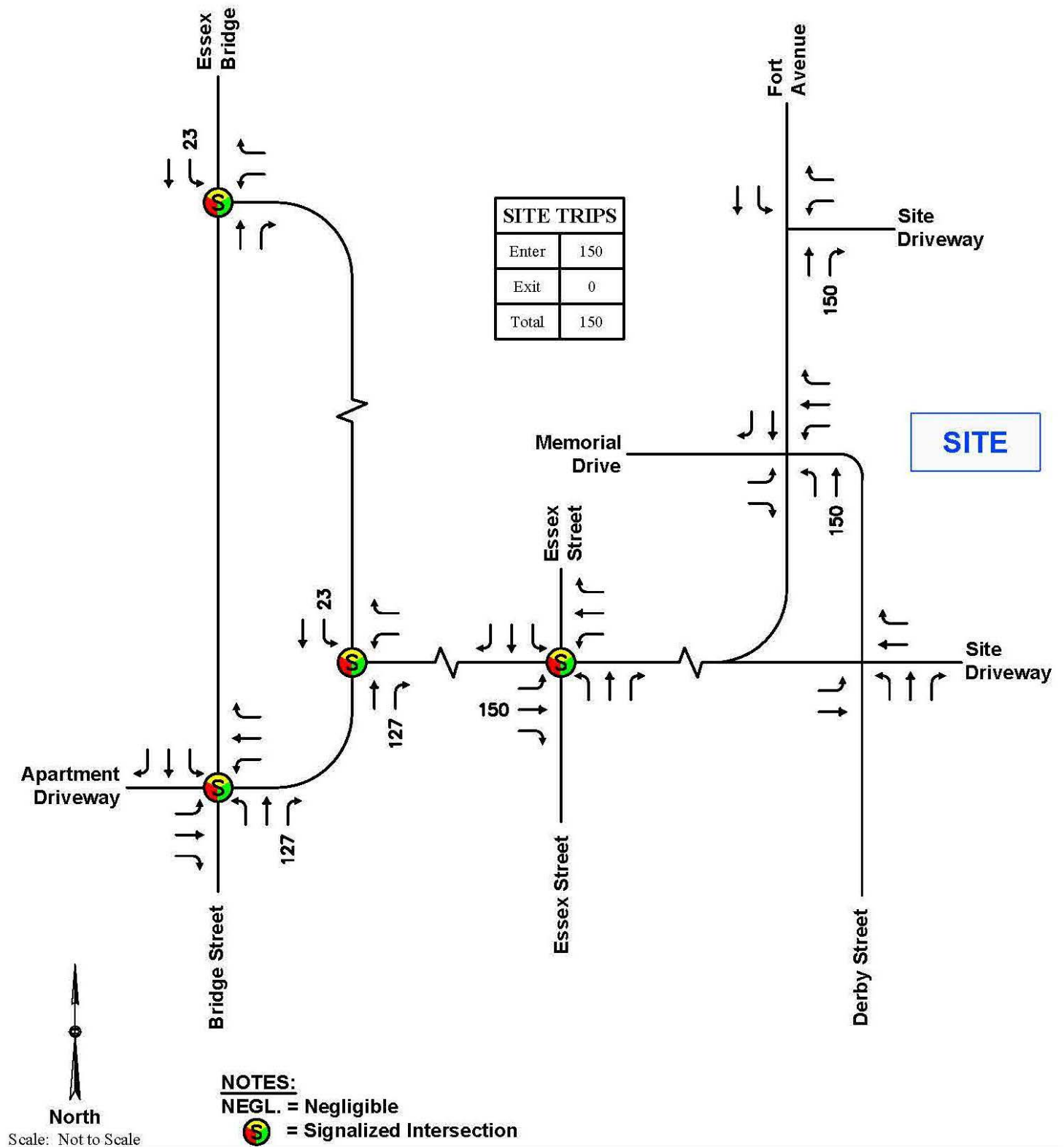


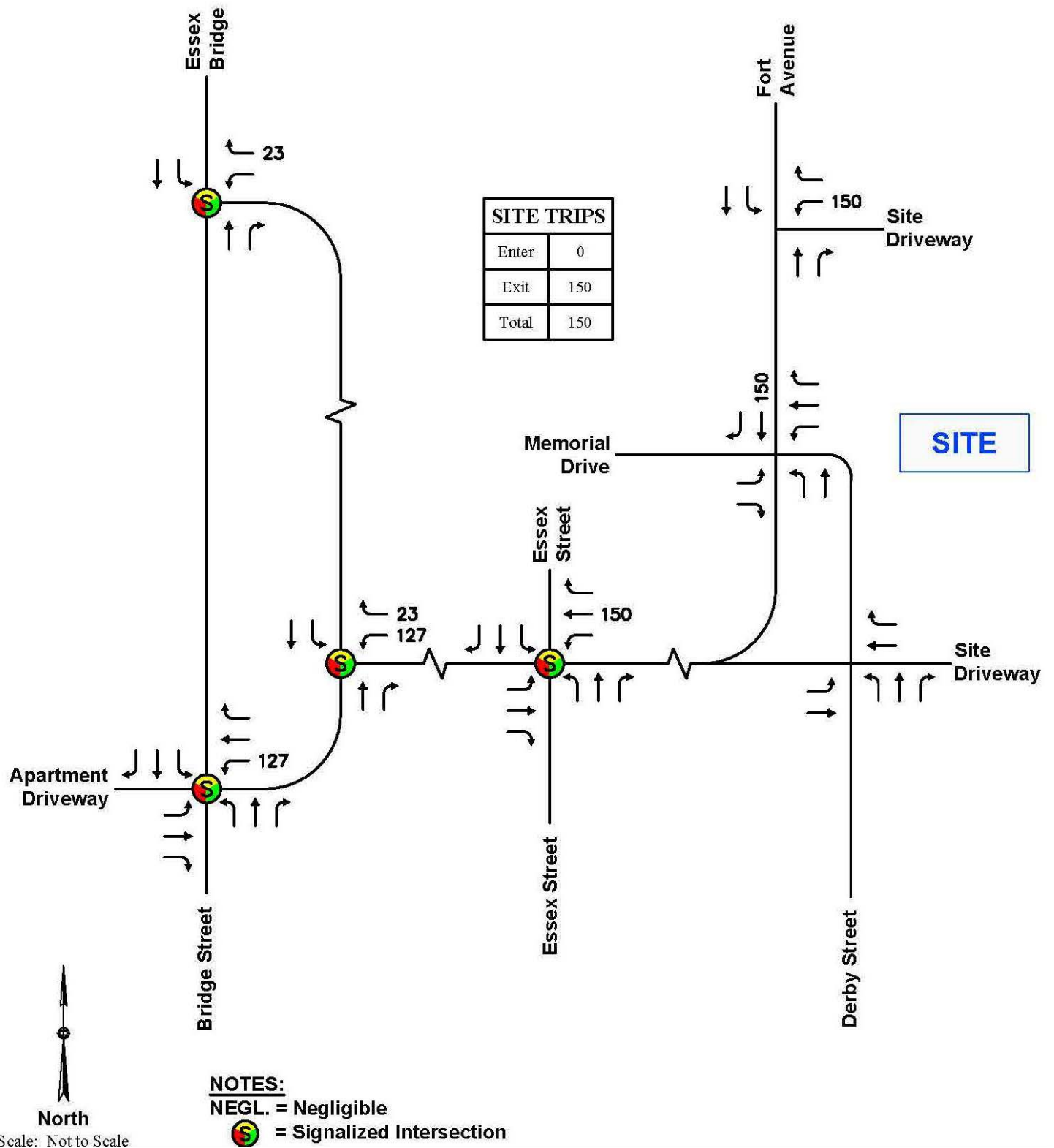


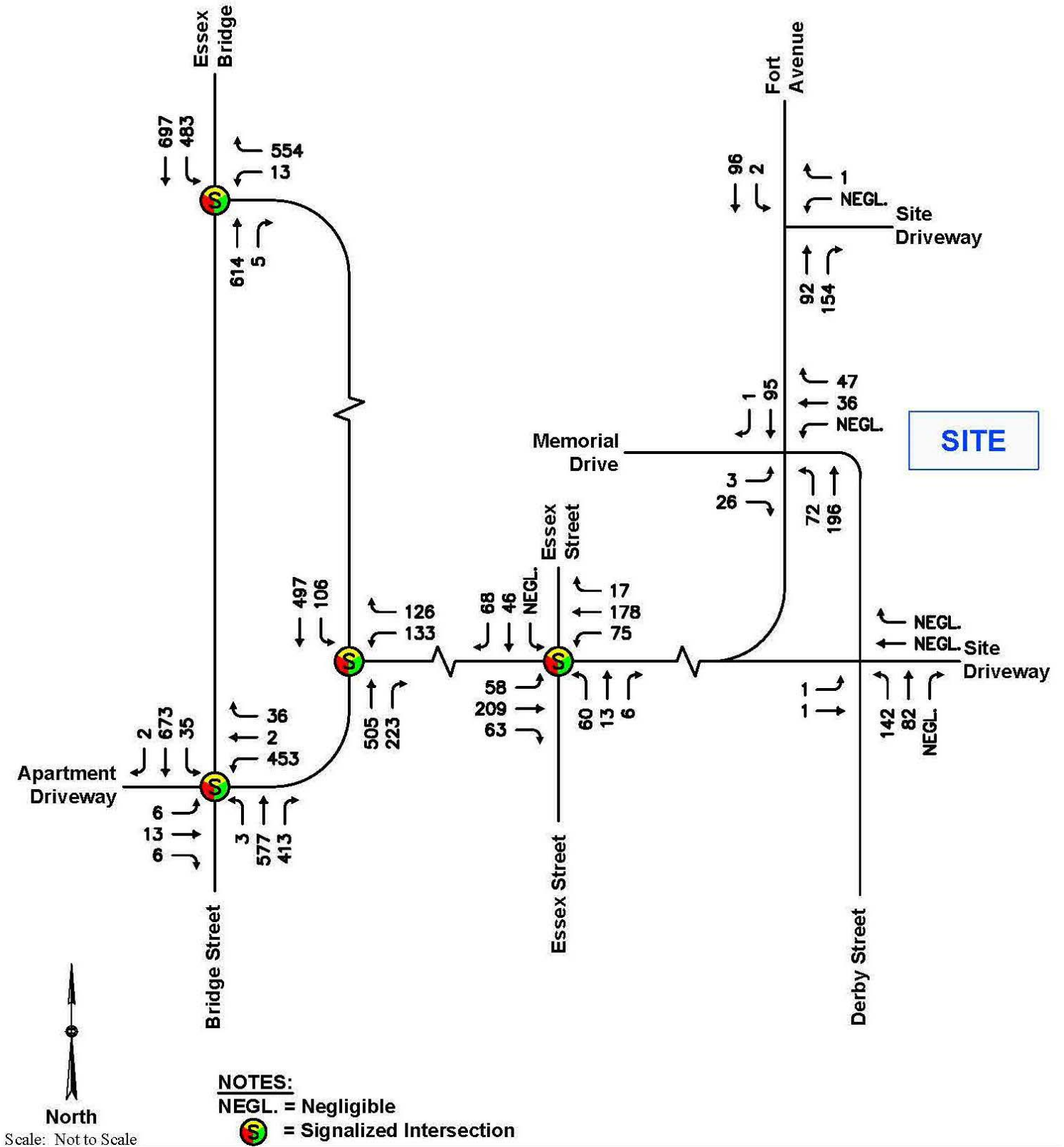


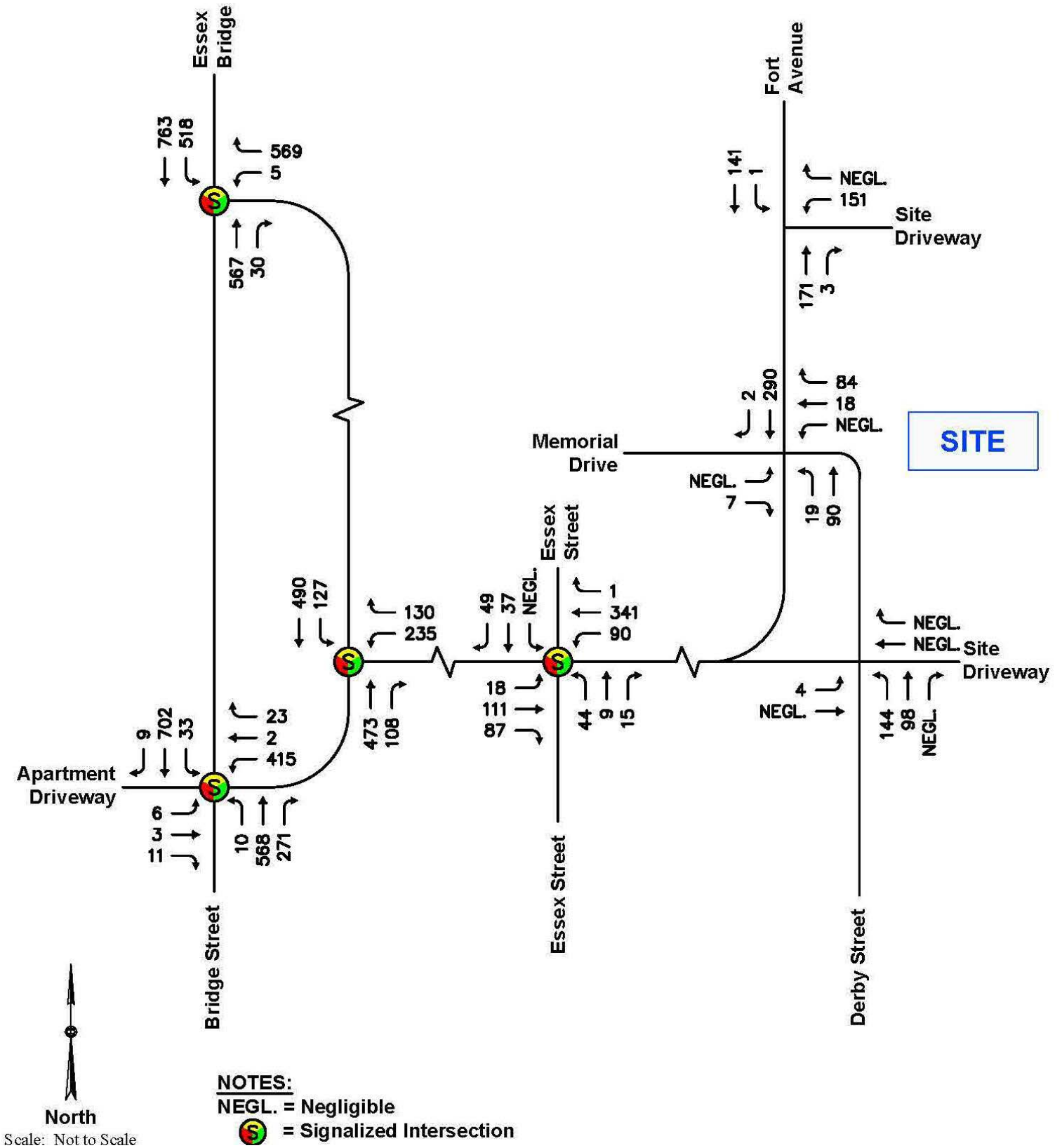
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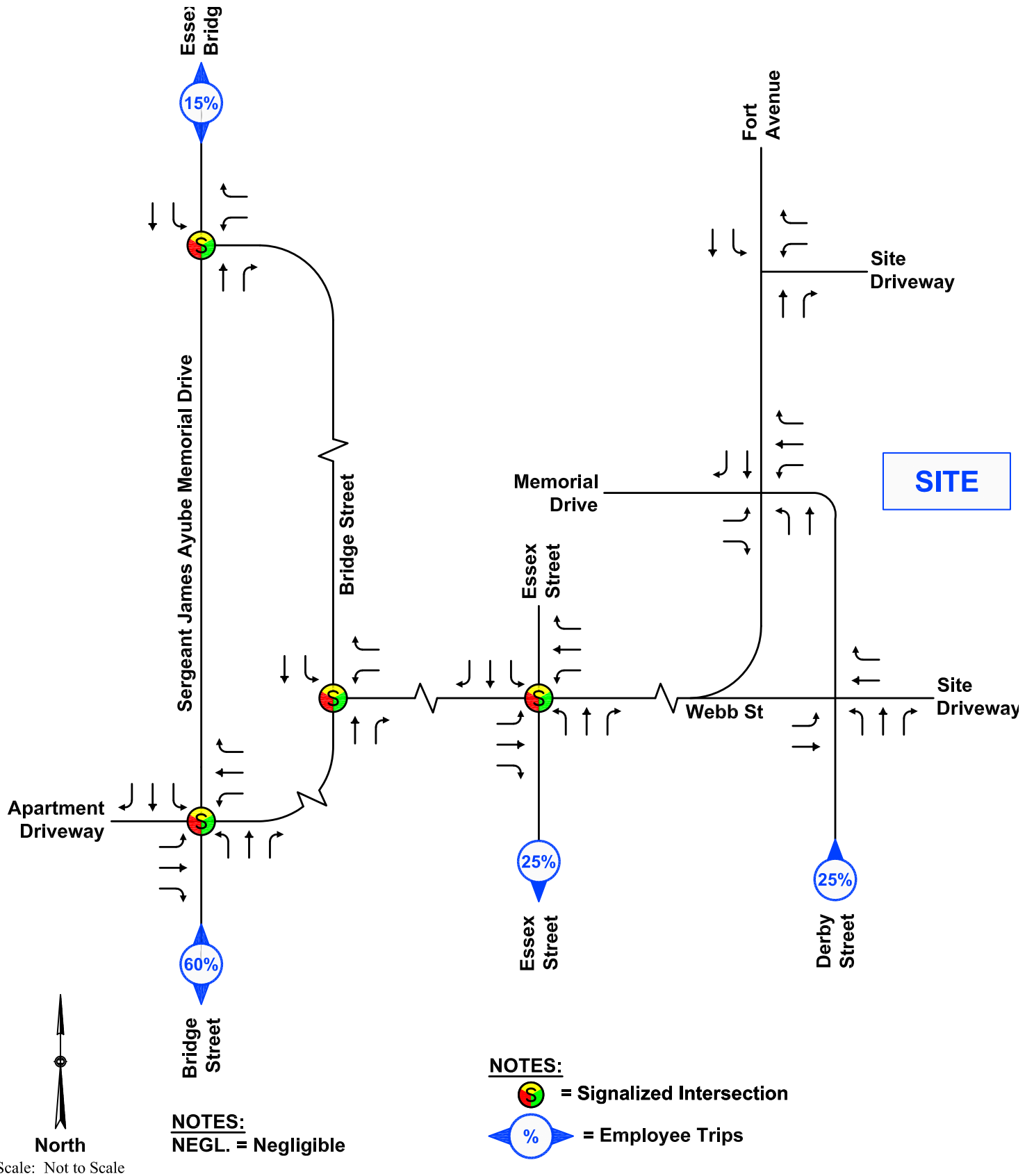


