Lynn Gear Works

Redevelopment

Final Environmental Impact Report EEA #15441

Proponent
Lynnway Associates, LLC
130 Atlantic Avenue
Swampscott, MA 01907

Prepared by
vhb
99 High Street
Boston, MA 02110

Submitted to
The Executive Office of Energy
and Environmental Affairs
MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

In association with
D'Angelo Engineering and Development
Commercial Construction Consulting, Inc.
Elkus | Manfredi Architects
Carol R. Johnson Associates
TEC, Inc.
Tech Environmental, Inc.
GZA GeoEnvironmental, Inc.
Hancock Associates

March 10, 2017

Lynn Gear Works Redevelopment

Lynn, Massachusetts

SUBMITTED TO **Secretary Matthew A. Beaton**
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

PROPONENT **Lynnway Associates, LLC**
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Swampscott, MA 01907

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Ref: 12341.00

Matthew Beaton, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 022114

Re: Final Environmental Impact Report, Lynn Gear Works, EEA No. 15441

Dear Secretary Beaton:

On behalf of Lynnway Associates, LLC (the "Proponent"), VHB is pleased to submit the enclosed Final Environmental Impact Report (FEIR) for the Lynn Gear Works Redevelopment Project (the "Project"). This FEIR has been prepared in accordance with the Secretary's Certificate on the Draft Environmental Impact Report (DEIR) for EEA No. 15441, issued November 30, 2016. The Project is located at the former General Electric Gear Works site in Lynn, MA, on an approximately 65.5-acre site. The proposed Project, which has changed only minimally since the filing of the DEIR, is an approximately 1.5 million square-foot transit-oriented development (TOD) located adjacent to the River Works MBTA commuter rail station, comprised of approximately 1,260 residential units, 2,080 parking spaces, a sports club, retail space, a leasing/ management office, a clubhouse, a pool house, and a community waterfront building/pavilion. Residents will have access to regular commuter rail service at the River Works station, which will be renovated and made compliant with the Americans with Disabilities Act (ADA) as part of the Project. The Project is expected to be built in five phases, with the final phase slated for completion in 2022.

The Proponent is pleased to advance this important project in Lynn, as it will revitalize a significant waterfront parcel, which in turn is expected to spur additional investment and growth in Lynn. In addition, the Project is consistent with a number of the Baker administration's policies and goals, such as investing in Gateway Communities, utilizing and improving upon existing infrastructure, promoting a variety of transportation opportunities, reusing and improving brownfields sites, minimizing impacts on air quality and ensuring that development is resilient, taking into consideration anticipated sea level rise.

Please publish notice of availability of the FEIR for public review in the March 22nd edition of *The Environmental Monitor*. We request public comments by April 21, 2017 and a Certificate by April 28, 2017. We look forward to your review of this project. Please contact me at 617-607-2972 if you have any questions.

Sincerely,

Stephanie Kruel

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Project Summary

Lynnway Associates, LLC (the "Proponent") has prepared this Final Environmental Impact Report (FEIR) for the Lynn Gear Works Redevelopment Project ("the Project") in accordance with the Certificate of the Secretary of the Executive Office of Energy and Environmental Affairs (EEA) on the Draft Environmental Impact Report (DEIR) (EEA No. 15441), issued November 30, 2016, and the Massachusetts Environmental Policy Act (MEPA) regulations, 301 CMR 11.00 (revised, May 10, 2013). This chapter includes a project description; a summary of changes to the project since the submission of the DEIR; an updated list of anticipated permits and approvals; and information requested by MEPA and commenting agencies related to land alteration, site contamination and hazardous materials, and waste reduction.

1.1 Project Description

The Project will transform a 65.5-acre portion of a former General Electric (GE) industrial site (the "Project Site") into a walkable, livable transit-oriented residential development that provides diverse transportation choices. The Project Site is located just north of, and adjacent to, the Saugus River and is directly west of the Lynnway (Route 1A) (Figure 1.1). To the east of the Project Site lies the Gateway Waterfront Neighborhood of the Lynn Waterfront Growth District, the goal of which is to create a mixed-use district with connections to downtown and the surrounding communities through public and private investment.

The Project is the first development to support the Waterfront Growth District. It is intended to be the catalyst to redevelop the adjacent waterfront properties, and to create a mixed use walkable environment with connections to the Massachusetts Bay Transportation Authority (MBTA) River Works commuter rail station, which is just two stops north of North Station. The Project Site has beautiful waterfront views, is within 10 miles of downtown Boston, and is also accessible by the local highway network, with frontage at two locations along Route 1A.

The Project includes construction of approximately 1,260 residential units within six separate buildings (Figure 1.2). It also includes the creation of an approximately 1.8-acre Waterfront Area open to the public with a pedestrian path network, a community waterfront building/pavilion (Figure 1.3), and associated public parking. On-site uses include a sports club, a

leasing/management office, retail space, a clubhouse, and a pool house, totaling approximately 1.5 million square feet of development. Additional resident amenities include swimming pools, a bandstand, tennis, beach volleyball and basketball courts, a dog park, and a bicycle path, along with significant passive open space.

Approximately 2,080 parking spaces will be provided in parking structures, surface lots, and on-street. Residents will have access to regular commuter rail service at the adjacent River Works MBTA station, which will be renovated and made compliant with the Americans with Disabilities Act (ADA) as part of the Project. Table 1.1 includes the proposed Project program, while Table 1.2 provides details about the proposed buildings. These numbers are preliminary and will be refined during final design.

TABLE 1.1 PROPOSED PROJECT PROGRAM

Project Element	Description
Site Area	65.5 acres
Upland	*38.4 acres*
Coastal Wetlands	*27.1 acres*
Building Area	Approx. 1,540,000 gsf
FAR	0.92
Height	1.5, 6, and 20 stories
Residential Area	Approx. 1,445,000 gsf
Residential Units	1,260 units
Studio/1 Bedroom (40%)	*Approx. 504 units*
2 Bedroom (60%)	*Approx. 756 units*
Sports Club	43,310 sf
Clubhouse	9,800 sf
Leasing/Management	10,260 sf
Retail	16,000 sf
Maintenance/Equipment	11,250 sf
Pool House	3,500 sf
Parking Structures	635,662 sf[a]
Residential Parking Ratio	Approx. 1.5 spaces/unit[b]
Parking Spaces	2,080 spaces
Residential	*1,920 spaces[b]*
Employee/Maintenance	*44 spaces*
Public	*116 spaces[c]*
Open Space[d]	13.4 acres
Waterfront Area	*1.8 acres*

[a] Square footage for structured parking will be constructed in Buildings A and B was mistakenly omitted in the DEIR program summary (Table 2.1). Impervious surface area and location of the structured parking spaces is unchanged.
[b] Includes visitor spaces
[c] Includes parking for the Waterfront Area, the potential future public MBTA station, and the Leasing Office.
[d] Open Space is defined as any vegetated area landward of the Coastal Bank.

TABLE 1.2 BUILDING DETAILS

Building	Use	Floor Plate Area	Height	Gross Square Footage
Building A	Residential	41,344	6 stories	225,226
Building B	Residential	41,344	6 stories	224,854
Building C	Residential	18,720	20 stories	363,438
Building D	Residential	47,710	6 stories	286,260
Building E	Residential	35,230	6 stories	211,380
Building F	Residential	23,075	6 stories	134,250
Building F Retail Space	Retail	-	-	4,200
Clubhouse	Amenity	12,000	1.5 stories	9,800
Clubhouse Lounge	Retail	-	-	8,200
Sports Club	Amenity	28,875	1.5 stories	43,310
Leasing/Management (L/M)	Office	13,860	1 story	10,260
L/M Retail Space	Retail	-	-	3,600
Maintenance	Amenity	7,500	1.5 stories	11,250
Poolhouse	Amenity	3,500	1 story	3,500
Total		**273,158**		**1,539,528**

The Project is expected to be completed in five phases, with Phase I, which includes Site enabling work, completed in 2018. Phase V is expected to be completed in 2023. As each phase of the Project is constructed, the Proponent will reassess the Project's parking needs with a goal of potentially reducing the overall parking supply to maximize public transportation utilization, and reduce single-occupancy vehicle (SOV) trips. Refer to section 2.2.5 of Chapter 2, *Transportation* for further information on this approach.

1.2 Changes Since the DEIR

The Project has been modified slightly since the issuance of the Secretary's Certificate on the DEIR (November 2016).

Changes to the Project include:

- Decrease in in the total number of parking spaces of 50 (from 2,130 to 2,080); and
- Increase in Project size of 45,868 square feet due to additional residential square footage, and related increase in Floor Area Ratio (FAR) from 0.89 to 0.92.

Changes to the site plan include:

- Improved landscape design for Waterfront Area and stormwater BMPs;

- Reduction in on-street parking of approximately 12 spaces; and
- Relocation of one of the proposed vehicle access gates from Street One (formerly Sunrise Lane), adjacent to the waterfront building/pavilion, to Avenue C, adjacent to building F.

Trip generation, water use, and wastewater generation remain unchanged from the DEIR.

1.3 Anticipated Permits/Approvals

Additional anticipated permits identified for the Project since DEIR include a Section 404 General Permit from the US Army Corps of Engineers and a Section 401 Individual Water Quality Certificate from the Massachusetts Department of Environmental Protection. A Notice of Intent was submitted to the Lynn Conservation Commission on February 1, 2017.

The Proponent and the MBTA have developed a Memorandum of Understanding (MOU) for renovation of the River Works commuter rail station. The MOU will include a commitment by the Proponent to upgrade the existing private River Works stop by designing and constructing two ADA-compliant platforms to service the mainline tracks, modifying the turn out to the Bennett Street yard, and installing a new switch back to allow the defunct GE siding to be reactivated if it is required at some future date. The estimated cost of these improvements, including paying for MBTA administration and flagging, is estimated at $9.4 Million. The Project will also set aside parking in anticipation of the stop becoming a full public access stop in the future.

Table 1.3 below lists the permits, approval and reviews that are currently anticipated for the Project.

TABLE 1.3 ANTICIPATED PERMITS, APPROVALS AND REVIEWS

Agency	Permit/Approval/Review
Federal	
Environmental Protection Agency (EPA) – Region I	National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Permit
US Army Corps of Engineers	Section 404 General Permit
State	
MEPA Office	Certificate on the FEIR (this filing)
Department of Environmental Protection	Chapter 91 License
	Section 401 Individual Water Quality Certificate
Massachusetts Department of Conservation and Recreation	Application for Construction and Roadways Access
	Traffic Signal Regulation
Secretary of Transportation	Approval for Construction on Former ROW Chapter

Agency	Permit/Approval/Review
	40 Section 54A
MBTA/MassDOT Commuter Rail	Memorandum of Understanding (MOU)
Natural Heritage and Endangered Species Program	Notice of Intent - Massachusetts Endangered Species Act Review
Massachusetts Office of Coastal Zone Management	Federal Consistency Review
Massachusetts Water Resources Authority	8(m) Permit
Local	
Lynn Conservation Commission	Order of Conditions
City of Lynn	Zoning: Site Plan Review per Sections 16A and 16B
	Building Permit
	Sewer Connection Permit

1.4 Land Alteration

Within the 27.1-acre coastal wetland area (the area seaward of the top of the coastal bank, which includes salt marsh and mudflats), previous alterations include disturbances from utility poles and the former saltwater intake pier located at the southeastern edge of the Project Site. Using aerial imagery, it is estimated 1.5 acres was previously altered.

The entire 38.4-acre upland portion of the Project Site (the area landward of the top of the coastal bank, which includes land subject to coastal storm flowage) was previously developed or altered as a result of its former uses as a United States Department of Navy marine propulsion unit manufacturing plant and GE Gear Works facility.

Proposed Site work will be within the previously altered 38.4-acre upland area. A program of old building foundation removal will be implemented prior to the commencement of Site development activities. All former concrete foundation walls, slabs, piles, and pits in the proposed building footprints will be removed, and the concrete will be processed on-site for reuse as backfill in the excavated areas or for Site grading.

Site preparation will require a raise in grade of up to two feet across most of the property, which will raise a majority of the site above the FEMA flood elevation and to accommodate sea level use. Excavation will be required for proposed building foundation construction. Additional excavations will be limited to utility corridors that run through the property under roadways, greenspaces and the individual trenches to each building. Subsequent Site work will include installation of sewer, water and stormwater infrastructure, construction of roads and other infrastructure, building construction, and final grading and landscaping.

There will be limited temporary impacts within the coastal wetlands for work required at the drainage outfalls as summarized in Chapter 4, Section 4.1, Table 4.1, and filed with the Lynn Conservation Commission in a Notice of Intent.

1.5 Site Contamination and Hazardous Materials

The Property is regulated under the Massachusetts Contingency Plan ("MCP") under Release Tracking Number (RTN) 3-0357. The status of the Property under the MCP is as follows:

To avoid and mitigate risks from potential Vapor Intrusion, the Activity and Use Limitation (AUL) in effect at the Site requires that "any new occupied building construction within designated Area A must include the installation of a vapor barrier and a passive sub-slab venting system to prevent the migration of volatile organic compounds into the building." The vapor barrier proposed for the referenced buildings will consist of a 60 mil thick Cetco Liquid Boot® Plus and Geovent® system, or approved equivalent, consistent with the AUL, to prevent potential vapor intrusion of volatile organic compounds (VOCs) into the indoor air of the proposed buildings. The barrier will cover the entire footprint of the slab-on-grade or structural mat portions of each building. The vapor barrier will be sealed around all penetrations, including utilities and footings. A series of 4-in. diameter perforated pipes will be installed below the slab within a permeable bedding material, such as sand or gravel. The perforated sub-slab piping will be connected to vertical solid piping embedded in the building walls and vented to the atmosphere above the roof line. The venting system will be designed to comply with the MCP and the MassDEP Vapor Intrusion guidelines, including indoor air sampling.

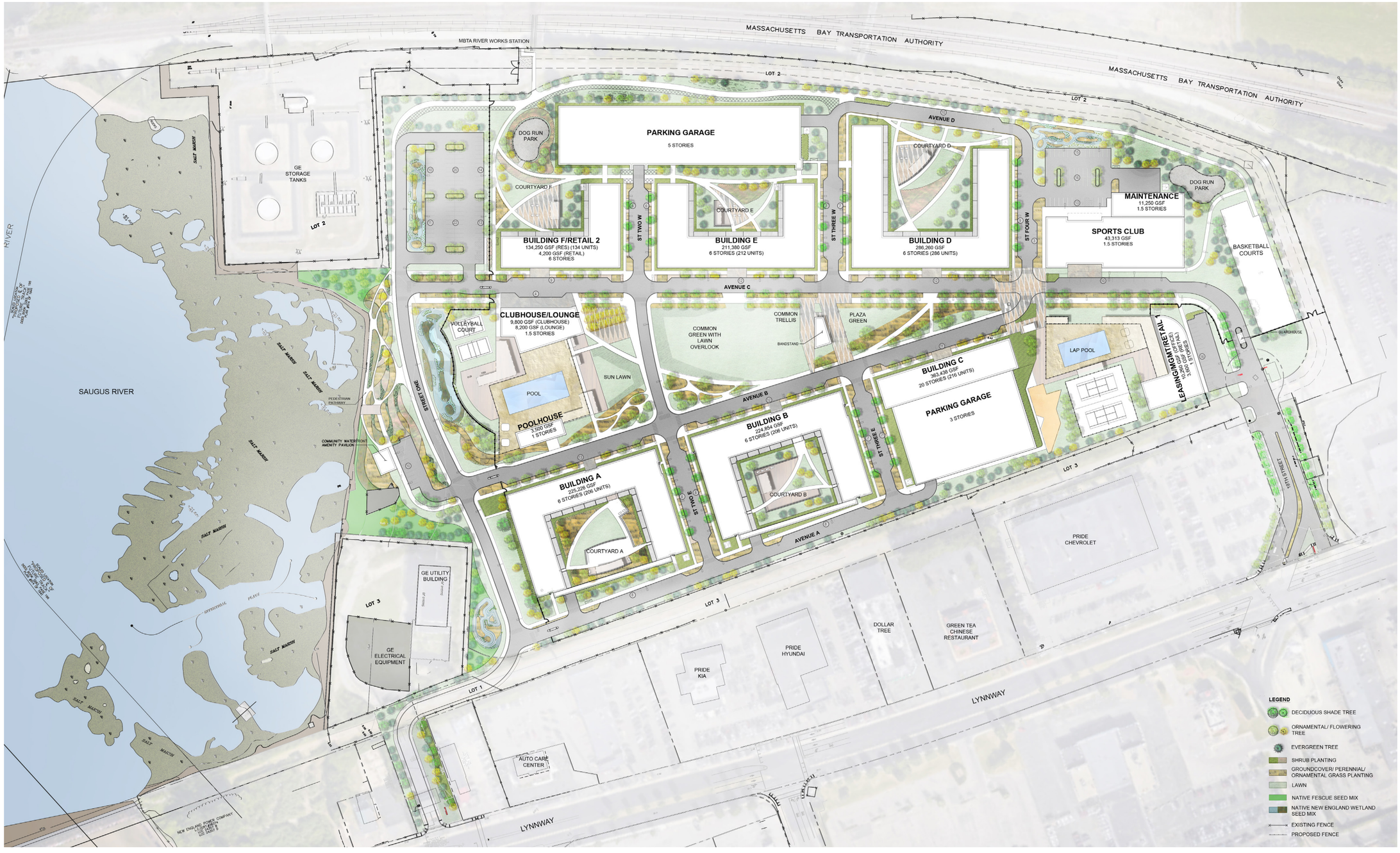
1.6 Waste Reduction

In addition to conserving raw materials, recycling of construction and demolition (C&D) debris conserves energy and water, and reduces the production of greenhouse emissions and other pollutants. In an effort to increase the Project's sustainability, the Proponent commits to recycling at least 75 percent of C&D debris. The Project's Construction Waste Management Plan (CWMP) will comply with Massachusetts Construction and Demolition Materials Waste Bans at 310 CMR 19.017, and its recycling commitment.

Source: ArcGIS Online Bing Aerial

Figure 1.1
Site Location

Lynn Gear Works
Lynn, Massachusetts



0 200 400 Feet

Figure 1.2
Proposed Site Plan

Lynn Gear Works
Lynn, Massachusetts

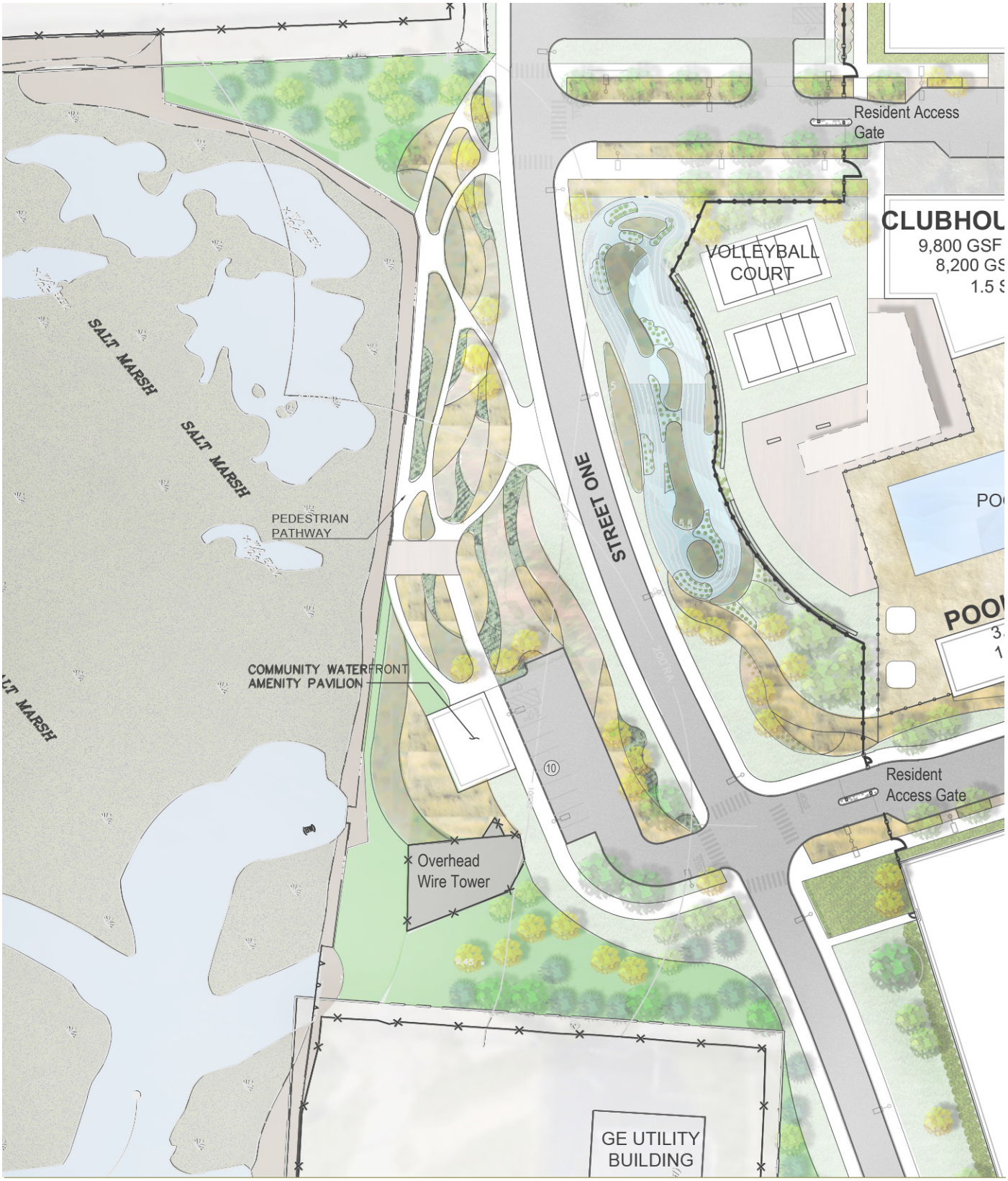


Figure 1.3
Waterfront Area

Lynn Gear Works
Lynn, Massachusetts

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Traffic and Transportation

This Chapter includes important updates to the transportation operational and safety analysis based on comments received on the Draft Environmental Impact Report (DEIR) from the Massachusetts Environmental Policy Act (MEPA) office, state agencies, municipalities, and other stakeholders. It also outlines the ongoing consultations and coordination that has occurred with the Proponent, the Massachusetts Department of Transportation (MassDOT) and the Massachusetts Department of Conservation and Recreation (DCR) on the scope, construction phasing, and parking impacts associated with the Project. Furthermore, it provides clarity on the process to identify transportation impacts within, and provide mitigation for, both City of Lynn and DCR off-site infrastructure.

The DEIR provided a detailed Traffic Impact, Access, and Parking Study, prepared using MassDOT and the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) standard guidelines, which outline the traffic related impacts and mitigation measures for all study area roadways and intersections. The comments received on the DEIR demonstrate that the Lynn Gear Works Redevelopment site is situated in an ideal location to distribute the impacts of motor vehicle traffic and create an efficient and attractive opportunity for transit riders, walkers, and bicyclists. This chapter provides further detail on the proposed improvements and operational measures that the Lynn Gear Works Redevelopment will employ to monitor traffic and parking facilities and provide options to reduce the reliance on automobile use by residents.

2.1 Impacts on the Lynnway

As all vehicular traffic for the Project will enter and exit the site via the Lynnway (Route 1A), the Proponent has committed to significant off-site improvements to minimize the impact on existing and potential future traffic. The following section provides further details on the Project's impact and the Proponent's mitigation measures along the Lynnway.

2.1.1 Bus Amenity Improvements

The Proponent is committed to providing enhancements to the existing Massachusetts Bay Transportation Authority (MBTA) bus infrastructure along the Lynnway in the immediate vicinity of the Project. The quality of the amenities for using public transportation has a general correlation to overall usage. To enhance the opportunity and likelihood of Project resident usage of the MBTA bus service along the Lynnway, the Proponent has committed to the following mitigation measures as outlined in the DEIR:

- The Proponent has committed to improve pedestrian signal equipment and ADA/AAB compliant wheelchair ramps at intersections along the Lynnway between the Lynnway Jughandle (referred to as the "Jughandle"), and 19th Street. In conjunction with sidewalk connections from the site to the Lynnway, the enhanced pedestrian facilities will improve access to MBTA bus stops along the Lynnway;
- To increase transit use by Project residents, the Proponent has committed to subsidize a portion of the cost of transit passes for bus service near the Project site. In addition, public transportation schedules with transit maps for all nearby routes will be provided to Project residents and posted within each of the residential buildings and on-site amenities; and
- The Proponent has committed to provide bus shelters and street furniture, as outlined below, to enhance the experience of the transit rider, both from the Project site and other land uses in the vicinity.

Bus Stop Enhancements

On February 20, 2017, representatives of the Proponent discussed the bus stop enhancements with MassDOT. The MBTA currently operates three (3) bus stops along the Lynnway, in both the northbound and southbound directions, immediately adjacent to the Project Site, including stops in the vicinity of the Jughandle, Hanson Street, and Harding Street intersections.

The Proponent is committed to the following upgrades to bus accessibility along the Lynnway for each bus stop between the Site access points:

- *Lynnway Southbound at 19th Street (far-side of intersection)* – Install a bench, bus schedule post, and trash receptacle at the existing bus stop location and within the existing Right-of-Way. The street furniture will be placed at the back-of-sidewalk to maintain existing Americans with Disabilities Act (ADA) accommodations. Install new bus stop signage at the existing location to comply with MBTA standards for accessibility and length.
- *Lynnway Southbound opposite Hanson Street (near-side of intersection)* - Install a bench, bus schedule post, and trash receptacle at a relocated bus stop location and within the existing Right-of-Way. The street furniture will be placed at the back-of-sidewalk to maintain existing ADA accommodations. The stop will be located, with new signage,

further upstream on the near-side of the intersection location to comply with MBTA standards for accessibility and length.

- *Lynnway Southbound at Proposed Site Driveway (far-side of intersection)* – Current stop location and placement of curb-cuts does not support the installation of street furniture or other enhancements without relocation of private permitted driveways. The Proponent has committed to replace existing MBTA bus signage.
- *Lynnway Northbound at 19th Street (near-side of intersection)* – Install a trash receptacle at the existing bus stop/shelter location within the existing Right-of-Way. The proposed street furniture will be placed at the back of sidewalk to maintain existing ADA accommodations. With the review and approval of MBTA and DCR, install new bus stop signage at the existing location to comply with MBTA standards for accessibility and length.
- *Lynnway Northbound opposite Hanson Street (far-side of intersection)* – Construct a bus turn-out and a relocated bus shelter at the location of the existing bus stop. Install a trash receptacle at the existing bus stop/shelter location within the existing Right-of-Way. The proposed street furniture will be placed at the back of sidewalk to maintain existing ADA accommodations. This construction of a bus turn-out at this location is contingent on the City of Lynn granting a Right-of-Way between the Lynnway and the Walmart property.
- *Lynnway Northbound at Jughandle (far-side of intersection)* – Install a bus shelter with schedule information and trash receptacle at the existing bus stop location and within the existing Right-of-Way. Install new bus stop signage at existing location to comply with MBTA standards for accessibility and length.

At each bus top location adjacent to the site, the Proponent has committed to provide information on the most up-to-date MBTA bus scheduling and routes. The Proponent will work with the MBTA on its preference for posting this information at each location.

The Proponent evaluated the need for improved transit rider space in the immediate vicinity of the MBTA bus stops: However, current Right-of-Way limitations along the Lynnway preclude the installation of bus shelters and the construction of bus turn-outs at several existing bus stop locations along the Lynnway.

The Proponent also coordinated with several property owners along the westerly side of the Lynnway (southbound approach) early in the planning process to incorporate improvements and access alternatives to the Project Site: However, the Proponent has not been successful in obtaining any agreements (preliminary or authorized) for land acquisition or easements, as the existing DCR Right-of-Way is at the immediate back-of-sidewalk. In addition, many of the businesses along the westerly side of the Lynnway provide site features, such as car dealership parking, immediately up to the back of the existing sidewalk. Private parking accommodations, DCR permitted driveway curb-cut locations, sight distance restrictions, and minimal area between curb-cuts limits the potential to provide fully-compliant MBTA bus stops along the easterly side of the Lynnway (northbound approach). Per the MBTA guidelines, any stop altered or added to the network must comply with current accessibility standards.

2.1.2 Bicycle Amenity Improvements

On February 21, 2017, representatives of the Proponent discussed the Lynnway bicycle accommodations with DCR. The Proponent has weighed the impacts of providing bicycle shared-use lane markings ("sharrows") and associated share-the-road signage verses constructing dedicated bicycle lanes along the Lynnway in the vicinity of the Project. The Proponent has committed to providing these markings and signage to provide the most beneficial bicycle accommodations while being respectful of private Right-of-Way, utility impacts, and the several design alternatives presented in the *Route 1A/Lynnway/Carroll Parkway Priority Corridor Study*[1] published by the Central Transportation Planning Staff (CTPS) in June 2016.

Right-of-Way and Utility Impacts

The installation of bicycle lanes along the corridor would require eight (8) feet of full-depth roadway widening (as noted in the *Route 1A/Lynnway/Carroll Parkway Priority Corridor Study)* for both the northbound and southbound directions (16 feet total) to accommodate a five-foot bicycle lane and a three-foot striped/raised buffer. The striped/raised buffer is recommended due to the high traffic volumes and potential high travel speeds exhibited along the Lynnway. The Proponent has noted that the physical constraints and additional construction costs and lack of authority to take these lands by eminent domain associated with the control and construction of dedicated bicycle lanes is not feasible as part of the scope of the Project. As previously stated, the widening of the Lynnway along the westerly side of pavement would require substantial impacts to private Right-of-Way and developed land currently used by several commercial businesses. Therefore, to accommodate a bicycle lane on the Lynnway southbound, the Proponent would be required to complete all roadway widening to the east, including ±2,000 feet of new 16-feet-wide full-depth pavement; ±2,000 feet of full central landscaped median reconstruction (current DCR open space); reconstruction of ±2,000 feet of concrete sidewalk; reconstruction of all Lynnway subsurface stormwater infrastructure to accommodate three (3) relocated curb lines; relocation of up to 13 street lighting poles and associated subsurface infrastructure; relocation of up to 60 public shade trees; and the acquisition of significant partially-developed Right-of-Way that the Proponent and DCR currently do not control. Current adjacent land uses, costs, and logistics make widening the Lynnway unfeasible.

Lynnway/Carroll Parkway Alternatives

The off-site corridor improvements along the Lynnway are proposed to limit the need for Right-of-Way takings, as noted in the previous section. The CTPS publication *Route 1A/Lynnway/Carroll Parkway Study in Lynn* identified six (6) improvement alternatives to change the cross-sectional and multi-modal characteristics of the Lynnway/Carroll Parkway corridor. The publication seeks to supplement the Lynn Waterfront Master Plan to identify

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[1] *Route 1A/Lynnway/Carroll Parkway Priority Corridor Study*; Central Transportation Planning Staff (directed by Boston Region Metropolitan Planning Organization); Boston, MA; June 2016

potential measures to repurpose the corridor within the existing curb lines and provide "Complete Streets" opportunities without the expansion of pavement and impervious area. Three (3) of these Alternatives, #1 – "Short Term Improvements", #3 – "Boulevard Style Roadway", and #6 – "Bus Rapid Transit Lines" propose restriping parts of, or the entire, corridor to accommodate shared-use lanes with "sharrows" at each edge line, generally within the existing curb lines. Three other alternatives, Alternatives #2 – Road Diet and Complete Streets, #4 – Pedestrian Bridges, and #5 – Altered Traffic Circulation Pattern, seek to provide new bicycle lanes within the existing curb lines by reducing the vehicular capacity of the corridor with two (2) lanes in each direction.

Widening the Lynnway to construct dedicated bicycle lanes is not consistent with the CTPS study identifying a significant potential to reduce roadway width in the future. Furthermore, eliminating a travel lane in each direction for a three-block section in front of the Lynn Gear Works Redevelopment to construct dedicated bicycle lanes is not feasible as it would:

- Create fragmented bicycle lanes and a considerable vehicular traffic bottleneck in both the northbound and southbound directions for only a 2,000-foot section of roadway; and
- Significantly reduce the capacity at the three signalized intersections at 19th Street, Hanson Street, and the Jughandle, and along the Lynnway adjacent to the Lynn Gear Works Redevelopment.

Any efforts to eliminate travel lanes to incorporate dedicated bicycle lanes should be conducted on a corridor-wide level improvement by DCR to provide consistency throughout the corridor.

Healthy Transportation Policy

As stated above, the proposed bicycle "sharrows" along the Lynnway complement the recommended short-term improvements for the corridor as outlined in the publication *Route 1A/Lynnway/Carroll Parkway Study in Lynn*, published by CTPS in June 2016. The MassDOT *Healthy Transportation Policy Directive*, published in September 2013, states that "projects shall seek to increase and encourage more pedestrian, bicycle, and transit trips." The proposed design accomplishes this goal while not precluding the potential improvement alternatives envisioned for a re-engineered Lynnway corridor.

2.1.3 Commuter Rail – Future Vehicular Trip Reduction

The Lynn Gear Works Redevelopment has been designed as a Transit-Oriented Development (TOD), providing access to the MBTA Commuter Rail service via the on-site private station. At this time, the Proponent is not proposing that the existing River Works Commuter Rail Station be opened for public use. However, the Proponent's intent is to develop the Site in a way that will not preclude public access in the future. This includes providing a secondary access/ egress point from the Site to the Lynnway with a direct route to the station and providing land for future public on-site parking, passenger drop off, bus turnaround and bicycle storage.

Access with Existing Conditions

Based on the private property constraints on the westerly side of the MBTA Right-of-Way (operational GE River Works site), all public traffic would be expected to come from the Lynnway via the new Southerly Site Driveway opposite the Jughandle. At this time, the River Works MBTA Station's proximity to the Wonderland Station (MBTA Blue Line) to the south, Central Square - Lynn Station (MBTA Commuter Rail) to the north, and various MBTA bus routes along the Lynnway would not be anticipated to support a significant amount of public travel, whereas many of the parcels within the station's sphere of influence are automotive-related retail, box store retail, and personal service establishments. These land uses do not traditionally correlate to significant commuter rail use. The proximity of other potential bus, commuter rail, and rapid transit stations for the nearby residential uses would generally result in few incidences of passenger drop-off vehicular trips along the Lynnway. Many of these drop-off trips would also be expected to be included in the traffic network already, attempting to access other existing MBTA stations and bus service along the Route 1A corridor.

Access with Waterfront Master Plan Build-Out

In 2007 the City of Lynn developed a Waterfront Master Plan[2] in an effort to revitalize Downtown Lynn through the creation of a mixed-use waterfront district with connections to Downtown and the surrounding communities. Under the 20-year vision, the Master Plan includes the creation of 4.1 million square feet (SF) of residential property, 1.0 million SF of commercial/retail space, 400,000 SF of office space, 305,000 SF of hotel, 230,000 SF of light industry, and 45 acres of marina. With an emphasis on high-density development and walkability, the Waterfront Master Plan would minimally impact traffic, especially along the Lynnway. In addition, specific targeted development within the Master Plan is also expected to be implemented, with corresponding and specific improvements to the side-street roadways and the Lynnway. As the parcels and new roadways associated with the Waterfront Master Plan are anticipated to be completed further into the future, trip generation projections cannot be reasonably assumed at this time. Generally, it would be anticipated that a majority of the usage at this station would be pedestrian-related and directly tied to the vision in the Waterfront Master Plan. When the conversion from a private stop to a public stop is proposed, it will be accompanied by a separate traffic analysis with potential mitigation measures, coordinated between the Proponent and other developers within the waterfront district, the City of Lynn, MBTA, and DCR.

2.1.4 Supplemental Traffic Impact Analyses

This section provides a response to DCR's comments on the DEIR and request for specific additional traffic impact analyses along the Lynnway.

[2] *Lynn Waterfront Master Plan Report*; Sasaki Associates, Inc.; September 2007

Queue Analysis

The DEIR presented 50th percentile and 95th percentile queue analysis graphics which visually depicted the lengths of each queue during all three (3) analysis periods over the various build and no-build scenarios. The results displayed in the graphics are indicative of conservative traffic volumes for their respective time period and scenario. Under every analysis condition, the 50th percentile and 95th percentile queues travelling Lynnway northbound toward the Jughandle never extended onto the drawbridge portion of the General Edwards Bridge. In fact, over 300 additional feet of pavement remained from the edge of the drawbridge to the rear of the last car in the queue during the worst queueing exhibited amongst the analyzed scenarios.

As part of the off-site improvements, the Proponent has committed to the funding and installation of traffic signal preemption hardware at the intersection of Lynnway/Jughandle/ Southerly Site Driveway. The vehicular/bicycle detection proposed at the intersection is in the form of video cameras mounted on the mast arm poles. The Proponent will install a separate video detection camera directly facing the drawbridge which will be formatted to pick up stationary vehicles at a point immediately downstream of the drawbridge portion of the Lynnway northbound approach. Should a vehicle be identified as stationary at this designated location, the traffic signal will release the Lynnway northbound approach with a green indication.

Southerly Site Driveway Alternatives

The ENF and DEIR assessed the potential for restricting all left-turn movements at the intersection of the Lynnway/Jughandle/Southerly Site Driveway. The resulting geometric modification would result in an increase in traffic at the intersection of the Lynnway/Harding Street/19th Street, including an increase in left-turning traffic by 94 vehicles per hour during the weekday morning peak along the 19th Street eastbound approach (total of 289 vehicles per hour), and by 47 vehicles per hour during the weekday evening peak hour along the Lynnway northbound left-turn lane (total of 120 vehicles per hour). The increase in traffic volumes for these movements will result in additional traffic signal green time needed for the non-mainline movements, thereby degrading traffic operations and extending queue lengths for the intersection. By distributing the left-turn traffic between the 19th Street/Harding Street and Jughandle intersections, the Project is able to maintain an acceptable level-of-service (LOS) at the Lynnway/19th Street/Harding Street intersection and minimally impact existing operations at the Lynnway/Jughandle/Southerly Site Driveway intersection. Because the Lynnway/Jughandle/Southerly Site Driveway intersection already operates under signalized control, that an additional traffic signal phase will be required even if only a right-out exiting movement exits the proposed driveway, and that a dedicated southbound left-turn signal phase already exits to match the proposed northbound left-turn phase, the addition of left-turning traffic volumes to/from the Southerly Site Driveway approach will not significantly impact the intersection's LOS or capacity over a right-in/right-out driveway alternative.

By providing full-access/egress to/from the Southerly Site Driveway, the Proponent is also making an effort to limit the potential for introducing future roadwork onto the Lynnway corridor. Should the River Works Commuter Rail Station be converted into a public station, it is likely that the MBTA and DCR would look to provide full-access/egress at this location. This would require the MBTA and DCR to construct additional significant improvements at the intersection to convert the intersection from a right-in/right-out driveway in the future. Therefore, the Proponent has committed to provide the full intersection upgrades at this time to balance vehicular delays along the corridor, provide a secondary emergency access point from all directions, and preempt the potential for future construction needed along the Lynnway at the Jughandle intersection.

2.2 Parking

It is the Proponent's goal to reduce the number of parking spaces provided on-site; however, it is important to strike the right balance to meet the needs of those who will be living in, working at, and visiting the Project. For this reason, multiple factors were considered to determine the appropriate number of parking spaces to provide on the Project Site, including parking requirements (zoning), parking demand, site context, market conditions, and the potential to accommodate future changes in conditions, all of which are described below. Based on these factors, the Proponent is proposing to reduce the parking supply on-site to 2,080, 50 fewer parking spaces than described in the DEIR. 1,920 spaces are for residential-related uses, 44 are for employee/maintenance use, and 116 for non-residential uses associated with the publicly accessible Waterfront Area, Leasing Office and the potential future MBTA parking.

2.2.1 Zoning

The City of Lynn Zoning Ordinance requires a minimum of 1.5 spaces per dwelling unit for multi-family residential developments in most zoning districts (Per Section 9.3). When applied to the Project, this results in a minimum requirement of 1,890 parking spaces to accommodate the Project's residential uses. In March 2016, the Zoning Ordinance was revised to establish the Waterfront Zoning Districts (applicable to the Project Site), which allow a reduced parking ratio of 1.0 spaces per unit for projects with more than 300 residential units. Applying this ratio results in a minimum requirement of 1,260 parking spaces.

Section 9.3 also requires that mixed use developments provide the number of parking spaces required for each individual use, computed separately in accordance with the Zoning Ordinance. While the majority of the non-residential uses on the Site are accessory uses intended to serve the residential population, the Waterfront Amenity Building/Pavilion is accessible to the public. Based on the size of the structure, five parking spaces required by zoning (although 10 are being provided to further encourage public use). Therefore, based on zoning, a minimum of between 1,274 and 1,904 spaces would be appropriate to serve the project.

2.2.2 Parking Demand

According to guidance associated with the Institute of Transportation Engineers (ITE)[3] standards for Land Use Code (LUC) 222 – High-Rise Apartment, parking supply needs to satisfying the 85th percentile peak parking demand. Based on 1,260 residential apartment units, 1,916 parking spaces for residential use are required to satisfy the 85th percentile peak parking demand per ITE standards.

In addition to demand from residential uses, the Project's other on-site uses generate some internal parking demand, including the dog park, the sports club, the pool facilities, and the open space recreation areas. The Waterfront Area provides 10 spaces for public parking (although five are required by zoning) to encourage waterfront use, and the Leasing Office provides 16 spaces for public use to support its leasing and retail operations. Extra spaces are also needed to accommodate tenants' visitors. Finally, additional parking spaces are needed on-site for future MBTA uses.

2.2.3 Site Context

The Project has been designed as a TOD, which is described by MassDOT as "compact, walkable development around transit stations generally including a mix of uses such as housing, shopping, employment, and recreational facilities. TOD is designed with transit and pedestrians as high priorities, making it possible for visitors and residents to move around without complete dependence on a car." The Project, which includes housing, accessory retail, and recreational facilities adjacent to a commuter rail station, fits this description.

To help reach the goal of reduced car dependence for residents of the Project, Transportation Demand Management (TDM) measures will be employed to help reduce single-occupancy vehicle (SOV) trips, including the use of MassRIDES, the North Shore Transportation Management Association, NuRide, ZipCar, and other ridesharing programs, as well as bicycle paths and sidewalks connected to the existing roadway network. It is important to note that the proximity of the MBTA services and TDM measures will greatly enhance public transportation ridership during the peak commuter periods through home-to-work and work-to-home trips.

However, residents who choose to utilize the commuter rail, bus, or ridesharing programs to commute to and from work are not necessarily expected to utilize these methods for all off-site non-commute trips. The potential need for a personal vehicle will initially be intensified at the Project Site as the nearby retail, restaurant, office, and service land uses identified in the Waterfront Master Plan have yet to be developed. It is expected that the number of vehicles parked on-site by residents will be greater in the near-term to allow residents to disperse to further commercial uses until the Lynn Waterfront Master Plan and Route 1A corridor

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[3] *Parking Generation, 4th Edition*; Institute of Transportation Engineers (ITE); Washington, D.C.; 2010

revitalization efforts are realized. As a counterbalance, the Proponent has committed to instituting parking fees for residents for their second vehicle per unit to discourage vehicle trips to/from the Project Area.

2.2.4 Market Conditions

The Proponent commissioned a parking analysis as part of the Project's initial market study which surveyed nearby TODs. The study notes that while developments in dense urban areas with abundant transit access, such as Downtown Boston and Cambridge, provide parking at ratios of 0.4 to 0.82 spaces per dwelling unit, properties with more suburban characteristics, such as bus-only public transportation, provide parking at ratios of 1.5 to 1.6 spaces per unit. The Project, which provides a residential parking ratio of approximately 1.5 spaces per unit, is consistent with the latter type of TOD, and is appropriate for current and projected market conditions.

2.2.5 Future Conditions

The Proponent recognizes that the Site's close proximity to the MBTA Station provides an opportunity to significantly reduce the number of SOV trips to/from the Site as a TOD. While the Project will be constructed to allow for full build-out of the proposed 2,080 parking spaces, the Proponent is committed to reducing the size of the parking supply to the extent practicable in direct relation to the construction phasing and the realized mode share. The Project will be constructed in sequential phases, allowing the Proponent to assess the parking utilization rate and resident mode share as occupancy occurs over time. As each phase of the Project is constructed, the Proponent will reassess the mode share, parking utilization, commuter verses non-commuter public transportation usage, and the vehicle ownership rate of the residents. The Proponent will commit to reduce the structured, under podium, and surface parking supply comparably to the monitored parking utilization rate after each subsequent phase to better maximize public transportation utilization, and reduce SOV trips. As an overwhelming majority of the on-site parking is to be structured or under-podium, the Proponent has agreed that it is in their best financial interest to reduce the number of parking spaces, if not needed, to reduce the capital construction costs.

2.3 Transit Analysis

In response to Agency comments, additional analyses of MBTA bus and commuter rail services are provided below.

2.3.1 MBTA Bus Service Analysis

As presented in Section 5.9.1 of the DEIR, the Lynn Gear Works Redevelopment is anticipated to generate approximately 780 bus trips on an average weekday, with 62 of those trips occurring during the weekday morning peak hour and 71 during the weekday evening peak hour. 808 bus trips are anticipated on Saturdays, with 54 of those trips occurring during the

Saturday midday peak hour. The distribution of entering and exiting trips, provided in Table 2.1, is based on standard trip rates published in the ITE publication *Trip Generation, 9th Edition* for LUC 220 – Apartments and as outlined in the DEIR.

TABLE 2.1 MBTA BUS – PROJECTED TRIP DISTRIBUTION

Time Period	Entering (#)	Exiting (#)	Entering (%)	Exiting (%)
Weekday Daily	390	390	50	50
Weekday AM PH	12	50	20	80
Weekday PM PH	46	25	65	35
Saturday Daily	404	404	50	50
Saturday Midday PH	27	27	50	50

The DEIR analysis proportioned the residential site-generated trip distribution based on a gravity model using 2000 U.S. Census Bureau Journey-to-Work data for City of Lynn residents who work in municipalities surrounding the development. This data was utilized to determine the percentage of trips travelling inbound verses outbound. Table 2.2 shows the anticipated trips destined to/from the nearby municipalities for each of the three peak hour periods evaluated. It should be noted that the destinations without projected bus trips (denoted by "-") are anticipated to be serviced by commuter rail with connections to rapid transit. These public transit trips are analyzed within Section 2.3.2 of this FEIR.

TABLE 2.2 MBTA BUS – PROJECTED TRIP DISTRIBUTION BY DESTINATION

Destination	Weekday AM		Weekday PM		Saturday MID	
	Enter	Exit	Enter	Exit	Enter	Exit
Lynn (56%)	12	46	42	23	25	25
Boston (21%)	-	-	-	-	-	-
Salem (7%)	-	-	-	-	-	-
Beverly (3%)	-	-	-	-	-	-
Cambridge (3%)	-	-	-	-	-	-
Swampscott (2%)	-	-	-	-	-	-
Chelsea (2%)	-	-	-	-	-	-
Marblehead (1.5%)	0	2	2	1	1	1
Revere (1.5%)	0	2	2	1	1	1
Gloucester (1%)	-	-	-	-	-	-
Medford (1%)	-	-	-	-	-	-
Somerville (1%)	-	-	-	-	-	-

Using the trip distributions by destination presented in Table 2.2, these trips were assigned to the individual buses passing near the Lynn Gear Works Redevelopment during the three peak hour periods evaluated, as sourced from the MBTA bus schedules published for spring 2016 through winter 2017 service (see Tables 2.3, 2.4, and 2.5).

Tables 2.3 and 2.4, presented below indicate significant remaining capacity on each of the individual MBTA buses during the weekday morning and weekday evening commuter peak hours after the inclusion of the anticipated site-generated bus trips. This remaining capacity is based on 140% occupancy of an average of 42 seats per bus, as sourced from the *MBTA Service Delivery Policy*, dated 6/2/2010.

