Everett Docklands Innovation District & Trimount Energy Storage Facility

52 Beacham Street
Everett, Massachusetts

SUBMITTED TO

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

SUBMITTED BY

Everett Landco, LLC
125 High Street, 21st Floor
Boston, MA 02110

Trimount ESS LLC
1108 Lavaca St, Ste 110-349
Austin TX 78701

PREPARED BY

vhb
99 High Street, 13th Floor
Boston, MA 02110

AUGUST 15, 2024

August 15, 2024

Ref: 15764.00

Rebecca Tepper
Executive Office of Energy and Environmental Affairs, MEPA Office
Attn: Tori Kim, MEPA Director
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: Everett Docklands Innovation District and Trimount Energy Storage Facility
Expanded Environmental Notification Form

Dear Secretary Tepper:

On behalf of Everett Landco, LLC (a Joint Venture led by Davis, in Partnership with Global Partners LP) and Trimount ESS LLC, c/o Jupiter Power LLC (the "Proponents"), I am pleased to submit the enclosed Expanded Environmental Notification Form in accordance with the Massachusetts Environmental Policy Act (MEPA), Massachusetts General Law ("G.L.") Chapter 30, Section 61-62I and the regulations promulgated thereunder set forth at 301 CMR 11.00, for the proposed redevelopment of an approximately 86-acre former Brownfield site at 52 Beacham Street and 0 South Farm in the City of Everett (the "Project Site").

The Everett Docklands Innovation District (EDID) comprises the "Master Plan Project" and consists of a mixed-use development including approximately 7.2 million square feet of industrial, high-tech manufacturing, lab/office, retail, maker, and residential space. It also includes the Trimount Energy Storage Facility, which will provide up to 700 MW of energy storage capacity. This facility is crucial to the Commonwealth's approach to decarbonizing how we meet peak electric demand and is a critical operational component of the successful development of offshore wind-generated power and other renewable energy sources. The proposed redevelopment will be constructed in two phases, with the Trimount Energy Storage Facility being constructed first (the "Phase 1 Project"), followed by the remainder of the Master Plan Project.

This Project is subject to MEPA review because it requires Agency Actions – including potential state funding, an Access Permit from the Massachusetts Department of Transportation (MassDOT), an 8(m) permit from the Massachusetts Water Resources Authority (MWRA), a Chapter 91 License from the Massachusetts Department of Environmental Protection (DEP), and actions by the Department of Public Utilities (DPU) – and exceeds review thresholds related to trip generation, parking spaces, and wastewater generation at 310 CMR 11.03 (5)(b)4.a, (6)(a)6, (6)(a)7, and (6)(b)13-15. The Phase 1 Project does not exceed any review thresholds on its own. To enable the Phase 1 Project to meet deadlines set by ISO New England, the Proponent respectfully requests that the Secretary allow a Phase 1 Waiver.

The Project Site is located within one mile of communities that meet Environmental Justice (EJ) criteria. The MEPA EJ Screening Form was translated into Spanish, Haitian Creole, Portuguese, Chinese, and Arabic, and was distributed to the EJ Community Based Organization list on July 1, 2024.

This filing has been distributed electronically as per the requirements set forth by MEPA. Please publish notice of availability of the EENF for public review in the August 23, 2024, edition of the Environmental Monitor. We understand that comments will be due by September 23, 2024, and a certificate will be issued on September 30, 2024. Should the Secretary elect to issue a Phase 1 Waiver, we anticipated the Draft Record of Decision would be issued on September 30, 2024, while the Final Record of Decision would be issued on October 23, 2024.

We look forward to your review of this Project. Please contact me at 617-607-2972 or skruel@vhb.com if you have any questions.

Sincerely,

VHB

Stephanie Kruel
Associate, Senior Regulatory and Resilience Advisor

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Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Massachusetts Environmental Policy Act (MEPA) Office

Environmental Notification Form

For Office Use Only

EEA#: _____

MEPA Analyst:_____

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: **Everett Docklands Innovation District and Trimount Energy Storage Facility**		
Street Address: **52 Beacham Street**		
Municipality: **Everett**	Watershed: **Mystic**	
Universal Transverse Mercator Coordinates: **19 T 330368.79 E 4695846.10 N**	Latitude: **42.39639** Longitude: **-71.06105**	
Estimated commencement date: **1/1/2026**	Estimated completion date: **2036**	
Project Type: **Mixed Use Master Plan & Battery Energy Storage Facility**	Status of project design: **10** % Complete	
Proponent: **Everett Landco, LLC and Trimount ESS LLC**		
Street Address: **125 High Street, 21st Floor**		
Municipality: **Boston**	State: **MA**	Zip Code: **02110**
Name of Contact Person: **Stephanie Kruel**		
Firm/Agency: **VHB**	Street Address: **99 High Street, 10th Fl**	
Municipality: **Boston**	State: **MA**	Zip Code: **02110**
Phone: **617-607-2972**	Fax: **N/A**	E-mail: **skruel@vhb.com**

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)? ☒**Yes** ☐No;

If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:

a Single EIR? (see 301 CMR 11.06(8))	☐ Yes	☒ **No**
a Rollover EIR? (see 301 CMR 11.06(13))	☐ Yes	☒ **No**
a Special Review Procedure? (see 301CMR 11.09)	☐ Yes	☒ **No**
a Waiver of mandatory EIR? (see 301 CMR 11.11)	☐ Yes	☒ **No**
a Phase I Waiver? (see 301 CMR 11.11)	☒ **Yes**	☐ No

(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?

- 5(b)4.a.New discharge or Expansion in discharge to a sewer system of 100,000 or more gpd of sewage, industrial wastewater or untreated stormwater;
- 6(a)6. Generation of 3,000 or more New adt on roadways providing access to a single location.
- 6(a)7. Construction of 1,000 or more New parking spaces at a single location.
- 6(b)13,14,15- trip generation, parking

Which State Agency Permits will the project require?