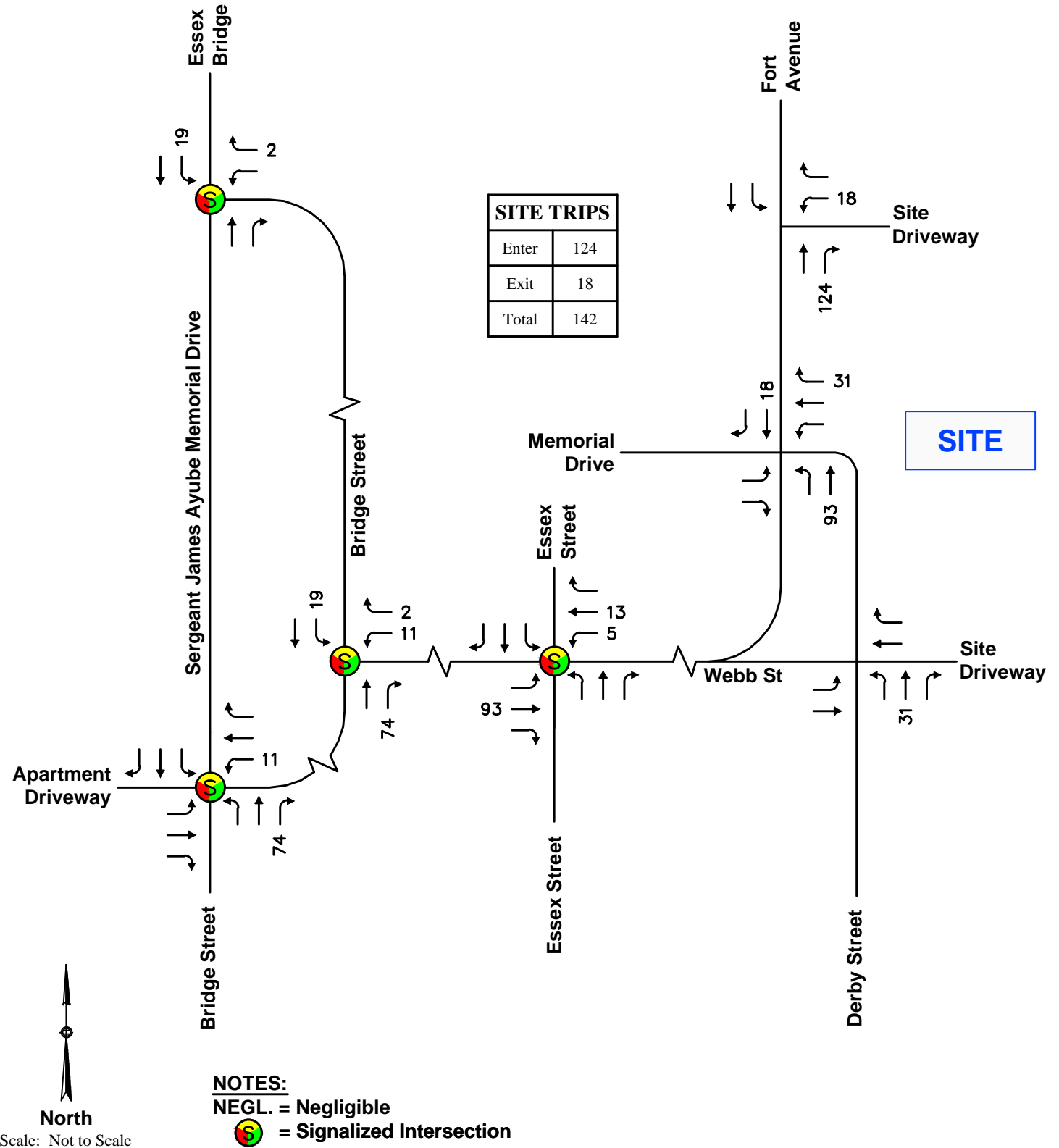


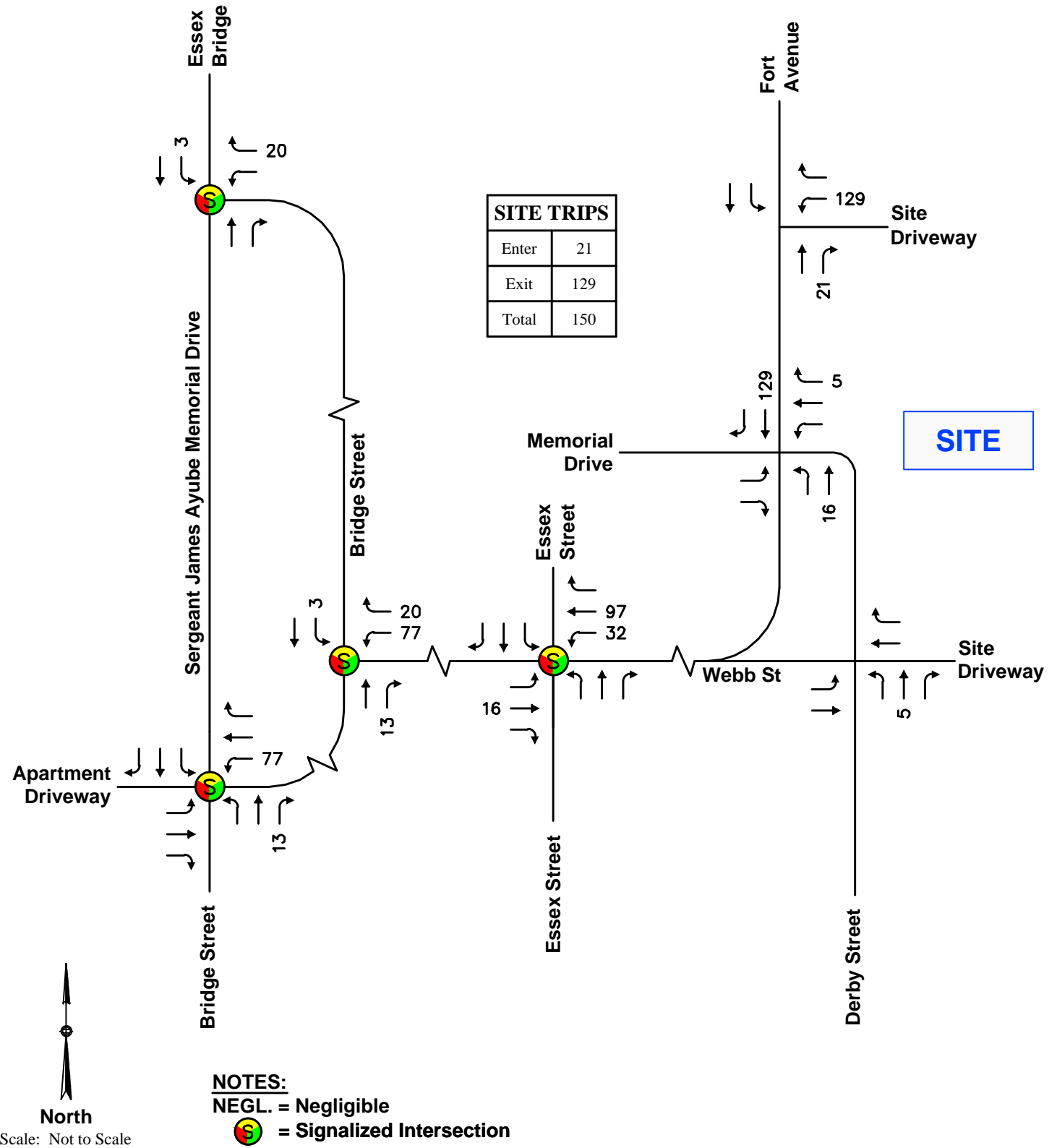


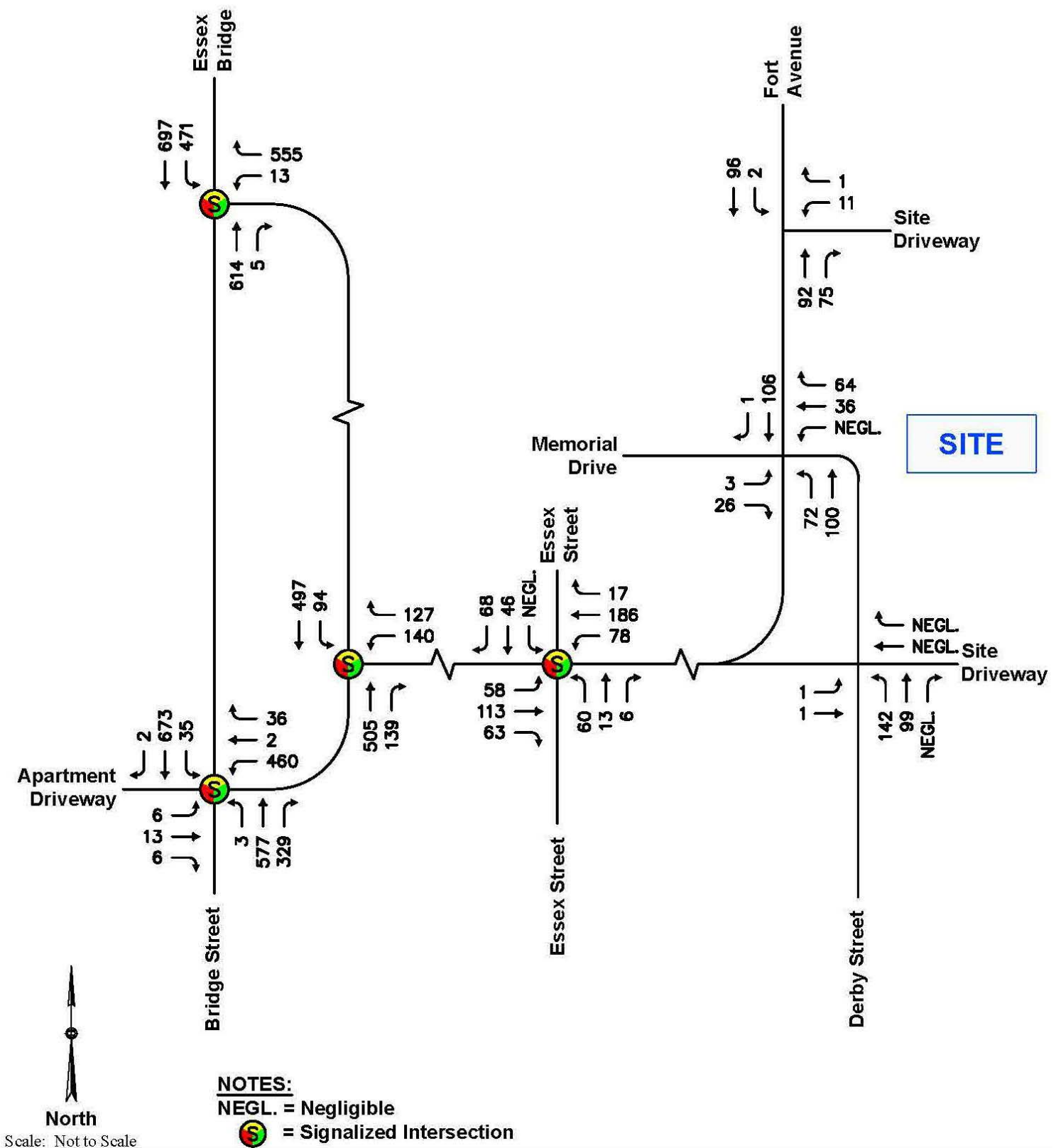


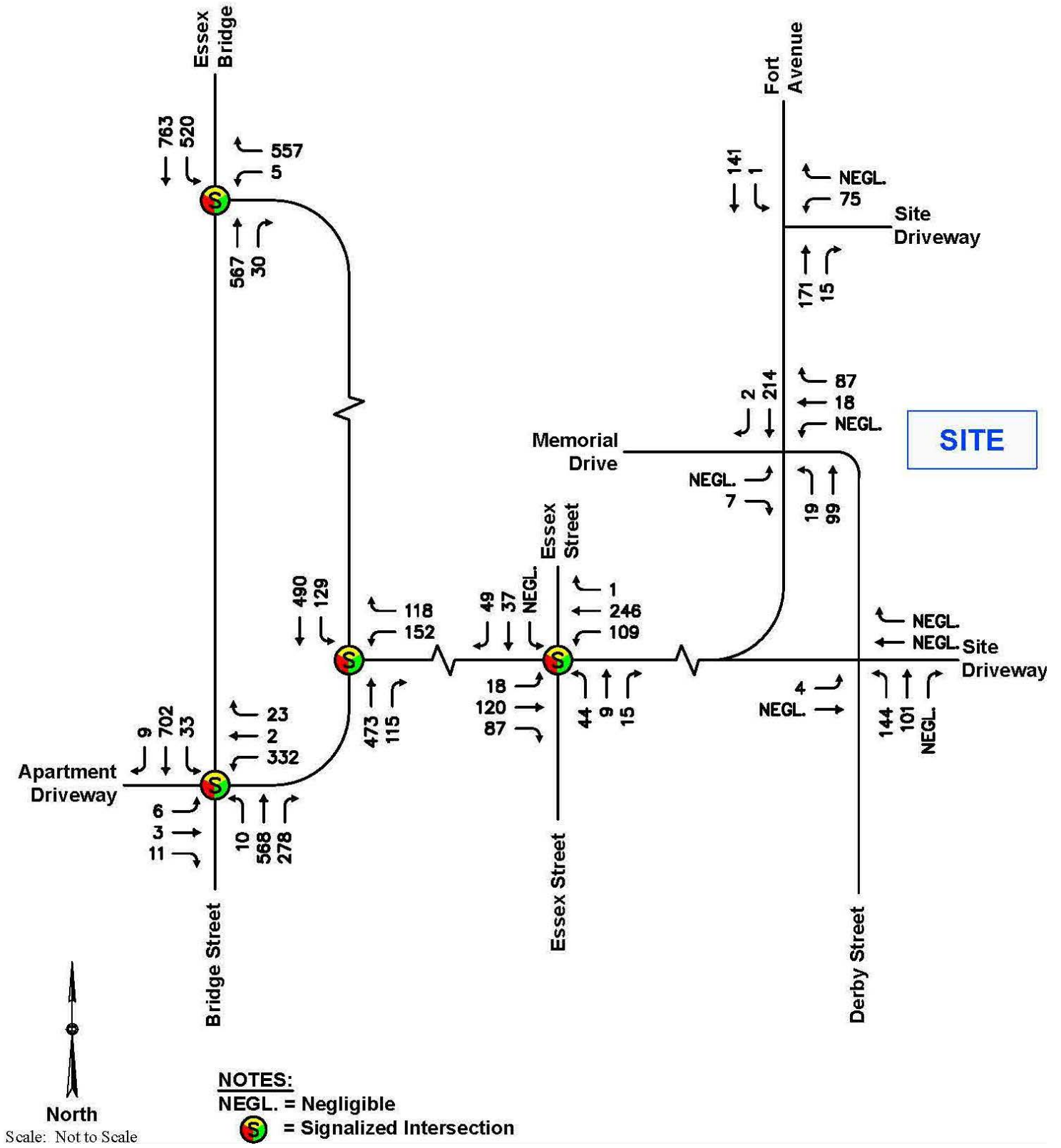


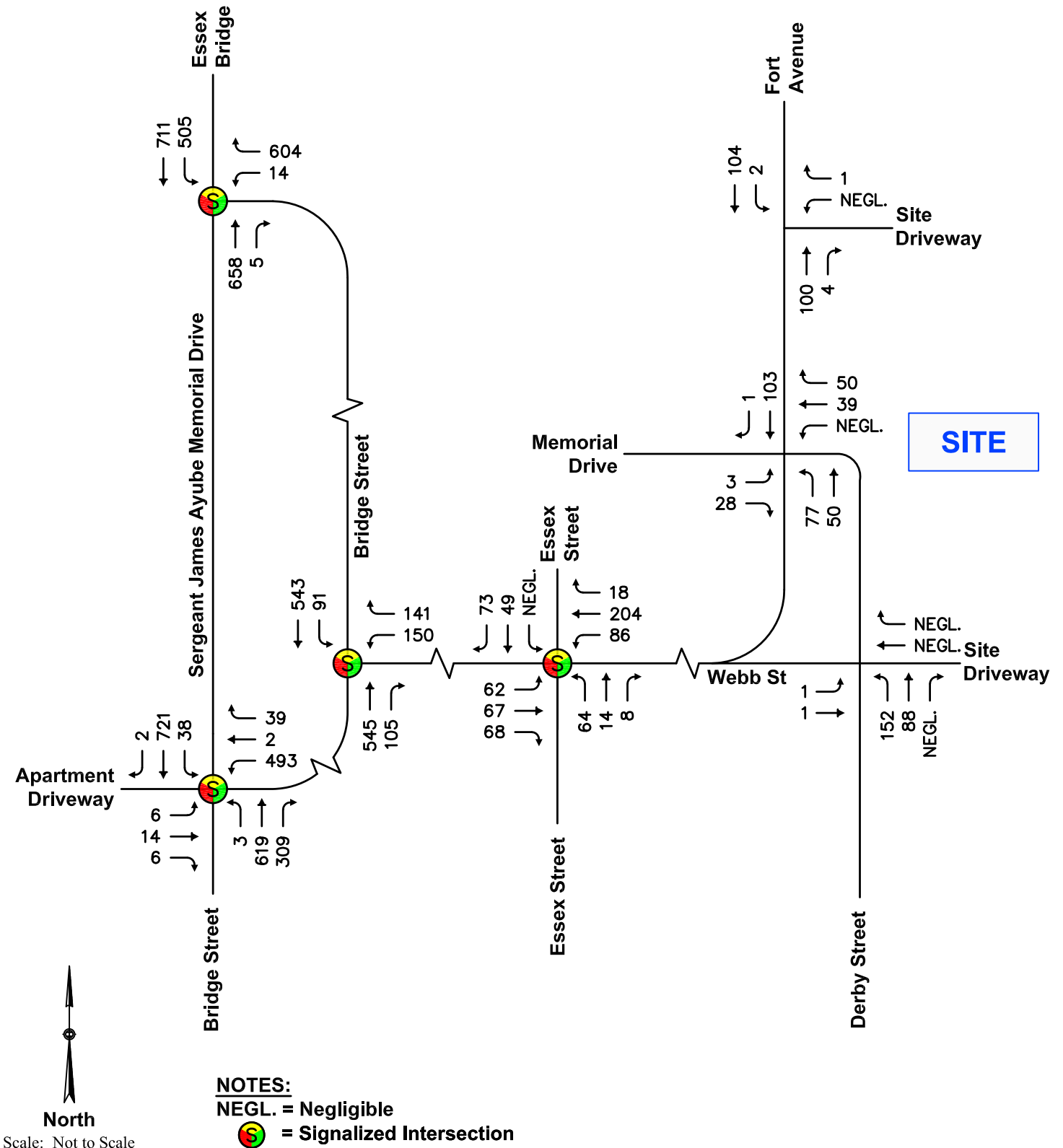


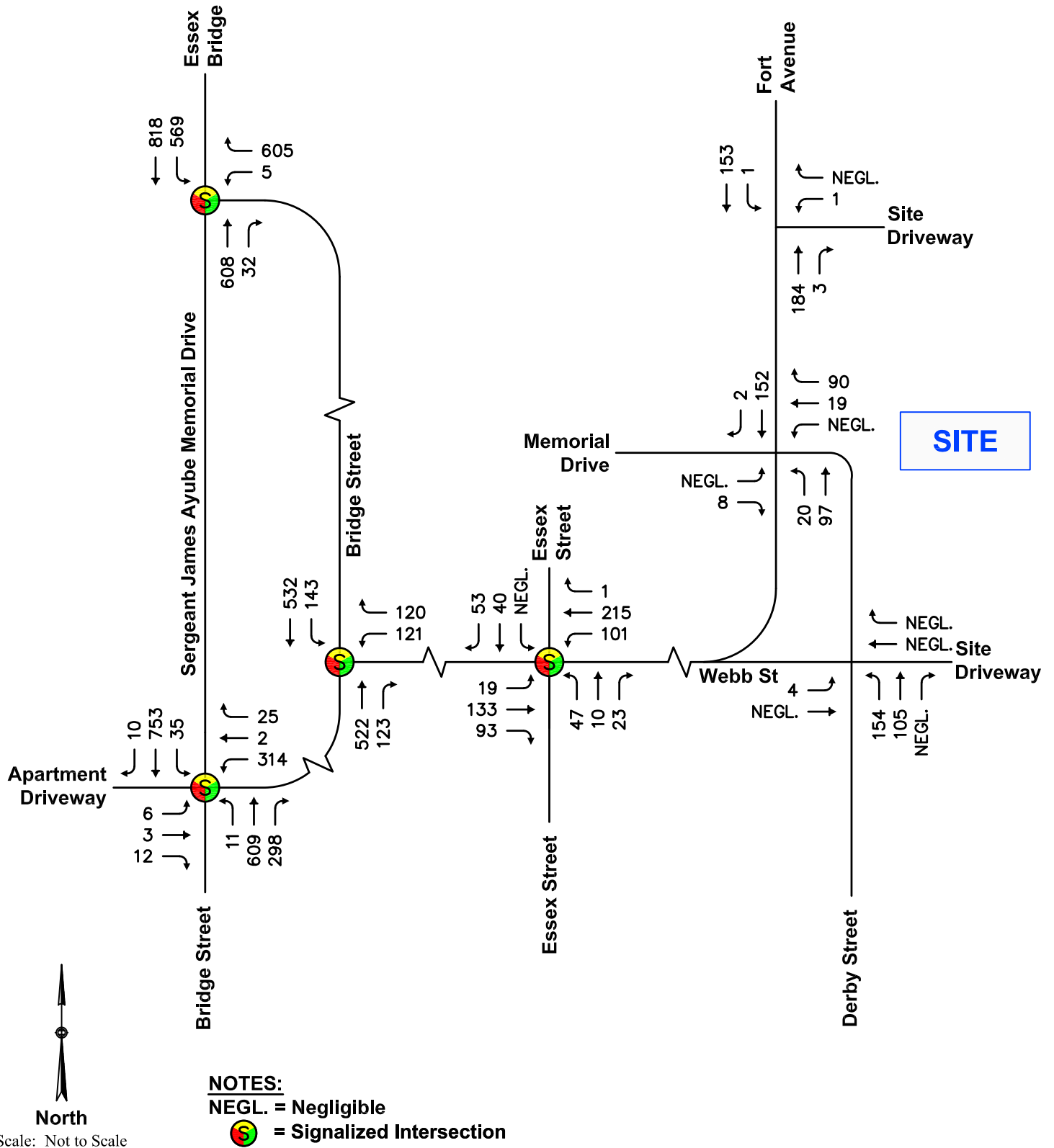


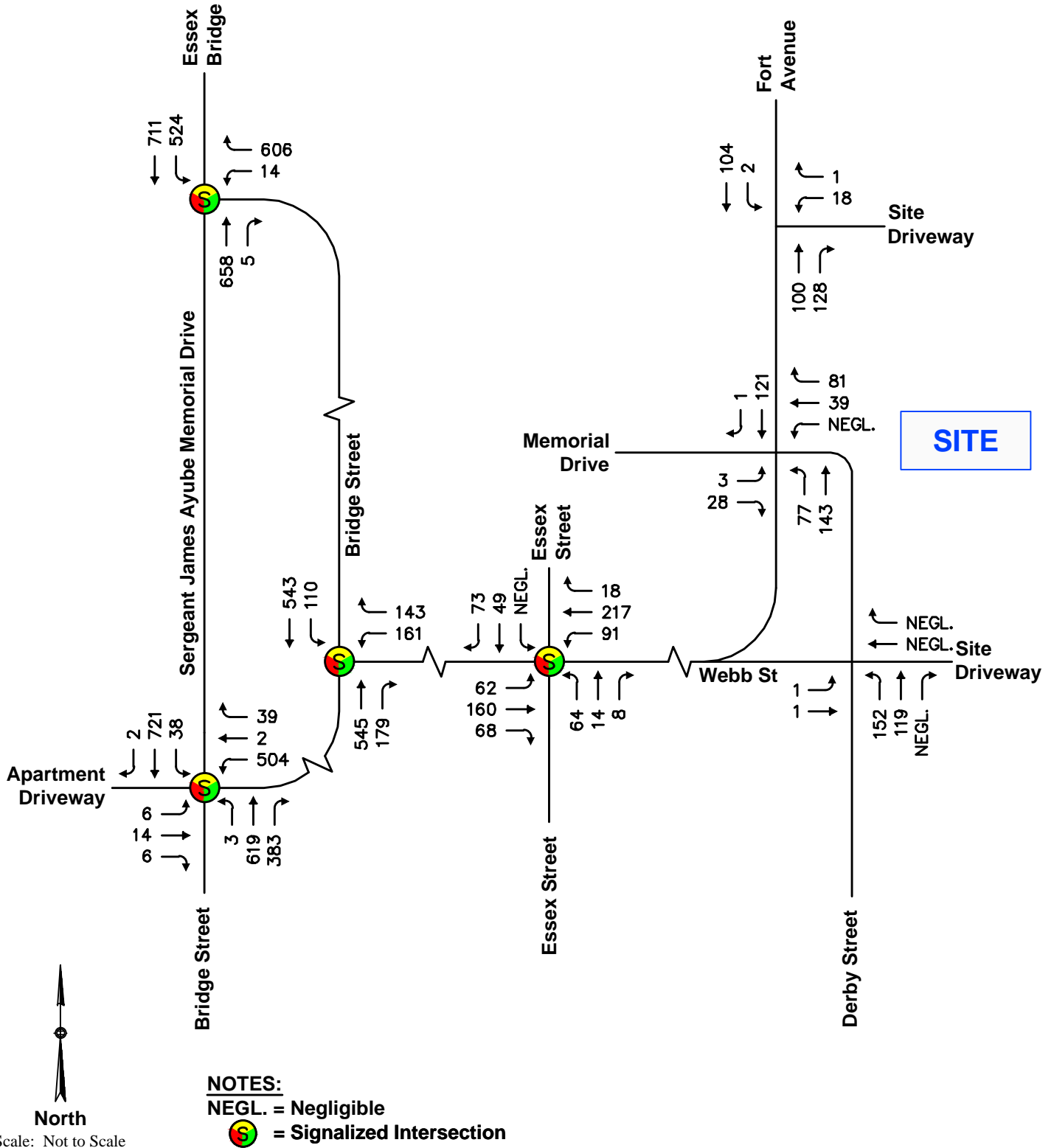


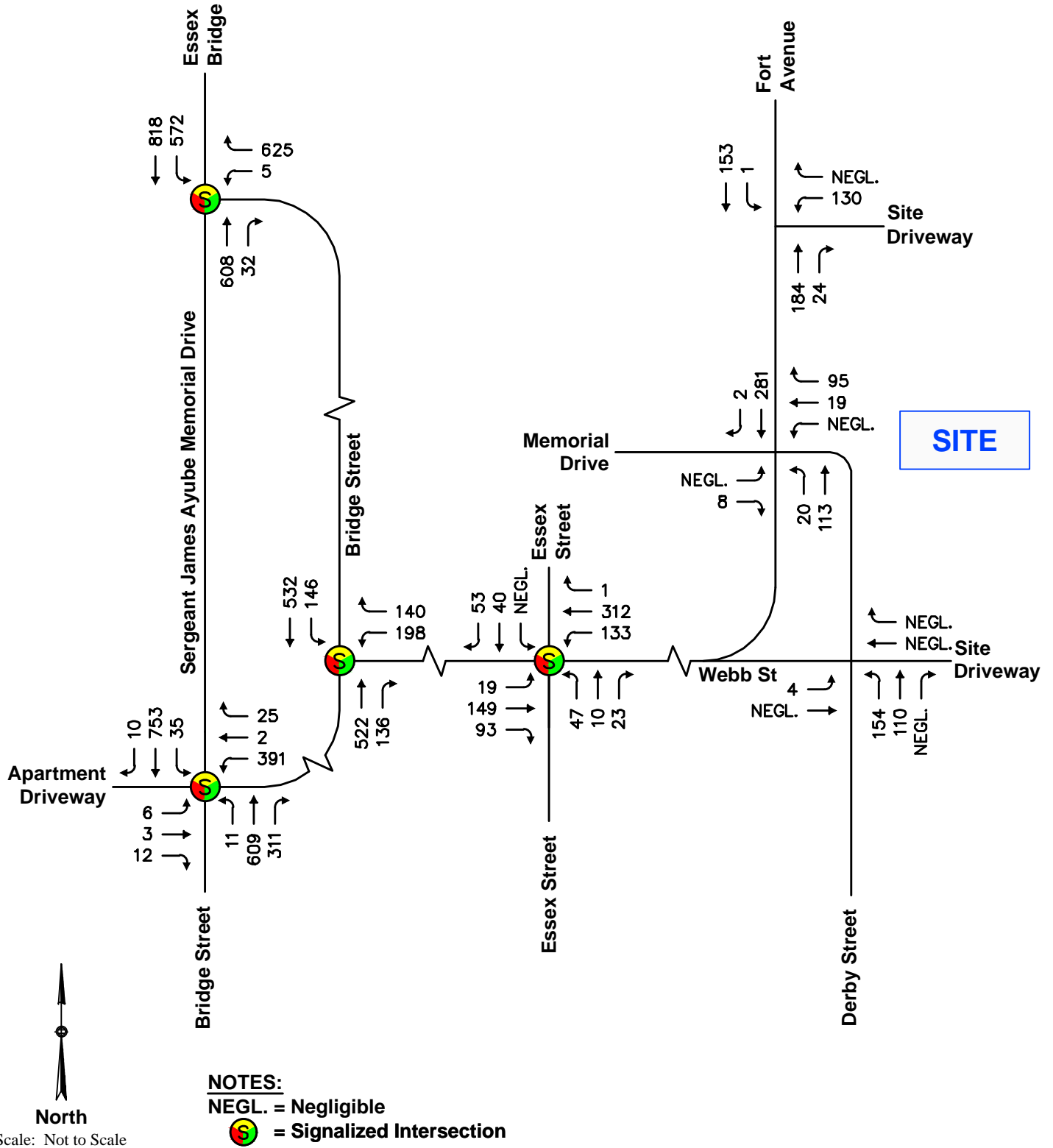














Chapter 10

CLIMATE CHANGE

CHAPTER 10: CLIMATE CHANGE

10.1 INTRODUCTION

The Project has been designed with the consideration of climate change to maintain the Project Site's proposed use of an offshore wind (OSW) marshalling terminal to support renewable energy investment. The Project's elements, such as site layout, operations, and infrastructure, have been designed and modeled under future climate conditions to analyze the longevity and resiliency of the Project Site. Specifically, the site planning has considered sea level rise and the potential for higher rainfall events over the expected useful life of the facility.

10.2 FLOOD ANALYSIS

A flood analysis was conducted by the Woods Hole Group (WHG) to determine if the Project would impact flooding on the abutting properties. As described below, the analysis concluded that the raised grades will not cause any flood impacts, channelization, or increased wave velocities on these properties.

10.2.1 FLOOD ANALYSIS METHODOLOGY

To analyze the Project's impact on flooding in the immediate vicinity of the Project Site, Woods Hole Group gathered existing data on the Project Site and performed a hydrodynamic model for existing and proposed conditions. See Attachment H: Flooding Analysis for details. The modelling study evaluated the potential coastal flooding impacts in the form of flood extent, depth, and velocity, from the Project's construction, which includes a raised site elevation of up to Elevation 15 (NAVD88) in some locations. This approach was coordinated with Massachusetts Coastal Zone Management (CZM) to confirm that the analysis would target the necessary aspects of CZM's flood resiliency goals. The baseline data used for the model was the Massachusetts Coast – Flood Risk Model (MC-FRM), which is a dataset of flood risk for the Commonwealth's coastline and simulates flood water flow during extreme coastal storm events. WHG updated the MC-FRM baseline model with changes to existing conditions, including topography, for an existing conditions model. For a proposed conditions model, WHG integrated the proposed grading, according to the 60% design plan set (refer to Attachment L: Project Plans), into the existing conditions. These models were then simulated and evaluated for their performance against three storm event cases: a 10% Recurrence interval storm event during Present Day Sea Level conditions, a 1% Recurrence interval storm event during Present Day Sea Level conditions, and a 1% Recurrence interval storm event during possible 2050 Sea Level condition. The flood risk model simulations yielded results comparing the flood

extent, depth, and velocities between the existing and proposed conditions based on the three storm event cases.

10.2.2 FLOOD ANALYSIS RESULTS

The results demonstrated minimal differences in flood extent, depth, and velocity in proposed conditions compared to the existing conditions when the model simulated the Present Day 10% and 1% events. The most significant result was the reduction in significant wave overtopping extents in the proposed conditions, with some minor velocity increases adjacent to the jetty. In the 2050 1% event model, there were more significant differences of flood extent, depth, and velocity between the existing and proposed conditions. The model projects a significant reduction of flood extent, depth, and velocity at the Project Site, but with minor increases along the jetty and in Collins Cove. In all storm events, there was no change rendered to the flood extent or depth of flooding on neighboring properties. Overall, the flood analysis demonstrated that the Project expects no significant changes to the flood extent, depth, or velocity on neighboring properties in proposed conditions due to raised topography.

10.3 FLOOD DESIGN AND GRADING

Portions of the Project Site are located within a Zone AE indicating a 1% annual chance flood elevation (i.e., Base Flood Elevation (BFE)) of 10 feet NAVD88 (see Figure 6-1, FEMA 100-year Flood Zone) per FEMA Flood Insurance Rate Maps ("FIRM") No. 25009C0419G and 25009C0438G, both dated July 16, 2014. Other portions of the Project Site are mapped as Zone VE at the shoreline. Zone VEs are coastal high hazard areas associated with wave heights of 3 feet or greater and are mapped on the Project Site at elevation 13 NAVD88. The AE Zones within the Project Site are located landward of the Limit of Moderate Wave Action (LiMWA), which indicates wave heights of less than 1.5 feet.

Since the FEMA analysis was produced in 2014, however, there have been significant changes in site grading associated with the construction of the Salem Harbor Power Station. Site grades are now much higher than indicated on the FEMA and therefore most of the Project Site is outside of the current 100 year flood zone. See Figure 6-1: FEMA 100-Year Flood Zone.

Design Flood Elevations (DFEs) refer to applicable and appropriate risk-based flood protection elevations and consider the projected useful life of the facility. For buildings and structures subject to state and local building codes, these DFEs are typically referenced to the effective FEMA BFE plus freeboard. This specialized use of the facility, which includes extensive laydown and storage of wind turbine components, has DFEs that are specific to flood protection of these features and their potential loss due to flooding. There are no established Flood Classes for laydown and storage areas, but these areas will be elevated to meet the requirements on Flood Class 2. To accommodate Flood Class 2, buildings and structures

subject to state and local building codes, the minimum required DFE is the Effective FEMA BFE plus 1 foot of freeboard, which is elevation (El.) 11 feet NAVD88.

The existing site grades vary but are typically above El. 10 feet NAVD88 except near the entrances along Derby Street, Fort Avenue, and the ferry terminal parking lot where they meet the lower grades of the streets and parking areas (see Attachment L – Project Plan Sheets C000 and V100 to V105). The proposed site grade ranges from El. 12-15 feet NAVD88. The existing and proposed site grades are shown in Attachment L, Project Plans Sheets C300 to C305. This proposed elevation provides a 2-foot freeboard above the current FEMA BFE of El. 10 feet NAVD88. Increasing site grades is an effective mechanism for flood protection given the large areas of stored turbine components. In areas where along abutting properties where the Site will be raised, the edge of this area will drain towards proposed drainage inlets that will treat runoff and drain into Salem Harbor. This design is aimed to minimize the risk of flooding to the surrounding neighborhood and accommodate runoff generated from the elevated site.

The expected useful life of the facility is 30 years. The anticipated future sea level rise of 3 feet during that time until 2050 is based on the RMA2 Tool Report (see Attachment E). The current design anticipates this level of Sea Level Rise: almost all of its 42.3 will have non-building areas that could be raised with additional fill without the need to construct new buildings. The Project Site's function, including the laydown operations, will allow grades to be increased in the future, if sea level rise exceeds current projections.

The elevation of the Site will not have any adverse effects on adjacent properties, and flood pathways through the Project Site towards adjacent properties will be intercepted. The proposed gradual slope from Derby Street down to the shoreline will mitigate any potential increases in velocity, reflection, or channelization of floodwaters towards adjacent properties.

10.4 INFRASTRUCTURE RESILIENCE

The Project Site is designed to be adaptable for future climate conditions. The Project Site will be filled, elevated, and graded towards Salem Harbor but the layout will allow for additional elevation via fill in accordance with the future sea level rise projections. According to the recent flood analysis, none of the Site as constructed will be impacted by the 10% or 1% present day flood events, or under the 1% flood event for 2050 (see Attachment L, Flood Analysis).

The infrastructure, including the Project's proposed structures, laydown yards, and critical infrastructure has been designed to accommodate future climate conditions. Critical infrastructure, such as buildings and substation pads, will be located in either higher elevation areas or raised up several feet. For example, the proposed buildings will be within locations that are currently 3 feet above the 100-year flood elevation (AE10). The first floors of the buildings and the transformer pad will also be raised several feet, which will provide additional protection from flood waters.

The stormwater management system was also modeled for performance under future climate conditions, with the extent of data available. The analysis demonstrated that the proposed stormwater system will meet pollutant loading requirements but will not attenuate flows, which is exempt for the Project under the Massachusetts Stormwater Standards as it is within Land Subject to Coastal Storm Flowage.

Chapter 11

CONSTRUCTION PERIOD

CHAPTER 11: CONSTRUCTION PERIOD

11.1 INTRODUCTION

Construction of the Project will be managed in order to minimize the impacts of construction activities on the environment and surrounding neighborhoods. Construction period impacts may include noise, dust, odor, light, and vibration on-site but impacts to the adjacent communities will be limited. Mitigation efforts are described in this chapter and detailed in Attachment B, Construction Management Plan.

11.2 CONSTRUCTION PERIOD MITIGATION

The Project team will provide weekly updates to the City of Salem for existing construction activity and coordination as construction activities change. The General Contractor will provide a three-week look ahead schedule at the Project's weekly coordination meeting.

Major activities that effect the City, especially traffic-related impacts, will be requested a week in advance so notifications and the appropriate measures can be put in place. Based on activity level on site, traffic control may vary, and activity communication is incredibly important. The Project team will coordinate with the City and discuss impacts. Regular updates and project statuses will be provided on the project website so the community can see and track what is on-going.

Public meetings and project updates will be announced on the project website, www.salemoffshorewind.com and shared across social media and notification channels, as appropriate. Regular updates will continue to be provided at Salem Harbor Port Authority public meetings as they have been throughout this process. Current information on the Project can be found at www.salemoffshorewind.com and project inquiries can be made at info@salemoffshorewind.com.

The Project includes measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management). Noise mitigation will be implemented during construction. Crowley Wind Services, Inc. (the "Proponent" or "Crowley") is establishing a baseline noise study for future reference and will employ a local provider to assist with monitoring during the construction. A reporting timeframe will be established. Some activities may require additional monitoring and reporting. Dust mitigation will focus on dust producing activities, such as dumping fill, which would employ hoses to wet down areas either prior to or during the activity. Wheel wash stations at truck exits will also be used to prevent tracking of mud onto city streets. The construction site will also be monitored for dust producing activities that may need additional mitigation.

Vibration mitigation will be implemented during construction. The Proponent will work with their consultants to establish a suitable monitoring program for onsite and offsite vibration.

The majority of the potential vibration will be due to pile driving and ground surface compaction. The pile driving will be taking place at the water's edge, far away from the neighborhood.

A detailed monitoring plan will be developed to protect the integrity of foundations of all buildings within a zone of influence in the Historic Derby Street Neighborhood. Before construction begins, the Proponent will publicize the protocol for inspection and documentation of the condition of foundations before, during, and after construction. Residents and business owners will be given the opportunity to participate in the vibration monitoring program and will be given timely alerts to when pile-driving will commence.

Additional landscaping is being proposed to add more vegetation between the neighborhood and the Project Site.

Lighting impacts are being addressed through site lighting design. The Project Site lighting will provide the OSHA minimums at night for safety and security. The lights will also have newer technology with lighting levels that can be adjusted based on need and are only bright when there is activity in the area. When there is no activity, lights will be dimmer. LED lighting will be used to focus light downward and not out over the water or into the neighborhood.

Construction lighting impacts will be minimized. There will be very limited night work, and only on an as-needed basis. If work is done at night, it will be done in specific areas so as not to impact the entire site.

Best emission practices, such as anti-idling measures to reduce emissions of air pollutants during construction, will be implemented. The Proponent will request that its contractors use construction equipment that meets the highest Tier emission standards level available or have installed retrofit emissions control devices or vehicles that use alternative fuels to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO), and particulate matter (PM) from diesel-powered equipment. Off-road vehicles will use ultra-low sulfur diesel fuel (ULSD). All construction and demolition activities will be managed in accordance with applicable Massachusetts Department of Environmental Protection's (MassDEP's) regulations regarding Air Pollution Control and Solid Waste Facilities. If oil and/or hazardous materials are found during construction, the Proponent will notify MassDEP in accordance with the Massachusetts Contingency Plan. The Proponent will seek opportunities for the reuse of construction and demolition debris to the maximum extent practicable.

In-water and nearshore work, which includes dredging, installation of piles and sheet piles, and revetment work that may impact marine habitats and wetland resource areas require mitigation to ensure protection of resources and habitats. The following mitigation measures will be implemented during construction:

- Use slow start pile driving to minimize impacts on fisheries resources.

- Observation of time-of-year (TOY) restrictions as designated by the Massachusetts Division of Marine Fisheries (DMF), which is from February 15 to June 30, to protect winter flounder spawning. A waiver of TOY restrictions may be sought for certain pier construction activities with the implementation of appropriate mitigation measures.
- Installing a bottom weighted turbidity curtain prior to commencing demolition activities, pile driving or dredging work in accordance with the DMF recommendations.
- A mechanical clamshell dredge with an environmental bucket will be used to dredge material, which will minimize turbidity so that the material can be deposited in a bottom-opening scow for ocean disposal.

All construction activities to ensure that they follow the conditions of all state and local permits and bylaws. If any unknown underwater archaeological resources are encountered during construction of the Project, the Proponent will take steps to limit adverse effects and notify the Massachusetts Board of Underwater Archaeological Resources and the Massachusetts Historical Commission (MHC), as well as other appropriate agencies, immediately, in accordance with the Board's Policy Guidance for the Discovery of Unanticipated Archaeological Resources.

11.3 ASBESTOS MANAGEMENT

Previous inspection reports note that asbestos concentrations have been encountered in one of the warehouses. In order to proceed with demolition, the Proponent will test for the presence of asbestos containing materials prior to demolition, and if they exist, will take the proper mitigation steps in accordance with MassDEP regulations, utilizing a MassDEP licensed contractor to properly manage and dispose of asbestos containing materials.

Chapter 12

HISTORIC RESOURCES

CHAPTER 12: HISTORIC RESOURCES

12.1 INTRODUCTION

The City of Salem has an incredible history, including the Salem Witch Trials, the rise and fall of the sea trade, and the City's role in the industrial revolution. Salem's remaining architecture and sites from these various eras reflects the City's rich historical background. Salem Harbor and the areas around the Project Site along Derby Street were historically maritime dating back to the 17th century. The Project will help continue the historic maritime uses and invigorate the Commonwealth's second deepest port.

Inventoried historic buildings and districts discussed herein were identified via Massachusetts Historical Commission's (MHC's) Massachusetts Cultural Resource Information System (MACRIS) online database. These buildings and districts are referred to in this chapter by their MHC designations (e.g., SAL.3425).