TABLE 2.3 MBTA BUS – INDIVIDUAL BUS RIDERSHIP PROJECTIONS (WEEKDAY MORNING)

Inbound (To Revere)

Time[a]	Route[a]	# of Seats[b]	Current Peak Ridership[c]	Increase in Ridership[d]	Proposed Ridership[e]	Maximum Ridership[f]	Remaining Ridership[g]
7:06 AM	441	42	44	3	47	59	12
7:18 AM	442	42	32	3	35	59	24
7:24 AM	442	42	17	2	19	59	40
7:40 AM	441	42	37	3	40	59	19
7:50 AM	439	42	22	2	24	59	35
7:51 AM	441	42	24	1	25	59	34
7:51 AM	442	42	17	0	17	59	42

Outbound (To Lynn/Marblehead)

Time[a]	Route[a]	# of Seats[b]	Current Peak Ridership[c]	Increase in Ridership[d]	Proposed Ridership[e]	Maximum Ridership[f]	Remaining Ridership[g]
7:40 AM	441	42	12	29	41	59	18
7:45 AM	442	42	26	5	31	59	28
7:50 AM	441	42	16	5	21	59	38
7:57 AM	449	42	17	5	22	59	37
8:00 AM	442	42	8	4	12	59	47

a = obtained from MBTA bus schedules published for spring 2016 service

b = average number of seats per bus in the MBTA fleet (obtained from *MBTA Service Delivery Policy*, dated 6/2/2010)

c = maximum load along the route (obtained from MBTA load profile data for 2015)

d = assignment of bus trips presented in Table 2.2

e = sum of 'current peak ridership' plus 'increase in ridership'

f = 140% of the total number of seats (obtained from *MBTA Service Delivery Policy*, dated 6/2/2010)

g = difference of 'maximum ridership' minus 'proposed ridership'

TABLE 2.4 MBTA BUS – INDIVIDUAL BUS RIDERSHIP PROJECTIONS (WEEKDAY EVENING)

Inbound (To Revere)

Time[a]	Route[a]	# of Seats[b]	Current Peak Ridership[c]	Increase in Ridership[d]	Proposed Ridership[e]	Maximum Ridership[f]	Remaining Ridership[g]
4:45 PM	442	42	26	11	37	59	22
4:50 PM	441	42	17	7	24	59	35
5:05 PM	442	42	30	12	42	59	17
5:30 PM	442	42	27	15	42	59	17

Outbound (To Lynn/Marblehead)

Time[a]	Route[a]	# of Seats[b]	Current Peak Ridership[c]	Increase in Ridership[d]	Proposed Ridership[e]	Maximum Ridership[f]	Remaining Ridership[g]
4:45 PM	442	42	32	3	35	59	24
4:54 PM	442	42	27	3	30	59	29
5:00 PM	441	42	33	4	37	59	22
5:10 PM	442	42	17	3	20	59	39
5:15 PM	442	42	24	3	27	59	32
5:30 PM	441	42	31	4	35	59	24
5:36 PM	449	42	40	3	43	59	16
5:40 PM	439	42	18	3	21	59	38
5:45 PM	442	42	38	0	38	59	21

a = obtained from MBTA bus schedules published for spring 2016 service

b = average number of seats per bus in the MBTA fleet (obtained from *MBTA Service Delivery Policy*, dated 6/2/2010)

c = maximum load along the route (obtained from MBTA load profile data for 2015)

d = assignment of bus trips presented in Table 2.2

e = sum of 'current peak ridership' plus 'increase in ridership'

f = 140% of the total number of seats (obtained from *MBTA Service Delivery Policy*, dated 6/2/2010)

g = difference of 'maximum ridership' minus 'proposed ridership'

For weekend service, the MBTA holds a higher standard for rider comfort, setting a maximum occupancy of 100% of the number of seats provided on each bus (i.e. one rider per seat with no riders required to stand). Based on these higher standards, Table 2.5 indicates that the maximum ridership of select buses during the Saturday midday peak hour is exceeded after the inclusion of anticipated site-generated bus trips.

TABLE 2.5 MBTA BUS – INDIVIDUAL BUS RIDERSHIP PROJECTIONS (SATURDAY MIDDAY)

Inbound (To Revere)

Time[a]	Route[a]	# of Seats[b]	Current Peak Ridership[c]	Increase in Ridership[d]	Proposed Ridership[e]	Maximum Ridership[f]	Remaining Ridership[g]
11:59 AM	441	42	37	10	47	42	-5
12:23 PM	442	42	36	9	45	42	-3
12:55 PM	441	42	45	8	53	42	-11

Outbound (To Lynn/Marblehead)

Time[a]	Route[a]	# of Seats[b]	Current Peak Ridership[c]	Increase in Ridership[d]	Proposed Ridership[e]	Maximum Ridership[f]	Remaining Ridership[g]
11:58 AM	442	42	30	10	40	42	2
12:26 PM	441	42	34	9	43	42	-1
12:53 PM	442	42	19	8	27	42	15

a = obtained from MBTA bus schedules published for spring 2016 service

b = average number of seats per bus in the MBTA fleet (obtained from *MBTA Service Delivery Policy*, dated 6/2/2010)

c = maximum load along the route (obtained from MBTA load profile data for 2015)

d = assignment of bus trips presented in Table 2.2

e = sum of 'current peak ridership' plus 'increase in ridership'

f = 100% of the total number of seats (obtained from *MBTA Service Delivery Policy*, dated 6/2/2010)

g = difference of 'maximum ridership' minus 'proposed ridership'

At this time, the Proponent recommends the MBTA maintain its existing bus service through construction and full-occupancy of the proposed Lynn Gear Works Redevelopment. After full-occupancy, the Proponent will reevaluate the mode share for public transportation usage and the future to-date bus scheduling and route details for MBTA buses along the Lynnway. Subsequent to this analysis, the Proponent will consult with the MBTA on the future realized bus ridership levels. This consultation will also involve the City of Lynn.

2.3.2 Commuter Rail Analysis

As presented in Section 5.9.2 of the DEIR, the Lynn Gear Works Development is anticipated to generate approximately 1,170 daily commuter rail trips (boardings and alightings) at River Works Station. During the morning peak period, approximately 585 additional boardings at River Works Station are projected, with around 90 percent or 525 boardings projected for the peak direction, inbound to Boston. The same level of demand is projected to occur in the evening peak direction, outbound from Boston, resulting in approximately 525 additional alightings at River Works Station.

To determine the impact of project-related commuter rail ridership increases on the MBTA system, vehicle loading on the MBTA's Newburyport/Rockport commuter rail service was analyzed for the weekday morning and evening peak periods, in the peak directions (Inbound during the AM Peak Period and Outbound during the PM Peak Period). Projected ridership

demands for the 2023 horizon year were compared to available vehicle capacities as defined by MBTA policy for acceptable levels of crowding. The analysis was based on the MBTA's *Service Delivery Policy,*[4] dated June 2, 2010, which defines the levels of crowding that are acceptable by time period and mode of transportation. For MBTA commuter rail service, the acceptable ratio of boarding passengers to seats on average during the AM Peak and PM Peak periods is 110 percent.

Projected demands for Newburyport/Rockport commuter rail service were based on existing ridership data from 2015,[5] an estimated 0.59 percent average annual growth rate in MBTA commuter rail ridership between 2015 and the 2023 horizon year,[6] and the projected increase in 2023 ridership due to the Project. Project-related ridership increases were assigned to specific peak period commuter rail trips using the existing ridership distribution observed in the 2015 count data.[7]

The capacity of the commuter rail trainsets that currently operate on the Newburyport/ Rockport Line during the peak period vary depending on the number of single-level and bi-level coaches comprising each trainset. Vehicle capacities assumed for the commuter rail analysis were based on train equipment cycles from 2015, which identify the number of seats provided for each scheduled weekday train.[8]

Findings of the commuter rail vehicle loading analysis are presented in Table 2.6 and Table 2.7 for the morning and evening peak directions, respectively. The tables summarize and compare the proposed demand in the 2023 horizon year against the maximum passenger capacity provided per train based on MBTA policy. Table 2.6 indicates that the loading levels on all individual trains and therefore during the AM Peak on average are well below the maximum load levels defined by MBTA policy. Similarly, Table 2.7 indicates that the loading levels on all individual trains and therefore during the PM Peak on average are well below the maximum load levels defined by MBTA policy.

In summary, the analysis results indicate that the Project would not result in crowding impacts to the MBTA's Newburyport/Rockport commuter rail line that exceed the maximum load capacity as defined in the MBTA's *Service Delivery Policy.*[9] After the inclusion of anticipated site-generated commuter rail trips in the 2023 horizon year, Newburyport/Rockport trains operating in the peak periods are anticipated to have additional remaining capacity available.

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[4] MBTA. *Service Delivery Policy.* 2010.
[5] Ridership data for peak period trains based on *2015 Fall North Side Passenger Counts Report*, provided by MBTA.
[6] An average annual growth rate of 0.59% was calculated based on system-wide MBTA commuter rail growth projections prepared by the Central Transportation Planning Staff (CTPS) for the Boston Metropolitan Planning Organization's Long-Range Transportation Plan, *Charting Progress to 2040*, dated July 2015. http://bosmpo.ctps.org/lrtp.
[7] Ridership data for peak period trains based on *2015 Fall North Side Passenger Counts Report*, provided by MBTA.
[8] The number of seats provided on each peak period train was based on the *North Side Equipment Cycle, Effective June 29, 2015,* provided by MBTA.
[9] MBTA. *Service Delivery Policy.* 2010.

TABLE 2.6 MBTA COMMUTER RAIL – NEWBURYPORT/ROCKPORT RIDERSHIP PROJECTIONS (WEEKDAY AM PEAK)

Inbound (To Boston)

Arrival Time[a]	Train Number[b]	# of Seats[c]	Current (2015) Ridership[d]	Projected (2023) Background Ridership[e]	Project-Related Increase in Ridership[f]	Proposed (2023) Ridership[g]	Maximum Policy Capacity/ Train[h]	Remaining Capacity[i]
6:15 AM	100	570	267	280	26	306	627	321
6:27 AM	150	570	269	282	26	308	627	319
6:56 AM	152	570	495	519	48	567	627	60
7:18 AM	102	570	512	537	49	586	627	41
7:38 AM	154	816	609	639	59	698	898	200
7:55 AM	104	816	727	763	70	833	898	65
8:10 AM	156	816	623	654	60	714	898	184
8:25 AM	158	570	512	537	49	586	627	41
8:33 AM	106	636	592	621	57	678	700	22
8:50 AM	52	570	379	398	37	435	627	192
9:01 AM	160	570	452	474	44	518	627	109

a = scheduled arrival time to North Station (obtained from *2015 Fall North Side Passenger Counts Report,* provided by MBTA)
b = scheduled train number (obtained from *2015 Fall North Side Passenger Counts Report,* provided by MBTA)
c = number of seats provided on each scheduled train (obtained from *North Side Equipment Cycle, Effective June 29, 2015,* provided by MBTA)
d = ridership by train based on North Station passenger counts in Fall 2015 (obtained from *2015 Fall North Side Passenger Counts Report,* provided by MBTA)
e = projected background ridership based on 0.59% average annual growth between 2015 and 2023
f = assignment of 525 project-related commuter rail trips as presented in Section 2.3.2 to individual trains, based on existing ridership distribution (see noted above)
g = sum of 'projected (2023) background ridership' plus 'Project-related increase in ridership'
h = 110% of the total number of seats provided (obtained from *MBTA Service Delivery Policy,* dated June 2, 2010)
i = difference of 'maximum policy capacity/train' minus 'proposed (2023) ridership'

TABLE 2.7 MBTA COMMUTER RAIL – NEWBURYPORT/ROCKPORT RIDERSHIP PROJECTIONS (WEEKDAY PM PEAK)

Outbound (From Boston)

Departure Time[a]	Train Number[b]	# of Seats[c]	Current (2015) Ridership[d]	Projected (2023) Background Ridership[e]	Project-Related Increase in Ridership[f]	Proposed (2023) Ridership[g]	Maximum Policy Capacity/ Train[h]	Remaining Capacity[i]
4:00 PM	111	636	331	347	34	381	700	319
4:20 PM	165	570	522	548	53	601	627	26
4:45 PM	55	570	382	401	39	440	627	187
5:00 PM	113	636	568	596	58	654	700	46
5:15 PM	167	816	748	785	76	861	898	37
5:30 PM	115	816	658	690	67	757	898	141
5:40 PM	169	816	595	624	61	685	898	213
5:55 PM	57	570	372	390	38	428	627	199
6:15 PM	117	570	495	519	50	569	627	58
6:45 PM	171	570	476	499	49	548	627	79

a = scheduled departure time from North Station (obtained from *2015 Fall North Side Passenger Counts Report,* provided by MBTA)
b = scheduled train number (obtained from *2015 Fall North Side Passenger Counts Report,* provided by MBTA)
c = number of seats provided on each scheduled train (obtained from *North Side Equipment Cycle, Effective June 29, 2015,* provided by MBTA)
d = ridership by train based on North Station passenger counts in Fall 2015 (obtained from *2015 Fall North Side Passenger Counts Report,* provided by MBTA)
e = projected background ridership based on 0.59% average annual growth between 2015 and 2023
f = assignment of 525 Project-related commuter rail trips as presented in Section 2.3.2 to individual trains, based on existing ridership distribution (see noted above)
g = sum of 'projected (2023) background ridership' plus 'Project-related increase in ridership'
h = 110% of the total number of seats provided (obtained from *MBTA Service Delivery Policy,* dated June 2, 2010)
i = difference of 'maximum policy capacity/train' minus 'proposed (2023) ridership'

2.4 Mitigation Summary

After evaluating the operations and safety of the study area roadways and intersections, the next step is to identify measures to improve traffic operations and safety for all roadway users based on existing and future deficiencies as a result of the Project. The following section provides a summary of the updated improvement measures to which the Proponent has committed within the preferred alternative to improve the existing and future traffic operations and safety for vehicles, pedestrians, bicyclists, and transit users.

2.4.1 Off-Site Improvements – Preferred Alternative

To mitigate the impacts of the Project, the following off-site improvements are proposed.

Intersection: Lynnway (Route 1A)/Jughandle/Southerly Site Driveway

As the secondary access/egress point for the Lynn Gear Works Redevelopment, the Proponent is committed to intersection improvements at the intersection of the Lynnway/Jughandle/ Southerly Site Driveway. The new Southerly Site Driveway eastbound approach to the

intersection will provide increased Site safety and emergency response capabilities, allowing residents to exit the Site through multiple egress points.

The following improvements are necessary to improve traffic operations and safety at the Project's southerly access point which will be phased to address impacts:

- Construct the new Site driveway slightly offset from the existing Jughandle, replacing an existing driveway for a former retail facility;
- Construct an exclusive left-turn lane along the Lynnway northbound approach, providing sufficient storage and deceleration for vehicles entering the Site;
- Stripe new crosswalks across the Lynnway, the Jughandle, and the Southerly Site Driveway to provide pedestrian access to the easterly side of the roadway;
- Reconstruct accessible and ADA/AAB compliant wheelchair curb ramps on all corners of the intersection;
- Complete a full upgrade of traffic signal infrastructure including: new mast arm assemblies, signal housings with reflective backplates, pedestrian signal housings, APS pedestrian push-buttons, emergency vehicle preemption, and vehicle detection equipment. Utilize the recently installed traffic signal controller and cabinet at the intersection;
- Install traffic signal preemption, in the form of a video detector, along the Lynnway northbound approach to preempt potential queuing onto the drawbridge section of the General Edwards Bridge;
- Revise the current traffic signal timing and phasing scheme to accommodate a northbound protected left-turn phase and an eastbound approach phase, provide adequate clearance intervals, provide new pedestrian timings, and provide improved minimum green times;
- Install or update MUTCD-compliant signage associated with modifications to median reconstruction, traffic signal reconstruction, or changes in lane configuration; and
- Implement MBTA bus stop enhancements as described in this chapter.

Improvements at this location are shown in Figure 2.1.

Intersection: Lynnway (Route 1A)/Hanson Street

Based on the MassDOT – Highway Division Traffic and Safety Engineering 25% Design Submission Guidelines,[10] the Proponent will work with the roadway owners, in this case the City of Lynn and DCR, on implementing many of the improvements and maintenance items that were identified as "Potential Safety Enhancements" in the Lynnway / Hanson Street RSA completed by TEC, Inc. in February 2017. Further attempts to incorporate the medium and

[10] *25% Design Submission Guidelines*; Massachusetts Department of Transportation – Highway Division; Boston, Massachusetts; February 15, 2011

long-term countermeasures identified in the RSA should be evaluated by DCR, the City of Lynn, and other developers within the immediate area.

The Proponent has committed to the following improvements identified in the RSA to improve traffic safety at the Lynnway/Hanson Street:

- Complete a full upgrade of traffic signal infrastructure, including the installation of new mast arm assemblies, a new traffic signal controller and cabinet, signal housings with reflective backplates, pedestrian signal housings, APS pedestrian push-buttons, emergency vehicle pre-emption, and vehicle detection equipment;
- Revise the current traffic signal timings to provide adequate clearance intervals, adequate pedestrian clearance intervals, and improved minimum green times;
- Reconstruct accessible and ADA/AAB compliant wheelchair curb ramps for the crossing provided across Hanson Street;
- Install or update MUTCD-compliant signage associated with U-turns, medians/object markers, traffic signal reconstruction, and lane configurations;
- Stripe tracking markings through intersection for guidance of the Lynnway southbound left-turn movement; and
- Implement MBTA bus stop enhancements, as described in this chapter.

Improvements at this location are shown on Figure 2.2.

Intersection: The Lynnway (Route 1A)/Harding Street/19th Street

As the primary access/egress point for the Lynn Gear Works Redevelopment, the Proponent is committed to intersection improvements at the intersection of the Lynnway/Harding Street/ 19th Street. The following improvements are necessary to improve traffic operations and safety at the Project's front door:

- Widen 19th Street to provide dual left-turn lanes exiting the Site (three-lane approach). This improvement will require modifications to the existing pump station located within the 19th Street median and require modifications to the traffic signal phasing structure, consisting of split phasing on the 19th Street eastbound and Harding Street westbound approaches;
- Complete a full upgrade of the traffic signal infrastructure, including installation of new mast arm assemblies, a new traffic signal controller and cabinet, signal housings with reflective backplates, pedestrian signal housings, accessible pedestrian signals (APS) push buttons, emergency vehicle preemption, and vehicle detection equipment;
- Revise the current traffic signal timing and phasing scheme to accommodate split phasing on the side street approaches, provide adequate clearance intervals, provide adequate pedestrian clearance intervals, and provide improved minimum green times;

- Reconstruct the median ends along Harding Street and 19th Street to provide an unobstructed crosswalk;
- Reconstruct accessible and ADA/AAB compliant wheelchair curb ramps on all corners of the intersection;
- Install or update MUTCD-compliant signage associated with modifications to median reconstruction, traffic signal reconstruction, or changes in lane configuration; and
- Implement MBTA bus stop enhancements, as described in this chapter.

Improvements at this location are shown in Figure 2.3.

Corridor: Commercial Street

Based on the MassDOT – Highway Division Traffic and Safety Engineering 25% Design Submission Guidelines, the Proponent worked with the roadway owners, in this case the City of Lynn and DCR, on implementing many of the short-term, low-cost improvements/ maintenance items that were identified as "Potential Safety Enhancements" in the Commercial Street Corridor RSA completed by TEC, Inc. in June 2016. Further attempts to incorporate the medium and long-term countermeasures identified in the RSA will be evaluated by the Proponent as part of any future design and should be evaluated by DCR, the City of Lynn, and other developers within the immediate area.

The Proponent has committed to the following improvements identified in the RSA to improve traffic safety along the Commercial Street corridor:

- Signage - Install or introduce the following traffic signage related improvements:
  - Complete a full sign inventory along Commercial Street between Summer Street and the Lynnway to determine the accurate placement, condition, and possible replacement of each roadway sign;
  - Install new street name signage at intersection locations along Commercial Street;
  - Install Wrong-Way signage (R5-1a) on the Neptune Boulevard westerly approach facing Neptune Street;
  - Install "Do Not Block the Intersection" signage (R10-7) along Commercial Street at Summer Street, Neptune Boulevard, and the Rear McDonald's Driveway;
  - Install additional "No Turn on Red" signage (R10-11b) along Commercial Street northbound at Summer Street on the easterly traffic signal post and along Commercial Street southbound at Summer Street;
  - Install additional "No Left Turn" signage (R3-2) along Commercial Street opposite the Honda Dealership driveway; and
  - Reinstall parking and no-parking signage at targeted locations along Commercial Street between Summer Street and the Lynnway.

- Traffic Signals - Install or introduce the following traffic signal related improvements:
  - Provide retro-reflective backplates on all "rigidly mounted" traffic signal housings along the corridor and retrofit all traffic signal housing with tunnel visors. All backplates and tunnel visors should be polycarbonate to limit the additional dead-load on the existing traffic signal equipment;
  - Revise the current traffic signal timings to provide adequate vehicle and pedestrian clearance intervals;
- Pavement Markings - Install or introduce the following traffic signal related improvements:
  - Stripe "sharrow" pavement markings along Commercial Street, between the Lynnway (Route 1A) to the south and Summer Street to the north, to increase motorist awareness of the travel lane being shared with bicycle traffic. Share-the-Road signage (W16-1) will be installed to supplement the shared-use pavement markings;
  - Provide new pavement markings along Commercial Street (where necessary), such as edge lines, centerlines, and STOP lines, where existing markings are currently faded or missing;
  - With guidance from the City of Lynn, provide pavement markings along Commercial Street to delineate on-street parking zones;
  - Stripe dashed centerline tracking between Neptune Boulevard and Neptune Street through the intersection and along Commercial Street at Summer Street; and
  - Provide arrow pavement markings along the Commercial Street approach to the Lynnway to denote the one-way southbound flow of traffic.

The Proponent has committed to work with DCR and the City of Lynn to implement other short-term improvements as described in the RSA that should be incorporated immediately. Improvements along this corridor are shown in Figure 2.4.

Corridor: Lynnway (Route 1A)

The subsequent sections describe improvements to specific intersections along the Lynnway adjacent to the study area. The following improvements are necessary to improve traffic operations and safety along the Lynnway corridor:

- Incorporate new traffic signal coordination patterns for the weekday morning, weekday midday, weekday evening, and weekend peak periods along the Lynnway between the Jughandle to the south and 19th Street to the north;
- Revise the current traffic signal timings to provide adequate clearance intervals and adequate pedestrian clearance intervals; and
- Stripe "sharrow" pavement markings along the Lynnway, between the Jughandle to the south and 19th Street to the north, to increase motorist awareness of the travel lane being shared with bicycle traffic. Share-the-Road signage (W16-1) will be installed to supplement the shared-use pavement markings.

2.4.2 Pedestrian, Bicycle, and Transit Accommodations

The Proponent has also committed to designing the Site and its direct connections to the Lynnway in line with Complete Streets guidance. A Complete Street is one that provides a safe, accessible, and conformable means of travel for all facility users. This includes accommodations for public transportation, pedestrians, and bicyclists; as well as passenger vehicles. The following section describes the on and off-site amenities in support of Complete Streets for public transportation, pedestrians, and bicyclists.

Pedestrian Amenities

The proposed Lynn Gear Works Redevelopment will create a more pedestrian-friendly on-site area with streetscape improvements. A network of sidewalks and enhanced streetscapes, such as street lighting and street trees, will establish pedestrian-friendly connections between the residential buildings, on-site amenities, and the River Works MBTA Station. In addition, sidewalks will be constructed along 19th Street and the proposed Southerly Site Driveway to provide connection from the Site to the Lynnway. Trees and landscaping treatments will create aesthetically-pleasing and pedestrian-friendly areas.

The Proponent has committed to improve pedestrian signal equipment (see above) and ADA/AAB compliant wheelchair ramps at intersections along the Lynnway between the Jughandle and 19th Street. In addition, traffic signal pedestrian timings at these intersections and others along Commercial Street within the study area will be recalculated to provide a sufficient and safe time for pedestrians to cross the roadway.

Bicycle Amenities

The Proponent is not proposing roadway widening and implementation of dedicated bicycle lanes on the Lynnway, as the scope of off-site mitigation is anticipated to be incorporated with only minor modifications to existing curb lines. The limited Right-of-Way provided along the Lynnway and the proximity of local businesses to the DCR Right-of-Way precludes the ability to implement dedicated bicycle lanes without a full reconstruction of the corridor. The Proponent has committed to installing shared bicycle "sharrow" lane markings and share-the-road bicycle signage along the major Site driveways, the Lynnway, and along Commercial Street to increase motorist awareness of the travel lane being shared with bicycle traffic. Share-the-Road signage (W16-1) will be installed to supplement the shared-use pavement markings.

The Proponent has committed to additional bicycle-related TDM measures, such as bicycle racks at each residential building, which are identified section 2.4.3 of this chapter.

Transit Amenities

The existing River Works MBTA Station is currently a private stop along the MBTA Newburyport/Rockport Commuter Rail Line. The stop, owned by the MBTA and maintained by GE, has been used traditionally to provide commuter rail access to the GE River Works and Gear Works plants exclusively for GE employees. The Proponent has committed to provide

access to the proposed residential TOD via commuter rail service to the existing River Works MBTA Station. The Proponent has developed a Memorandum of Understanding (MOU) with the MBTA that includes a commitment by the Proponent to upgrade the River Works stop by designing and constructing two ADA-compliant platforms to service the mainline tracks. Use of this station will provide the residents of the Project with efficient access to downtown Boston and to points north, as well as reduce vehicle trips on the adjacent roadway network.

The Proponent is committed to providing additional space for future MBTA-related accommodations. Space for a drop-off area with a limited number of parking spaces will be set aside to allow for the future conversion of the stop from private to public. However, the FEIR has been compiled with the assumption that the stop will remain a private stop for the foreseeable future.

The Proponent is committed to the following upgrades to bus accessibility along the Lynnway for each bus stop between the Site access points:

- *Lynnway Southbound at 19th Street (far-side of intersection)* – Install a bench, bus schedule post, and trash receptacle at the existing bus stop location and within the existing Right-of-Way. The street furniture will be placed at the back-of-sidewalk to maintain existing Americans with Disabilities Act (ADA) accommodations. Install new bus stop signage at the existing location to comply with MBTA standards for accessibility and length;
- *Lynnway Southbound opposite Hanson Street (near-side of intersection)* - Install a bench, bus schedule post, and trash receptacle at a relocated bus stop location and within the existing Right-of-Way. The street furniture will be placed at the back-of-sidewalk to maintain existing ADA accommodations. The stop will be located, with new signage, further upstream on the near-side of the intersection location to comply with MBTA standards for accessibility and length;
- Lynnway Southbound at Proposed Site Driveway *(far-side of intersection)* – Current stop location and placement of curb-cuts does not support the installation of street furniture or other enhancements without relocation of private permitted driveways. The Proponent has committed to replace existing MBTA bus signage;
- *Lynnway Northbound at 19th Street (near-side of intersection)* – Install a trash receptacle at the existing bus stop/shelter location within the existing Right-of-Way. The proposed street furniture will be placed at the back of sidewalk to maintain existing ADA accommodations. With the review and approval of MBTA and DCR, install new bus stop signage at the existing location to comply with MBTA standards for accessibility and length.
- *Lynnway Northbound opposite Hanson Street (far-side of intersection)* – Construct a bus turn-out and a relocated bus shelter at the location of the existing bus stop. Install a trash receptacle at the existing bus stop/shelter location within the existing Right-of-Way. The proposed street furniture will be placed at the back of sidewalk to maintain existing ADA accommodations. Construction of a bus turn-out at this location is contingent on the City of Lynn granting a Right-of-Way between the Lynnway and the Walmart property; and

- *Lynnway Northbound at Jughandle (far-side of intersection)* – Install a bus shelter with schedule information and trash receptacle at the existing bus stop location and within the existing Right-of-Way. Install new bus stop signage at existing location to comply with MBTA standards for accessibility and length.

2.4.3 Transportation Demand Management (TDM) Measures

The Proponent has committed to a number of TDM measures recommended to reduce SOV and general vehicular traffic to and from the Site and better manage traffic generated by the proposed Project. These measures are described below.

Site Coordination Measures

Transportation Coordinator (TC) or Transportation Management Office (TMO)

A Transportation Coordinator (TC) or Transportation Management Office (TMO) will be provided and will assume responsibility for managing rideshare and carpool programs, as well as distributing information to residents to encourage alternative means of transportation. The TC or TMO will be responsible for posting and distributing announcements, holding promotional events to encourage rideshare, bicycling, and walking, and monitoring the TDM program. This role may be filled by an on-site employee or by outside means such as direct membership in the North Shore Transportation Management Association (TMA). Membership in the North Shore TMA is further described in the following section.

North Shore Transportation Management Association (TMA)

The North Shore TMA is a non-profit transportation and environmental organization working to address transportation issues within the North Shore region of Massachusetts. The North Shore TMA's goals are to reduce traffic congestion, reduce vehicle emissions, improve air quality, and enhance multi-modal access by promoting and advocating for transportation options that support environmental/sustainability goals and promote business and municipal economic development objectives.

On behalf of the Proponent, TEC contacted the North Shore TMA in September 2016 to discuss the potential for membership in the association. The Proponent will continue to be in contact with the North Shore TMA and is committed to start preliminary discussions with the organization in regards to membership and assistance in instituting many of the TDM initiatives defined in the following section. The proponent has agreed to become part of the TMA and will work with them to identify measures to assist in ridesharing and trip reduction.

MassRIDES

MassRIDES is a free program provided by MassDOT designed to help reduce traffic congestion and improve air quality and mobility. To accomplish these goals, MassRIDES works with both employers and commuters within the Commonwealth to promote the use of alternative commuter options. Through hands-on worksite assistance, ride matching services, marketing,

and outreach events, MassRIDES annually offers thousands of commuters and employers time – and money – saving solutions for a better commute in Massachusetts.

Although the Proponent is currently looking into membership with the North Shore TMA, the Proponent is also considering participation in the MassRIDES program to promote and evaluate TDM measures.

Public Transportation Measures

Location of Development Site

The Project will be located adjacent to the River Works MBTA Station, which currently provides private Commuter Rail service throughout the North Shore and connects to North Station in Downtown Boston. The Proponent is coordinating with MassDOT and the MBTA to provide improvements to the River Works MBTA Station and provide private service to the proposed development, through the execution of an MOU. The MOU anticipates the project proponent working with MBTA to allow the private construction a center platform meeting ADA requirements. In addition, the development is in close proximity to both MBTA bus and MBTA ferry services (although currently not operational) within one mile of the Site.

The availability of public transportation to the Project is anticipated to result in at least a 25 percent reduction in vehicle trips generated by the development. The Proponent will offer a number of programs to promote the use of public transportation, which is further described below, to ensure that the anticipated transit mode share goals are met.

Transit Maps, Schedules, and Passes

To increase transit use by residents, the Proponent has committed to subsidize a portion of the cost of transit passes for commuter rail, bus, and ferry service (when operational). In addition, public transportation schedules with transit maps for all nearby routes will be provided to residents and posted within each of the residential buildings and on-site amenities.

Parking Measures

Electric Vehicle Charging Stations

The Proponent has committed to install charging stations for electric vehicles within the on-site structured parking at a minimum of two (2) percent of site parking supply. Directional signage will be implemented to direct drivers toward these electric vehicle charging stations. Charging station parking will be located strategically in convenient locations near entryways to promote usage.

Preferential Parking

Preferential parking will be offered to residents participating in rideshare or carpool programs or those who travel by hybrid vehicle. The TC will be responsible for distributing parking

passes to participants, which would allow residents to park in reserved spaces that will be located strategically in convenient locations near entryways to promote usage.

Parking Fees

The Proponent has committed to instituting parking fees for residents with more than one vehicle per unit to discourage vehicle trips to/from the Project area.

Reduced Parking Provisions

People are more apt to utilize transit services to travel to/from the Project Site if they know that limited parking is available at their destination or that parking fees outweigh the cost of transit. In an effort to reduce vehicle trips to/from the development, the parking structures and lots will be appropriately sized to meet minimal needs without providing excessive parking. Currently, the Site is designed to accommodate the 85th percentile peak demand as calculated by industry standard values published by ITE and in accordance with City of Lynn Zoning Ordinances for multi-family housing. The structured and podium parking on-site will be constructed by building in designated phases. This phased construction will allow the Proponent to assess the resident parking utilization rate and resident mode share as occupancy occurs over time. As each phase of the Project is constructed, the Proponent will reassess the mode share of residents utilizing personal vehicles versus public transportation and the vehicle ownership rate of the residents. Should the parking utilization rate call for a reduction in on-site parking, the Proponent has committed to reduce the structured, under-podium, and surface parking where necessary to better maximize the green space, maximize public transportation utilization, and reduce SOV trips.

Zip Car

The Proponents will evaluate providing Zip Car services on-site for use by Project residents. The TC or TMO would likely be responsible for purchasing and providing Zip Cars. These vehicles would be parked in designated spaces and would be available for use by residents of the Project when available on an as-needed basis. The provision of Zip Car allows residents without vehicles to rely mostly on public transit but provides a few shared vehicles that residents may use for infrequent trips that require the use of a personal vehicle.

Pedestrian and Bicycle Measures

Location of Project Site

The Project will be located along the Lynnway with pedestrian access provided between the Project Site and the sidewalk network along the Lynnway. Ample commercial, retail, banking, and restaurant establishments are provided within a 10-minute walking distance of the Site, which should further reduce the number of personal vehicle trips from the Site and increase both walking and biking opportunities.

Pedestrian Friendly Development

The proposed Lynn Gear Works Redevelopment will create a pedestrian-friendly area. A network of sidewalks will establish pedestrian-friendly connections between the residential buildings, the River Works MBTA Station, and the several on-site accessories. The sidewalks will be designed to encourage walking. Trees and landscaping treatments will create aesthetically-pleasing and pedestrian-friendly areas. Sidewalk connections are also proposed between the Site and the Lynnway to connect the Site with the adjacent retail, restaurants, and bus stop locations along the arterial corridor.

Bicycle Racks

The Proponent has committed to install high-security bicycle racks to encourage bicycling. Bicycle racks encourage residents to ride bicycles to/from the Site by allowing them a secure place to store bicycles. In addition, a bicycle path is proposed along the west side of the Site.

Other TDM Measures

Carpooling/Rideshare Program

The TC or TMO will develop an employee rideshare program and ride-matching program through NuRide or the North Shore TMA (pending membership) to assist and encourage residents to seek alternatives to driving to work alone, such as carpool matches. The TC or TMO will contact residents to determine if they receive their match-lists, review the lists with them, and inquire whether they have contacted anyone on the list or would like assistance in doing so.

NuRide is a program geared to helping individuals make "greener" trips by walking, biking, carpooling, vanpooling, and using public transportation. It is a free service supported by sponsors who provide incentives and discounts to NuRide members for making greener trips. MassDOT and MassRIDES have partnered with NuRide to assist individuals in traveling together in carpools and vanpools, cutting greenhouse gas emissions, reducing traffic congestion in their communities, and tracking green trips to earn rewards. Residents will be enrolled in NuRide during their employee orientation; this will help employees find ride-sharing matches, identify public transportation options, and receive information on alternative modes of transportation.

Site Accessories

Several accessories will be provided at the Site to assist in reducing vehicular demand, which include: small-scale food service and/or convenience retail; a resident fitness center; a club house; and open space and athletic facilities for recreational uses.

Promotional Events and Activities

The TC or TMO will be responsible for organizing promotional events and activities to encourage rideshare and alternative transportation means. For example, the TC or TMO may hold monthly drawings for participants in the carpool program. Drawings would be held on a

random basis and all residents who carpooled, used public transportation, walked, or bicycled to work that day will be entered into the drawing. These drawings would encourage those who carpool, use public transportation, walk, or bicycle part-time to do so more often while encouraging participation among those who do not currently travel in these manners. In addition, the TC or TMO will distribute brochures to all new residents and post posters and bulletins on various subjects from carpooling to the rideshare program throughout the Site.

Monitoring Program

A key component of a successful TDM program will be a traffic monitoring program (TMP), which will be facilitated and managed by the TC or TMO on a regular basis. The monitoring program will be a mechanism for ensuring that the goals of the TDM program are being met.

Based on the U.S. Census Bureau American Community Survey Five Year Estimates for 2010 – 2014, approximately 65.3 percent of residents living within the City of Lynn commute to work via SOV trips, 8.4 percent carpool, 12.5 percent use public transit, and 4.8 percent walk or bike. Given the location of the Site along the Lynnway and the MBTA Commuter Rail, it is feasible that the development would be able to achieve more than 25 percent public transportation trips. Based on current commuting patterns in the surrounding area, the Proponent proposes the following mode share goals for the residents of the Project:

- 10 percent carpool/vanpool/rideshare trips;
- 25 percent public transit trips (based on proximity to the MBTA Station); and
- 5 percent walking/biking trips.

The TC or TMO will implement an evaluation program to determine whether the goals of the programs are being met. Should the existing TDM measures fall short of meeting the desired goals, the TC or TMO will be responsible for modifying the programs or implementing additional programs to meet the overall goals. It is recommended that the monitoring of the TDM program continue for at least five (5) years following the full build-out of the proposed Project but should not extend for a period beyond 10 years from initial occupancy of a portion of the Project.

By using the programs described above, it is possible for the development to reduce its drive-alone population. It is estimated that the provision of the TDM measures summarized above will provide an overall 25 to 40 percent reduction in site-generated trips along the study area roadways, in a similar fashion to other uses located on more high-intensity public transportation routes.

The Proponent agrees to report and undertake the programs as required and review them as needed in the future.

2.4.4 Traffic Monitoring Program

The Proponent has committed to implementing a TMP, which is intended to monitor traffic operations and parking occupancy throughout the construction and for a period following completion of the Project. The intent of the monitoring program is to ensure that the Project impacts are consistent with those projected in the DEIR and this FEIR, and evaluate the need for additional improvements. This will also assure that vehicle emissions which may result from inefficient signal timing and improper phasing are minimized in the future after the completion and occupancy of the proposed residential mixed-use development.

The monitoring program will include evaluation of the following:

- Traffic operations at the intersections of:
  - Lynnway (Route 1A)/Jughandle/Southerly Site Driveway;
  - Lynnway (Route 1A)/Harding Street/19th Street;
  - Lynnway (Route 1A)/Commercial Street;
- Utilization of the constructed parking supply; and
- Effectiveness of TDM measures as defined in Section 2.4.3.

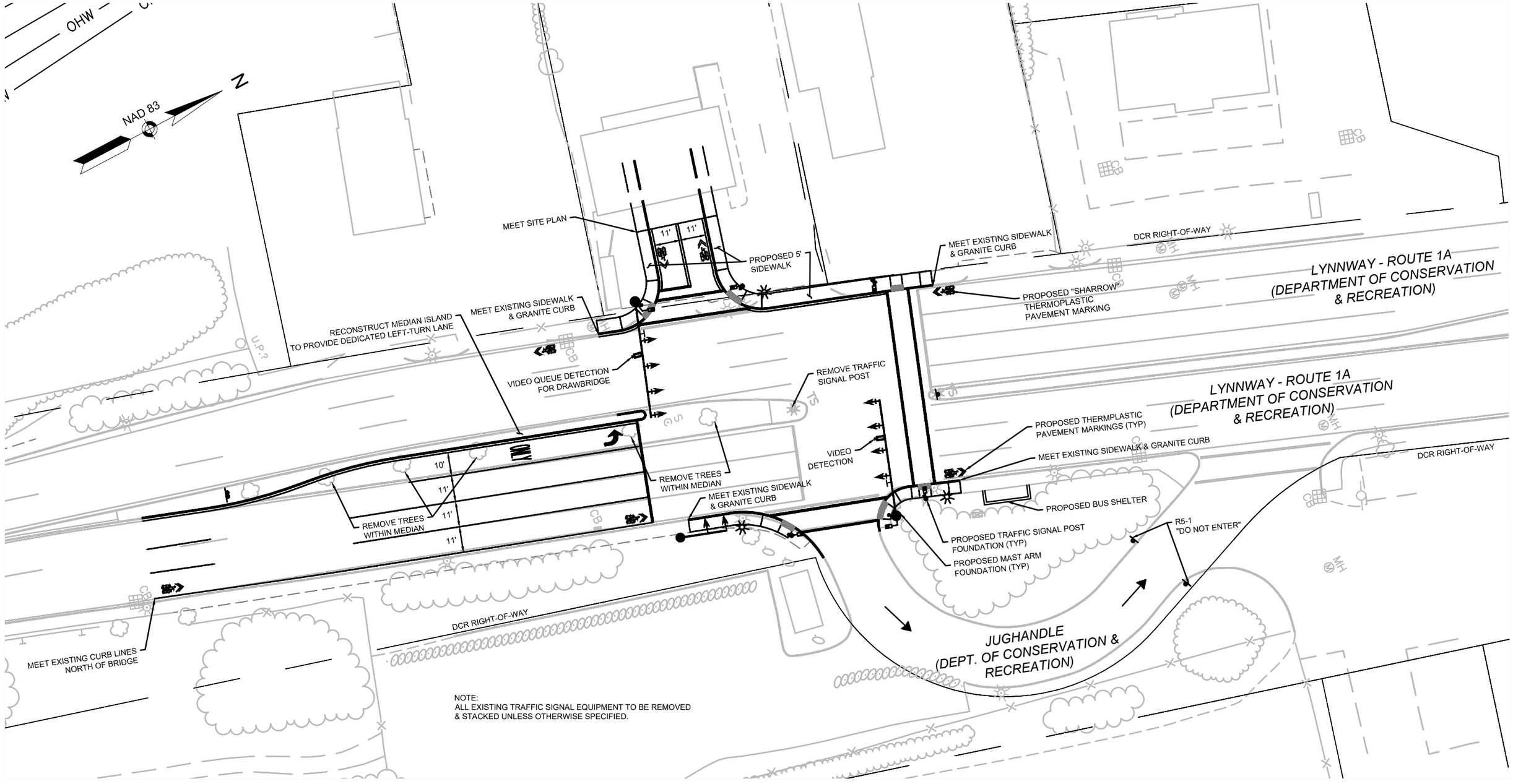
As part of the monitoring program, the Proponent will complete the following tasks:

- Collect manual TMCs during the weekday morning (7:00 to 9:00 AM) and weekday evening (4:00 to 6:00 PM) peak periods at the following intersections:
  - Lynnway (Route 1A)/Jughandle/Southerly Site Driveway;
  - Lynnway (Route 1A)/Harding Street/19th Street;
  - Lynnway (Route 1A)/Commercial Street;
- Collect Automatic Traffic Recorder (ATR) counts for a continuous 72-hour period along the following roadway segments:
  - Lynnway (Route 1A), south of Jughandle;
  - Lynnway (Route 1A), north of 19th Street;
- Compare the TMCs collected above with those projected within the DEIR/FEIR prepared for the Project to determine whether the total vehicles entering each intersection exceeds the volumes projected;
- Collect on-site parking utilization counts during a typical weekday peak parking demand period between 7:00 PM and 10:00 PM to assess the adequacy of the existing parking supply. In addition, the utilization of preferential carpool and alternative-fueled vehicle spaces, as well as EV charging stations, will be recorded separately to track utilization of these programs;
- Conduct a survey of residents to estimate the use of public transit and other TDM measures to be implemented as part of the Project. This survey will be utilized to measure the vehicle trips reduced (VTR) and to determine the effectiveness of the TDM program in

meeting the Project's mode share goals and assessing the need for modification to the TDM program to reduce SOV trips;

- Review crash reports from MassDOT and City of Lynn Police Department records to compare crash rates before and after occupancy of the proposed development to assess whether a significant increase in collisions has occurred as a result of the Project. Should an increase in the crash rate of more than 10 percent occur at any of the study area intersections listed above, the Proponent will work with DCR and the City of Lynn to investigate potential mitigation measures;
- Document potential alternative TDM measures should the development fail to meet its projections for public transportation and other SOV reducing measures; and
- Prepare a memorandum summarizing the results of the TMCs, ATRs, parking, mode share, and observations of traffic signal operations to DCR, CPTS, the City of Lynn, and the North Shore TMA (pending membership).

The monitoring program will occur on an annual basis beginning one (1) year after issuance of the first occupancy permit and continuing for five (5) years following full occupancy of the Project. Parking and mode share related monitoring will occur subsequent to each construction phase to assess the need to reduce the parking field or structured parking on-site. The monitoring program may be suspended if five (5) years have passed since the issuance of an occupancy permit for the Project.



NOTE:
ALL EXISTING TRAFFIC SIGNAL EQUIPMENT TO BE REMOVED & STACKED UNLESS OTHERWISE SPECIFIED.

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Figure 2.1

Off-Site Mitigation
Lynnway (Route 1A) / Jughandle

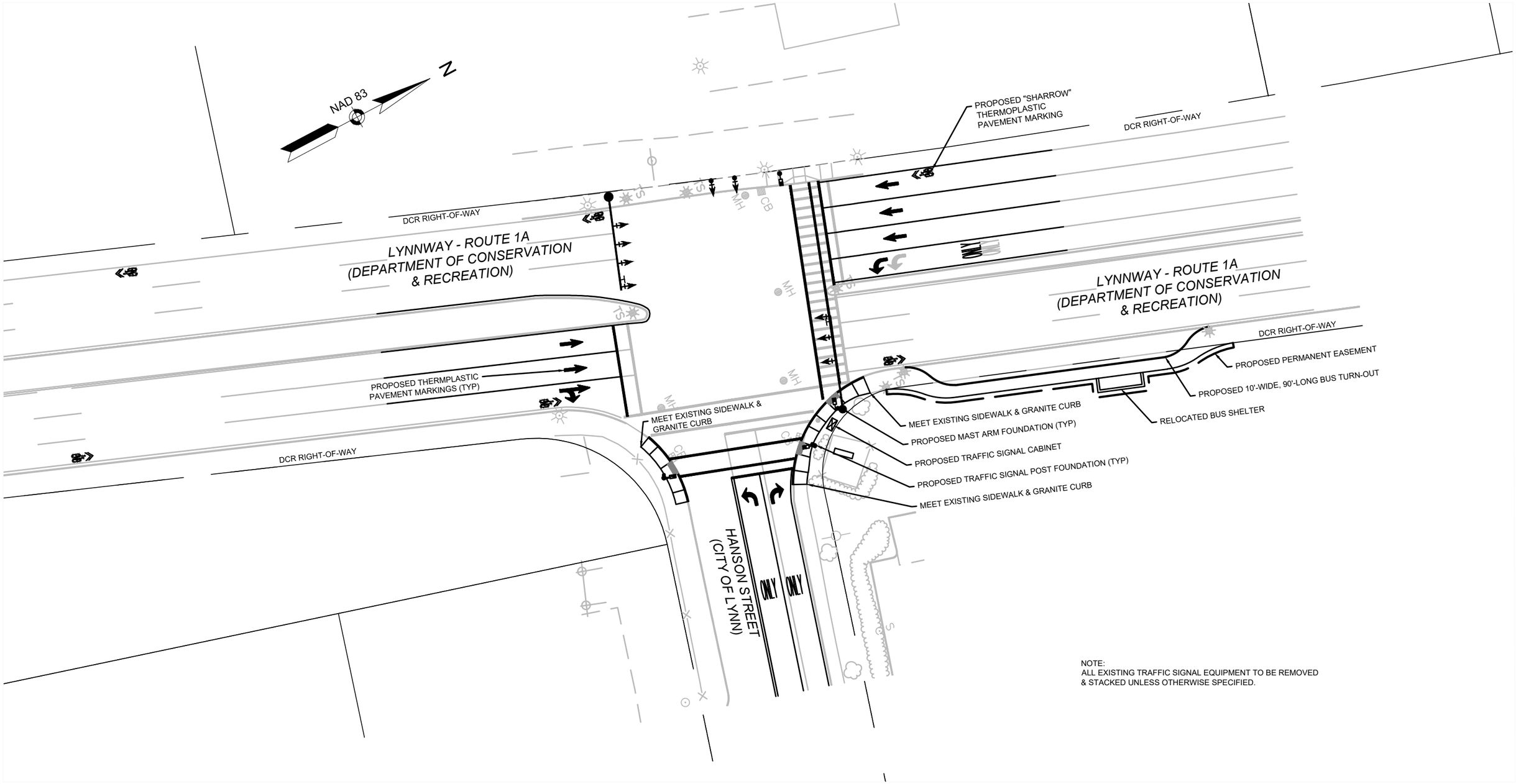

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Figure 2.2

Off-Site Mitigation
Lynnway (Route 1A) / Hanson Street

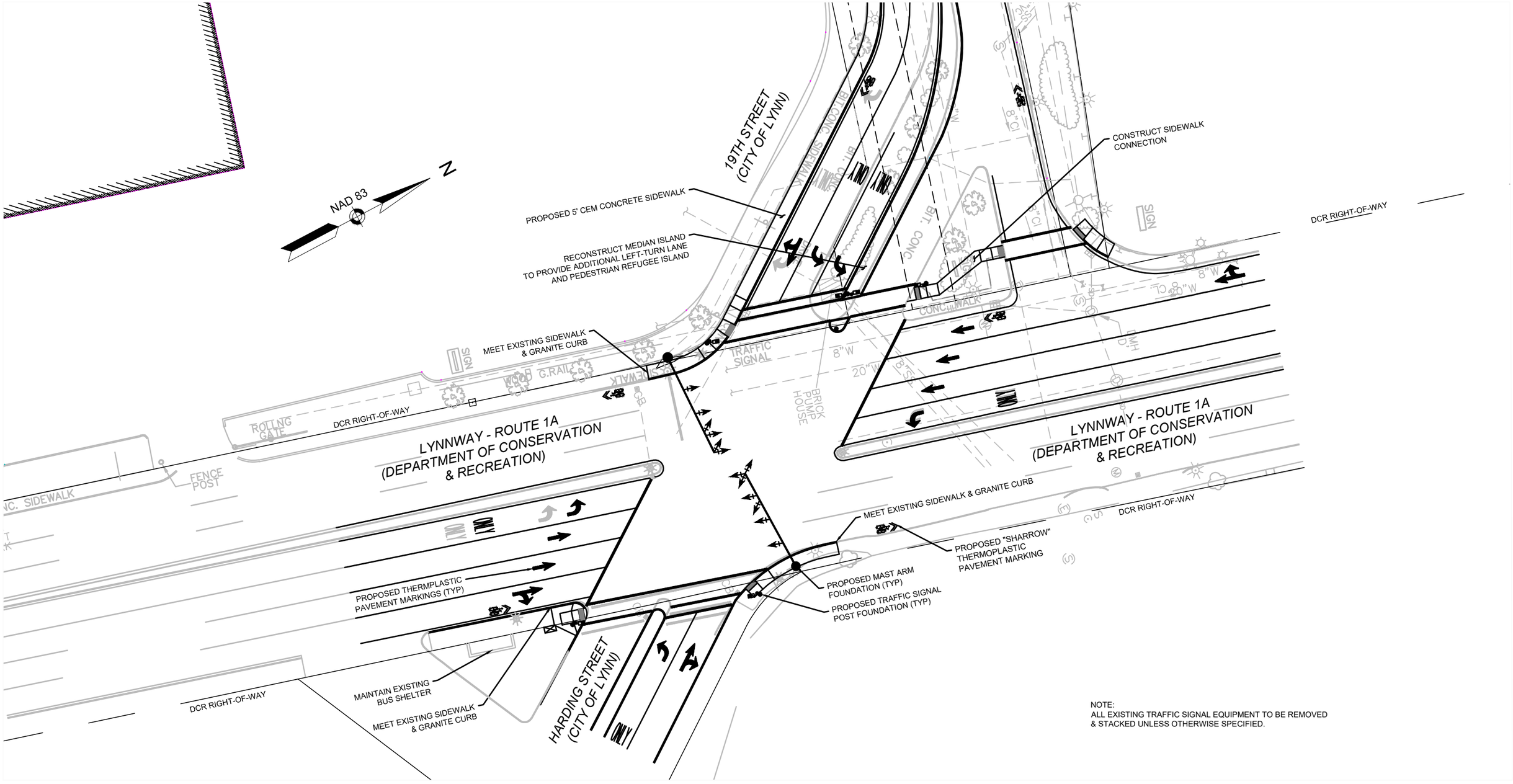

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Figure 2.3

Off-Site Mitigation
Lynnway (Route 1A) / Harding Street

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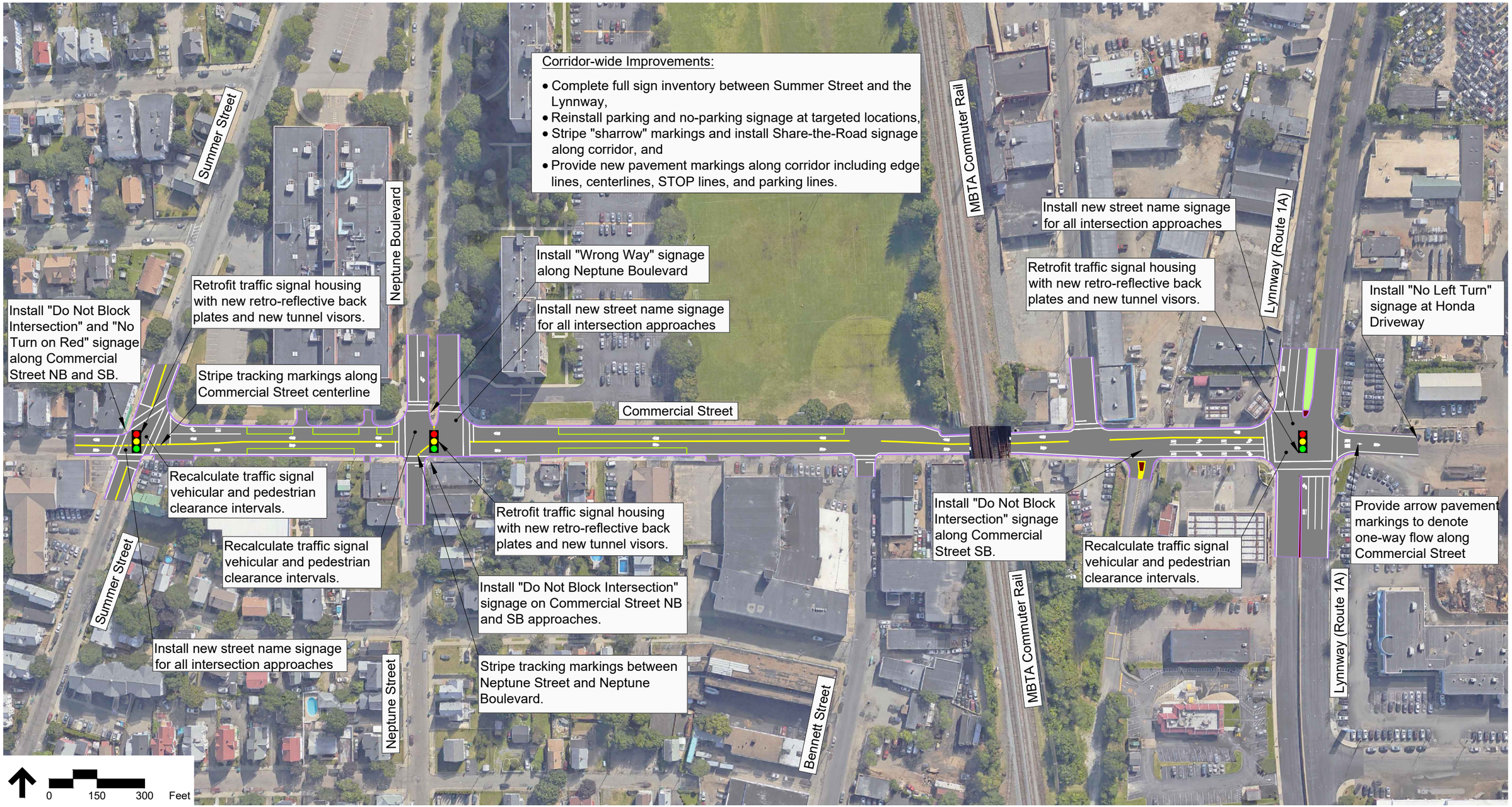

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Figure 2.4

Off-Site Mitigation
Commercial Street Corridor

3

Energy and Greenhouse Gas

This Chapter includes a revised Greenhouse Gas (GHG) analysis, a detailed description of proposed energy efficiency measures, and an analysis of alternative energy sources based on comments received on the Draft Environmental Impact Report (DEIR) from the Massachusetts Environmental Policy Act (MEPA) office, state agencies, municipalities, and other stakeholders.