- Massachusetts Water Resources Authority (MWRA) 8(m), TRAC sewer permit
- Massachusetts Department of Transportation (MassDOT) Vehicular Access Permit

- Department of Environmental Protection (DEP) Chapter 91 License (Water-Dependent Use)
- Department of Public Utilities (DPU) Section 72 Order Approving New Transmission Lines & Comprehensive Zoning Exemption

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres:

- State funding/tax credits to be determined

Summary of Project Size & Environmental Impacts

	Existing	Change	Total
LAND			
Total site acreage	**86.0**		
New acres of land altered		**0**	
Acres of impervious area	**83.93**	**-4.76**	**79.17**
Square feet of new bordering vegetated wetlands alteration		**0**	
Square feet of new other wetland alteration		**0**	
Acres of new non-water dependent use of tidelands or waterways		**0**	
STRUCTURES			
Gross square footage	**0**	**+7,196,800**	**7,196,800**
Number of housing units	**0**	**+3,200**	**3,200**
Maximum height (feet)	**0**	**+370**	**370**
TRANSPORTATION			
Vehicle trips per day	**548**	**+62,474**	**63,022**
Unadjusted Phase 1 Project	*44*	*-32*	*12*
Unadjusted Master Plan Project	*504*	*+62,506*	*63,010*
Parking spaces	**128**	**+5,588**	**5,716**
Phase 1 Project	*11*	*-1*	*10*
Master Plan Project	*117*	*+5,589*	*5,706*
WASTEWATER			
Water Use (Gallons per day)	**0**	**+1,168,000**	**1,168,000**
Water withdrawal (GPD)	**0**	**0**	**0**
Wastewater generation/treatment (GPD)	**0**	**+1,062,000**	**1,062,000**
Length of water mains (miles)	**0**	**+2.8**	**2.8**
Length of sewer mains (miles)	**0**	**+2.8**	**2.8**
Has this project been filed with MEPA before? ☐ Yes (EEA #) ☒ **No**			
Has any project on this site been filed with MEPA before? ☐ Yes (EEA #) ☒**No**			

** Unadjusted trips. Trips adjusted for mode share will be reported in the DEIR.*

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION

Existing Conditions

Describe the existing conditions and land uses on the project site:

The Master Plan Project Site is located on approximately 86 acres comprising the former Exxon Mobile Terminal property in the City of Everett. Prior to project commencement, the Site will be vacant after having obtained a Permanent Solution Statement under the Massachusetts Contingency Plan. Please see Chapter 1, Section 1.1. for additional information.

Project Description

Describe the proposed project and its programmatic and physical elements:

The "Master Plan Project" is known as the Everett Docklands Innovation District (EDID), which consists of a mixed-use development including approximately 7.2M sf of industrial, high-tech manufacturing, lab/office, retail, maker, and residential space, as well as the Trimount Energy Storage Facility, which will provide up to 700± MW of energy storage and includes approximately 5,800 square feet (SF) of associated office/storage building space. The proposed redevelopment will be constructed in two phases, with the Trimount Energy Storage Facility, including associated infrastructure (e.g., duct banks, Gen Tie Line), being constructed first (the "Phase 1 Project"), followed by the remainder of the Master Plan Project. Please see Chapter 1 for additional information.

NOTE: The project description should summarize both the project's direct and indirect impacts (including construction period impacts) in terms of their magnitude, geographic extent, duration and frequency, and reversibility, as applicable. It should also discuss the infrastructure requirements of the project and the capacity of the municipal and/or regional infrastructure to sustain these requirements into the future.

Alternatives

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by the proponent, including at least one feasible alternative that is allowed under current zoning, and the reasons(s) that they were not selected as the preferred alternative:

The No Build and two Off-Site Alternatives were considered for the Phase 1 Project as described in Chapter 3. An alternatives analysis for the Master Plan Project will be provided in the DEIR.

NOTE: The purpose of the alternatives analysis is to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent feasible. Examples of alternative projects include alternative site locations, alternative site uses, and alternative site configurations.

Mitigation

Summarize the mitigation measures proposed to offset the impacts of the preferred alternative:

As described in Section 3.1.4 of Chapter 3, *Alternatives Analysis*, the Preferred Alternative (Phase 1 Project) will not result in Damage to the Environment as it does not exceed any MEPA review thresholds. Construction period impacts will be minimized and mitigated to the maximum extent practicable through implementation of a Construction Management Plan. As such, no mitigation is warranted for the Phase 1 Project. Further details on the limited impacts of the Preferred Alternative are described in Section 12.1 of Chapter 12, *Phase 1 Mitigation and Draft Section 61 Findings*.

Mitigation measures for the remainder of the Master Plan will be summarized in the DEIR.

Phasing

If the project is proposed to be constructed in phases, please describe each phase:

The Phase 1 Project is projected to begin construction in 2026. The balance of the Master Plan Project will begin construction after Phase 1 commences.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Is the project within or adjacent to an Area of Critical Environmental Concern?
☐Yes (Specify:) ☒**No**

If yes, does the ACEC have an approved Resource Management Plan? ☐Yes ☐No; If yes, describe

how the project complies with this plan.

Will there be stormwater runoff or discharge to the designated ACEC? ☐Yes ☐No; If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC.

RARE SPECIES

Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm) ☐Yes (Specify:) ☒**No**

HISTORICAL /ARCHAEOLOGICAL RESOURCES

Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth? ☐Yes (Specify:) ☒**No**; If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☐Yes ☐No (Specify:)

WATER RESOURCES

Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site? ☐Yes ☒**No**; If yes, identify the ORW and its location.

NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.

Are there any impaired water bodies on or within a half-mile radius of the project site? ☒**Yes** ☐No; If yes, identify the water body and pollutant(s) causing the impairment:

Mystic River – Toxic pollutants in industrialized areas, eutrophication, and bacterial contamination including fecal coliform.

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? ☐Yes ☒**No**

STORMWATER MANAGEMENT

Generally describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations:

The Project is expected to improve stormwater runoff quality and manage peak flows through the implementation of Best Management Practices (BMPs). The design is anticipated to include surface retention basins pretreated with sand filters, proprietary systems, or similar. Stormwater management controls will be established in compliance with MassDEP Stormwater Standards and Everett Stormwater regulations.

MASSACHUSETTS CONTINGENCY PLAN

Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? ☒**Yes** ☐No;If yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome Classification):

RTN 3-0000310, Seeking Permanent Solution Statement

Is there an Activity and Use Limitation (AUL) on any portion of the project site? ☒**Yes** ☐No;If yes, describe which portion of the site and how the project will be consistent with the AUL:

The AUL will apply to the entire Master Plan Project Site. It will prohibit single family residential use and agriculture for consumption. The AUL will mandate protocols and management activities for any subsurface excavation or disturbance.
Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN? ☐Yes ☒**No**; If yes, please describe:

SOLID AND HAZARDOUS WASTE

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood:

No demolition is required. The Proponents will take an active role regarding the reprocessing and recycling of construction waste.

(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)

Will your project disturb asbestos containing materials? ☐Yes ☒**No**; If yes, please consult state asbestos requirements at http://mass.gov/MassDEP/air/asbhom01.htm

Describe anti-idling and other measures to limit emissions from construction equipment:

The Master Plan Project will enforce anti-idling measures consistent with MGL Chapter 90 Section 16A and all diesel construction machinery will be fitted with oxidation catalysts to reduce emissions. In addition, the Phase 1 Project will comply with the requirements of the Clean Construction Equipment Initiative aimed at reducing air emissions from diesel-powered construction equipment.