12.2 HISTORIC AND ARCHAEOLOGICAL RESOURCES IN THE VICINITY

Historic resources were compiled based on the Massachusetts Inventory of Historic and Archeological Assets of the Commonwealth and the State and National Register of Historic Places.

12.2.1 HISTORIC RESOURCE STATUS

There are 394 historic resources (individual structures) within a quarter-mile radius of the Project Site. See Attachment N, Historic Resources within ¼ mile of the Project Site and Figure 12-1, Historic Resources. These resources are composed primarily of buildings, but also include structures and objects. These resources have received the following designations:

- 211 inventoried properties;
- 1 Local Historic District;
- 81 sites listed on the National Register of Historic Places;
- 88 National Register of Historic Places/Local Historic Districts; and
- 13 Preservation Restrictions.

The Project Site is directly across from several sites within the National Register of Historic Places/Local Historic District as part of the Derby Street Historic District. The majority of these sites are single and multi-family dwellings today. Notable locations in proximity to the Project Site include Memorial Park (SAL.994), located at 17 Fort

Avenue, the House of the Seven Gables (SAL.3425), which is a National Historic Landmark and is located approximately 0.1 mile from the Project Site at 115 Derby Street, and Nathaniel Hawthorne's Birthplace (SAL.3429), also approximately 0.1 mile from the Project Site.

12.2.2 HISTORIC AREAS STATUS

In addition to historic resources, there are 14 Historic Areas within the quarter-mile boundary. Historic areas are generally designated parts of the city that include historic resources, such as buildings, but may also contain a specific resource. These areas include the following designations:

- 6 inventoried areas;
- 2 Local Historic Districts;
- 1 Preservation Restriction;
- 4 National Register of Historic Places; and
- 1 National Register of Historic Places/Local Historic Districts.

The Project Site is partially within the Derby Street Local Historic District (SAL.HO) and abuts the Derby Waterfront Historic District (SAL.HN), which is on the National Register of Historic Places, and the inventoried area of Salem Neck and Winter Island (SAL.GZ).

12.3 HISTORIC RESOURCES ASSESSMENT

The entire Project Site is adjacent to and surrounded by the Salem Harbor Power Development LP site, a gas-fired electricity generation plant that began operating in 2017 under the name Footprint Power Plant. This facility replaced the Salem Harbor Generating Station, a coal and oil-fired power plant built in the 1950s that encompassed both the current Salem Harbor Power Development LP site and the Project Site. The site was used as a coal terminal for more than 30 years prior to the construction and operation of the power plant. The entire Project Site has been entirely industrial for more than 100 years and has been significantly re-graded and transformed over its history. Because of these developments, there are no historic resources found on the Project Site. There was a building located on the Project Site that was part of a local historic district, but it was demolished during previous work unrelated to this Project. The other existing buildings currently on the Project Site are various structures from the power plant facility that are no longer being used. These include two shed structures and two transformer buildings, and none of these buildings have historical significance.

Although there are no historic sites or buildings found within the Project Site, a small part of the Project Site next to India Street is partially within the Derby Street Local Historic District (SAL.HO). This small section contained a building at 65 Derby Street that was also on the National Register of Historic Places (SAL.3396). This building, called the McDonald House, however, was demolished. This local historic district was established in 1974 and is significant to the City of Salem's maritime history. The majority of the historic resources on Derby Street and within the Derby Street Local Historic District across from the Project Site are historic houses from this maritime era, from 1760-1820, that are now single and multi-family residential dwellings. In addition, the House of the Seven Gables and Nathaniel Hawthorne's Birthplace are within this district on Turner Street, and these two sites are within the House of Seven Gables Historic District (SAL.JB).

The Derby Waterfront Historic District (SAL.HN) abuts the western side of the Project Site and also encompasses the Derby Street Local Historic District and the House of Seven Gables Historic District. This area was in the center of Salem's foreign commerce activities and consists of many historical residences, commercial buildings, and other sites that were significant to Salem's economic development from the American Revolution to the 1820s.

Salem Neck and Winter Island (SAL.GZ) is a residential district which abuts the northern side of the Project Site. Salem Neck was the center of the fishing industry in Salem starting in the mid-17th century. The Salem Willows Historic District (SAL.HA) and the Winter Island Historic and Archeological District (SAL.IH) are also within the area of Salem Neck and Winter Island. The Salem Willows area within Salem Neck is a historically residential district developed in the 19th century, and the architecture of the buildings there today reflects that time period. Winter Island was also an important area for Salem's fishing industry and also includes Fort Pickering, which was built in the 17th century and served many purposes, including as a coastal defense post, military barracks, the home of the Frigate Essex, and an aviation fuel depot for the U.S. Coast Guard. This island is located across the water from the northeastern corner of the Project Site.

12.4 STATUS OF PROJECT REVIEW WITH HISTORICAL AGENCIES

12.4.1 SALEM HISTORICAL COMMISSION

An application for the Project will be submitted to the Salem Historical Commission (SHC) in order to seek a waiver for a demolition delay permit to demolish the existing remnant structures from the old Footprint Power Plant. These structures are not historically significant.

12.4.2 MASSACHUSETTS HISTORICAL COMMISSION

The Project is subject to review by the MHC, which was initiated with the filing of the Expanded Environmental Notification Form (EENF). MHC declined to offer any

comments on the EENF for the Proposed Project, which constitutes a default finding of no adverse effect.

An ENF for the construction of the Footprint Power Plant was submitted to MHC in 2012, and similarly, MHC did not submit any comments to the Massachusetts Environmental Policy Act (MEPA) Office during the public comment period.

12.5 POTENTIAL IMPACTS TO HISTORIC RESOURCES

12.5.1 DEMOLITION AND ALTERATION OF EXISTING BUILDINGS

The existing transformer stations and shed structures on the Project Site that will be demolished are not historic resources or within historic areas, so any demolition to existing buildings will not impact any registered or inventoried historic areas or resources.

12.5.2 VISUAL IMPACTS TO HISTORIC RESOURCES

The Project Site is heavily industrial and has been for many decades, and the Project Site will continue to serve water-dependent industrial uses (WDIUs). Although this proposed industrial use is not consistent with the architecture and nature of the nearby historic districts the site itself is also mostly concealed by an existing barrier of vegetation between the Project Site and the bordering roads of Fort Avenue and Derby Street, so the Project Site should not interfere visually with any historic resources and districts. Additional landscape treatment is being incorporated into the Project design, and the width of landscaped buffer will be increased reduce visual impacts from the Site.

12.5.3 SHADOW IMPACTS TO HISTORIC RESOURCES

The Project will not cause any permanent shadow impacts to nearby historic resources including the House of Seven Gables and the adjacent Derby Street Historic District except for the cranes on the Project Site, which may be up to 460 feet tall. There are no permanent fixed structures, such as a tall building or tower: all the OSW components will be placed temporally and all the cranes and specialized transportation vehicles will be mobile to move the OSW components on and off the Site. Depending upon where these mobile cranes are situated, there may be temporary shadows cast from them onto historic resources on Derby Street, Fort Avenue, or other areas south and west of the Site in the mornings of winter months when the days are shortest during the year. Wind turbine components, such as the towers that are stored near the south side of the site, may also temporally cast as shadow in the mornings during the winter months.

12.6 ARCHAEOLOGICAL RESOURCES WITHIN THE PROJECT SITE

There is no evidence that the Project Site is likely to have important archaeological resources as the history of the Project Site is industrial and the area has been substantially disturbed over the past 70 years.

12.7 UNDERWATER ARCHAEOLOGICAL RESOURCES

Current plans for the Project should not result in excavations that would disturb potential underwater archaeological resources. The Basin has been dredged several times, most recently in 2002, and there has been no previous evidence of underwater archaeological resources. In the 2012 ENF submitted by Footprint Power Salem Harbor, the narrative states that closest underwater archaeological resource to the Project Site is located south next to the pier at Salem Wharf and is outside of the Project Site area. Should any underwater archeological resources be encountered during construction, the Proponent and, will notify the Massachusetts Board of Underwater Archaeological Resources and the Massachusetts Historical Commission of in accordance with the Board's Policy Guidance for the Discovery of Unanticipated Archaeological Resources.



Chapter 13

MITIGATION AND DRAFT SECTION 61 FINDINGS

CHAPTER 13: MITIGATION AND DRAFT SECTION 61 FINDINGS

13.1 INTRODUCTION

The Project as described in previous sections has incorporated numerous mitigation measures that respond to potential impacts related to transportation, community resources, greenhouse gas (GHG) emissions, climate change, and environmental justice (EJ). Mitigation areas include: climate change, stormwater, wetlands, air quality, dredging, EJ populations, transportation, and construction period. Proposed mitigation measures including draft Section 61 findings for each state agency that will issue permits for the Project are described below in more detail.

Each table is organized by Subject Matter, Improvement Measure, Estimated Cost, and Schedule. The schedule is determined by the time frame within the construction period or operations period. The Construction Period will begin in the summer 2023 and end in the early part of 2026. The Operations period will begin in the summer of 2026.

13.2 PUBLIC BENEFITS

As described in Chapter 1, significant and substantial public benefits will be realized with the construction and operation of the Project. These public benefits will help mitigate any adverse impacts as a result of the Project.

Subject Matter	Improvement Measure	Schedule
<p align="center">Public Benefits</p>	<ul style="list-style-type: none"> Community Benefits Agreement with the City of Salem to preserve the City’s long-term interests, identify local supply chain opportunities, establish OSW workforce training programs, support the local economy, and develop partnerships with residents and community organizations. 	<p>Operations Period</p>
	<ul style="list-style-type: none"> Investment in renewable energy to serve ongoing OSW farm projects around Massachusetts and beyond and to support the Commonwealth’s clean energy and climate targets. 	<p>Construction Period and Operations Period</p>
	<ul style="list-style-type: none"> Create approximately 123 jobs during the construction phase and approximately 200 full time jobs during the operations phase. 	<p>Construction and Operations Periods</p>
	<ul style="list-style-type: none"> Establish workforce development programs within the OSW industry with partners. 	<p>Construction Period</p>
	<ul style="list-style-type: none"> Improve the State Turning Basin (the “Basin”), wharves, and port facilities to support existing and future maritime industrial uses in Salem Harbor and the recommendations of the Salem MHP. 	<p>Construction Period – Summer 2025</p>
	<ul style="list-style-type: none"> Conform with the Approved 2008 Salem Municipal Harbor Plan (MHP), DPA Master Plan, the draft 2023 Salem MHP, and DPA Master Plan reflects the City’s commitment to further developing the DPA and conforms with the 2023 MHP’s preference of OSW use for this site. 	<p>Not Applicable</p>
	<ul style="list-style-type: none"> Add 50,000 square feet of landscaped open space along Derby Street and along the Salem Wharf ferry parking lot, and maintain the existing tree-lined open space along Derby Street and Fort Avenue. 	<p>Construction Period – Summer 2024</p>
<p>Public Benefits Total Estimated Cost: \$287,000,000</p>		

13.3 CLIMATE CHANGE AND RESILIENCY

As described in Chapters 1 and 10, the Project Site will be designed in a way to mitigate future climate change to the maximum extent possible.

Subject Matter	Improvement Measure	Schedule
Climate Change and Resiliency	<ul style="list-style-type: none"> • Incorporate Resilient Massachusetts Action Team (RMAT) design criteria in the design of flood resilience measures to account for future sea level rise. 	Design Period
	<ul style="list-style-type: none"> • Regrade the upland areas of the Project Site to be raised an additional 2 feet to increase site resiliency to storm and flood waters 	Construction Period – Winter 2024
	<ul style="list-style-type: none"> • Improve and replace the existing wharf infrastructure, which will be better able to withstand flooding and storm surge. 	Construction Period – 2024
	<ul style="list-style-type: none"> • Install landscape swale on the Project Site to capture runoff and minimize impacts to adjacent properties. 	Construction Period – 2024
	<ul style="list-style-type: none"> • Reuse construction and demolition debris to the maximum extent practicable. 	Demolition Period -Fall 2023
Climate Change Total Estimated Cost: \$10,900,136		

13.4 STORMWATER

As described in Chapters 6 and 8, a number of stormwater management measures will be incorporated into the Project to reduce impacts of the Project on wetland resource areas.

Subject Matter	Improvement Measure	Schedule
Stormwater	<ul style="list-style-type: none"> • Inspect and maintain existing storm drainage systems that outlet into Salem Harbor. 	Construction Period Fall 2023
	<ul style="list-style-type: none"> • Install stormwater treatment devices such as deep sump catch basins. 	Construction Period - 2024
	<ul style="list-style-type: none"> • Install and/or repair of backflow prevention devices on existing storm drain outlets into the Salem Harbor. 	Construction Period - Winter 2024

Subject Matter	Improvement Measure	Schedule
	<ul style="list-style-type: none"> • Install 2 new stormwater drainage systems to collect and treat stormwater prior to discharge into Salem Harbor. • Grade site to capture and treat runoff. • Maintain stormwater drainage structures during operations of the Site. 	Construction Period - Summer 2024 Construction period - 2024 Operations period
Stormwater Total Estimated Cost: \$1,192,233		

13.5 WETLANDS AND WATER QUALITY

As described in Chapters 6 and 8, a number of measures will be incorporated into the Project which will contribute to improved protection of wetlands and improved water quality through stormwater infrastructure and mitigation controls in order to reduce impacts of the Project on wetland resource areas.

Subject Matter	Improvement Measure	Schedule
Wetlands and Water Quality Certification	<ul style="list-style-type: none"> • Use efficient design and construction practices to minimize Project Site area to the extent practicable and avoid unnecessary wetland impacts. • Implement environmental control measures during construction such as turbidity curtains, slow start pile driving, following TOY restrictions, wetting down areas to control dust, straw bales, and siltation fences. • Upgrade the stormwater systems to comply with MassDEP stormwater standards. • Install stormwater treatment devices such as proprietary water quality structures. 	Construction Period Construction Period Construction Period – 2024 Construction Period - 2024
Wetlands and Water Quality Certification Total Estimated Cost: \$1,463,885		

13.6 DREDGING MITIGATION

Dredging and marine construction activities will be mitigated through a variety of measures and will follow applicable local, state, and federal regulations.

Subject Matter	Improvement Measure	Schedule
<p>Dredging Mitigation</p>	<ul style="list-style-type: none"> • Implement time-of-year (TOY) restrictions as designated by the Massachusetts Division of Marine Fisheries (DMF). 	<p>Construction Period – 2023-2025</p>
	<ul style="list-style-type: none"> • Install a bottom anchored turbidity curtain prior to dredging work. 	<p>Construction Period – 2025</p>
	<ul style="list-style-type: none"> • Minimize turbidity during maintenance dredging through use of a mechanical clamshell dredge with an environmental bucket. 	<p>Construction Period – 2025</p>
	<ul style="list-style-type: none"> • Conduct dredge sampling analysis to determine the best option for dredging disposal. 	<p>Ongoing through Winter 2024.</p>
<p>Dredging Mitigation Total Estimated Cost: \$4,787,951</p>		

13.7 ENVIRONMENTAL JUSTICE

As described in Chapter 3, the Project will mitigate potential impacts to EJ populations and will not cause any adverse effects to EJ populations compared to non-EJ populations. Mitigation efforts stated previously will mitigate potential impacts on EJ populations, and the Project will bring similar benefits to both EJ and non-EJ populations.

Subject Matter	Improvement Measure	Schedule
Environmental Justice	<ul style="list-style-type: none"> • Reduce noise impacts, including through the use of appropriate mufflers on all equipment and replacing specific operations and equipment with less noisy ones. 	Construction Period
	<ul style="list-style-type: none"> • Reduce traffic impacts through access and egress improvements. 	Construction Period
	<ul style="list-style-type: none"> • Prepare and implement a transportation demand management program to reduce vehicle impacts. 	Operations Period
	<ul style="list-style-type: none"> • Engage with residents, community-based organizations, tribal organizations, government agencies, and other relevant stakeholders throughout the Project’s design, construction, and operation. 	Ongoing through Construction and Operations Period
Environmental Justice Total Estimated Cost: \$400,000		

13.8 AIR QUALITY/GREENHOUSE GAS

As described in Chapter 9, the transportation demand management (TDM) program will implement a number of measures to reduce impacts of the Project on air quality and GHGs.

Subject Matter	Improvement Measure	Schedule
Air Quality/ Greenhouse Gas	<ul style="list-style-type: none"> • Install “No Idling” signs at the Project Site’s delivery vehicle parking and loading areas. 	Construction Period
	<ul style="list-style-type: none"> • Electric vehicle charging stations/outlets for employees and visitors. 	Operations Period
	<ul style="list-style-type: none"> • Off-road vehicles on the Project Site will use ultra-low sulfur diesel fuel (ULSD). 	Construction Period

Subject Matter	Improvement Measure	Schedule
	<ul style="list-style-type: none"> • Provide shoreside electrical connections for vessels where feasible to reduce “hoteling” emissions. • Use Transportation Demand Management measures to reduce vehicle use. • The Proponent will provide a self-certification to the MEPA Office indicating that all of the required GHG emissions reduction measures, or their equivalent, are constructed for performed by the Proponent in the Preferred Alternative. 	<p>Operations Period</p> <p>Operations Period</p> <p>Post Construction</p>
Air Quality GHG Total Estimated Cost: \$2,664,531		

13.9 TRANSPORTATION MITIGATION

As described in detail in Chapter 9, traffic impacts of the Project are minimal. However, efforts will be made to reduce the traffic and transportation impacts of the Project on the surrounding community.

Subject Matter	Improvement Measure	Schedule
Traffic Mitigation and TDM Program	<ul style="list-style-type: none"> • Designate on-site employee transportation coordinator. • Employee job shift times outside of traditional commuter periods. • Create preferential parking for low-emission vehicles. • Encourage employee carpools and vanpools through preferential parking locations and site tenants will be encouraged to sponsor and/or subsidize carpool incentives such as gift cards for first-time participation in a carpool or vanpool program. • Sidewalks, including crosswalks and ADA compliant ramps where appropriate, connecting the parking areas to the public 	<p>Operations Period</p> <p>Operations Period</p> <p>Construction Period – 2025</p> <p>Operations Period</p> <p>Construction Period – 2025</p>

Subject Matter	Improvement Measure	Schedule
	sidewalk system at the main site entranceway and proposed storage shed in the parking lot. <ul style="list-style-type: none"> • On-site weather-protected bike storage facilities. • A STOP sign and STOP line pavement marking on the driveway approaches to Fort Avenue and Derby Street. Deliver offshore wind (OSW) farm components via barge rather than over-the-road transport. 	Construction Period – 2025 Construction Period - 2025
Traffic and Transportation Total Estimated Cost: \$2,000,000		

13.10 CONSTRUCTION PERIOD IMPACT MITIGATION

As discussed within Chapter 11, the Project includes measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management). Specific measures that will be taken place during the construction period are attached in Attachment B, Construction Management Plan.

Subject Matter	Improvement Measure	Schedule
Construction Period Impact Mitigation	<ul style="list-style-type: none"> • Prepare and implement a construction management plan that will address reduction of construction period impacts. • Reduce air quality impacts during the construction-period, including through the use of diesel retrofitted equipment, wetting down areas during construction, and turning off idling equipment. • Create designated parking for construction employees on-site accessible via the Fort Avenue primary driveway. • Schedule construction periods and deliveries of materials to coincide with off-peak travel periods of nearby roadways and avoid peak school arrival and dismissal periods, specifically of the nearby Bentley Academy Innovation School. 	Construction Period Construction Period Construction Period - Fall 2023 Construction Period

Subject Matter	Improvement Measure	Schedule
	<ul style="list-style-type: none"> • Limit truck delivery of aggregate, paving and terminal building materials, as well as materials for site stabilization work and earthwork to major routes such as Route 114, Bridge Street, and Webb Street. • Establish queueing and staging areas on-site for all material deliveries and managing truck traffic via the Webb Street gate. • Use slow start pile driving. 	<p>Construction Period</p> <p>Construction Period – Fall 2023</p> <p>Construction Period – 2024</p>
Construction Period Total Estimated Cost: \$300,000		

13.11 DRAFT SECTION 61 FINDINGS

Massachusetts General Laws Chapter 30, Section 61, requires state agencies and authorities, when approving, providing land or funding for, or undertaking a project, to evaluate and determine whether the project causes any damage to the environment, and to make a written finding describing that determination and confirming that all feasible measures have been taken to avoid, minimize, and mitigate any damage to the environment. Under the MEPA regulations, an agency's Section 61 findings are directed to those aspects of the project that are within the subject matter scope of the agencies respective permit or within the geographic area subject to a land transfer.

State agencies expected to make Section 61 findings for the Project prior to issuing approvals for implementing the Project include MassDEP and the MCZM. This SEIR addresses and provides draft Section 61 Findings for these agencies.

The following draft Section 61 findings reflect the mitigation measures related to each of the following agencies' jurisdictions as they may be implemented. All such mitigation shall be subject to the Proponent obtaining all federal, state, and local approvals. As required by the Secretary's Certificate on the Expanded ENF, the implementation schedules for these mitigation measures are included in the draft Section 61 findings.

FINDING BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF RESOURCE PROTECTION – WETLANDS AND WATERWAYS

FOR A WATER QUALITY CERTIFICATION UNDER M.G.L. C. 30, S. 61

Introduction

Massachusetts General Laws, Chapter 30, section 61 ("Section 61") requires that "[a]ll agencies, departments, boards, commission and authorities of the commonwealth shall review, evaluate, and determine the impact on the natural environment of all works, projects, or activities conducted by them and shall use all practical means and measures to minimize damage to the environment. . Unless a clear contrary intent is manifested, all statutes shall be interpreted and administered so as to minimize and prevent damage to the environment. Any determination made by an agency of the commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact." The finding required by Section 61 "shall be limited to those matters which are within the scope of the environmental impact report, if any, required [on a project]." M.G.L. c. 30. S. 62A.

The development of the Salem Wind Port Project Site may require a 401 Water Quality Certification from DEP for the discharge of fill in and dredging of state waters. Therefore, the DEP-BRP must issue a Section 61 Finding.

MEPA Review

An Expanded Environmental Notification Form (EENF) for the Project was prepared and filed on October 31, 2022. The Secretary of the Executive Office of Environmental Affairs (the Secretary) issued a Certificate on the EENF specifying the scope for a Single Environmental Impact Report (SEIR) on November 30, 2022. The SEIR was filed with the Secretary on May 15, 2023. The Secretary issued the Certificate on the SEIR on June ____ 2023.

Project Description

The main objective of the Project is to create an OSW marshalling terminal to facilitate the receiving, storage, assembly, and shipment of wind turbine generators (WTGs) and their components. To accommodate vessels that will deliver OSW components to and from the Site and to provide laydown yards to store and move them, three main components of the Project, are needed: 1) Construct a new 685 foot, pile supported delivery pier and remove the existing 705 foot wharf and replace it with a 660 foot, pile-supported loadout wharf, and construct a 416 foot assembly platform landward of the loadout wharf; 2) regrade the site and strengthen it with at least two feet of dense graded aggregate to support the large and heavy OSW components; and 3) dredge the State Turning Basin several feet down to -32 feet below mean low lower water to accommodate the deep draft vessels that will be transporting the OSW components. Cruise ships will also use the berths and loadout wharf to transport passengers to and from the Site through a designated pedestrian path between the waterfront and the parking lot at the adjacent ferry terminal.

Mitigation Measures

Measure	Schedule
Improve the State Turning Basin (the "Basin"), wharves, and port facilities to support existing and future maritime industrial uses in Salem Harbor and the recommendations of the Salem MHP.	Construction Period – Summer 2025
Improve and replace the existing wharf infrastructure, which will be better able to withstand flooding and storm surge.	Construction Period – Summer 2025
Inspect and maintain existing storm drainage systems that outlet into Salem Harbor.	Construction Period Fall 2023
Install stormwater treatment devices such as deep sump catch basins and proprietary water quality structures.	Construction Period – 2024

Measure	Schedule
Install and/or repair of backflow prevention devices on existing storm drain outlets into the Salem Harbor.	Construction Period - Winter 2024
Install 2 new stormwater drainage systems to collect and treat stormwater prior to discharge into Salem Harbor.	Construction Period - 2023-2025
Grade site to capture and treat runoff.	Construction period - 2023-2025
Maintain stormwater drainage structures during operations of the Site.	Operations period
Use efficient design and construction practices to minimize Project Site area to the extent practicable and avoid unnecessary wetland impacts.	Construction Period
Implement environmental control measures during construction such as turbidity curtains, slow start pile driving, following TOY restrictions, wetting down areas to control dust, straw bales, and siltation fences.	Construction Period
Upgrade the stormwater systems to comply with MassDEP stormwater standards.	Construction Period – 2023-2025
Implement time-of-year (TOY) restrictions as designated by the Massachusetts Division of Marine Fisheries (DMF).	Construction Period – 2023-2025
Install a bottom anchored turbidity curtain prior to dredging work.	Construction Period – 2025
Minimize turbidity during maintenance dredging through use of a mechanical clamshell dredge with an environmental bucket.	Construction Period – 2025
Conduct dredge sampling analysis to determine the best option for dredging disposal.	Ongoing through Winter 2024.
Install “No Idling” signs at the Project Site’s delivery vehicle parking and loading areas.	Construction Period
Off-road vehicles on the Project Site will use ultra-low sulfur diesel fuel (ULSD).	Construction Period
Prepare and implement a construction management plan that will address reduction of construction period impacts.	Construction Period
Reduce air quality impacts during the construction-period, including through the use of diesel retrofitted equipment,	Construction Period

Measure	Schedule
wetting down areas during construction, and turning off idling equipment. Use slow start pile driving.	Construction Period – 2024-2025

Conclusion

Now, therefore, the DEP-BRP, having reviewed the MEPA filings for the Salem Wind Port project and the mitigation measures proposed, finds pursuant to M.G.L. c. 30, section 61 that with the implementation of the aforesaid measures, all practical and feasible means and measures will have been taken to avoid or minimize potential damage to the environment from the Project.

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION – BUREAU OF RESOURCE PROTECTION – WETLANDS AND WATERWAYS

Date

By

FINDING BY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF RESOURCE PROTECTION – WATERWAYS REGULATION PROGRAM
FOR A CHAPTER 91 LICENSE UNDER M.G.L. C. 30, S. 61

Introduction

Massachusetts General Laws, Chapter 30, section 61 (“Section 61”) requires that “[a]ll agencies, departments, boards, commission and authorities of the commonwealth shall review, evaluate, and determine the impact on the natural environment of all works, projects, or activities conducted by them and shall use all practical means and measures to minimize damage to the environment. Unless a clear contrary intent is manifested, all statutes shall be interpreted and administered so as to minimize and prevent damage to the environment. Any determination made by an agency of the commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact.” The finding required by Section 61 “shall be limited to those matters which are within the scope of the environmental impact report, if any, required [on a project].” M.G.L. c. 30. S. 62A.

The development of the Salem Wind Port Project Site may require a Chapter 91 license from MassDEP for the structures, fill, and uses, in filled and flowed tidelands of the commonwealth. Therefore, the DEP-BRP must issue a Section 61 Finding.

MEPA Review

An Expanded Environmental Notification Form (EENF) for the Project was prepared and filed on October 31, 2022. The Secretary of the Executive Office of Environmental Affairs (the Secretary) issued a Certificate on the EENF specifying the scope for a Single Environmental Impact Report (SEIR) on November 30, 2022. The SEIR was filed with the Secretary on May 15, 2023. The Secretary issued the Certificate on the SEIR on June ____ 2023.

Project Description

The main objective of the Project is to create an OSW marshalling terminal to facilitate the receiving, storage, assembly, and shipment of wind turbine generators (WTGs) and their components. To accommodate vessels that will deliver OSW components to and from the Site and to provide laydown yards to store and move them, three main components of the Project, are needed: 1) Construct a new 685 foot, pile supported delivery pier and remove the existing 705 foot wharf and replace it with a 660 foot, pile-supported loadout wharf, and construct a 416 foot assembly platform landward of the loadout wharf; 2) regrade the site and strengthen it with at least two feet of dense graded aggregate to support the large and heavy OSW components; and 3) dredge the State Turning Basin several feet down to -32 feet below

mean low lower water to accommodate the deep draft vessels that will be transporting the OSW components. Cruise ships will also use the berths and loadout wharf to transport passengers to and from the Site through a designated pedestrian path between the waterfront and the parking lot at the adjacent ferry terminal.

Mitigation Measures

Measure	Schedule
<p>Improve the State Turning Basin (the “Basin”), wharves, and port facilities to support existing and future maritime industrial uses in Salem Harbor and the recommendations of the Salem MHP.</p>	<p>Construction Period – Summer 2025</p>
<p>Conform with the Approved 2008 Salem Municipal Harbor Plan (MHP), DPA Master Plan, the draft 2023 Salem MHP, and DPA Master Plan reflects the City’s commitment to further developing the DPA and conforms with the 2023 MHP’s preference of OSW use for this site.</p>	<p>Not Applicable</p>
<p>Add 50,000 square feet of landscaped open space along Derby Street and along the Salem Wharf ferry parking lot, and maintain the existing tree-lined open space along Derby Street and Fort Avenue.</p>	<p>Construction Period – Summer 2024</p>
<p>Incorporate Resilient Massachusetts Action Team (RMAT) design criteria in the design of flood resilience measures to account for future sea level rise.</p>	<p>Design Period</p>
<p>Regrade the upland areas of the Project Site to be raised an additional 2 feet to increase site resiliency to storm and flood waters</p>	<p>Construction Period – Winter 2024</p>
<p>Improve and replace the existing wharf infrastructure, which will be better able to withstand flooding and storm surge.</p>	<p>Construction Period – 2024</p>
<p>Install landscape swale on the Project Site to capture runoff and minimize impacts to adjacent properties.</p>	<p>Construction Period – 2024</p>
<p>Reuse construction and demolition debris to the maximum extent practicable.</p>	<p>Demolition Period -Fall 2023</p>
<p>Implement environmental control measures during construction such as turbidity curtains, slow start pile driving, following TOY restrictions as designated by the Massachusetts Division of Marine Fisheries, wetting down areas to control dust, straw bales, and siltation fences.</p>	<p>Construction Period</p>

Measure	Schedule
The Proponent will provide a self-certification to the MEPA Office indicating that all of the required GHG emissions reduction measures, or their equivalent, are constructed for performed by the Proponent in the Preferred Alternative.	Post Construction

Conclusion

Now, therefore, the DEP-BRP, having reviewed the MEPA filings for the Salem Wind Port project and the mitigation measures proposed, finds pursuant to M.G.L. c. 30, section 61 that with the implementation of the aforesaid measures, all practical and feasible means and measures will have been taken to avoid or minimize potential damage to the environment from the Project.

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION – BUREAU OF RESOURCE PROTECTION – WATERWAYS REGULATION PROGRAM

Date

By

FINDING BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION**BUREAU OF RESOURCE PROTECTION****FOR A CHAPTER 91 PERMIT UNDER M.G.L. C. 30, S. 61****Introduction**

Massachusetts General Laws, Chapter 30, section 61 ("Section 61") requires that "[a]ll agencies, departments, boards, commission and authorities of the commonwealth shall review, evaluate, and determine the impact on the natural environment of all works, projects, or activities conducted by them and shall use all practical means and measures to minimize damage to the environment. Unless a clear contrary intent is manifested, all statutes shall be interpreted and administered so as to minimize and prevent damage to the environment. Any determination made by an agency of the commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact." The finding required by Section 61 "shall be limited to those matters which are within the scope of the environmental impact report, if any, required [on a project]." M.G.L. c. 30. S. 62A.