3.1 Revised Greenhouse Gas Analysis

A revised GHG emissions analysis was performed for the Project, consistent with the EOEEA "Greenhouse Gas Emissions Policy and Protocol" (May 5, 2010; the "Policy"). The Project will consist of 1,260 residential units in six buildings and a mix of other uses, including an 18,000-sf clubhouse and lounge, a 43,313-sf sports club, a 13,860-sf management office/retail, an 11,250-sf maintenance space, 3,500-sf pool house and 7,800 square feet of neighborhood retail space. The revisions since the DEIR include:

- Space heating energy use for the six residential buildings has been increased and matches typical values for multi-family residential buildings (The updated eQUEST model runs for each of the buildings is provided in Appendix A);
- The PV solar analysis was revised using current installed-cost data; and
- The solar thermal analysis was revised to include asset depreciation in the net income and to use the updated space heating energy use for the residential buildings.

The GHG Policy requires a project to quantify carbon dioxide (CO_2) emissions and identify measures to avoid, minimize or mitigate such emissions, quantifying the effect of proposed mitigation in terms of energy savings and emissions reduction. The GHG Emissions Policy and Protocol requires quantification of GHG emissions from three sources: direct emissions from on-site stationary sources, indirect emissions from energy generated off-site (electricity), and traffic generated by the Project. The Project's GHG emissions will include:

- Direct emissions of CO_2 from natural gas combustion for space heating and hot water;
- Indirect emissions of CO_2 from electricity generated off-site and used on-site for lighting, building cooling and ventilation, and the operation of other equipment; and

- Transportation emissions of CO_2 from Project traffic.

Energy use and CO_2 emissions are detailed for each building, parking garage and parking lot, and transportation-related CO_2 emission calculations are provided in Appendix A. Table 3.1 summarizes total CO_2 emissions for the Project, for the Base Case (buildings that comply with the Code), and the Mitigation Alternative (includes all energy saving measures). The eQUEST model input files have been provided to the Massachusetts Department of Energy Resources (DOER).

The Proponent commits to the CO_2 reduction presented in Chapter 6 of this FEIR, but retains the flexibility to achieve this goal using energy efficiency measures that may be refined at the stage of detailed design. Table 3.1 demonstrates that the Mitigation Alternative will reduce stationary source CO_2 emissions by 20.1%, compared to the Base Case.

The Transportation Demand Management (TDM) measures and intersection improvements in the traffic study area identified in more detail in Chapter 2, Section 2.4.3, will reduce Project-related motor vehicle CO_2 emissions by 19.8%. The net reduction of the Project's total CO_2 emissions (stationary sources plus transportation) is 20.1% compared to the Base Case.

TABLE 3.1 GREENHOUSE GAS (CO_2) EMISSIONS SUMMARY (TONS/YEAR)

Source	Base Case	Mitigation Alternative	Change in GHG Emissions
Direct Emissions	1,275.0	1,147.4	-10.0%
Indirect Emissions	9,180.2	7,239.7	-21.1%
Subtotal Direct and Indirect Emissions	10,455.2	8,387.1	-19.8%
Transportation Emissions	940.8	754.6	-19.8%
Total CO_2 Emissions	11,396.0	9,141.7	-19.8%

3.2 Energy Efficiency Measures

As detailed in the GHG study, the Project design includes the following building design and operational energy efficiency measures (EEMs):

- Higher efficiency building envelope;
- Higher-efficiency heating and cooling systems;
- Higher-efficiency hot water heaters;
- Using interior lighting systems with a lower light power density;
- Installing Energy STAR appliances;
- Using LED lighting;
- Sealing, insulating, and testing HVAC supply ducts;
- Employing a light-colored membrane roof (cool roof);

- Installing energy management systems;
- Supporting tenant recycling efforts;
- Use of water conserving fixtures;
- Setting aside solar-ready roof space for a 600-kW PV system on the PS2 parking garage and pursuing a third-party PV installation.

The following subsections present a summary of the DEIR responses to comments.

3.2.1 Energy Recovery

Heat recovery ventilation will likely be a component of the final MEP design for the residential units.

3.2.2 Responsive Systems and Controls

Economizers will be included in all HVAC systems. Demand control ventilation (DCV) is only required in buildings with high occupant densities (over 25 persons per 1,000 sf), such as auditoriums and theaters. Most of the buildings in this development are residential and occupant densities for residential use are well below the threshold for DCV.

3.2.3 Insulation

The proposed wall insulation of R13+R11ci exceeds the new building code (9th edition) wall insulation requirements and the proposed roof insulation meets the new code. An eQUEST model run for a large multi-family residential building reveals that increasing the roof R value to 36 provides less than a one percent improvement in energy efficiency and CO_2 emissions reductions, an insignificant change.

3.2.4 Financial Incentives

The Proponent will contact National Grid to investigate energy efficiency measures and incentives to further improve envelope mitigation and other efficiency improvements as part of the detailed design of the project. Examples include incentives for cold climate air source heat pumps and combine heat and power (CHP) systems (See discussion in Section 3.3 below).

3.2.5 Transportation Demand Management

Chapter 2, Section 2.4.3, provides additional details on the transportation demand management (TDM) measures included in the GHG analysis. For example, the Proponent has committed to include electrical vehicle charging stations for 2 percent of the parking space within the Project Site, and will continue to evaluate installing additional vehicle charging stations at other strategic locations as part of the project design in the future.

3.3 Alternative Energy Sources

The potential for alternative and renewable energy sources to be incorporated into the Project has been examined. The Project is only at an early conceptual level of design, and for this reason the solar photo voltaic, combined heat and power, solar hot water systems and air source heat pumps will be studied further at the stage of detailed building design. Each of these are discussed below.

3.3.1 Solar Photo Voltaic Analysis

The DEIR GHG study included a detailed financial evaluation of the useable roof area for all the buildings included in project. The PV cost feasibility analysis has been redone for a kW size that is in the middle of the range of 60 kW and 493 kW identified for building roofs. The proponent is committed to having solar ready roof space on the PS-2 parking garage for a 600-kW PV system. The Proponent will also consider PV for the residential building rooftops.

The challenges of PV development in multi-tenant buildings is discussed in detail of the FEIR GHG report (starting on page 40) provided in Appendix A.

3.3.2 Combined Heat and Power Analysis

The Proponent will continue to investigate the viability of installing CHP in to the Project, including consultation with National Grid as the project moves to detailed design.

3.3.3 Solar Thermal Analysis

The financial analysis for the solar thermal (hot water) system has been revised to include accelerated depreciation of the capital asset. This revised financial analysis reveals that, at this time, commercial SHW system for Building C is not financially feasible due to the low annual capacity factor in eastern Massachusetts (infrequency of strong sunshine) and the high system cost.

3.3.4 Air Source Heat Pumps

Cold climate air source heat pumps (ASHPs) will be considered by the MEP engineer in the final design, considering the substantial subsidies available in the form of Alternative Energy Credits (AECs) and other financial incentives available from the MassSave program through National Grid.

3.3.5 Variable Refrigerant Flow

Variable Refrigerant Flow (VRF) is not proposed for the Project's HVAC systems. This technology is not generally favored by MEPs in this region for two reasons, as discussed in a recent Pacific Northwest National Laboratory report prepared for the GSA ("Variable Refrigerant Flow Systems," December 2012): (i) VRF has a higher capital cost than a comparable rooftop DX system due to the complexity of the compressor system, controls and

piping; and (ii) VRF requires long runs of refrigerant piping and this can cause problems in building design in complying with ANSI/ASHRAE Safety Standard 15-2010, triggering a requirement for refrigerant mechanical rooms under the ANSI Standard.

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Wetlands, Waterways and Climate Resilience

This Chapter includes updates to the wetland, waterways, and climate resilience analyses based on comments received on the Draft Environmental Impact Report (DEIR). The DEIR provided a detailed assessment of the Project's potential impact on wetland resource areas. The DEIR demonstrates that the Lynn Gear Works Redevelopment Site has been designed to protect the Site's wetland resource areas and waterways, meet or exceed performance standards and accounts for the potential impacts of climate change. This Chapter provides further detail on the improvements proposed as part of this Project and compliance with state agency regulations.

4.1 Wetlands

Comments from the Massachusetts Office of Coastal Zone Management (CZM) and MassDEP include a request for additional descriptions of the potential impacts of activities within the salt marsh associated with the ecologically sensitive Rumney Marshes ACEC. Since the preparation of the DEIR, a constructability analysis has been performed to advance the Project beyond conceptual design. The analysis and design revealed that both temporary and permanent impacts to salt marsh are avoidable. Work will be performed around the outfalls within coastal beach (tidal flat), coastal bank, and land subject to tidal action and will result in temporary impacts to these resource areas only. No work will take place that will permanently impact the salt marsh. Plans with cross sections of work proposed on the coastal bank/revetment, within the tidal flat, and within land subject to tidal action are included in the revised Project Plans, with clearly demarcated elevations (Figures 4.1, 4.2 and 4.3). A Notice of Intent has been filed with the Lynn Conservation Commission, demonstrating compliance with the performance standards in the regulations (310 CMR 10.00) and that no work is proposed in salt marsh.

The MEPA certificate required the FEIR to include a table that clearly identifies impacts (temporary, permanent, maintenance, and/or improvement) to all resource areas on-site

and within the ACEC, and to demonstrate that these impacts are minimized. Note that all wetlands on the property (with the exception of Land Subject to Coastal Storm Flowage) are located within the ACEC. This information is included below in Table 4.1.

TABLE 4.1 IMPACTS TO WETLAND RESOURCES

Resource Area	Permanent Impacts	Temporary Impacts	Total
Tidal Flat	0	2,008 SF (maintenance)	2,008 SF
Coastal Bank	0	794 LF (maintenance)	794 LF
Land Subject to Tidal Action	0	443 SF (maintenance)	443 SF
Land Subject to Coastal Storm Flowage	33.2 AC	0	33.2 AC
Riverfront Area	62,395 SF (improvement/restoration)	0	62,395 SF

Source: VHB
LF – Linear Feet
SF – Square Feet
AC – Acre

The MEPA certificate required the FEIR to describe the nature of all impacts, both temporary and permanent, that cannot be avoided. The following sections describe the work within jurisdictional wetland resource areas.

4.1.1 Coastal Beach (Tidal Flat)

Approximately 2,008 square feet of tidal flat will be temporarily impacted by installing cofferdams at the outfalls during repairs. This is necessary to reduce tidal influence to the work zone during the outfall repair/replacements. The cofferdams will contain the work area and minimize the potential for secondary impacts to sensitive resource areas, while allowing work to progress outside of the influence of tides. The outfalls will be replaced in-kind with reinforced concrete pipe; no rip-rap will be placed within the tidal flats. The locations of cofferdams and outfall profiles are shown in Figures 4.1 and 4.2. The timber bulkhead located adjacent to outfall 30 will be replaced in the same location.

Each cofferdam will be offset from the face of the outfall by 15 feet in order to contain the work area in the tidal flats. Installing the cofferdam will be performed from upland areas, to the extent practicable, with the intent to avoid impacts to the resource area. After installation, the work areas will be dewatered, filtering the seawater through a dewatering bag to filter out sediments before being allowed to naturally drain back into the tidal zone of the Saugus River. Construction is expected to last two months. Areas of tidal flat that are

dewatered during construction will be restored naturally once the cofferdams are removed and tidal hydrology is restored.

4.1.2 Coastal Bank

Work will occur on approximately 794 linear feet of coastal bank to repair the rip-rap revetment. Because the existing bank is armored and largely un-vegetated, only temporary impacts to the coastal bank are anticipated during repair of the armored bank. Rip-rap will be replaced along the bank, as was previously installed. The rip-rap will help ensure coastal bank stability (see Figure 4.3).

The timber bulkhead located at Outfall 30 also comprises a portion of coastal bank and will be replaced in the same location. The horizontal timber facing will be replaced, in its current position, with metal sheeting, leaving the existing vertical timber braces in place. In one area, where active erosion is occurring behind the timber bulkhead, the revetment that currently comprises the coastal bank will be stabilized with gravel wrapped in filter fabric.

The proposed redevelopment includes creating new green space within the 100-foot buffer zone to coastal bank, a portion of which overlaps with Riverfront Area. The 100-foot buffer zone to coastal bank extends onto the developed Site and will be largely converted from paved areas to vegetated open space, with public recreational access. Invasive plants, such as Russian olive, will be removed within the 100-foot buffer zone and the Project will include plantings from the CZM Coastal Bank Plant List.

The conceptual design plans with cross-sections of proposed work at the outfall locations are shown in Figure 4.2

The Coastal Bank along the perimeter is currently stabilized with placed stone and is paved on the upper surface. Areas of the rip rap have washed away, including the area behind the bulkhead. Where active erosion is taking place, the riprap will be replaced to provide a stable coastal bank. Along much of the bank, the upper surface will be replaced with vegetated open space, and will become part of the public access along the waterfront.

4.1.3 Land Subject to Tidal Action

Approximately 443 square feet of land subject to tidal action will be temporarily impacted at Outfalls 28 and 29 during construction-period cofferdam installation and repairs to the rip-rap slopes at the outfall locations. Outfalls 28 and 29 contain rocky slopes from the base of the tidal creek up to the coastal bank. The cofferdam will be installed in a portion of land subject to tidal action in order to reduce tidal influence to the work zone while replacing the outfalls. Rip-rap will be replaced along the side slopes of the outlet pipes, as was previously installed for the existing pipes, to help ensure slope stability. Work will be

conducted from upland areas and heavy equipment will not be used within the salt marsh or tidal areas. The existing concrete tide gate will be replaced with a tide gate set further inland and outside the tidal resource area.

4.1.4 Land Subject to Coastal Storm Flowage

According to FEMA Flood Insurance Rate Map (FIRM) panels 25009C0528G and 25009C0529G for Essex County, Massachusetts, effective July 16, 2014, virtually the entire Project Site is currently within the 1% annual chance floodplain. These maps indicate that the Project Site is within the AE zone with a base flood elevation of 10 feet NAVD88. Ground survey indicates that portions of the Project Site are at 10-12 feet NAVD88. The areas below 10 feet comprise the Land Subject to Coastal Storm Flowage (LSCSF) wetland resource area.

Areas of LSCSF to be redeveloped are paved and previously disturbed. Prior MEPA documentation prepared for the Project Site, including the ENF and DEIR, reported the area of work to occur within LSCSF as 26.6 acres. This was based upon Site conditions with buildings present. Recent elevation survey data, following the demolition of the buildings on-site shows that much of the former building foundations are now below the base flood elevation. Therefore, using the current condition of the Project Site as the baseline for calculating the area of LSCSF, proposed work will occur within 33.2 acres of LSCSF.

The elevation of the first floors of all buildings, with the exception of the community waterfront amenity building, will be set at 12 feet NAVD88, taking into account sea level rise, increasing resiliency and reducing the risk of coastal flooding impacts resulting from the 1% annual chance flood. As detailed in the DEIR, sea level rise projections were combined with information about existing soil conditions, geotechnical constraints, stormwater management system design requirements, current and future building code requirements, accessibility considerations, and adjacent Site/roadway grades. Adding fill to the Project Site to raise it to elevations 10 to 12 feet will reduce the risk of tidal flooding during the Project's design life. The Project will create stormwater features within LSCSF, such as bio retention basins and gravel stormwater wetlands, and create new green space with plantings from the CZM Coastal Bank Plant List. As a result of the Project, impervious area will decrease by approximately 1.0 acre, for a total 23.2 acres of pervious area on the 65.6-acre Project Site.

4.1.5 Riverfront Area

The proposed redevelopment includes improvements to the riverfront area (RA) and improved stormwater management over the entire Project Site. The portion of the RA that extends onto the developed Site has been designed to be largely converted from paved area to vegetated open space with public access to the riverfront. Approximately 34,738 square feet of pavement will be converted to vegetated open space, of which 12,565 square feet will be within the 100-foot RA. The Project will reduce impervious coverage by approximately 0.76 acres within the RA. Work within the RA, including the improvements and the outfall replacements, will take place in previously developed areas and total approximately 62,395 square feet. Invasive plants, such as Russian olive, will be removed within the RA. The Project will include plantings from the CZM Coastal Bank Plant List within the RA. An open air waterfront pavilion has been integrated into the design to increase public access to the RA and provide views of the Saugus River.

Work within the RA complies with WPA performance standards applicable to redevelopment of the RA pursuant to 310 CMR 10.58(5). A small portion of the Project Site in the southeastern corner is within Chapter 91 licensing jurisdiction and, therefore, exempt from the RA performance standards pursuant to 310 CMR 10.58(6)(i). However, this area constitutes an insignificant portion of the Project Site and the redevelopment of the remainder of the RA on the Project Site is subject to the jurisdiction of the WPA.

MassDEP and MEPA requested consideration of alternative internal road alignments that would relocate the roadway outside of the RA and 100-foot buffer zone to coastal bank. The existing Site conditions and previous industrial uses of the Site have impacted the RA and other resource areas on-site. The proposed roadway location balances a number of important factors (public access to the waterfront area, improved stormwater management, increased open space, decrease in impervious surfaces, vehicular movements and parking), and shifting the road further to north would not result in a significant improvement in the RA, when taking into consideration these important factors and various land uses. While the Community Waterfront building and its associated parking lot with handicapped parking is located within the RA, it is designed for the specific purpose of increasing access to and along the waterfront, which is previously altered and impacted RA, where no public access currently exists, and provides a valuable public amenity at the Project Site.

4.1.6 Salt Marsh

No permanent or temporary impacts to salt marsh are anticipated with this design.

4.2 Waterways

The Project Site includes two areas of tidelands subject to jurisdiction of M.G.L. Chapter 91, the footprint of a filled tidal creek that crossed the Site until it was filled in the mid-1940s and the Project shoreline which includes the flowed tidelands/waters of the Saugus River.

The ENF and the Draft EIR included a delineation of the filled and flowed tidelands at the Site, summarized Chapter 91 jurisdictional areas at the Project Site, described the proposed construction and changes in use within filled and flowed tidelands and provided a detailed analysis of the Project's compliance with the licensing provisions of Chapter 91.

The Secretary's Certificate on the DEIR requested additional information on the following topics germane to Chapter 91:

- Calculations describing the footprint of filled and flowed tidelands on the Project Site;
- A detailed description of the Project's public benefits as required by the Public Benefit Regulations at 301 CMR 13.00.
- A detailed description of the Project's compliance with the Waterways Regulations at 310 CMR 9.32(1)(e) pertaining to work within filled and flowed tidelands in a state-designated Area of Critical Environmental Concern (ACEC)
- Description of the planned open space and associated infrastructure to demonstrate how the Project can be designed to ensure the open space and waterfront access clearly signifies that it is public and encourages community use.

The following sections respond to the Secretary's requests for additional information regarding tidelands.

4.2.1 Filled and Flowed Tidelands

The Project Site contains extensive flowed tidelands associated with the Saugus River extending from the surveyed mean high water mark to the lower-low water mark of the river. Filled tidelands at the Site are limited to the footprint of the historic tidal creek that crossed the Site prior to filling and construction of the prior industrial facility in the 1940s. The locations of these jurisdictional areas are shown on Figure 4.4.

The Draft EIR (Figure 8.1) depicted two alternative historic high water marks. One was based on the 1849 and 1850 US Coast Surveys, published by MassGIS and considered the presumed historic high water mark and jurisdictional boundary for Waterways licensing. The second was the high water mark from an 1892 survey prepared by J.K. Harris, titled "The Lynn Marshes". While inconsistent with the MassDEP presumed high water mark, this 1892 survey is generally consistent with a number of maps and charts prepared by

the US Coast and Geodetic Survey published until the 1940s. The 1892 Lynn Marshes survey puts more of the Site within a geographic area subject to jurisdiction.

The regulatory definition for Historic High Water Mark at 310 CMR 9.02 directs MassDEP as follows in determining jurisdiction:

> *"In areas where there is evidence of such alteration by fill, the Department shall presume the historic high water mark is the farthest landward former shoreline which can be ascertained with reference to topographic or hydrographic surveys, previous license plans, and other historic maps or charts…"* (emphasis added)

The 1892 Lynn Marshes survey depicts a high water mark further landward than the 1849 and 1850 US Coast Surveys and places more of the Site within a geographic area subject to Chapter 91 jurisdiction. Accordingly, this 1892 survey, which is more inclusive, has been used in the tidelands analysis in the Draft and Final EIR. This jurisdictional boundary is subject to confirmation by MassDEP during the Chapter 91 Licensing process. Table 4.2 provides the areas of filled and flowed tidelands on the Project Site.

TABLE 4.2 FILLED AND FLOWED TIDELANDS

Site Component	Area (ac)
Project Site	**65.0**
Area landward of Historic High Water	38.3
Area seaward of Historic High Water	26.7
Chapter 91 Jurisdiction	**26.7**
Filled Tidelands	0.7
Flowed Tidelands	26.0

The location and extent of filled and flowed tidelands on the Project Site are shown in Figure 4.4

4.2.2 Area of Critical Environmental Concern (ACEC)

The Project Site includes filled and flowed tidelands located, in part, within the Rumney Marsh ACEC. Figure 4.5 shows the Project Site, filled tidelands, and the boundary of the ACEC. Those tidelands are therefore subject to the provisions of the Waterways Regulations at 310 CMR 9.32(1)(e). This regulation establishes categorical restrictions for licensing projects within an ACEC. The following section lists the relevant sections of the regulation pertinent to the filled and flowed tidelands within the ACEC and provides a summary of the Project's compliance with each.

1. *Fill or structures for any use on previously filled tidelands;*

This provision applies to proposed activities on filled tidelands located landward of the existing mean high water mark of the Saugus River.

5. *Privately-owned structures for other water-dependent use below the high water mark, provided that:*

    a. *the proposed use is not industrial and is located within the footprint of existing previously authorized pile-supported structures, unless an insignificant deviation from said footprint is authorized by the Department in order to protect public health, safety, or the environment; or*

    b. *such structures are necessary to accommodate infrastructure facilities, provided that such structures are designed to minimize encroachment in the water; or*

As described in the Environmental Notification Form and the Draft Environmental Impact Report, the Project Site includes three existing licensed stormwater outfalls (identified as Outfall #28, #30 and #31) and one licensed, now-sealed sea-water return outfall (identified as Outfall #29). Each of these outfalls include previously licensed fill and/or structures to support the outfall. The Project includes the replacement of each of these structures in-kind and within the same footprint as the existing, licensed structures. The proposed outfall replacement and reconstruction is planned to be completed under the maintenance and, to the extent necessary, minor modification provisions of the Waterways Regulations at 310 CMR 9.22. No new structures or fill is proposed and we understand that no new Chapter 91 License will be required for the replacement in-kind of the existing outfalls.

While no new license is anticipated for work in flowed tidelands, the proposed use of the existing and replacement outfalls complies fully with the provisions of 310 CMR 9.32(1)(e) because they support the planned residential use of the Project Site and:

- They are not industrial in nature;
- They are located within the footprint of existing licensed fill;
- The structures are necessary to accommodate the operation of a stormwater management system – an infrastructure facility as defined at 310 CMR 9.02;
- By replacing the existing outfalls within the existing and licensed footprint, the Project will minimize temporary and avoid permanent encroachment into the water;

Based on the forgoing information, the Project fully complies with the provisions of 310 CMR 9.32(1)(e) for the work in the ACEC.

4.2.3 Public Open Space

The Project includes the dedication of approximately 1.8 acres of publicly accessible waterfront along the Saugus River that is intended to be available from dawn until dusk, or as determined in the Chapter 91 license. The location and planned landscaping for the Waterfront Area is shown in Figure 1.3. The current design includes an extensive network of shared-use paths, dedicated parking available to the public and a waterfront pavilion to encourage passive recreation such as picnics and small gatherings.

Vehicular access to the Waterfront Area will be from the Lynnway and will be signed appropriately. No gates, fences or other impediments to public access will be installed in a way which would discourage public use. The anticipated Chapter 91 Waterways License application will include additional detailed plans and renderings depicting the public access points.

4.2.4 Public Benefit Review and Determination

The Project is subject to the Secretary's review under the provisions of the 2007 Massachusetts statute "An Act Relative to Licensing Requirements for Certain Tidelands" (2007 Massachusetts Acts Chapter. 168, Section 8) (the Act). The Project must comply with the regulations at 301 CMR 13.02(1) because it is located, in part, upon filled tidelands. Accordingly, the Project requires a Public Benefit Determination from the Secretary as stipulated in the regulations at 301 CMR 13.00.

The Secretary is required to consider the following criteria/factors when making a Public Benefit Determination for projects requiring an Environmental Impact Report located on filled tidelands within thirty (30) days of issuance of the FEIR Certificate:

- Purpose and effect of the development;
- The impact on abutters and the surrounding community;
- Enhancement of the property;
- Benefits to the public trust rights in tidelands or other associated rights;
- Community activities on the development Site;
- Environmental protection and preservation;
- Public health and safety, and
- General welfare.

The following sections describe how these public benefits comply with the statutory requirements of the Act and will be properly protective of the public trust rights inherent in tidelands.

Purpose and Effect of the Development

The purpose of the Project is to provide private residential and public recreational opportunities within former industrial land that that has been vacant and underutilized since 2011. The Project will revitalize approximately 38.4 acres of a 65.5-acre waterfront property within a section of Lynn poised for new development. The positive public effects of the Project include:

- Reactivation of approximately 600 linear feet of the Saugus River Waterfront for public access, where none presently exists in an area that has been fenced off and closed to the public since at least 1941. This includes new driveway access, a parking area and a community waterfront amenity building/pavilion;
- Redevelopment of approximately 38.4 acres of former industrial land as an active transit oriented residential project;
- Stormwater infrastructure improvements resulting in a net benefit to stormwater quality discharged to the Saugus River;
- Increase tax revenue from approximately 1,260 new residential units; and
- Creation of approximately 600 to 800 full-time construction jobs.

Impact on Abutters and Community

The Project is expected to have a net beneficial effect on abutting properties and the Lynn community at large through the redevelopment of the 38.4-acre Site. These benefits are, in part, related to the revitalization of the Project Site from largely vacant industrial land, to a new active residential community. The redevelopment will have the following direct benefits on Project abutters:

- The opening of a new public waterfront access point on the Saugus River including parking and a community waterfront amenity building/pavilion;
- The opening of a new shared-use waterfront path for public use;
- Increased activation, pedestrian and vehicular uses on the approximately 38.4-acre Site, resulting in improved security along the rear of the adjacent Lynnway commercial properties;
- Anticipated increased property values on adjacent commercial, industrial and vacant parcels; and

- Creation of a catalyst to expanding the use of the existing private train station and assuring that the access rights exist if municipal officials desire a future public train station.

The Project is anticipated to have to the following net benefits on the Lynn community at large:

- Increased tax revenue for the City from approximately 1,260 residential units;
- Transportation and utility infrastructure improvements at and adjacent to the Project Site;
- Conversion of vacant industrial site to vibrant transit oriented residential use;
- Creation of approximately 600 to 800 full-time construction jobs;
- Elimination of infiltration to the existing sewer line through the complete replacement of the sewer line; and
- Improved water quality in the Saugus River from the improvements to the on-site Stormwater Management System.

Enhancement of the Property

The Project will result in substantial enhancements to the property. Under existing conditions, the Site is dominated by the remnants of the prior industrial use, including abandoned utilities, building pads and foundations, and demolition debris. Furthermore, the Site is fenced along the waterside boundary and not readily accessible by the public in a safe manner. The property's shoreline contains outfalls in various stages of disrepair, creating an unsafe and unstable condition prone to continued degradation and substantial erosion of the embankment and potential impacts to the adjacent salt marsh.

Under proposed conditions, the Project Site will be substantially improved. The remains of the former industrial uses will be demolished and reused or removed from the Site. All safety hazards and impediments to public waterfront access will be removed and a new vehicular and pedestrian access point provided. The Project Site will be redeveloped in a thoughtful and attractive way improving the visual aesthetics of the Property, substantially improving the Site with a higher and greater use than under existing conditions.

Benefits to the Public Trust Rights in Tidelands or Other Associated Rights

The Project will result in a substantial improvement in public benefits in tidelands through the reactivation of approximately 30,400 square feet of filled private tidelands from their existing industrial and inaccessible condition, to an active mix of public and private uses. The Project will make publicly accessible approximately 600 linear feet of existing shoreline

which includes approximately 25 linear feet of filled tidelands within the footprint of a filled tidal creek. The Project shoreline will include a public Waterfront Area occupying approximately 1.8 acres, which is contemplated to be open from dawn until dusk daily.

The Project design will meet the Chapter 91 regulations and will not have any private tenancies within 100 feet of the Project shoreline or in the water-dependent use zone.

Approximately 3,500± square feet of the 1.8-acre public Waterfront Area is within filled tidelands. While the majority of this Waterfront Area is located outside filled tidelands and therefore not subject to Chapter 91 jurisdiction, the proposed public access will be indistinguishable, significantly enhancing the value and utility of the relatively limited area of filled tidelands subject to Chapter 91.

While the footprint of filled tidelands at the Project Site is approximately 30,800 square feet, the public waterfront park will be approximately 78,400 square feet, roughly 2.74 times the jurisdictional area. Accordingly, the Project will result in a significant improvement in the public use of the Saugus River Waterfront and the filled tidelands therein.

Community Activities on the Site

The Project will include an approximately 1,500-square foot Community Waterfront Amenity Building/Pavilion with 10 associated parking spaces. This open-air facility will be available for public use and public access from dawn till dusk.

Environmental Protection/Preservation

The Project will protect the human and natural environment by implementing a transit - oriented development designed and constructed to meet all applicable local, state and federal environmental protection standards. Compliance with these standards is required by multiple ordinances and state and federal regulations. The Project has been designed to reflect climate change, sea level rise and a reduction in greenhouse gas generation. In addition to this requirement under the Public Benefit Provisions, the Waterways Regulations at 310 CMR 9.33(1) require any project subject to licensing comply with all applicable Environmental Protection Standards. Table 4.3 provides a list of all anticipated permits and approvals required for the Project.

TABLE 4.3 ANTICIPATED PERMITS AND APPROVALS

Agency	Permit/Approval/Review
Federal	
Environmental Protection Agency (EPA) – Region I	National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Permit
US Army Corps of Engineers	Section 404 General Permit
State	
MEPA Office	Certificate on the FEIR (this filing)
Department of Environmental Protection	Chapter 91 License
	Section 401 Individual Water Quality Certificate
Massachusetts Department of Conservation and Recreation	Application for Construction and Roadways Access
	Traffic Signal Regulation
Secretary of Transportation	Approval for Construction on Former ROW Chapter 40 Section 54A
MBTA/MassDOT Commuter Rail	Memorandum of Understanding (MOU)
Natural Heritage and Endangered Species Program	Notice of Intent - Massachusetts Endangered Species Act Review
Massachusetts Office of Coastal Zone Management	Federal Consistency Review
Massachusetts Water Resources Authority	8(m) Permit
Local	
Lynn Conservation Commission	Order of Conditions
City of Lynn	Zoning: Site Plan Review per Sections 16A and 16B
	Building Permit
	Sewer Connection Permit

Public Health and Safety

The Project will promote public health and safety by redeveloping a largely vacant industrial site that is unattended and contains the remnants and some demolition debris from the prior industrial use.

The Project will demolish and physically remove the remains of the prior industrial use and remedy and address any state-regulated oil and hazardous materials found on the Site in accordance with the Massachusetts Contingency Plan and the Activities and Use Limitation recorded in the chain of title for the property.

In addition to the elimination of any potential hazards, the Project will be developed in a manner consistent with good engineering practice, local, state and federal safety standards and in accordance with applicable provisions of the Americans with Disabilities

Act (ADA). In summary, the Project will eliminate potential hazards to public health and safety present at the Site and develop a modern, inherently-safe residential community. All private and publicly accessible areas will be designed to meet applicable building and safety codes.

General Welfare

The Project will enhance the protection of the general welfare by completing the demolition of the remnants of the former industrial use, removing the demolition debris and associated hazards that may persist in the absence of the redevelopment, and implementing a long-term condition consistent with the Activities and Use Limitation (AUL) on the Site. As described above, the Site design avoids the use of stormwater infiltration measures to minimize the potential for the migration of any contaminants associated with past uses.

The Project will redevelop the Site, creating a safe transit oriented residential development, while providing public access to and along the waterfront where none exists today.

Protection of Groundwater

The Project Site has high groundwater elevations, being adjacent to the Saugus River and associated wetland resources, which are unlikely to be adversely affected by the Project because the design does not include any groundwater cut-off walls or other features that would preclude the free-flow of groundwater within the Site.

Furthermore, the Project Site contains known past releases of oil and hazardous materials subject to regulation under the Massachusetts Contingency Plan (310 CMR 10.40) and an Activities and Use Limitation. Stormwater infiltration could exacerbate conditions and encourage the migration of known contaminants into groundwater. Therefore, in light of the existing high groundwater elevations and the potential adverse effects related to use of stormwater infiltration systems at the Site, their use has been avoided to the extent practicable, thereby protecting groundwater from the potential for additional contamination.

Summary

The Project will meet the requirements of 2007 Massachusetts Acts Chapter 168, Section 8, provide appropriate public benefits, and be adequately protective of the public trust rights inherent in tidelands as described herein.

4.3 Climate Resilience

Comments from CZM, MassDEP and Lynn United for Change requested additional assessment of adaptation and resiliency measures. The sections below address the feasibility of increasing the elevation of the Site by up to three feet. It also includes a more robust discussion of other potential measures being considered by the Proponent and how they would address potential vulnerabilities.

4.3.1 Site Elevation

Due to the presence of the highly compressible soil and geotechnical constraints, a maximum fill elevation of 12 was selected, which is approximately two feet above existing grade and is designed to reflect potential sea level rise accommodation. Setting the finish floor elevation of the buildings at that same elevation allows for flush entryways and effective accessibility. The limiting factors for increasing ground elevations at the Project Site are soil conditions and drainage geometry. A geotechnical report and investigation completed by GZA GeoEnvironmental, Inc. identified compressible organic and silty clay soils that would cause significant settlement, if Site grades were raised more than approximately two feet. Within the proposed building footprints, existing grades generally range between elevations 9 and 10 NAVD88 (see Figure 4.6).

As shown in Figure 4.7, the Project Site was graded so that roadways, sidewalks and landscape areas would transition from existing grades around the perimeter of the property up to building finish floor elevations of 12. Minimum acceptable engineering cross and longitudinal slopes were used to keep Site grades as high as possible relative to the buildings' finish floor elevation, while maintaining adequate slopes for drainage.

4.3.2 Flood Proofing Measures

The Secretary's Certificate on the Lynn Gear Works DEIR requires that the FEIR consider additional flood control measures for inclusion in the design to minimize the potential impacts of flooding. This section describes the Project as currently envisioned and discusses options for further mitigating the impacts of future storm flooding due to projected sea level rise. Site design elements, such as an elevated ground plane and first floor elevations up to two feet above the current base flood elevation (BFE) will greatly reduce the risk of flooding on the Site for several decades. Further, the Project has been designed to accommodate the additional flood-proofing options below in the event that the Site becomes vulnerable to flooding in the future.

Current Proposal

The current BFE on the Site is elevation 10 feet NAVD88. Existing Site elevations range from 8 feet to 10 feet. In order to reduce the risk of flooding due to extreme coastal storms, the Project will include the placement of approximately two feet of clean fill, raising the elevation to between 10 and 12. In addition, the elevation of the first floor of all buildings, with the exception of the community waterfront amenity building, will be set at 12 feet.

The Project is anticipated to be completed in five phases, with Phase V expected to be completed in 2023. Multi-family residential structures like those proposed for this Project are generally expected to have a lifespan of approximately 60 years.Under some predictions, climate conditions up to around the year 2082 may have an impact on the Project, and by the 2080s the BFE at the Site may exceed elevation 12. Although the proposed elevations of the Site and first floors reduce the risk of flooding resulting from the 1% annual chance flood until nearly late-century, these strategies may not eliminate potential flood risk. Therefore, additional adaptation measures are being considered if predictions become reality between 2050 and 2080.

The DEIR offered that "…permanent and/or temporary protective barriers (e.g. Aquafence) may be strategically placed to mitigate the impacts of future storm flooding, and additional floodproofing could be incorporated into building design." Such additional floodproofing options are described below in more detail.

Additional Flood Proofing Options

The Site has been designed so that dry floodproofing measures could be deployed if warranted by future conditions at three different scales: Site Perimeter, Building Exterior, and Individual Buildings (see Figure 4.8). Various types of movable and permanent barriers could be deployed at these scales, as described further below.

- Dry Floodproof at Site Perimeter: One option would be to deploy continuous flood shields around the Site perimeter. Mechanical, electrical, and plumbing (MEP) penetration points between buildings would be sealed. Each building would provide the required number of egress routes up and over deployable flood shields.
- Dry Floodproof at Building Exterior: Another option would be to deploy flood shields at the building perimeter and set back from building exterior wall. MEP connections between buildings would be dry floodproofed and penetration points sealed. Each building would provide the required number of egress routes up and over the deployable flood shields.
- Dry Floodproof at Individual Buildings: A third option would be to harden the building exterior wall and install deployable flood shields at all openings (doors, windows, etc.).

Installing a waterproof membrane at the building facade would provide additional redundant protection and impermeability. Floodproofing sub-grade spaces and MEP lines between buildings would be required to secure flood protection below grade. Sewer backflow valves would be installed while allowing easy access for maintenance. Elevator equipment would be protected by either elevating essential systems above the DFE or encasing it in a floodproofed enclosure below the DFE.

While advances in flood barrier technology are to be expected by mid-late century, when the Project Site could become vulnerable to flooding from extreme storms, products are already on the market that could provide the protection that may be needed. The three main types of flood barriers are movable, demountable, and permanent, as described below.

- Movable Flood Barriers: Movable flood barriers are temporary in nature and are the most flexible option, as they can be set up in virtually any location without the need for permanent anchors. Various systems include hard and soft plastic barriers and inflatable barriers, some of which are shown in Figure 4.9.
- Demountable Flood Barriers: Removable or "demountable" flood barriers are engineered to provide similar levels of protection to permanent flood defenses, but with the advantage of being fully removable when not required. They are ideal for situations where semi-permanent installation is required, as permanent mounting hardware is required. They can be retrospectively fitted to existing building openings or configured as a continuous flood wall. This category of barriers includes products by Flood Control International and Aqua Fence shown in Figure 4.10.
- Permanent Flood Barriers: Permanent flood barriers would likely be deployed around the Site perimeter, and could include flip-up barriers and/or green levees. Self-rising flip-up barriers provide unrestricted access to pedestrian and vehicle entrances. A single flip-up flood barrier system can protect openings up to 40 feet wide and multiple systems can be linked with intermediate posts to create a flood defense run of almost any length. Depending on span, flood defense heights of up to 6.5 feet are currently available. Levees combined with enhanced wetlands and pedestrian and recreational amenities could also act as flood barriers. Such an approach to flood protection requires coordination with adjacent property owners. Figure 4.11 provides examples of permanent flood barriers.

The Proponent will implement the appropriate resiliency measures when conditions require them.