DESIGNATED WILD AND SCENIC RIVER

Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? ☐Yes ☒**No**; If yes, specify name of river and designation:

If yes, does the project have the potential to impact any of the "outstandingly remarkable" resources of a federally Wild and Scenic River or the stated purpose of a state designated Scenic River? ☐Yes ☐No; If yes, specify name of river and designation:

If yes, will the project result in any impacts to any of the designated "outstandingly remarkable" resources of the Wild and Scenic River or the stated purposes of a Scenic River? ☐Yes ☐No; If yes, describe the potential impacts to one or more of the "outstandingly remarkable" resources or stated purposes and mitigation measures proposed.

ATTACHMENTS:

1. List of all attachments to this document.
   Project Narrative, Chapters 1-13
   Figures
   Appendix A – EJ Documentation
   Appendix B – Climate Adaptation Documentation
   Appendix C – Waterways Documentation
   Appendix D – Stormwater Documentation

2. U.S.G.S. map (good quality color copy, 8-½ x 11 inches or larger, at a scale of 1:24,000)

indicating the project location and boundaries.
Refer to Figure 1.1

3. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.
Refer to Figure 1.2

4. Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts.
Refer to Figure 1.3

5. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase).
Refer to Figures 1.5 and 1.6

6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).
Refer to Chapter 13, Circulation.

7. List of municipal and federal permits and reviews required by the project, as applicable.
Refer to Table 1-2 of Chapter 1, *Project Summary*, for a list of anticipated permitting approvals.

8. Printout of output report from RMAT Climate Resilience Design Standards Tool, available here.
Refer to Appendix B.

9. Printout from the EEA EJ Maps Viewer showing the project location relative to Environmental Justice (EJ) Populations located in whole or in part within a 1-mile and 5-mile radius of the project site.
Refer to Appendix A and Figure 4.1.

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1) ☐Yes ☒**No**; If yes, specify each threshold:

Prior to remediation, the Master Plan Project Site included approximately 83.9 acres of impervious cover. Remediation requires removal of existing surfaces, creating a temporary pervious condition. Much of the impervious cover will be reestablished as a result of the Master Plan Project: However, it will ultimately result in a decrease in impervious area of approximately 4.8 acres as compared to the previously existing condition.

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing **(pre-development)**	Change	Total
Footprint of buildings	0	+33	33
Internal roadways	0	+7	7
Parking and other paved areas	0	+38	38
Other altered areas	86	-78	8
Undeveloped areas	0	0	0
Total: Project Site Acreage	86	0	86

B. Has any part of the project site been in active agricultural use in the last five years? ☐Yes ☒**No;** If yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use? ☐Yes ☒**No**; If yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation:

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? ☐Yes ☒**No**; If yes, describe:

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction? ☐Yes ☒**No**;If yes, does the project involve the release or modification of such restriction? ☐Yes ☐No; If yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ☐Yes ☒**No**; If yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? ☐Yes ☒**No**; If yes, describe:

III. Consistency

A. Identify the current municipal comprehensive land use plan.

Title: **Lower Broadway Urban Renewal Plan (URP) Amendment #2**
Date: **7/20/2021**

B. Describe the project's consistency with that plan with regard to:

1) Economic development: **The economic goals of the URP include creation of well-paying, long-term job opportunities, strengthening the City's tax base and enhancing Everett's**

growing reputation as a reginal destination. The Phase 1 Project will contribute over 500 million dollars of total investment in the City of Everett and also boost annual tax revenues to the City of Everett and Everett public schools. The Master Plan Project will contribute approximately 23 million dollars in local real estate taxes, expand Everett's local economy and provide new opportunities for higher-paying jobs.

2) Adequacy of infrastructure: **The URP proposes creation of dedicated bus-only lanes running along Broadway from Alford Street to Sweetser Circle to increase the efficiency of public transportation available in the Area, with the goal of increasing utility and ridership of current and planned MBTA bus service. it is anticipated that longer-term infrastructure projects that build upon the economic benefits of redevelopment and contribute to the destination-like quality of the District will also be realized through the efforts of others. As a redevelopment project, the Master Plan Project will both utilize existing infrastructure and create new and/or upgraded infrastructure to benefit the district.**
3) Open space impacts: **The URP promotes the Commonwealth's ten Sustainable Development Principles, which address open space under Principle 1: Concentrate Development and Mix Uses: Create pedestrian friendly districts and neighborhoods that mix commercial, civic, cultural, educational, and recreational activities with open spaces and homes; and Principle 4: Protect Land and Ecosystems: Increase the quantity, quality and accessibility of open spaces and recreational opportunities. The Master Plan Project supports both of these goals.**
4) Compatibility with adjacent land uses: **The Project Site is generally surrounded by commercial facilities to the east and west, industrial facilities to the south and a mix of residential, retail and recreational spaces to the north. The Master Plan Project is compatible with the surrounding land uses as it proposes a mixed-use redevelopment consisting of industrial, high-tech manufacturing space, lab/office space, retail and residential uses along with ancillary parking and open space. The Master Plan Project will offer a highly compatible façade with commercial redevelopment in the Lower Broadway area and negligible traffic impacts in the neighborhood.**

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)
RPA: **Metropolitan Area Planning Council**
Title: **MetroCommon 2050**
Date: **2021**

D. Describe the project's consistency with that plan with regard to:
1) Economic development: **MetroCommon is a land-use and policy plan designed to enable more people to build and maintain wealth. The plan also aims to increase wages and access to benefits expanding the availability of high-quality jobs and addressing racial disparities in wealth generation and quality of life. The Master Plan Project will expand Everett's local economy and provide new opportunities for higher-paying jobs including jobs during grading and construction processes.**
2) Adequacy of infrastructure: **MetroCommon promotes focusing growth in places where infrastructure already exists. As an urban redevelopment, the Master Plan Project meets this objective. In addition, the Phase 1 Project provides needed energy infrastructure to support the Commonwealth's transition to renewable energy.**
3) Open space impacts : **MetroCommon promotes creation of new open space and access to recreational spaces. Under both previously-existing and existing/predevelopment conditions, there is no open space on the site. The Master Plan Project will include well-designed open spaces that will meet the needs of the neighborhood.**

RARE SPECIES SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? ☐Yes ☒**No**; If yes, specify, in quantitative terms:

(NOTE: If you are uncertain, it is recommended that you consult with the Natural Heritage and Endangered Species Program (NHESP) prior to submitting the ENF.)

B. Does the project require any state permits related to **rare species or habitat**? ☐Yes ☒**No**

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ☐Yes ☒**No**

D. If you answered "No" to all questions A, B and C, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

II. Impacts and Permits

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ☐Yes ☐No; If yes:

1) Have you consulted with the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP)? ☐Yes ☐No; If yes, have you received a determination as to whether the project will result in the "take" of a rare species ☐Yes ☐No; If yes, attach the letter of determination to this submission.

2) Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ☐Yes ☐No;If yes, provide a summary of proposed measures to minimize and mitigate rare species impacts.

3) Which rare species are known to occur within the Priority or Estimated Habitat?

4) Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act? ☐Yes ☐No

5) If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? ☐Yes ☐No; If yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ☐Yes ☐No

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ☐Yes ☐No; If yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? ☐Yes ☒**No**; If yes, specify, in quantitative terms:

C. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? ☒**Yes** ☐No;If yes, specify which permit:

Phase 1 requires a Chapter 91 License for a water-dependent use.

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? ☐Yes ☒**No**
If yes, has a Notice of Intent been filed? ☐Yes ☐No; If yes, list the date and MassDEP file number:
If yes, has a local Order of Conditions been issued? ☐Yes ☐No
Was the Order of Conditions appealed? ☐Yes ☐No
Will the project require a Variance from the Wetlands regulations? ☐Yes ☐No

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Coastal Wetlands		
Land Under the Ocean		
Designated Port Areas		
Coastal Beaches		
Coastal Dunes		
Barrier Beaches		
Coastal Banks		
Rocky Intertidal Shores		
Salt Marshes		
Land Under Salt Ponds		
Land Containing Shellfish		
Fish Runs		
Land Subject to Coastal Storm Flowage		
Inland Wetlands		
Bank (lf)		
Bordering Vegetated Wetlands		
Isolated Vegetated Wetlands		
Land Under Water		
Isolated Land Subject to Flooding		
Bordering Land Subject to Flooding		
Riverfront Area		

D. Is any part of the project:

1) proposed as a **limited project**? ☐Yes ☐No; if yes, what is the area (in sf)?
2) the construction or alteration of a dam? ☐Yes ☐No; If yes, describe:
3) fill or structure in a velocity zone or regulatory floodway? ☐Yes ☐No
4) dredging or disposal of dredged material? ☐Yes ☒No; if yes, describe the volume of dredged material and the proposed disposal site:
5) a discharge to an Outstanding Resource Water (ORW) or an Area of Critical Environmental Concern (ACEC)? ☐Yes ☐No
6) subject to a wetlands restriction order? ☐Yes ☐No; if yes, identify the area (in sf):
7) located in buffer zones? ☐Yes ☐No; if yes, how much (in sf)

E. Will the project:
1) be subject to a local wetlands ordinance or bylaw? ☐Yes ☐No
2) alter any federally-protected wetlands not regulated under state law? ☐Yes ☐No o; if yes, what is the area (sf)?

III. Waterways and Tidelands Impacts and Permits

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? ☒**Yes** ☐No
If yes, is there a current Chapter 91 License or Permit affecting the project site? ☒**Yes** ☐No
If yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

Board of Harbor and Land Commissioners License 2162. See Figure 1.3.

C. Does the project require a new or modified license or permit under M.G.L.c.91? ☒**Yes** ☐No;
If yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use?
Current: **0** Change: **0** Total: **0**
If yes, how many square feet of solid fill or pile-supported structures (in sf)? **0 sf**

D. For non-water-dependent use projects, indicate the following:
Area of filled tidelands on the site:
Area of filled tidelands covered by buildings:
For portions of site on filled tidelands, list ground floor uses and area of each use:
Does the project include new non-water-dependent uses located over flowed tidelands?
☐Yes ☐No
Height of building on filled tidelands:

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

E. Is the project located on landlocked tidelands? ☒**Yes** ☐No; If yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

Under both previously existing and existing/pre-development conditions, there is no public access to the Master Plan Project Site's filled tidelands. As a result of the Project, new uses that will improve the area will be established, including publicly accessible open space, retail space, maker space, roadways open to public travel, and parking, and private spaces including residential buildings, parking areas, lab/office buildings, industrial buildings, high-tech manufacturing buildings, and portions of the BESS facility.

F. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? ☐Yes ☒**No**; If yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

G. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? ☐Yes ☒**No**
(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)

H. Does the project include dredging? ☐Yes ☒**No**; If yes, answer the following questions:
What type of dredging? ☐Improvement ☐Maintenance ☐Both
What is the proposed dredge volume, in cubic yards (cys)
What is the proposed dredge footprint:
Will dredging impact the following resource areas?
Intertidal ☐Yes ☐No; if yes, sq ft
Outstanding Resource Waters ☐Yes ☐No; if yes, sq ft
Other resource area (i.e. shellfish beds, eel grass beds) ☐Yes ☐No; if yes sq ft

If yes to any of the above, have you evaluated appropriate and practicable steps to: 1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?

If no to any of the above, what information or documentation was used to support this determination? Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.

Sediment Characterization
Existing gradation analysis results? ☐Yes ☐No; if yes, provide results.
Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? ☐Yes ☐No; if yes, provide results.
Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? ☐Yes ☐No

If yes, check the appropriate option:
☐Beach Nourishment
☐Unconfined Ocean Disposal
☐Confined Disposal:
☐Confined Aquatic Disposal (CAD)
☐Confined Disposal Facility (CDF)
☐Landfill Reuse in accordance with COMM-97-001
☐Shoreline Placement
☐Upland Material Reuse
☐In-State landfill disposal
☐Out-of-state landfill disposal
(NOTE: This information is required for a 401 Water Quality Certification.)

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? ☒**Yes** ☐No; If yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

As per 310 CMR 9.54, nonwater-dependent use projects subject to Chapter 91 that are located in the coastal zone shall be consistent with CZM policies. The Phase 1 Project comprises a water-dependent industrial use within a Designated Port Area.

B. Is the project located within an area subject to a Municipal Harbor Plan? ☐Yes ☒**No**; If yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? ☐Yes ☒**No**; If yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**? ☐Yes ☒**No;** If yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

II. Impacts and Permits

A. Describe, in gallons per day (gpd), the volume and source of water use for existing and proposed activities at the project site:

	Existing	Change	Total
Municipal or regional water supply			
Withdrawal from groundwater			
Withdrawal from surface water			
Interbasin transfer			

(NOTE: Interbasin Transfer approval will be required if the basin and community where the proposed water supply source is located is different from the basin and community where the wastewater from the source will be discharged.)

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? ☐Yes ☐No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source, has a pumping test been conducted? ☐Yes ☐No; If yes, attach a map of the drilling sites and a summary of the alternatives considered and the results:

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons per day)? will the project require an increase in that withdrawal? ☐Yes ☐No; If yes, then how much of an increase (gpd)?