The development of the Salem Wind Port Project Site may require a Chapter 91 permit from MassDEP for the structures, fill, and uses, in filled and flowed tidelands of the commonwealth. Therefore, the DEP-BRP must issue a Section 61 Finding.

MEPA Review

An Expanded Environmental Notification Form (EENF) for the Project was prepared and filed on October 31, 2022. The Secretary of the Executive Office of Environmental Affairs (the Secretary) issued a Certificate on the EENF specifying the scope for a Single Environmental Impact Report (SEIR) on November 30, 2022. The SEIR was filed with the Secretary on May 15, 2023. The Secretary issued the Certificate on the SEIR on June ____ 2023.

Project Description

The main objective of the Project is to create an OSW marshalling terminal to facilitate the receiving, storage, assembly, and shipment of wind turbine generators (WTGs) and their components. To accommodate vessels that will deliver OSW components to and from the Site and to provide laydown yards to store and move them, three main components of the Project, are needed: 1) Construct a new 685 foot, pile supported delivery pier and remove the existing 705 foot wharf and replace it with a 660 foot, pile-supported loadout wharf, and construct a 416 foot assembly platform landward of the loadout wharf; 2) regrade the site and strengthen it with at least two feet of dense graded aggregate to support the large and heavy OSW components; and 3) dredge the State Turning Basin several feet down to -32 feet below

mean low lower water to accommodate the deep draft vessels that will be transporting the OSW components. Cruise ships will also use the berths and loadout wharf to transport passengers to and from the Site through a designated pedestrian path between the waterfront and the parking lot at the adjacent ferry terminal.

Mitigation Measures

Measure	Schedule
Improve the State Turning Basin (the "Basin"), wharves, and port facilities to support existing and future maritime industrial uses in Salem Harbor and the recommendations of the Salem MHP.	Construction Period – Summer 2025
Conform with the Approved 2008 Salem Municipal Harbor Plan (MHP), DPA Master Plan, the draft 2023 Salem MHP, and DPA Master Plan reflects the City's commitment to further developing the DPA and conforms with the 2023 MHP's preference of OSW use for this site.	Not Applicable
Use efficient design and construction practices to minimize Project Site area to the extent practicable and avoid unnecessary wetland impacts.	Construction Period
Implement environmental control measures during construction such as bottom-anchored turbidity curtains, slow start pile driving, following TOY restrictions as designated by the Massachusetts Division of Marine Fisheries, wetting down areas to control dust, straw bales, and siltation fences.	Construction Period
Minimize turbidity during maintenance dredging through use of a mechanical clamshell dredge with an environmental bucket.	Construction Period – 2025
Conduct dredge sampling analysis to determine the best option for dredging disposal.	Ongoing through Winter 2024.

Conclusion

Now, therefore, the DEP-BRP, having reviewed the MEPA filings for the Salem Wind Port project and the mitigation measures proposed, finds pursuant to M.G.L. c. 30, section 61 that with the implementation of the aforesaid measures, all practical and feasible means and measures will have been taken to avoid or minimize potential damage to the environment from the Project.

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION – BUREAU OF RESOURCE PROTECTION

Date

By

Chapter 14

RESPONSES TO COMMENTS

CHAPTER 14: RESPONSE TO COMMENTS

14.1 SEIR COMMENT RESPONSES

The Secretary’s Certificate on the Expanded Environmental Notification Form (EENF), which included the Scope for the Single Environmental Impact Report (SEIR), was issued on November 30, 2022. The comment period for the EENF closed on November 23, 2022. The Certificate on the EENF included 22 comment letters from local, state, and federal resource agencies, local environmental groups, and members of the public.

The following pages contain each comment letter, which are followed by a table of responses that have corresponding alphanumeric references for each comment. The letters are organized alphabetically by the writer. References to additional and technical detailed material elsewhere in this SEIR are also noted in these responses.



November 21, 2022

Secretary Bethany A. Card
Executive Office of Energy and Environmental Affairs
Attn: Alex Strycky, MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Re: EEA #16618 – Salem Wind Port EENF

Dear Secretary Card:

The Department of Conservation and Recreation (“DCR” or “the Department”) is pleased to submit the following comments in response to the Expanded Environmental Notification Form (“EENF”) filed for the Salem Wind Port (the “Project”).

As proposed, the Project involves activities within a 100-year floodplain as delineated on the current effective Flood Insurance Rate Map (“FIRM”) for Essex County, dated July 19, 2018. In its role as the state coordinating agency for the National Flood Insurance Program (“NFIP”), DCR submits the following comments.

DCR’s Flood Hazard Management Program (“FHMP”), under agreement with the Federal Emergency Management Agency (“FEMA”), is the state coordinating agency for the NFIP. As such, the FHMP provides technical assistance to communities that participate in the NFIP related directly to the program and also related to floodplain management in general. Communities that participate in the NFIP are required by FEMA, as a condition of their participation, to regulate development within the 100-year floodplain in a manner that meets or exceeds the minimum standards established by FEMA, located at 44 CFR 60.3. Participating communities such as Salem are required to adopt the NFIP requirements through locally enforceable measures. In Massachusetts, many of the requirements contained in 44 CFR 60.3 are enforced through existing state regulations such as the State Building Code (780 CMR) and Wetlands Protection Act regulations (310 CMR 10.00). Communities typically adopt the remainder of the requirements as part of a zoning ordinance or other locally enforceable measure. Salem has a zoning ordinance that includes a Floodplain District section which has been accepted by FEMA as meeting their requirements under the NFIP.

In our role as NFIP coordinator, the FHMP offers comments on the proposed Project’s relationship to many of the above regulations and requirements. The FHMP does not administer any of these requirements and therefore does not provide official determinations as to compliance with them; rather, our comments are provided as an overview of the requirements and the documentation that the FHMP believes may be necessary to demonstrate compliance with these requirements.

The Project includes the construction of an offshore wind marshalling terminal and other associated work. Based on information submitted with the EENF, some of the work is located within the 100-year floodplain on the current effective FIRM, specifically a zone VE with a base flood elevation of 13 feet above North American Vertical Datum (“NAVD”) and a zone AE with a base flood elevation of 10 feet NAVD. Because of its location

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation
251 Causeway Street, Suite 600
Boston, MA 02114-2199
617-626-1250 617-626-1351 Fax
www.mass.gov/dcr



Charles D. Baker
Governor
Karyn E. Polito
Lt. Governor

Bethany A. Card, Secretary
Executive Office of Energy & Environmental Affairs
Douglas J. Rice, Commissioner
Department of Conservation & Recreation

in the 100-year floodplain, compliance with the requirements of several federal, state and local measures related to floodplain development is required.

The proposal includes placement of a construction office trailer in the AE zone. For floodplain management purposes, structures, including trailers, placed for more than 180 days are not considered to be temporary structures and must meet the requirements for new buildings in the floodplain. This will include elevation to the level required in ASCE 24-14 Chapter 2, and other requirements.

A-1

Additionally, projects within the 100-year floodplain involving any federal action (e.g., permit, funding) must comply with federal Executive Order 11988, Floodplain Management. This executive order requires an eight-step decision-making process which includes analysis of alternatives, avoiding impacts when possible, and minimizing impacts when avoidance is not possible. Because this project includes federal funding and will require approval from several federal agencies, compliance with this process is necessary.

A-2

DCR appreciates the opportunity to comment on the EENF. If you have any questions regarding these comments, or to request additional information or coordination with DCR, please contact Eric Carlson at (617) 626-1362.

Sincerely,

Douglas Rice

Douglas J. Rice
Commissioner

cc: Eric Carlson, Priscilla Geigis, Patrice Kish, Tom LaRosa

A. Department of Conservation and Recreation (DCR), November 21, 2022

#	Response
A-1	Any proposed buildings, including trailers, to be located within the AE Zone for more than 180 days, will meet the state and local requirements for new buildings constructed in the floodplain.
A-2	As the Project involves federal action, it will undergo the eight-step decision-making process to ensure compliance with Executive Order 11988: Floodplain Management.



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Bethany A. Card
Secretary

Martin Suuberg
Commissioner

Memorandum

To: Alexander Strysky, MEPA Unit

From: Susan You, Waterways Regulation Program, MassDEP/Boston

Cc: Daniel Padien, Program Chief, MassDEP/Boston

Re: Salem Wind Port, Salem, EENF (EEA #16618)
Chapter 91 Waterways Regulation Program Comments

Date: November 21, 2022 (as revised)

The Department of Environmental Protection Waterways Regulation Program (the “Department”) has reviewed the above referenced EENF (EEA #16618), submitted by Fort Point Associates, Inc. on behalf of the Crowley Wind Services, Inc. (the “Proponent”) for the Salem Wind Port Project. located on Filled and Flowed Tidelands of Salem Harbor at 67 Derby Street within the Salem Harbor Designated Port Area (DPA) in the City of Salem, Essex County (the “project site”). The project proposes to create a wind turbine marshalling terminal for Offshore Wind Energy Industry, as well as reestablish a cruise ship berthing area. The proposed work includes reconstruction of a 685-foot-long pile-supported delivery pier, construction of a new 660-foot-long pile-supported loadout wharf, approximately 80,170 cubic yards of maintenance and improvement dredging to elevation -32 feet (MLLW) with a 2 foot overdredge in the existing State Turning Basin and along said loadout wharf and delivery piers and the existing berth along the 685-foot wharf dredged to -36 feet (MLLW) with a 2-foot overdredge, reinforcing existing onshore infrastructure/stormwater management system, office trailer/storage shed/parking spaces, and associated site grading and resurfacing.

Water Dependency:

The EENF describes a proposed site development and use focused on the delivery by ocean going vessels, interim storage, assembly, and deployment – also by ocean-going vessels – of assembled

components of considerable size to provide for off-shore energy generation. The project site will serve as an off-shore wind energy marshalling facility. Based on the information provided in the EENF, participation by members of the Waterways Program Team in the City of Salem’s ongoing Municipal Harbor Planning efforts, consultation with the Office of Coastal Zone Management and representatives of the marine trades organizations the Department makes the following determinations:

1. The project is a water dependent use pursuant to 310 CMR 9.12(2) because it requires direct access to and location in tidal waters.
2. The project meets several criteria for water dependent industrial uses stipulated at 310 CMR 9.12(2)(b) including but not limited to: 310 CMR 9.12(2)(b)2 – commercial passenger vessel operations; 310 CMR 9.12(2)(b)5 – facilities related to the construction, serving, maintenance and repair of marine structures (i.e., off-shore wind turbines) and 310 CMR 9.12(2)(b)7 – fill, structures and uses associated with the operation of a Designated Port Area.

B-1

Chapter 91 Jurisdiction:

The project site includes Filled Private and Commonwealth Tidelands and Flowed Private and Commonwealth Tidelands of Salem Harbor, which are subject to Chapter 91 jurisdiction pursuant to 310 CMR 9.04(1) and (2). The project is eligible for a license pursuant to 310 CMR 9.32(1)(b)1 as it is restricted to fill and structures for WDI use and accessory uses thereto within a DPA.

The project site within the Salem Harbor DPA is also located within the “Industrial Port” planning area identified in the 2008 Salem Municipal Harbor Plan and Designated Port Area Master Plan (“The Salem MHP”).

Chapter 91 Comments:

After review of the EENF, the Department finds that reconstruction/construction/placement of any structure and fill in and on filled and flowed tidelands requires a Chapter 91 Waterways License pursuant to 310 CMR 9.05(1)(a), while the associated dredging requires a Chapter 91 Waterways Permit per 310 CMR 9.05(2)(b).

B-2

The EENF states that there will be limited public access to the waterfront for cruise ship access. The and the public access portion of the Project site will be managed with appropriate signage, access to open space, and a management plan with reasonable rules and regulations. However, said public access is not delineated on the project plans submitted along with the EENF. When submitting SEIR, the Proponent should submit a plan showing the extent of public access on the project site and what measures will be taken to ensure that it will not interfere with the planned WDI uses on the project site.

B-3

The EENF states that the City of Salem has confirmed that the Project is consistent with the recommendations of the 2022 Salem MHP which is current under review of the Secretary and will update the 2008 Salem MHP. When submitting the SEIR, the Proponent needs to demonstrate compliance with both the 2008 and 2022 Salem MHP, in the event that the 2022 Salem MHP is not approved at the time of licensing. B-4

If you have any questions regarding the Department's comments, please feel free to contact me at susan.you@mass.gov or at (857) 972-5638.

B. Massachusetts Department of Environmental Protection (MassDEP)/Waterways Regulation Program (WRP), November 21, 2022

#	Response
B-1	<p>The following water-dependent industrial uses (WDIU) should also be included in the Massachusetts Department of Environmental Protection (MassDEP or the “Department”) water dependency determination: 310 CMR 9.12(2)(b)1 marine terminals and related facilities for the transfer between ship and shore, and the storage of, bulk materials or other goods transported in waterborne commerce; 310 CMR 9.12(2)(b)6 facilities for tug boats, barges, dredges, or other vessels engaged in port operations or marine construction; and 310 CMR 9.12(2)(b)11 facilities for the manufacture, servicing, maintenance, data collection, and other functions related to coastal or offshore structures, buoys, autonomous underwater vehicles or vessels, and for the development of new technologies and systems for these structures, buoys, vehicles or vessels, provided that the facility requires transfer between ship and shore or the withdrawal and/or discharge of large volumes of water.</p>
B-2	<p>To support the development and use of the proposed offshore wind (OSW) marshalling terminal, the Proponent will first apply for a Chapter 91 Waterways License for the fill and structures to begin construction in the summer 2023. After the dredge sampling analysis is completed at the end of 2023, the Proponent will apply for a Chapter 91 Waterways Permit for dredging.</p>
B-3	<p>Public access to the waterfront for cruise ship access and to the open space along Derby Street is delineated on the Project Plans. To ensure the safety of the public and those working within the port’s facility, and to comply with security regulations promulgated by the Department of Homeland Security and the International Ship and Port Security Code, public access will not be allowed on the Project Site. There will not be any public access along the water’s edge, except for cruise ship passengers.</p> <p>In compliance with 310 CMR 9.35, the public access portion of the Project will be managed with appropriate signage, a security fence and gates, and a management plan with reasonable rules and regulations.</p> <p>A description of the public access areas and measures to avoid interference with WDIU may be found on pages 4-8 and 4-10 in Chapter 4.</p>
B-4	<p>The Project demonstrates compliance with the Approved 2008 Salem Municipal Harbor Plan (MHP) and the draft 2023 Salem MHP.</p> <p>The Project Site is located within the planning area of the Approved 2008 Salem MHP and Designated Port Area (DPA) Master Plan, and therefore, the Project is subject to the standards for complying with a municipal harbor plan. The 2008 Salem MHP contemplated changes in the marine industry and infrastructure needed to support future energy production. The Project is consistent with these recommendations as it will support offshore energy needs as well as substantially improve the Project Site’s infrastructure for WDIUs. All the proposed uses are consistent with the standards for WDIUs and DPAs. The proposed offices and shed structures are integral to the port operations and are considered Accessory Uses in accordance with 310 CMR 9.12(3)(a).</p>

#	Response
	<p>The City of Salem recently submitted the Proposed 2023 Municipal Harbor Plan (the “2023 MHP”) and the Designated Port Area Master Plan (the “2023 DPA Master Plan”) to the MassDEP and MCZM. The 2023 DPA Master Plan focuses WDIUs on renewable energy and expanded cruise ship/ferry activity, and provides for public access only as deemed appropriate by MassDEP but does not discourage or preempt the transition of the project site to WDIUs. The 2023 DPA Master Plan also recommends incorporation of community noise abatement, visual protections, public access, and climate resiliency where possible without conflicts to WDIUs. The Project is a WDIU that supports renewable energy (offshore wind turbines) and provides an improved berth for cruise ships and OSW vessels, and a pedestrian accessway for cruise ship passengers. The Project also expands the buffer area along the south and west sides to minimize noise and visual impacts to the neighborhood, as well as increase open space, all of which are compliant with the 2023 MHP. These compliance descriptions are detailed on pages 4-6 and 4-7.</p>

From: [Strysky, Alexander \(ENV\)](#)
To: [Jabba, Richard](#)
Subject: FW: Salem Wind Port, 67 Derby Street, Salem, Expanded ENF, EEA No. 1
Date: Monday, November 21, 2022 3:05:07 PM

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Alex Strysky
MEPA Office
100 Cambridge Street
Boston, MA 02114

Cell: (857) 408-6957

From: Jeff Cohen <jcohen@Salem.com>
Sent: Monday, November 21, 2022 1:40 PM
To: Strysky, Alexander (EEA) <alexander.strycky@mass.gov>
Subject: Fw: Salem Wind Port, 67 Derby Street, Salem, Expanded ENF, EEA No. 1

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Sorry Alex, had incorrect email you when 1st sent.

Thanks
Jeff

From: Jeff Cohen
Sent: Sunday, November 20, 2022 6:13 AM
To: Bethany.card@mass.gov <Bethany.card@mass.gov>
Cc: Alex.Stryski@state.ma.us <Alex.Stryski@state.ma.us>
Subject: Salem Wind Port, 67 Derby Street, Salem, Expanded ENF, EEA No. 1

Bethany A. Card, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900

Boston, Massachusetts 02114

Re: Salem Wind Port, 67 Derby Street, Salem, Expanded ENF, EEA No. 1

Dear Secretary Card:

C-1

Currently a Salem City Councillor and formerly Vice-Chair of Salem's Sustainability, Energy & Resiliency Committee, I am providing this letter in support of the proposed offshore wind marshalling terminal at 67 Derby Street, Salem that was proposed in the Expanded ENF submitted by Crowley Wind Services.

The proposed industrial use within the Salem Designated Port Area will substantially improve the port's facilities, help meet the City's long-term economic and tourism goals, and substantially improve underutilized port infrastructure. The Project will construct a new delivery pier to unload large wind turbine components including nacelles, towers, and blades. The 42-acre project site will have ground improvements to store laydown components. An existing wharf will be reconstructed to assemble and loadout these components on ships that will transport them to offshore wind farm sites. To improve access and navigation, dredging will be needed in the adjacent turning basin. The project will mitigate environmental issues by regrading the site, providing a stormwater system to treat runoff, and stabilizing the shoreline in response to sea level rise and flood events.

The community will benefit from the redevelopment of this vacant site, with new construction and operational jobs and training as well as improved access for cruise ships and tourism. The site, which is adjacent to New Salem Wharf, had a long history of energy production due to the unloading and distribution of coal and, more recently, as a coal-fired power plant.

I strongly believe that the development team, which has a strong track record of building quality and responsive developments in the region, will provide an excellent project that will address environmental and neighborhood concerns, provide a resilient and sustainable design, and support the Salem Municipal Harbor Plan. They have an experienced development team of architects and engineers who understand the complications involved in developing waterfront property.

The City of Salem is currently completing its updated Salem Municipal Harbor Plan, which reflects the City's commitment to further developing its Designated Port Area for industrial uses. This project will provide a modern port facility that meets the City's long-term goals for economic development and tourism.

I encourage your agency to issue a Decision that allows the project to proceed to the next MEPA review of a Single EIR, and then to environmental permitting with state and local agencies.

Sincerely,

Jeff

Jeff Cohen

Salem Ward 5 Councillor

He/Him/His

<https://jeffcohenforsalem.weebly.com>

www.facebook.com/JeffCohensDirectActionNetwork

978-587-1443 (cell)

12 Hancock St

Salem, MA 01970

C. Jeff Cohen, Salem Ward 5 Councilor, November 21, 2022

#	Response
C-1	Thank you for your letter of support.



November 21, 2022

John D. Keenan, *President*

Bethany A. Card, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114
Via email: Alex.Strycki@state.ma.us

Re: Salem Wind Port, 67 Derby Street, Salem, Expanded ENF, EEA No. 1

Dear Secretary Card:

D-1

I am pleased to provide this letter in support of the proposed offshore wind marshalling terminal at 67 Derby Street, Salem that was proposed in the Expanded ENF submitted by Crowley Wind Services. The proposed industrial use within the Salem Designated Port Area will substantially improve the port's facilities, help meet the city's long-term economic and tourism goals, and substantially improve underutilized port infrastructure.

The project will construct a new delivery pier to unload large wind turbine components and will bring ground improvements to the 42-acre site. It will mitigate environmental issues by regrading the site, providing a stormwater system to treat runoff, and stabilizing the shoreline in response to sea level rise and flood events while also improving access and navigation.

As a past chairman of the Joint Committee on Telecommunications, Utilities and Energy, I am very familiar with this site. A prime location on Salem's coast, this site has a long history of energy production as a coal-fired power plant and, more recently, as a natural gas plant. This project supports the next phase of clean energy for Salem as well as the Commonwealth's overall goals for clean energy generation, transition to renewable energy sources, and development of offshore wind farms.

In addition, the region will benefit from the redevelopment the vacant parcel on this site, with new construction and operational jobs as well as improved access for cruise ships and tourism. As president of the only public university in this region, I am looking forward to the future partnership opportunities this project presents to our students and faculty as we work together to address this new workforce need for the North Shore.

I encourage your agency to issue a decision that allows the project to proceed to the next MEPA review of a Single EIR, and then to environmental permitting with state and local agencies.

Thank you for your consideration

Sincerely,

A handwritten signature in black ink, appearing to read "John D. Keenan", written over a horizontal line.

John D. Keenan
President

D. John D. Keenan, President at Salem State University, November 21, 2022

#	Response
D-1	Thank you for your letter of support.



November 21, 2022

Bethany A. Card, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114
Via email: Alex.Stryski@state.ma.us

RE: Salem Wind Port - 67 Derby Street, Salem - Expanded ENF, EEA No. 1

Dear Secretary Card:

The Salem Partnership is pleased to provide this letter in support of the proposed offshore wind marshalling terminal at 67 Derby Street, Salem that was proposed in the Expanded ENF submitted by Crowley Wind Services. The proposed industrial use within the Salem Designated Port Area will substantially improve the port's facilities, help meet the City's long-term economic and tourism goals, and substantially improve underutilized port infrastructure. The Project will construct a new delivery pier to unload large wind turbine components including nacelles, towers, and blades. The 42-acre project site will have ground improvements to store laydown components. An existing wharf will be reconstructed to assemble and loadout these components on ships that will transport them to offshore wind farm sites. To improve access and navigation, dredging will be needed in the adjacent turning basin. The project will mitigate environmental issues by regrading the site, providing a stormwater system to treat runoff, and stabilizing the shoreline in response to sea level rise and flood events.

E-1

The community will benefit from the redevelopment of this vacant site, with new construction and operational jobs and training as well as improved access for cruise ships and tourism. The site, which is adjacent to New Salem Wharf, had a long history of energy production due to the unloading and distribution of coal and, more recently, as a coal-fired power plant.

We strongly believe that the development team, which has a strong track record of building quality and responsive developments in the region, will provide an excellent project that will address environmental and neighborhood concerns, provide a resilient and sustainable design, and support the Salem Municipal Harbor Plan. They have an experienced development team of architects and engineers who understand the complications involved in developing waterfront property.

The City of Salem is currently completing its updated Salem Municipal Harbor Plan, which reflects the City's commitment to further developing its Designated Port Area for industrial uses. This project will provide a modern port facility that meets the City's long-term goals for economic development and tourism. The Salem Partnership is a member of the Municipal Harbor Plan Committee and has worked closely with City officials on the development of the port area.

We encourage your agency to issue a Decision that allows the project to proceed to the next MEPA review of a Single EIR, and then to environmental permitting with state and local agencies.

Sincerely,

Elizabeth A. Debski

Elizabeth A. Debski, AICP

Executive Director

E. Elizabeth A. Debski, The Salem Partnership Executive Director, November 21, 2022

#	Response
E-1	Thank you for your letter of support.



Outer Harbor Consulting

November 22, 2022

Bethany A. Card, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114
Via email: Alex.Stryski@state.ma.us

Re: Salem Wind Port, 67 Derby Street, Salem, Expanded ENF, EEA No. 16618

Dear Secretary Card:

Thank you for the opportunity to comment on the proposed offshore wind marshalling terminal at 67 Derby Street, Salem as described in the Expanded ENF submitted by Crowley Wind Services.

As other Commonwealth DPA communities struggle to attract water-dependent industrial uses to sites that are undersized or otherwise not conducive to contemporary waterfront industry, Salem and the Commonwealth are fortunate that the Crowley proposal will take full advantage of the site's unique modern-day waterfront industrial characteristics to support an emerging, high-priority offshore wind sector: the next stage in the evolution from a coal fired power plant to a clean energy hub on Salem's waterfront.. This is precisely the type of policy-consistent, jobs-creating private sector port infrastructure investment the Commonwealth should work to attract and support to revitalize underutilized industrial waterfront sites.

The City of Salem is currently completing its updated Salem Municipal Harbor Plan, which reflects the City's commitment to further developing its Designated Port Area for industrial uses. This project will provide a modern port facility that meets the City's long-term goals for economic development and tourism.

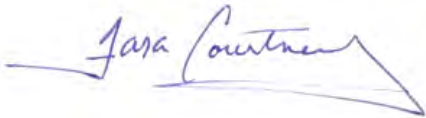
The EIR should highlight how this project supports Massachusetts' important public policy objectives around clean energy generation, as well as carbon reduction in the use, design and operations of this new port facility. Discussion should include traffic impact mitigation and best practices to limit or eliminate emissions from vessels and vehicles on site.

The community will benefit from the redevelopment of this vacant site, with new construction and operational jobs and training as well as improved access for cruise ships and tourism. The EIR should reflect the proponent's early and ongoing commitment work closely and transparently with the adjacent residential neighborhoods to address specific design and operational concerns including traffic, lighting, public access and safety.

F-2

I encourage your agency to issue a Decision that allows the project to proceed to the next MEPA review of a Single EIR, and then to environmental permitting with state and local agencies.

Sincerely,

A handwritten signature in blue ink that reads "Fara Courtney". The signature is written in a cursive style with a long horizontal stroke at the end.

Fara Courtney, Principal
Outer Harbor Consulting

F. Fara Courtney, November 22, 2022

#	Response
F-1	<p>The Project supports the Commonwealth of Massachusetts' public policy objectives for clean energy generation and carbon reduction.</p> <p>Clean Energy The Project allows for substantial investment in renewable energy to further the Commonwealth of Massachusetts' clean energy and climate goals to address climate change impacts and pollution from traditional fossil fuel energy sources. It also enables the Commonwealth to remain at the forefront of the OSW industry and to take full advantage of the nation's rapidly growing OSW industry on the East Coast, especially as the industry matures and new technologies, such as floating OSW, become more common. These efforts will help reduce pollution from fossil fuels and slow the progression of climate change-related impacts, two important concerns for communities, and especially for traditionally marginalized communities and EJ populations.</p> <p>Clean renewable energy is an environmental benefit as defined by 301 CMR 11.02, and while there will not be renewable energy directly produced on the Project Site, the OSW marshaling terminal will be an important part in meeting the state's renewable energy targets and achieving this environmental benefit, both for EJ and non-EJ communities.</p> <p>Carbon Reduction The goals of the Project align well with the region's goals of striving toward a net-zero carbon output. To mitigate construction emissions, "No Idling" signs will be installed at the Project Site's delivery vehicle parking and loading areas to reduce the amount of greenhouse gasses emitted. The importance of limited idling will be discussed with bidders during contracting, The Proponent expects their contractors to have a strict no-idling policy and to use post-2007 diesel vehicles retrofit to the US Environmental Protection Agency's (USEPA's) standards. The provision of bicycles facilities on-site will encourage workers to utilize alternative modes of transportation and reduce auto emissions, and the Proponent will work with the City to explore the potential for a nearby Bluebike station.</p> <p>Elements of a Transportation Demand Management (TDM) program include a series of measures that are designed to encourage the use of alternative modes of travel to single-occupant vehicles (SOVs) by influencing the choice of travel modes. These elements are consistent with the MassDEP directive to use all reasonable and feasible mitigation actions to reduce auto emissions. The benefits that are derived from an effective TDM program include less congestion on the roadway network; improved air quality; reduced parking demands and the need for construction of new parking spaces; and health benefits through walking and bicycling. See Chapter 9, Traffic and Transportation for a list of TDM program elements. Preferential parking locations for employees and patrons who use low-emission vehicles will be considered.</p> <p>Additionally, the Project will use electric conduits along the wharfs at the Project Site to connect to shore-based electrical sources.</p>

#	Response
F-2	<p>The Proponent's early and on-going commitment to work closely and transparently with the adjacent residential neighborhoods to address specific design and operational concerns including traffic, lighting, public access, and safety are described below.</p> <p>Public Meetings and Outreach Crowley and the City of Salem are committed to seeking community feedback and keeping residents up to date as the redevelopment of the port advances. Public meetings and project updates will be announced on the project website, www.salemoffshorewind.com and shared across social media and notification channels, as appropriate. Regular updates will continue to be provided at Salem Harbor Port Authority public meetings as they have been throughout this process. Current information on the project can be found at www.salemoffshorewind.com, and project inquiries can be made at info@salemoffshorewind.com.</p> <p>Traffic Limited increased traffic to and from the Project Site will occur during construction of the new facility, although, where feasible, deliveries by barge will be mandated. Truck routes will be established and enforced during construction through the preparation of a Traffic Management Plan. Once construction at the Project Site is completed and normal operations begin, it is not expected to have any significant traffic impacts.</p> <p>Lighting Lighting impacts are being addressed through design. The design team is working on lighting to keep the OSHA minimums at night for safety and security. The lights will also have newer technology where they are only bright when in the area and when not working in the vicinity, they will be dimmer. The Proponent is also implementing lights that are focused and will not bleed light out to the Salem Harbor or the adjacent neighborhood.</p> <p>Construction lighting impacts will be minimized. There will be limited night work, and only on an as-needed basis. If work is done at night, it will be done in specific areas so as not to impact the entire Project Site.</p> <p>Public Access Balancing industrial uses with opportunities for public access will continue to be a key focus as planning is initiated for this privately owned land. There will be restricted public access for only cruise ships passengers transiting between the wharf on the Project Site and the Salem Wharf ferry terminal parking lot. To ensure the safety of the public and those working within the port's facility, and to comply with regulations promulgated by the Department of Homeland Security and the international ship and port security code, public access to the industrial use portions of the Project will not be allowed. The public will be able to access the enhanced landscaped areas along Derby Street and the ferry terminal parking lot.</p> <p>Safety To ensure the safety of the public and those working within the port's facility, and to comply with security regulations promulgated by the Department of Homeland Security</p>

#	Response
	and the International Ship and Port Security Code, public access to the industrial use portions of the Project will not be allowed and will be limited along the areas next to the working portion of the terminal.

November 22, 2022

Bethany A. Card, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114
Via email: Alexander.Strysky@state.ma.us

Re: Salem Wind Port , 67 Derby Street, Salem, Expanded ENF, EEA No. 1

Dear Secretary Card:

This a letter in support of the proposed offshore wind marshalling terminal at 67 Derby Street, Salem that was proposed in the Expanded ENF submitted by Crowley Wind Services.