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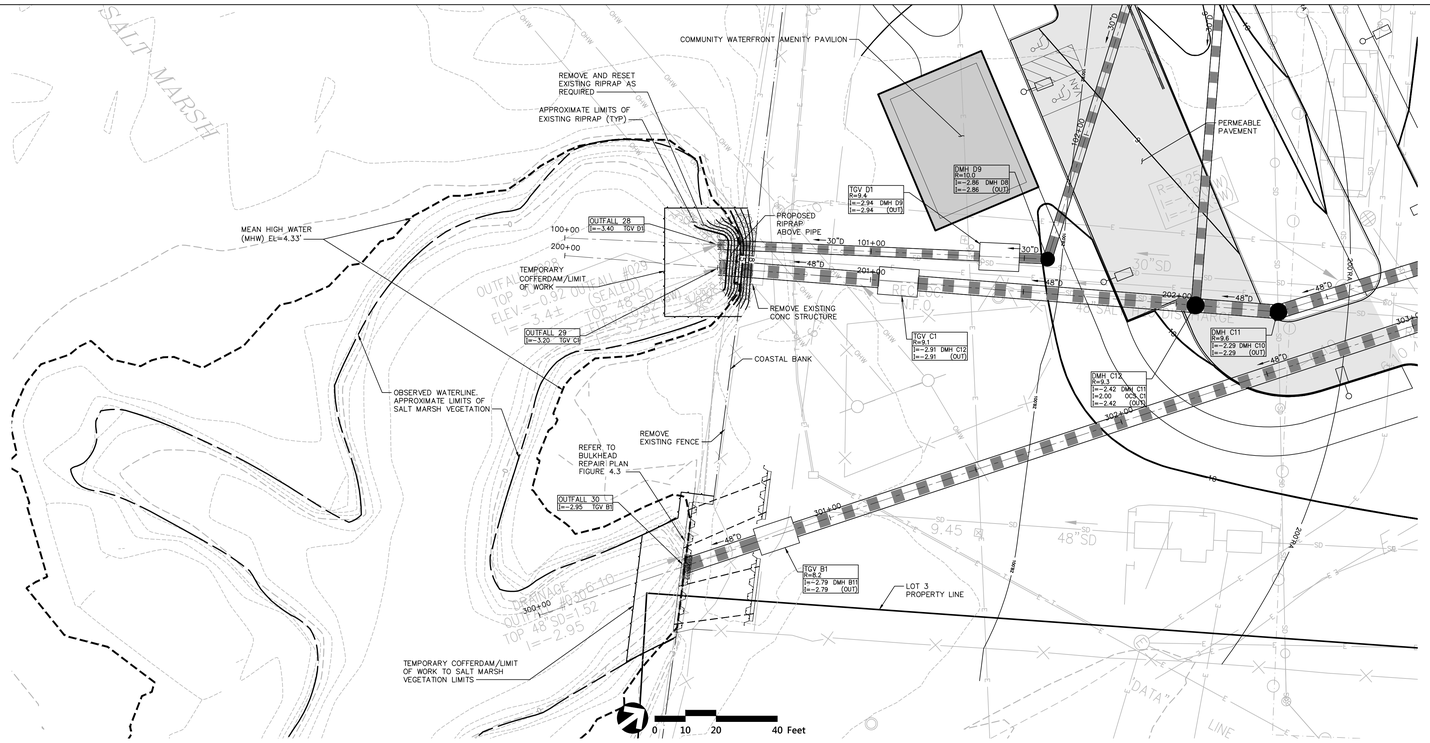
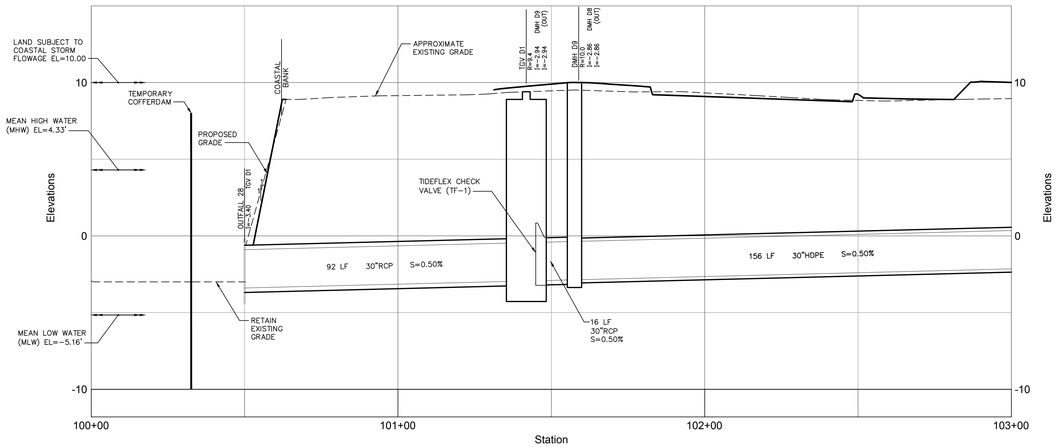
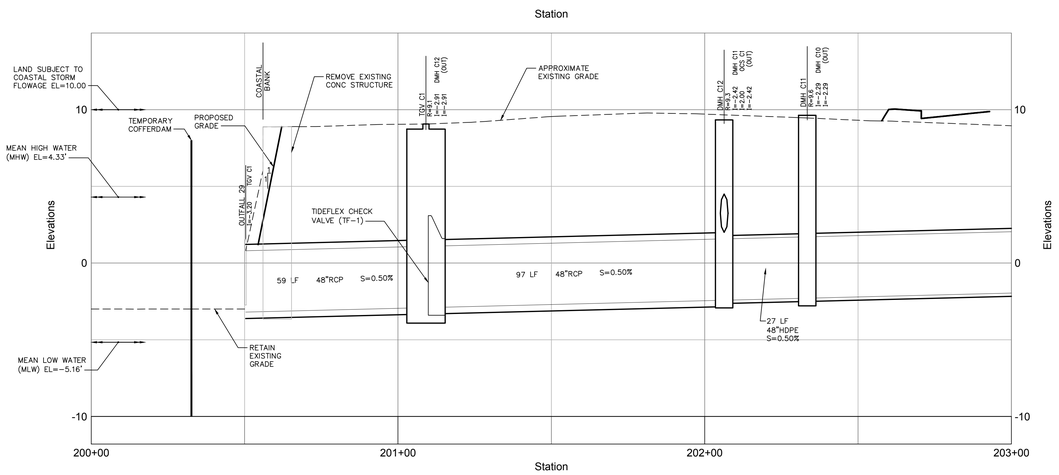
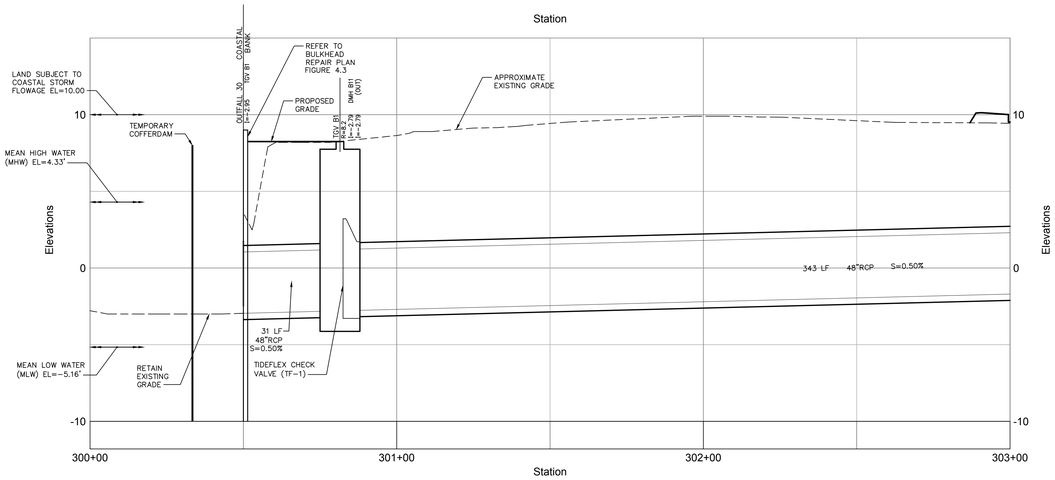




Drainage - Outfall 28



Drainage - Outfall 29

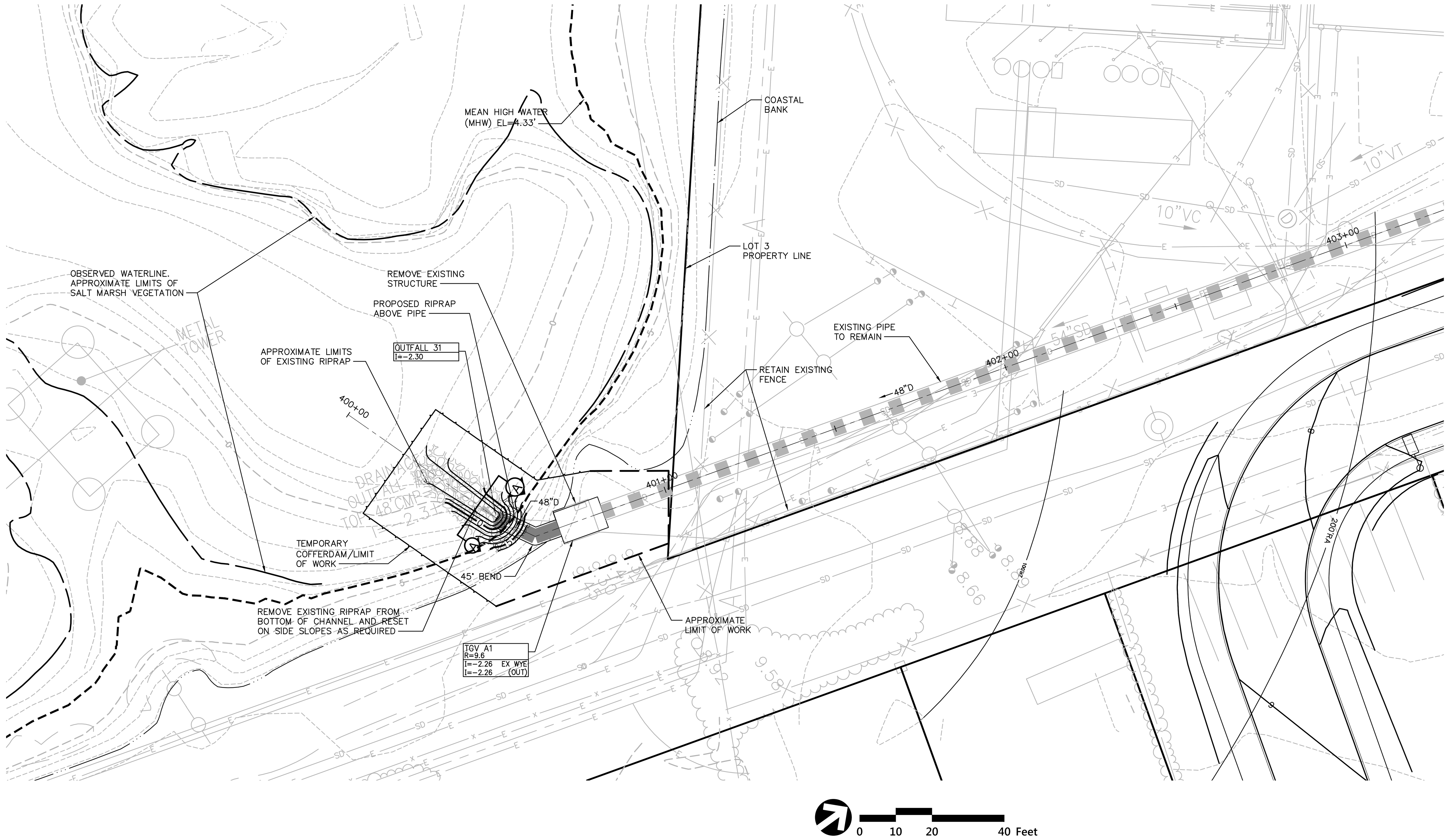


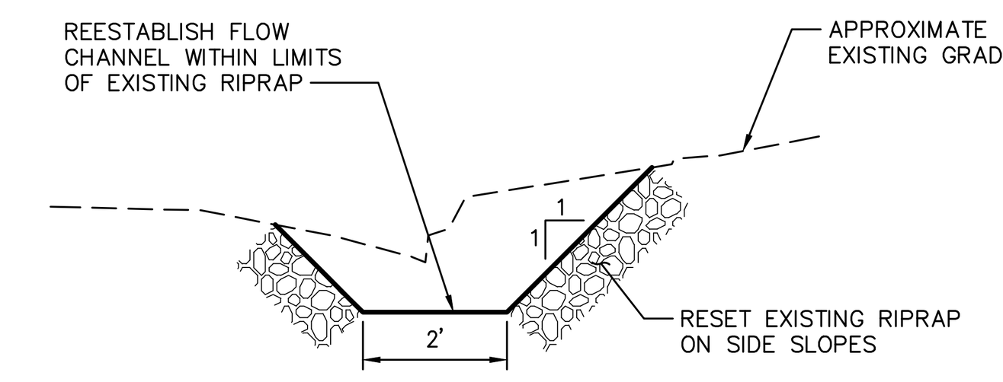
Drainage - Outfall 30

Vert. 0 2 4 8 Feet
Horiz. 0 10 20 40 Feet

Figure 4.1
Outfall Plan and Profile

Lynn Gear Works
Lynn, Massachusetts

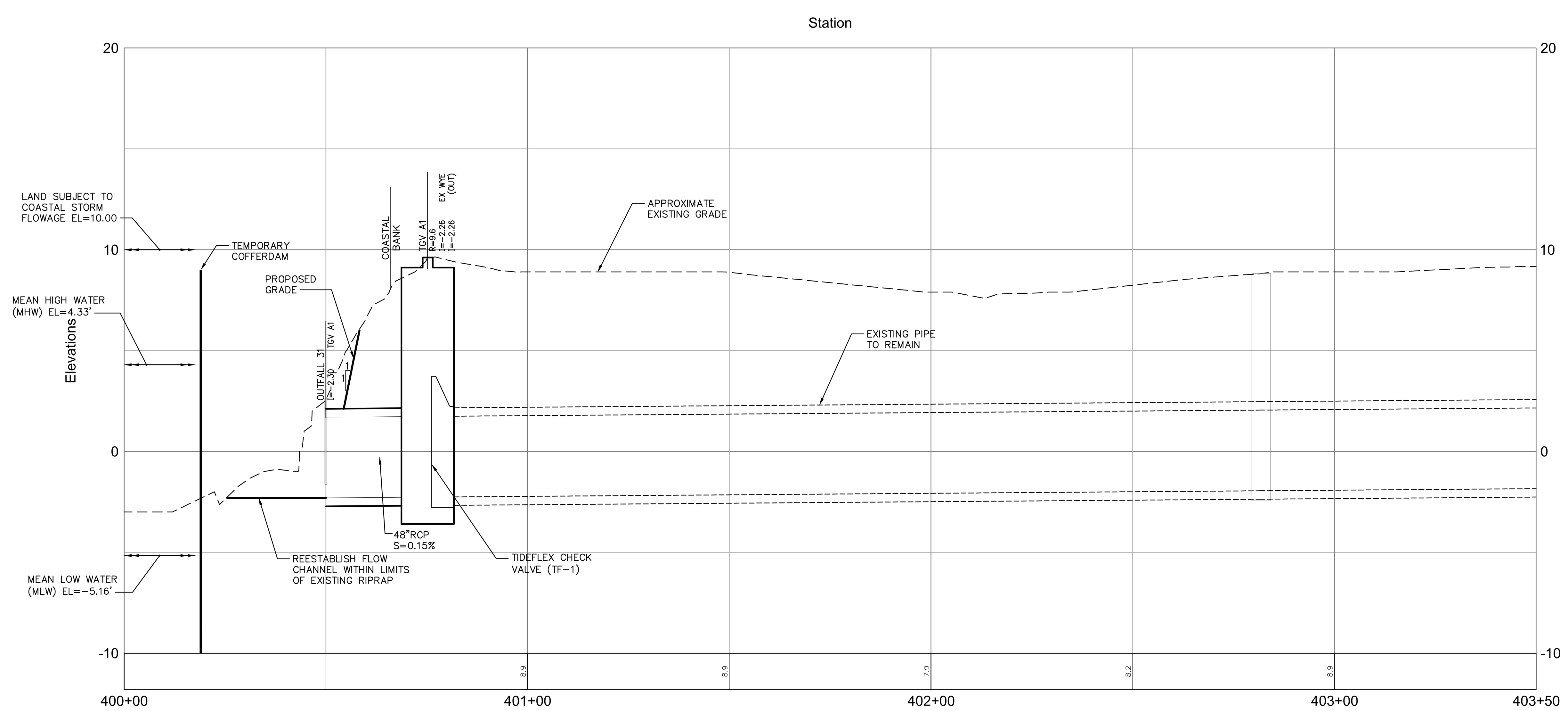




Section A-A Swale 01/17

1"=5' Source: VHB

0 2.5 5 10 Feet



Drainage - Outfall 31

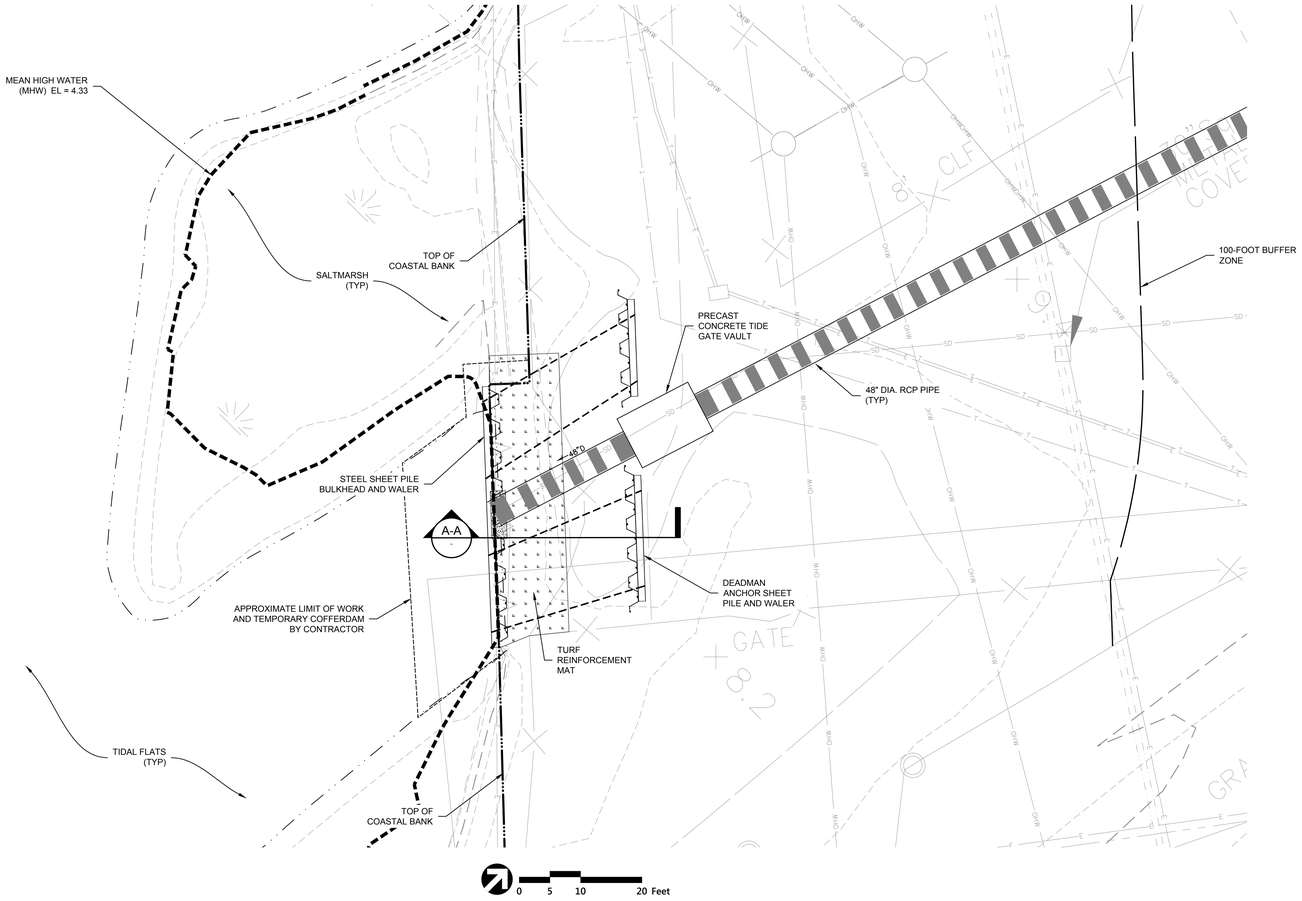
Vert. 0 2 4 8 Feet

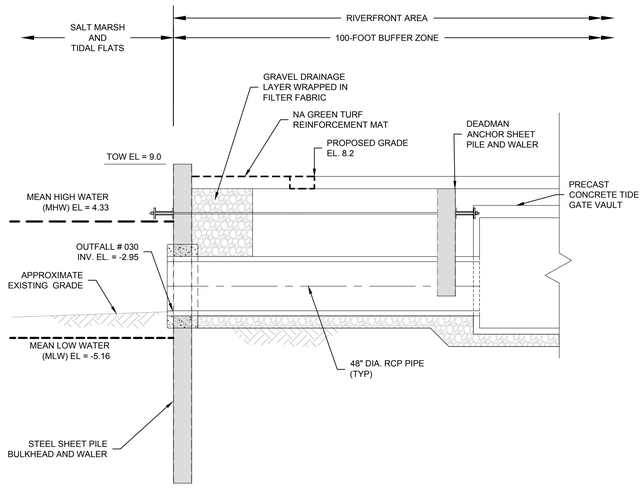
Horiz. 0 10 20 40 Feet

Figure 4.2

Outfall Plan and Profile

Lynn Gear Works
Lynn, Massachusetts





SECTION A-A

1/2017

1"=5'

GZA

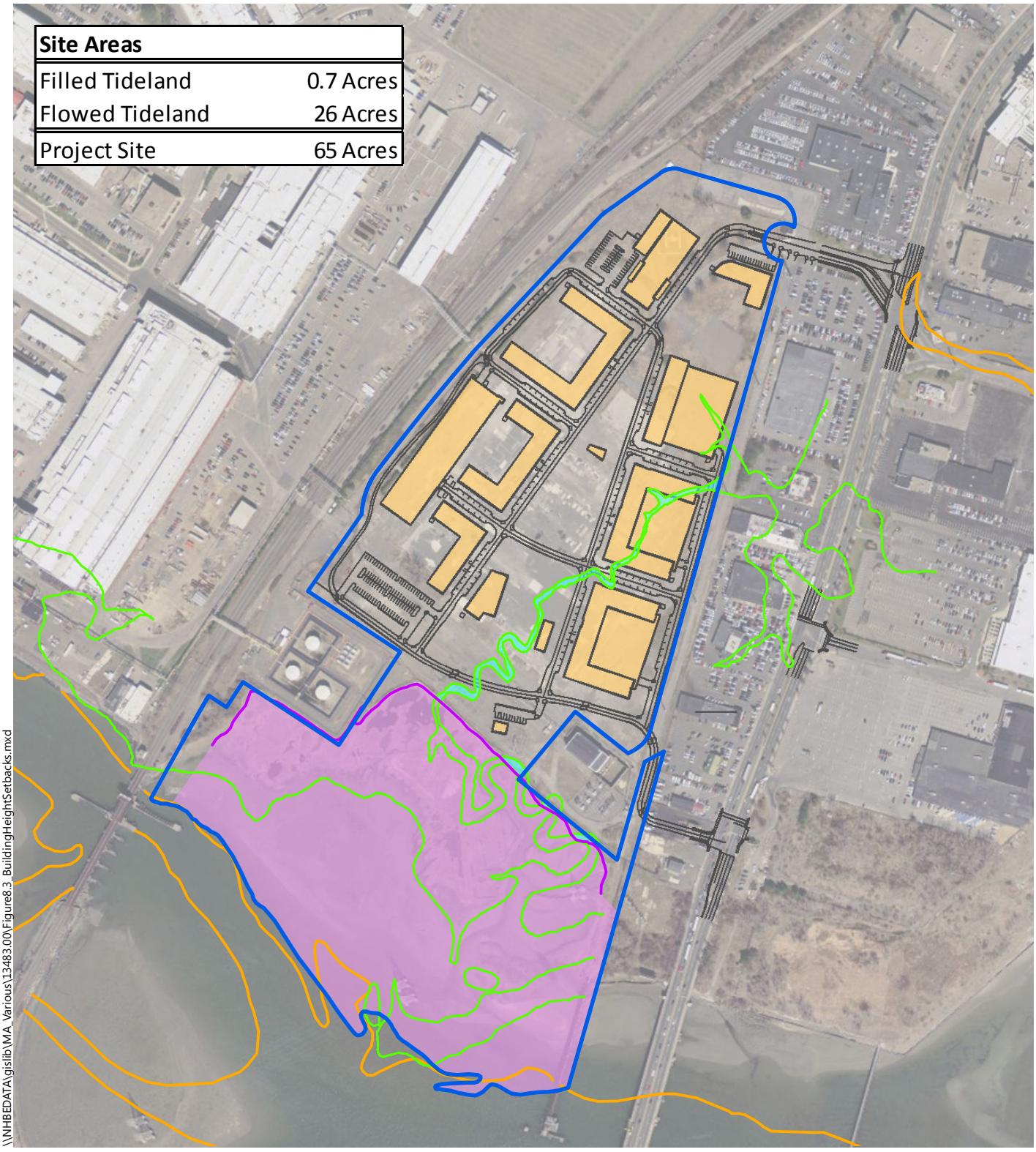
0 2.5 5 10 Feet

Notes

1. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988). DATUM INFORMATION TAKEN FROM HANCOCK ASSOCIATES.
2. LIMIT OF RIVERFRONT AREAS IS OUTSIDE THE LIMITS SHOWN ON THIS DRAWING. SEE OTHER DRAWINGS FOR DETAILS.
3. EXISTING TIMBER BULKHEAD TO BE REMOVED NOT SHOWN FOR CLARITY IN SECTION A-A. FACE OF PROPOSED STEEL SHEETING TO MATCH FACE OF EXISTING TIMBER SHEETING.
4. EXISTING TIMBER PILES IN FRONT OF TIMBER BULKHEAD TO REMAIN IN PLACE.

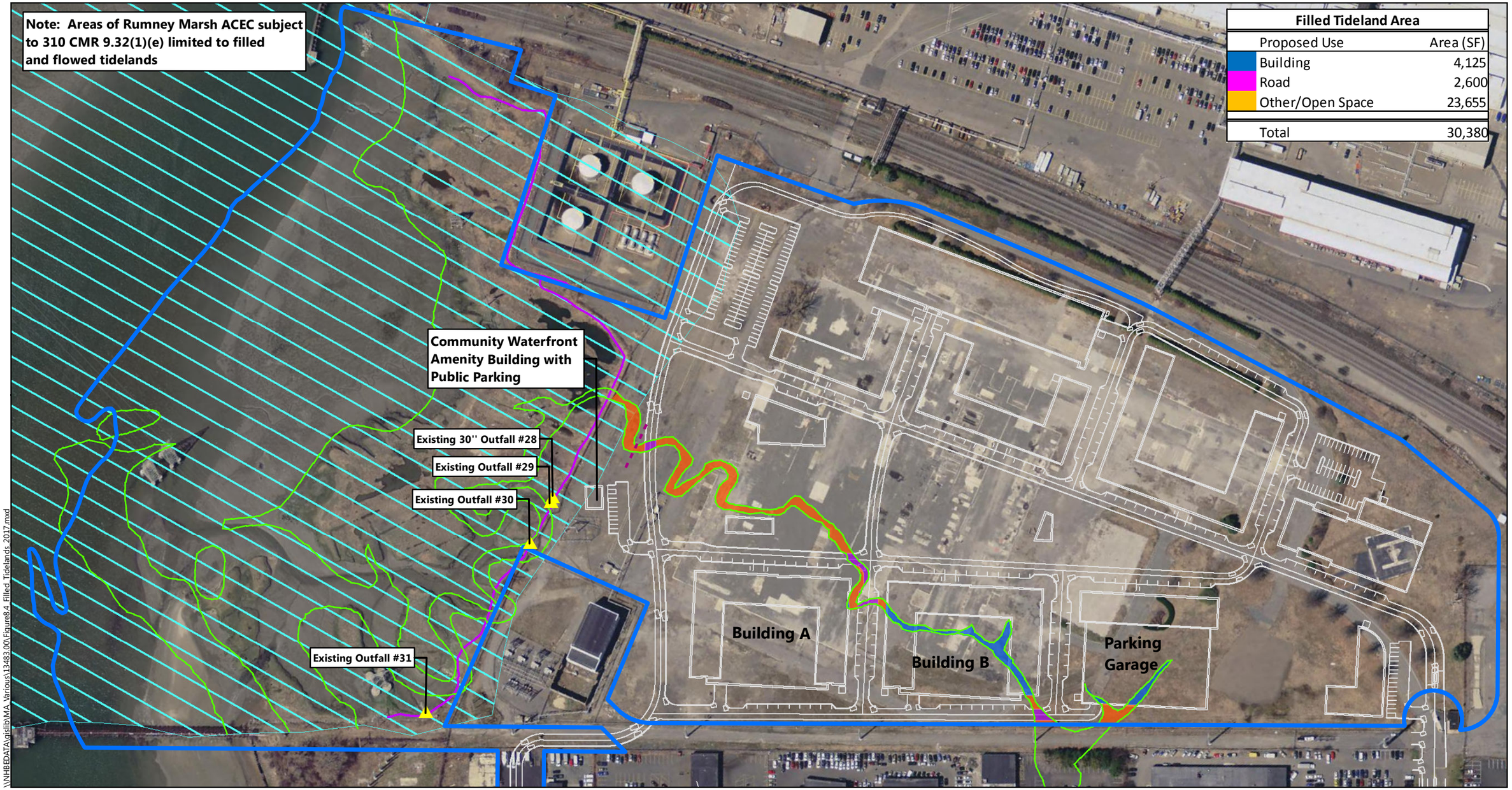
Figure 4.3
Outfall #30 Repair Plan

Lynn Gear Works
Lynn, Massachusetts



Lynn Gear Works | Lynn, MA

Chapter 91 Jurisdictional Areas



0 100 200 400 Feet

- Site Boundary
- Proposed Site
- Historic Mean High Water (J.K. Harris (1892))
- Existing Mean High Water
- 100-FT Existing Mean High Water Offset
- Existing Outfall Location
- Romney Marsh Area of Critical Environmental Concern

Lynn Gear Works | Lynn, MA

Filled Tidelands Land Utilization

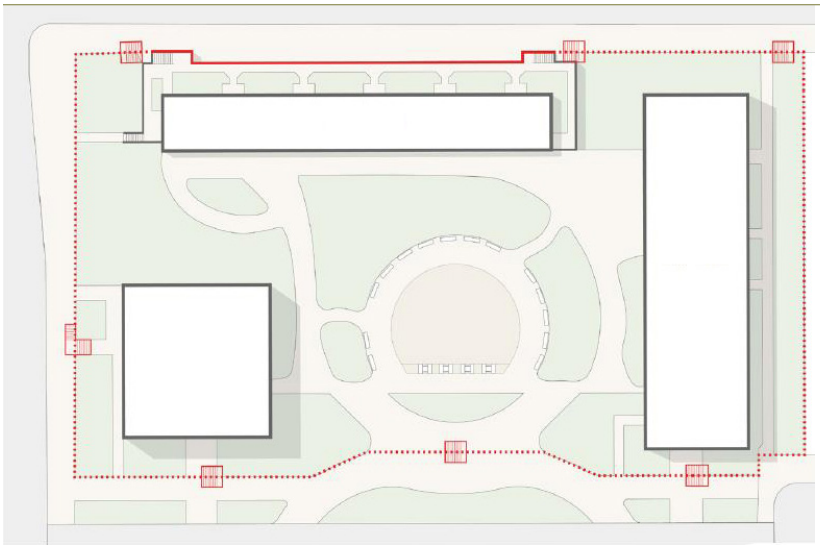
Source: MassGIS, VHB

Figure 4.6
Existing Grades

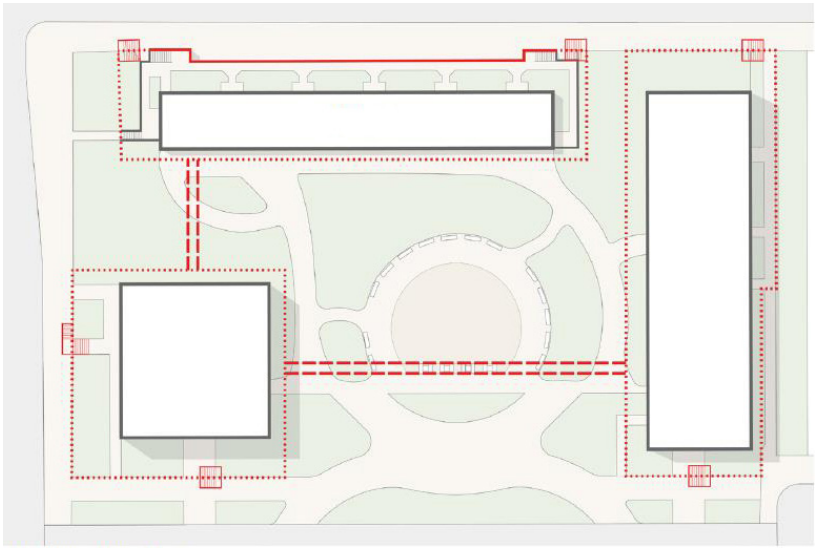
Lynn Gear Works
Lynn, Massachusetts

Figure 4.7
Existing and Proposed Grades

Lynn Gear Works
Lynn, Massachusetts

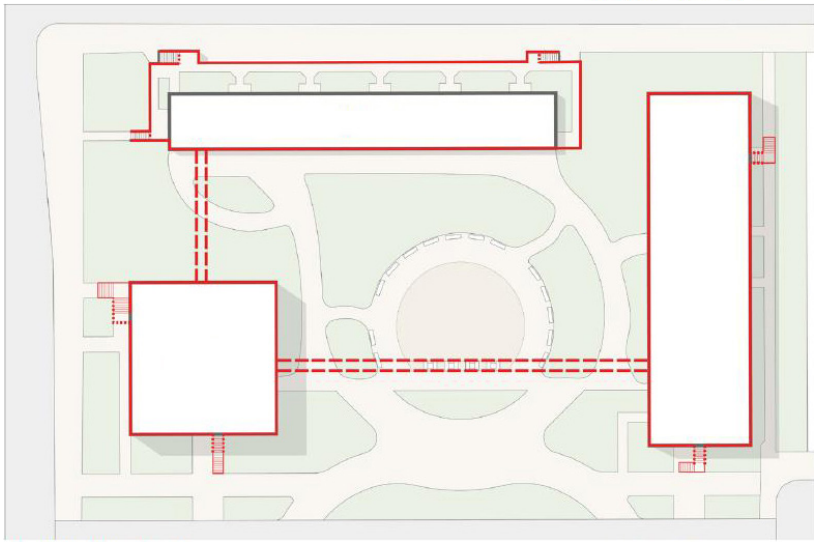


Dry Floodproofing at Site Perimeter



Dry Floodproofing at Building Exterior

Dry Floodproofing at Individual Buildings



Source: Resilient Neighborhoods: East Village, Lower East Side, Two Bridges. City of New York, Department of City Planning. April 2016.
Note: Diagrams are for illustrative purposes only.

Figure 4.8

Scaled Dry Floodproofing Schemes

Lynn Gear Works
Lynn, Massachusetts

Sources clockwise from top left: Geoline Ltd.; Flood Control International (NOAQ Tubewall); Barrier Solutions; Water Gate; Flood Control International (NOAQ Boxwall)

Figure 4.9

Examples of Moveable Flood Barriers

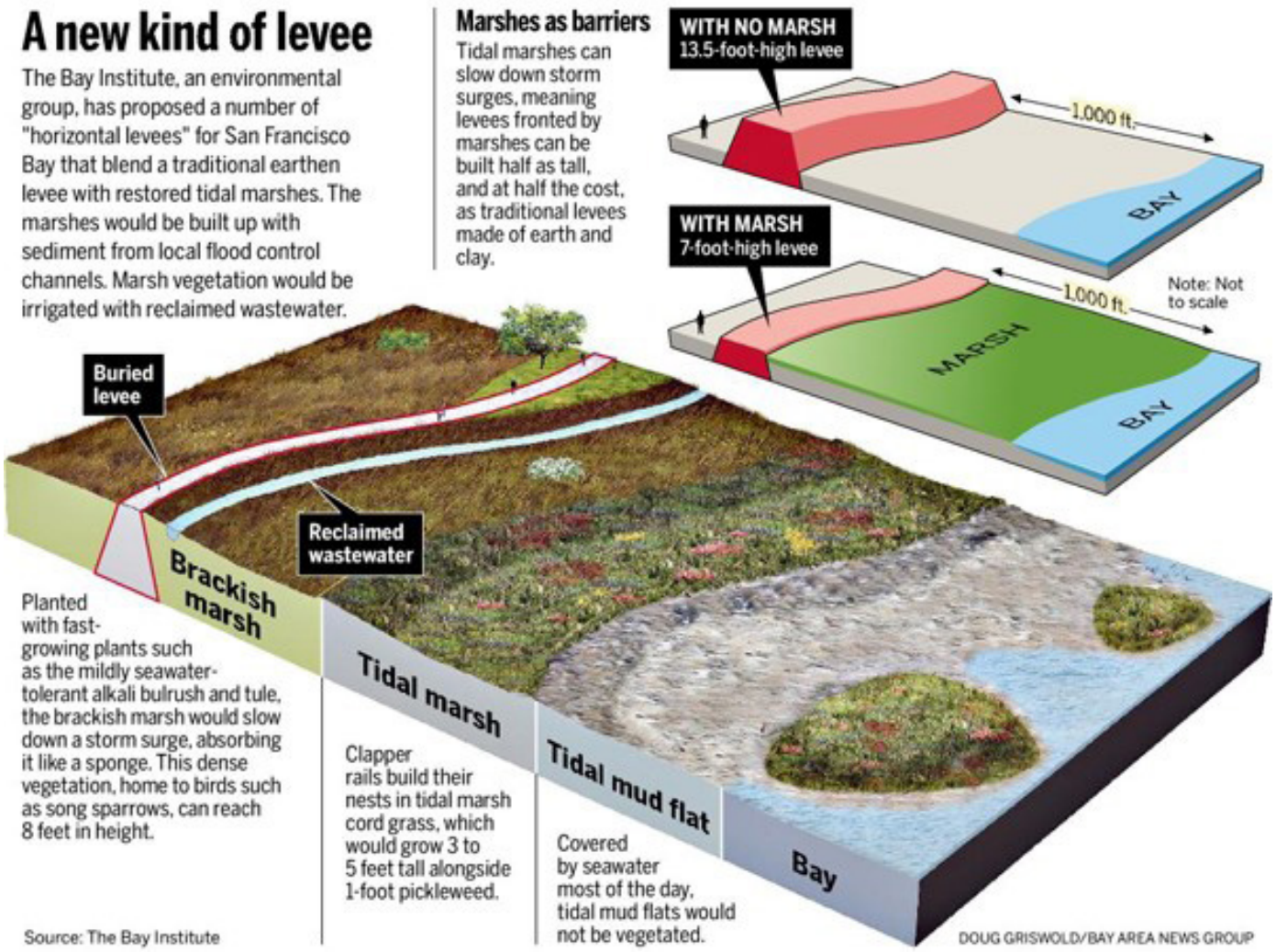
Lynn Gear Works
Lynn, Massachusetts

Sources top row: Flood Control International; bottom row: Aqua Fence

Figure 4.10

Examples of Demountable Flood Barriers

Lynn Gear Works
Lynn, Massachusetts



Sources: Flood Control International; The Bay Insitute

Figure 4.11

Examples of Permanent Flood Barriers

Lynn Gear Works
Lynn, Massachusetts

5

Water Resources

This chapter provides information related to stormwater and wastewater impacts and design as requested in the Secretary's Certificate on the DEIR.

5.1 Stormwater

This section demonstrates that the Proponent will meet the MassDEP Stormwater Management Standards where practicable, that the proposed stormwater management system will be a vast improvement over existing conditions and that the Project's outfalls will meet Standard #1. It also provides requested information about proprietary units, analyzes BMPs that are effective at removing bacteria from stormwater runoff, and describes the Project's approach to reducing and minimizing the amount of impervious surface on the Site.

5.1.1 Massachusetts Stormwater Management Standards

The Secretary's Certificate requested the Proponent demonstrate that the Project will strive to meet the Massachusetts Stormwater Management Standards for this redevelopment project, where feasible. The DEIR included a Stormwater Management Report (DEIR Appendix D) that outlined compliance with each of the ten Stormwater Management Standards. In addition to the information provided in the DEIR, the Proponent offers the following description of the method of compliance with the Stormwater Management Standards:

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

   The post development condition of the Site will not add any additional treated or untreated discharge to wetlands or waters of the Commonwealth. No erosion will be caused by discharge of this Project. Stormwater treatment is an integral part of the design of the stormwater management system. A further description is included in section 5.1.3 in this chapter.

2. *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.*

   The post-development discharge rates will not exceed pre-development discharge rates. Table 7 in DEIR Appendix D, Stormwater Management Report, provides the calculated peak flow rates from pre- and post-development conditions.

3. *Loss of annual recharge to ground water shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. 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 as determined in accordance with the Massachusetts Stormwater Handbook.*

   The Project is considered redevelopment, therefore Standard 3 will be met to the maximum extent practicable.

   The Site has a recorded Activity Use and Limitation (AUL), and has existing sealed underground storage tanks (UST). On sites with these existing conditions, stormwater infiltration is discouraged to prevent the risk of migration of contaminants. The Project Site also has high groundwater. The on-site contamination and high groundwater limit the potential for traditional infiltrating stormwater BMPs.

   As design development nears completion, the Project's net new pervious area is expected to increase by approximately 1.0 acre in addition to the 1.1-acre increase currently planned. This will be achieved by replacing some sidewalk areas with landscaping areas, decreasing roadway widths, and reducing the number of surface parking spaces. The increase in pervious area will help decrease pollutant loads from the Project Site and increase recharge.

   The Project complies with Standard 3 by increasing pervious area to the maximum extent practicable and increasing recharge. The existing conditions described above limit the ability for groundwater recharge.

4. *Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:*

   - *Suitable practices for source control and pollution prevention are identified in a long- term pollution prevention plan, and thereafter are implemented and maintained;*

- *Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and*
- *Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook*.

The Project is considered redevelopment, therefore the pretreatment and structural best management practice requirements for Standard 4 will be met to the maximum extent practicable.

The post-development of this Project will enhance the pre-development conditions by decreasing the amount of impervious area. The Project's stormwater drainage approach will improve the stormwater quality through the following methods and stormwater BMPs:

- Minimized impervious area for proposed the Site Layout
- Using structured parking instead of surface parking
- Providing a clustered residential design for efficient use of the land
- Source Controls
- Deep sump hooded catch basins
- Proprietary separators
- Bioretention basins
- Porous pavement
- Subsurface gravel wetlands

The TSS removal rates provided by the structural BMPs above are included in Appendix B, TSS Removal Rates. A TSS removal rate of 25% has been assigned for all proprietary separators based upon MassDEP guidance. Studies have shown higher TSS removal rates for proprietary separators, however, to be consistent with the MassDEP guidance in the Project's DEIR comments, a 25% TSS removal rate is used.

Each proprietary separator has been sized according to the manufacturer's water quality flow rates sizing and the MassDEP guidance for "Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices." Calculated Water Quality Flow Rate per above guidance is shown in Appendix B, Water Quality Unit Sizing. The proprietary separators on the Project Site will be serviced annually and inspected for more frequent maintenance based on sediment depth.

The stormwater management design focuses on treating the first flush of roadway because this is the area and precipitation stage with the highest pollutant load. The prioritization of treating the roadways will allow the BMPs to have the greatest positive impact upon water quality. Providing open space/recreational areas was a major goal of the Project, resulting in a significant improvement over the previous demolished industrial site. The post-development condition restores green space and provides a pedestrian friendly, open environment while also providing stormwater quality improvement. To best comply with this standard, all proposed BMPs are designed to a goal volume equal to 1.0 inch of runoff multiplied by the total roadway area being discharged to the BMP. Due to the design constraints, Project goals, and existing Site conditions, the Project will meet the standard by incorporating pretreatment and best management practices to the maximum extent practicable.

5. *For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.*

   The Project is considered redevelopment, therefore the pretreatment and structural best management practice requirements for Standard 5 will be met to the maximum extent practicable.

   Standard five's definition for a land use with higher potential pollutant load (LUHPPL) includes parking lots with high-intensity-use (1,000 vehicle trips per day or more) and sites with previous releases of oil or hazardous materials. The Project is proposing three (3) parking garages (vs. parking lots) that are anticipated to generate 1,000 vehicle trips per day. The runoff from these parking garages will not reach the proposed drainage system because all parking garage runoff will be collected by the site sewer system and treated off-site. The Project is considered redevelopment and a LUHPPL and has been designed with pretreatment and structural best management practices to the maximum extent practicable.

6. *Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area*

require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

The Project is considered redevelopment, therefore the pretreatment and structural best management practice requirements for Standard 6 will be met to the maximum extent practicable.

The Project is located within the Rumney Marshes Area of Critical Environmental Concern (ACEC). The Rumney Marsh is also a designated Outstanding Resource Water (ORW). As described under Standard 4, the Project is proposing a comprehensive stormwater management system including strategic site layout, deep sump hooded catch basins, sediment forebay pre-treatment, and bioretention basins, gravel wetlands, and proprietary separators with the design goal of treating a one-inch water quality volume. This will greatly reduce the pollutant loading to Rumney Marsh, and may potentially increase the aquatic health of the ACEC and ORW.

7. *A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*

   This Project results in a reduction in impervious area of 1.1 acres and is therefore considered redevelopment (as shown in Table 3 of Chapter 2). The designation of redevelopment requires that Standards 2 through 6 are met to the maximum extent practicable. This Project meets this standard as noted above and below.

8. *A plan to control construction related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.*

A Stormwater Pollution Prevention Plan (SWPPP) will be provided by the Site contractor and owner in accordance with the Environmental Protection Agency's (EPA's) National Pollutant Discharge Elimination System (NPDES) General Permit Program for Stormwater Discharges from Construction Sites. Recommended erosion and sedimentation control practices are also included in DEIR Appendix D, Stormwater Management Report, and will be finalized as part of the Notice of Intent process under the Wetlands Protection Act. A maintenance checklist recommended for evaluating erosion control BMPs is also included. This standard will be met.

9. *A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.*

   Recommended practices for operating and maintaining long term stormwater BMPs are included in DEIR Appendix D, Stormwater Management Report. A recommended checklist for maintenance inspections and follow-up is also included. This standard will be met by the Project design.

10. *All illicit discharges to the stormwater management system are prohibited.*

    The sanitary sewer structures that were part of the previous development on the Site are to be completely removed during the Site redevelopment process. The storm drainage structures remaining from previous development will be removed or will be incorporated into the updated separate stormwater system. The design plans submitted with this report have been designed in full compliance with current standards. The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges and this standard is met by the Project design.

5.1.2 Bacteria TMDL Improvement

The North Coastal Watershed Pathogen TMDL includes the Saugus River and has been considered in the controls, practices, and designs described in this section. A comprehensive source control program will be implemented at the Site as part of the above referenced O&M Plan, which includes regular catch basin cleaning and enclosure and maintenance of all dumpsters, compactors, and loading areas. The use of parking garages, which connect to the sewer system, reduces the potential for pollutant loads compared to an alternative of using surface parking lots. Other actions to reduce pollutant loads will be implemented throughout the Site as well to reduce potential bacteria and pathogen sources:

- Animal waste stations will be provided throughout the Site with directions on how to clean up waste and pet waste bag dispensers; and
- Sanitary sewer structures, which were part of the previous development on this Site, will be completely removed during the Site redevelopment. The Project is proposing

a new on-site sanitary sewer piping system, which will reduce the potential for outflow from the on-site piping.

A 2008 study published in the Stormwater Journal (included in Appendix B) reports that bioretention basins remove bacteria, particularly at specific site-level scale, through filtration through soil. According to this article, the filtration through the proposed gravel wetland media will likely also provide water quality benefits. These BMPs help reduce bacteria and address the pathogen TMDL in order to improve bacteria removal.

5.1.3 Outfall Design and Protection

The Project will continue to use the three existing stormwater outfalls to the Saugus River (Outfalls 28, 30, and 31), and will bring a fourth existing outfall (Outfall 29) back on-line. The inclusion of Outfall 29 increases the resiliency of the Project by providing the proposed drainage system with a larger hydraulic capacity (versus using only three outfalls), thus reducing the potential for on-site flooding during future forecasted rainfall events and tailwater conditions. Outfall locations and pipe sizes will remain consistent with existing conditions. Duckbill check valves are proposed at each outfall to restrict tidal flow into the drainage system, but still allow stormwater discharge from the drainage system into the Saugus River. Upgrades to deteriorating headwalls and piping will be performed in some locations to ensure long-term stability, conveyance and increased efficiency.

The outfalls are submerged for a majority of the time due to the tidal cycles of the Saugus River. The potential for scour occurs during low tide conditions and storm events large enough to cause erosive velocities. However, the four outfalls were visually inspected during low tide conditions and no existing scour was observed.

Proposed changes in velocities at each of the outfalls were estimated under free discharge conditions to evaluate the potential for increasing erosive conditions during low tide conditions. Table 5.1 shows the results of this analysis. Under proposed conditions velocities are estimated to decrease for Outfall 28 and 31 for all storm events, therefore decreasing the potential for scour over existing conditions. At Outfall 29, velocities are estimated to remain the same or slightly (less than 2%) increase over existing conditions. This negligible potential increase in velocities is not expected to increase the potential for scour. The existing flow for Outfall 30 is unknown since it was previously used as a process water discharge (vs. stormwater discharge) and was estimated as the full flow capacity of the pipe. Comparing proposed velocities to this estimated velocity shows a decrease for all events except the 100-year event, which shows a 5% increase. This increase is due to additional hydraulic head resulting in raising the base elevation of the site. Due to this minor increase in the unlikely scenario of the 100-year storm occurring at low tide, no additional scour protection is proposed.

The Project is not proposing changes to the existing scour protection at the outfalls based on an analysis of velocities at each of the outfalls and the observation of no existing scour.

TABLE 5.1 OUTFALL ESTIMATED VELOCITIES (CFS)

	Outfall 28			Outfall 29			Outfall 30			Outfall 31		
	EX	PR	Δ	EX	PR	Δ	EX*	PR	Δ	EX	PR	Δ
2-Year	7.4	5.0	*-2.3*	6.0	6.0	*0.0*	8.1	6.7	*-1.4*	6.5	3.8	*-2.7*
10-Year	7.3	5.6	*-1.7*	6.5	6.6	*0.1*	8.1	7.4	*-0.7*	7.3	4.3	*-3.1*
25-Year	7.3	5.9	*-1.5*	6.8	6.9	*0.1*	8.1	7.9	*-0.2*	7.8	4.5	*-3.3*
100-Year	7.3	6.3	*-1.1*	7.3	7.5	*0.1*	8.1	8.5	*0.4*	8.4	4.8	*-3.6*

*Existing flows/velocities unknown for Outfall #30. Velocity estimated based on full flow capacity of pipe.

5.1.4 Land Subject to Coastal Storm Flowage and Channelization of Flood Waters

Land Subject to Coastal Storm Flowage

The Lynn Gear Works Site is within FEMA Zone AE, as are the adjacent properties. This flood area is regulated as Land Subject to Coastal Storm Flowage (LSCSF). The majority of the Site will be raised in elevation to provide a finished floor elevation (FFE) compliant with the Massachusetts Building Code and provide resiliency for forecasted sea level rise scenarios. This results in the Project Site having a net decrease in flood storage volume. However, since flooding at the Project Site is due to coastal flooding from the Atlantic Ocean, the loss in effective storage capacity is minimal compared to the entirety of the storage volume for the Atlantic Ocean. Therefore, a decrease in flood storage at this location does not increase the 100-year flood water surface elevation. The Massachusetts Wetlands Protection Act does not have performance standards for work proposed in LSCSF, which is reflected in the Notice of Intent filed with the Lynn Conservation Commission. Furthermore, the Lynn Zoning Ordinance does not require compensatory flood storage within LSCSF per Section 20.1.

Channelization of Flood Waters

Since the majority of the Site will be raised in elevation, the 1% annual chance coastal flood will affect a much smaller portion of the Site in post-development conditions as compared to pre-development conditions. VHB investigated the existing and proposed watershed delineations for circumstance in which the drainage system is already surcharged (i.e., when the amount of stormwater exceeds the capacity of the drainage system). This situation is predicted to occur for any flooding greater than that of the 10-year design storm for current sea level conditions. This analysis indicates that during severe floods, under post-development conditions smaller amounts of flood waters will

be directed off-site as compared to pre-development conditions for two primary reasons. First, the volume of floodwater that is available to runoff to the adjacent properties is decreased because the Site is proposed to be raised, which will reduce flood water on the Site during a coastal flood event. Second, the proposed grading will also reduce the watershed area that directly impacts the adjacent properties. To illustrate this point, VHB delineated the pre- and post- condition watersheds that drain off the Project Site to adjacent properties, and plotted three cross-sections of the Project Site, shown on Figure B-4, titled Pre- and Post-Development Channelization of flooding, found in Appendix B. The cross-sections depict the following:

- *Existing watershed breaks*: Locations where flood waters currently flow from on-site to off-site, based on grading only;
- *Proposed watershed breaks*: Locations where flood waters will flow from on-site to off-site, based on proposed grading, assuming on-site drainage system is surcharging; and
- Approximate area that will no longer be channelized to adjacent properties.