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility? ☐Yes ☐No; If yes, describe existing and proposed water supply facilities at the project site:

	Permitted Flow	Existing Avg Daily Flow	Project Flow	Total
Capacity of water supply well(s) (gpd)				
Capacity of water treatment plant (gpd)				

D. If the project involves a new interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

E. Does the project involve:

1) new water service by the Massachusetts Water Resources Authority or other agency of the Commonwealth to a municipality or water district? ☐Yes ☐No
2) a Watershed Protection Act variance? ☐Yes ☐No; if yes, how many acres of alteration?
3) a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking water supply for purpose of forest harvesting activities? ☐Yes ☐No

III. Consistency

Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? ☒**Yes** ☐No; If yes, specify, in quantitative terms:

5(b)4.a.New discharge or Expansion in discharge to a sewer system of 100,000 or more gpd of sewage, industrial wastewater or untreated stormwater;

B. Does the project require any state permits related to **wastewater**? ☒**Yes** ☐No ; If yes, specify which permit:

MWRA 8(m) Sewer Connection Permit (to be confirmed); TRAC permit (to be determined)

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

II. Impacts and Permits

A. Describe the volume (in gallons per day) and type of disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00 for septic systems or 314 CMR 7.00 for sewer systems):

	Existing	Change	Total
Discharge of sanitary wastewater	**0**	**+1,062,000**	**1,062,000**
Discharge of industrial wastewater	**0**	**TBD**	**TBD**
TOTAL	**0**	**+1,062,000**	**1,062,000**

	Existing	Change	Total
Discharge to groundwater	**0**	**0**	**0**
Discharge to outstanding resource water	**0**	**0**	**0**
Discharge to surface water	**0**	**0**	**0**
Discharge to municipal or regional wastewater facility	**0**	**+1,062,000**	**1,062,000**
TOTAL	**0**	**+1,062,000**	**1,062,000**

B. Is the existing collection system at or near its capacity? ☐Yes ☒**No**; If yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

C. Is the existing wastewater disposal facility at or near its permitted capacity? ☐Yes ☒**No**; If yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? ☐Yes ☒**No**; if yes, describe as follows:

	Permitted	Existing Avg Daily Flow	Project Flow	Total
Wastewater treatment plant capacity (in gallons per day)				

E. If the project requires an interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or new?

(NOTE: Interbasin Transfer approval may be needed if the basin and community where wastewater will be discharged is different from the basin and community where the source of water supply is located.)

F. Does the project involve new sewer service by the Massachusetts Water Resources Authority (MWRA) or other Agency of the Commonwealth to a municipality or sewer district ☐Yes ☒**No**

G. Is there an existing facility, or is a new facility proposed at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, wastewater reuse (gray water) or other sewage residual materials? ☐Yes ☒**No;** If yes, what is the capacity (tons per day):

	Existing	Change	Total
Storage			
Treatment			
Processing			
Combustion			
Disposal			

H. Describe the water conservation measures to be undertaken by the project, and other wastewater mitigation, such as infiltration and inflow removal:

The Project will adhere to Inflow & Infiltration (I/I) policies for the City of Everett, and the Massachusetts Water Resources Authority (MWRA). Given that the Project will generate approximately 1,062,000 GPD of new wastewater, it is anticipated that payment for mitigation will be required. Conservation measures including rainwater reuse are being considered for the future buildings.

III. Consistency

A. Describe measures that the proponent will take to comply with applicable state, regional, and local plans and policies related to wastewater management:

See response to H above.

B. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ☐Yes ☐No; If yes, indicate the EEA number for the plan and whether the project site is within a sewer service area recommended or approved in that plan:

N/A

TRANSPORTATION SECTION (TRAFFIC GENERATION)

I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? ☒**Yes** ☐No; If yes, specify, in quantitative terms:

- **The Phase 1 Project will not exceed any traffic generation thresholds.**
- **The Master Plan Project will exceed the following thresholds:**
  - 6(a)6. Generation of 3,000 or more New adt on roadways providing access to a single location.
  - 6(a)7. Construction of 1,000 or more New parking spaces at a single location.
  - 6(b)13. Generation of 2,000 or more New adt on roadways providing access to a single location.
  - 6(b)14. Generation of 1,000 or more New adt on roadways providing access to a single location and construction of 150 or more New parking spaces at a single location.
  - 6(b)15. Construction of 300 or more New parking spaces at a single location.

B. Does the project require any state permits related to **state-controlled roadways**? ☒**Yes** ☐No; If yes, specify which permit:

- **The Phase 1 Project does not require any such state permits.**
- **The Master Plan Project will require a MassDOT Access Permit.**

C. C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

	Existing	Change	Total
Number of parking spaces **Phase 1 Project** **Master Plan Project**	**128** **11** **117**	**5,588** **-1** **+5,589**	**5,716** **10** **5,706**
Number of vehicle trips per day **Unadjusted Phase 1 Project [1]** **Unadjusted Master Plan Project [1]**	**548** **44** **504**	**+62,474** **-32** **+62,506**	**63,022** **12** **63,010**
[1] ***The unadjusted vehicle trips are estimated prior to accounting for trips associated with alternate travel modes, such as transit, bicycling, and walking. The DEIR will include an estimation of adjusted vehicle trips for the Master Plan Project.***			
ITE Land Use Code(s): **LUC 221 – Multi-Family House Mid-Rise** **LUC 710 – General Office Building** **LUC 760 – Research and Dev't Center** **LUC 820 – Shopping Center** **LUC 140 – Manufacturing** **LUC 130 – Industrial Park**			

B. What is the estimated average daily traffic on roadways serving the site?

Roadway	Existing	Change	Total
1. Beacham Street	**10,500**	**-16[1]**	**10,484**
2. Broadway	**30,400**	**-16[1]**	**30,384**
[1] ***The change shown is associated with the Phase 1 Project only. The DEIR will include an estimation of adjusted vehicle trips for the Master Plan Project and the associated change in daily volumes on Beacham Street and Broadway.***			

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement:

The Master Plan Project Proponent will evaluate the need for mitigation based on projected operations identified in the DEIR to offset impacts at off-site intersections within the study area.

D. How will the project implement and/or promote the use of transit, pedestrian and bicycle facilities and services to provide access to and from the project site?

The Master Plan Project Proponent will prepare a comprehensive Transportation Demand Management (TDM) Plan and construct new pedestrian and bike-friendly streets. The Proponent will coordinate with the MBTA on their plans to extend the Silver Line into Everett. The Proponent will also continue to coordinate with the City of Everett's Transportation and Mobility Department and MassDOT on TDM strategies and other efforts to minimize automobile usage.

E. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site? ☐Yes ☐No; If yes, describe if and how the project will participate in the TMA:

As part of the commitment to TDM, the Master Plan Project Proponent will become a member of the Lower Mystic TMA.

F. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities?
G. ☐Yes ☐No;If yes, generally describe:

The Master Plan Project Site is located adjacent to a portion of the MBTA's Newburyport/Rockport Commuter Rail Line.

H. If the project will penetrate approach airspace of a nearby airport, has the proponent filed a Massachusetts Aeronautics Commission Airspace Review Form (780 CMR 111.7) and a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) (CFR Title 14 Part 77.13, forms 7460-1 and 7460-2)?

The Master Plan Project Proponent will file the appropriate forms with the FAA as needed.

III. Consistency

Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:

The site access and circulation will be consistent with municipal, regional, state, and federal plans and policies related to traffic, and transit facilities and services. The Proponent will work with the City of Everett and MassDOT to identify and implement mitigation, as appropriate, to offset impacts at off-site intersections within the study area. The transportation analysis to be prepared for the DEIR will follow MassDOT guidelines for completing a Transportation Impact Assessment (TIA).

TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? ☐Yes ☒**No**; If yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? ☒**Yes** ☐No; If yes, specify which permit:

- **The Phase 1 Project does not require any such state permits.**
- **The Master Plan Project will require a MassDOT Access Permit.**

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

II. Transportation Facility Impacts

A. Describe existing and proposed transportation facilities in the immediate vicinity of the project site:

The primary roadways serving the Master Plan Project Site include Broadway and Beacham Street. The Site is adjacent to a portion of the MBTA's Newburyport/Rockport Commuter Rail Line.

B. Will the project involve any:

1) Alteration of bank or terrain (in linear feet)? **No**
2) Cutting of living public shade trees (number)? **No**
3) Elimination of stone wall (in linear feet)? **No**

III. Consistency

Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

The site access and circulation will be consistent with municipal, regional, state, and federal plans and policies related to traffic and transit facilities/services. The Proponent will work with the City of Everett and MassDOT to identify and implement mitigation, as appropriate, to offset impacts at off-site intersections within the study area.

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))? ☐Yes ☒**No**; If yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**? ☒**Yes** ☐No; If yes, specify which permit:

Department of Public Utilities (DPU) Section 72 Order Approving Transmission Lines & Comprehensive Zoning Exemption

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	Existing	Change	Total
Capacity of electric generating facility (megawatts)	**N/A**	**700± MW**	**700± MW**
Length of fuel line (in miles)	**N/A**	**N/A**	**N/A**
Length of transmission lines (in miles)	**N/A**	**0.5±**	**0.5± substation**
Capacity of transmission lines (in kilovolts)	**N/A**	**115kV and 345kV**	**115kV and 345kV**

B. If the project involves construction or expansion of an electric generating facility, what are:
   A. the facility's current and proposed fuel source(s)?
   B. the facility's current and proposed cooling source(s)?

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? ☐Yes ☒**No;** If yes, please describe:

Not applicable because the infrastructure is underground.

D. Describe the project's other impacts on energy facilities and services:

The Phase 1 Project will facilitate the retirement of fossil fuel generation facilities, support transmission-level grid reliability, and facilitate increasing utilization of renewable generation sources.

III. Consistency

Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services:

The Phase 1 Project is highly consistent with state, local, and federal plans and policies to enhance energy facilities, particularly policies related to decarbonization of electric energy supplies.

State Plans and Policies: Statutory climate protection goals

The Commonwealth of Massachusetts has adopted ambitious targets to achieve net zero

statewide greenhouse gas emissions by 2050.[1] To meet these goals, the electric grid must rely principally or exclusively on offshore wind and other intermittent renewable resources such as solar energy. This reliance on intermittent renewable resources in turn requires significant battery energy storage deployment to reliably meet electric grid demands. As a practical matter, electric sector decarbonization goals and battery energy storage deployment are inextricably linked.

The Massachusetts Department of Energy Resources concluded a seminal Offshore Wind Study[2] in 2019. That study further explained the need for battery energy storage to support offshore wind development. According to the study:

> ***Offshore wind is an intermittent resource, generating electricity when the wind blows and not in response to electric demand. To support a growing amount of intermittent renewable energy generation, energy storage will need to be developed to charge during low cost periods when there is excess offshore wind and discharge during high cost peak times. Pairing energy storage with offshore wind will allow the Commonwealth to meet peak demand times with clean energy instead of high cost and high emissions fuel oil.[3]***

<u>Regional Plans and Policies: the value of the Project's connection to the Eversource Substation 250</u>

The nearby Eversource Substation 250, with a street address of 173 Alford Street, Boston, MA, is the Phase 1 Project's point of interconnection to the electric grid and is critical to the Commonwealth's efforts to develop renewable offshore wind energy. Throughout 2020 to 2022, ISO New England's Planning Advisory Committee (the "PAC") conducted multiple integration studies focused on identifying the offshore wind interconnections necessary to support offshore wind energy in the near future. These studies identified a key role for this substation.

In ISO New England's First Cape Cod Resource Integration Study, the PAC determined that offshore wind resources off Cape Cod and delivered into Cape Cod were limited to 2800 megawatts ("MW") of total capacity due to transmission corridor constraints.[4] A limit of 2800 MW would severely limit potential offshore wind project development off the Cape. The study identified the need for high-voltage direct current transmission development directly into the Boston area to avoid the existing land-based transmission constraints.

The PAC's Second Cape Code Resource Integration Study further examined the best available options for delivery of the offshore wind resources into the Boston area. In a September 2022 study update, the PAC concluded:

> ***As a result of the preliminary findings of the Second CCRIS [Cape Cod Resource Integration Study], the CETU [Cluster Enabling Transmission Upgrade] for offshore wind generation proposals to the Cape Cod Area, beyond those contemplated by the First CCRIS, will be a radial 1,200 MW HVDC connection from the offshore lease area(s) to the Mystic 345 kV substation in Boston.[5]***

Put differently, the Eversource Substation 250 has been identified as the most suitable delivery point of injection into the electric grid to serve future offshore wind projects, and those projects, in turn, need nearby energy storage systems to manage the storage and distribution of energy effectively. Battery energy storage projects located near to this substation, where they can connect directly with relatively short generational interconnect (Gen-Tie) lines, are uniquely well-sited to support offshore wind development in the waters off the Commonwealth, and therefore to support regional energy goals.

[1] For more on Massachusetts climate goals, see *An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy (2021)*: https://malegislature.gov/Laws/SessionLaws/Acts/2021/Chapter8
[2] https://www.mass.gov/doc/offshore-wind-study/download

[3] **Ibid, page 10.**
[4] **See presentation of First Cape Cod Resource Integration Study Preliminary Results, March 2021, pages 39-40. https://www.iso-ne.com/static-assets/documents/2021/04/cape_cod_resource_integration_study_march_2021_preliminary_results_summary_non_ceii_version.pdf**
[5] **See presentation of Second Cape Cod Resource Integration Study Status Update, September 2022, p.15. https://www.iso-ne.com/static-assets/documents/2022/09/a03_second_cape_cod_resource_integration_study_status_update.pdf**

Local Government Plans and Policies: Climate protection goals

The Project is located in the City of Everett and the Gen-Tie Line connecting the Phase 1 Project to the Eversource Substation 250 traverses a small portion of the City of Boston. Both Everett and Boston have enacted their own climate protection goals, and the Project supports those goals for the same reasons identified above.