G-1

This proposed industrial use within the Salem Designated Port Area will substantially improve the port's facilities, help meet the City's long-term economic and tourism goals, and substantially improve underutilized port infrastructure. As I understand it, the Project will construct a new delivery pier to unload large wind turbine components including nacelles, towers, and blades. The 42-acre project site will also have ground improvements to store laydown components. An existing wharf will be reconstructed to assemble and loadout these components on ships that will transport them to offshore wind farm sites. To improve access and navigation, dredging will be needed in the adjacent turning basin. The project will mitigate environmental issues by regrading the site, providing a stormwater system to treat runoff, and stabilizing the shoreline in response to sea level rise and flood events.

The Hawthorne Hotel, one of the Historic Hotels of the United States, endorses this Project because it will provide a major step in the revitalization of Salem Harbor, one of the City's greatest resources. The Salem community will benefit from the redevelopment of this vacant site, with new construction and operational jobs and training as well as improved access for cruise ships and tourism.

We strongly believe that the development team, which has a strong track record of building quality and responsive developments in the region, will provide an excellent project that will address environmental and neighborhood concerns, provide a resilient and sustainable design, and support the Salem Municipal

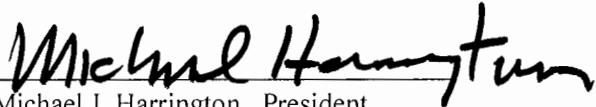
Harbor Plan. They have an experienced development team of architects and engineers who understand the complications involved in developing waterfront property.

The City of Salem is currently completing its updated Salem Municipal Harbor Plan, which reflects the City's commitment to further developing its Designated Port Area for industrial uses. This project will provide a modern port facility that meets the City's long-term goals for economic development and tourism.

We encourage your agency to issue a Decision that allows the project to proceed to the next MEPA review of a Single EIR, and then to environmental permitting with state and local agencies.

Respectfully Yours

Hawthorne Hotel

By: 
Michael J. Harrington, President

G. Michael J. Harrington, President Hawthorne Hotel, November 22, 2022

#	Response
G-1	Thank you for your letter of support.

From: [Kaitlyn Shaw - NOAA Federal](#)
 To: [Strycky, Alexander \(EEA\)](#)
 Cc: [Maniccia, Paul M CIV USARMY CENAF \(USA\)](#); [Brien, Ruthann CIV USARMY CENAF \(USA\)](#); [Farris, Charles N CIV USARMY CENAF \(USA\)](#); [Frew, Katelyn \(FWF\)](#)
 Subject: Re: Notice of MEPA In Person Site Visit and Remote Consultation Session - EEA 16618 Salem Wind Port, Salem
 Date: Tuesday, November 22, 2022 3:15:03 PM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hello,

We (NMFS-HESD) have not yet received an EFH consultation request for this project, but we have reviewed the EENF and attended the MEPA site visit on 11/07/22. Our comments for this project are restricted to the general EFH consultation process, the information that will be needed to complete our consultation, and the habitat concerns we have regarding the proposed project that will need to be addressed during the federal review process. According to the EENF, the proposed project includes 929,350 cubic yards of permanent impact to subtidal habitats and 14,450 square feet of permanent in-water fill. Areas of permanent shading due to dense graded aggregate wharf construction were not provided.

H-1

The dredge area includes both maintenance dredging as well as new dredging. This includes 80,190 cubic yards of material from a 21.3 acre area. The area identified as maintenance dredging was last dredged in 2002. Maintenance dredging is planned to a depth of -32 feet MLLW, -34 ft due to overdepth dredging. New dredging will lead to a depth change from about -32 ft to -36 ft depending on proximity to berth pocket and scour protection area. Additional overdepth of 2 feet is proposed for all dredging despite target depth of -32 ft being achieved for much of the dredge footprint, which increases the dredged material quantity substantially. Phase 1B side slopes are proposed at 2:1. Phase 2 optional dredging consists of dredging shallower areas to the South and East of the project site.

In order to satisfy the consultation requirements of the MSA EFH regulations, an EFH assessment must be prepared to analyze the effects of the proposed action on EFH during the federal review process. The required contents of an EFH assessment include: 1) a description of the action; 2) an analysis of the potential adverse effects of the action on EFH and the managed species; 3) conclusions regarding the effects of the action on EFH; and 4) proposed mitigation, if applicable. Due to the scope of the project, adverse impacts to EFH may be substantial and an expanded EFH consultation will likely be necessary under the procedures outlined in the EFH regulations.

H-2

In preparing an expanded EFH consultation, we encourage the lead federal agency to incorporate additional information in the EFH assessment, including: 1) the results of on-site inspections to evaluate the habitat and site-specific effects; 2) the views of recognized experts on the habitat or the species that may be affected; 3) a review of pertinent literature and related information; and 4) an analysis of alternatives to the action that could avoid or minimize the adverse effects on EFH. Specifically, the information that will be necessary is:

H-3

- a) a delineation of habitats;
- b) an evaluation of habitat impacts that may result from dredging and construction activities;
- c) an evaluation of alternatives to avoid sensitive habitats;
- d) proposed methods to be employed to minimize adverse effects to EFH;
- e) proposed monitoring of potential impacts to nearby SAV beds;
- f) proposed mitigation to offset unavoidable impacts;
- g) proposed decommissioning procedures, post 50 year design life.

We recommend coordination with resource managers to ensure the surveys will provide the appropriate level of information necessary for consultation. We will need detailed information on the items listed above to be addressed in the EFH assessment. Of particular concern for this project are eelgrass and mud habitats, which support winter flounder and numerous other federally managed and NOAA trust resources. The EENF states that "based on the topographic and bathymetric plans, and state-mapped resources areas, none of the proposed dredge area is located within intertidal areas, eelgrass beds, shellfish beds, other identified living resource areas". However winter flounder exist within the dredge footprint and have not been adequately discussed in the project materials.

H-4

According to the Massachusetts Division of Marine Fisheries 'Historic eelgrass trends in Salem Sound, Massachusetts Final Report,' eelgrass was mapped in Cat Cove in 2016 and was mapped within the project vicinity by MassDEP in 2019. While the dredge footprint may not be within Eelgrass habitat, proposed dredging could cause adverse effects to existing submerged aquatic vegetation which represent a Special Aquatic Site. Additional surveys to delineate current extent of SAV beds and proposed methods to limit sedimentation and turbidity within these beds will be needed for the subsequent Essential Fish Habitat consultation. Impacts to sensitive habitats, particularly potential sedimentation and turbidity impacts to nearby eelgrass habitats should be fully avoided. Work within designated winter flounder spawning areas should only occur when spawning is not actively occurring. In addition, the Shellfish suitability layer from MassCZM indicates nearby Quahog, European Oyster and Soft Shell clam habitat nearby. Adverse effects to shellfish from dredging activities should be minimized.

H-5

H-6

We agree with the inclusion of Best Management Practices such as "the use of turbidity curtains to control erosion

and sedimentation, following time of year restrictions as designated by the MADMF to protect fisheries and marine wildlife, and slow start pile driving practices in order to minimize impacts." However additional information will be needed, as identified above, in order for us to provide appropriate conservation recommendations during the EFH consultation.

H-7

Please note that potential impacts to fisheries and NOAA-trust species will also need to be addressed during the federal review process, as will further coordination with other NOAA divisions (e.g. ESA Section 7 consultation).

H-8

Best,

Kaitlyn Shaw

Marine Resources Management Specialist

Habitat and Ecosystem Services Division

NOAA/ National Marine Fisheries Service

Gloucester, MA

Office: 978-282-8457

Pronouns: she/her

kaitlyn.shaw@noaa.gov

www.nmfs.noaa.gov

On Tue, Nov 1, 2022 at 12:14 PM Strysky, Alexander (ENV) <alexander.strycky@state.ma.us> wrote:

Para averiguar por servicios de traducción, consulte el documento adjunto.

NOTICE OF MEPA SITE VISIT AND CONSULTATION SESSION

EEA 16618 Salem Wind Port, Salem

Project Description: An [Expanded Environmental Notification Form \(EENF\)](#) (**please note:** this is a link to only a small portion of the EENF; see below to obtain a full copy) has been filed with the Executive Office of Energy and Environmental Affairs by Crowley Wind Services, Inc, to construct an offshore wind marshalling terminal where barges, freighters and other vessels will deliver wind turbine generator components and transfer partially-assembled components to offshore wind farms. The project includes reconstruction of the existing 685-ft long loadout wharf, construction of a new 660-ft long delivery pier, dredging 80,170 cubic yards (cy) of sediment from a 21.3-acre area in the existing turning basin, dredging of the berth at the existing 685-ft long wharf and ground improvements to make the areas suitable for storage and transport of wind turbine generator components. The 42.3 acre project site will include two laydown areas totaling 32.5 acres, a 3 acre transition yard, a parking lot for 195 vehicles and a trailer to be used as an office, a 3,000-square foot (sf) shed and an office trailer near the loadout wharf. The project will add 3.77 acres of impervious area, generate 343 average daily trips, alter 21.3 acres of Land Under Ocean (LUO), 3,341 linear feet of Coastal Bank and 3.7 acres of Land Subject to Coastal Storm Flowage (LSCSF), occupy filled tidelands and construct a total of 132,029 sf of new pile-supported piers. The project is located within one mile of Environmental Justice (EJ) populations.

The project meets the thresholds for a mandatory EIR at 301 CMR 11.03(3)(a)(1)(b), alteration of 10 or more acres of any wetlands (Land Under Ocean). The project requires a Chapter 91 License and a 401 Water Quality Certificate from the Massachusetts Department of Environmental Protection (MassDEP) and will seek Financial Assistance from state funding programs. The Proponent has filed an Expanded Environmental Notification Form with a request for a Single EIR.

The MEPA Office will conduct both an in-person site visit and a remote consultation session. The public is welcome to participate in either or both of the meetings.

In-person site visit: 2:00 PM on Monday November 7, 2022. We will meet at 24 Fort Avenue, Salem at the north end of the parking lot (see diagram below). Please wear suitable footwear and bring a hard hat and safety vest if you have them (they will be provided if you don't have your own).

Remote consultation session: The public consultation session will take place at 6:00 PM on Monday November 14, 2022. See below for a meeting link and call-in phone number.

Spanish interpretation services are available for the public consultation session by contacting Richard Jabba, rjabba@fpa-inc.com, (617)279-4386 by November 11, 2022.

MEPA comments due on or before: November 23, 2022

Certificate due: November 30, 2022

Contact for Project Information: Richard Jabba, rjabba@fpa-inc.com, (617)279-4386

MEPA Contact: Alex Strysky, (857) 408-6957, alexander.strysky@mass.gov

Comments may be submitted my email to alexander.strysky@mass.gov or via the [MEPA Public Comments Portal](#).

REMOTE MEETING INFORMATION:

Microsoft Teams meeting

Join on your computer, mobile app or room device

[Salem Wind Port - MEPA EENF Consultation Session](#)

Meeting ID: 288 561 964 554

Passcode: AfQuar

[Download Teams](#) | [Join on the web](#)

Or call in (audio only)

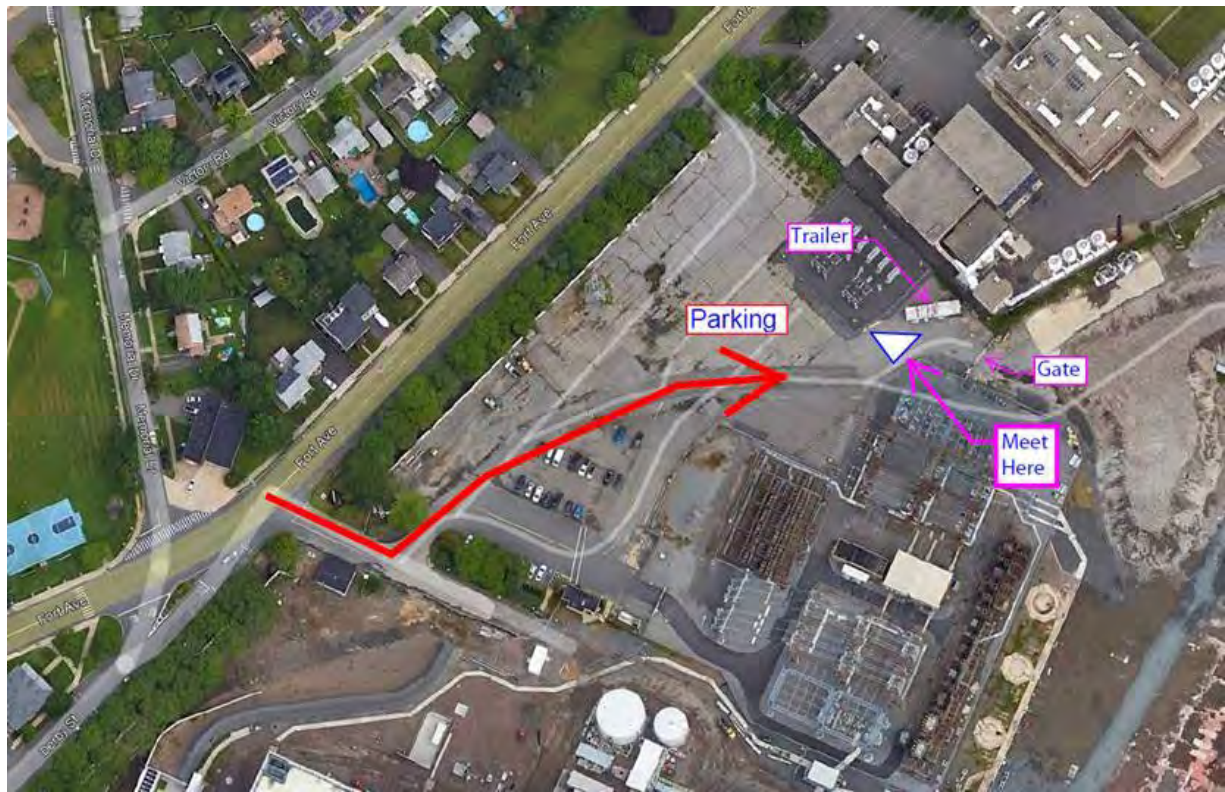
[+1 213-357-2812,,149469026#](#) United States, Los Angeles

Phone Conference ID: 149 469 026#

[Find a local number](#) | [Reset PIN](#)

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In person site visit meeting location- enter at 24 Fort Avenue



Alex Strysky
MEPA Office
100 Cambridge Street
Boston, MA 02114

Cell: (857) 408-6957

Please be informed that the MEPA Office has proposed amended regulations for public comment. Written comments will be accepted until November 14, 2022.

Please consult the [MEPA website](#) for more details.

H. National Marine Fisheries Service (NMFS), November 22, 2022

#	Response
H-1	<p>Correction: the Project includes 929,350 square feet of permanent impacts, not 929,350 cubic yards.</p> <p>There will be a net increase of approximately 43,390 square feet of permanent shading over inter and subtidal waters due the construction of new wharves along the shoreline.</p>
H-2	<p>An expanded Essential Fish Habitat (EFH) Assessment will be prepared to analyze the effects of the proposed action on EFH as part of the federal review process with the U.S. Army Corps of Engineers (USACE), who is the lead federal agency.</p>
H-3	<p>Providing that the USACE, the lead federal agency, determines that an expanded EFH is necessary, the Proponent will address the specific items (a – g) listed in the comment letter.</p>
H-4	<p>Winter flounder (<i>Pseudopleuronectes americanus</i>) are known to exist within Salem Harbor, which includes the dredge area. To minimize impacts to the Winter flounder spawning season, the proposed dredging will occur outside of the Time-of-Year (TOY) restriction period, which runs from February 15 to June 30.</p>
H-5	<p>An eelgrass survey was conducted on January 28, 2023, and the report can be viewed in Attachment I: Eelgrass Survey.</p>
H-6	<p>To avoid sensitive habitats and minimize adverse impacts to nearby shellfish and spawning winter flounder, the Proponent has consulted with Massachusetts Division of Marine Fisheries (DMF) and utilize TOY restrictions to avoid adverse impacts and will minimize dredging impacts near identified eelgrass beds with the use of turbidity curtains and turbidity monitoring.</p>
H-6	<p>Work within the designated winter flounder spawning areas will only occur when spawning is not actively occurring, which will be outside of the TOY period as determined by the DMF.</p>
H-7	<p>Adverse effects to shellfish from dredging activities will be minimized through the use of bottom anchored silt curtains</p>
H-7	<p>The Proponent will work with the USACE and other resource agencies to provide additional information that will help determine the appropriate conservation recommendations.</p>
H-8	<p>The potential impacts to fisheries and National Oceanic and Atmospheric Administration (NOAA) trust species and coordination will with other NOAA divisions will be addressed during the federal review process with the USACE.</p>



November 22, 2022

Secretary Bethany Card
 Executive Office of Energy and Environmental Affairs (EEA)
 Massachusetts Environmental Policy Act (MEPA) Office
 Attn: Alex Strycky, EEA No. 16618
 100 Cambridge St, Suite 900
 Boston, MA 02114

Dear Secretary Card,

Salem Alliance for the Environment (SAFE) appreciates this opportunity to submit comments in response to the October 17, 2022 Expanded Environmental Notification Form issued by Crowley Wind Services Inc. for the Salem Wind Port. SAFE addresses local environmental challenges in Salem through a mostly all-volunteer membership model.

The port of Salem is bordered by multiple Environmental Justice communities. As we transition our energy systems to renewable options, it is imperative we center those disproportionately impacted by the climate crisis. We believe that the following requests of Crowley Wind Services for sustainable practices and community needs will make our port a shining example of the Offshore Wind future.

1. We notice a number of references to local, stable jobs for the project, but we would like to see specifics. Please share what commitments are being made to those often not seen in these jobs—women, BIPOC, English isolated, and lower income residents in Salem and the region—to support their entering this new industry. The EEA should ensure Crowley formalizes its equitable workforce commitments in a contract or memorandum of understanding with interested parties. I-1
2. Please share how workforce development efforts (field trips, webinars, employment portals, etc.) tied to this construction will be rolled out, to our EJ communities in particular. I-2
3. Crowley must demonstrate an understanding of the Community Benefits Agreement established by Footprint Power and the City of Salem—specifically to Sec. II. D. 4—regarding a tie-in location preserved to land offshore wind energy in the future. Indicate the area where land is set aside for this transmission hub. Crowley should show that it understands the encumbrance and it is taking steps to ensure it does not preclude allowing a wind power interconnection in the future. I-3
4. Considering the poor air quality in Essex County and its impact on our EJ communities, we expect to see a commitment to all-electric operations at our port. We know that cold ironing practices, for example, are used elsewhere on Crowley projects. We do not want to see diesel vessels operating in our waters or diesel- or gasoline-powered vehicles on the work site. The emissions from carbon power vessels or vehicles can be prevented by shore to ship powering and electric and hybrid vehicles. Please share your commitments to an all-electric operation during development and operation of the port, and if there is cause for delay, please clarify why and the timeline for seeing a zero emissions port development. I-4

5. We understand the area will be raised 2 feet. It is not clear to us how the raising of this area impacts water runoff into neighborhoods, Blaney wharf, and places along the coast like the House of Seven Gables. Share your plan for protecting historic treasures. I-5
6. For stormwater management and drainage, please provide further plans and calculations. These plans should include Green Infrastructure features like bioretention. I-6
7. The EENF had a relatively small amount of the total acreage as impervious both before and after construction; however, it is our understanding that areas of compacted gravel should be treated as impervious. Can you clarify this point? The EENF says that no infiltration is possible throughout the site because it is all compacted urban fill and marine clay – this indicates that the whole site is impervious. It seems the whole site would need a stormwater system to treat runoff. I-7
8. The EENF says the site is not subject to rules for Land Uses with Higher Potential Pollutant Loads, but the Wetlands Regulations defines LUHPPL in such a way that it seems to be one. Can you further explain? I-8
9. To accommodate an operations workforce of between 50 and 200 individuals, a permanent structure is needed that includes sanitary facilities and break areas for the workers. Temporary facilities such as trailers will not suffice. I-9
10. Please state clearly the intent to transport everything by water whenever possible. While there is a detailed report on traffic and impacts, we are hoping to see a commitment to electric transport for workers in the form of carpool vehicles or a bus to ensure less emissions and traffic. I-10
11. We believe public engagement is critical to sparking excitement and enthusiasm for the coming offshore wind industry, particularly for the EJ community. First-hand exposure to the coming offshore wind port will spark interest in offshore wind jobs. We request a public viewing area be established that gives visibility to the work happening at our port, as we are proud of this 21st century industry landing at our shore. Please provide plans for observation decks, etc. I-11
12. Share the ways in which the buffer zones to the neighborhood and the ferry terminal will be improved and maintained. For instance, where possible, consider alternatives with green stormwater infrastructure and natural plantings. The existing drainage channel is hardened rip rap now and might be modified. I-12
13. A number of abbutters shared concerns about lighting and sound. Please be specific about what remediation efforts will be in place to minimize the impacts of lighting and sound during construction and operations. Provide specifics on the technology you will be using. I-13
14. Construction inevitably means more rats in our streets, as many reside at the pier. We ask for details on a commitment to ethical extermination practices such as traps rather than poisons so as not to harm other wildlife. I-14
15. Provide a detailed plan to address maintaining the integrity of foundations of all buildings in the Historic Derby Street Neighborhood. Before construction begins, Crowley should publicize the protocol for inspection and documentation of the condition of foundations before, during, and after construction. Residents and business owners should be given timely alerts to when detonation or pile-driving will commence. I-15
16. Please provide a clear and publicly available number to contact for issues concerning the plant that is copied to the city to monitor for increased issues and resolution. I-16

SAFE was founded over 20 years ago in an effort to close the coal-fired power plant on our shores and see an investment in renewable energy. Wind has been our vision for over two decades. Revitalizing the waterfront while simultaneously catalyzing the clean energy sector will have a transformational environmental and economic impact throughout the region and the Commonwealth as a whole if done correctly. We thank you for reviewing our comments and we are here to support next steps.

Sincerely,

Patricia A. Gozemba & Jim Mulloy
 Co-Chairs
 Salem Alliance for the Environment

I. Patricia A. Gozemba & Jim Mulloy, SAFE, November 22, 2022

#	Response
I-1	We are working with local groups, local high schools, and local colleges to promote and educate Salem and regional residents about workforce opportunities. As this is a new industry in the region, we don't have a specific number of direct jobs we will be hiring for, but we will make every effort to hire local, qualified, workers. We have an existing MOU with Salem High School, Massachusetts Maritime, and Salem State University to assist in creating this needed.
I-2	Workforce development efforts associated with construction and terminals operations are being developed with the City of Salem, other local community groups and stakeholders.
I-3	The City of Salem and Crowley are preparing an updated Community Benefits Agreement. The current design maximizes the potential for use of the Project Site as an OSW marshalling terminal, which provides a unique combination of deep draft access, unlimited height restrictions, and sufficient but minimal land area to support the goals of the City and Commonwealth that is not available elsewhere in the state. Landfall connections for OSW farms are being proposed in locations closer to the lease areas. Additionally, the local power services would need to be upgraded to accommodate a landfall connection. The Proponent is exploring and considering a future possibility for a landfall connection. Although the Proponents have not precluded the possibility of bringing offshore wind power to this site, they must balance the OSW opportunity with a use that can be located elsewhere. Regardless, Crowley is exploring and considering a future possibility for a landfall connection should one be proposed.
I-4	The Proponent will explore opportunities for electric operations within the Project Site, where possible. Currently, the Proponent is committed to reducing air quality impacts during the construction-period, including using diesel retrofitted equipment, wetting down areas during construction, appropriate mufflers on all equipment to reduce noise, turning off idling equipment, replacing specific operations and techniques with less noisy ones, implementing a construction management plan, and following all local, state, and federal regulations concerning construction. The Proponent will utilize all electric equipment to the extent possible considering that much of the available equipment is highly specialized, and there may not be all electric options. To reduce air quality impacts from vessels, the Project has designed ship to shore connections for its tug boats at the delivery pier and the loadout wharf. Conduits for future ship to shore connections have also been designed for use in the future when the specific types of vessels are available to connect to shore power, which will further reduce emissions.
I-5	The Project Site will be raised and graded down towards Salem Harbor to direct runoff away from adjacent properties, including the historic assets within Salem. A flooding analysis has also been prepared to model the water runoff created with the Project within the neighborhood and attached in Attachment H, Flooding Analysis. As the analysis states, there will not be any impacts from floodwaters on adjacent properties due to the raising of the Project Site's grade. Flood waters will not be redirected or channelized on to Blaney Street or the House of Seven Gables, which is more than 550 feet from the Project Site.
I-6	Green infrastructure has been integrated into the stormwater system design with measures such as a vegetated swale capturing and directing runoff on-site. Updated stormwater management plans are detailed further within Attachment L, Project Plans and Attachment M, Stormwater Report, including details on implementation of vegetative buffers, vegetative swales, and water quality features.

#	Response
I-7	The Proponent had modeled the existing and proposed Project Site for stormwater performance with the consideration that the gravel surfaces function as pervious. The EENF reflected this in stating that the Project Site was approximately 11% impervious, based only on amount of concrete/paved surfaces in the existing and proposed conditions. The updated calculation included within the SEIR calculates the existing conditions at approximately 96% impervious surfaces, including the existing dense packed gravel, and proposed conditions at approximately 95% impervious surfaces, including the proposed dense graded aggregate (DGA) as impervious area. Regardless, the Project improves stormwater management from the existing Project Site through the expanded water quality treatment. See Chapter 8, Infrastructure, and Attachment M, Stormwater Report for further details.
I-8	The Project will not be considered a land use with higher pollutant load. The Project Site does not have areas within a site that are the location of activities that are subject to an individual National Pollutant Discharge Elimination System (NPDES) permit or the NPDES Multi-Sector General Permit or other applicable uses. Furthermore, the proposed offloading, storage, and loading of OSW components are not a land use that qualifies a LUHPPL as defined by the wetland and drinking water regulations pursuant to 310 CMR 10.00 and 310 CMR 22.00, respectively.
I-9	The trailers will include sanitary facilities and break areas for workers during the construction and operation periods.
I-10	<p>The Project will transport materials for construction via Salem Harbor to the extent practicable to reduce roadway traffic impacts. The Proponent is currently seeking contractors that can source materials via barge, which will significantly reduce greenhouse gas (GHG) emissions and landside traffic.</p> <p>The Proponent will designate preferential parking locations for employees who use carpools. Employees will be encouraged to carpool and vanpool, and building tenants will be encouraged to sponsor and/or subsidize carpool incentives such as gift cards for first-time participation in a carpool or vanpool program. See Chapter 9 for TDM that will be employed to reduce emission and traffic impacts.</p>
I-11	The public will be able to view the OSW marshalling construction and operational activities from the existing ferry terminal and docks at Salem Wharf. To ensure the safety of the public and those working within the port's facility, and to comply with security regulations promulgated by the Department of Homeland Security and the International Ship and Port Security Code, public access to the industrial use portions of the Project will not be allowed and will be restricted along the areas next to the working portion of the terminal. There will not be any public access along the water's edge, except for cruise ship passengers.
I-12	The Project design includes additional pervious open space along Derby Street and the Salem Wharf parking lot, which will help mitigate stormwater runoff and improve water quality. An approximately 25-foot wide planted buffer is proposed to be installed along the Salem Wharf parking lot. It will consist of a drainage swale with shade trees, evergreen trees, understory trees, shrubs, and grasses. The Project has also integrated vegetative buffers, vegetative swales, and water quality features to mitigate the Project's impact due to stormwater runoff. For additional details, see Sheets L200, L201, and L300 in Attachment L, Project Plans.
I-13	The Project will comply with the local ordinances for noise and light. During construction,

#	Response
	<p>remedial measures for noise include using appropriate mufflers on all equipment, turning off idling equipment, and replacing specific operations and techniques with less noisy ones. Furthermore, noise abatement measures will be developed as part of the Construction Management Plan, included in Attachment B, Construction Management Plan. Lighting for construction will be minimal as construction operations will be conducted Monday through Friday, 7 AM to 5 PM or as otherwise limited by the City of Salem There will be very limited night work, and only on an as-needed basis. If work is done at night, it will be done in specific areas so as not to impact the entire Project Site.</p> <p>Noise generated during the operation of terminal is expected to be minimal and located mainly along the wharfs where most of the OSW components will be loaded and unloaded from the transportation vessels. The design team is working on lighting to keep the OSHA minimums at night for safety and security. The lights will also have newer technology where they are only bright when in the area, and when not working in the vicinity, they will be dimmer. The Proponent is also implementing lights that are focused and will not bleed light out to the water or the neighborhood.</p>
I-14	The Proponent will investigate ethical extermination practices to reduce rodent attraction such as traps rather than poison to avoid harm to other wildlife, such as hawks that may feed on rodents.
I-15	The majority of the vibration will be due to pile driving and ground surface compaction. Vibration Mitigation will be implemented during construction. The pile driving will be closer to the water than the neighborhood. The Proponent will publicize further specific measures the contractor will implement to protect buildings within the neighborhood. Pile-driving efforts will be communicated in a timely manner to abutters to the Project Site.
I-16	Contact information for issues concerning the plant is provided on the project website and here: John Berry, Director Terminal Operations, Crowley Wind Services, 603-247-3363.



265 Essex Street
Salem, MA 01970
978-744-0004

www.salem-chamber.org

November 22, 2022

Bethany A. Card, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114
Via email: Alex.Stryski@state.ma.us

Re: Salem Wind Port , 67 Derby Street, Salem, Expanded ENF, EEA No. 1

Dear Secretary Card:

On behalf of the Salem Chamber of Commerce, the largest business organization in Salem, I would like to express our support for the proposed offshore wind marshalling terminal at 67 Derby Street, Salem that was proposed in the Expanded ENF submitted by Crowley Wind Services. The proposed industrial use within the Salem Designated Port Area will substantially improve the port's facilities, help meet the City's long-term economic and tourism goals, and substantially improve underutilized port infrastructure. The Project will construct a new delivery pier to unload large wind turbine components including nacelles, towers, and blades. The project will mitigate environmental issues by regrading the site, providing a stormwater system to treat runoff, and stabilizing the shoreline in response to sea level rise and flood events. J-1

The community, including the business community, will benefit from the redevelopment of this vacant site, with new construction and operational jobs and training as well as improved access for cruise ships and tourism.

The Salem Chamber believes that the development team, which has a strong track record of building quality and responsive developments in the region, will provide an excellent project that will address environmental and neighborhood concerns, provide a resilient and sustainable design, and support the Salem Municipal Harbor Plan.

The City of Salem is currently completing its updated Salem Municipal Harbor Plan, which reflects the City's commitment to further developing its Designated Port Area for industrial uses. This project will provide a modern port facility that meets the City's long-term goals for economic development and tourism.

I encourage your agency to issue a Decision that allows the project to proceed to the next MEPA review of a Single EIR, and then to environmental permitting with state and local agencies.