The watershed and cross-sectional analysis illustrates that the *proposed watershed breaks* are closer to adjacent properties and higher in elevation than the *existing watershed breaks*. The volume of water represented by the area between the *existing watershed break* and the *proposed watershed break* is the flood water that will no longer be channelized off-site. Therefore, channelized flooding to the adjacent properties will decrease under post-development conditions.

5.2 Wastewater

This section describes the Proponent's proposed sewer system survey, coordination with the Lynn Water and Sewer Commission (LWSC) and measures to offset new wastewater flows.

5.2.1 Proposed Sewer Survey

The Proponent will undertake continuous flow metering within the existing sewer system serving the Project at a point immediately upstream of the connection to the LWSC interceptor sewer in Commercial Street. A second flow metering exercise will also be undertaken at the existing on-site sewer pump station to assess the component of infiltration/inflow (I/I) to the system which would otherwise be pumped regularly with the Site's sanitary flow, but which has been temporarily interrupted due to the suspension of previous Site uses and subsequent building demolition. Continuous flow metering will follow MassDEP *Guidelines for Performing Inflow/Infiltration Analyses* and will run, at a minimum, for a 10-week period between March 1 and June 30, 2017. Rainfall data will be collected during the continuous flow metering period to correlate I/I to rainfall events

and establish inflow rates associated with the one-year, six-hour design rainfall event. Combined data from flow metering and rainfall data will establish the existing I/I that will be removed from the LWSC system by the Project replacing all on-site sewers and eliminating any illicit stormwater connections within the Site.

5.2.2 I/I Mitigation Commitment

The LWSC executed a *Third Modified Consent Order* (Consent Order) with the Massachusetts DEP and EPA that, among other conditions, and in accordance with regulations for wastewater system operators in 314 CMR 12.04 (2), requires the LWSC to have an ongoing program to identify and remove sources of I/I. To comply with the Consent Order and in accordance with 314 CMR 122.04 (2), the LWSC voted in January 2017 to implement an I/I program for the removal of four gallons of I/I for every one gallon of net new sanitary sewage flow by establishing a dedicated account to be funded by a fee paid by developers proposing new connections to the LWSC sewer system greater than 15,000 gpd. The Proponent will pay the appropriate I/I program fee, and or a combination of fee payment and demonstration of I/I removal, when applying for connection of new sewage flows to the LWSC sewer system.

In addition to the I/I program fee, the Proponent is committed to replacing the majority of the aged 2,700 linear-foot vitrified clay sewer pipe between the new sewer pump station on the Site and the existing interceptor sewer in Commercial Street.

5.2.3 Update on Consultations with the LWSC

The Proponent has met with LWSC staff to review the Project's proposed sewer connection and on-site system layout, as recently as December 2016. The on-site sewer system and proposed re-use of the existing connection to the interceptor sewer in Commercial Street are consistent with LWSC's interceptor sewer capacities and direction from LWSC to maintain the connection to Commercial Street.

5.2.4 Assessment of New Opportunities to Offset New Wastewater Flow

It is anticipated that the Project will be built out in phases over 5 years, with associated sewer connection applications for each phase. LWSC I/I program fees will be paid by the Proponent, and/or the potential to remove I/I will be demonstrated, with each sewer connection permit application.

The Proponent is committed to installing water conserving plumbing fixtures throughout the Project, including flow flush toilets, low flow shower heads and water-conserving washing machines within the rental units.

6

Draft Section 61 Findings and Proposed Mitigation

As required by 301 CMR 11.07(6)(k) of the Massachusetts Environmental Policy Act (MEPA) regulations, this chapter provides updated draft Section 61 Findings for each agency action to be taken on the Lynn Gear Works Redevelopment Project ("the Project"). It also provides a summary of proposed mitigation measures.

6.1 Draft Section 61 Findings

M.G.L Chapter 30, Section 61, requires that "[a]ll authorities of the commonwealth … review, evaluate, and determine the impact on the natural environment of all works, projects or activities conducted by them and…use all practicable means and measures to minimize [their] 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 Chapter 30, Section 62A.

The Project is subject to a Mandatory EIR and meets the following review thresholds:

- 301 CMR 11.03(1)(b)(1) – "Direct alteration of 25 or more acres of land, unless the Project is consistent with an approved conservation farm plan or forest cutting plan or other similar, generally accepted agricultural or forestry practices."
- 301 CMR 11.03 (3)(a)(5) – "Provided that a Chapter 91. License is required, New non-water dependent use or expansion of an existing non water dependent structure, provided the use or structure occupies one or more acres of waterways or tidelands."
- 301 CMR 11.03 (5)(b)(4)(a) – "New discharge to a sewer system of 100,000 or more gpd of sewerage, industrial wastewater or untreated stormwater."

- 301 CMR 11.03(6)(a)(6) – "Generation of 3,000 or more NEW ADT on roadways providing access to a single location."
- 301 CMR 11.03(6)(a)(7) – "Construction of 1,000 or more NEW parking spaces at a single location."
- 301 CMR 11.03(11)(b) – "Any Project within a designated ACEC, unless the Project consists solely of one single family dwelling."

Table 6.1 includes an updated list of anticipated state permits, approvals, and reviews.

TABLE 6.1 ANTICIPATED STATE PERMITS, APPROVALS AND REVIEWS

Agency	Permit/Approval/Review
MEPA Office	Certificate on the Final Environmental Impact Report (this filing)
Department of Environmental Protection	Section 401 Individual Water Quality Certificate
	Chapter 91 License
Department of Conservation and Recreation	Application for Construction and Roadways
	Traffic Signal Regulation
Secretary of Transportation	Approval for Construction on Former ROW CH40 Section
MBTA/MassDOT Commuter Rail	Memorandum of Understanding (MOU), Access Agreement , Permit to Construct Station Improvements
Natural Heritage and Endangered Species Program	Notice of Intent - Massachusetts Endangered Species Act Review
Massachusetts Office of Coastal Zone Management	Federal Consistency Review
Massachusetts Water Resources Authority	8(m) Permit

6.1.1 Massachusetts Department of Conservation and Recreation

DRAFT ONLY

March 10, 2017

DEPARTMENT OF CONSERVATION AND RECREATION

M.G.L. CHAPTER 30, SECTION 61

PROJECT NAME: Lynn Gear Works Redevelopment
PROJECT LOCATION: Lynnway and Commercial Street - Lynn, MA
PROJECT PROPONENTS: Lynnway Associates, LLC
EEA NUMBER: 15441

PERMIT SOUGHT: Permit for Construction and/or Associated Access to DCR Park Lands and Roadway

I. PROJECT DESCRIPTION

Lynnway Associates, LLC (the "Proponent") proposes to redevelop a site formerly occupied by the ±500,000 square foot (SF) General Electric (GE) Gear Works facility, which was demolished in 2011 (the "Site"). The proposed Lynn Gear Works Redevelopment (the "Project"), a transit-oriented development (TOD), consists of constructing 1,260 new residential apartment units within six residential buildings on the Site. In addition, several supporting resident-oriented accessory buildings; such as a club house, a leasing/ management office, a resident sports club, a poolhouse/maintenance space, and support retail/lounge space will be provided to offer on-site services to the residents in an effort to minimize off-site trips. All accessory uses as noted above are on-site amenities for residents.

The Site will include 2,080 on-site parking spaces, of which 1,920 are for residential-related uses, 44 for employee/maintenance use, and 116 for non-residential uses associated with the publicly accessible Leasing Office, Waterfront Area, and the potential future conversion from a private MBTA Commuter Rail stop to public use. To limit the total amount of impervious area on-site, only approximately 337 parking spaces will be provided as surface or on-street parking, including a 10-space surface parking area to support public access to the Waterfront Area along the Saugus River. The remainder of the parking spaces will be provided in parking structures.

Access to the Site is proposed via the existing signalized driveway, signed as 19th Street, on the westerly side of the Lynnway opposite Harding Street. As part of this Project, a secondary full-access/egress driveway is proposed for construction along the westerly side of the Lynnway opposite the existing Jughandle between Hanson Street to the north and the General Edwards Bridge (Saugus River Bridge) to the south.

The Massachusetts Department of Transportation (MassDOT) and the Massachusetts Department of Conservation and Recreation (DCR) reviewed the Final Environmental Impact Report (FEIR) dated February 28, 2017, and submitted comment letters to the MEPA Office. This Section 61 Finding is accordingly based upon information disclosed throughout the MEPA process.

II. PROJECT IMPACTS

The Lynn Gear Works Redevelopment Project is anticipated to generate:

- Approximately 5,842 new vehicle trips (2,921 entering and 2,921 exiting) on an average weekday;

- Approximately 468 vehicle trips (94 entering and 374 exiting) during the weekday morning peak hour;
- Approximately 534 vehicle trips (347 entering and 187 exiting) during the weekday evening peak hour;
- Approximately 6,062 vehicle trips (3,031 entering and 3,031 exiting) during the average Saturday; and
- Approximately 404 vehicle trips (202 entering and 202 exiting) during the Saturday midday peak hour.

Due to the Project's proximity to multiple Massachusetts Bay Transportation Authority (MBTA) bus routes and the proposed access to the MBTA Commuter Rail, a reduction in site-generated traffic volumes is expected. Based on the findings summarized in the Draft and Final Environmental Impact Reports (DEIR and FEIR), the projected public transportation mode-share at the Lynn Gear Works Redevelopment can be reasonably assumed to be 25% from the residential use. Based on the Transportation Demand Management (TDM) program described in this DEIR/FEIR, the Proponent expects the public transportation mode share to be in excess of 25%.

III. TRAFFIC MITIGATION MEASURES (FEIR Section 2.4)

DCR and the City of Lynn have analyzed the operational and safety impacts in the affected state highway areas due to the proposed Project and determined that the mitigation measures outlined below are adequate to mitigate or minimize these traffic impacts. The Project Proponent has committed to undertake the following mitigation measures in cooperation with the identified parties.

Any proposed mitigation measures within the DCR Layout, as well as internal circulation, should be consistent with a Complete Streets design approach that provides adequate and safe accommodation for all roadway users, including pedestrians, bicyclists, and public transit riders. Guidance on Complete Streets design is included in the MassDOT Project Development and Design Guide. Where these criteria cannot be met, the Proponent should provide the justification as to the reason why, and must work closely with the DCR to obtain a design exception for those elements of infrastructure under DCR's jurisdiction.

Intersection: The Lynnway (Route 1A)/Jughandle/Southerly Site Driveway

As the secondary access/egress point for the Lynn Gear Works Redevelopment, the Proponent is committed to intersection improvements at the intersection of the Lynnway/Jughandle/ Southerly Site Driveway. The new Southerly Site Driveway

eastbound approach to the intersection will provide increased Site safety and emergency response capabilities, allowing residents to exit the Site through multiple egress points.

The following improvements will improve traffic operations and safety at the Project's southerly access point which will be phased to mitigate impacts:

- Construct the new Site driveway slightly offset from the existing Jughandle, replacing an existing driveway for a former retail facility;
- Construct an exclusive left-turn lane along the Lynnway northbound approach, providing sufficient storage and deceleration for vehicles entering the Site;
- Stripe new crosswalks across the Lynnway, the Jughandle, and the Southerly Site Driveway to provide pedestrian access to the easterly side of the roadway;
- Reconstruct accessible and ADA/AAB compliant wheelchair curb ramps on all corners of the intersection;
- Complete a full upgrade of traffic signal infrastructure including: new mast arm assemblies, signal housings with reflective backplates, pedestrian signal housings, APS pedestrian push-buttons, emergency vehicle preemption, and vehicle detection equipment. Utilize the recently installed traffic signal controller and cabinet at the intersection;
- Install traffic signal preemption, in the form of a video detector, along the Lynnway northbound approach to preempt potential queuing onto the drawbridge section of the General Edwards Bridge;
- Revise the current traffic signal timing and phasing scheme to accommodate a northbound protected left-turn phase and an eastbound approach phase, provide adequate clearance intervals, provide new pedestrian timings, and provide improved minimum green times;
- Install or update MUTCD-compliant signage associated with modifications to median reconstruction, traffic signal reconstruction, or changes in lane configuration; and
- Implement MBTA bus stop enhancements as described in the subsequent public transportation accommodations section.

Intersection: The Lynnway (Route 1A)/Hanson Street

Based on the MassDOT – Highway Division Traffic and Safety Engineering 25% Design Submission Guidelines,[1] the Proponent will work with the roadway owners, in this case the City of Lynn and DCR, on implementing many of the improvements and maintenance items that were identified as "Potential Safety Enhancements" in the Lynnway / Hanson Street RSA completed by TEC, Inc. in February 2017. Further attempts to incorporate the medium and long-term countermeasures identified in the RSA should be evaluated by DCR, the City of Lynn, and other developers within the immediate area.

The Proponent has committed to the following improvements identified in the RSA to improve traffic safety at the Lynnway/Hanson Street intersection:

- Complete a full upgrade of traffic signal infrastructure, including the installation of new mast arm assemblies, a new traffic signal controller and cabinet, signal housings with reflective backplates, pedestrian signal housings, APS pedestrian push-buttons, emergency vehicle pre-emption, and vehicle detection equipment;
- Revise the current traffic signal timings to provide adequate clearance intervals, adequate pedestrian clearance intervals, and improved minimum green times;
- Reconstruct accessible and ADA/AAB compliant wheelchair curb ramps for the crossing provided across Hanson Street;
- Install or update MUTCD-compliant signage associated with U-turns, medians/object markers, traffic signal reconstruction, and lane configurations;
- Stripe tracking markings through intersection for guidance of the Lynnway southbound left-turn movement; and
- Implement MBTA bus stop enhancements as described in the subsequent public transportation accommodations section.

Intersection: The Lynnway (Route 1A)/Harding Street/19th Street

As the primary access/egress point for the Lynn Gear Works Redevelopment, the Proponent is committed to intersection improvements at the intersection of the Lynnway/Harding Street/19th Street. The following improvements are necessary to improve traffic operations and safety at the Project's front door:

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[1] *25% Design Submission Guidelines*; Massachusetts Department of Transportation – Highway Division; Boston, Massachusetts; February 15, 2011

- Widen 19th Street to provide dual left-turn lanes exiting the Site (three-lane approach). This improvement will require modifications to the existing pump station located within the 19th Street median and require modifications to the traffic signal phasing structure, consisting of split phasing on the 19th Street eastbound and Harding Street westbound approaches;
- Complete a full upgrade of the traffic signal infrastructure, including installation of new mast arm assemblies, a new traffic signal controller and cabinet, signal housings with reflective backplates, pedestrian signal housings, accessible pedestrian signals (APS) push buttons, emergency vehicle preemption, and vehicle detection equipment;
- Revise the current traffic signal timing and phasing scheme to accommodate split phasing on the side street approaches, provide adequate clearance intervals, provide adequate pedestrian clearance intervals, and provide improved minimum green times;
- Reconstruct the median ends along Harding Street and 19th Street to provide an unobstructed crosswalk;
- Reconstruct accessible and ADA/AAB compliant wheelchair curb ramps on all corners of the intersection;
- Install or update MUTCD-compliant signage associated with modifications to median reconstruction, traffic signal reconstruction, or changes in lane configuration; and
- Implement MBTA bus stop enhancements as described in the subsequent public transportation accommodations Section IV.

Corridor: Commercial Street

Based on the MassDOT – Highway Division Traffic and Safety Engineering 25% Design Submission Guidelines, the Proponent will work with the roadway owners, in this case the City of Lynn and DCR, to implement many of the short-term, low-cost improvements/maintenance items that have been identified as "Potential Safety Enhancements" in the Commercial Street Corridor Road Safety Audit (RSA) completed by TEC, Inc. in June 2016. Further attempts to incorporate the medium and long-term countermeasures identified in the RSA will be evaluated by the Proponent as part of any future design and should be evaluated by DCR, the City of Lynn, and other developers within the immediate area.

The Proponent has committed to the following improvements identified in the RSA to improve traffic safety along the Commercial Street corridor:

- Signage - Install or introduce the following traffic signage related improvements:
  - Install new street name signage at intersection locations along Commercial Street;

- Install Wrong-way signage (R5-1a) on the Neptune Boulevard westerly approach facing Neptune Street;
- Install "Do Not Block the Intersection" signage (R10-7) along Commercial Street at Summer Street, Neptune Boulevard, and the Rear McDonald's Driveway;
- Install additional "No Turn on Red" sign (R10-11b) along Commercial Street northbound at Summer Street on easterly traffic signal post and along Commercial Street southbound at Summer Street;
- Install additional "No Left Turn" signage (R3-2) along Commercial Street opposite the Honda Dealership driveway; and
- Reinstall parking and no-parking signage at targeted locations along Commercial Street between Summer Street and the Lynnway.

- Traffic Signals - Install or introduce the following traffic signal related improvements:
  - Provide retro-reflective backplates to all "rigidly mounted" traffic signal housings along the corridor and retrofit all traffic signal housing with tunnel visors. All backplates and tunnel visors should be polycarbonate to limit the additional dead-load on existing traffic signal equipment; and
  - Revise current traffic signal timing to provide adequate vehicle and pedestrian clearance intervals.
- Pavement Markings - Install or introduce the following traffic signal related improvements:
  - Stripe "Sharrow" pavement markings along Commercial Street, between the Lynnway (Route 1A) to the south and Summer Street to the north, to increase motorist awareness of the travel lane being shared with bicycle traffic. Share-the-Road signage (W16-1) will be installed to supplement the shared-use pavement markings;
  - Provide new pavement markings along Commercial Street (where necessary), such as edge lines, centerlines, and STOP lines, where existing markings are currently faded or missing;
  - With guidance from the City of Lynn, provide pavement markings along Commercial Street to delineate on-street parking zones;
  - Stripe dashed centerline tracking between Neptune Boulevard and Neptune Street through the intersection and along Commercial Street at Summer Street; and
  - Provide arrow pavement markings along the Commercial Street approach to the Lynnway to denote the one-way southbound flow of traffic.

The Proponent has committed to work with DCR and the City of Lynn to implement other short-term improvements as described in the RSA that should be incorporated immediately.

Corridor: Lynnway (Route 1A)

The subsequent sections describe improvements to specific intersections along the Lynnway adjacent to the study area. The following improvements are necessary to improve traffic operations and safety along the Lynnway corridor:

- Incorporate new traffic signal coordination patterns for the weekday morning, weekday midday, weekday evening, and weekend peak periods along the Lynnway between the Jughandle to the south and 19th Street to the north;
- Revise current traffic signal timing to provide adequate clearance intervals and to provide adequate pedestrian clearance intervals; and
- Stripe "Sharrow" pavement markings along the Lynnway, between the Jughandle to the south and 19th Street to the north, to increase motorist awareness of the travel lane being shared with bicycle traffic. Share-the-Road signage (W16-1) will be installed to supplement the shared-use pavement markings. The existing right-of-way constraints do not permit shoulder widening or the addition of separated bike lanes.

IV. PEDESTRIAN, BICYCLE, AND PUBLIC TRANSPORTATION ACCOMMODATIONS

The Proponent has also committed to designing the Site and its direct connections to the Lynnway in line with Complete Streets guidance. A Complete Street is one that provides a safe, accessible, and conformable means of travel for all facility users. This includes accommodations for public transportation, pedestrians, and bicyclists; as well as passenger vehicles. The following section describes the on and off-site amenities in support of Complete Streets for public transportation, pedestrians, and bicyclists.

Pedestrian Amenities

The proposed Lynn Gear Works Redevelopment will create a more pedestrian-friendly on-site area with streetscape improvements. A network of sidewalks and enhanced streetscapes, such as street lighting and street trees, will establish pedestrian-friendly connections between the residential buildings, on-site amenities, and the GE/River Works MBTA Station. In addition, sidewalks will be constructed along 19th Street and the proposed Southerly Site Driveway to provide connection from the Site to the Lynnway. Trees and landscaping treatments will create aesthetically-pleasing and pedestrian-friendly areas.

The Proponent has committed to improve pedestrian signal equipment (see above) and ADA/AAB compliant wheelchair ramps at intersections along the Lynnway between the Jughandle and 19th Street. In addition, traffic signal pedestrian timings at these

intersections and others along Commercial Street within the study area will be recalculated to provide a sufficient and safe time for pedestrians to cross the roadway.

Bicycle Amenities

The Proponent is not proposing roadway widening and implementation of dedicated bicycle lanes on the Lynnway, as the scope of off-site mitigation is anticipated to be incorporated with only minor modifications to existing curb lines. The limited Right-of-Way provided along the Lynnway and the proximity of local businesses to the DCR Right-of-Way precludes the ability to implement dedicated bicycle lanes without a full reconstruction of the corridor. The Proponent has committed to installing shared bicycle "sharrow" lane markings and share-the-road bicycle signage along the major Site driveways, the Lynnway, and along Commercial Street to increase motorist awareness of the travel lane being shared with bicycle traffic. Share-the-Road signage (W16-1) will be installed to supplement the shared-use pavement markings.

The Proponent has committed to additional bicycle-related TDM measures, such as bicycle racks at each residential building, which are identified in the following TDM section.

Transit Amenities

MBTA Commuter Rail

The existing River Works MBTA Station is currently a private stop along the MBTA Newburyport/Rockport Commuter Rail Line. The stop, owned by the MBTA and maintained by GE, has been used traditionally to provide commuter rail access to the GE River Works and Gear Works plants exclusively for GE employees. The Proponent has committed to provide access to the proposed residential TOD via commuter rail service to the existing River Works MBTA Station. The Proponent has developed a Memorandum of Understanding (MOU) with the MBTA that includes a commitment by the Proponent to upgrade the River Works stop by designing and constructing two ADA-compliant platforms to service the mainline tracks. Use of this station will provide the residents of the Project with efficient access to downtown Boston and to points north, as well as reduce vehicle trips on the adjacent roadway network.

The Proponent is committed to providing additional space for future MBTA-related accommodations. Space for a drop-off area with a limited number of parking spaces will be set aside to allow for the future conversion of the stop from private to public. However, the design as noted in the FEIR and Section 61 Finding has been studied with the assumption that the stop will remain private for the foreseeable future.

MBTA Bus Service

The Proponent is committed to the following upgrades to enhance bus accessibility along the Lynnway for each bus stop between the Site's access points:

- *Lynnway Southbound at 19th Street (far-side of intersection)* – Install a bench, bus schedule post, and trash receptacle at the existing bus stop location and within the existing Right-of-Way. The street furniture will be placed at the back-of-sidewalk to maintain existing Americans with Disabilities Act (ADA) accommodations. Install new bus stop signage at the existing location to comply with MBTA standards for accessibility and length;
- *Lynnway Southbound opposite Hanson Street (near-side of intersection)* - Install a bench, bus schedule post, and trash receptacle at a relocated bus stop location and within the existing Right-of-Way. The street furniture will be placed at the back-of-sidewalk to maintain existing ADA accommodations. The stop will be located, with new signage, further upstream on the near-side of the intersection location to comply with MBTA standards for accessibility and length;
- *Lynnway Southbound at Proposed Site Driveway (far-side of intersection)* – Current stop location and placement of curb-cuts does not support the installation of street furniture or other enhancements without relocation of private permitted driveways. The Proponent has committed to replace existing MBTA bus signage;
- *Lynnway Northbound at 19th Street (near-side of intersection)* – Install a trash receptacle at the existing bus stop/shelter location within the existing Right-of-Way. The proposed street furniture will be placed at the back of sidewalk to maintain existing ADA accommodations. With the review and approval of MBTA and DCR, install new bus stop signage at the existing location to comply with MBTA standards for accessibility and length.
- *Lynnway Northbound opposite Hanson Street (far-side of intersection)* – Construct a bus turn-out and a relocated bus shelter at the location of the existing bus stop. Install a trash receptacle at the existing bus stop/shelter location within the existing Right-of-Way. The proposed street furniture will be placed at the back of sidewalk to maintain existing ADA accommodations. Construction of a bus turn-out at this location is contingent upon the City of Lynn granting a Right-of-Way between the Lynnway and the Walmart property; and
- *Lynnway Northbound at Jughandle (far-side of intersection)* – Install a bus shelter with schedule information and trash receptacle at the existing bus stop location and within the existing Right-of-Way. Install new bus stop signage at existing location to comply with MBTA standards for accessibility and length.

V. TRANSPORTATION DEMAND MANAGEMENT (TDM) MEASURES

TDM measures are recommended to reduce vehicle trips and better manage traffic generated by the proposed Project. These measures are summarized below.

Site Coordination Measures:

- Provide a Transportation Coordinator (TC) or Transportation Management Office (TMO) on-site;
- Seek membership in the North Shore Transportation Management Association (TMA); and
- Seek participation in MassRIDES (pending membership activation with North Shore TMA).

Transit Measures:

- Locate development close to MBTA bus and Commuter Rail services, including the River Works MBTA Station;
- Provide enhancements to bus stops along the Lynnway adjacent to the side; including but not limited new bus shelters as noted in the previous section;
- Subsidize a portion of the cost of transit passes for commuter rail, bus services, and ferry services (when operational) to residents; and
- Post public transportation schedules with transit maps for all nearby routes within each of the several residential buildings and on-site amenities.

Parking Treatments:

- Provide charging stations for electric vehicles;
- Provide preferential parking for rideshare, carpool, and hybrid vehicles;
- Implement parking fees for residents' second vehicle to discourage vehicle trips;
- Provide the minimum parking based on the potential demand of the project; and
- Evaluate providing direct access to Zip Car services on-site.

Pedestrian and Bicycle Treatments:

- Locate development close to heavy retail and commercial developments along the Lynnway;
- Provide sidewalks and bicycle accommodations on-site with building to building connections and connections to/from the MBTA Commuter Rail Station and the Lynnway;

- Update and retrofit pedestrian signal equipment at study area intersections surrounding the site;
- Provide striping improvements for sharrows along the Lynnway and site driveways;
- Provide ADA improvements at wheelchair ramps near the site; and
- Provide secure, weather protected, long-term bicycle parking (for residents) at designated locations within the site.

Other Measures:

- Encourage vanpool and carpooling rideshare programs, including NuRide;
- Provide site accessories, such as minor resident on-site food service or retail buildings to provide low level comfort retail, an on-site resident fitness center, an on-site club house, and on-site open space and athletic facilities for recreational uses;
- Organize promotional events and activities to encourage rideshare and alternative transportation means; and
- Provide a monitoring system to evaluate TDM goals.

VI. TRANSPORTATION MONITORING PROGRAM

The Proponent has committed to implementing a TMP, which is intended to monitor traffic operations and parking occupancy throughout the construction and for a period following completion of the Project. The intent of the monitoring program is to ensure that the Project impacts are consistent with those predicted in the DEIR and this FEIR, and evaluate the need for additional improvements. This will also assure that vehicle emissions which may result from inefficient signal timing and improper phasing are minimized in the future after the completion and occupancy of the proposed residential transit oriented development.

The monitoring program will include evaluation of the following:

- Traffic operations at the intersections of:
  - Lynnway (Route 1A)/Jughandle/Southerly Site Driveway;
  - Lynnway (Route 1A)/Harding Street/19th Street;
  - Lynnway (Route 1A)/Commercial Street;
- Utilization of the constructed parking supply; and
- Effectiveness of TDM measures as defined in previous section.

As part of the monitoring program, the Proponent will complete the following tasks:

- Collect manual TMCs during the weekday morning (7:00 to 9:00 AM) and weekday evening (4:00 to 6:00 PM) peak periods at the following intersections:
  - Lynnway (Route 1A)/Jughandle/Southerly Site Driveway;
  - Lynnway (Route 1A)/Harding Street/19th Street;
  - Lynnway (Route 1A)/Commercial Street;
- Collect Automatic Traffic Recorder (ATR) counts for a continuous 72-hour period along the following roadway segments:
  - Lynnway (Route 1A), south of Jughandle;
  - Lynnway (Route 1A), north of 19th Street;
- Compare the TMCs collected above with those projected within the DEIR/FEIR prepared for the Project to determine whether the total vehicles entering each intersection exceeds the volumes projected;
- Collect on-site parking utilization counts during a typical weekday peak parking demand period between 7:00 PM and 10:00 PM to assess the adequacy of the existing parking supply. In addition, the utilization of preferential carpool and alternative-fueled vehicle spaces, as well as EV charging stations, will be recorded separately to track utilization of these programs;
- Conduct a survey of residents to estimate the use of public transit and other TDM measures to be implemented as part of the Project. This survey will be utilized to measure the vehicle trips reduced (VTR) and to determine the effectiveness of the TDM program in meeting the Project's mode share goals and assessing the need for modification to the TDM program to reduce SOV trips;
- Review crash reports from MassDOT and City of Lynn Police Department records to compare crash rates before and after occupancy of the proposed development to assess whether a significant increase in collisions has occurred as a result of the Project. Should an increase in the crash rate of more than 10 percent occur at any of the study area intersections listed above, the Proponent will work with DCR and the City of Lynn to evaluate potential mitigation measures;
- Document potential alternative TDM measures should the development fall short of its projections for public transportation and other SOV reducing measures; and
- Prepare a memorandum summarizing the results of the TMCs, ATRs, parking, mode share, and observations of traffic signal operations to DCR, CPTS, the City of Lynn, and the North Shore TMA (pending membership).

The monitoring program will occur on an annual basis beginning one (1) year after issuance of the first occupancy permit and continuing for five (5) years following full

occupancy of the Project. Parking and mode share related monitoring will occur subsequent to each construction phase to assess the need to reduce the parking field or structured parking on-site for future phases. The monitoring program may be suspended if five (5) years have passed since the issuance of an occupancy permit for the Project.

VII. AIR QUALITY/GHG EMISSIONS

In accordance with the MEPA "Greenhouse Gas Emissions Policy and Protocol," the Proponent will provide a certification to the MEPA Office signed by an appropriate professional stating that all transportation and non-transportation greenhouse gas mitigation measures described in the DEIR and FEIR, or measures providing comparable mitigation, have been incorporated into the Project. This self-certification will be supported by as-built plans and shall include an update with respect to those measures that are operational in nature (i.e. TDM program, recycling, Energy Star-rated equipment, etc.). This update shall include any changes to these measures from those identified in the DEIR or FEIR, the schedule for implementation of all measures, and how progress toward achieving these measures will be advanced, if not currently implemented. The self-certification and all supporting plans and documents shall be provided to the MEPA office within three months of the completion of the Project.

VIII. FINDINGS

DCR finds that, with implementation of the mitigation measures described herein, all feasible means and measures will have been taken to avoid or minimize adverse traffic and related impacts to the environment resulting from the Project. Appropriate conditions consistent with this Section 61 Finding will be included in the access permits to be issued by DCR to ensure implementation of the mitigation measures.

6.1.2 Massachusetts Department of Environmental Protection

DRAFT ONLY

March 10, 2017

Secretary Matthew A. Beaton
Executive Office of Energy & Environmental Affairs
100 Cambridge Street, Suite 900
Boston MA 02114

ATTN: Deirdre Buckley, Director, MEPA Office

Re: M.G.L. Chapter 91 Waterways Licensing
Lynn Gear Works Project
Lynn, MA (EEA No. 15441)

Dear Secretary Beaton and Director Buckley:

On behalf of Lynnway Associates (the "Proponent"), VHB has prepared a summary of the project's potential impacts on tidelands and measures designed to avoid, minimize and mitigate such impacts in accordance with the regulations at 310 CMR 9.00.

I. PROJECT DESCRIPTION

Lynnway Associates, LLC (the "Proponent") proposes to redevelop a site formerly occupied by the ±500,000 square foot (SF) General Electric (GE) Gear Works facility, which was demolished in 2011. The proposed Lynn Gear Works Redevelopment (the "Project"), a transit-oriented development (TOD), consists of constructing 1,260 new residential apartment units within six residential buildings on the Site. In addition, several supporting resident-oriented buildings will be provided including a club house, leasing/management office, sports club, pool house and maintenance space. Approximately 16,000 SF of support retail/lounge space will be provided to offer on-site services to the residents in an effort to minimize off-site trips. All ancillary uses as noted above are on-site amenities for residents.

The Site will include 2,080 on-site parking spaces. To limit the total amount of impervious area on-site, only approximately 337 parking spaces will be provided as surface or on-street parking, including a 10-space surface parking area to support public access to the Waterfront Area along the Saugus River. The remainder of the parking spaces will be provided in parking structures.

Access to the Site is proposed via the existing signalized driveway, signed as 19th Street, on the westerly side of the Lynnway opposite Harding Street. As part of this Project, a secondary full-access/egress driveway is proposed for construction along the westerly side of the Lynnway opposite the existing Jughandle between Hanson Street to the north and the General Edwards Bridge (Saugus River Bridge) to the south.

The Project includes the following activities within filled and flowed tidelands:

- Maintenance, repair, rehabilitation and/or replacement of the existing licensed outfalls #28, #29, #30 and #31. No new fill or expansion of these structures will occur within flowed tidelands or within salt marsh.
- Maintenance, repair, rehabilitation and/or replacement of an approximately 35-foot long timber bulkhead located adjacent to Outfall #30 and authorized by DPW Waterways License 6160 and DEP Waterways License 9140.

- Placement of additional structural fill material within filled tidelands. Fill is proposed to provide a suitable subgrade for site development and to raise critical portions of the project site above the coastal floodplain as determined by the Federal Emergency Management Agency, to increase resiliency of the Project and surrounding areas and to accommodate potential sea level rise.
- Construction of portions of three buildings for non-water dependent uses within filled private tidelands. Proposed Building A, Building B and the parking garage PS-1 are located, in part, within filled private tidelands. These buildings are all located a minimum of 600 feet from existing flowed tidelands and outside the 100-foot wide Water Dependent Use Zone established by 310 CMR 9.51(3)c).
- Construction of roads and on-street parking located, in part, within filled private tidelands.
- Construction of public access and waterfront amenities. The Project includes amenities such as a waterfront path, a community waterfront amenity building, sidewalks, and lawn and landscaped areas open to public access to encourage active and passive recreation.

II. IMPACTS

The Project includes the following impacts to filled tidelands associated with the Saugus River subject to the jurisdiction of M.G.L. Chapter 91 and the Waterways Regulations at 310 CMR 9.00, based on the current iteration of the Site Plan. The final configuration and associated impacts will be depicted in the Chapter 91 License Plan:

- Construction of portions of three buildings for non-water dependent uses on filled private tidelands comprising an approximate footprint of 6,725 SF in the aggregate;
- Construction of internal site drive and surface parking for non-water dependent uses within approximately 2,600 SF of filled private tidelands;
- Dedication of approximately 23,655 SF of open space within filled private tidelands;
- Removal of approximately 600 linear feet of 8-foot high chain-link fence located along the edge of the Saugus River; and
- Construction of a new waterfront community building/pavilion at the edge of the Saugus River, with 10 dedicated parking spaces for public use and access, open free of charge.

III. MITIGATION

The Project mitigates the above impacts and complies with the applicable open space, height, private tenancy and Water Dependent Use Zone criteria of Chapter 91. The Project will fully comply with all Chapter 91 standards. The following mitigation is proposed:

- Opening approximately 30,380 SF of filled private tidelands that had been reserved for water-dependent industrial and associated uses since 1941 to public and private use, encouraging access to the Saugus River shoreline;
- Dedication of approximately 23,655 SF of open space within filled private tidelands;
- Removal of approximately 600 linear feet of 8-foot high chain-link fence located along the edge of the Saugus River; and
- Construction of a new community waterfront amenity building at the edge of the Saugus River, with 10 dedicated parking spaces and dedicated vehicular and pedestrian access for public use, free of charge.

IV. FINDINGS

The Massachusetts Department of Environmental Protection (MassDEP) reviewed the Environmental Notification Form (ENF) dated November 16, 2015, and submitted a comment letter to the Massachusetts Environmental Policy Act (MEPA) Office within the Executive Office of Energy and Environmental Affairs (EEA). Furthermore, MassDEP has reviewed the Draft Environmental Impact Report (DEIR) dated October 17, 2016 and submitted a comment letter(s) to EEA thereon.

MassDEP finds that, with the mitigation measures and design features described, all feasible means and measures will have been taken to avoid or minimize adverse impacts to filled tidelands or coastal wetlands and related impacts to the environment resulting from the Project. Appropriate conditions consistent with this Section 61 finding will be included in the Chapter 91 License to be issued by the Department as part of the implementation of the mitigation measures.

This Section 61 Finding is accordingly based upon information disclosed throughout the MEPA process including its review of the Final Environmental Impact Report (FIER).

A separate Public Benefits Determination will be issued by this office within thirty (30) days following certification of the FEIR.

6.1.3 Stationary Source GHG Emissions Self-Certification

In accordance with the MEPA GHG Policy, the Proponents are committed to providing a self-certification to the MEPA Office signed by an appropriate professional (e.g., engineer,

architect, transportation planner, general contractor) following completion of construction to demonstrate that the stationary source GHG emissions have been mitigated. A draft commitment letter for this self-certification submission is provided below.

DRAFT ONLY

March 10, 2017

Secretary Matthew A. Beaton
Executive Office of Energy & Environmental Affairs
100 Cambridge Street, Suite 900
Boston MA 02114

ATTN: Deirdre Buckley, Director, MEPA Office

Re: Letter of Commitment for Stationary Source Greenhouse Gas Emissions Self-Certification
Lynn Gear Works Project
Lynn, MA (EEA No. 15441)

Dear Secretary Beaton and Director Buckley:

On behalf of Lynnway Associates (the "Proponent"), VHB has prepared a summary of the estimated reduction in overall energy use and stationary source Greenhouse Gas (GHG) emissions for the Lynn Gear Works Redevelopment Project located in Lynn, MA (the "Project").

In accordance with the current the MEPA Greenhouse Gas Emissions Policy and Protocol (the "GHG Policy") dated May 2010, the stationary source GHG assessment was provided to the MEPA Office as part of the Draft Environmental Impact Form (the "DEIR") filed on October 17, 2016. The design case assumed building design and system improvements that would result in energy reductions, in accordance with the GHG Policy. On XXX, a Certificate was issued stating that the Project's FEIR adequately and properly complied with the Massachusetts Environmental Policy Act (MEPA) and its implementing regulations was issued by the Secretary of Energy and Environmental Affairs (EEA).

The energy conservation measures proposed for the full build-out of the Project are estimated to reduce the overall energy use by 19.2% percent resulting in a 20.1% percent reduction in stationary source CO_2 emissions when compared to the baseline case. The following table presents the estimated energy savings and CO_2 emissions reductions for each Project Component:

Project Component	Energy Consumption (MBtu/yr)			CO_2 Emissions (tons/yr)		
	Base Case	Design Case	Percent Savings	Base Case	Design Case	Percent Reduction
Residential Buildings A, B, D, E, F	70,321.4	59,749.3	-15.0%	6,781.8	5,781.5	-14.7%
Residential Building C	22,609.9	19,843.9	-12.2%	2,222.0	1,927.9	-13.2%
Parking Garages	7,525.3	1,252.0	-83.3%	794.5	132.7	-83.3%
Clubhouse/Lounge	1,285.4	1,165.2	-9.0%	94.0	85.5	-9.0%
Pool House	753.1	643.5	-14.6%	53.7	46.1	-14.0%
Leasing Center/Retail	762.9	700.3	-8.2%	70.5	64.3	-8.7%
Sports Club/Maintenance	4,801.2	4,291.5	-10.6%	357.0	320.6	-10.2%
Parking Lots	774.1	269.8	-65.0%	81.7	28.6	-65%
Total	**108,064.5**	**87,646.5**	**-18.9%**	**10,455.2**	**8,387.1**	**-19.8%**

The building energy model results/energy savings and resulted stationary source GHG emissions reductions are preliminary as none of the proposed buildings have progressed past a conceptual level of design. Following completion of construction of each element, the Proponents will submit a self-certification to the MEPA Office, signed by an appropriate professional, which identifies the as-built energy conservation measures and documents the stationary source GHG emissions reductions from the baseline case.

If you have any questions, please contact me at (781) 890-2220 x30 or via e mail at mWallace@TechEnv.com.

Very truly yours,

Marc C. Wallace, Tech Environmental, Inc.

cc: Lynnway Associates, LLC

6.2 Proposed Mitigation

The Proponent, where practicable, will mitigate or compensate for unavoidable impacts. This section provides a summary of impacts from and mitigation required for implementation of the Project. Table 6.2 summarizes the Proponent's mitigation commitments. All commitments are the responsibility of the owner and the owner's design team.

TABLE 6.2 SUMMARY OF MITIGATION MEASURES

Category	Mitigation Measure	Estimated Cost	Schedule
Air Quality/Greenhouse Gas Emissions			
	Design cool roofs	N/A	Final Design
	Install higher energy efficient windows and increased building envelope insulation	TBD	Construction Phase I
	Design for higher HVAC cooling efficiency	N/A	Final Design
	Install sealed, tested, and insulated HVAC supply ducts	TBD	Construction Phase I
	Install energy management systems for residential buildings	TBD	Construction Phase I
	Install energy efficient LED exterior lighting	TBD	Construction Phase I
	Install energy efficient interior lighting	TBD	Construction Phase I
	Install water conserving fixtures in all buildings	TBD	Construction Phase I
	Install energy STAR appliances	TBD	Construction Phase I
	Install demand control exhaust ventilation (DCEV) with VFD fans for parking garages	TBD	Construction Phase I
	Construct waste recycling areas	TBD	Construction Phase I
	Install electric vehicle charging stations	TBD	Construction Phase I
Water/Wastewater Generation			
	Payment to Lynn Water and Sewer Commission of I/I program fee.	$1,030,000[a]	Phased with Sewer Connection Applications
	Replacement of portions of sewer service pipe.	$375,000	Construction Phase I
Traffic/Transportation			
	Off-site intersection improvements at: ▫ The Lynnway (Route 1A)/Jughandle/Southerly Site Driveway ▫ The Lynnway (Route 1A)/Hanson Street ▫ The Lynnway (Route 1A)/Harding Street/19th Street ▫ The Commercial Street Corridor ▫ The Lynnway (Route 1A) Corridor ▫ Off-Site Pedestrian Bicycle, and Transit AccomodationsShort- and long-term improvements to the Lynnway Corridor in compliance with the Route 1A/Lynnway/Carroll Parkway Study	$1,750,000	Construction Phase I

Category	Mitigation Measure	Estimated Cost	Schedule
	On-Site Pedestrian, Bicycle, and Transit Accommodations: ▫ Internal sidewalk network ▫ Complete Streets design ▫ Streetscapes ▫ Improve pedestrian signals & ADA compliant ramps on the Lynnway ▫ Recalculate signal timings to accommodate pedestrians ▫ Install sharrows on the Lynnway ▫ Site-wide bicycle racks ▫ Commuter rail access for residents	TBD	Construction Phase II
	Transit Amenities		Construction Phase I
	▫ Residential access to GE/River Works MBTA commuter rail station	$9,400,000	
	▫ Future parking and passenger drop-off space for MBTA station	$900,000	
	▫ Upgrades to six bus stops along the Lynnway	TBD	
	TDM strategies: ▫ Site coordination measures ▫ Public transportation measures ▫ Parking measures ▫ Pedestrian and Bicycle measures ▫ Carpooling/Rideshare program ▫ On-site amenities to reduce off-site trips ▫ Promotional events and activities to encourage alternative transportation ▫ Monitoring system to evaluate TDM goals	TBD	Construction Phase II
Public Access			
	Open filled private tidelands to public and private use	N/A	Construction Phase I
	Dedicate open space within filled private tidelands	N/A	Construction Phase I
	Remove fence along edge of Saugus River on the Project Site	TBD	Construction Phase I
	Construct new community waterfront amenity building with associated parking and pedestrian access for public use	$1,000,000	Construction Phase I

[a] And/or a combination of fee payment and demonstrating I/I removal,

7

Response To Comments

This chapter presents comments received on the Lynn Gear Works DEIR (EEA No. 15441). Section 7.1 includes the Certificate of the Secretary of Energy and Environmental Affairs dated November 30, 2016. Section 7.2 provides the original comment letters annotated with unique identifying codes for each comment. Section 7.3 provides responses to each comment in a tabular format.

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7.1 Certificate of the Secretary of Energy and Environmental Affairs on the Draft Environmental Impact Report, November 30,2016, EEA No. 15441

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The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Matthew A. Beaton
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1081
http://www.mass.gov/eea

November 30, 2016

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
DRAFT ENVIRONMENTAL IMPACT REPORT

PROJECT NAME	: Lynn Gear Works Redevelopment
PROJECT MUNICIPALITY	: Lynn
PROJECT WATERSHED	: North Coastal
EEA NUMBER	: 15441
PROJECT PROPONENT	: Lynnway Associates, LLC
DATE NOTICED IN MONITOR	: October 24, 2016

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61-62I) and Section 11.08 of the MEPA regulations (301 CMR 11.00), I have reviewed the Draft Environmental Impact Report (DEIR) and hereby determine that it **adequately and properly complies** with MEPA and its implementing regulations.

Project Description

As described in the DEIR, the project consists of the redevelopment of a 65.5-acre brownfield site into a 1,494,000-square foot (sf) transit-oriented development (TOD). The site is located off the Lynnway (Route 1A) in Lynn and was previously developed for industrial uses by General Electric (GE). The project will include construction of 1,260 residential units in six buildings and a mix of other uses, including a 9,800-sf clubhouse, a 43,310-sf sports club, a 10,260-sf management office, and 16,000 sf of neighborhood retail space. The project will also provide 2,130 parking spaces (structured and at-grade). Site access is proposed via an existing signalized full-access driveway on the Lynnway opposite Harding Street and a second full-access driveway on the Lynnway opposite the Jughandle. The project will provide commuter rail access via the Massachusetts Bay Transportation Authority (MBTA) GE/Riverworks Station, which is a privately controlled stop on the Newburyport/Rockport Commuter Rail line. The Proponent has indicated that the residential development will be gated and will not include vehicular access to the general public.

The project will include internal private driveways, a stormwater management system, and other associated infrastructure including water, sewer, power, and phone/data. Water and wastewater needs will be served by municipal systems. Development is proposed in five phases.

Project Site

The 65.5-acre project site (Lot 1) is owned by the Proponent. It is part of a 77-acre parcel previously owned by GE. The remaining 11.5-acre portion houses an outlying utility building (Lot 3) and jet fuel storage tanks (Lot 2), which are utilized by the adjacent Riverworks plant and will be retained by GE. The project site is located west of the Lynnway, just north of the border between Lynn and Revere. The site is bounded by the Saugus River to the south, the MBTA Newburyport/Rockport Commuter Rail Line and Lot 2 to the west, Lot 3 to the east and several commercial properties to the north and east (along the west side of the Lynnway).

The site was previously part of property owned by GE, along with the adjacent Riverworks plant to the west across the MBTA right-of-way (ROW). GE expanded the Riverworks plant to the east with the development of the Gearworks plant in 1941, which was constructed to manufacture main propulsion gear boxes for the U.S. Navy (destroyers, nuclear carriers, and submarines) during World War II (WWII). The Navy no longer required gears after WWII and GE purchased the plant in 1971.The Gearworks plant was closed and demolished in 2011 and has since remained vacant.

Access to the site is provided via a full access driveway (signed as 19th Street) along the west side of the Lynnway opposite Harding Street. The Lynnway is under the jurisdiction of the Department of Conservation and Recreation (DCR). A secondary access drive is provided for fuel trucks only along the western edge of the site, which crosses over the MBTA ROW and passes through the GE Riverworks property to Western Avenue. MBTA commuter rail service is currently provided to the site via an existing private stop at the GE/Riverworks Station along the Newburyport/Rockport line.

The site contains 38.4 acres of uplands and 27.1 acres of coastal wetlands. The upland portion of the site is generally flat. The majority of the site is developed; however, the site includes wetland resource areas in the southern portion along the Saugus River. Wetland resource areas include Land Subject to Coastal Storm Flowage (LSCSF), Riverfront Area, Coastal Bank, Salt Marsh, Coastal Beach/Tidal Flats, and Land Containing Shellfish. The entire site is in the Waterfront Zone (WF-1). The project is located within the Rumney Marshes Area of Critical Environmental Concern (ACEC). The Rumney Marshes ACEC and the Salt Marsh within the ACEC are designated Outstanding Resource Waters (ORW). The site is regulated under the Massachusetts Contingency Plan (MCP) (M.G.L. c.21E) and is subject to an Activity Use and Limitation (AUL).

Environmental Impacts and Mitigation

Potential environmental impacts associated with the project include: the generation of 5,842 new average daily trips (adt); the construction of 2,130 new parking spaces; use of 245,207 gallons per day (gpd) of water; generation of 222,915 gpd of wastewater; construction of 3,450 feet and 2,400 feet of water and sewer mains, respectively; permanent alteration of LSCSF, and new non-water dependent use of tidelands or waterways.

Measures to avoid, minimize and mitigate potential impacts include redevelopment of a brownfield site, removal of 1.1 acres of impervious area, redevelopment of an industrial brownfield site, construction of a stormwater management system, transportation improvements including conversion of the rail station into a public stop, transportation demand management (TDM) measures, public access to the waterfront, enhanced bicycle and pedestrian access and
measures to address vulnerability of the site to the potential effects of climate change.