- **Everett Climate Plan: https://mrsc.org/getmedia/b7f8a1b4-975a-4333-9ccf-d435122ce4de/e9ccsreport.pdf**
- **Boston Climate Plan: https://www.boston.gov/departments/environment/boston-climate-action**

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ☐Yes ☒**No**; If yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ☐Yes ☒**No**; If yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

II. Impacts and Permits

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? ☐Yes ☐No
If yes, describe existing and proposed emissions (in tons per day) of:

	Existing	Change	Total
Particulate matter			
Carbon monoxide			
Sulfur dioxide			
Volatile organic compounds			
Oxides of nitrogen			
Lead			
Any hazardous air pollutant			
Carbon dioxide			

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

III. Consistency

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ☐Yes ☒**No**; If yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? ☐Yes ☒**No**; If yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

II. Impacts and Permits

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste? ☐Yes ☐No; If yes, what is the volume (in tons per day) of the capacity:

	Existing	Change	Total
Storage			
Treatment, processing			
Combustion			
Disposal			

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste? ☐Yes ☐No If yes, what is the volume (in tons or gallons per day) of the capacity:

	Existing	Change	Total
Storage			
Recycling			
Treatment			
Disposal			

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos? ☐Yes ☐No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

III. Consistency

Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission? ☐Yes ☒**No**; if yes, attach correspondence.
For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? ☐Yes ☐No if yes, attach correspondence.

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ☐Yes ☒**No**; If yes, does the project involve the demolition of all or any exterior part of such historic structure? ☐Yes ☐No; If yes, please describe:

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ☐Yes ☒**No**; If yes, does the project involve the destruction of all or any part of such archaeological site? ☐Yes ☐No; If yes, please describe:

D. If you answered "No" to all parts of both questions A, B and C, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

CLIMATE CHANGE ADAPTATION AND RESILIENCY SECTION:

This section of the Environmental Notification Form (ENF) solicits information and disclosures related to climate change adaptation and resiliency, in accordance with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency (the "MEPA Interim Protocol"), effective October 1, 2021. The Interim Protocol builds on the analysis and recommendations of the 2018 Massachusetts Integrated State Hazard Mitigation and Climate Adaptation Plan (SHMCAP), and incorporates the efforts of the Resilient Massachusetts Action Team (RMAT), the inter-agency steering committee responsible for implementation, monitoring, and maintenance of the SHMCAP, including the "Climate Resilience Design Standards and Guidelines" project. The RMAT team recently released the RMAT Climate Resilience Design Standards Tool, which is available here.

The MEPA Interim Protocol is intended to gather project-level data in a standardized manner that will both inform the MEPA review process and assist the RMAT team in evaluating the accuracy and effectiveness of the RMAT Climate Resilience Design Standards Tool. Once this testing process is completed, the MEPA Office anticipates developing a formal Climate Change Adaptation and Resiliency Policy through a public stakeholder process. Questions about the RMAT Climate Resilience Design Standards Tool can be directed to rmat@mass.gov.

All Proponents must complete the following section, referencing as appropriate the results of the output report generated by the RMAT Climate Resilience Design Standards Tool and attached to the ENF. In completing this section, Proponents are encouraged, but not required at this time, to utilize the recommended design standards and associated Tier 1/2/3 methodologies outlined in the RMAT Climate Resilience Design Standards Tool to analyze the project design. However, Proponents are requested to respond to a respond to a user feedback survey on the RMAT website or to provide feedback to rmat@mass.gov, which will be used by the RMAT team to further refine the tool. Proponents are also encouraged to consult general guidance and best practices as described in the RMAT Climate Resilience Design Guidelines.

Climate Change Adaptation and Resiliency Strategies

Has the project taken measures to adapt to climate change for all of the climate parameters analyzed in the RMAT Climate Resilience Design Standards Tool (sea level rise/storm surge, extreme precipitation (urban or riverine flooding), extreme heat)? ☒**Yes** ☐No

Note: Climate adaptation and resiliency strategies include actions that seek to reduce vulnerability to anticipated climate risks and improve resiliency for future climate conditions. Examples of climate adaptation and resiliency strategies include flood barriers, increased stormwater infiltration, living shorelines, elevated infrastructure, increased tree canopy, etc. Projects should address any planning priorities identified by the affected municipality through the Municipal Vulnerability Preparedness (MVP) program or other planning efforts, and should consider a flexible adaptive pathways approach, an adaptation best practice that encourages design strategies that adapt over time to respond to changing climate conditions. General guidance and best practices for designing for climate risk are described in the RMAT Climate Resilience Design Guidelines*.*

A. If no, explain why.

B. If yes, describe the measures the project will take, including identifying the planning horizon and climate data used in designing project components. If applicable, specify the return period and design storm used (e.g., 100-year, 24-hour storm).

The Master Plan Project will use the 2070 Target Planning Horizon. The return periods recommended in the RMAT will be assessed, including the 200-year return period for sea level rise/storm surge (SLR/SS) flooding and the 50-year return period for precipitation for the Phase 1 Project, and the 1% ACE for SLR/SS and the 25-year return period for

precipitation for the balance of the Master Plan Project. Potential flood protection measures include raising site elevations and dry-floodproofing buildings.

C. Is the project contributing to regional adaptation strategies? ☐Yes ☒**No**; If yes, describe.

The Project Site is not identified as part of a regional adaptation strategy. The Project is expected to benefit from nearby regional adaptation efforts, including the Island End River Flood Resilience project and the Amelia Earhart Dam project.

II. Has the Proponent considered alternative locations for the project in light of climate change risks? ☒**Yes** ☐No

A. If no, explain why.

B. If yes, describe alternatives considered.

Alternative locations for the Phase 1 Project have been considered. Please see Chapter 2 for details.

III. Is the project located in Land Subject to Coastal Storm Flowage (LSCSF) or Bordering Land Subject to Flooding (BLSF) as defined in the Wetlands Protection Act? ☐Yes ☒**No**; If yes, describe how/whether proposed changes to the site's topography (including the addition of fill) will result in changes to floodwater flow paths and/or velocities that could impact adjacent properties or the functioning of the floodplain. General guidance on providing this analysis can be found in the CZM/MassDEP Coastal Wetlands Manual, available here.