Kind regards,

Rinus Oosthoek
Executive Director
Salem Chamber of Commerce

Executive Committee

- Tina Jordan, President**
Salem Witch Museum
- Rob Liani, Past President**
Coffee Time Bake Shop
- Scott Grover, Clerk**
Tinti & Navins
- Gina Deschamps, Treasurer**
Journeyman Press
- Bernadette Butterfield,**
Groom Construction
- Jason Consalvo**
Salem Five Bank
- Beth Debski**
Salem Partnership
- Adria Duijvesteijn**
Salem State University
- Diego Fellows, At Large**
Salem Academy

Directors

- Jim Armstrong**
Armstrong Field Real Estate
- Robyn Burns**
Salem Pantry
- Jennifer Close**
Peabody Essex Museum
- Joe Correnti**
Correnti & Darling
- Karen Davis**
Coons Card and Gift Shop
- Gina Flynn**
Eastern Bank
- Kate Fox**
Destination Salem
- Jim Gagnon**
RCG, LLC
- Eric Glass**
Pirate Dog Brand (Rumson's Rum)
- Bill Henning**
North Shore Bank
- Claire Kallelis**
Hawthorne Hotel
- Serie Keezer**
Finz Seafood & Sea Level
- Joy Livramento-Bryant**
Salem Hospital
- Shawn Newton**
Newton Consultancy
- Karen Scalia**
Salem Food Tours
- Jason Seidman**
Boxer Motor Works
- Mike Sperling**
Sperling Interactive
- Flora Tonthat**
Northey Street House B&B
- Nate Townsend**
Pamplemousse
- Josh Turiel**
Turiel Associates
- Chip Tuttle**
Seagrass

J. Salem Chamber of Commerce, November 22, 2022

#	Response
J-1	Thank you for your letter of support.



The Commonwealth of Massachusetts
MASSACHUSETTS SENATE

Letter K

SENATOR JOAN B. LOVELY
ASSISTANT MAJORITY LEADER
Second Essex District

STATE HOUSE, ROOM 413D
BOSTON, MA 02133-1053
TEL. (617) 722-1410

JOAN.LOVELY@MASENATE.GOV
WWW.MASENATE.GOV

Chair
JOINT COMMITTEE ON RULES
SENATE COMMITTEE ON RULES

Vice Chair
SENATE COMMITTEE ON BILLS IN THE THIRD READING

JOINT COMMITTEE ON HOUSING

SENATE COMMITTEE ON REIMAGINING MASSACHUSETTS

SENATE COMMITTEE ON GLOBAL WARMING AND CLIMATE CHANGE

SENATE COMMITTEE ON STEERING AND POLICY

November 22, 2022

Bethany A. Card, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114
Via email: Alex.Stryski@state.ma.us

Re: Salem Wind Port, 67 Derby Street, Salem, Expanded ENF, EEA No. 1

Dear Secretary Card:

I am pleased to provide this letter in support of the proposed offshore wind marshalling terminal at 67 Derby Street, Salem that was proposed in the Expanded ENF submitted by Crowley Wind Services. The proposed industrial use within the Salem Designated Port Area will substantially improve the port's facilities, help meet the City's long-term economic and tourism goals, and substantially improve underutilized port infrastructure. The Project will construct a new delivery pier to unload large wind turbine components including nacelles, towers, and blades. The 42-acre project site will have ground improvements to store laydown components. An existing wharf will be reconstructed to assemble and loadout these components on ships that will transport them to offshore wind farm sites. To improve access and navigation, dredging will be needed in the adjacent turning basin. The project will mitigate environmental issues by regrading the site, providing a stormwater system to treat runoff, and stabilizing the shoreline in response to sea level rise and flood events.

K-1

The community will benefit from the redevelopment of this vacant site, with new construction and operational jobs and training as well as improved access for cruise ships and tourism. The site, which is adjacent to New Salem Wharf, had a long history of energy production due to the unloading and distribution of coal and, more recently, as a coal-fired power plant.

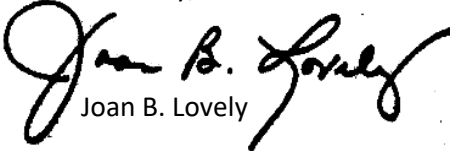
I strongly believe that the development team, which has a strong track record of building quality and responsive developments in the region, will provide an excellent project that will address environmental and neighborhood concerns, provide a resilient and sustainable design, and support the Salem Municipal

Harbor Plan. They have an experienced development team of architects and engineers who understand the complications involved in developing waterfront property.

The City of Salem is currently completing its updated Salem Municipal Harbor Plan, which reflects the City's commitment to further developing its Designated Port Area for industrial uses. This project will provide a modern port facility that meets the City's long-term goals for economic development and tourism.

I encourage your agency to issue a Decision that allows the project to proceed to the next MEPA review of a Single EIR, and then to environmental permitting with state and local agencies.

Sincerely,



Joan B. Lovely

K. Senator Joan B. Lovely, Second Essex District, November 22, 2022

#	Response
K-1	Thank you for your letter of support.

Doc. ID.: CWW-GEN-POR-COM-AGR-000001



November 23, 2022

Bethany A. Card, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114
Via e-mail: alexander.strysky@state.ma.us

Re: Salem Wind Port, 67 Derby Street, Salem, Expanded ENF, EEA No. 16618

Dear Secretary Card:

Avangrid, the U.S. renewable energy subsidiary of the Iberdrola Group - an international energy company L-1 engaged in developing true global energy security; is very pleased to provide this letter of support for the Salem Wind Port project, the proposed offshore wind marshalling facility located at 67 Derby Street in Salem, MA. This letter is submitted to express Avangrid's strong support for this development project as it is presented in the Expanded ENF filing submitted by the City of Salem and Crowley Wind Services in November of 2022. As you are aware, it is our intention to serve as an anchor tenant for this port and to use it for construction staging for our Commonwealth Wind project. We have worked together with you, Crowley Maritime, the City of Salem, and the legislature to move this port development project forward since our bid for Commonwealth Wind was accepted in December 2021.

Avangrid is the owner of significant offshore wind lease acreage off the coast of the eastern U.S. and is the developer of 4.9 GW of offshore wind energy projects from these lease areas along the eastern seaboard. Our portfolio includes the Commonwealth Wind Project, which is anticipated to deliver 1,200 MW of offshore wind power to residents of Massachusetts, Park City Wind, an 804 MW offshore wind farm that will deliver energy to electricity customers in Connecticut, and a 50% ownership share in the Vineyard Wind 1 Project, delivering 800 MW of clean renewable offshore wind power to Massachusetts. The historic Vineyard Wind 1 project, which is currently under construction, represents America's first grid-scale offshore wind power generation project and will be the nation's first commercial scale offshore wind farm.

Avangrid has been working with multiple stakeholders and agencies to ensure that Commonwealth Wind Project is able to move forward which is squarely in the public interest and the best possible outcome for Massachusetts and its ratepayers, and we look forward to continued engagement so this project can deliver on its immense economic and environmental benefits and help the state achieve its ambitious 2030 climate target.

To meet its clean energy mandate as expressed in the "Massachusetts 2050 Decarbonization Roadmap", Massachusetts will require significant offshore wind power development. To ensure the rapid development of this new power generation technology, and meet these ambitious targets, the

Doc. ID.: CWW-GEN-POR-COM-AGR-000001



Commonwealth will need to develop several port facilities that are purpose-built as marshalling and construction support hubs for the deployment of the windfarms. Substantial development of this port infrastructure, to include the rehabilitation of existing quayside infrastructure, will be required to achieve Massachusetts' offshore wind goals. Additionally, the development of the Salem Wind Port is key to Massachusetts capturing the business and the jobs associated with the historic once-in-a-millennia energy transition pipeline these offshore wind projects represent. The Port of Salem redevelopment scheme will maximize local economic benefits associated with establishing the supportive offshore wind supply chain along the north coast of Massachusetts and will enhance the overall offshore wind business offering the Commonwealth has for the offshore wind industry by working together symbiotically with the Commonwealth's other offshore wind marshalling port, the Marine Commerce Terminal in New Bedford. Enhancing port opportunities at Salem Wind Port will benefit the offshore industry by significantly furthering and enhancing the infrastructure required to support the deployment, operation and maintenance of U.S. Offshore Wind - both now, for the projects scheduled to be installed in the next 10 years, and also far into the future, as the unique characteristics of the Salem port will serve future generations of offshore wind projects, including those projects in deep water that utilize floating platforms as foundations.

The proposed industrial use within the Salem Designated Port Area (DPA) will substantially improve the City's overall port facilities and will significantly assist the City in meeting its long-term economic and development goals, while at the same time substantially improve the currently underutilized port infrastructure. The Project will result in the construction of a new delivery pier to offload large wind turbine components - including nacelles, towers, and blades. The 42-acre project site will include ground improvements for heavy lift infrastructure to store and laydown components. An existing wharf will be reconstructed to facilitate component pre-assemble and loadout on to vessels for transport to the offshore wind energy areas. To improve access and navigation to the facility, maintenance dredging will be required in the adjacent turning basin. The Project will mitigate environmental issues by regrading the site, providing a stormwater system to treat runoff, and stabilizing the shoreline in response to sea level rise and flood events.

The community will benefit from the redevelopment of this vacant site through numerous job opportunities both in new construction and operations of the facility as well as training and improved access for cruise ships and tourism.

Avangrid strongly believes that the development team has a successful track record of building quality and responsive developments in the region and will execute on this excellent project that will address environmental and neighborhood concerns, provide a resilient and sustainable design, and support the Salem Municipal Harbor Plan. The experienced development team of architects and engineers understands the complicated nature of developing waterfront property.

The City of Salem is currently completing its updated Salem Municipal Harbor Plan, which reflects the City's commitment to further developing its Designated Port Area for industrial uses. This project will provide a modern port facility that meets the City's long-term goals for economic development and tourism.

Doc. ID.: CWW-GEN-POR-COM-AGR-000001



Avangrid encourages your agency to issue a Decision that allows the project to proceed to environmental permitting with state and local agencies.

Sincerely,

DocuSigned by:


576B7E66DE3A4D8...

Sy Oytan
Senior VP – Offshore Projects

L. Avangrid Renewables, November 23, 2022

#	Response
L-1	Thank you for your letter of support.



Are you on board?

15 State Street Suite 1100
Boston, MA 02109
617 223 8667
bostonharbornow.org

November 23, 2022

Via email: alexander.strysky@mass.gov

Ms. Bethany A. Card, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Attn: Alex Strysky

Re: Salem Wind Port Expanded Environmental Notification Form

Dear Mr. Strysky,

Boston Harbor Now respectfully submits the following comments on the *Salem Wind Port Expanded Environmental Notification Form* submitted by Crowley Wind Services, Inc. Our organization has reviewed the October 17th, 2022 Expanded Environmental Notification Form and recently attended the November 11th, 2022 site visit.

Boston Harbor Now has been long-time champions of working waterfronts, with their unique geography and specialized jobs, and we are committed to ensuring that the waterfront we build today is designed for a more resilient and inclusive future. We envision that Designated Port Areas (DPAs) around the Commonwealth will support the existing and future marine industries that strengthen our region and prepare for the challenges climate change will bring. We expect that robust working port areas will work in tandem with their neighboring communities and provide local residents with job and educational opportunities that allow both to flourish.

We believe that the Salem Wind Port exhibits these qualities and underscores how important DPAs are, and will be, to ensuring the success of the region. The Wind Port, and other coastal land uses that support the offshore wind industry, will be vital to providing the Commonwealth with clean electricity in the future and has the potential to bring hundreds of new green jobs to the area and thousands of jobs statewide. We hope that this industry continues to flourish and expand in Massachusetts, and we understand that to do so we must also preserve the spaces that support these projects. Large contiguous DPAs with deep water must be protected to fully capitalize on the benefits of this emerging industry and move Massachusetts into the future. Meanwhile, unique adaptation strategies will need to be deployed to keep water dependent uses connected to the water sheet but out of harm's way.



Are you on board?

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bostonharbornow.org

An Exemplary Use for DPAs

The Salem Wind Port provides a model for modernizing DPAs in order to take advantage of a unique coastal asset, fulfill the region's future energy needs, and create new green jobs. Like its predecessor, the 750-megawatt coal and oil-fired power plant that resided on site, the proposed Wind Port will contribute to the area's energy demand, but this time it will do so with clean and renewable electricity. Although the Wind Port will not generate power locally, it will support Massachusetts' offshore wind industry by providing assembly space for the wind turbines. This new use will help reactivate this site, which has been dormant since the demolition of the power plant.

In addition to bringing a marine industrial use to the DPA, the Wind Port will be vital to supporting the region's expanding demand for renewable energy. The Massachusetts Executive Office of Energy and Environmental Affairs recognizes the need to significantly expand the region's clean electricity supply to decarbonize the state and has identified offshore wind as being key to implementing their plan. Landside uses that help site and construct offshore wind, such as the proposed Wind Port, are therefore vital to achieving the Commonwealth's decarbonization goals.

The Wind Port, and other DPA land uses that support offshore wind, will also result in the expansion of new job opportunities. The proposed Wind Port in particular is expected to create 200 full time jobs in Salem during the construction phase and an additional 200 full time jobs once it's fully operational. In conjunction with jobs, the proponent has stated that they intend to work with local colleges, non-profits, and academies to provide Global Wind Offshore certified training and are committed to fair and safe work practices.

Expanding Wind Requires DPA Protections

Given the importance of the offshore wind industry described above, we hope that measures will be taken to preserve and expand this sector. This includes protecting Designated Port Areas. Wind Ports such as Salem's require certain conditions to function properly, principally large areas of contiguous Designated Port Area space, to run their operations. In order to carefully maneuver large, heavy, and very expensive wind turbine parts without damaging them, ample space is vital. Without at least 25 acres of land, wind turbine assembly of this type becomes infeasible.

Given the water dependency of these operations, the offshore wind industry will need access to deep water berthing for vessels to load and unload their supplies and cargo at the port facility. For wind turbine assembly specifically, it is vital that there be a clear path to the open ocean with no height clearances. Therefore, DPAs with these characteristics will be vital to expanding offshore wind.

To ensure the success of the offshore wind industry in Massachusetts it will be important that we are especially mindful of protecting DPAs that exhibit these characteristics. Losing critical DPAs such as these may result not only in the failure to expand clean energy in Massachusetts, but a loss of green jobs for the region.



Are you on board?

15 State Street Suite 1100
Boston, MA 02109
617 223 8667
bostonharbornow.org

Balancing Public Waterfront Access with Port Operations

Part of what makes DPAs particularly vulnerable is the desire to provide new public and private uses that take advantage of the value people place on being by the water. While we are strong advocates for public waterfront access and an overall welcoming waterfront, we understand that a working waterfront comes with constraints. Although the proposed project is not able to provide public access to the waterfront on their site due to safety concerns, we appreciate that the proponents will continue to maintain pedestrian access to the Salem Wharf and cruise ship terminal for water transportation. Similarly, the new multi-use trails affiliated with the natural gas-fired power plant presently located in the middle of the proposed site, will not be affected by the proposed Wind Port, still allowing for public enjoyment of the area and an opportunity to be surrounded by significant infrastructure in a welcoming open space.

We suggest that in lieu of public access the proponent provides some sort of public educational programming on site, perhaps modeled on the tours of the Deer Island Wastewater Treatment facility in Winthrop—educating the public about the value of this technology. Interpretive signage and exhibits along the edges of the site or at the entrance can further serve as a buffer and an educational benefit. We further hope that the port will support educational efforts to train a new diverse workforce for green jobs.

M-1

M-2

Preparing for Climate Change Impacts

We appreciate that the Wind Port will be elevated to 12 feet (NAVD88) with aggregate to keep operations above present and near term high tides while still maintaining port operations along the water across a range of present tidal levels. With this configuration, the site can be further elevated at a later date as sea level rise increases the high tide elevation and to protect against storm surge. An elevated berm along the inland edge of the site can support flood protection for the neighborhood and may serve as a public pathway.

Should further bulkhead modifications or wave attenuation measures be necessary in the future as climate change impacts call for further coastal adaptation, designs should consider opportunities for protecting other nearby wharves in the Salem Harbor.

M-3

We appreciate the opportunity to comment on this project, and are excited to see such an exemplary DPA use come to the harbor in Greater Boston. Offshore wind will be vital to the Commonwealth's pursuit of decarbonization, and we hope that DPAs are protected accordingly. We would be happy to speak with you further if there are additional questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Kathy Abbott".

Katherine F. Abbott
President and CEO
Boston Harbor Now

M. Boston Harbor Now, November 23, 2022

#	Response
M-1	The Proponent will protect and make use of the DPA within Salem Harbor to the maximum extent practicable, by facilitating the navigation and berthing of vessels for assembly of offshore wind facilities. This will help bolster the Salem Harbor DPA to promote a working waterfront for the region, provide local job opportunities, and support the Commonwealth's renewable energy goals.
M-2	The Proponent will explore the use of public educational programming on-site in lieu of public access, consisting of public tours and educational signage. Additional educational efforts will also be engaged as part of the workforce training for the Project construction to promote green jobs.
M-3	If the Proponent foresees any further bulkhead modifications or wave attenuation measures, the designs will consider opportunities for the protection of adjacent wharves in Salem Harbor to prepare the Harbor for climate change. The design of these structures would also need to address potential environmental and navigation impacts.

November 23, 2022

Bethany A. Card, Secretary
Executive Office of Energy and Environmental Affairs
Attention: Alexander Strycky, MEPA Unit (via email attachment)
100 Cambridge Street, Suite 1020
Boston, MA 02114

RE: Crowley Wind Services, Inc.: EEA #16618 – Salem Wind Port, Salem

Dear Secretary Card,

The staff of the Massachusetts Board of Underwater Archaeological Resources has reviewed the above-referenced proposed project as detailed in the *Environmental Monitor* of October 24, 2022, and in the project's Expanded Environmental Notification Form of October 17, 2022, prepared by Fort Point Associates, Inc. on behalf of Crowley Wind Services, Inc. We offer the following comments.

The Board has conducted a preliminary review of its files and secondary literature sources to identify known and potential underwater archaeological resources within the proposed project area. No record of any underwater archaeological resources was found within the proposed project boundaries. Based on the results of this review, and the limit of proposed underwater and intertidal project impacts to the previously disturbed, remediated, rip-rap banked and sheet-piled industrial waterfront at the sites of the currently operating gas-fired Salem Harbor Power Station and the retired coal and oil-fired Salem Harbor Generating Station that it replaced, and repeatedly dredged (as recently as 2002) portions of Salem harbor (i.e., the State Turning Basin extending out to the federal navigation channel), the Board expects this project is unlikely to adversely affect submerged cultural resources.

However, the Board notes that as one of Massachusetts's oldest and most historically significant ports, Salem Harbor may be generally archaeologically sensitive. Research indicates the occurrence of at least thirteen (13) shipwrecks in the Salem vicinity during the period of 1709-1900 for which locations are vague, and that the loss of earlier and smaller coastal vessels and the purposeful abandonment of obsolete or damaged vessels are generally not found in the documentary record. In addition, recent studies related to other improvements to less-disturbed, un-dredged, portions Salem Harbor, outside of the proposed project area, documented the presence of previously unknown historic wharf structures and submerged paleosols containing ancient Indigenous cultural material (micro-debitage from stone tool manufacture).

Therefore, should heretofore-unknown underwater archaeological resources be encountered during the course of work, the Board expects that the project's sponsor will take steps to limit adverse effects and notify the Board and the Massachusetts Historical Commission, as well as other appropriate agencies, immediately, in accordance with the Board's *Policy Guidance for the Discovery of Unanticipated Archaeological Resources*.

The Board appreciates the opportunity to provide these comments as part of the MEPA review process. Should you have any questions regarding this letter, please do not hesitate to contact me at the address above or by email at david.s.robinson@mass.gov.

Sincerely,



David S. Robinson
Director

/dsr

Cc: Brona Simon, MHC
Robert Boeri, Kathryn Glenn, MCZM (via email attachment)
Bettina Washington, WTGH/A (via email attachment)
David Weeden, MWT (via email attachment)

N. Board of Underwater Archaeological Resources, November 23, 2022

#	Response
N-1	If any unknown underwater archaeological resources are discovered during the course of the Project, the Proponent will take actions to limit adverse effects and notify the Board of Underwater Archaeological Resources and the Massachusetts Historical Commission (MHC), as well as other appropriate agencies.



CITY OF SALEM, MASSACHUSETTS

Kimberley Driscoll
Mayor

November 23, 2022

Secretary of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
Alex Strysky, EEA No. 16618
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: Salem Offshore Wind Port – MEPA Expanded ENF Comments

Dear Mr. Strysky,

Thank you for the opportunity to provide comments on the Expanded Environmental Notification Form (“EENF”) filed by our partners at Crowley Wind Services (“Crowley” or the “Proponent”) for the Salem Offshore Wind Port in Salem’s Designated Port Area (the “Project”). The Project is proposed at a location that has long been an economic driver and job hub for Salem and the region, but unfortunately, for many years was also a source of local air pollution and greenhouse gas emissions. The reconstruction of the former coal power plant to a cleaner natural gas facility was a tremendous step forward for our community and represented in more ways than one a bridge to a clean energy future. That reconstruction also made available for reuse the 42 acres of land where the Project is proposed. Over the past few years, we have been engaged in a city-wide conversation to identify community objectives for the property. Through that process we have identified a strong local interest in seeing Salem’s port utilized in support of offshore wind. We have also learned how unique this property is for this emerging industry and how critical it is for the state and the nation to reach our renewable energy targets. For this reason, I am pleased to share my support for the Project and for MEPA’s consideration of the request for a Single Environmental Impact Report (“SEIR”). This expedited review process is critical to our ability to get the port ready for the deployment of the initial offshore wind projects.

While we wholeheartedly support this use of the property, we are also committed to ensuring that the Project is designed and operated in a manner that mitigates impacts and maximizes local opportunity. Accordingly, we offer a number of comments attached hereto for consideration in an SEIR. We are fortunate to have forged a strong and cooperative relationship with our partners at Crowley and are confident that they can address these comments sufficiently in the SEIR.

Thank you for your consideration. Please don't hesitate to contact me or my team with any questions you may have.

Sincerely,

A handwritten signature in black ink, appearing to read "Kim Driscoll". The signature is written in a cursive, flowing style.

Mayor Kimberley Driscoll

Wetlands

The Proponent should continue to work closely with the Salem Conservation Commission to close out the existing outstanding Order of Conditions with the prior property owner prior to the submission of a new Notice of Intent for the Project. The Conservation Commission recommends that the Proponent explore alternative options to improve stormwater treatment, including expanding pervious area and other low impact development (LID) features. These LID features could be combined with other uses, such as resiliency features, elevated boardwalks, or areas of educational signage. The Proponent should also work with the city to explore additional offsite opportunities for open space and public access improvements. O-1
O-2

In addition to its responsibility to enforce the Wetlands Protection Act, the Salem Conservation Commission is also responsible for implementation of the City's Wetlands Protection and Conservation Ordinance. This includes protections related to climate change mitigation and resilience. The Commission understand that the Proponent plans to elevate the property by approximately two feet to improve the overall resiliency of the property. Additional information should be provided on the impact of this fill on adjacent properties. O-3

Waterways

The City is currently in the process of finalizing an update to our 2008 Municipal Harbor Plan. The updated Harbor Plan (the "2022 Plan") is anticipated to include a Designated Port Area (DPA) Master Plan that contains a series of guiding principles for the DPA which encourage the use of the property in support of water-dependent renewable energy, including offshore wind. Accordingly, the use of this property for offshore wind staging is fully consistent with the 2008 Plan and encouraged in the current draft versions of the 2022 Plan.

The 2022 Plan also includes several recommendations to maximize compatibility between the neighborhood and encourage sustainable and resilient development of the property. The City offers the following recommendations for Crowley's consideration:

1. Climate resiliency: To the extent practicable, the terminal should be redeveloped to provide resilience against flooding, and where possible protection which can extend to adjacent neighborhoods. O-4
2. Carbon footprint: Port operations should follow best management practices to decrease its carbon footprint, including consideration of low/no emissions vessels and machinery and plug-in/cold-ironing options for docked vessels. O-5
3. Multiple uses: Where possible, Project infrastructure should be designed to allow for multiple uses, such as flood control berms and public access, subject to the operational requirements of the Project; all uses, should be located and designed with the intent of providing visual buffers and noise attenuation between the Project site and the Derby Street neighborhood. O-6
4. Minimize conflicts with residential neighborhoods: The Project should minimize impacts on adjacent residential neighborhoods to the extent practicable through location, screenings, plantings, traffic circulation plans, etc. Structures should also be located and designed to minimize noise impacts and light pollution and provide some visual screening from the Derby Street neighborhood. Landscaping and tree plantings may also be used for screening along O-7

Derby Street. Some visual corridors should be protected where feasible to allow visitors and residents to observe activities related to the construction and operation of the Project.

Historic Resources

Given the proximity of the property to several significant historic resources and areas, it is recommended that the Proponent engage a historic resources consultant, if they haven't already. The lists provided in 6.2.1 Historic Resource Status and 6.2.2 Historic Areas Status appear to have overlap and should be combined. They should also be reviewed for accuracy as they are missing a National Historic Landmark, The House of Seven Gables. O-8 O-9

For mitigation of potential impacts in 6.5, the Proponent should assess whether the proposed wind turbine components will have shadow effects on the surrounding historic resources, the Derby Street Local Historic District and The Gables complex in particular. A better understanding of the visual impacts on the district and the Gables would also be beneficial to validate the statement "the Project Site should not interfere visually with any historic resources and districts". O-10

Transportation

The City offers the following comments related to the Project's traffic study:

1. Traffic Analysis

The traffic study concludes that the traffic associated with the Project will not degrade operating conditions at the studied intersections during construction or operation. This statement should be validated by also factoring background growth in a five-to-seven-year period and proposed nearby developments, including the Leefort Terrace development. Additional information should also be provided on how the existing driveways on Derby Street and Fort Avenue will be used during the Construction Period and Design Condition. O-11 O-12

2. Parking

The Proponent should provide additional information on parking management for on-site employees to confirm that the Project will not impact neighborhood parking. Additional information should also be provided on other agreements or plans for shared use of the parking lot, including any commitments for neighborhood snow emergency parking or spaces committed to power plant employees. O-13

3. Safety

Table 8-2 shows that the intersection of Webb St at Essex St has an above average crash rate when compared to the District 4 MassDOT rate for a signalized intersection. The report states that improvements to these intersections are not warranted; however, the Proponent should coordinate with the City's Traffic and Parking Department about this intersection and whether contributions from our Transportation Enhancement Fund could help pay for improvements to this location. O-14

4. Construction management

The Proponent should coordinate closely with the city as it advances the Construction Management Plan (CMP). All efforts should be taken to limit the number of vehicle trips on O-15

neighboring streets during construction, including transport of materials by water, a robust TDM program for construction workers, and strict enforcement of construction period protocols such as designated truck routes and time of day restrictions. The CMP should also consider enhanced mitigation measures during Salem's Haunted Happenings events and other peak tourism periods.

Salem Harbor Port Authority

The Salem Harbor Port Authority has the legislative duty, power, and authority to coordinate port development within Salem Harbor for the primary benefit of the public interest in the City of Salem. The Port Authority will co-own the Project Site with Crowley and will be working with Crowley during operations to manage cruise access at the Project Site and to coordinate activities with their adjacent Salem Wharf facility at 10 Blaney Street. As a partner in the Project, the Port Authority supports this Project as a once in a generation opportunity for transformative reinvestment into the Port of Salem.

Crowley should continue to work closely with the local port pilots, harbormaster, and Port Authority staff to ensure that the Project is designed and managed to maximize this overall public benefit. This includes thoughtful planning of future uses of the port, such as transmission interconnection and how the port operations will be different as we transition into floating offshore wind. The Port Authority appreciates that a phased approach to the Project is necessary to meet the schedule and cost objectives of the Project, and supports the request for a Single EIR, however continued collaboration on a shared master plan for the port will provide a steady point of reference to maximize the use of resources in the future.

O. City of Salem, November 23, 2022

#	Response
O-1	The Salem Conservation Commission issued a Certificate of Compliance for the Order of Conditions that was issued to Footprint Power Plant, the prior property owner of Lot 2, which is now owned by the Proponent.
O-2	The Proponent will continue to explore alternative options to improve stormwater treatment, including expanding pervious area and other low impact development (LID) features. The Project has integrated increased vegetative buffers, vegetative swales, and water quality features to mitigate the Project's impact on stormwater runoff. The Project design includes additional pervious open space along Derby Street and the Salem Wharf parking lot, which will help mitigate stormwater runoff and improve water quality. The Proponent can help connect open space on the Project Site with offsite improvements such as making pedestrian walkways seamless.
O-3	The Project Site will be raised and graded down towards Salem Harbor to direct runoff away from adjacent properties, including the historic assets within Salem. A flooding analysis has also been prepared to model the water runoff created with the Project within the neighborhood and attached in Attachment H, Flooding Analysis. As the analysis states, there will not be any impacts from floodwaters on adjacent properties due to the raising of the Project Site's grade.
O-4	The Project will be designed to provide resilience against flooding for the Project Site . The Project will be filled and graded towards Salem Harbor and will not have any direct impacts on adjacent properties. See Attachment H, Flooding Analysis for details.
O-5	To minimize its carbon footprint, the Project Site operations will aim to follow best management practices (BMPs) such as installation of electrical conduits for ship to shore vessel connections to reduce vessel diesel fuel use, compliance with no idling and low sulfur fuel requirements, and various construction period traffic mitigation measures, where practicable. See Attachment B, Construction Management Plan for the details regarding construction period measures.
O-6	The Proponent has utilized and will continue to explore opportunities on the Project Site to allow for multiple uses where practicable. The Project Site will have operations set back from the property lines with landscaped buffers and along Derby Street and the Ferry Terminal, in addition to protecting the existing multiuse path along the Salem Harbor Power Development LP site. These landscaped buffers will mitigate visual and noise impacts between the Project Site and the Derby Street neighborhood, while also allowing for public access and recreational benefits.
O-7	The Project will minimize impacts on adjacent residential neighborhoods to the extent practicable through various mitigation measures. The proposed structures will be located away from the adjacent residential properties and set back from Derby Street to provide a buffer for noise, light, and visual impacts at the vicinity of buildings. Visual screening of the Project Site will also be provided for site elements and operation through plantings along Derby Street and the southern property line. Traffic circulation plans have also been developed to minimize impacts on adjacent residential neighborhoods to stagger construction-related traffic/deliveries and avoid main roadways for points of entry such as Derby Street, among other traffic mitigation measures. See Chapter 13, Mitigation and Draft Section 61 Findings, for additional details.
O-8	The Proponent has engaged a consultant team that has worked on multiple historic properties and districts throughout Massachusetts to ensure completeness on addressing

#	Response
	impacts to historic resources. Based on their project experience locally in the City of Salem and understanding of MEPA regulations, the consultant has assessed the Project's impact on historic resources.
O-9	The Historic Resources and Properties were identified individually from the Massachusetts Cultural Resource Information System (MACRIS) MassGIS layer, which also noted the House of Seven Gables as a Preservation Restriction.
O-10	The Project will not have significant shadow effects on the surrounding historic resources as the assembly parts will be the only visual obstructions and will only be mobilized often during operations. The cranes and assembly parts will only create minimal shadows temporarily to the adjacent historic properties early in the morning, even on the days of the year with the short daylight time, as assembly parts are relatively narrow. Based on the location of site elements and the sun's angles, shadows will be primarily cast only within the Project Site after the early morning hours.
O-11	After factoring in proposed developments such as Leefort Terrace and a five-to-seven-year study period, the Project is projected to result in no material impacts to the study area intersections or changes in traffic operations in the study area considering Project Build conditions compared to No-Build conditions. Relative traffic increases for the Project represents an inconsequential change in area roadway volumes - a level of change that falls well within normal day-to-day fluctuations in traffic entering and exiting the study intersections and is immaterial to traffic operations in the area. Additionally, the incremental traffic increases at the study intersections during the construction period will be adequately accommodated below-capacity with level of service (LOS) C or better operations expected.
O-12	During the construction period, the Derby Street driveway will be used for deliveries to the Project Site while the Fort Avenue driveway will be used for access/egress for all construction employees and visitors as well as existing employees and visitors for the Salem Harbor Power Development LP Site. Under design conditions, the Fort Avenue driveway will be used for employees and visitors of the Project Site and the Salem Harbor Power Development LP site while the Derby Street driveway will be used for deliveries for the Project Site.
O-13	The Project will not impact neighborhood parking as on-site parking will include 178 spaces to accommodate both the employees and visitors of the Project Site as well as the existing Salem Harbor Power Development LP site. The parking will be actively managed by the both the Proponent and Salem Harbor Power Development LP, and a parking management plan will be put in place for any supplemental parking requirements for construction periods or atypical events as applicable. The parking lot will be the Project Site's main parking area. The Proponent has an agreement with Salem Harbor Power Development LP to provide them with a number of parking spaces and a commitment with the City of Salem to provide additional spots for neighbors during snow emergencies.
O-14	The Proponent will coordinate with the City's Traffic and Parking Department to evaluate if financial contributions from the City's Transportation Enhancement Fund could assist with payments for safety improvements at the Webb Street at Essex Street intersection.
O-15	The Proponent is continuing to develop a construction management plan in coordination with the City officials to accommodate the specific needs of the Project Site throughout the construction period. See Attachment B, Construction Management Plan for the details regarding construction period measures. The Proponent will also coordinate with the City of Salem with regards to the length of the construction period and any construction

#	Response
	<p>permits that may be required. Mitigation measures are expected to include but not be limited to the following:</p> <ul style="list-style-type: none"> • Designated parking for construction employees will be on-site and accessed via the Fort Avenue primary driveway with a robust TDM program for the construction workers. • Construction periods and material deliveries will be designated to coincide with off peak travel periods of the area roadways – specifically to avoid peak school arrival/dismissal periods. • The delivery of facility construction materials will prioritize barge transport rather than on-road transport to reduce/minimize roadway impacts. Materials to be transported to the Project Site by truck for site stabilization, earthwork, aggregate, paving and terminal building materials will be limited to major routes that include Route 114, Bridge Street, and Webb Street as depicted on Figure 9-15, Construction Truck Route Map. • The Proponent will establish waiting and staging areas on-site for all material deliveries and the management of truck traffic via the Webb Street gate. • A police detail will be placed at the Webb Street construction gate and the primary entrance at Fort Avenue to direct traffic during peak traffic/shift periods. • The Proponent will work closely with the City to consider enhanced mitigation measures during Salem’s Haunted Happenings events and other peak tourism periods.
O-16	<p>The Proponent meets regularly (usually weekly) with the pilots and harbormaster to provide project updates and involve them in discussions in regard to the design and permitting. The Proponent also attends the Salem Harbor Port Authority meetings and regularly corresponds with their staff on the Project. The design and security plan are being coordinated with the harbormaster.</p>



MEMORANDUM

TO: Bethany A. Card, Secretary, EEA
ATTN: Alex Strycky, MEPA Office
FROM: Lisa Berry Engler, Director, CZM
DATE: November 23, 2022
RE: EEA-16618, Salem Wind Port; Salem

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Expanded Environmental Notification Form (EENF), noticed in the *Environmental Monitor* dated October 24, 2022, and recommends that the following comments be addressed in the scope of the Environmental Impact Report (EIR) for the project.