Permits and Jurisdiction

The project is subject to a Mandatory EIR pursuant to 301 CMR Sections 11.03(3)(a)(1)(b), 11.03(6)(a)(6) and 11.03(6)(a)(7) of the MEPA regulations because it requires State Agency Actions and will alter ten or more acres of other wetlands (LSCSF), generate 3,000 or more new adt providing access to a single location, and construct 1,000 or more new parking spaces at a single location. The project also exceeds Environmental Notification Form (ENF) thresholds[1] at 301 CMR 11.03(1)(b)(1) for direct alteration of 25 or more acres of land[2]; 301 CMR 11.03(5)(b)(4)(a) for new discharge to a sewer system of 100,000 or more gpd of sewage; 301 CMR 11.03(5)(b)(3)(c) for construction of one or more new sewer mains of one-half of more miles in length that are not located in the ROW of existing roadways and 301 CMR 11.03(11)(b) because it is located within an ACEC.

The project may receive Financial Assistance from the Commonwealth in the form of a MassWorks grant. The project will require a Chapter 91 (c. 91) License from the Massachusetts Department of Environmental Protection (MassDEP), a Construction and Access Permit and Traffic Signal Regulation from DCR, a Memorandum of Understanding (MOU) from the Massachusetts Department of Transportation (MassDOT) and MBTA, a Chapter 40 Section 54A Permit for Construction on Railroad Rights-of-Way from the MassDOT, a Section 8(m) Permit from the Massachusetts Water Resources Authority (MWRA) and review under the Massachusetts Endangered Species Act (MESA) by the Natural Heritage and Endangered Species Program (NHESP). The project is subject to the MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol (the Policy). The project will also require a Public Benefits Determination (PBD). The project may require review and approval of Stormwater Pollution Prevention Plans (SWPPP) for Construction or Industrial General Permits Discharging to ORWs (BRP WM 09) from MassDEP.

The project will also require an Order of Conditions from the Lynn Conservation Commission (or in the case of an appeal, a Superseding Order of Conditions from MassDEP), and a National Pollutant Discharge Elimination System (NPDES) Construction General Permit from the United States Environmental Protection Agency (EPA). The project will require federal consistency review from the Massachusetts Office of Coastal Zone Management (CZM).

Because the Proponent is seeking opportunities for Financial Assistance from the Commonwealth for the project, and requires a c. 91 License, subject matter jurisdiction is broad and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

[1] The ENF indicates that the project would exceed the ENF threshold at 301 CMR 11.03(4)(b)(1) for new withdrawal of 100,000 or more gpd from a water source that requires new construction; however, at the MEPA site visit, the Proponent indicated that the project would not require construction of a new water source.
[2] The project will alter greater than 25 acres of land that was previously developed.

Review of the DEIR

The DEIR provides a detailed description of the project, existing and proposed conditions plans, an alternatives analysis, a GHG analysis, a transportation analysis, an assessment of the site's vulnerability to effects of climate change, and identifies measures to avoid, minimize, and mitigate the project's environmental impacts. The DEIR identifies changes to the project since the filing of the ENF. It provides a description and analysis of applicable statutory and regulatory standards and requirements, and explains how the project will meet those standards. It includes a list of required State Agency Actions, and Financial Assistance, and provides an update on the status of these actions. The DEIR indicates that the Proponent will seek funding opportunities including a MassWorks grant and/or transportation improvements through a U.S. Department of Transportation (USDOT) Fast Lane grant. The DEIR describes local review and permitting requirements. The DEIR indicates that the project is intended to provide market-rate rental units and does not anticipate incorporating affordable housing.

Alternatives Analysis

The DEIR provides an analysis of several project alternatives including the No-Build, Building Program variations, and the Reduced Build. The analysis includes a summary of potential environmental impacts (in tabular format) associated with each of these alternatives and a supporting narrative. Conceptual site layout plans are provided for the Reduced Build and Preferred Alternatives. The analysis quantifies each alternative's impacts on land alteration, creation of impervious area, impacts to wetland resource areas, traffic generation, parking, water use, and wastewater.

The DEIR indicates that the No-Build alternative would leave the site in its present degraded and poorly utilized condition with a limited tax base for the community. While it would create no new impacts, it would not realize the site's economic potential, provide housing within the context of a TOD, provide jobs, or improve the existing outdated infrastructure on-site and along the Lynnway. The No-Build alternative was dismissed because it is not consistent with planning and redevelopment initiatives targeted for this area and with the City of Lynn Waterfront Master Plan.

The Building Program alternatives include:

- Retail Based Mixed Use (500 units; 750,000 sf retail);
- Office Building Alternative (1,500,000 sf office);
- Restaurant/Retail Mixed Use (980 units; 200,000 restaurant/retail); and
- TOD residential project with Mixed Use Components – Preferred Alternative.

The Reduced Build alternative consists of 1,000 residential units, 1,520 parking spaces, and residential amenity spaces. Approximately 70 percent of the site would consist of buildings, parking areas, roadways, and other impervious areas and 30 percent of the site would consist of vegetated or pervious area. Due to the triangular shape of the site, this alternative would place all buildings at the southern end of the site to provide residents with views and amenities. Open space would be provided on the northern portion of the site where it is not accessible to the public, and would not satisfy c. 91 requirements. The DEIR indicates that the cost of building three steel-frame residential towers would

prevent the production of market rate apartments and would not meet the goal of providing housing suitable for the City of Lynn.

The Preferred Alternative, as presented in the DEIR, represents a full build-out of the buildable portion of the site. It attempts to balance density, internal open space, public access to the waterfront, amenities, and access to the MBTA station while preserving views. The Preferred Alternative would result in the least amount of impervious area and the lowest level of traffic generation compared to the other alternatives. The Preferred Alternative will provide parking with each construction phase which will provide an opportunity to reevaluate the supply based on parking and transit demand prior to construction of subsequent phases. The Proponent intends to delay construction of the high rise tower until the final phase of the project to determine if market demand would justify the premium cost of these units. If market demand does not warrant full build-out, water use, wastewater generation, parking and trip generation would be further reduced.

I encourage the Proponent to continue to explore on-site alternatives to reduce impacts to environmental resources through design modification or the addition of features to further mitigate potential impacts such as impervious surfaces, additional open space, and reduced parking ratios for residential buildings.

Land Alteration

The DEIR indicates that almost the entire 38.4-acre upland portion of the site was previously developed or altered, with approximately 68 percent consisting of impervious surfaces. The DEIR quantifies the amount of alteration associated with the proposed project including areas to be altered for buildings, pavement/roadways, sidewalks, and pervious areas. It does not quantify the amount of land alteration associated with wastewater, water and stormwater infrastructure, and other project components. It includes a breakdown showing the amount of alteration for most project elements. The DEIR includes site plans that locate and delineate areas proposed for development, for open space, and areas that will not be altered.

Due to the amount of previously altered land on-site, the project will result in a reduction of impervious area of 1.1. acres and improved stormwater management. Further reductions will be sought through structured parking, a central open space, minimum width roadways and driveways, and avoidance and minimization of work in coastal wetlands. The project will reassess the parking demand as each phase is constructed and will reduce parking where necessary to maximize green space, public transit use, and reduce single-occupancy vehicle trips. The project will replace approximately 35,200 sf of pavement within Riverfront Area with vegetation.

Traffic and Transportation

The DEIR includes a Transportation Impact Assessment (TIA) prepared in conformance with the current MassDOT/EOEEA *Transportation Impact Assessment Guidelines*. The study includes a comprehensive assessment of the transportation impacts of the project. The Proponents proposes to implement an integrated multimodal mitigation package intended to improve vehicular traffic operations and provide safe and convenient access to residents who walk, bike, or using public transportation.

Site Access

Access to the project site is proposed via the existing signalized driveway, signed as 19th Street, on the westerly side of the Lynnway opposite Harding Street. A secondary full-access/egress driveway along the west side of the Lynnway opposite the existing jughandle between Hanson Street to the north and the General Edwards Bridge (Saugus River Bridge) to the south will be provided to improve the distribution of site-generated traffic volumes. To improve access into the site along the driveway, the Proponent is proposing to construct a left-turn lane along the Lynnway northbound approach to the intersection within the existing raised landscaped median. The left-turn lane will be designed to extend for its full width of the 95th percentile queue and deceleration length under traffic signal control.

Trip Generation

The trip generation characteristics for the project were estimated using guidelines outlined in the Institute of Transportation Engineers (ITE) Trip Generation Manual - 9th Edition. Based on the land uses proposed, the trip generation was calculated using Land Use Code 220 (Apartments). The project is expected to generate 7,790 new trips on an average weekday, including 624 trips during the weekday morning peak hour and 713 trips during the weekday evening peak hour. The project is expected to generate 8,804 new trips on an average Saturday, including 538 trips during the Saturday midday peak hour. When adjusted for use of public transportation, trip reduction is reduced to 5,842 vehicle trips on an average weekday and 6,062 vehicle trips on an average Saturday. The trip generation does not include traffic associated with on-site retail uses because they are intended to serve residents, not the general public.

In its comments on the ENF, MassDOT requested that the Proponent substantiate the mode share projections associated with transit use. The trip generation was refined using mode share splits derived from two comparable transit-oriented development (TOD) projects that rely primarily on commuter rail service, University Station in Westwood and Mansfield Station in Mansfield. In its comments on the DEIR, MassDOT indicates that it generally concurs with the methodology used.

Traffic Operations

The study area was selected to contain the major roadways and intersections providing local and regional access to the project site. The following intersection locations were analyzed as part of this DEIR:

- North Shore Road (Route 1A)/Lynnway Interchange [City of Revere];
- Lynnway (Route 1A)/Jughandle;
- Lynnway (Route 1A)/Hanson Street;
- Lynnway (Route 1A)/Harding Street / 19th Street;
- Lynnway (Route 1A)/Commercial Street;
- Lynnway (Route 1A)/Market Street;
- Commercial Street/Neptune Boulevard / Neptune Street; and
- Commercial Street/Summer Street.

Capacity analyses were conducted for the weekday morning and evening and Saturday midday peak hours for both existing and future conditions, for all locations in the study area. In general, most of the locations are expected to operate at an acceptable level-of-service (LOS) and delay, and Future Build operations will be consistent with Future No Build conditions.

The proposed traffic mitigation program will include geometric improvements and traffic signal upgrades along the Lynnway corridor to improve traffic flow. The traffic analysis indicates that the traffic generated by the project will not increase overall delay through the majority of intersections studied, and proposed mitigation will reduce delay and queues at some study intersections.

As part of the transportation mitigation program, the Proponent proposes to construct improvements at three intersections along the Lynnway (at its intersection with the Southern Site Driveway, Hanson Street, and Harding Street/19th Street). The Proponent also proposes to undertake additional mitigation along the Lynnway corridor, including coordinating new traffic light timing sequences, and striping the Lynnway pavement with sharrow markings. The Lynnway is a DCR parkway and, therefore, the project will require a Construction and Access Permit from DCR for the proposed improvements.

In its comments on the ENF, DCR requested that the Proponent conduct a queue analysis to estimate the potential impacts to traffic operations at the General Edwards Bridge resulting from the proposed left-turn lane at the southern Site Driveway. The DEIR included both 50 percent and a 95 percent queue analyses, and indicates that the Proponent is exploring a potential traffic preemption signal for the northbound lane of the Lynnway. The results of the queue analyses suggest that there is adequate space to accommodate traffic from a 95 percent queue between the southern Site Driveway and the drawbridge portion of the General Edwards Bridge. In the FEIR, DCR requests that the Proponent clarify whether this would include all potential traffic resulting from a worst case scenario. The Proponent should also indicate whether it will commit to funding the traffic preemption signal on the drawbridge, and if so, include this commitment in its draft Section 61 findings. DCR further requests that the Proponent analyze traffic impacts along the Lynnway based on Right-in/Right-out access at the jughandle.

Transit Operations

The project site is currently served by three MBTA bus routes with growing ridership, and the MBTA Newburyport/Rockport Commuter Rail Line at the River Works station. The Proponent has committed to provide access to project residents via commuter rail service at the private MBTA River Works station. Approximately 25 percent of residential trips are expected to be made using public transportation, with 60 percent of the public transportation trips (15 percent of all trips) anticipated to use the MBTA commuter rail services, and 40 percent of the public transportation trips (10 percent of all trips) anticipated to use the MBTA bus services along the Lynnway.

These projections would result in approximately 1,170 additional weekday transit trips for the GE/Riverworks station, with 525 transit trips expected in the morning peak hour. For bus service along Route 1A, 10 percent of the residents are estimated to use the multiple bus routes for a ridership total of 780 trips on an average weekday, with 62 trips and 70 new trips respectively in the morning and evening peak hours. MassDOT generally concurs with these projections; however, the TIA did not provide a

transit analysis to verify that these additional transit trips would not result in adverse impacts to existing services. The Proponent should consult with MassDOT and the MBTA to obtain the necessary information and agree on a methodology to undertake and present that analysis in the FEIR.

Parking

The site will include 2,120 parking spaces for residents, including 1,261 spaces in two multi-story parking structures and 520 spaces in three under-podium parking structures. To limit the total amount of impervious area on-site, only 328 resident spaces will be provided as surface or on-street parking. In addition to residential uses, a 10-space surface parking field is noted on the site plans outside the gated residential area to provide for public access to the Saugus River waterfront and the passive waterfront park. A large quantity of the parking will be structured or provided under the podium of the residential structures to minimize impervious areas and maximize the amount of green space while providing sufficient parking for residents and visitors.

MassDOT comments request additional information regarding the derivation of the proposed parking supply. MassDOT comments indicate that the proposed parking supply appears excessive for a transit-oriented development and notes that the supply is more than 10 percent higher than what is required by the City of Lynn and rates based on the ITE Trip Generation Manual. A rate of 1.5 parking spaces per dwelling unit could undermine efforts to encourage alternative methods of transportation. To address this concern, the Proponent has proposed a phased construction of the parking supply. The Proponent will assess the resident parking utilization rate and resident mode share. If warranted, the amount of parking may be reduced to maximize green space and public transportation use, and reduce single-occupancy vehicle (SOV) trips. The FEIR should provide more detailed information on parking supply associated with each construction phase and estimate the amount of parking that could potentially be avoided.

Multimodal Access and Facilities

The Proponent proposes to provide access to the project via MBTA commuter rail service at the existing MBTA River Works station. The Proponent is currently working with MassDOT, and specifically the MBTA, to negotiate a MOU on the use of this station and any required upgrades. The stop will initially operate as "private with controlled access" for residents and GE employees. This service will provide users with easy and efficient access to downtown Boston and points to the north, and will minimize vehicle trips on the adjacent roadway network.

The Proponent understands that future development of other sites in the Lynn Waterfront Growth District may benefit from access to the MBTA station. Therefore the project site is being designed in a manner consistent with the City of Lynn's goals, which will not preclude future public access and use, as needed when additional development and investment occur. The Proponent indicates that the intent of the reactivating the station is to provide a public access to it with amenities such as a "kiss and ride" drop-off and pick-up location and a limited number of parking spaces for general commuter use. To properly assess the traffic count estimates, DCR requests the Proponent clarify in the FEIR the quantity of vehicle trips on the Lynnway that would decrease (due to commuter rail trips) and increase (for drop-offs, pick-ups, and parking) if the commuter rail stop is converted to public use.

The Proponent has committed to upgrading the existing MBTA bus stops along the Lynnway to enhance safety and improve the experience of users at these facilities. This should include the addition of shelters/weather protection, turn-outs, and street furniture.

As requested, the DEIR includes a site circulation plan to show how pedestrians and cyclists would safely and conveniently maneuver the site and access the MBTA facility. The Proponent has also identified the likely travel routes for bicyclists within the study area, and shown how these facilities would be integrated with those proposed on the project site. The Proponent should work closely with DCR to ensure that the proposed bicycle improvements on Route 1A are consistent with the Healthy Transportation Policy.

The Proponent has committed to design the project to meet the MassDOT "Complete Streets" standard, and to implement a comprehensive package of on-site and off-site improvements to provide safe and efficient connectivity for pedestrian and bicyclists. The Proponent proposes to install shared bicycle "sharrow" lane markings and share-the-road bicycle signage along the site driveways, the Lynnway, and Commercial Street to increase motorist awareness of the travel lane being shared with bicycle traffic. DCR requests that the Proponent explore alternatives to these markings that would facilitate safe bicycle travel in the area.

Transportation Demand Management Program

The TIA proposes a comprehensive Transportation Demand Management (TDM) program to reduce trip generation. The TDM program is generally consistent with the recommendations in the ENF and includes the following:

- Designation of an on-site Transportation Coordinator;
- Bus stop enhancements along the Lynnway;
- Subsidies for resident transit passes;
- Provision of transit schedules, maps, and rider information throughout the project;
- Provision of electric vehicle (EV) charging stations on site;
- Charging residents for parking of a second vehicle and using fees to support the TDM plan;
- Provision of car sharing service on site;
- Provision of high-security protected bicycle parking for residents;
- Facilitating a ridesharing/ride matching program among the residents of the project;
- On-site food service amenities to minimize the number of off-site trips by residents;
- Holding promotional events and activities; and
- Implementing a TDM monitoring program to ensure that those measures in place are effective in minimizing single-occupant auto trips to and from the site.

The Proponent should continue to work with MassRIDES, the Commonwealth's Travel Options provider, or an appropriate Transportation Management Association (TMA) to further develop the TDM program and assist with implementation.

Transportation Monitoring Program

The Proponent has committed to conduct an annual traffic monitoring program for a period of five years, beginning six months after occupancy of the full-build project. The goals of the monitoring is to evaluate the assumptions made in the DEIR and the adequacy of the mitigation measures, as well as to determine the effectiveness of the TDM program. The monitoring program will include:

- Simultaneous automatic traffic recorder (ATR) counts at each site driveway for a continuous 24-hour period on a typical weekday and Saturday;
- Travel survey of residents at the site (to be administered by the Transportation Coordinator);
- Weekday AM and PM and Saturday peak hour turning movement counts (TMCs) and operations analysis of improved intersections, including those involving site driveways; and
- An update on TDM effectiveness, transit ridership, and parking utilization.

Air Quality

The DEIR includes a mesoscale analysis to determine the project's air quality impacts with and without mitigation. The analysis includes 10 roadway segments within the study area. The analysis used the MOVES2014 Mobile Source Emission Factor Model approved by EPA to conduct the mesoscale analysis and generate motor vehicle emission factors for volatile organic compounds (VOC) and nitrogen oxides (NO_X). VOC and NO_X emissions for the 2023 Build are anticipated to be 8.54 kilograms (kg)/day and 34.61 kg/day, respectively, which are approximately 6.5 percent and 5.8 percent higher than the 2023 No-Build, respectively. Because hydrocarbon emissions under the Build scenario would be greater than the No-Build scenario, the Proponent will provide mitigation through the implementation of roadway/traffic signal improvements at certain intersections and the TDM program. These measures will result in reductions of 0.1 kg/day for VOC emissions and 0.21 kg/day for NO_X emissions. The DEIR asserts that these improvements constitute all reasonable and feasible traffic mitigation measures for the project.

The DEIR includes the air quality dispersion modeling analysis that was performed for the two parking garages to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS). The garage ventilation system will be designed to provide adequate dilution of motor vehicle emissions before they are vented outside. EPA's AERMOD model was used to estimate potential ground-level impacts of parking garages. The DEIR indicates that, based on the size of the natural gas-fired boilers for the high-rise building, self-certifications must be filed with MassDEP.

Greenhouse Gas Emissions

The DEIR included a GHG analysis based on the MEPA Greenhouse Gas Policy and Protocol ("the Policy"). The Policy requires projects to quantify carbon dioxide (CO_2) emissions and identify measures to avoid, minimize or mitigate such emissions. The analysis quantified the direct and indirect CO_2 emissions associated with the project's energy use (stationary sources) and transportation-related emissions (mobile sources).

Direct stationary source CO_2 emissions included those emissions from the facility itself, such as boilers, heaters, and internal combustion engines. Indirect stationary source CO_2 emissions were derived

from the consumption of electricity, heat or other cooling from off-site sources, such as electrical utility or district heating and cooling systems. Mobile CO_2 emissions included those emissions associated with vehicle use by employees, vendors, customers and others. The DEIR outlined and committed to mitigation measures to reduce GHG emissions. The GHG analysis provided separate stationary source CO_2 emission reduction estimates between a Base Case and the Mitigation Alternative for each of the buildings. The results of these separate analyses were then combined to estimate the overall CO_2 reductions achievable by the project as a whole.

The stationary source GHG analysis evaluated CO_2 emissions for a Base Case and a Mitigation Alternative. The Base Case corresponded to the 8th Edition of the Massachusetts Building Code and the Mitigation Alternative included additional GHG mitigation measures to be implemented by the project that exceed building code requirements. The 8th edition of the Building Code incorporates the building energy provisions of the International Energy Conservation Code (IECC) 2012, which references the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2010 standards. I note that the Building Code was amended in July 2016 with an effective date of August 12, 2016. These amendments contain a concurrency section provision that will require all buildings to conform to the amended provisions beginning on January 2, 2016. Given the timeframe for project development and construction, it is likely that the amended building code requirements will apply to the project.

The analysis in the DEIR used eQUEST Version 3.65 modeling software for the analysis of GHG emissions from stationary sources for the Full Build alternative. Stationary source CO_2 emissions were estimated at 10,211.2 tons per year (tpy) in the Base Case, with the Mitigation Case emissions at 8,133.5 tpy, representing a reduction of 2,077.7 tpy (20.3 percent).

Energy efficiency measures proposed as part of the project include, but are not limited to:

- Energy-efficient windows and building envelope that exceed the base building code, including double-pane, low-e glass windows with U value of 0.29, R-30 roof insulation in all buildings, and R-13+ R-11ci wall insulation;
- Use of cool roofing materials;
- High-efficiency heating systems including gas-fired furnaces with a thermal efficiency of 90 percent in the low-rise residential buildings, a gas-fired boiler with a 97 percent heating efficiency in the high-rise residential building, and heating systems with 92 percent efficiency in the non-residential buildings;
- High-efficiency cooling units with a SEER 12.4 in the non-residential buildings, SEER 15.8 in the low-rise residential buildings, and SEER 12.0 in the high-rise residential building;
- HVAC supply ducts will be sealed, leak tested, and insulated;
- Energy management systems (EMS) to track and control energy use;
- Energy-efficient exterior lighting including the use of LED fixtures in the parking lots and common area;
- Energy-efficient lighting with interior lighting power density (LPD) 5 percent below code for the non-residential building and 20 percent below code for the residential buildings;
- Use of water conserving plumbing fixtures;
- Energy STAR appliances that will reduce plug loads by at least 10 percent below the base building code; and,

- Demand Control Exhaust Ventilation (DCEV) with Variable Frequency Drives (VFD) for ventilation of parking garages.

The DEIR also provided an evaluation of mitigation measures that were determined to be infeasible. The analysis evaluated the use of a 30-kiloWatt (kW) micro-turbine Combined Heat and Power (CHP) unit. The DEIR indicates that a unit of this size would not be economically feasible because only a small percentage of the waste heat (17 to 22 percent) would be usable by the buildings. The DEIR included a feasibility analysis using the EPA's LEED CHP calculator that also indicated that CHP would not be feasible. The DEIR also concluded that Green Roofs and Air Source Heat Pumps are not economically feasible and that Virtual Net Metering and a Green Lease Program would be too complicated to implement because of the need to coordinate many parties to participate and the long payback period that may not be attractive to tenants.

The DEIR included a feasibility analysis for on-site renewable energy generation, including the installation of rooftop solar hot water (SHW) or solar photovoltaic (PV) systems. According to the analysis, an SHW system on the top of the high-rise residential building would reduce GHG emissions by 0.34 percent and would not result in an economic benefit resulting from avoided natural gas costs. The DEIR evaluated a third-party installation of a 75-kW solar PV system on all of the rooftops. A system of this size could reduce GHG emissions by 1,311 tpy, a 13.4 percent reduction. The DEIR indicates that a solar PV system may be economically viable and the Proponent will construct a solar-ready roof on one of the parking garages that could support a 600-kW solar PV system.

The DEIR analyzed the project's mobile-source emissions using the EPA's MOVES emissions model and traffic data from the TIA. Emissions in the traffic study area were calculated for three scenarios: 2023 No-Build, 2023 Build without TDM measures, and 2023 Build with TDM measures. The 2023 Build without TDM scenario included proposed roadway mitigation measures. Based on projected background traffic volumes on the roadway network and an emissions factor provided by the MOVES model, the 2023 No Build emissions will be 14,713.3 tpy. Under the 2023 Build without TDM conditions, emissions will be 15,654.0 tpy, of which 940.8 tpy is attributable to project-related trips. Project-related emissions under the 2023 Build with TDM include implementation of the project's TDM mitigation measures and roadway mitigation. Under the 2023 Build with TDM scenario, project-related emissions will amount to 754.6 tpy, for a reduction of 186.2 tpy (19.8 percent) compared to the 2023 Build without TDM.

The DEIR includes a commitment to provide a self-certification to the MEPA Office at the completion of the project to be signed by an appropriate professional (e.g. engineer, architect, transportation planner, general contractor) indicating that all of the GHG mitigation measures, or equivalent measures that are designed to collectively achieve identified reductions in stationary source GHG emission and transportation-related measures, have been incorporated into the project.

Climate Change Adaptation and Resiliency

The DEIR includes a vulnerability and risk assessment for the project addressing potential effects associated with climate change including sea level rise and increased frequency of precipitation. The assessment uses the U.S. Army Corps of Engineers/National Oceanic and Atmospheric Administration (NOAA) *Sea Level Change Curve Calculator*, the City of Boston's *Climate Change and*

Sea Level Rise Projections for Boston: The Boston Research Advisory Group Report, and the Boston Harbor Flood Risk Model. In addition, the Proponent has reviewed the *Climate Change Adaptation Report* (September 2011)3, and CZM's December 2013 report entitled, "*Sea Level Rise: Understanding and Applying Trends and Future Scenarios for Analysis and Planning*"4. The Proponent consulted with the MEPA Office regarding this analysis prior to the submission of the DEIR.

According to the DEIR, almost the entire site is within LSCSF based on the Flood Insurance Rate Maps (FIRM) panels (25009C0528G and 25009C0529G, July 16, 2014). The FIRM shows that the site is within Flood Zone AE, elevation 10 feet NAVD 88.

The assessment has been employed to inform the design of site grading and finished floor elevations with a goal of providing resiliency to flooding from the one percent annual chance flood through most of its 60-year design life. The analysis is based on the NOAA Intermediate-High sea level rise projections and the sea level rise projections and adaptation strategies are consistent with those identified by the City in the *Lynn Coastal Resiliency Assessment* (July 2016).

The build year for the project is expected to be 2022 and it assumes that climate conditions up to the year 2082 will have an impact on the project. The DEIR addresses compliance with Construction and Design Standards of the Building Code. The DEIR indicates that the site will be filled to elevation 11 feet or 12 feet NAVD88 to reduce on-site flooding. A design elevation of 12 feet NAVD has been selected for the elevation of the finished floor (except the waterfront amenity building), utilities, and mechanical equipment. The DEIR indicates that this elevation is one foot higher than that which will be required by the amended Building Code (9th Edition). The DEIR indicates that this elevation would provide mitigation for the majority of sea level rise-related impacts until approximately the late-century (2080).

The DEIR provides a discussion of why the NOAA Intermediate High Scenario was selected for evaluation, describes associated sea level rise elevations, identifies the extent of inundation areas on-site, and indicates how the project will be designed to mitigate this impact and facilitate adaptation responses. The NOAA Scenario projects base flood elevation (BFE) at between 13 feet NAVD88 in 2080 and 14 feet NAVD88 in 2100. The DEIR indicates that the Proponent has selected the level of risk, as appropriate for the project, associated with the NOAA Intermediate High Scenario.

The project site or tributary wetlands may be subject to both inland and coastal flooding during severe weather events, and the evaluation provides a limited discussion of the impacts of combined flooding and the likelihood that they may occur concurrently. The DEIR indicates that research recommends further analyses of the joint probability of rain- and storm surge-driven flooding.

Projections of increased regional rainfall volumes and intensities were used to design the stormwater management system to handle stormwater on-site throughout the project's design life. The system will use low impact development (LID) elements, bioretention basins, and gravel wetlands. Site grading and drainage will be designed to avoid deflection, reflection, or redirection of flood waters that would damage the project or adjacent areas. The analysis indicates that the project will not exacerbate flooding conditions of adjacent uses and properties. To mitigate coastal flooding, the project will include

[3] http://www.mass.gov/eea/docs/eea/energy/cca/eea-climate-adaptation-report.pdf
[4] http://www.mass.gov/eea/docs/czm/stormsmart/slr-guidance-2013.pdf

plantings from CZM's Coastal Bank Plant List, particularly within the Riverfront Area. The project provides space for potential marsh migration and the Proponent may remove impervious ground cover from the Riverfront Area and replace it with natural vegetation.

Wetlands

The Lynn Conservation Commission will review the project to determine its consistency with the Wetlands Protection Act (WPA), the Wetlands Regulations (310 CMR 10.00), and associated performance standards, including the stormwater management standards (SMS). The DEIR provides a discussion of the project's consistency with CZM program policies.

The DEIR briefly describes potential impacts to resource areas on-site and addresses the project's consistency with the WPA performance standards. It includes plans that delineate applicable resource area and buffer zone boundaries including floodplain elevations. Project plans depict project elements in relation to wetland resource areas and any associated buffer zones within the site. The portion of the project site landward of the top of Coastal Bank consists entirely of developed or previously disturbed land.

The entire project site is comprised of LSCSF and will be altered. Areas of LSCSF that will be redeveloped are paved and previously disturbed. The DEIR does not identify the amount of alteration, either temporary or permanent. Changes to LSCSF include raising site elevations from 11 to 12 feet NAVD88, which is above the current BFE. The DEIR indicates that the project will not impact Salt Marsh, Tidal Flats, or Land Containing Shellfish. The project will convert 35,200 sf of pavement within the Riverfront Area into vegetated open space. The DEIR indicates that the project may alter Coastal Bank and its buffer zone to restore an armored revetment; however, it does not quantify impacts or describe proposed work. Minor work is proposed in previously developed areas within the ACEC.

Waterways and Public Benefits Determination

The project will require authorization through a c. 91 License as a limited portion of the site is comprised of filled and flowed tidelands of the Saugus River. MassDEP will review the project to determine its consistency with the Waterways Regulations (310 CMR 9.00). MassDEP has determined that the project would be a non-water-dependent use project. The DEIR describes the regulatory context, the site's licensing history, proposed site improvements that are subject to c. 91 and consistency of the project with licensing requirements.

The DEIR includes a site plan (Figure 8.1) that overlays the MassDEP Presumptive Line to determine the extent of c. 91 jurisdiction. The DEIR also identifies a separate historic plan titled "The Lynn Marshes" prepared by J.K. Harris (1892) to rebut the MassDEP Presumptive Line in whole or in part. MassDEP comments provide guidance on the process for rebutting the Presumptive Line and indicate that the area of the site subject to jurisdiction is relatively small and will not be substantively affected if the Proponent can demonstrate there is adequate justification for deviating from the Presumptive Line.

Improvements subject to c. 91 include maintenance, repair, rehabilitation and/or replacement of the existing licensed outfalls and 35-foot long timber bulkhead; placement of additional structural

material within filled tidelands; portions of three residential buildings; road construction, on-street parking, sidewalks, and underground utilities located, in part, within filled private tidelands; and construction of public access and waterfront features as well as removal of extensive areas of existing concrete paving, and landscaping. The Community Waterfront Amenity Building is located within the Rumney Marsh ACEC but outside of c.91 jurisdiction.

The DEIR provide calculations for the area of filled tidelands to be occupied by buildings. It identifies the prospective uses of the ground floor of buildings and provides a table identifying the height of the buildings to be located within c. 91 jurisdiction. The project will include public access along the shoreline and point access to the shoreline from the Lynnway, most of which is located outside of c.91 jurisdiction.

Consistent with the provisions of *An Act Relative to Licensing Requirements for Certain Tidelands* (2007 Mass. Acts ch. 168, sec.8) (the Act), which was enacted on November 15, 2007 and the implementing regulations at 301 CMR 13.00, I *must* conduct a Public Benefit Review for projects in tidelands that are required to file an EIR. The regulations indicate that in making the public benefit determination, I shall consider the following criteria: (a) the purpose and effect of the project, (b) the impact on abutters and the surrounding community, (c) enhancement to the property, (d) benefits to the public trust rights in tidelands or other associated rights, including but not limited to, benefits provided through previously obtained municipal permits, (e) community activities on the site, (f) environmental protection and preservation, (g) public health and safety, and the general welfare.

The DEIR indicates that information necessary to address public benefits is included in Table 8.2 which address consistency with the Waterways Regulations and does not specifically address each of the criteria identified above. I note comments from Lynn United for Change which express concern that a gated residential community is not appropriate for a project that is subject to c. 91 and that public access provisions are not adequate.

Stormwater

As noted previously, the project will remove 1.1 acres of impervious area. The design and maintenance of the stormwater management system is important to ensure protection of sensitive coastal resources.

Under existing conditions, the majority of stormwater runoff enters one of three closed drainage systems on-site or sheet flows towards the Saugus River. Each of these drainage systems connects to one of three active outfalls that discharge to the Rumney Marshes ACEC. The project will reuse these active outfalls and reopen a fourth inactive outfall. The outfalls extend through a riprap revetment from the site. The project will replace the existing closed drainage system with a system that uses a mixture of stormwater best management practices (BMPs) including bioretention basins, gravel wetlands, proprietary separators, and deep sump hooded catch basins. The project will eliminate industrial discharges, decrease impervious cover, decrease peak discharge rates, and provide water quality treatment. The DEIR indicates that projections of increased regional rainfall volumes and intensities provided by the Boston Water and Sewer Commission (BWSC) have been used to design the project's stormwater management system to handle stormwater on-site throughout the project's design life. The

project will be designed to comply with MassDEP's SMS, and is considered to be a redevelopment project.

The DEIR includes existing and proposed conditions plans that delineate drainage areas, stormwater flow patterns, BMP designs, and discharge points. It includes supporting calculations and hydrogeologic modeling. For compliance with the standards for redevelopment (Standard 7), the stormwater management system is designed to comply with Standards 2, 3, and to comply to the maximum extent practicable with Standards 4, 5, and 6. The DEIR indicates that the project does not qualify as a land use with higher potential pollutant load (LUHPPL); however, MassDEP comments indicate that it should be considered a LUHPPL because it is a MCP disposal site.

The DEIR indicates that the opportunity for subsurface infiltration and certain LID techniques (e.g. porous pavement, tree box-tree filters) are limited because of the composition of soils, high groundwater table and the AUL. The Proponent will develop an operations and management plan to ensure the long-term effectiveness of the stormwater management system.

Water and Wastewater

Municipal water supply will be provided via an existing 12-inch municipal water main on Commercial Street and looped to the existing water main in the Lynnway. The DEIR confirms that the project will not require construction of a new water source for the withdrawal of water.

Wastewater will be collected on-site and discharged to an existing 15-inch municipal sewer main in Commercial Street (previously used by the GE Gearworks plant). The DEIR describes the wastewater treatment system and includes a discussion of the existing and proposed conditions and connections associated with wastewater flows from the project. According to the DEIR, the Lynn Water and Sewer Commission (LWSC) indicates that there is adequate capacity available in its water and sewer mains in the immediate vicinity of the project site to accommodate the project.

MassDEP requires sewer authorities with permitted combined sewer overflows (CSOs), including the City of Lynn, to require removal of four gallons of Inflow/Infiltration (I/I) for each gallon of new wastewater flow generated for any new connection proposing greater than 15,000 gpd. The project will be required to support removal of I/I in accordance with the LWSC requirements. The project will investigate stormwater entry into sanitary sewer lines and provide improvements to prevent stormwater inflow, including potentially replacing or relining existing pipes or installing new pipes. According to the DEIR, the LWSC indicates that removing existing piping that is hydraulically connected to the mains in the vicinity of the project site could potentially meet I/I requirements. In addition, the project will include improved stormwater management and incorporate high-efficiency fixtures and systems to minimize wastewater generation.

The project will require an MWRA 8(m) Permit because it includes construction activities within an easement or any other property interest held by the MWRA. The existing cul-de-sac area, which will be repaved, contains MWRA fire service infrastructure.

Historic and Archaeological Resources

The DEIR confirms that there are no state-listed historic or archaeological resources on-site; however, several resources, including two bridges spanning the Saugus River, are located nearby. The project will not impact the Point of Pines Bridge and the Saugus River Drawbridge. A reconnaissance report (May 2015) prepared by DCR and the Essex National Heritage Commission lists the GE Riverworks Plant as an industrial landscape feature, and the Saugus River and Rumney Marsh as natural landscape features. The Gearworks Plant and appurtenances on the project site were demolished in 2011. The Proponent sent a letter to the Lynn Historical Commission in August 2016 describing inventoried and listed properties within the project area and requesting comments on the project.

Hazardous Materials

The site is regulated under the MCP as Release Tracking Number (RTN) 3-357 associated with a partial Response Action Outcome (RAO-P). The DEIR provides a brief summary of the response actions at the site to date. The DEIR is responsive to MassDEP comments regarding compliance with the MCP. The entire site is currently subject to an AUL to support and maintain the RAO-P. Based on the results of a revised Method 3 Risk Assessment that evaluated a multi-family residential scenario, the AUL was amended on February 18, 2016 to allow multi-family residential use. The amended AUL requires a vapor intrusion evaluation for the construction of new buildings intended for continuous human occupancy in a portion of the site identified as Area A and implementation of an appropriate vapor intrusion remedy. In addition, planned subsurface excavation must be conducted under the oversight of a licensed site professional (LSP) and in accordance with a Soil Management Plan (SMP) and a Health and Safety Plan (HASP). With the AUL restrictions in place, a condition of No Significant Risk would exist for the site.

The DEIR describes how the project will comply with the requirements in the amended AUL. MassDEP comments indicate that excavating, removing, and/or disposing of contaminated soil, pumping of contaminated groundwater, or working in contaminated media must be done under the provisions of M.G.L. c. 21E and the Occupational Safety and Health Act (OSHA). If oil and/or hazardous material are identified during the implementation of this project, notification pursuant to the MCP must be made to MassDEP. Specific activities related to construction activities that may impact contaminated soils and groundwater will be performed under the guidance of a Release Abatement Measure (RAM) Plan.

Construction Period

The Proponent must comply with MassDEP's Solid Waste and Air Quality Control regulations, pursuant to M.G.L. Chapter 40, Section 54, during construction. All construction activities should be undertaken in compliance with the conditions of all State and local permits. The DEIR describes construction period activities, related permitting requirements, and mitigation measures. The project will include removal and processing of existing foundations for reuse as site material, and recycling of asphalt pavement. Construction activities will include filling the site and constructing roads, utilities, and six buildings with associated parking and amenities. The Proponent will prepare a Construction Management Plan (CMP) that includes detailed information on construction activities, mitigation measures, and access and staging areas.

The DEIR describes potential construction period impacts and identifies mitigation measures associated with air quality (emissions and noise), erosion and sedimentation, site contamination, solid waste management, and truck traffic.

The DEIR indicates that the project will include diesel reduction strategies outlined in MassDEP's *Diesel Engine Retrofits in the Construction Industry: A How to Guide (2008)*. The project will comply with: the Massachusetts Idling regulation at 310 CMR 7.11; MassDEP's Diesel Retrofit Program; EPA's Clean Air Nonroad Diesel Rule; and EPA's Tier 4 Emissions Standards. The DEIR confirms that the project will require its construction contractors to use Ultra Low Sulfur Diesel (ULSD) fuel in off-road equipment. The project will use alternatively-fueled or electric vehicles where feasible.

The DEIR provides information regarding the project's generation, handling, recycling, and disposal of construction and demolition (C&D) debris. The DEIR describes the potential management and disposal of any asbestos containing materials (ACM). The Proponent has not yet quantified construction waste. The project will implement a Construction Waste Management Plan that complies with the Massachusetts Construction and Demolition Materials Waste Bans regulations (310 CMR 19.017) which ban disposal of C&D debris including asphalt, brick, concrete, metal, and wood. All construction debris will be taken off-site, sorted as either recycled debris or waste debris and sent to the appropriate recycling center or waste facility. The project will target a 75 percent recycling rate to divert waste from landfills and incineration facilities.

Conclusion

Based on review of the DEIR, consultation with State Agencies and review of public comments, I have determined that the DEIR adequately responded to the Scope identified in the ENF Certificate. The Proponent should prepare a FEIR consistent with the Scope below.

SCOPE

General

The FEIR should follow Section 11.07 of the MEPA regulations for outline and content, as modified by this scope.

Project Description and Permitting

1.01 The FEIR should describe any changes to the project since the filing of the DEIR. It should include updated site plans for existing and proposed conditions and provide a summary, on a building by building basis, of floor area by use, and overall height (i.e., stories). The FEIR should include a list of required State Agency Permits, Financial Assistance, or other State approvals and provide an update on the status of these actions. It should identify the source and purpose of any Financial Assistance requested from the Commonwealth. In addition, the FEIR should provide an update on the local permitting processes for the project.

Land Alteration

1.02 The FEIR should quantify the amount of previous alteration within the 27.1 acres of coastal wetlands on-site. 1.03 In addition, the FEIR should clarify that LSCSF extends through upland areas as well as coastal wetlands. 1.04 The FEIR should clarify the location, type and amount of alteration in previously undisturbed areas, including coastal resource areas. It should quantify the amount of land alteration 1.05 associated with wastewater, water and stormwater infrastructure, and other project components both on-site and off-site. The FEIR should continue to evaluate additional opportunities for increasing open space, reducing impervious area, and improving stormwater management all of which will contribute 1.06 toward establishing consistency with policies, guidance and regulatory standards associated with stormwater, coastal wetlands, tidelands, and climate change.

Traffic and Transportation

The MassDOT and DOER comment letters requested additional information regarding the traffic 1.07 study and mitigation. I hereby incorporate by reference the MassDOT comment letter, dated November 23, 2016, and the DCR letter, dated November 29, 2016, into the FEIR Scope. I strongly encourage the Proponent to consult with MassDOT and DCR prior to filing the FEIR to ensure that FEIR adequately 1.08 addresses guidance and requests for information from MassDOT and DCR.

Greenhouse Gas Emissions

The FEIR should provide a detailed response to the Department of Energy Resources' (DOER) 1.09 comment letter regarding additional energy efficiency and on-site energy generation opportunities that appear to be feasible for this project. According to DOER, these measures could reduce GHG emissions by 50 percent over the Base Case. I expect that the FEIR will include a detailed evaluation of each measure outlined in DOER's comment letter. 1.10 The FEIR should address the comments in MassDEP's letter. The FEIR should further evaluate the use of CHP and solar PV and provide the additional analysis 1.09 cont... requested by DOER, including an analysis of the financial incentives identified therein.

Over 75 percent of the proposed GHG emissions would result from energy-efficient lighting, use of Energy Star equipment, and garage ventilation. As noted by DOER, garage DCEV, which accounts for approximately 50 percent of the project's stationary source GHG emissions has been incorporated into the amended Building Code. DOER's comment letter indicated that the project could significantly reduce GHG emissions by exceeding building code requirements for the building envelope and HVAC systems and identified additional energy efficiency measures that should be evaluated in the FEIR. 1.11 These measures include Variable Refrigerant Flow (VRF), energy recovery, responsive HVAC systems, cold climate air source heat pumps, and roof and wall insulation.

Climate Change and Adaptation

The DEIR indicates that the Proponent is considering additional flood mitigation measures, such as temporary barriers and flood proofing, in addition to elevation of the site and structures. CZM comments indicate that proposed elevations (11 feet and 12 feet NAVD88) will not ensure that the project will be resilient to flooding from the one percent annual flood throughout its design life and would likely require retrofitting later in its design life to accommodate the sea level rise identified in the

project's vulnerability assessment. Comments from CZM, MassDEP and Lynn United for Change request additional assessment of adaptation and resiliency measures. As recommended by CZM, the
1.12 FEIR should address the feasibility of incorporating up to three feet of elevation to maximize the project's resiliency to flooding throughout its design life and should include a more robust discussion of other potential measures being considered by the Proponent and how they would address potential vulnerabilities.

Wetlands

The FEIR should include a table that clearly identifies impacts (temporary, permanent,
1.13 maintenance, and/or improvement) to all resource areas on-site and within the ACEC and demonstrate that these impacts are minimized. The FEIR should describe the nature of all impacts that cannot be
1.14 avoided including grading, clearing and construction-related disturbances and indicate whether impacts
1.15 are temporary or permanent in nature. Plans submitted with the FEIR should clearly identify existing and proposed elevations, at a reasonable scale, associated with fill and grading. The FEIR should
1.16 provide a response to comments from CZM regarding LSCSF and potential channelization of flood waters during a coastal storm event.

The FEIR should provide additional details and identify impacts to Coastal Bank and its buffer
1.17 zone and Salt Marsh associated with the restoration of the armored bank, replacement or repair of four outfall pipes, and removal of invasive species. The FEIR should include conceptual design plans and
1.18 cross sections of proposed work to clarify the extent of the impacts proposed and clearly show elevations and areas of impact for Salt Marsh and Coastal Bank. MassDEP comments indicate that the shallow bank appeared to be armored and well stabilized with vegetation established along its length at the MEPA consultation session. The FEIR should consider where alternative bank stabilization methods
1.19 such as vegetated alternatives can be applied successfully. If there are areas where this is not feasible, the limitations should be explained. MassDEP recommends that work within the Coastal Bank be limited to stabilizing damaged bank with plant material and minimizing the use of riprap unless an area is actively eroding.

1.20 The FEIR should identify the total amount of LSCSF that the project will alter. The FEIR should
1.21 address how the project will maximize the function of LSCSF to minimize storm damage and flooding. The
1.22 FEIR should confirm that the project will not permanently or temporarily impact Salt Marsh. The FEIR should address comments from MassDEP which note that the DEIR does not consider the extent to
1.23 which the Riverfront Area is within c. 91 Licensing jurisdiction, where the Riverfront Area performance standards would be exempt, pursuant to 310 CMR 10.58(6)(i).

Figure 7.3 depicts a new internal roadway connection, parking, and Community Waterfront
1.24 Amenity Building within the 100-foot buffer to the Coastal Bank and the Riverfront Area. The FEIR should address alternatives that would relocate these elements outside of the resource areas to minimize potential impacts to Coastal Bank and Riverfront Area.

Waterways and Public Benefits Determination

1.25 The FEIR should provide calculations of the portion of the site that is comprised of filled and
1.26 flowed tidelands of the Saugus River in Lynn. The FEIR should describe how the project will comply

with 310 CMR 9.32(1)(e) for work proposed in the ACEC that is also located within c.91 jurisdiction. MassDEP comments indicate that it appears that the project will comply with open space, building height, Water Dependent Use Zone (WDUZ) setback requirements, and Facilities of Private Tenancy (FPTs) setback requirements for a non-water-dependent project. The FEIR should include more detailed
1.27 information regarding publicly accessible open space and associated infrastructure to demonstrate how the project can be designed to ensure the open space and waterfront access clearly signifies that it is public and encourages community use. The FEIR should include renderings and perspectives that
1.28 include the proposed gate.

The FEIR should include a specific response to the criteria that I must consider in making a
1.29 Public Benefits Determination, including community activities on the site. This information will be used to inform the PBD which will be issued within 30 days of the issuance of the FEIR Certificate.

Stormwater

I note CZM comments which emphasize that, although this may be considered a redevelopment project, the entire site will be completely redeveloped and, as such, the project may be able to fully comply with stormwater. The FEIR should demonstrate that the Proponent will strive to meet the SMS where feasible. In addition to demonstrating compliance with compliance with Standards 2, 3, and to the maximum extent practicable with Standards 4, 5, and 6, the FEIR should discuss how the stormwater management system will be designed for compliance with all other requirements (i.e., Standards 1, 8, 9,
1.30 and 10). The FEIR should address each of MassDEP's comments regarding the project's compliance with Standards 1, 4, 5, and 6 including: providing outfall velocity calculations; proposed work to outfalls; verifying total suspended solids (TSS) removal rates for proprietary units; appropriately sizing proprietary units; revising TSS calculations; considering alternative BMPs that are effective at removing bacteria from stormwater runoff; and confirming the project's designation as a LUHPPL.

As recommended by CZM, the FEIR should fully explore possible improvements to the
1.31 stormwater over and above those required as the baseline for stormwater management for the site. The FEIR should continue to consider minimizing the amount of impervious surfaces, adding vegetation, parking ratios, banking of parking, and narrow roadway widths, and water quality swales.

Wastewater

The FEIR should provide additional discussion and assessment of opportunities to offset new
1.32 wastewater flow through removal of I/I. It should describe in more detail potential measures, including the sewer survey work, and estimate associated reductions, to the extent practical based on available information, to demonstrate that required I/I reductions are feasible. If I/I mitigation will be tied to
1.33 project phasing, the FEIR should identify what measures and associated reductions will be associated with each phase. The final design and alignment of sewer and drain infrastructure should be carefully coordinated with LWSC, to ensure that the planned work does not impact infrastructure and CSO
1.34 abatement work being planned by LWSC. The FEIR should provide an update on the outcome of consultations with LWSC.

Hazardous Materials

1.35 Comments from MassDEP recommend that the Proponent monitor indoor air following construction and during the winter heating season to demonstrate that passive venting will be effective in preventing vapor intrusion. The FEIR should describe proposed indoor air monitoring activities and identify measures that will be employed if the monitoring indicates that passive venting is not effective.

Mitigation and Section 61 Findings

1.36 The FEIR should include an updated and revised chapter that summarizes proposed mitigation measures and provides individual draft Section 61 Findings for each State Agency that will issue permits for the project. The FEIR should contain clear commitments to implement mitigation measures, estimate
1.37 the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation.

Responses to Comments

The FEIR should contain a copy of this Certificate and a copy of each comment letter received. In order to ensure that the issues raised by commenters are addressed, the FEIR should include direct responses to comments to the extent that they are within MEPA jurisdiction. This directive is not intended, and shall not be construed, to enlarge the scope of the FEIR beyond what has been expressly identified in this certificate.

Circulation

The Proponent should circulate the FEIR to those parties who commented on the ENF and DEIR, to any State and municipal agencies from which the Proponent will seek permits or approvals, and to any parties specified in section 11.16 of the MEPA regulations. To save paper and other resources, the Proponent may circulate copies of the DEIR to commenters other than State Agencies in a digital format (e.g., CD-ROM, USB drive) or post to an online website. However, the Proponent should make available a reasonable number of hard copies to accommodate those without convenient access to a computer to be distributed upon request on a first come, first served basis. The Proponent should send a letter accompanying the digital copy or identifying the web address of the online version of the FEIR indicating that hard copies are available upon request, noting relevant comment deadlines, and addresses for submission of comments. The FEIR submitted to the MEPA office should include a digital copy of the complete document. A copy of the FEIR should be made available for review in the Lynn Public Library.

November 30, 2016
Date

Matthew A. Beaton

Comments received:

11/22/2016	Massachusetts Office of Coastal Zone Management (CZM)
11/23/2016	Massachusetts Department of Environmental Protection (MassDEP) – Northeast Regional Office (NERO)
11/23/2016	Lynn United for Change
11/28/2016	Massachusetts Department of Transportation (MassDOT)
11/29/2016	Massachusetts Department of Conservation and Recreation (DCR)
11/29/2016	Massachusetts Department of Energy Resources (DOER)

MAB/PPP/ppp

7.2 DEIR Comment Letters

Table 7.1 lists the identifying letter number, commenter, affiliation, date for each comment letter received by MEPA, and the page in this chapter where responses can be found.

TABLE 7.1 LIST OF DEIR COMMENTERS

Letter Number	Commenter	Affiliation	Date	Page
1	Matthew A. Beaton, Secretary of Energy and Environmental Affairs	Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA)	November 30, 2016	7-7
2	David J. Mohler, Executive Director of Transportation Planning	Massachusetts Department of Transportation (MassDOT)	November 23, 2016	7-12
3	John D. Viola, Deputy Regional Director	Massachusetts Department of Environmental Protection (DEP)	November 23, 2016	7-14
4	Daniel Sieger, Acting Commissioner	Massachusetts Department of Conservation and Recreation (DCR)	November 23, 2016	7-17
5	Paul Ormond	Massachusetts Department of Energy Resources (DOER)	November 29, 2016	7-17
6	Bruce Carlisle, Director	Massachusetts Executive Office of Energy and Environmental Affairs Office of Coastal Zone Management (CZM)	November 22, 2016	7-19
7	Judith Flanagan Kennedy, Mayor	City of Lynn	November 8, 2016	N/A [a]
8	Efres Perez, Isaac Simon Hodes, Dara Chhim	Lynn United for Change	November 22, 2016	7-20

[a] Indicates a letter of support for which no responses are necessary.

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Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

November 23, 2016

Matthew Beaton, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114-2150

RE: Lynn: Gearworks Redevelopment – DEIR
(EEA #15441)

ATTN: MEPA Unit
Purvi Patel

Dear Secretary Beaton:

On behalf of the Massachusetts Department of Transportation, I am submitting comments regarding the proposed Gearworks Redevelopment project in Lynn, as prepared by the Office of Transportation Planning. If you have any questions regarding these comments, please contact J. Lionel Lucien, P.E., Manager of the Public/Private Development Unit, at (857) 368-8862.

Sincerely,

David J. Mohler
Executive Director
Office of Transportation Planning

DJM/jll

Ten Park Plaza, Suite 4150, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
www.mass.gov/massdot

cc: Thomas J. Tinlin, Administrator, Highway Division
Patricia Leavenworth, P.E., Chief Engineer, Highway Division
Paul Stedman, District 4 Highway Director
Neil Boudreau, State Traffic Engineer
Lynn Planning Department
PPDU Files

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant. Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

MEMORANDUM

TO: David Mohler, Executive Director

FROM: J. Lionel Lucien, P.E, Manager, Public/Private Development Unit
Office of Transportation Planning

DATE: November 23, 2016

RE: Lynn – Gearworks Redevelopment – DEIR - (EEA #15441)

The Public/Private Development Unit (PPDU) has reviewed the Draft Environmental Impact Report (DEIR) for the proposed Gearworks Redevelopment project in Lynn. The site is the former location of the General Electric (GE) Gearworks factory that was demolished in 2011. The parcel is bounded by the Saugus River to the south, the Newburyport/Rockport MBTA commuter rail to the west, and commercial buildings along the Lynnway to the north and east. The proposal is for a transit-oriented apartment community with 1,260 new residential units within multiple buildings along with supporting amenities (clubhouse, gym, pool) and 16,000 square feet of ancillary retail uses, all served by an on-site parking supply of 2,130 spaces.

Access/egress for the site is proposed via an existing signalized driveway on the Lynnway, opposite Harding Street, and a second full-access driveway on the west side of the Lynnway opposite the Jughandle. Route 1A (Lynnway) within the study area is under the jurisdiction of the Department of Conservation and Recreation (DCR). The site is historically served by a private MBTA commuter rail station formerly used by General Electric employees, which the Proponent is seeking access to for the use of the project's residents.

Based on updated information presented in the DEIR, the fully built project would generate 7,790 unadjusted new vehicle trips on a typical weekday including 624 trips during the weekday AM peak hour and 713 trips during the weekday PM peak hour. The project would generate 8,084 unadjusted new vehicle trips on a Saturday including 538 trips during the Saturday midday peak hour.

The Draft Environmental Impact Report (DEIR) includes a Transportation Impact Assessment (TIA) prepared in conformance with the current MassDOT/EOEEA *Transportation Impact Assessment Guidelines*. The study includes a comprehensive assessment of the transportation impacts of the project. The study proposes an integrated multimodal mitigation package intended to improve vehicular traffic operations while supporting increased use of walking, bicycling, and transit by residents.

Trip Generation

The trip generation characteristics for the project were estimated using guidelines outlined in the Institute of Transportation Engineers (ITE) *Trip Generation Manual - 9th Edition*.

Ten Park Plaza, Suite 4150, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
www.mass.gov/massdot

Based on the land uses proposed, the trip generation was calculated using Land Use Code 220 (Apartments). The project is expected to generate 7,790 new trips on an average weekday including 624 trips during the weekday AM peak hour and 713 trips during the PM peak hour. The project is expected to generate 8,804 new trips on an average Saturday, including 538 trips during the Saturday midday peak hour. When adjusted for trips projected to use transit, the project is anticipated to generate 5,842 vehicle trips during an average weekday and 6,062 vehicle trips on an average Saturday.

In MassDOT's ENF comments, the Proponent was asked to substantiate the mode share projections devoted to transit trips. The trip generation was refined using mode share splits derived from two comparable transit-oriented development (TOD) projects, the University Station project in Westwood and the Mansfield Station mixed-use TOD. MassDOT is generally comfortable with the methodology used.

The Proponent used ITE Land Use Code 220-Apartments to calculate the site-generated traffic but did not anticipate that the retail uses would add additional traffic because they would be accessible to residents and not the general public. The Proponent has reconfirmed that the use is only intended to serve the residents of the development, which will be gated and with no vehicular access to the general public.

Traffic Operations

Capacity analyses were conducted for the weekday AM and PM and Saturday midday peak hours for both existing and future conditions, for all locations in the study area. In general, most of the locations are expected to operate at an acceptable level of service (LOS) and delay, with Future Build conditions no worse that Future No Build. The Proponent has identified a comprehensive mitigation program that would include minor geometric improvements and as required traffic signal upgrades along the Route 1A corridor to improve traffic flow. We defer to DCR regarding the detailed design and permitting of these improvements.

Transit Operations

The TIA provides an evaluation of the transit ridership for the public transportation system in the vicinity of the project for the existing conditions. Ridership projections are provided for both the MBTA Service along Route 1A and the MBTA Newburyport/Rockport commuter rail line. The TIA estimates that approximately 15 percent of residents would utilize the commuter rail, based on comparable TOD projects. These projections would result in approximately 1,170 additional transit trips for the GE/Riverworks station, with 525 transit trips expected in the morning peak hour. For the bus service along Route 1A, 10 percent of the residents are estimated to use the multiple bus routes for a ridership total of 780 trips on an average weekday, with 62 trips and 70 trips respectively in the AM and PM peak hours. MassDOT generally concurs with these projections; however, the TIA did not provide a transit analysis to verify that the additional transit trips would not result in adverse impacts to existing services. The Proponent should consult with MassDOT and the MBTA to obtain the necessary information and agree on the methodology to adequately present that analysis.

2.1

Parking

2.2 The TIA has not fully explained the derivation of the proposed parking supply for the project. MassDOT still finds the parking supply excessive for a transit oriented development and given that the supply is more than 10 percent higher than what is required by the City of Lynn or from calculations from the ITE Trip Generation Manual. A rate of 1.5 parking spaces per dwelling unit could undermine efforts to encourage alternative methods of transportation. To address this concern, the Proponent has proposed a phased construction of the parking supply to assess the resident parking utilization rate and resident mode share as occupancy occurs over time. The Proponent has suggested that they may reduce the number of parking spaces as necessary to maximize the green space, encourage public transportation utilization, and reduce SOV trips. We would recommend that the FEIR provide more detailed information on the construction phasing and identified specific reduction targets.

Multimodal Access and Facilities

The Proponent is still working with the MBTA on a Memorandum of Understanding for exclusive access to the station to serve the residential community. The Proponent indicates that the intent of the reactivation of the station is to provide a publicly accessible station with

2.3 amenities such as a "kiss and ride" location and a limited number of parking spaces for commuter use. The Proponent conversely states that the residential development will function as a "gated community" so they must address how the two objectives will be reconciled in the site planning process.

2.4 The Proponent has committed to upgrading the existing MBTA bus stops along the Lynnway to enhance the safety and improve the user experience at these facilities. This should include the addition of shelters/weather protection, turn outs, and street furniture.

As requested, the DEIR includes a site circulation plan to show how pedestrians and cyclists would safely and conveniently maneuver the site and access the MBTA facility. The Proponent has also identified the likely travel routes for bicyclists within the study area, and shown how these facilities would be integrated with those proposed on the project site. The Proponent has committed to a comprehensive package of on-site and off-site improvements to provide safe and efficient connectivity for pedestrian and bicyclists. The Proponent should work

2.5 closely with DCR to ensure that the proposed bicycle improvements on Route 1A are consistent with the Healthy Transportation Policy.

Transportation Demand Management Program

The TIA includes a comprehensive Transportation Demand Management (TDM) program that fully explores all feasible measures aimed at reducing site trip generation. The TDM program is generally consistent with the recommendations in the ENF and includes the following:

- Designation of an on-site Transportation Coordinator;

- Bus stop enhancements along the Lynnway;
- Subsidies for resident transit passes;
- Provision of transit schedules, maps, and rider information throughout the project;
- Provision of electric vehicle charging stations on site;
- Charging residents for parking of a second vehicle and using those fees to further TDM objectives;
- Provision of car sharing service on site;
- Provision of high-security protected bicycle parking for residents;
- Facilitating a ridesharing/ride matching program among the residents of the project;
- On-site food service amenities to minimize the number of off-site trips by residents;
- Holding promotional events and activities; and
- Implementing a TDM monitoring program to ensure that those measures in place are effective in minimizing single-occupant auto trips to and from the site.

2.6 The Proponent should continue to work with MassRIDES, the Commonwealth's Travel Options provider, or the appropriate Transportation Management Association to help implement the TDM program.

Transportation Monitoring Program

The Proponent has committed to conduct an annual traffic monitoring program for a period of five years, beginning six months after occupancy of the full-build project, to include:

- Simultaneous automatic traffic recorder (ATR) counts at each site driveway for a continuous 24-hour period on a typical weekday and Saturday;
- Travel survey of residents at the site (to be administered by the Transportation Coordinator);
- Weekday AM and PM and Saturday peak hour turning movement counts (TMCs) and operations analysis at "mitigated" intersections, including those involving site driveways;
- An update on TDM effectiveness, transit ridership, and parking utilization.

The goals of the monitoring program would be to evaluate the assumptions made in the Environmental Impact Report and the adequacy of the mitigation measures, as well as to determine the effectiveness of the TDM program.

2.7 The Proponent should continue consultation with appropriate MassDOT units, including PPDU and the MBTA, to discuss preparation of the FEIR. If you have any questions regarding these comments, please contact me at (857) 368-8862.

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

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

November 23, 2016

Matthew A. Beaton, Secretary
Executive Office of
Energy & Environmental Affairs
100 Cambridge Street
Boston MA, 02114

RE: Lynn
Lynn GE Gear Works Redevelopment
The Lynnway/19th Street
EEA # 15441

Attn: MEPA Unit

Dear Secretary Beaton:

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed the Draft Environmental Impact Report (DEIR) submitted by the Lynnway Associates LLC to redevelop a 65.5 acre that includes 37.3 acres of upland and 28.2 acres of coastal wetland along the Saugus River waterfront that is within the Rumney Marshes Area of Critical Environmental Concern in Lynn (EEA #154418). The redevelopment site is a portion of the 77 acre former GE gear works. The project is proposed as a mixed-use residential development, totaling 1,494,000 square feet (sf) with 1,260 housing units in six buildings, 16,000 sf of retail space, 9,800 sf clubhouse, 43,310 sf sports club, a 10,260 sf leasing/management office, a 11,250 sf maintenance building, and a 3,500 sf pool house. The project also includes internal circulation roads, structured (461,325 sf) and surface parking for about 2,130 vehicles, open space, landscaping, network of sidewalks, and a waterfront walkway with associated appurtenances located on filled tidelands of the Saugus River. The project is proposed in phases with Phase I completed in 2018 and Phase V in 2022. MassDEP provides the following comments.

Wastewater

The DEIR revised the estimated wastewater generated by the project to 222,915 gallons per day (gpd). The existing wastewater collection system on site conveys waste to a sewer main on Commercial Street that directs flow towards the Lynnway to the Lynn Regional Wastewater Treatment facility. A new system of gravity sewers (3,450 feet) to convey wastewater to a new sewer pump station and a force main (2,400 feet) are proposed. The force main will discharge to a new manhole on the existing sewer line near the right-of-way of Commercial Street.

The proponent has made a commitment to work with the Lynn Water and Sewer Commission to address infiltration and inflow (I/I) within the wastewater system serving the project site. The DEIR explains that the proponent will survey where stormwater infiltration into the sewer lines is occurring to identify areas where I/I reductions are needed. Preliminarily, there appears to be an opportunity to remove I/I from the existing piping connecting to the sewer mains near the site. The FEIR should provide additional details about the proposed sewer survey work to the extent it is available, and explain the proponent's commitment to remove I/I to mitigate wastewater added by the project as the project is phased in and completed. 3.01

MassDEP regulations at 314 CMR 12.04(2)(d) require NPDES permittees with combined sewer overflows, including the Lynn Water & Sewer Commission, to mitigate impacts of any new connections to their system for which design flows exceed 15,000 gallons per day, by having provisions in their I/I plan to require removal of four gallons of I/I for each new gallon of wastewater flow to be connected. 3.02 Accordingly, the proponent must work with the Commission to meet this requirement. The final design and alignment of sewer and drain infrastructure should be carefully coordinated with the Lynn Water & Sewer Commission, to ensure that the planned work does not impact infrastructure and CSO abatement work being planned by the Commission. 3.03

Wetlands

The DEIR has briefly identified the wetland resource areas on site, including coastal bank, land subject to coastal storm flowage (LSCSF), Riverfront Area, salt marsh, coastal beach/tidal flats, and land containing shellfish. The project site also includes the Rumney Marshes Area of Critical Environmental Concern. MassDEP notes that the DEIR has not considered the extent to which the Riverfront Area is within Chapter 91 Licensing jurisdiction, where the Riverfront Area performance standards would be exempt, pursuant to 310 CMR 10.58(6)(i). 3.04

The project will directly alter coastal bank and its buffer zone, Riverfront Area, and LSCSF. Coastal bank impacts will result from work identified only as repair of the bank, replacement or repair of four outfall pipes, and removal of invasive species. MassDEP requests that the FEIR provide additional details about the coastal bank alteration, with at least conceptual-level design plans, to clarify the extent of the impacts proposed. At the time of the MEPA site visit, the coastal bank appeared to be armored and well stabilized with vegetation established along the bank. Unless an area is actively eroding, MassDEP recommends that work within the coastal bank be limited to stabilizing damaged bank with plant material and minimizing the use of riprap. 3.05 The FEIR should consider where alternative bank stabilization methods can be applied successfully. If there are areas where this is not feasible, the limitations should be explained.

The proposed conditions plans in Figure 7.3 show a new internal roadway connection within the 100 foot buffer to the coastal bank and the outer 200 foot Riverfront Area. Although MassDEP appreciates that imperviousness in the Riverfront Area would be reduced by about 12,500 sf in the inner 100 foot Riverfront Area and 22,700 sf within the outer 100 foot Riverfront Area, a review of the plan appears to show it would be possible to shift the roadway in a northeast direction to avoid or further minimize the impacts within the coastal bank buffer 3.06

zone and Riverfront Area. An alternative alignment should be considered in the FEIR to further reduce the project's direct impacts.

Climate Change and Sea Level Rise

According to the DEIR, most of the project site is within LSCSF based on the Flood Insurance Rate Maps (FIRM), Map Number 25009C0528G, and 25009C0529G, July 16, 2014. The FIRM shows that the site is Flood Zone AE, elevation 10 (NAVD 88). To address the potential flooding on site, the DEIR reports that the site will be filled to elevation 11 or 12, as shown on the Seal Level Rise Resiliency Plan, Figure 11.2.

The DEIR used a variety of sources to evaluate sea level rise vulnerability and risk at the project site from 2022 – 2082, the 60 year projected design life of the project. The City of Lynn's resiliency plan (*Lynn Coastal Resiliency Assessment,* July 2016) was acknowledged; this assessment reported that the 100-year storm elevation would be between elevations 11.5 to 14 NAVD88 by 2066.

The analysis in the DEIR used the US Army Corps of Engineers and National Oceanic and Atmospheric Administration (NOAA) *Sea Level Change Curve Calculator*, the City of Boston sea level rise projections, and the Boston Harbor Flood Risk Model. The NOAA Intermediate High scenario was selected for the design standard, which estimates sea level rise elevations of 11(2030), 11(2050), 13(2080), and 14(2100). As reported, a one foot sea level rise by 2050 also is predicted to occur within a 15 year period and possibly as often as two years or less.

A design elevation of 12 (NAVD) has been selected for the elevation of the top of the lowest floor, and the elevation of utilities and mechanical equipment. This elevation is reported to be one foot higher than the Massachusetts Building Code, 9th Edition, which is approved as a final draft, but not yet in effect. However, based on the analysis, this elevation would be lower than the sea level rise elevation projected for the design life of the project. The DEIR also reports that the proponent is considering other flood mitigation measures, such as temporary barriers and flood proofing. The FEIR should consider additional flood control measures for inclusion in the design that minimize the potential impacts predicted on this flood-prone site.

3.07

Stormwater

The existing stormwater runoff is reported to be a combination of sheet flow and conveyance through three separate drainage systems and outfalls into the Saugus River. Generally, the proposed stormwater management system is described as a system of low impact development and conventional best management practices, including bioretention basins, gravel wetlands, proprietary separators, and catch basins.

Stormwater from most of the project site will continue to be discharged to the Saugus River through four outfalls: three outfalls are currently used and an unused outfall will be unsealed for use. The project is identified as a redevelopment project for the purposes of compliance with the stormwater management standards. The DEIR has provided sufficient information to demonstrate that imperviousness on site will be decreased by about 1.1 acres (Section 4.2, page 4-1 and 4-2). For compliance with the standards for redevelopment (Standard 7), the stormwater management system is reported to be designed for compliance with Standards

2, 3, and to the maximum extent practicable with Standards 4, 5, and 6 (Section 9.4.4, page 9-9). MassDEP notes that the stormwater management system also must be designed for compliance with all other requirements, i.e., Standards 1, 8, 9, and 10 and provide an improvement over existing conditions. The Stormwater Management Report in Appendix D was reviewed for compliance with the applicable stormwater management standards and MassDEP offers the following comments.

Standard 1

3.08 The discussion of the stormwater outfalls in Chapter 3 of Appendix D indicates that no changes are necessary and that scour is not a problem. However, the Stormwater Management Report has not provided outfall velocity calculations and the sediment's ability to resist erosion to show this, as required in the *Stormwater Management Handbook*, Volume 3, Chapter 1, page 2-3. The DEIR indicates that there will be some work done to headwalls, but there are no details, so it is unclear how this work affects the outfalls and the requirements for stormwater control. Additional information should be included in the FEIR to explain proposed work to, the outfalls.

Standard 4

3.09 The six proprietary units are reported to be Stormceptor 450i and Stormceptor 900 units. These units have been given total suspended solids (TSS) removal rates of 80 percent or more in the TSS calculation sheets. However, these TSS removal rates are not verified by an approved third-party, in accordance with the *Stormwater Management Handbook*, Volume 2, Chapter 4. The Stormceptor 450i units are the smallest unit size available, with limited storage capacity for TSS, which makes them susceptible to treatment bypass. MassDEP allows up to 25 percent TSS removal for this size unit. The stormwater management plan and report should address this issue.

3.10 It also has not been demonstrated that these flow-based units are sized adequately for the contributing drainage area. The Stormwater Management Report should include flow-based calculations using the MassDEP's *Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices*, dated September 10, 2016 in conjunction with third-party sizing information to demonstrate that the proprietary separators are sized adequately to treat one inch of runoff multiplied by the impervious area contributing runoff.

3.11 Although the DEIR acknowledges that there is a total maximum daily load (TMDL) for bacteria in the Saugus River, the proposed proprietary treatment devices do not remove bacteria effectively. MassDEP recommends consideration of alternative best management practices that are effective at removing bacteria from stormwater runoff.

Standard 5

3.12 The project appears to be a Land Use with a Higher Potential Pollutant Load and subject to Standard 5 because the site is a disposal site in M.G.L. c21E, as described in the *Stormwater Management Handbook*, Volume 1, Chapter 1, page 12. The Stormwater Management Report should be revised to demonstrate that the stormwater management plan meets Standard 5.

Standard 6

As explained in the *Stormwater Management Handbook*, Volume 1, Chapter 1, page 16, MassDEP reminds the proponent that a long term pollution prevention strategy includes

stormwater best management practice designs that allow for isolation and containment in the event of an accidental spill or unexpected event.

Waterways Regulation Program (WRP)

Water Dependency

The Department has determined that this project is a nonwater-dependent use project pursuant to 310 CMR 9.12(2)(f)(2), (3), (5), and (8).

Chapter 91 Jurisdiction

The proposed project will require authorization through a Chapter 91 (c.91) Waterways License as a limited portion (exact amount has not been calculated by the Proponent) of the 65.5 acre site is comprised of filled and flowed tidelands of the Saugus River in Lynn. The WRP acknowledges that only portions of the project site within c.91 jurisdiction must conform to the applicable Waterways Regulations at 310 CMR 9.00. Also, the seaward side of the project site is located within the Rumney Marshes Area of Critical Environmental Concern (ACEC) and the Department acknowledges that only the portions of the ACEC located within c.91 jurisdiction must comply with 310 CMR 9.32(1)(e).

Chapter 91 Comments

Figure 8.1 of the DEIR includes the Department's Presumptive Line, as it applies to the subject property, which derives from a compilation of various U.S. Coast Survey Plans and historic plans to determine the landward most historic shoreline (U.S. Coast Survey Plan titled "Map of N.W. Shore of Mass Bay from Saugus River to Marblehead" dated 1849 and 1850; U.S. Coast and Geodetic Survey Plan titled "Lynn Harbor and Vicinity" dated 1894; historic plan titled "Location of the Eastern Railroad in the County of Essex, Mass" dated 1857; and U.S. Coast and Geodetic Survey Plan titled "Massachusetts Bay, Lynn to Chelsea" dated 1919). The DEIR also identified a separate historic plan titled "The Lynn Marshes" prepared by J.K. Harris, dated 1892 to rebut the Department's Presumptive Line in whole or in part. The Department's policy on the Presumptive Line states that a proponent can only rebut the line during licensing or through a Request for Determination of Applicability (RDA), but the burden will be on the proponent to demonstrate that there is adequate justification for changing the Presumptive Line and a Professional Land Surveyor will be required to verify such conclusions. If during licensing (or through an RDA) the Department does not believe that the proponent has overcome the presumption, then the Department's Presumptive Line shall be utilized to determine the landward extent of c.91 jurisdiction onsite.

The Department's Presumptive Historic Low Water Mark has also been plotted on Figure 8.1 of the DEIR and confirms that no Commonwealth Tidelands exist onsite, therefore the project site consists of filled and flowed Private Tidelands subject to the requirements of 310 CMR 9.51 and 9.52.

Very little of the project site is subject to c.91 jurisdiction, whether one uses the Department's Presumptive Line or the Proponent's historic plan. Nevertheless, the proponent is

providing public access along the shoreline and point access to the shoreline from the Lynnway, most of which is located outside of c.91 jurisdiction.

The proposed Community Waterfront Amenity Building is located within the Rumney Marsh ACEC but outside of c.91 jurisdiction, regardless of which historic high water mark is used (Presumptive Line or Proponents historic plan line). Lastly, it appears that the proposed project complies with all other applicable nonwater-dependent use regulations, including but not limited to open space, building height, Water Dependent Use Zone (WDUZ) setback requirements, and Facilities of Private Tenancy (FPTs) setback requirements.

Recycling Issues

3.13 MassDEP strongly encourages the project proponent to make a significant commitment to construction waste recycling activities as a sustainable measure for the project. At a minimum, proponents of projects are committing to recycle at least 75 percent of C&D waste.

Greenhouse Gas (GHG) Emissions

The GHG analysis modeled the direct and indirect stationary source, GHG emissions using the eQuest Model (version 3.65). The Baseline project meets the minimum IECC 2012 and ASHRAE 90.1-2010 requirements of the Massachusetts Building Code 8th Edition.

3.14 The full build GHG analysis estimates that stationary source CO_2 reductions for the project with mitigation will be 20.3 percent (2,078 tpy), with a total of 8,133.5 tpy of CO_2 emissions generated by stationary sources on site. With mobile source mitigation, the combined reduction remains at 20.3 percent (8,208.5 tpy of CO_2 emissions), as shown on Table 6.5. However, there appears to be a discrepancy; Table 5 in Appendix C is reporting the total CO_2 emissions to be 8,881 tpy. The difference between these two tables should be explained in the FEIR.

As described in the DEIR and based on the assumptions used in the model, the stationary source GHG emissions reductions are generally attributable to cool roofs, high performance building envelop (increased wall insulation and low-e glass U=.29, more efficient cooling (SEER 12.4, non-residential, 12 for high rise residential and 15.8 for low-rise residential), lower lighting power density (five percent below the Massachusetts Building Code for non-residential, 20 percent below for residential) LED exterior lighting, and EnergyStar appliances. Demand control exhaust ventilation and variable frequency drive fans will be used in the parking garages. Supporting model data were provided in Appendix C.

The mobile source emissions are estimated to be reduced from the baseline by 19.8 percent (186.2 tpy) for a total of 754.6 tpy of emissions from mobile sources. The reductions are reported to be accomplished by implementing intersections improvements (Chapter 5) and transportation demand management measures, including providing a transportation coordinator or transportation management office; bus stop improvements; transit maps, schedules, and subsidized passes; electric vehicle charging stations; parking fees, and limiting parking to minimal requirements.

3.15 The FEIR should provide additional details about the transportation demand management measures. For example, there should be a more specific commitment to vehicle charging stations. As the proponent may be aware, Massachusetts is party to a multi-state memorandum of

understanding for an action plan facilitating implementation of zero-emission vehicle (ZEVs) programs. The goal is to ensure that there are 3.3 million ZEVs on the roads by 2025, which requires adequate fueling infrastructure. As there will be more than 1,000 parking spaces on site, it is recommended that four percent of the parking spaces be dedicated to electric charging vehicles unless the City of Lynn requires dedication of a greater number of spaces.

The results from the analysis of photovoltaics (PV) on site yield a maximum potential for 3,500 kW per year, which corresponds to a significant 1,311 tpy reduction in CO_2 emissions. This renewable energy has the potential to reduce the total stationary source emissions by over 33 percent (10,211.2 – (8,133.5-1,311)/10.211/2 x 100%)[12]. However, the DEIR indicates that there are difficulties to overcome with rental units, relating to the need for long-term PV contracts in buildings with short-term leases. Given that the potential for GHG emissions reductions is significant, MassDEP requests that the FEIR consider case studies where PV have been included in multi-tenant buildings to understand whether there is a pathway forincorporating PV successfully into the proposed residential development.

3.16

Contaminated Soil and Groundwater: The site is regulated under Release Tracking Number 3-357. There is a Partial Class A-3 Response Action Outcome, with an Activity and Use Limitation for the project area. A portion of that area has contamination such that there is a potential for complete vapor intrusion pathways in the proposed buildings. The RAO/AUL describes the obligation to evaluate the vapor intrusion pathway once the new buildings are constructed. Following building construction for human occupancy within Area A, and during the winter heating season, MassDEP recommends a demonstration that the passive venting is effective in preventing vapor intrusion. Indoor air monitoring would provide confirmation that vapor intrusion is not occurring. If the passive venting system is not effective, it should be converted to an active system by addition of fan(s).

3.17

The MassDEP appreciates the opportunity to comment on this proposed project. Please contact Kevin.Brander@state.ma.us at (978) 694-3236 for further information on the wastewater issues, Jack.Miano@state.ma.us at (978) 694-3357 for additional information on the (MCP)/M.G.L. c.21E issues, and Frank.Taormina@state.ma.us at (617) 292-5551 for information on the waterways comments. If you have any general questions regarding these comments, please contact Nancy.Baker@state.ma.us, MEPA Review Coordinator at (978) 694-3338.

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

[1] The source of the 9,794.2 value in the PV calculation (page 42, Appendix C) is unclear. Although Table 5 is cited as the source (page 40 in the solar hot water calculation), this value was not among the data in that table.
[2] The data in MassDEP's calculation are from Table 5.

cc: Brona Simon, Massachusetts Historical Commission
Ben Lynch, Frank Taormina, MassDEP-Boston
Eric Worrall, Rachel Freed, Kevin Brander, Jack Miano, Iris Davis, Heidi Davis, MassDEP-NERO
Dan O'Neill, Executive Director
Lynn Water & Sewer Commission
400 Parkland Avenue
Lynn, MA 01905

dcr
Massachusetts

November 23, 2016

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attn: Purvi Patel, MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Re: EOEEA #15441 Lynn Gear Works Redevelopment DEIR

Dear Secretary Beaton:

The Department of Conservation and Recreation ("DCR" or "Department") has reviewed the Draft Environmental Impact Report ("DEIR") submitted by Lynnway Associates LLC (the "Proponent") for its Lynn Gear Works Redevelopment project (the "Project").

As stated in the DEIR, the Project will redevelop a 65.5-acre portion of the General Electric ("GE") Gear Works site in Lynn. The site was used during the early- and mid-1900s as a military factory to produce parts for ships and submarines. The redevelopment proposes 1,260 units of housing, 2,130 parking spaces, a sports club, retail space, a leasing/management office, a clubhouse, a poolhouse, and a community waterfront amenity building. The site provides convenient access to an adjacent MBTA commuter rail stop that is currently limited to sole use by GE employees, but is proposed to extend for use by the general public under the Project. Vehicular access to the site is currently provided by a driveway off the Lynnway/Route 1A. Some minor changes in the building program were made compared to the previous filing in December 2015. The Project is proposed to be constructed in five stages between 2017 and 2022.

DCR has care, custody, and control of the Lynnway/Route 1A. As part of the transportation mitigation program, the Proponent is seeking to construct proposed improvements at three intersections along the Lynnway (at its intersection with the Southern Site Driveway, Hanson Street, and Harding Street/19th Street). Additional mitigation is proposed along the Lynnway corridor including coordinating new traffic light timing sequences, and striping the Lynnway pavement with sharrow markings. The Project will require a Construction and Access Permit from DCR for the proposed Lynnway improvements. DCR submits the following comments related to transportation impacts on the Lynnway, and includes recommendations for inclusion in the FEIR scope.

Transportation

The DEIR notes that the Proponent is working with the MBTA to convert the private MBTA commuter rail stop, currently used solely by General Electric employees, to a public stop. DCR notes that the conversion would likely reduce potential vehicle trips on the Lynnway and accordingly would be likely beneficial. To properly assess the traffic count estimates, DCR requests the Proponent clarify in the Final

4.1

EIR the quantity of vehicle trips on the Lynnway that would decrease (due to commuter rail trips) and increase (for drop-offs, pick-ups, and parking) if the commuter rail stop is converted to public use.

4.2 In the EENF and Draft EIR, the Proponent states that sharrow markings and shared road signage will be added to the Lynnway to enhance bicycle mobility. In its Final EIR, DCR requests the Proponent explore a potential alternative to these markings that would facilitate safe bicycle travel in the area. DCR requests designing improvements to meet the MassDOT "Complete Streets" standard, with an emphasis on providing safe accommodation for bicycle, pedestrian, and bus transportation. DCR is available for consultation on this request.

In DCR's comments on the EENF, the Department requested the Proponent include a queue analysis to estimate the potential impacts to the General Edwards Bridge operation from the placement of a new left-turn lane. The DEIR included a 50% and 95% queue analysis, and mentions the Proponent are exploring a potential traffic preemption signal for the northbound lane of the Lynnway. The results of the queue

4.3 analysis suggest that adequate space is provided to accommodate traffic from a 95% queue between the Southern Site Driveway and the drawbridge portion of the General Edwards Bridge. In its FEIR, DCR requests the Proponent clarify whether this includes all potential traffic resulting from a worst case scenario.

4.4 In the FEIR, DCR requests the Proponent provide an update on whether the Proponent will fund a traffic preemption signal on the drawbridge, and if so include the commitment in its proposed Section 61 findings.

4.5 DCR further requests that the Proponent analyze traffic impacts along the Lynnway based on Right-in/Right-out access at the new driveway at the jug handle.

Thank you for the opportunity to comment on the DEIR. If you have questions regarding our comments please contact Ken Kirwin at 617-626-1498 or ken.kirwin@state.ma.us.

Sincerely,

Leo Roy
Commissioner

cc: Andy Backman, Ken Kirwin, Patrice Kish, Tom LaRosa, Rob Lowell. Norm Orrall, Mahendra Ughreja (DCR)
Charles Patsios, Lynnway Associates
Samuel Gregorio, TEC Inc.

COMMONWEALTH OF MASSACHUSETTS
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Secretary

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Commissioner

29 November 2016

Matthew Beaton, Secretary
Executive Office of Energy & Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02114
Attn: MEPA Unit

RE: Lynn Gear Works, Lynn Massachusetts EEA #15441

Cc: Arah Schuur, Director of Energy Efficiency Programs, Department of Energy Resources
Judith Judson, Commissioner, Department of Energy Resources

Dear Secretary Beaton:

We've reviewed the Draft Environmental Impact Report (DEIR) for the above-referenced project. We are pleased to see the proponent evaluate an array of energy efficiency and renewable measures. The proponent was responsive to the requests contained in the DOER's comments from the environmental notification form.

Based on the evaluations performed, we are pleased to report that the project can readily achieve a GHG reduction in the order of 50% using financially-feasible strategies.

In summary:

- The currently proposed mitigation (consisting of energy efficiency measures only) would reduce greenhouse gas emissions by approximately 20% (compared to 2012 Baseline).

- We were pleased to see solar PV and CHP evaluated (though not committed). The DEIR evaluations show that, if implemented, solar PV and CHP would result in GHG reduction of over 30%.

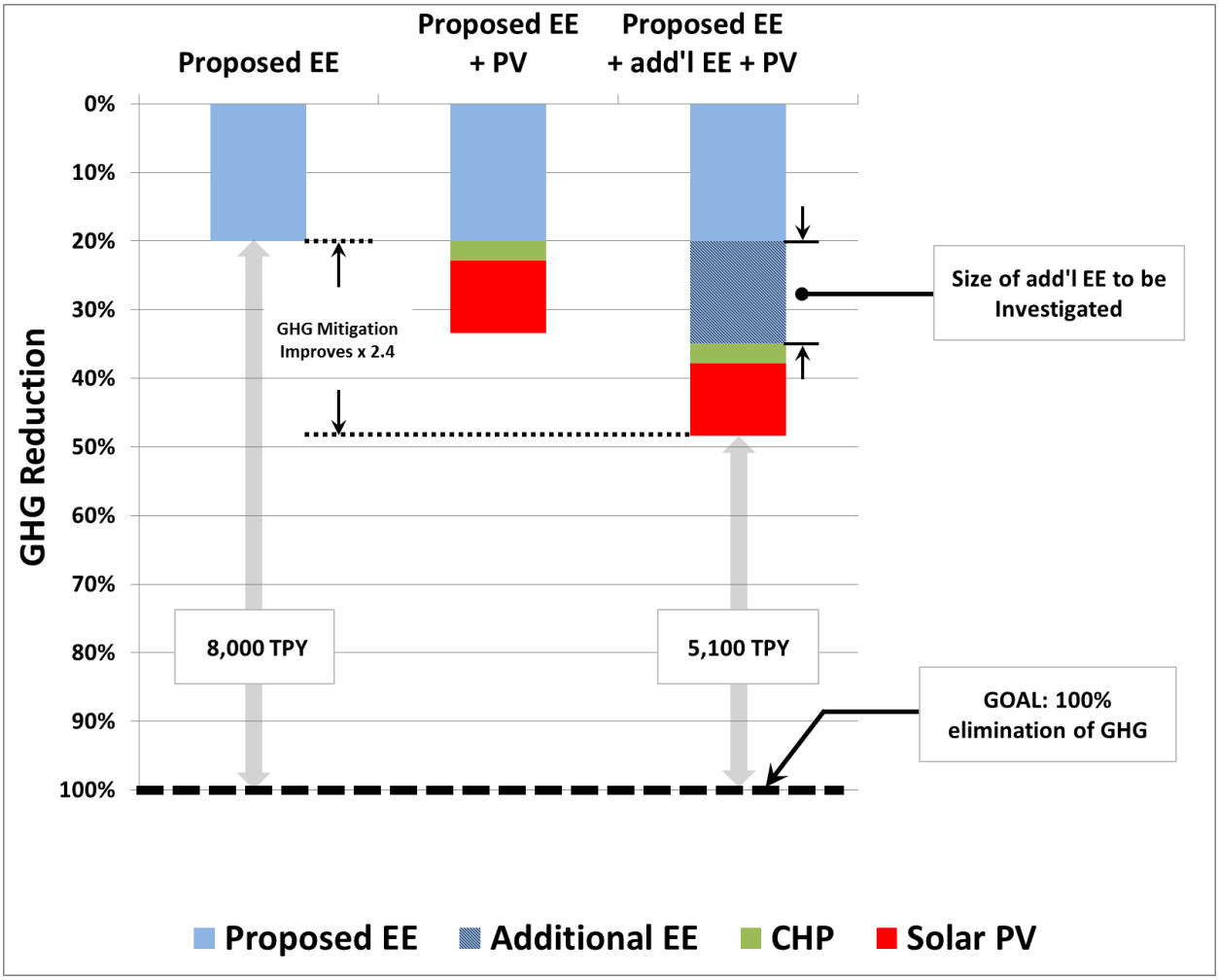
- Evaluations indicate that both PV and CHP are also financially feasible. Using the information provided in the DEIR, PV would have a NPV of over $1.6M; while CHP

would have a payback of less than 5 years. Generous utility incentives would further reduce this payback time.

- Additional energy efficiency measures (beyond what is currently proposed) can likely push total GHG reduction to approximately 50%. Costs for these additional measures may be able to be offset through energy efficiency programs offered by the local program administrators (National Grid).

- GHG mitigation would be more than doubled, resulting in GHG footprint of 5,100 TPY compared to currently planned footprint of 8,000 TPY. This reduction is equivalent to the GHG footprint of over 300 homes.

Accordingly, it appears that a financially-feasible pathway exists to reach GHG reductions in the order of 50%. The figure below demonstrates how additional EE, PV, and CHP provide that pathway.



In the figure above, the left bar illustrates the GHG reduction using currently proposed (and committed) energy efficiency (EE) measures. The middle stacked bar illustrates how GHG reduction can be improved with PV and CHP. The stacked right bar illustrates how GHG reduction can be even further improved through additional energy efficiency measures (shown as "additional EE"). Together, GHG reductions for the project would approach 50%.

Note that the contribution of "additional EE" shown in the illustration is 15%. We've indicated in the illustration that this could be more or less than this, as may be confirmed through evaluations with the utility programs.

Our detailed recommendations are as follows:

1. Investigate the following HVAC options:

5.01 *a.* *Variable Refrigerant Flow:* VRF is an increasingly popular choice for reducing energy consumption. VRFs are distributed through the units, integrated to a high efficiency central boiler and heat sink.

5.02 *b.* *Energy Recovery:* Where not already required by code, we recommend energy recovery options be investigated.

5.03 *c.* *Responsive Systems and Controls:* Responsive HVAC systems, where not already required by Code, such as economizers and demand controlled ventilation usually are effective GHG mitigation strategies which we recommend be investigated.

2. 5.04 Note that the proposed roof and wall insulation is equal to code coming into effect 2 January 2017. Updated code information is here: http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/buildings/amendments-to-780-cmr-effective-august-12-2016.html. We recommend evaluating roof and wall insulation which exceeds code coming into effect.

3. 5.05 The evaluation cited issues with heat pumps in cold climates. These issues are addressed with new cold climate air source heat pumps. Extensive information can be found here: http://www.neep.org/initiatives/high-efficiency-products/emerging-technologies/ashp/cold-climate-air-source-heat-pump

4. 5.06 Cold climate air source heat pumps may be an effective strategy for several of the buildings. Air source space heating is eligible for thermal Alternative Energy Credits (AECs). Guidelines on details of AEC eligibility and estimates are available here: http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/renewable-thermal/renewable-heating-and-cooling-alternative-portfolio-std.html.

5. 5.07 We are pleased to see an investigation of solar PV. However, we recommend that the associated GHG and financial evaluation be based on the size that can be achieved as a function of the usable roof area.

5.08 6. Review federal allowances for accelerated and bonus deprecation and, if applicable, revise solar thermal financial analyses. See http://www.energy.gov/savings/modified-accelerated-cost-recovery-system-macrs

5.09 7. We recommended meeting National Grid to investigate energy efficiency incentives (see contact information) as soon as possible. Utility incentive programs are performance-based and investigating further improved envelope mitigation and other efficiency improvements may yield significant financial incentives for the project.

Efficiency with National Grid:

https://www.nationalgridus.com/Trade/EE-Programs-Solutions/CI-New-Construction-Services

5.10 8. The space heating end use energy consumption appears to be low, by approximately a factor of 10, for all the residential buildings. We recommend investigating model results.

Need blurb on CHP

5.11 9. We would exCHP system was found to be financially feasible. We recommend engaging National Grid as soon as possible (see contact information). Also, the following link provides useful guidance on the CHP evaluation process: http://www.masssave.com/~/media/Files/Business/Applications-and-Rebate-Forms/A-Guide-to-Submitting-CHP-Applications-for-Incentives-in-Massachusetts.pdf

CHP Contact:

Gerald Ferris (National Grid): 401.784.7364

Sincerely,

Paul F. Ormond, P.E.
Energy Efficiency Engineer
Massachusetts Department of Energy Resources

THE COMMONWEALTH OF MASSACHUSETTS
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MEMORANDUM

TO: Matthew A. Beaton, Secretary, EEA
ATTN: Purvi Patel, MEPA Unit
FROM: Bruce Carlisle, Director, CZM
DATE: November 22, 2016
RE: EEA-15441, Lynn Gear Works Redevelopment; Lynn

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Draft Environmental Impact Report (DEIR) noticed in the *Environmental Monitor* dated October 24, 2016. CZM recommends that the scope for the Final EIR for the proposed project include the issues identified below.

Project Description

The proposed project is the development of 65.5 acres of a 77 acre parcel for a transit-oriented residential development (TOD) project with mixed-use components. The remaining 11.5 acre portion of the parcel will retained by General Electric (GE) and contains an outlying utility building and jet fuel storage tanks, utilized by the adjacent Riverworks plant. Since the ENF was filed, the proposed project has been modified slightly The proposed project now includes construction of 1,260 residential units in six residential buildings, and a mix of ancillary retail, restaurant, and other supporting uses in several other buildings including a clubhouse, a sports club, a pool house, a maintenance building, a leasing/management office, and complementary retail space intended to offer on-site services to the TOD residents. Free-standing parking buildings have been reduced from three to one. Overall, the building area has been reduced from 1,663,000 square feet (sf) to 1,494,000 sf. The proponent continues to work with the Massachusetts Department of Transportation and the MBTA to negotiate a Memorandum of Agreement (MOU) to allow residents of the TOD to use the existing GE/Riverworks station. This will require reconstruction of the platform to provide compliance with Americans with Disabilities Act (ADA) and Architectural Access Board (AAB) standards. The 65.5 acre development parcel includes 28.2 acres of coastal wetlands including salt marsh and coastal bank, and 37.3 acres that are within Land Subject to Coastal Storm Flowage (LSCSF). The entire site is within a FEMA AE zone with a Base Flood Elevation (BFE) of 10 (NAVD88), and a portion of the site adjacent to the Saugus River is within the Rumney Marshes Area of Critical Environmental Concern (ACEC).

Project Comments

Resource Area Impacts

The proposed project includes a significant scope of development within an existing resource area (LSCSF), and is directly adjacent to, and partially within, an ACEC. The DEIR states that the project will not require any fill or dredging in the Saugus River and adjacent salt marsh, therefore no impacts to salt marsh are anticipated. The DEIR also states that the revetment that currently comprises the coastal bank will be stabilized and improved where necessary, and that repair

or replacement of four outfall pipes will require limited work within the intertidal area. While work is proposed to be performed from upland areas, this proposed structural work is within the Rumney Marshes ACEC, and directly in the salt marsh associated with this ecologically sensitive area. The information available in Chapter 7, *Wetlands* in the DEIR is not adequate for review of the potential impacts of these activities. CZM recommends that the FEIR include cross sections of work proposed on the coastal bank/revetment and within the salt marsh that clearly show elevations and areas of impact for salt marsh and coastal bank. The FEIR should fully describe all impacts to all resource areas on the site, including impacts associated with this coastal bank work, and demonstrate that the impacts associated with these are minimized.

6.1

Land Subject to Coastal Storm Flowage

The response to comments section of the DEIR states that figure 2.3 in Chapter 2 illustrates the proposed grading plan for the project; however that figure is not included in the DEIR. Figure 11.2 appears to show areas of elevation that are less than 10 NAVD88 to elevations greater than 11NAVD88. This grading plan would likely increase channelization of floodwaters during a coastal storm event. This channelization can cause exacerbated flooding impacts even in areas that are not experiencing velocity wave action, and could result in longer term flooding for certain areas. CZM requests that existing and proposed elevations resulting from fill and grading, clearly shown on plans of a reasonable scale, are included in the FEIR, and a description of how flood waters would be anticipated to flow onto and from the site during a coastal flooding event should be included to demonstrate that the grading does not exacerbate flooding issues on or adjacent to the site.

6.2

Climate change and sea level rise

The proposed project will add six new residential buildings with 1,260 new residences and several ancillary use buildings to an area that is currently within LSCSF. Given the current flooding concerns coupled with the importance of the residential uses proposed for the site, CZM is pleased to note that the DEIR includes a climate change and sea level rise assessment, and a commitment that the project will be designed to exceed current Massachusetts Building Code standards and accommodate the potential for flood levels resulting from sea level rise conditions. In addition, the DEIR states that "additional flood proofing could be incorporated into the design." CZM recommends that the FEIR include more detailed information regarding these design opportunities.

6.3

The DEIR project summary (pg. 1-6) indicates that the elevations chosen will ensure that the project will be resilient to flooding from the 1% annual flood through its design life. The DEIR further states that multi-family residential structures like those proposed as part of this project are generally expected to have a lifespan of approximately 60 years, and therefore climate conditions up to around the year 2082 will have an impact on the project. Table 11.4 indicates a projected base flood elevation of 13 feet NAVD88 on the site by 2080. However, according to the DEIR the proposal will add approximately two feet of fill to the site to raise it to between elevations 10 NAVD88 and 12 NAVD88, as depicted in Figure 11.2. CZM notes that these elevations will not ensure that the project will be resilient to flooding from the 1% annual flood throughout its design life (projected to be up to elevation 13 NAVD88), but will likely require retrofitting later in the design life to accommodate the level of sea level rise predicted by the sea level rise vulnerability assessment included in the DEIR. CZM recommends that the project incorporate the full three feet of elevation identified by the analysis to maximize the ability of the project to be resilient to flooding throughout its design life and avoid more difficult retrofit requirements in the future.