Project Description

The proposed project is a water-dependent industrial (WDI) use within the Salem Designated Port Area (DPA). It includes the construction of a marshaling site to support offshore wind development, reconstruction of the existing 685-ft long loadout wharf, construction of a new 660-ft long delivery pier, dredging 80,170 cubic yards (cy) of sediment from a 21.3-acre area in the existing turning basin, dredging of the berth at the existing 685-ft long wharf and ground improvements to allow for the storage and transport of wind turbine generator components. The 42.3-acre project site will include two laydown areas totaling 32.5 acres, a three-acre transition yard, a parking lot for 195 vehicles and a trailer to be used as an office, a 3,000-square foot (sf) shed, and an office trailer near the loadout wharf. Portions of the site are currently mapped on the FEMA Flood Insurance Rate Maps as an AE flood zone, elevation 10 NAVD 88. The project includes adding approximately two feet of fill to elevate the site to elevation 12 NAVD 88. The project will add 3.77 acres of impervious area, generate 343 average daily trips; alter approximately 818,720 sf of Land Under Ocean (LUO), 3,341 linear feet of Coastal Bank, and 160,420 sf of Land Subject to Coastal Storm Flowage (LSCSF); and construct a total of 132,029 sf of new pile-supported piers. The project site includes approximately 17.4 acres of filled private tidelands, 8.7 acres of filled Commonwealth tidelands, and 21.9 acres of flowed tidelands, and is subject to the provisions of the 2008 Salem Harbor Municipal Harbor Plan and DPA Master Plan (2008 Plan). Approximately nine acres of the site are located outside of Chapter 91 jurisdiction but within the DPA and are subject to use limitations as required by a Grant of Restriction and Easement held by the City of Salem.

Project Comments

Compliance with Waterways and Municipal Harbor Plan

The City of Salem is currently in the process of updating the 2008 Plan. Although the 2022 MHP/DPA Master Plan has not yet been submitted for approval, the project will be subject to its requirements should the plan be completed before the Chapter 91 permitting for the project is complete. According to the EENF, the city has confirmed that the project is consistent with the recommendations of the updated plan because the 2022 DPA Master Plan identifies offshore wind as a preferred use for the project site. The EIR should demonstrate that the project complies with the requirements of the 2008 Plan, the 2022 MHP/DPA Master Plan, and the waterways regulations for water-dependent industrial use in a DPA.

P-1



The EENF states that the project will increase public access to the waterfront by supporting cruise ship visits to the port and that the public access portion of the project will be managed with appropriate signage, access to open space, and a management plan with rules and regulations. The EENF also states that to ensure the safety of the public and the employees of the facility and to comply with the regulations of the Department of Homeland Security public access to the industrial use portions of the project site will not be allowed. Improved public access to the waterfront is identified as a goal in the draft 2022 MHP and DPA Master Plan, so long as it is balanced with the safety and needs of water-dependent industrial use. The EIR should describe how the project will support cruise ship visits and where open space will be available for public access under the management plan.

P-2

The proposed project is an industrial use that directly abuts a historic residential neighborhood. The EENF and statements from the proponent during the comment period indicate that the massive size and expense of the offshore wind components require slow, methodical, and careful movements and that the primary noise-generating activities will primarily occur quayside well away from the adjacent residential neighborhood. The area directly adjacent to the neighborhood will be used primarily for the storage of blades, which will minimize the robust activity in that area. While DPAs are intended to support water-dependent industries, appropriate buffers between industrial uses in the DPA and community uses must be provided to avoid operational conflict. The plans in the EENF indicate that the existing vegetated buffer between the project site and the residential area will be maintained, but proponent representatives indicated that additional outreach and consultation with the city and the neighborhood residents would occur to ensure that noise concerns are addressed. The EIR should detail the outcomes of these meetings and demonstrate that the project will provide an ample buffer to separate the industrial use from the nearby neighborhood.

P-3

Dredging

The project includes dredging approximately 80,190 cy of sediment within approximately 21.3 acres of the state turning basin adjacent to the site to accommodate the vessels needed for the project and to improve navigation for cruise vessels within the port. According to the EENF, the proposed dredge area is entirely within the DPA and will include both maintenance and improvement dredging. The improvement dredging will be located alongside the berthing area to provide adequate depth. The EIR should detail the extent of the dredge areas with the top of the slope identified on the plans and the BMPs that will ensure that the protected interests for LUO in a DPA are met. The EENF states that sampling for previous dredging activities found that the dredged material in this area qualified for offshore disposal at the Massachusetts Bay Disposal Site but that a sampling plan is currently in development. If the sampling results do not allow for offshore disposal, on or off-site processing and treatment may be needed before disposal at an upland landfill or reuse on-site. The EIR should include the findings of the updated sampling and confirm the planned disposal location(s) for the sediment.

P-4

P-5

The proposed dredging could increase wave heights at the shoreline of the project site. The EIR should include an analysis of whether wave heights at the shoreline will change because of the dredging and what mitigation measures may be needed to mitigate any impacts due to increased wave heights.

P-6

Floodplain Function and Resiliency

The project should not increase the velocity of flood waters and/or change flow directions on or around the subject site in a way that may impact the site, adjacent properties, or public or private

ways. A narrative was provided in the EENF indicating that the fill would not have adverse effects on adjacent property and flood pathways through the site would be intercepted. A more detailed pre- and post-construction flow analysis should be included in the EIR, which should include a plan of existing conditions within LSCSF showing current topography, surface conditions (pavement, gravel, etc.), walls, berms, etc. that may affect flow pathways or velocity of flow (floodplain functions), and pathways that may conduct coastal flood waters onto and off the site based on current topography and site conditions. The analysis should also include a plan showing proposed conditions, including topography resulting from proposed design changes, grading, and fill as well as proposed surface conditions, proposed buildings, walls, berms, etc. that may affect flow pathways or velocity of flow (floodplain functions), and pathways that may conduct coastal flood waters onto and off the site based on the proposed topography and site conditions. The EIR should also include a narrative comparing existing conditions to proposed conditions and expected pathways, noting potential increases or changes in velocity, reflection, or channelization of floodwaters within the site or onto adjacent parcels, and a narrative describing how the proposed design of the site avoids, minimizes, or if necessary, mitigates potential impacts. This analysis should look at potential impacts for the present as well as expected conditions over the design life of the project.

P-7

Climate Resilience

The proponents stated at the MEPA consultation that the NOAA intermediate high sea level rise scenario was used to plan for resiliency. Based on the description provided, the approach to determine the appropriate design flood elevation was to add the sea level rise estimates from NOAA to the FEMA base flood elevations. This “bathtub” approach for estimating the future impacts of sea level rise does not consider the dynamics of the floodplain and interactions with landforms along the shoreline. The best available data developed for Massachusetts is incorporated into the Climate Resilience Design Standards Tool Project Report. The results on page 11 in the report attached to the EENF in Appendix H consider the dynamic impacts of tides, waves, wave run-up and overtopping, storm surge, winds, and currents over a range of storm conditions and at a high resolution and are the best data currently available. However, the model grids for this data do not account for the fill associated with the Footprint project. The EIR should assess how that recent fill and the proposed fill will alter the flood risk at the site as part of the analysis for the proposed project.

P-8

Federal Consistency Review

The proposed project may be subject to CZM federal consistency review and if so must be found to be consistent with CZM's enforceable program policies. For further information on this process, please contact Robert Boeri, Project Review Coordinator, at robert.boeri@mass.gov, or visit the CZM website at <https://www.mass.gov/federal-consistency-review-program>.

P-9

LE/kg

cc: Kathryn Glenn, CZM
Rachel Freed, Jill Provencal, DEP NERO
Daniel Padien, Christine Hopps, DEP Waterways
Seth Lattrell, Salem Port Authority Deputy/Planner
Kate Kennedy, Salem Conservation Agent

P. Massachusetts Office of Coastal Zone Management (CZM), November 23, 2022

#	Response
P-1	<p>The Project demonstrates compliance with the Approved 2008 Salem MHP and the draft 2023 Salem MHP.</p> <p>The Project Site is located within the planning area of the Approved 2008 Salem MHP and DPA Master Plan, and therefore, the Project is subject to the standards for complying with a municipal harbor plan. The 2008 Salem MHP contemplated changes in the marine industry and infrastructure needed to support future energy production. The Project is consistent with these recommendations as it will support offshore energy needs as well as substantially improve the Project Site's infrastructure for WDIUs. All the proposed uses are consistent with the standards for WDIUs and DPAs. The proposed offices and shed structures are integral to the port operations and are considered Accessory Uses in accordance with 310 CMR 9.12(3)(a).</p> <p>The City of Salem recently submitted the Proposed 2023 Municipal Harbor Plan (the "2023 MHP") and the Designated Port Area Master Plan (the "2023 DPA Master Plan") to the MassDEP and MCZM. The 2023 DPA Master Plan focuses WDIUs on renewable energy and expanded cruise ship/ferry activity, and provides for public access only as deemed appropriate by MassDEP but does not discourage or preempt the transition of the project site to WDIUs. The 2023 DPA Master Plan also recommends incorporation of community noise abatement, visual protections, public access, and climate resiliency where possible without conflicts to WDIUs. The Project is a WDIU that supports renewable energy (offshore wind turbines) and provides an improved berth for cruise ships and OSW vessels, and a pedestrian accessway for cruise ship passengers. The Project also expands the buffer area along the south and west sides to minimize noise and visual impacts to the neighborhood, as well as increase open space, all of which are compliant with the 2023 MHP. These compliance descriptions are detailed in Chapter 4 on pages 4-7 and 4-8.</p>
P-2	<p>The SEIR describes how the project will support cruise ship visits and where open space will be available for public access under the management plan. Cruise ship visits will be coordinated with the Salem Harbor Port Authority, the Proponent, and the tenant to properly manage the use of the berths. Cruise ship visits will be based on demand, availability of berth space, and an agreement between the Salem Harbor Port Authority and the Proponent.</p> <p>Open space will be available along Derby Street, Fort Avenue, the Salem Wharf parking lot. To ensure the safety of the public and those working within the port's facility, and to comply with security regulations promulgated by the Department of Homeland Security and the International Ship and Port Security Code, public access to the industrial use portions of the Project will not be allowed on the Project Site. There will not be any public access along the water's edge, except for cruise ship passengers. A management plan will specify available hours and uses within the open space areas. See Attachment L, Project Plans for open space layout.</p>
P-3	<p>The existing tree-lined open space along Derby Street and Fort Avenue will be maintained and expanded. The Project will add more than 50,000 square feet of landscaped open space along Derby Street and the Salem Wharf parking lot. This space will provide a buffer</p>

#	Response
	between the Project Site and the neighborhood along Derby Street and the public areas at Salem Wharf parking area. These appropriate buffers will provide additional separation between the adjacent Derby Street neighborhood and the water-dependent industrial use and minimize operation conflicts.
P-4	<p>The SEIR details the extent of the dredge areas with the top of the dredge area identified on the plans as a thicker black line (see Attachment L, Sheet D302). Most of the dredge area is within the confines of the Basin. However, there are two dredge areas that extend beyond the Basin into the side slopes at the east and west sides of the berthing areas that are within the DPA.</p> <p>As described on pages 6-10 and 6-11 in Chapter 6, the protected interests for Land Under the Ocean (LUO) in a DPA are met for improvement dredging: a) The dredging will be conducted in water that is approximately -32 feet mean lower low water (MLLW), and therefore will not result in an increase in the height or velocity of waves that would cause flooding or erosion (see also page 6-13 for additional details); b – c) Dredging several feet deeper within area the has been historically dredged to 32 feet below MLW for many decades to similar depths will not affect sediment transport processes or water circulation; and d) BMPs to mitigate impacts to marine productivity include the use of turbidity curtains, TOY restrictions, and slow start pile driving; and for maintenance dredging with BMPs to minimize adverse effects by using turbidity curtains, following TOY restrictions, use of an environmental clamshell bucket, and slow start pile driving.</p>
P-5	Dredge material sampling has occurred at this location as part of previous dredging activities. The first phase of dredge samples have been collected and analyzed. Additional samples will be collected and tested before dredging commences at the Project Site in compliance with MassDEP and USACE regulations. The results of Phase 2 samples will determine the dredge material disposal site. See page 7-3 in Chapter 7 and Attachment J for a detailed description of the sampling plan.
P-6	<p>The Project will be dredging the existing Basin, which has a design elevation of -32 feet MLLW and also is the same depth as the Federal Navigation Channel that extends approximately three miles from within Salem Sound to the Basin. Some areas within the Basin have shoaled since it was last dredged approximately 20 years ago. Based on recent bathymetric surveys, some parts of the Basin will need to be dredged several feet deeper to ensure safe navigation and berthing of the OSW vessels and cruise ships.</p> <p>Wave heights are dependent on the wind speeds, water depths and wavelengths as the wave approaches the shoreline. Relatively small storm waves typically found in Salem Harbor are not impacted by the 30-foot plus deep waters of the Basin. Dredging the Basin several feet deeper, therefore, will not result in any changes to the wave heights, and therefore there is no need to mitigate impacts. This analysis is on page 6-13 in Chapter 6.</p>
P-7	A more detailed pre- and post-construction flow analysis is included in the SEIR, which includes a plan of existing conditions within Land Subject to Coastal Storm Flowage (LSCSF) showing current topography, surface conditions, such as buildings, which may affect flow pathways or velocity of flow (floodplain functions), and pathways that may conduct coastal flood waters onto and off the Project Site. The analysis concludes that the Project will not impact flooding on the adjacent properties now or in 2050. For a complete description of the flood analysis, see Chapter 10 starting on page 10-1 and Attachment M, Stormwater Report and Attachment H, Flooding Analysis for details.

#	Response
P-8	The SEIR includes a narrative comparing existing conditions to proposed conditions and expected pathways, noting potential increases or changes in velocity, reflection, or channelization of floodwaters within the Project Site or onto adjacent parcels, and a narrative describing how the proposed design of the Project Site avoids, minimizes, or if necessary, mitigates potential impacts. See Attachment H, Flooding Analysis for details.
P-8	<p>The Woods Hole Group conducted a flood analysis for the all the properties within an approximately 0.25-mile radius of the Project Site. It revealed that proposed grade increase of at least 2 feet within the Project Site will not deflect waves, channel flood waters, or increase flooding on adjacent properties. Chapter 10 assesses how the recent fill associated with the Footprint Power project and the proposed fill will alter the flood risk at the Project Site as part of the analysis for the Project (see pages 10-1 through 10-3). See also Attachment H, Flooding Analysis for details.</p> <p>The Project Site will be elevated by 2 feet for resiliency but graded away from the adjacent neighborhoods to Salem Harbor to prevent stormwater impacts on adjacent properties. Any portions of the Project Site that cannot be graded towards Salem Harbor, will have stormwater infrastructure to capture, treat, convey, and discharge the runoff to avoid flooding impacts to the adjacent neighborhoods. The Project will not increase the neighborhood's flood risk and will not have any direct adverse effects on adjacent properties. The Proponent has provided Attachment H, Flooding Analysis for demonstration of the Project's impact on wave deflection, channelization, and flooding to adjacent properties.</p>
P-9	The Project will require a federal consistency review and will be consistent with Massachusetts Coastal Zone Management's (MCZM's) enforceable program polices, which are described in Chapter 4: Tidelands on pages 4-11 through 4-14.



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Bethany A. Card
Secretary

Martin Suuberg
Commissioner

November 23, 2022

Bethany A. Card, Secretary
Executive Office of
Energy & Environmental Affairs
100 Cambridge Street
Boston MA, 02114

RE: Salem
Salem Wind Port
EEA # 16618

Attn: MEPA Unit

Dear Secretary Card:

The Massachusetts Department of Environmental Protection Northeast Regional Office (MassDEP-NERO) has reviewed the Expanded Environmental Notification Form (EENF) for the proposed Salem Wind Port in Salem. MassDEP provides the following comments.

Wetlands

An Expanded Environmental Notification Form (EENF) has been filed with the Executive Office of Energy and Environmental Affairs by Fort Point Associates, Inc. The project consists of a reconstructed loadout wharf, a new delivery pier, dredging of the existing state turning basin and berths for large ships, and ground improvements to support heavy components.

The project site is located in Salem Neck, a peninsula in the northeast corner of the City of Salem. The existing 42.3-acre Project Site is a remediated waterfront property in a Designated Port Area (DPA) of Salem Harbor. The Site is bordered by Derby Street to the west, Fort Avenue and the South Essex Sewerage District wastewater treatment plant to the north, and Salem Harbor to the east and south. Most recently, the property was part a larger site that contained a 750-megawatt (MW) coal and oil-fired power plant that encompassed the original 65-acre parcel. The coal plant was demolished in 2014 and a natural gas-fired powerplant was constructed in 2017 in the middle of the 65-acresite.

The upland portions of the site are mostly flat and include two sheds, remnant foundations, concrete pads, paved areas, and two stockpiles of crushed fill leftover from the powerplant demolition project. The site contains approximately 6,100 linear feet of waterfront, a 695 foot long pile supported pier, a 160 foot long pile supported pier, a 150 foot long wharf with a sheet pile wall, an approximately 970 foot long by 64 foot wide channel used by the former powerplant, and an approximately 400 foot long solid filled jetty pier.

Direct, permanent impacts to wetland resource areas include approximately 160,420 square feet of Land Subject to Coastal Storm Flowage (LSCSF) associated with the improvements to soil structure to accommodate heavy loads, the removal of the jetty pier, and improvements to the existing wharf; approximately 1,210 linear feet of Coastal Bank associated with the removal of portions of the jetty pier, drainage installation, and stabilization of the coastal bank under the loading wharf; and approximately 818,720 square feet of Land Under Water associated with new and maintenance dredging and pile driving to support the new pier and wharf.

The EENF proposes to raise the elevation of the project site to approximately 2' above the Base Flood Elevation to reduce flooding and storm damage from coastal storms. The applicant must demonstrate that raising the elevation of the project site will not cause wave deflection, channelize flows, or increase flooding onto adjacent properties. Q-1

The project requires an Order of Conditions from the Salem Conservation Commission, or a Superseding Order of Conditions issued by MassDEP in the event of an appeal for work performed within wetland resource areas and within the 100' buffer zone to wetland resource areas. The project also requires a 401 Water Quality Certification for impacts to Land Under Water (below the High Tide Line) greater than 5,000 square feet. Q-2

The MassDEP appreciates the opportunity to comment on this proposed project. Please contact Rachel.Freed@mass.gov at (978) 694-3258 for further information on wetlands issues. If you have any general questions regarding these comments, please contact me at John.D.Viola@mass.gov or at (978) 694-3304.

Sincerely,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

John D. Viola
Deputy Regional Director

cc: Brona Simon, Massachusetts Historical Commission
Eric Worrall, Rachel Freed, Jill Provencal, Kyle Lally, MassDEP-NERO

Q. Massachusetts Department of Environmental Protection (MassDEP)/ Northeast Regional Office (NERO), November 23, 2022

#	Response
Q-1	The Woods Hole Group conducted a flood analysis for the all the properties within an approximately 0.25-mile radius of the Project Site. It revealed that proposed grade increase of at least 2 feet within the Project Site will not deflect waves, channel flood waters, or increase flooding on adjacent properties. See Attachment H, Flood Analysis for additional details.
Q-2	The Proponent filed a NOI for work performed within wetland resource areas and its 100-foot buffer zone with the Salem Conservation Commission on February 4, 2023 and expects to obtain an Order of Conditions in July 2023. Additionally, the Proponent plans to file for a 401 Water Quality Certification in May 2023 as the Project has identified impacts to Land Under Water greater than 5,000 square feet.

From: [Davis, Shannon \(FWE\)](#)
To: [Strycky, Alexander \(EEA\)](#)
Cc: [Frew, Katelyn \(FWE\)](#); [Kaitlyn Shaw](#); rjabba@fpa-inc.com; kkennedy@salem.com; [Glenn, Kathryn \(EEA\)](#); [Rousseau, Mark \(FWE\)](#)
Subject: EEA# 16618 Crowley Wind
Date: Wednesday, November 23, 2022 3:58:27 PM
Attachments: [EEA# 16618 CrowleyWind DMFtoMEPA.pdf](#)

Hi Alex,

Please see the attached MarineFisheries comments regarding EEA# 16618 Crowley Wind in the City of Salem. For additional information or questions regarding this review, please contact Kate Frew at kate.frew@mass.gov.

Thank you and have a great holiday.
-Shannon

Shannon Davis

*Commonwealth of Massachusetts
Division of Marine Fisheries
Program and Revenue Coordinator
(978) 491-6214*



The Commonwealth of Massachusetts

Division of Marine Fisheries

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www.mass.gov/marinefisheries



CHARLES D. BAKER
Governor

KARYN E. POLITO
Lt. Governor

BETHANY A. CARD
Secretary

RONALD S. AMIDON
Commissioner

DANIEL J. MCKIERNAN
Director

November 18, 2022

Secretary Bethany A. Card
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
Alex Strysky, EEA No. 16618
100 Cambridge Street, Suite 900
Boston, MA 02114

Dear Secretary Card:

The Division of Marine Fisheries (MA DMF) has reviewed the Expanded Environmental Notification Form (EENF) by Crowley Wind Services, Inc. to construct an offshore wind marshalling terminal on the former coal and oil-fired power plant located along Salem Harbor in the City of Salem. Development of the terminal would allow the Proponent to receive, store, assemble, and ship wind turbine generators (WTG) to offshore wind (OSW) farms south of Cape Cod. The proposed facility would include redevelopment of upland areas to store and transport WTG components, construction of a storage shed and office trailer, improved utilities, reconstruction of an existing wharf, a new pier and associated dredging to allow for large vessel access and berthing.

In-water work associated with the proposed project would involve reconstruction of an existing loadout wharf, construction of a new delivery pier, and dredging. The existing 660-foot-long pile supported wharf will be reconstructed and a lift platform and bulkhead will be constructed adjacent to it. The new pier would be approximately 685 feet long. Maintenance and improvement dredging is proposed to allow for vessel berthing. Up to 80,190 cubic yards of sediment would be dredged over a 21.3-acre area. The turning basin will be dredged to -32 feet MLLW (plus -2 feet overdredge), the proposed berth dredging area along the wharf will be dredged to -34 feet MLLW (plus -2 feet overdredge), and a small area along the wharf and jetty will be dredged to -36 feet MLLW (plus -2 feet overdredge). Dredge material would be disposed of at the Massachusetts Bay Disposal Site (MBDS). The project area has been dredged continuously since the 1920s, with the most recent dredge work occurring in 2006 and 2007. In-water work was reviewed with respect to potential impacts to marine fisheries resources and habitat.

Salem Harbor provides forage habitat for a variety of fish and invertebrate species including but not limited to alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), rainbow smelt (*Osmerus mordax*), American eel (*Anguilla rostrata*), white perch (*Morone americana*), Atlantic tomcod (*Microgadus tomcod*), Atlantic cod (*Gadus morhua*) and American lobster (*Homarus americanus*). It is also habitat for the forage, spawning, and early development of winter flounder (*Pseudopleuronectes americanus*). Areas near the project site has been mapped as shellfish habitat by MA DMF for soft shell

clam (*Mya arenaria*), northern quahog (*Mercenaria mercenaria*), razor clam (*Ensis directus*) and blue mussel (*Mytilus edulis*) within shellfish growing area N18.1, classified as Prohibited for shellfish harvest.

In an area adjacent to the dredge site, MA DEP mapped eelgrass in 2016 (Fig. 1). Eelgrass (*Zostera marina*) is a highly important and protected meadow-forming marine plant. It is well established that eelgrass beds are important habitat, providing shelter and forage for many marine fish and invertebrate species (Heck et al. 1989, Lubbers et al. 1990). Unfortunately, eelgrass has experienced long-term declines in Massachusetts. Specifically, the North Shore lost up to 3.5% of its eelgrass per year from 1995 to 2007 (Costello and Kenworthy 2010).

MA DMF offers the following comments on content for consideration in developing the Single Environmental Impact Report (SEIR).

Dredge Footprint and Design

- The applicant is proposing to utilize a mechanical dredge due to silt and clay material. We recommend the use of an environmental bucket. R-1
- Proper siltation control is critical. Bottom-weighted silt curtains should be used and routinely monitored to contain turbidity around the work area. R-2
- Project plans do not clearly indicate the size of the different dredging areas. This should be defined in the SEIR. R-3

Loadout Wharf and Delivery Pier

- MA DMF concurs with the applicant's intent that slow-start pile driving be used to reduce turbidity and to startle fish away from the site and that vibratory driving, not impact driving or jetting, be used to minimize noise and turbidity. R-4
- Project plans do not clearly indicate how many piles are proposed for the new pier structure. The SEIR should clearly define the number and diameter of piles proposed for construction. R-5

Finfish and Shellfish

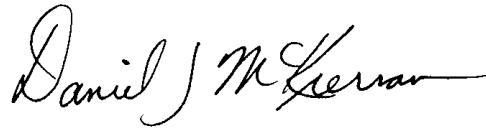
- A time-of-year (TOY) restriction should be observed on all in-water, silt-producing activities to protect sensitive life stages of the above listed diadromous species and winter flounder. No dredging should take place from **February 15 – June 30** of any year (Evans et al. 2011). R-6

Eelgrass

- An eelgrass survey be completed because eelgrass extent may fluctuate from year to year. MA DMF recommends that no dredging occur within 250 feet of any eelgrass. R-7

The SEIR should clearly identify when construction of each project component, including in-water components, would take place. Thank you for considering our comments. Questions regarding this review may be directed to Kate Frew in our Gloucester office at kate.frew@mass.gov. R-8

Sincerely,



Daniel J. McKiernan
Director

cc:

R. Jabba, Fort Point Associates

K. Glenn, MA CZM

K. Shaw, NMFS

K. Kennedy, Salem Conservation Commission

M. Rousseau, MA DMF

DM/KF/sd

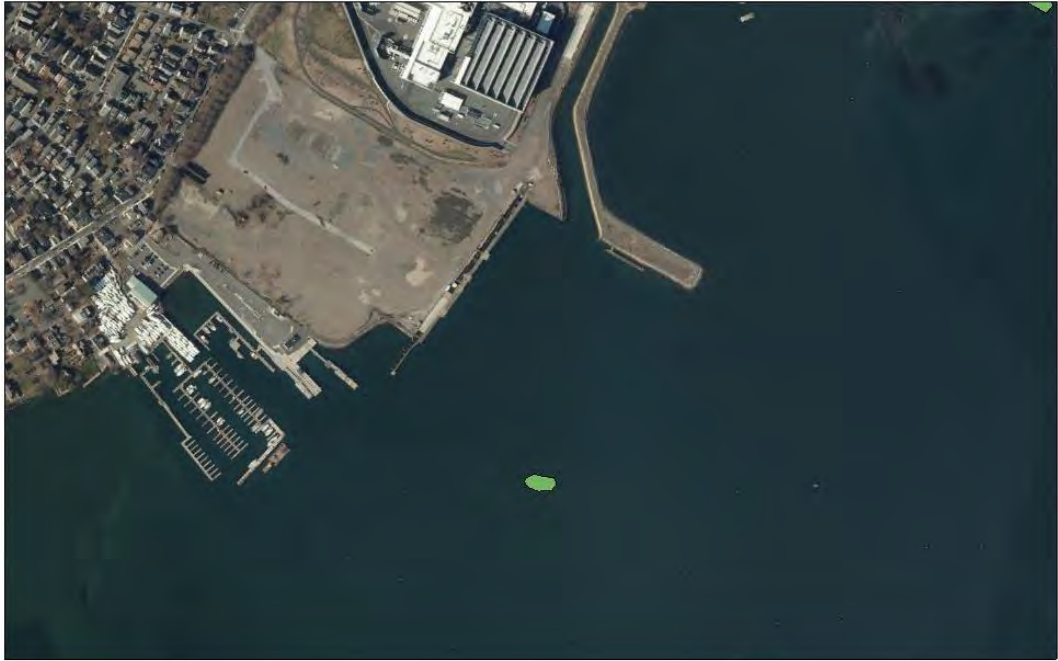
References

Heck KL, Jr., Able KW, Fahay M, and Roman CT (1989) Fishes and decapod crustaceans of Cape Cod eelgrass meadows: Species composition, seasonal abundance patterns and comparison with unvegetated substrates. *Estuaries* 12:59-65.

Lubbers L, Boynton WR, and Kemp WM (1990) Variations in structure of estuarine fish communities in relation to abundance of submersed vascular plants. *Marine Ecology Progress Series* 65 1-14.

Costello CT and Kenworthy WJ (2010) Twelve year mapping and change analysis of eelgrass (*Zostera marina*) distribution in Massachusetts (USA) identifies state wide decline. *Estuaries and Coasts*.

Evans NT, Ford KH, Chase BC, and Sheppard J (2011) Recommended Time of Year Restrictions (TOYs) for Coastal Alteration Projects to Protect Marine Fisheries Resources in Massachusetts. Massachusetts Division of Marine Fisheries Technical Report, TR-47.



11/10/2022

Eelgrass2016

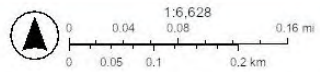


Figure 1. Mapped eelgrass by DEP offshore from 62 Derby Street Salem MA.

R. Division of Marine Fisheries (DMF), November 23, 2022

#	Response										
R-1	The Proponent will use an environmental bucket for dredging of silt and clay material.										
R-2	Bottom-weighted silt curtains will be installed and inspected regularly to reduce turbidity outside of the contained work area.										
R-3	There are three dredge areas within and next to the Basin that have the following sizes and depths (MLLW): -32 feet, 652,447 sf; -34 feet, 231,841 sf; -36 feet, 12,588 sf. These three areas plus the side slopes (32,474 sf) total of 929,350 sf. See Figure 7-1 in Chapter 7.										
R-4	The Proponent will ensure that slow-start pile driving and vibratory driving will be used to minimize turbidity and noise. The Proponent will use vibratory pile driving at the start of in-water work and where practicable. The request for elimination of impact driving is acknowledged but impact driving will be needed for a portion of the in-water work.										
R-5	Below mean high water (MHW), there will be approximately 169, 30-inch diameter piles, 181 36-inch diameter piles, and 39 48-inch diameter piles (see Sheets S310, S315, S340, S343-6, S350, and S355-7 in Attachment L, Project Plans).										
R-6	The TOY restriction of February 15 through June 30 will be observed on all in-water, silt-producing activities for the Project unless otherwise allowed by the DMF.										
R-7	An eelgrass survey was conducted on January 28, 2023, and its report can be viewed in Attachment I, Eelgrass Survey. The Proponent has consulted with DMF and will minimize dredging impacts near identified eelgrass beds with the use of turbidity curtains and turbidity monitoring. No dredging will be performed within 190 feet of any eelgrass bed.										
R-8	<p>The construction schedule of project components is as follows:</p> <table border="1"> <thead> <tr> <th>Location</th> <th>Schedule</th> </tr> </thead> <tbody> <tr> <td>Upland site work</td> <td>July 2023 – July 2025</td> </tr> <tr> <td>Main wharf demolition/Loadout wharf construction</td> <td>July 2023 – June 2024</td> </tr> <tr> <td>Jetty wharf/trestle construction</td> <td>August 2024 – July 2025</td> </tr> <tr> <td>Dredging</td> <td>July 2025 – February 2026</td> </tr> </tbody> </table> <p>See Attachment B: Construction Management Plan for additional details.</p>	Location	Schedule	Upland site work	July 2023 – July 2025	Main wharf demolition/Loadout wharf construction	July 2023 – June 2024	Jetty wharf/trestle construction	August 2024 – July 2025	Dredging	July 2025 – February 2026
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Dredging	July 2025 – February 2026										



Secretary Bethany Card
 Executive Office of Energy and Environmental Affairs
 MEPA Office
 Attn: Alex Strycky
 100 Cambridge St, Suite 900
 Boston, MA 02114

November 23, 2022

RE: EEA No. 16618, Salem Wind Port Expanded Environmental Notification Form (EENF)

Dear Secretary Card,

Thank you for the opportunity to comment on the proposed project for Salem Wind Port development. The Massachusetts Bays National Estuary Partnership (MassBays) has reviewed the Expanded Environmental Notification Form (EENF) by Crowley Wind Services, Inc. to construct an offshore wind marshalling terminal on the site of the former coal and oil-fired power plant in Salem Harbor, City of Salem, MA. Section 320 or the Clean Water Act designates MassBays as an Estuary of National Significance and one of 28 National Estuary Programs with a mandate to protect and preserve coastal habitats and water quality. Most recently, MassBays established a series of goals for restoration of eelgrass, salt marsh, and tidal flat extent in the 44 estuarine embayments encompassed by our study area, including Salem Harbor.

We reviewed aspects of non-point source pollution including stormwater discharge and management, as well as in-water work with respect to potential impacts to estuarine water quality and habitat condition. The proposed project includes dredging as well as pile-supported pier and wharf construction. The proposed dredge area has been previously dredged many times over the years, most recently in 2006-2007. MassBays appreciates the efforts proposed by the proponent to minimize impacts on water quality from these activities by implementing a range of BMPs including deploying silt curtains and installing suitable stormwater treatment to alleviate the impacts of discharges into coastal waters. We look forward to reviewing detailed stormwater management plans (to meet the state's water quality standards) and encourages the proponent to conduct proper monitoring of turbidity outside of the silt curtains to ensure surrounding benthic communities are not impacted by the project. More details pertaining to proposed turbidity monitoring techniques should be included in the SEIR.

S-1

S-2

We posit that the EENF is lacking in its assessment of potential impacts to eelgrass. The Massachusetts Department of Environmental Protection (MassDEP) has tracked eelgrass extent coastwide since 1995 using aerial imagery, with their most recent mapping of Salem Harbor taking place in 2016. MassDEP data indicate a decline in eelgrass coverage in Salem Harbor over the time series (Costello and Kenworthy, 2010).¹ Subsequent acoustic and drop-camera mapping conducted by the Massachusetts Division of Marine Fisheries

S-3

¹ Costello CT and Kenworthy WJ (2010) Twelve year mapping and change analysis of eelgrass (*Zostera marina*) distribution in Massachusetts (USA) identifies state wide decline. *Estuaries and Coasts*.

University of Massachusetts Boston
 100 Morrissey Boulevard, Boston MA 02125
www.massbays.org

We envision a network of healthy and resilient estuaries, sustainable ecosystems that support the life and communities dependent upon them.

(DMF) in 2016 identified beds in the middle of Salem Harbor as very patchy in nature and difficult to detect, with some areas not recorded in the MassDEP maps.² Therefore, while eelgrass has not been documented in the proposed dredging area MassDEP, based on the variability of eelgrass in Salem Harbor and difficulties associated with remote detection of low-density eelgrass in a turbid estuary, MassBays recommends an eelgrass survey be conducted by the proponent. The survey should be designed and carried out consultation with the appropriate agencies (e.g., MA DMF) with regard to the exact methodologies and timing to be applied. Eelgrass of any density is considered part of a meadow, and a buffer of 250 feet from observed eelgrass should be applied to protect the resource from silt-producing activities.

Thank you for considering our comments.

Regards,



Prassede Vella
Senior Scientist

Cc:

Kate Frew, Daniel McKiernan, DMF
Kaitlyn Shaw, NOAA
Bob Boeri, Kathryn Glenn, CZM

² Carr J and K Ford (2017) Historic eelgrass trends in Salem Sound, Massachusetts. Final Report to the Massachusetts Bays National Estuary Program, 6/29/2017. https://www.mass.gov/files/2017-08/2016_Salem%20Sound%20Eelgrass.pdf

*University of Massachusetts Boston
100 Morrissey Boulevard, Boston MA 02125
www.massbays.org*

We envision a network of healthy and resilient estuaries, sustainable ecosystems that support the life and communities dependent upon them.

S. Massachusetts Bay National Estuary Partnership, November 23, 2022

#	Response
S-1	The proposed stormwater system infrastructure and its compliance with MassDEP Stormwater Standards is described on pages 8-1 through 8-2 of Chapter 8, Infrastructure. Detailed stormwater management plans are provided within Attachment M, Stormwater Report.
S-2	The Proponent will regularly inspect turbidity outside of silt [turbidity] curtains to ensure surrounding benthic communities are not adversely impacted. There will be visual inspections during in-water silt-producing work to monitor changes in turbidity. Furthermore, additional measures to limit turbidity and related impacts, such as use of an environmental clamshell bucket and observance of TOY restrictions, will be employed.
S-3	The Proponent conducted an eelgrass survey of the bed identified by MassDEP in 2016. The DMF approved the scope of the survey, and its report can be viewed in Attachment I, Eelgrass Survey. Impacts to eelgrass will be minimized during construction by precluding dredging within 100 feet of any identified eelgrass bed, use of an environmental clamshell bucket and use of a bottom anchored turbidity curtain.

November 23, 2022

MA-NE4OSW Partners:

350 Mass
Acadia Center
The Alliance for Business Leadership
Association to Preserve Cape Cod
Black Economic Council of MA
BlueGreen Alliance
Bristol Community College
Ceres
Clean Water Action
Climate XChange
Elders Climate Action, MA Chapter
Environment Massachusetts
Environmental League of MA
Green Energy Consumers Alliance
Health Care Without Harm
Iron Workers Local 7
League of Conservation Voters
Mass Audubon
National Wildlife Federation
New England Aquarium
NASRCC (Carpenters Union)
PowerOptions
Revision Energy
Salem Alliance for the Environment
Second Nature
Sierra Club

Secretary Bethany Card
Executive Office of Energy and Environmental Affairs
Massachusetts Environmental Policy Act Office
100 Cambridge St Ste 900
Boston, MA 02114

Dear Secretary Card,

New England for Offshore Wind appreciates this opportunity to submit comments in response to the October 17, 2022, Expanded Environmental Notification Form issued by Crowley Wind Services Inc. for the Salem Wind Port. New England for Offshore Wind is a broad-based coalition of businesses and business associations, environmental and justice organizations, academic institutions, and labor unions that aims to drive regional collaboration and increased state commitments to responsibly develop offshore wind in New England.

Salem Alliance for the Environment (SAFE) is an active member of New England for Offshore Wind and has been a strong advocate for the responsible development of the Salem Wind Port. Ensuring that the port is constructed with sustainable practices in mind, strong workforce provisions, and the consideration of local community needs is imperative.

MA-NE4OSW Endorsers:

Amalgamated Bank
Ben Hillman & Company
Berkshire Bank
Boston Energy Wind Power Services
Cape Cod Climate Change Collab.
Cape Cod 5
Climate Action Now, Western MA
Climate Reality – MA Southcoast
Coalition for Social Justice
Eastern Bank
Energy Efficiency Associates, LLC
Faith Communities Enviro. Network
Flashover LLC
Greater Boston Physicians for Social Responsibility
Green Newton
Greenwater Marine Sciences Offshore

Offshore wind is the single biggest lever we can pull to simultaneously address the climate crisis, meet our energy needs, and grow our economy. Given that New England boasts some of the best offshore wind resources in the country, it is our best opportunity for new renewable energy sources in our region. The Salem Port, alongside a constellation of ports throughout New England, will be critical to that potential becoming a reality.

As we transition away from fossil fuels, it is vital that we provide high-quality jobs for under-served communities and impacted workers. Specifically, this project must prioritize jobs for women, people of color, English-isolated communities, and lower-income people in Salem and in the region. EEA should ensure Crowley formalizes its equitable workforce commitments with a project labor agreement (PLA) or memorandum of understanding (MOU) with interested parties. Additionally, workforce development efforts tied to local, stable jobs should be appropriately distributed and advertised.

T-1

MA-NE4OSW Endorsers:

Lautec US Inc.
Massachusetts AFL-CIO
MassMEP
MCAN
Mills Public Relations
Nashoba Conservation Trust
POWER-US | MA
Self-Reliance
Skunk Works Fund
Vineyard Power Cooperative Inc.

MA-NE4OSW Allies:

Unitarian Universalist Mass Action

Considering the poor air quality in Essex County and its impact on environmental justice communities, the coalition encourages EEA to hold Crowley to an all-electric operation during port construction and subsequent working use of the port. Pollution from fossil fuels causes serious damage to the environment and negative impacts on the health of communities, including respiratory issues, water and food insecurity, and health complications due to rising temperatures. These issues are especially prevalent for low-income communities and communities of color, which have been historically underserved and overburdened by energy pollution.

T-2

Thank you for the opportunity to provide comments on the Salem Wind Port project. Our coalition is very excited by the opportunity to maximize benefits for the region through development of the Salem Wind Port that unlocks the promise of offshore wind, provides local economic opportunity, and readies our region for a clean energy transition. We stand ready to assist with and support the next steps in this process.

Sincerely,

Amber Hewett
National Wildlife Federation
Chair, Massachusetts State Committee
New England for Offshore Wind

Pat A. Gozemba & Jim Mulloy
Co-Chairs
Salem Alliance for the Environment



T. New England for Offshore Wind, November 23, 2022

#	Response
T-1	The Proponent will address its equitable workforce commitments as part of the Community Benefits Agreement.
T-2	The Proponent will explore the feasibility of an all-electric operation during port construction and subsequent working use of the port. The Project will install electric conduits along the wharfs and appropriate electrical stations to allow vessels to connect to the landside electrical grid when berthed.

From: [roberta.crosbie](#)
To: [Strycky, Alexander \(EEA\)](#)
Cc: [Seth Lattrell](#)
Subject: Comments on Salem Wind Project
Date: Wednesday, November 23, 2022 8:57:34 AM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Mr. Strycky

Please see my comments below on this project and please incorporate them into the MEPA review.

I live at in Unit 3 at 6 White Street in Salem. This project is in our neighborhood and will impact us, but we have yet to be contacted by the developer. Why not? U-1

From what I can see in your preliminary plan, there appear to be very large structures proposed on the site. These appear too high for the site and neighborhood. Is there a height limit? The structures are overwhelming and I don't think the Salem waterfront should look like the industrial sites in Lynn. Salem residents deserve better. U-2

What about noise? Construction and port operations should be limited to M-F 7am to 5pm. We have enough noise pollution. Noise not only affects people, but the wildlife in this area. U-3

Also - Light pollution? Light should be limited and not spill over for the sake of residents, birds, insects and animals. U-4

Construction traffic should be limited to M-F 7 am to 5 pm. No night construction. U-5

And no idling of construction or delivery machinery. U-6

Also will the bike bath connect from the ferry lot to the trail on the plant U-7

site? That seemed to be the original plan.

A swath of land along the ferry lot should be dedicated to re-wilding for native species of plants, animals and insects/pollinators. U-8

This swath should also include indigenous hardwoods. NO arbor vitae or similar fast growing shrubbery. Those are simply used to “hide” ugliness but contribute nothing to the environment.

Thank you for seriously considering these comments. I hope to see them incorporated into final design, construction and permitting.

Roberta Crosbie
6 White St, Unit 3
Salem

Sent from [Mail](#) for Windows

U. Roberta Crosbie, November 23, 2022

#	Response
U-1	Public notices regarding public comments on the Salem Wind Port EENF were published in the Salem News on October 22, 2022 and in the MEPA Environmental Monitor on October 24, 2022. There have been and will continue to be other opportunities for public meetings and comments as the Proponent continues with local, state, and federal permitting. Furthermore, the Proponent has been conducting formal and informal community processes with permitting agencies, neighboring residents, and a variety of advocacy groups since the beginning of 2022 in accordance with MEPA Public Involvement Protocol for Environmental Justice Populations.
U-2	The maximum height of permanent structures on Project Site will remain below 45 feet, which is the height limit for permanent structures within the Industrial zone under Salem's zoning ordinance. Mobile cranes, which are not regulated under the zoning ordinance, will be up to 460 feet in height and will be used to load and unload OSW components. Due to the unique nature of the OSW components and the equipment use to move and transport them, the industrial port in Salem will not look like the industrial port in Lynn.
U-3	To avoid, mitigate, or minimize temporary construction-period noise pollution impacts, the Project will comply with the City of Salem Noise Control Ordinance. Efforts will be made to minimize the noise impact of construction activities, including appropriate mufflers on all equipment such as air compressors and welding equipment, maintenance of intake and exhaust mufflers, turning off idling equipment, replacing specific operations and techniques with less noisy ones, and other appropriate noise reduction measures. Furthermore, noise abatement measures will be developed as part of the Construction Management Plan (CMP). Noise generated during the operation of terminal is expected to be minimal and located mainly along the wharfs where most of the OSW components will be exchanged between the transportation vessels, which are away from the neighborhood along Derby Street.
U-4	The Proponent is currently designing lighting to meet and maintain the OSHA minimum requirements for lighting at night for security. Lighting will also be designed to be held at a dimmer setting until approached and brightness increases as a result. Lighting is not projected to bleed into Salem Harbor or neighboring properties. The photometry for the proposed light poles have been calculated and there will be minimal visible light projected off-site. The proposed lighting during post-construction operations is detailed within the lighting and photometric plans within Attachment L, Project Plans Sheets E100 and E625. Construction will also take place Monday through Friday, 7 AM to 3:30 PM. Only rarely will night construction be needed and will be performed to control lighting impacts to the immediate work areas.
U-5	Hours of construction operations will limit traffic to the general working period. Work hours will be Monday through Friday 7 AM to 3:30 PM. See Attachment B, Construction Management Plan for further details on construction operations.
U-6	The Proponent expects their contractors to have a strict no-idling policy and to use post-2007 diesel vehicles retrofitted to the USEPA's standards. The importance of limited idling will be discussed with bidders during contracting. Signs that restrict idling will be posted as a reminder during construction.
U-7	A bike path has not been proposed for this project. There will be additional landscaped open space along the Salem Wharf parking lot off Blaney Street and along Derby Street, however.

#	Response
U-8	An approximately 25-foot wide planted buffer is proposed to be installed along the Salem Wharf parking lot. It will consist of a drainage swale with shade trees, evergreen trees, understory trees, shrubs, and grasses. See Sheets L200 and L201 in Attachment L, Project Plans, for a view of the proposed landscape features and plants along the Ferry Terminal.

From: [Barbara Warren](#)
To: [Strycky, Alexander \(EEA\)](#)
Subject: EENF Salem Wind Port
Date: Wednesday, November 23, 2022 12:59:21 PM
Attachments: [SSCW-CrowleyWindServices-SalemPort.pdf](#)

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Alex, Please accept this attached comment letter from Salem Sound Coastwatch.

~~ Barbara Warren

Salem Sound Coastwatch Executive Director

MassBays Lower North Shore Regional Coordinator

12 Federal Street, Salem MA | 978-741-7900 | salemsound.org



November 20, 2022

Secretary Bethany Card
Executive Office of Energy and Environmental Affairs (EEA)
Massachusetts Environmental Policy Act (MEPA) Office

Attn: Alex Strycky, EEA No. 16618
100 Cambridge St, Suite 900
Boston, MA 02114

Dear Secretary Card,

RE: Salem Wind Port Expanded Environmental Notification Form (EENF)

Salem Sound Coastwatch (SSCW) welcomes Crowley Wind Services (Crowley) to Salem. We have high expectations for their environmental stewardship of Salem Harbor and Salem Sound.

“At Crowley, we have a strong company culture of environmental stewardship and sustainability in not only our own operations, but in our services to customers.,” said Chairman and CEO Tom Crowley. “The New Energy division captures our commitment to those cultural principles while delivering the innovative solutions that help customers in these emerging sectors succeed.”

<https://www.crowley.com/news-and-media/press-releases/new-energy-division-formed/>

SSCW looks forward to working with the City of Salem, the Commonwealth, and Crowley as the Port of Salem is developed and put into service to support offshore wind development and the creation of renewable, clean electricity. Please accept the following comments and questions that are critical for the success of this project.

1. Ship-to-Shore Power must be a requirement for the Port of Salem.

The ENF states that “barges, freighters, and other marine vessels will deliver the large wind turbine components to the marshalling facility and to transfer the partially-assembled components to offshore wind farms.” These vessels when at port need to connect to shore electricity to be able to shut down their engines. It is happening in California, Brooklyn New York, and City Docks at the Port of Lake Charles, Louisiana. With multiple Environmental Justice neighborhoods within a mile of the port, it is imperative that operations limit the air pollution.

V-1

“Sustainability is crucial to the communities we serve and our industry’s future,” said Greg Pavellas, director of Crowley offshore services. “The reduction in diesel usage and emissions through idling is an important step as we develop new and cleaner energy solutions that maintain our high-performance standards while protecting air quality.” <https://portlc.com/news/port-partners-with-crowley-marine-entergy-louisiana-to-reduce-local-emissions-through-shore-power/>

“Increases in maritime shipping and environmental pollution concerns have created a demand for ship-to-shore power solutions that comply with environmental restrictions in ports and harbors. “Cold-ironing,” a process of ships shutting down on-board generation and then plugging into shore-side power while in berth, can reduce air pollution by 39% in areas neighboring ports. According to the Los Angeles Department of Water and Power, this method removes more than three tons of nitrogen oxides (NOx) and 350 pounds of particulate matter from the air for each ship that is “plugged in.” The US Military has used this method for many decades to reduce on-board manpower requirements while in port.” <https://eslpwr.com/shore-power/>

2. How will the new stormwater drainage system accommodate the City’s stormwater infrastructure that currently crosses the site?

V-2

Vegetated swales, landscaping, deep sump catch basins, and outfalls with tide gates are part of the proposed stormwater management improvements. There are currently 2 stormwater outfalls to Salem Harbor, and it appears 2 more are proposed. This system should comply with the highest standards of the Massachusetts Department of Environmental Protection’s Stormwater Management Standards. SSCW looks forward to understanding more fully the new stormwater infrastructure and management plan and how the City’s stormwater that currently moves through the site will be handled.

3. How does this project address the need for water and sewerage for 200 employees?

V-3

The EENF states the existing water and sewer utilities will be utilized. With the City’s aged water and sewer infrastructure in Derby Street, it is critical that Crowley work closely with the City to determine if the infrastructure has the capacity to handle an additional 200 full-time Crowley employees, and if not, how the systems will be improved.

4. How will the needs of the 200 employees be accommodated?

V-4

What buildings are being constructed for the 200 employees for shelter, offices, restrooms, cafeteria, etc.? The Site Plan Figure 2-6 shows the current single-wide trailer, 15’ height in the Laydown Yard “A” and 3000 sq ft storage shed in Laydown Yard “B”, which are probably being removed.

5. The following Transportation discrepancies need to be explained and more fully vetted with Salem.

V-5

The EENF states that there will be 343 vehicle trips per day, and a reduction in parking spaces from 295 to 198. There will be approximately 200 jobs during construction and 200 new jobs during operations [9.1 EENF]. In one of Crowley’s public meetings, it was stated that their Traffic Study had concluded that there would be “no change” to Salem’s traffic. The Trip-Generation Summary was for 114 employees but a total of 82-86 vehicle trips at peak hours generating 440 vehicle trips on a weekday with 50 entering and exiting [EENF 8.4 Table]. It is understood that there will be shifts, but where are the vehicles going if they are not entering and exiting? Obviously, the traffic discussion needs to continue.

6. Coastal adaptations because of climate change are being examined by the City of Salem and property owners.

Crowley is proposing a 2-foot freeboard above the current FEMA base flood elevation, raising the site from 10 feet NAVD88 to 12 feet NAVD88 and creating landscape berms to reduce the neighborhood’s flood risk. The EENF states that the “elevation of the site grade will not have any directly adverse effects on adjacent properties, and flood pathways through the Project Site towards adjacent properties will be intercepted.” The neighborhood will want assurances that this is accurate, and if any neighborhood flooding does occur from this site what the process will be to remediate.

V-6

7. How can public enjoyment of the water's edge be accomplished around the Salem Wind Port?

The EENF states that a community benefits agreement between Salem and the Proponent will be established. We understand the challenges of providing public access to this industrial site. This is important for the City, residents and visitors. We look forward to working with the City and Crowley to figure out ways to promote public enjoyment of the water's edge to an extent commensurate with the Commonwealth's interests [2.44. Tidelands 2.11 Chapter 91 standards]. This includes landside and harbor activities. V-7

One possibility worth considering by the City, Salem Harbor Power Station and Crowley is finding a safe way for people to view the port in action. Currently, people enjoy the walkway and garden on the westside of the Salem Harbor Station, which abuts the Salem Wind Port Laydown Area "A" on the east. The walkway currently dead ends at the Transition Yard, does not have seating, and is not raised to provide people with a view of the harbor.

8. More details about buffering the neighborhood and City from noise, heat, and light pollution are needed.

The EENF states that the Crowley property along Derby Street will remain an open space, which currently consists of a grass strip with two rows of black locust trees and a row of juniper shrubs along the chain link fence. The neighborhood and City welcome this remaining a green space, but this area needs refreshing and maintenance. Many of the shrubs are now as tall as the fence, and some are dying. Leaving it in its current state is not sufficient. Also, how will Salem Wind Port's interface with the Ferry Terminal and the abutting properties along Blaney Street be improved? V-8

9. How will the security fence and lighting affect the surrounding properties and the general appearance of the Salem Wind Port? V-9

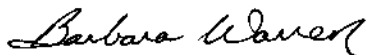
Is there any way to avoid chain link security fencing and barbed wire around the property?

10. The Community Benefits Agreement needs to uphold and commit to assisting with the landfall to a substation for offshore wind power.

The City of Salem and Crowley need to put in writing that the construction of the Salem Wind Port will not preclude the possibility of bringing offshore wind power on shore [see Sec. II. D. 4 Footprint RealCo Community Benefits Agreement with the City of Salem]. Any permanent construction on the site should not compromise connection to the National Grid switchyard or another substation. V-10

Thank you for reviewing these comments.

Sincerely,



Barbara Warren
Executive Director, Salem Sound Coastwatch
Lower North Shore Regional Coordinator, Massachusetts Bays National Estuary Partnership

V. Salem Sound Coastwatch, November 23, 2022

#	Response
V-1	Connection of marine vessels to shore-side electricity will allow for engine shutdowns to limit air pollution, conserve fuel, and reduce GHG emissions. The Project design includes electric conduits along the wharfs for connections to vessels that can be shore powered while they are berthed. The Proponent will utilize ship-to-shore power to the extent possible, which will be determined by the types, sizes, and availability of the specialized ships needed to transport the OSW components to and from the Project Site as well as their assist vessels.
V-2	The City's existing stormwater infrastructure, including its 48" outfall, that currently crosses the Project Site, will be protected and remain in-place. The proposed stormwater infrastructure and management plan are detailed in Chapter 8: Infrastructure, specifically pages 8-1 and 8-2. See Attachment M, Stormwater Report.
V-3	Based on the domestic demand of sewage flow, it is estimated there is sufficient capacity in the existing 10-inch service line. The trailers will be provided with temporary pipe connections for sanitary sewer waste to tie into an existing gravity sewer lateral on-site. The proposed system will have 8-inch water main diameter loop and fire hydrant branches for fire protection on-site. See Chapter 8, Infrastructure, and Attachment L, Project Plans, Sheets C400 to C405 for proposed utility details.
V-4	The Project Site will consist of three proposed structures to accommodate the employee's needs. An office trailer will be located within Laydown Yard "A", and a storage shed and another trailer will be located within Laydown Yard B. Should the tenant determine that more worker space is needed for this industrial use site, another trailer will be added. Current plans are to remove the two existing sheds located in the northern part of the Project Site.
V-5	<p>Correction: There will be approximately 123 employees during construction and 200 employees during operations. The Trip Generation Summary has been adjusted to 200 employees with a total of 142-150 vehicle trips at peak hours generating 774 vehicles trips on a weekday with 50% entering and 50% exiting the Project Site.</p> <p>While the proposed development is assumed to support employment levels up to 200 persons, peak hour trips reflect that not all of the employees enter and exit the Project Site during the same peak hour period. Consistent with the operations of these types of facilities the employees will arrive and depart over several hours and will include various shifts. All of the employees are assumed to park on-site under normal operating conditions with a parking management plan in place for any supplemental parking requirements for construction periods or atypical events as applicable.</p> <p>See Chapter 9: Traffic and Transportation, pages 9-10 through 9-12, and Attachment G, Transportation Attachments for final vehicle trip calculations. The Project will still reduce on-site parking spaces from 295 to 178.</p>
V-6	The Project Site will be elevated by at least 2 feet for resiliency but graded away from the adjacent neighborhoods down to Salem Harbor to drain runoff to Salem Harbor. Any portions of the Project Site that cannot be graded towards Salem Harbor, will have stormwater infrastructure to capture, treat, convey, and discharge the runoff to avoid flooding impacts to the adjacent neighborhoods. The Project will not impact the neighborhood's flood risk and will not have any direct adverse effects on adjacent

#	Response
	properties. The Proponent has provided Attachment H, Flooding Analysis for demonstration of the Project's impact on wave deflection, channelization, and flooding to adjacent properties.
V-7	There will be restricted public access to the waterfront on the Project Site, which will be only for cruise ship passengers. To ensure the safety of the public and those working within the port's facility, and to comply with regulations promulgated by the Department of Homeland Security and the international ship and port security code, public access to the industrial use portions of the Project will not be allowed. The public will be able to access the landscaped areas along Derby Street, Fort Avenue, and the ferry terminal parking lot.
V-8	The existing tree-lined open space along Derby Street and Fort Avenue will be maintained and expanded. The Project will add more than 50,000 square feet of landscaped open space along Derby Street and the Salem Wharf parking lot. This space will provide a buffer between the Project Site and the neighborhood along Derby Street and the public areas at Salem Wharf parking area. Landscaping will include evergreen trees, shade trees, understory trees, shrubs, and seeding.
V-9	The fence line along Derby Street and the Ferry Terminal property will be screened with proposed vegetative plantings. The existing fencing along Fort Avenue will be protected and maintained adjacent to the Salem Harbor Power Development LP site and Sewer Plant. Due to the high security needs for these critical and high value OSW components, chain link security fencing with barbed wire will be needed, most of which will be located on the far side of the landscaped areas and out of view from the streets and public ways.
V-10	The City of Salem and the Proponent are currently working on an updated Community Benefits Agreement. The current design maximizes the potential for use of the Project Site as an OSW marshalling terminal, which provides a unique combination of deep draft access, unlimited height restrictions, and sufficient but minimal land area to support the goals of the City and Commonwealth that is not available elsewhere in the state. Landfall connections for OSW farms are being proposed in locations closer to the lease areas. Additionally, the local power services would need to be upgraded to accommodate a landfall connection. The Proponent is exploring and considering a future possibility for a landfall connection. Although the Proponents have not precluded the possibility of bringing offshore wind power to this site, they must balance the OSW opportunity with a use that can be located elsewhere. Regardless, Crowley is exploring and considering a future possibility for a landfall connection should one be proposed.

Chapter 15

CIRCULATION

CHAPTER 15: CIRCULATION LIST

15.1 CIRCULATION LIST

Federal Agencies and Government Organizations

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Massachusetts Department of Transportation- Boston	MassDOTPPDU@dot.state.ma.us	Public/Private Development Unit 10 Park Plaza, Suite #4150 Boston, MA 02116
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Massachusetts Clean Energy Center (MassCEC)	info@masscec.com	294 Washington Street, 11th Floor Boston, MA 02108

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