6.4

Stormwater

The ENF states that the stormwater design for the redevelopment of the site will meet applicable regulatory performance standards. While this is a redevelopment project, CZM notes that the entire site will be completely redeveloped for this project, and encourages the proponent to strive to meet the stormwater management standards fully wherever possible. Given the extensive nature of the work to be done, and the fact that the stormwater is proposed to discharge directly into the Rumney Marshes ACEC via existing stormwater outfall pipes, CZM recommends that the FEIR fully explore possible improvements to the stormwater over and above those required as the baseline for stormwater management for the site. Further reductions in impervious areas on site and additional vegetation should be further considered, as these will also have a positive impact on the function of the LSCSF resource area on site.

6.5

6.6

6.7

Federal Consistency Review

The proposed project may be subject to CZM federal consistency review, in which case it 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 617-626-1050, or visit the CZM web site at www.mass.gov/czm.

6.8

BKC/kg

cc: Kathryn Glenn, CZM
Nancy Baker, MassDEP

CITY OF LYNN

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Lynn, MA 01901

Phone 781-599-1444
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JKennedy@LynnMA.gov

JUDITH FLANAGAN KENNEDY
MAYOR

November 8, 2016

Matthew Beaton, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02214

Re: EEA #15441
Lynn Gear Works Redevelopment
Draft EIR

Dear Secretary Beaton,

I am writing to offer the strong support of my office and administration for the Lynn Gear Works Redevelopment project. The project as proposed would transform a long vacant industrial site 1260 units of market rate rental housing immediately adjacent to the MBTA Riverworks commuter rail station. The redevelopment of this riverfront area has long been envisioned with the City's completion of the Lynn Waterfront Master Plan ten years ago. This project represents not only a significant investment but the City views it as the catalyst for other developments consistent with that master plan.

We understand through our continued discussion with the project proponent that the MBTA continues to work with the proponent to define how access to the Riverworks station will be accomplished. We support those efforts and emphasis the importance of the MBTA access for this project.

Thank you.

Sincerely,

Judith Flanagan Kennedy

Judith Flanagan Kennedy
MAYOR, CITY OF LYNN

LYNN UNITED FOR CHANGE
LYNN UNIDO POR EL CAMBIO
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November 22, 2016

Secretary of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs (EEA)
Attention: MEPA Office
Purvi Patel, EEA No. 15441
100 Cambridge Street, Suite 900
Boston, MA 02114

VIA EMAIL (purvi.patel@state.ma.us)

Dear Secretary Beaton:

As Lynn residents and representatives of the grassroots community organization Lynn United for Change, we are writing to raise concerns regarding the project planned for the former General Electric Gear Works site in Lynn, MA (EEA No. 15441).

Based on the information provided in the DEIR, we believe there are two primary issues that call for further scrutiny and fall under your jurisdiction. First, the project creates a gated residential community on tidelands. This is fundamentally at odds with state public access requirements, and the proponent's provisions for public use are wholly inadequate. Second, the project fails to adequately account for sea level rise related to climate change.

8.1
8.2

Public Access

Public access to the waterfront is a regulatory requirement for the proponent under Chapter 91. We are concerned that the proponent's obligations under 310 CMR 9.51(3)(d) and other related regulations are not being met. We further believe that the project is fundamentally at odds with the spirit of public access regulations, as it seeks to create a private, gated community on tidelands (e.g. a "gated residential area" is referenced in the DEIR at Section 5.3, page 5-4).

8.3 Our interpretation of the information in the DEIR is that virtually the whole site is gated and public access is only allowed on a very small area (see, e.g., Figure 11.2). We would like the proponent to confirm whether that is correct, and to specify the location of the gates and fences that will prevent public access to the majority of the site. We would also like the proponent to specify what percentage of open space on
8.4 site will be publicly accessible.

8.5 Public access is further restricted in that even the tiny area the proponent seems to have proposed for public use will likely be available only during limited hours. The DEIR states that "the Proponent anticipates providing such access from dawn until dust [sic] on daily basis" (Section 8.5.2.1, page 8-11).

8.6 The proponent claims that the project will benefit the public by "promot[ing] a sense of community" (DEIR, Section 1-1, page 1-1). However, the plan as currently constituted will create the clear perception

that the entire area is for private use of the residents. This will be exacerbated by the racial and class segregation that is likely to result from the proponent's intent to create residential units exclusively for affluent people, which will put the area out of reach for the majority of Lynn's current working class residents.

The proponent implicitly acknowledges that the publicly accessible area will not in practice serve the broader public well, noting that, "[a]s on-site amenities are programmed residents only and will not be open to the general public, only a small number of additional parking spaces above the Zoning Ordinance have been included in the Site plan" (DEIR, Section 5.10.1, page 5-64). It seems that only ten parking spaces are provided for the public (DEIR, Section 5.3, page 5-4). Given the size of Lynn's population, this clearly indicates that the proponent does not anticipate the area being frequently used by the public.

8.7

Finally, in the Summary of Alternatives (DEIR, 1-6), no serious consideration is given to an option that would enable public access to a significant portion of the area, or of development of a housing mix that would not exclude the majority of current Lynn residents (i.e. preventing the racial and class segregation that will fuel the perception of a completely privatized space).

8.8

In sum, we believe the current project plan privatizes the area, that the public access provisions are wholly inadequate, and that revisions should be required to provide for genuine public access and engagement with the waterfront.

Climate change, sea level rise, and related equity concerns

According to the sea-level rise projections cited by the proponent, this project is not sufficiently elevated to cope with climate change in the medium to long term (see sea-level rise projections in the DEIR, page 11-9).

8.9

This issue is exacerbated by the minimal buffer provided between the site boundary and built areas. Inclusion of a larger buffer might enable nature based ecological flood control to provide increased mitigation.

8.10

The failure to fully account for medium to long-term climate change scenarios also raises concerns related to equity and public access. The area currently designated for public access is likely to be rendered unusable due to increased flooding in the future, according to the projections cited by the proponent. Public access will for practical purposes no longer exist. Thus, the benefit of this project will accrue almost entirely to the developers and residents of the proposed gated community, not the general public.

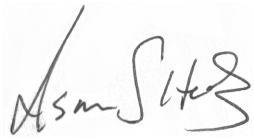
8.11

This further constitutes a negative, disparate impact to the general population of Lynn (which is disproportionately composed of racial minorities and working class people, as compared to the projected population of the gated community).

Conclusion

In conclusion, we request that the proponent be required to provide the information requested above; to address the project's failure to adequately provide for open space and public access; to address the project's failure to deal with medium to long term climate change impacts; and to address the project's disproportionately adverse effect on communities of color, working class residents, and families with children.

Sincerely,



Efres Perez Isaac Simon Hodes Dara Chhim

Cc: matthew.beaton@massmail.state.ma.us

7.3 Responses to Comments on the DEIR

This section provides responses to each comment identified in the comment letters included in Section 7.2, *DEIR Comment Letters*. For those comments that are addressed directly in the text of the FEIR, a section reference is provided. For those comments that are not addressed directly in the text of the FEIR, a response is provided within Table 7.2. Comments have been transcribed exactly as found in the comment letters, complete with any erroneous spelling or other matter that might otherwise be taken as an error of transcription.

TABLE 7.2 RESPONSES TO DEIR COMMENTS

Comment Number	Comment	Response
MEPA		
1.01	The FEIR should describe any changes to the project since the filing of the DEIR. It should include updated site plans for existing and proposed conditions and provide a summary, on a building by building basis, of floor area by use, and overall height (i.e., stories). The FEIR should include a list of required State Agency Permits, Financial Assistance, or other State approvals and provide an update on the status of these actions. It should identify the source and purpose of any Financial Assistance requested from the Commonwealth. In addition, the FEIR should provide an update on the local permitting processes for the project.	Chapter 1 includes the requested information.
1.02	The FEIR should quantify the amount of previous alteration within the 27. I acres of coastal wetlands on-site.	Chapter 1, Section 1.4, Land Alteration, provides the requested information
1.03	In addition, the FEIR should clarify that LSCSF extends through upland areas as well as coastal wetlands.	Chapter 4, Section 4.1.4, Land Subject to Coastal Storm Flowage, provides the requested information.
1.04	The FEIR should clarify the location, type and amount of alteration in previously undisturbed areas, including coastal resource areas.	Chapter 1, Section 1.4, Land Alteration, provides the requested information
1.05	It should quantify the amount of land alteration associated with wastewater, water and stormwater infrastructure, and other project components both onsite and off-site.	Chapter 1, Section 1.4, Land Alteration, provides the requested information

Comment Number	Comment	Response
1.06	The FEIR should continue to evaluate additional opportunities for increasing open space, reducing impervious area, and improving stormwater management all of which will contribute toward establishing consistency with policies, guidance and regulatory standards associated with stormwater, coastal wetlands, tidelands, and climate change.	Chapter 5, Section 5.1.1, Massachusetts Stormwater Management Standards, provides the requested information
1.07	The MassDOT and DOER comment letters requested additional information regarding the traffic study and mitigation. I hereby incorporate by reference the MassDOT comment letter, dated November 23, 20 I 6, and the DCR letter, dated November 29, 20 I 6, into the FEIR Scope.	Chapter 2 of the FEIR provides responses to the MassDOT and DCR comments letters.
1.08	I strongly encourage the Proponent to consult with MassDOT and DCR prior to filing the FEIR to ensure that FEIR adequately addresses guidance and requests for information from MassDOT and DCR.	The Proponent has consulted with MassDOT and DCR regarding guidance and requests identified in the DEIR. Chapter 2 of the FEIR summarizes the extent of improvements the Proponent has committed to as mitigation for the project.
1.09	The FEIR should provide a detailed response to the Department of Energy Resources' (DOER) comment letter regarding additional energy efficiency and on-site energy generation opportunities that appear to be feasible for this project. According to DOER, these measures could reduce GHG emissions by 50 percent over the Base Case. I expect that the FEIR will include a detailed evaluation of each measure outlined in DOER's comment letter.... The FEIR should further evaluate the use of CHP and solar PV and provide the additional analysis requested by DOER, including an analysis of the financial incentives identified therein.	Responses to DOER's comments have been addressed in responses to comments 5.01 through 5.11. As described in Chapter 3, Section 3.3.1, Solar Photo Voltaic Analysis, the PV cost feasibility analysis has been revised.
1.10	The FEIR should address the comments in MassDEP's letter.	MassDEP's comments have been addressed in responses to comments 5.01 through 5.11.
1.11	DOER's comment letter indicated that the project could significantly reduce GHG emissions by exceeding building code requirements for the building envelope and H AC systems and identified additional energy efficiency measures that should be evaluated in the FEIR. These measures include Variable Refrigerant Flow (VRF), energy recovery, responsive HV AC systems, cold climate air source heat pumps, and roof and wall insulation.	Chapter 3, Energy and Greenhouse Gas, discusses the energy efficiency measures that have been considered and identifies those that will be included as part of the Project design.

Comment Number	Comment	Response
1.12	Comments from CZM, MassDEP and Lynn United for Change request additional assessment of adaptation and resiliency measures. As recommended by CZM, the FEIR should address the feasibility of incorporating up to three feet of elevation to maximize the project's resiliency to flooding throughout its design life and should include a more robust discussion of other potential measures being considered by the Proponent and how they would address potential vulnerabilities.	Chapter 4, Section 4.3.1, Site Elevation, provides information related to limiting factors for increasing elevation. Section 4.3.2, Flood Proofing Measures, provides a discussion of other potential measures to address flood vulnerabilities.
1.13	The FEIR should include a table that clearly identifies impacts (temporary, permanent, maintenance, and/or improvement) to all resource areas on-site and within the ACEC and demonstrate that these impacts are minimized.	Chapter 4, Section 4.1, Wetlands, provides this information in tabular form (Table 4.1).
1.14	The FEIR should describe the nature of all impacts that cannot be avoided including grading, clearing and construction-related disturbances and indicate whether impacts are temporary or permanent in nature.	Chapter 4, Section 4.1, Wetlands, provides the requested information.
1.15	Plans submitted with the FEIR should clearly identify existing and proposed elevations, at a reasonable scale, associated with fill and grading.	Figures 4.3 and 4.4 in Chapter 4 provide the requested information.
1.16	The FEIR should provide a response to comments from CZM regarding LSCSF and potential channelization of flood waters during a coastal storm event.	Chapter 5, Section 5.1.4, Land Subject to Coastal Storm Flowage and Channelization of Flood Waters, provides a response to CZM's comments.
1.17	The FEIR should provide additional details and identify impacts to Coastal Bank and its buffer zone and Salt Marsh associated with the restoration of the armored bank, replacement or repair of four outfall pipes, and removal of invasive species.	Chapter 4, Sections 4.1.2, Coastal Bank, and 4.1.6, Salt Marsh, provide the requested information.
1.18	The FEIR should include conceptual design plans and cross sections of proposed work to clarify the extent of the impacts proposed and clearly show elevations and areas of impact for Salt Marsh and Coastal Bank.	Figures 4.1 and 4.2 in Chapter 4, Wetlands, Waterways and Climate Resilience, include the requested information.
1.19	MassDEP comments indicate that the shallow bank appeared to be armored and well stabilized with vegetation established along its length at the MEPA consultation session. The FEIR should consider where alternative bank stabilization methods such as vegetated alternatives can be applied successfully. If there are areas where this is not feasible, the limitations should be explained. MassDEP recommends that work within the Coastal Bank be limited to stabilizing damaged bank with	Chapter 4, Section 4.1.2, Coastal Bank, provides the requested information.

Comment Number	Comment	Response
	plant material and minimizing the use of riprap unless an area is actively eroding.	
1.20	The FEIR should identify the total amount of LSCSF that the project will alter.	Chapter 4, Section 4.1, Wetlands, provides this information in Table 4.1. The Project will permanently alter approximately 33.2 acres of LSCSF.
1.21	The FEIR should address how the project will maximize the function of LSCSF to minimize storm damage and flooding.	Chapter 4, Section 4.1.4, Land Subject to Coastal Storm Flowage, provides the requested information.
1.22	The FEIR should confirm that the project will not permanently or temporarily impact Salt Marsh.	Chapter 4, Section 4.1.6, Salt Marsh, includes confirmation that the Project will not permanently or temporarily impact Salt Marsh.
1.23	The FEIR should address comments from MassDEP which note that the DEIR does not consider the extent to which the Riverfront Area is within c. 91 Licensing jurisdiction, where the Riverfront Area performance standards would be exempt, pursuant to 310 CMR 10.58(6)(i).	Chapter 4, Section 4.1.5, Riverfront Area, provides the requested information.
1.24	Figure 7.3 depicts a new internal roadway connection, parking, and Community Waterfront Amenity Building within the 100-foot buffer to the Coastal Bank and the Riverfront Area. The FEIR should address alternatives that would relocate these elements outside of the resource areas to minimize potential impacts to Coastal Bank and Riverfront Area.	Chapter 4, Section 4.1.5, Riverfront Area, provides the requested information.
1.25	The FEIR should provide calculations of the portion of the site that is comprised of filled and flowed tidelands of the Saugus River in Lynn.	Chapter 4, Section 4.2.1, Filled and Flowed Tidelands, provides the requested information.
1.26	The FEIR should describe how the project will comply with 310 CMR 9.32(1)(e) for work proposed in the ACEC that is also located within c.91 jurisdiction.	Chapter 4, Section 4.2.2, ACEC Compliance, provides the requested information.
1.27	The FEIR should include more detailed information regarding publicly accessible open space and associated infrastructure to demonstrate how the project can be designed to ensure the open space and waterfront access clearly signifies that it is public and encourages community use.	Chapter 4, Section 4.2.3, Public Open Space, provides the requested information.

Comment Number	Comment	Response
1.28	The FEIR should include renderings and perspectives that include the proposed gate.	The proposed gate has been relocated to Avenue C, and is outside of the Water Dependent Use Zone (WDUZ) as depicted in DEIR Figure 8.3. It no longer restricts public circulation on the Site along the waterfront. As shown in FEIR Figure 1.2, the Project now provides additional public pedestrian facilities to further ensure the adjacent WDUZ is not isolated from the nearby public ways.
1.29	The FEIR should include a specific response to the criteria that I must consider in making a Public Benefits Determination, including community activities on the site. This information will be used to inform the PBD which will be issued within 30 days of the issuance of the FEIR Certificate.	Chapter 4, Section 4.2.4, Public Benefit Review and Determination, provides the requested information.
1.30	I note CZM comments which emphasize that, although this may be considered a redevelopment project, the entire site will be completely redeveloped and, as such, the project may be able to fully comply with stormwater. The FEIR should demonstrate that the Proponent will strive to meet the SMS where feasible. In addition to demonstrating compliance with compliance with Standards 2, 3, and to the maximum extent practicable with Standards 4, 5, and 6, the FEIR should discuss how the stormwater management system will be designed for compliance with all other requirements (i.e., Standards 1, 8, 9, and 1 0). The FEIR should address each of MassDEP's comments regarding the project's compliance with Standards 1, 4, 5, and 6 including: providing outfall velocity calculations; proposed work to outfalls; verifying total suspended solids (TSS) removal rates for proprietary units; appropriately sizing proprietary units; revising TSS calculations; considering alternative BMPs that are effective at removing bacteria from stormwater runoff; and confining the project's designation as a LUHPPL.	Chapter 5, Section 5.1.1, Massachusetts Stormwater Management Standards, provides the requested information.
1.31	As recommended by CZM, the FEIR should fully explore possible improvements to the stormwater over and above those required as the baseline for stormwater management for the site. The FEIR should continue to consider minimizing the amount of impervious surfaces, adding vegetation, parking ratios, banking of parking, and narrow roadway widths, and water quality swales.	Chapter 5, Section 5.1, Stormwater, provides the requested information.

Comment Number	Comment	Response
1.32	The FEIR should provide additional discussion and assessment of opportunities to offset new wastewater flow through removal of 1/1. It should describe in more detail potential measures, including the sewer survey work, and estimate associated reductions, to the extent practical based on available information, to demonstrate that required I/I reductions are feasible.	Chapter 5, Section 5.2.2, I/I Mitigation Commitment, provides the requested information.
1.33	If I/I mitigation will be tied to project phasing, the FEIR should identify what measures and associated reductions will be associated with each phase.	Chapter 5, Section 5.2.2, I/I Mitigation Commitment, provides the requested information.
1.34	The final design and alignment of sewer and drain infrastructure should be carefully coordinated with LWSC, to ensure that the planned work does not impact infrastructure and CSO abatement work being planned by LWSC. The FEIR should provide an update on the outcome of consultations with LWSC.	Chapter 5, Section 5.2.3, Update on Consultations with the LWSC, provides the requested information.
1.35	Comments from MassDEP recommend that the Proponent monitor indoor air following construction and during the winter heating season to demonstrate that passive venting will be effective in preventing vapor intrusion. The FEIR should describe proposed indoor air monitoring activities and identify measures that will be employed if the monitoring indicates that passive venting is not effective.	Chapter 1, Section 1.5, Site Contamination and Hazardous Materials, describes Vapor Intrusion Barrier as well as the protocol for collecting indoor air quality samples.
1.36	The FEIR should include an updated and revised chapter that summarizes proposed mitigation measures and provides individual draft Section 61 Findings for each State Agency that will issue permits for the project.	Chapter 2 of the FEIR provides a revised summary of mitigation measures. A revised Section 61 Finding is also provided within the FEIR.
1.37	The FEIR should contain clear commitments to implement mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation.	Chapter 6 includes a summary of mitigation measures including a preliminary implementation schedule.
MassDOT		
2.1	The TIA did not provide a transit analysis to verify that the additional transit trips would not result in adverse impacts to existing services. The Proponent should consult with MassDOT and the MBTA to obtain the necessary information and agree on the methodology to adequately present that analysis.	Section 2.3 of the FEIR provides a detailed analysis of the additional transit trips as compared to the impacts to existing service.

Comment Number	Comment	Response
2.2	The TIA has not fully explained the derivation of the proposed parking supply for the project. MassDOT still finds the parking supply excessive for a transit oriented development and given that the supply is more than 1 0 percent higher than what is required by the City of Lynn or from calculations from the ITE Trip Generation Manual. A rate of 1 .5 parking spaces per dwelling unit could undermine efforts to encourage alternative methods of transportation.... We would recommend that the FEIR provide more detailed information on the construction phasing and identified specific reduction targets.	Chapter 2, Section 2.2, Parking, describes the derivation of the proposed parking supply.
2.3	The Proponent indicates that the intent of the reactivation of the station is to provide a publicly accessible station with amenities such as a "kiss and ride" location and a limited number of parking spaces for commuter use. The Proponent conversely states that the residential development will function as a "gated community" so they must address how the two objectives will be reconciled in the site planning process	Chapter 1 explains that the vehicle gate that was to be located on Street One (Sunrise Lane) has been relocated to Avenue C, allowing the public to access the surface lot located in the vicinity of the commuter rail station.
2.4	The Proponent has committed to upgrading the existing MBTA bus stops along the Lynnway to enhance the safety and improve the user experience at these facilities. This should include the addition of shelters/weather protection, turn outs, and street furniture.	Section 2.1.1 of the FEIR provides a detailed description of the proposed MBTA bus stop improvement the Proponent has committed to and the justification for each improvement.
2.5	The Proponent should work closely with DCR to ensure that the proposed bicycle improvements on Route IA are consistent with the Healthy Transportation Policy.	Chapter 2, Section 2.1.2, Bicycle Amenity Improvements, outlines the proposed bicycle accommodations along Route 1A.
2.6	The Proponent should continue to work with MassRIDES, the Commonwealth's Travel Options provider, or the appropriate Transportation Management Association to help implement the TDM program.	The Proponent has been in contact with the North Shore Transportation Management Association. Discussions with the TMA will continue as the Project progresses.
2.7	The Proponent should continue consultation with appropriate MassDOT units, including PPDU and the MBTA, to discuss preparation of the FEIR.	The Proponent has consulted with MassDOT and DCR regarding guidance and requests identified in the DEIR. Chapter 2 of the FEIR summarizes the extent of improvements the Proponent has committed to as mitigation for the Project.

Comment Number	Comment	Response
MassDEP		
3.01	The FEIR should provide additional details about the proposed sewer survey work to the extent it is available, and explain the proponent's commitment to remove I/I to mitigate wastewater added by the project as the project is phased in and completed.	Chapter 5, Sections 5.2.1, Proposed Sewer Survey, and 5.2.2, I/I Mitigation Commitment, provide the requested information.
3.02	MassDEP regulations at 314 CMR 12.04(2)(d) require NPDES permittees with combined sewer overflows, including the Lynn Water & Sewer Commission, to mitigate impacts of any new connections to their system for which design flows exceed 15,000 gallons per day, by having provisions in their I/I plan to require removal of four gallons of I/I for each new gallon of wastewater flow to be connected. Accordingly, the proponent must work with the Commission to meet this requirement.	Chapter 5, Section 5.2.2, I/I Mitigation Commitment, provides the requested information.
3.03	The final design and alignment of sewer and drain infrastructure should be carefully coordinated with the Lynn Water & Sewer Commission, to ensure that the planned work does not impact infrastructure and CSO abatement work being planned by the Commission.	Chapter 5, Section 5.2.3, Update on Consultations with the LWSC, provides the requested information.
3.04	MassDEP notes that the DEIR has not considered the extent to which the Riverfront Area is within Chapter 91 Licensing jurisdiction, where the Riverfront Area performance standards would be exempt, pursuant to 310 CMR 10.58(6)(i).	Chapter 4, Section 4.1.5, Riverfront Area, provides the requested information.
3.05	MassDEP requests that the FEIR provide additional details about the coastal bank alteration, with at least conceptual-level design plans, to clarify the extent of the impacts proposed. At the time of the MEPA site visit, the coastal bank appeared to be armored and well stabilized with vegetation established along the bank. Unless an area is actively eroding, MassDEP recommends that work within the coastal bank be limited to stabilizing damaged bank with plant material and minimizing the use of riprap. The FEIR should consider where alternative bank stabilization methods can be applied successfully. If there are areas where this is not feasible, the limitations should be explained.	Chapter 4, Section 4.1.2, Coastal Bank, provides the requested information.
3.06	A review of the plan appears to show it would be possible to shift the roadway in a northeast direction to avoid or further minimize the impacts within the coastal bank buffer zone and	Chapter 4, Section 4.1.5, Riverfront Area, provides the requested information.

Comment Number	Comment	Response
	Riverfront Area. An alternative alignment should be considered in the FEIR to further reduce the project's direct impacts.	
3.07	The FEIR should consider additional flood control measures for inclusion in the design that minimize the potential impacts predicted on this flood-prone site.	Chapter 4, Section 4.3.2, Flood Proofing Measures, provides the requested information.
3.08	The discussion of the stormwater outfalls in Chapter 3 of Appendix D indicates that no changes are necessary and that scour is not a problem. However, the Stormwater Management Report has not provided outfall velocity calculations and the sediment's ability to resist erosion to show this, as required in the Stormwater Management Handbook, Volume 3, Chapter 1, page 2-3. The DEIR indicates that there will be some work done to headwalls, but there are no details, so it is unclear how this work affects the outfalls and the requirements for stormwater control. Additional information should be included in the FEIR to explain proposed work to, the outfalls.	Chapter 5, Section 5.1.3, Outfall Design and Protection, provides the requested information.
3.09	The six proprietary units are reported to be Stormceptor 450i and Stormceptor 900 units. These units have been given total suspended solids (TSS) removal rates of 80 percent or more in the TSS calculation sheets. However, these TSS removal rates are not verified by an approved third-party, in accordance with the Stormwater Management Handbook, Volume 2, Chapter 4. The Stormceptor 450i units are the smallest unit size available, with limited storage capacity for TSS, which makes them susceptible to treatment bypass. MassDEP allows up to 25 percent TSS removal for this size unit. The stormwater management plan and report should address this issue.	Chapter 5, Section 5.1.2, Bacterial TMDL Improvement and TSS Reduction, provides the requested information.
3.10	It also has not been demonstrated that these flow-based units are sized adequately for the contributing drainage area. The Stormwater Management Report should include flow-based calculations using the MassDEP's Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices, dated September 10, 2016 in conjunction with third-party sizing information to demonstrate that the proprietary separators are sized adequately to treat one inch of runoff multiplied by the impervious area contributing runoff.	Chapter 5, Section 5.1.2, Bacterial TMDL Improvement and TSS Reduction, provides the requested information.

Comment Number	Comment	Response
3.11	Although the DEIR acknowledges that there is a total maximum daily load (TMDL) for bacteria in the Saugus River, the proposed proprietary treatment devices do not remove bacteria effectively. MassDEP recommends consideration of alternative best management practices that are effective at removing bacteria from stormwater runoff.	Chapter 5, Section 5.1.2, Bacterial TMDL Improvement and TSS Reduction, provides the requested information.
3.12	The project appears to be a Land Use with a Higher Potential Pollutant Load and subject to Standard 5 because the site is a disposal site in M.G.L. c21E, as described in the Stormwater Management Handbook, Volume 1, Chapter 1, page 12. The Stormwater Management Report should be revised to demonstrate that the stormwater management plan meets Standard 5.	Chapter 5, Section 5.1.1, Massachusetts Stormwater Management Standards, provides the requested information.
3.13	MassDEP strongly encourages the project proponent to make a significant commitment to construction waste recycling activities as a sustainable measure for the project. At a minimum, proponents of projects are committing to recycle at least 75 percent of C&D waste.	Chapter 1, Section 1.6, Waste Reduction, includes the Proponent's commitment to recycle at least 75% of C&D debris.
3.14	The full build GHG analysis estimates that stationary source CO_2 reductions for the project with mitigation will be 20.3 percent (2,078 tpy), with a total of 8,133.5 tpy of CO_2 emissions generated by stationary sources on site. With mobile source mitigation, the combined reduction remains at 20.3 percent (8,208.5 tpy of CO_2 emissions), as shown on Table 6.5. However, there appears to be a discrepancy; Table 5 in Appendix C is reporting the total CO_2 emissions to be 8,881 tpy. The difference between these two tables should be explained in the FEIR.	The total CO_2 emissions of 8,881 tpy in Table 5 in DEIR Appendix C is the correct value. The FEIR includes the correct values in Chapter 3 and in FEIR Appendix A.
3.15	The FEIR should provide additional details about the transportation demand management measures. For example, there should be a more specific commitment to vehicle charging stations…. As there will be more than 1,000 parking spaces on site, it is recommended that four percent of the parking spaces be dedicated to electric charging vehicles unless the City of Lynn requires dedication of a greater number of spaces.	Chapter 3, Section 3.2.5, Transportation Demand Management, provides the requested information.
3.16	Given that the potential for GHG emissions reductions is significant, MassDEP requests that the FEIR consider case studies where PV have been included in multi-tenant buildings to understand whether there is a pathway for incorporating PV successfully into the proposed residential development.	As described in Chapter 3, Section 3.3.1, Solar Photo Voltaic Analysis, the Proponent will consider adding PV solar to the residential roof top buildings.

Comment Number	Comment	Response
3.17	Following building construction for human occupancy within Area A, and during the winter heating season, MassDEP recommends a demonstration that the passive venting is effective in preventing vapor intrusion. Indoor air monitoring would provide confirmation that vapor intrusion is not occurring. If the passive venting system is not effective, it should be converted to an active system by addition of fan(s).	Chapter 1, Section 1.5, Site Contamination and Hazardous Materials, describes Vapor Intrusion Barrier as well as the protocol for collecting indoor air quality samples.
DCR		
4.1	To properly assess the traffic count estimates, DCR requests the Proponent clarify in the Final EIR the quantity of vehicle trips on the Lynnway that would decrease (due to commuter rail trips) and increase (for drop-offs, pick-ups, and parking) if the commuter rail stop is converted to public use.	Chapter 2, Section 2.1.3, Commuter Rail - Future Vehicular Trip Reduction, includes a description of the current status of the MBTA Commuter Rail stop in terms of vehicular trips along Route 1A.
4.2	In the EENF and Draft EIR, the Proponent states that sharrow markings and shared road signage will be added to the Lynnway to enhance bicycle mobility. In its Final EIR, DCR requests the Proponent explore a potential alternative to these markings that would facilitate safe bicycle travel in the area. DCR requests designing improvements to meet the MassDOT "Complete Streets" standard, with an emphasis on providing safe accommodation for bicycle, pedestrian, and bus transportation. DCR is available for consultation on this request.	Chapter 2, Section 2.1.2, Bicycle Amenity Improvements, outlines the proposed bicycle accommodations along Route 1A.
4.3	The DEIR included a 50% and 95% queue analysis, and mentions the Proponent are exploring a potential traffic preemption signal for the northbound lane of the Lynnway. The results of the queue analysis suggest that adequate space is provided to accommodate traffic from a 95% queue between the Southern Site Driveway and the drawbridge portion of the General Edwards Bridge. In its FEIR, DCR requests the Proponent clarify whether this includes all potential traffic resulting from a worst case scenario.	Chapter 2, Section 2.1.4 provides a description of the queue analysis results for the Lynnway northbound at the Jughandle in relation to the Edwards Drawbridge. The Proponent has committed to the installation of queue detection / preemption at the downstream traffic signal.
4.4	In the FEIR, DCR requests the Proponent provide an update on whether the Proponent will fund a traffic preemption signal on the drawbridge, and if so include the commitment in its proposed Section 61 findings.	Chapter 2, Section 2.1.4, Supplemental Traffic Impact Analyses, provides the requested information.
4.5	DCR further requests that the Proponent analyze traffic impacts along the Lynnway based on Right-in/Right-out access at the new driveway at the jug handle.	Chapter 2, Section 2.1.4, Supplemental Traffic Impact Analyses, provides a qualitative analysis of the impacts of opening the Southerly Site Driveway as a right-in/right-out only driveway.

Comment Number	Comment	Response
DOER		
5.01	(Investigate) Variable Refrigerant Flow: VRF is an increasingly popular choice for reducing energy consumption. VRFs are distributed through the units, integrated to a high efficiency central boiler and heat sink.	Chapter 3, Section 3.3.5, Variable Refrigerant Flow, discusses why VFR is not proposed for this Project's HVAC systems.
5.02	Energy Recovery: Where not already required by code, we recommend energy recovery options be investigated.	Chapter 3, Section 3.2.1, Energy Recovery, states that energy recovery will be considered in the actual MEP design for HVAC systems.
5.03	Responsive Systems and Controls: Responsive HVAC systems, where not already required by Code, such as economizers and demand controlled ventilation usually are effective GHG mitigation strategies which we recommend be investigated.	Chapter 3, Section 3.2.2, Responsive Systems and Controls, discusses the Project's use of economizers.
5.04	Note that the proposed roof and wall insulation is equal to code coming into effect 2 January 2017. Updated code information is here: http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/buildings/amendments-to-780-cmr-effective-august-12-2016.html. We recommend evaluating roof and wall insulation which exceeds code coming into effect.	Chapter 3, Section 3.2.3, Insulation, describes the proposed insulation and its relationship to the revised code.
5.05	The evaluation cited issues with heat pumps in cold climates. These issues are addressed with new cold climate air source heat pumps. Extensive information can be found here: http://www.neep.org/initiatives/high-efficiency-products/emerging-technologies/ashp/cold-climate-air-source-heat-pump	As explained in Chapter 3, Section 3.3.4, Air Source Heat Pumps, this system will be considered by the project engineer in the final MEP design.
5.06	Cold climate air source heat pumps may be an effective strategy for several of the buildings. Air source space heating is eligible for thermal Alternative Energy Credits (AECs). Guidelines on details of AEC eligibility and estimates are available here: http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/renewable-thermal/renewable-heating-and-cooling-alternative-portfolio-std.html.	As explained in Chapter 3, Section 3.3.4, Air Source Heat Pumps, this system will be considered by the project engineer in the final MEP design.
5.07	We are pleased to see an investigation of solar PV. However, we recommend that the associated GHG and financial evaluation be based on the size that can be achieved as a function of the usable roof area.	Chapter 3, Section 3.3.1, Solar Photo Voltaic Analysis, provides the requested information.
5.08	Review federal allowances for accelerated and bonus deprecation and, if applicable, revise solar thermal financial	As described in Chapter 3, Section 3.3.3, Solar Thermal Analysis, the

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	analyses. See http://www.energy.gov/savings/modified-accelerated-cost-recovery-system-macrs	financial analysis for the solar thermal system has been revised.
5.09	We recommended meeting National Grid to investigate energy efficiency incentives (see contact information) as soon as possible. Utility incentive programs are performance-based and investigating further improved envelope mitigation and other efficiency improvements may yield significant financial incentives for the project.	As explained in Chapter 3, Section 3.2.4, Financial Incentives, the Proponent will contact National Grid to investigate energy efficiency measures and incentives as part of the detailed design of the Project.
5.10	The space heating end use energy consumption appears to be low, by approximately a factor of 10, for all the residential buildings. We recommend investigating model results.	This has been corrected in the FEIR GHG analysis, included as Appendix A.
5.11	We would exCHP (sic) system was found to be financially feasible. We recommend engaging National Grid as soon as possible (see contact information). Also, the following link provides useful guidance on the CHP evaluation process: http://www.masssave.com/~/media/Files/Business/Applications-and-Rebate-Forms/A-Guide-to-Submitting-CHP-Applications-for-Incentives-in-Massachusetts.pdf	As explained in Chapter 3, Section 3.3.2, Combined Heat and Power Analysis, since CHP may be financially feasible, the Proponent will continue to investigate the viability of installing CHP including consultation with National Grid.
CZM		
6.1	While work is proposed to be performed from upland areas, this proposed structural work is within the Rumney Marshes ACEC, and directly in the salt marsh associated with this ecologically sensitive area. The information available in Chapter 7, Wetlands in the DEIR is not adequate for review of the potential impacts of these activities. CZM recommends that the FEIR include cross sections of work proposed on the coastal bank/revetment and within the salt marsh that clearly show elevations and areas of impact for salt marsh and coastal bank. The FEIR should fully describe all impacts to all resource areas on the site, including impacts associated with this coastal bank work, and demonstrate that the impacts associated with these are minimized.	Chapter 4, Section 4.1, Wetlands, provides the requested information, including Figures 4.1 and 4.2.
6.2	CZM requests that existing and proposed elevations resulting from fill and grading, clearly shown on plans of a reasonable scale, are included in the FEIR, and a description of how flood waters would be anticipated to flow onto and from the site during a coastal flooding event should be included to demonstrate that the grading does not exacerbate flooding issues on or adjacent to the site.	Figures 4.3 and 4.4 in Chapter 4 provide the existing and proposed site elevations. Chapter 5, Section 5.1.4, Land Subject to Coastal Storm Flowage and Channelization of Flood Waters, describes the impact of site elevation on adjacent flooding conditions.

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6.3	The DEIR states that "additional flood proofing could be incorporated into the design." CZM recommends that the FEIR include more detailed information regarding these design opportunities.	Chapter 4, Section 4.3.2, Flood Proofing Measures, provides the requested information.
6.4	According to the DEIR the proposal will add approximately two feet of fill to the site to raise it to between elevations 10 NAVD88 and 12 NAVD88, as depicted in Figure 11.2. CZM notes that these elevations will not ensure that the project will be resilient to flooding from the 1% annual flood throughout its design life (projected to be up to elevation 13 NAVD88), but will likely require retrofitting later in the design life to accommodate the level of sea level rise predicted by the sea level rise vulnerability assessment included in the DEIR. CZM recommends that the project incorporate the full three feet of elevation identified by the analysis to maximize the ability of the project to be resilient to flooding throughout its design life and avoid more difficult retrofit requirements in the future.	Chapter 4, Section 4.3.1, Site Elevation, describes the limiting factors to increasing site elevation.
6.5	While this is a redevelopment project, CZM notes that the entire site will be completely redeveloped for this project, and encourages the proponent to strive to meet the stormwater management standards fully wherever possible.	Chapter 5, Section 5.1.1, Massachusetts Stormwater Management Standards, provides the requested information.
6.6	Given the extensive nature of the work to be done, and the fact that the stormwater is proposed to discharge directly into the Rumney Marshes ACEC via existing stormwater outfall pipes, CZM recommends that the FEIR fully explore possible improvements to the stormwater over and above those required as the baseline for stormwater management for the site.	Chapter 5, Section 5.1, Stormwater, provides the requested information.
6.7	Further reductions in impervious areas on site and additional vegetation should be further considered, as these will also have a positive impact on the function of the LSCSF resource area on site.	Chapter 4, Section 4.1.4, Land Subject to Coastal Storm Flowage, and Chapter 5, Section 5.1.1, Massachusetts Stormwater Management Standards, provide the requested information.
6.8	The proposed project may be subject to CZM federal consistency review, in which case it 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 617-626-1050, or visit the CZM web site at www.mass.gov/czm.	The Project complies with the requirements of the Massachusetts Coastal Zone Management Program as demonstrated in Table 8.7 of the DEIR.
Lynn United for Change		

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8.01	First, the project creates a gated residential community on tidelands. This is fundamentally at odds with state public access requirements, and the proponent's provisions for public use are wholly inadequate.	Chapter 4, Section 4.2.4, Public Benefit Review and Determination, describes how the project complies with the regulations at 301 CMR 13.00.
8.02	Second, the project fails to adequately account for sea level rise related to climate change.	Chapter 11 of the DEIR included a robust assessment of sea level rise including the latest projections from the City of Boston, the Boston Harbor Flood Risk Model, the US Army Corp of Engineers, and the National Oceanic and Atmospheric Administration. As described in the DEIR, sea level rise is one of several variables considered in project design and site elevation, along with existing soil conditions, geotechnical constraints, stormwater management system design requirements, current and future building code requirements, accessibility considerations, and adjacent site/roadway grades.
8.03	Our interpretation of the information in the DEIR is that virtually the whole site is gated and public access is only allowed on a very small area (see, e.g., Figure 11.2). We would like the proponent to confirm whether that is correct, and to specify the location of the gates and fences that will prevent public access to the majority of the site.	Chapter 1 explains that the vehicle gate that was located on Street One (Sunrise Lane) has been relocated to Avenue C, allowing the public to access the entire Waterfront Area, which encompasses approximately 1.8 acres.
8.04	We would also like the proponent to specify what percentage of open space on-site will be publicly accessible.	Approximately 1.8 acres, or 13%, of the Site's open space landward of the coastal bank will be publicly accessible.
8.05	Public access is further restricted in that even the tiny area the proponent seems to have proposed for public use will likely be available only during limited hours. The DEIR states that "the Proponent anticipates providing such access from dawn until dust [sic] on daily basis" (Section 8.5.2.1, page 8-11).	The Project includes a 1.8-acre publicly accessible Waterfront Area. 310 CMR 09.35 (5)(a) allows holders of a Chapter 91 license to adopt "reasonable rules and regulations governing public use" of areas accessible to the public. The Proponent has adopted the same policy regarding public access as Rule 12 of the 2010 *Lynn Park Department Rules Relating to Parks and Playgrounds in the City of Lynn*, which states, "No person shall be or remain

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		in or upon or stay in any playground or park after sunset and no person shall enter into or upon playgrounds or parks after sunset."
8.06	The proponent claims that the project will benefit the public by "promote[ing] a sense of community" (DEIR, Section 1-1, page 1-1). However, the plan as currently constituted will create the clear perception Lynn United for Change – comment on EEA No. 15441 Page 2 of 3, that the entire area is for private use of the residents. This will be exacerbated by the racial and class segregation that is likely to result from the proponent's intent to create residential units exclusively for affluent people, which will put the area out of reach for the majority of Lynn's current working class residents.	As described in Chapter 1, Section 1.2, Changes Since the DEIR, the vehicle access gate previously proposed on Street One (formerly Sunrise Lane) adjacent to the waterfront amenity building/pavilion, will be located to Avenue C, adjacent to building F. This makes it clear that the entire 1.8-acre Waterfront Area is open and accessible to the public.
8.07	It seems that only ten parking spaces are provided for the public (DEIR, Section 5.3, page 5-4). Given the size of Lynn's population, this clearly indicates that the proponent does not anticipate the area being frequently used by the public.	According to the Lynn Zoning Ordinance, Section 9, Off Street Parking Requirements, recreational facilities are required to provide one parking space per 350 feet of gross floor area. Based on its size, five parking spaces are required for the Waterfront Amenity Building/Pavilion. The Proponent is providing a total of 10 spaces to encourage public use of the facility.
8.08	Finally, in the Summary of Alternatives (DEIR, 1-6), no serious consideration is given to an option that would enable public access to a significant portion of the area, or of development of a housing mix that would not exclude the majority of current Lynn residents (i.e. preventing the racial and class segregation that will fuel the perception of a completely privatized space).	This market-rate transit-oriented develop will provide a new type of housing option for the City of Lynn, and will transform a vacant industrial parcel into an asset for the community and the City's tax base.
8.09	According to the sea-level rise projections cited by the proponent, this project is not sufficiently elevated to cope with climate change in the medium to long term (see sea-level rise projections in the DEIR, page 11-9).	Chapter 4, Section 4.3.1, Site Elevation, provides additional information regarding the considerations contributing to the selected site elevations. Section 4.3.2, Flood Proofing Measures, provides details regarding potential flood proofing measures should they be warranted by future flooding conditions.

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8.10	This issue is exacerbated by the minimal buffer provided between the site boundary and built areas. Inclusion of a larger buffer might enable nature based ecological flood control to provide increased mitigation.	Chapter 4, Section 4.3.2, Flood Proofing Measures, describes potential means of protecting the Site from the impacts of future sea level rise.
8.11	The failure to fully account for medium to long-term climate change scenarios also raises concerns related to equity and public access. The area currently designated for public access is likely to be rendered unusable due to increased flooding in the future, according to the projections cited by the proponent. Public access will for practical purposes no longer exist. Thus, the benefit of this project will accrue almost entirely to the developers and residents of the proposed gated community, not the general public.	As described in the DEIR, Site elevations were set using a variety of data including sea level rise projections, existing soil conditions, geotechnical constraints, stormwater management system design requirements, current and future building code requirements, accessibility considerations, and adjacent site/roadway grades. As described in DEIR Chapter 8, Waterways and Tidelands, the Project will result in substantial improvements to on-foot passage along the Project shoreline and across filled tidelands restoring public access and is in compliance with the Proper Public Purpose Requirements of 310 CMR 9.31(2).

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Circulation

This chapter contains the lists of agencies and organizations who commented on the ENF and/or the DEIR; federal, state and municipal agencies from whom the Proponent will seek permits or approvals; and other parties as specified in 301 CMR 11.16.

8.1 Federal Agencies

US EPA
Attn: Ed Reiner
5 Post Office Square, Suite 100 (0EP06-3)
Boston, Massachusetts 02109

8.2 State Agencies

Secretary Matthew A. Beaton
Executive Office of Energy and
Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Department of Environmental Protection
Attn: Commissioner's Office
One Winter Street
Boston, Massachusetts 02108

Department of Environmental Protection
Attn: Waterways Program
One Winter Street
Boston, Massachusetts 02108

DEP/Northeast Regional Office
Attn: John D. Viola, Deputy Regional Director
205B Lowell Street
Wilmington, Massachusetts 01887

Natural Heritage and Endangered
Species Program
Massachusetts Division of Fisheries & Wildlife
1 Rabbit Hill Road
Westborough, Massachusetts 01581

Massachusetts Bay Transportation Authority
Attn: MEPA Coordinator
10 Park Plaza, Suite 3910
Boston, Massachusetts 02116

Department of Public Health
Attn: Director of Environmental Health
250 Washington Street
Boston, Massachusetts 02115

Energy Facilities Siting Board
Attn: MEPA Coordinator
One South Station, 5th Floor
Boston, Massachusetts 02110

Massachusetts Department of Transportation
Attn: David J. Mohler, Executive Director of Transportation Planning
10 Park Plaza, Suite 4160
Boston, Massachusetts 02116

Massachusetts Department of Transportation
Public / Private Development Unit
10 Park Plaza, Room 4150
Boston, Massachusetts 02116

Massachusetts Department of Transportation
District 4 Office
Attn: MEPA Coordinator
519 Appleton Street
Arlington, Massachusetts 02476

MassDOT Traffic Operations
Attn: Neil Boudreau, State Traffic Engineer
10 Park Plaza Room 7210
Boston MA 02116

Department of Conservation and Recreation
Attn: Daniel Sieger, Acting Commissioner
251 Causeway Street, Suite 600
Boston, Massachusetts 02114

Coastal Zone Management
Attn: Bruce Carlisle, Director
251 Causeway Street, Suite 800
Boston, Massachusetts 02114

Massachusetts Water Resource Authority
Attn: MEPA Coordinator
100 First Avenue
Charlestown Naval Yard
Boston, Massachusetts 02129

Massachusetts Historical Commission
The Massachusetts Archives Building
220 Morrissey Boulevard
Boston, Massachusetts 02125

Department of Energy Resources
Attn: Paul Ormond
100 Cambridge Street, 10th Floor
Boston, Massachusetts 02114

Division of Marine Fisheries (North Shore)
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, Massachusetts 01930

Metropolitan Area Planning Council
60 Temple Place, 6th Floor
Boston, Massachusetts 02111

8.3 Local Agencies

City of Lynn
Office of the Mayor
Attn: Judith Flanagan Kennedy
3 City Hall Square, Room 306
Lynn, Massachusetts 01901

City of Lynn
City Council
Attn: Daniel F. Cahill, Council President
3 City Hall Square, Room 408
Lynn, Massachusetts 01901

City of Lynn
Planning Board
Attn: Judith Lewin Callahan
3 City Hall Square
Lynn, Massachusetts 01901

City of Lynn
Health Department
Attn: MaryAnn O'Connor
3 City Hall Square
Lynn, Massachusetts 01901

City of Lynn
Dept. of Community Development
Attn: James Marsh, Director
3 City Hall Square
Lynn, Massachusetts 01901

Lynn Economic Development & Industrial Corporation
Attn: Jim Cowdell
City Hall Square, , Room 307
Lynn, Massachusetts 01901

Lynn Water and Sewer Commission
400 Parkland Avenue
Lynn, MA 01905

City of Lynn
Conservation Commission
Attn: Attn: Judith Lewin Callahan
3 City Hall Square
Lynn, Massachusetts 01901

City of Lynn
Department of Public Works
250 Commercial Street
Lynn, MA 01905

City of Lynn
Inspectional Services Department
3 City Hall Square
Lynn, MA, 01901

8.4 Other Organizations

North Shore TMA
Attn: Andrea Leary, Executive Director
c/o NE Transit Planning & Management Corp.
28 Brook Road
Marblehead, MA 01945

Jeff Furr
Contract Support (NISC III), AJW-23 EOSH Services
400 Virginia Ave., SW, Suite 400
Washington, DC 20024

Joan LeBlanc, Executive Director
Saugus River Watershed Council
PO Box 1092
Saugus, MA 01906

Deanna Moran
CLF Massachusetts
62 Summer Street
Boston, MA 02110

Karen Pollastrino
Minco Corporation
231 Sutton Street, Suite 1B
North Andover, MA 01845

Lynn Public Library
5 North Common Street
Lynn, MA 01902

Natalie Bates
Eastern Logistics Service Area, ALO-620
FAA Southern Regional Office
1701 Columbia Ave
College Park, GA 30337

Isaac Simon Hodes
Lynn United for Change
112 Exchange Street
Lynn, MA 01901

Steve Adams
Banker & Tradesman
280 Summer Street, 8th Floor
Boston, MA 02210

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