ENVIRONMENTAL JUSTICE SECTION

I. Identifying Characteristics of EJ Populations

A. If an Environmental Justice (EJ) population has been identified as located in whole or in part within 5 miles of the project site, describe the characteristics of each EJ populations as identified in the EJ Maps Viewer (i.e., the census block group identification number and EJ characteristics of "Minority," "Minority and Income," etc.). Provide a breakdown of those EJ populations within 1 mile of the project site, and those within 5 miles of the site.

A portion of the Project Site is located within an EJ census tract with Minority population and there are 55 EJ populations located within the 1-mile radius of the Project Site that meet the EJ criteria based on Minority Population, Minority and Income, Minority and English Isolation, and Minority, Income and English Isolation. See Chapter 4, Table 4-1 for a breakdown of census block group and census tract by EJ category within the 1-mile radius. Appendix A provides the full breakdown of census tracts that meet EJ criteria within the 5-mile radius of the Project Site.

B. Identify all languages identified in the "Languages Spoken in Massachusetts" tab of the EJ Maps Viewer as spoken by 5 percent or more of the EJ population who also identify as not speaking English "very well." The languages should be identified for each census tract located in whole or in part within 1 mile and 5 miles of the project site, regardless of whether such census tract contains any designated EJ populations.

According to the "Languages Spoken in Massachusetts" tab of MEPA's EJ Maps Viewer, there are blocks within the Project Site's DGA (1-mile radius) that contain a population of at least 5 percent who reported speaking English less than "very well." These populations report speaking other languages at home including Spanish/ Spanish Creole, French Creole, Portuguese/Portuguese Creole, Chinese, and Arabic. Appendix A provides the full breakdown of census tracts that contain more than five percent populations speaking languages other than English within the 5-mile radius of the Project Site.

C. If the list of languages identified under Section I.B. has been modified with approval of the EEA EJ Director, provide a list of approved languages that the project will use to provide public involvement opportunities during the course of MEPA review. If the list has been expanded by the Proponent (without input from the EEA EJ Director), provide a list of the additional languages that will be used to provide public involvement opportunities during the course of MEPA review as required by Part II of the MEPA Public Involvement Protocol for EJ Populations ("MEPA EJ Public Involvement Protocol"). If the project is exempt from Part II of the protocol, please specify.

The list of languages has not been modified.

I. Potential Effects on EJ Populations

A. If an EJ population has been identified using the EJ Maps Viewer within 1 mile of the project site, describe the likely effects of the project (both adverse and beneficial) on the identified EJ population(s).

The Phase 1 Project will not result in Damage to the Environment, nor will it generate GHG emissions. When operational, it will generate negligible traffic and wastewater, and will require negligible water use. Construction period impacts will be minimized

and mitigated to the maximum extent practicable through implementation of a Construction Management Plan. Refer to Chapter 4, Section 4.4 for additional details.

B. If an EJ population has been identified using the EJ Maps Viewer within 5 miles of the project site, will the project:
   (i) meet or exceed MEPA review thresholds under 301 CMR 11.03(8)(a)-(b) ☐Yes ☒**No**; or
   (ii) generate150 or more new average daily trips (adt) of diesel vehicle traffic, excluding public transit trips, over a duration of 1 year or more. ☐Yes ☒**No**

C. If you answered "Yes" to either question in Section II.B., describe the likely effects of the project (both adverse and beneficial) on the identified EJ population(s).

III. Public Involvement Activities

A. Provide a description of activities conducted prior to filing to promote public involvement by EJ populations, in accordance with Part II of the MEPA EJ Public Involvement Protocol. In particular:

1. If advance notification was provided under Part II.A., attach a copy of the Environmental Justice Screening Form and provide list of CBOs/tribes contacted (with dates). Copies of email correspondence can be attached in lieu of a separate list.

2. State how CBOs and tribes were informed of ways to request a community meeting, and if any meeting was requested. If public meetings were held, describe any issues of concern that were raised at such meetings, and any steps taken (including modifications to the project design) to address such concerns.

3. If the project is exempt from Part II of the protocol, please specify.

A copy of the EJ Screening Form is included in Appendix A and the MEPA distribution list, including a list of CBOs/tribes contacted, is included in Chapter 13, *Circulation*. Instructions for requesting a meeting regarding this Project were provided in the EJ Screening Form. The Proponents have not received any requests to date. As per the requirements stated under Section II of the Public Involvement Protocol, "Measures to Enhance Public Involvement Prior to Filing ENF," the Proponents have made meaningful efforts to engage with the community prior to this EENF filing as described in detail in Chapter 4, Section 4.4.

The Proponents held a pre-filing meeting with the MEPA Office on May 15, 2024. During that meeting, the Proponent and MEPA staff discussed the need for EJ Protocol compliance as the Project Site is located within one mile of an EJ population, and the Proponents provided an overview of the pre-filing public outreach held to date. The Proponents also met with EEA's EJ and MEPA Offices and MassDEP on July 25, 2024.

B. Provide below (or attach) a distribution list (if different from the list in Section III.A. above) of CBOs and tribes, or other individuals or entities the Proponent intends to maintain for the notice of the MEPA Site Visit and circulation of other materials and notices during the course of MEPA review.

The Proponents will use the same distribution list as that identified in Section III.A.

C. Describe (or submit as a separate document) the Proponent's plan to maintain the same level of community engagement throughout the MEPA review process, as conducted prior to filing.

Following the filing of this EENF, the Proponents will hold a public site consultation to present the Project to the MEPA office, state agencies, and the public. This presentation will also provide the attendees with the opportunity to ask questions about the Project. This will provide the public direct access to the Proponents and project team, allowing them to inquire about Project specifics and better understand how impacts will be mitigated. The Proponents will offer Arabic, Chinese, Haitian Creole, Portuguese and Spanish languages translation services on an as-requested basis. The Proponents will also invite state, tribal, and local community groups to the virtual site consultation.

Please refer Section 4.5 of Chapter 4, *Environmental Justice and Public Health,* for a summary of the proposed outreach plan that will be implemented during and after the MEPA review process. This plan was developed through guidance provided in MEPA's Public Involvement Protocol for Environmental Justice Populations.

CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

   Name: **Boston Herald** Date: **8/15/2024**

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

Signatures:

8/12/2024		**8/12/2024**	
Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing ENF (if different from above)
Michael Cantalupa		**Stephanie Kruel**	
Name		Name	
Everett Landco, LLC		**VHB**	
Firm/Agency		Firm/Agency	
125 High Street, Suite 2111		**99 High Street, 13th Floor**	
Street		Street	
Boston, MA 02110		**Boston, MA 02110**	
Municipality/State/Zip		Municipality/State/Zip	
617-936-4816		**617.607.2972**	
Phone		Phone	

8/12/2024	See Following Page
Date	Signature of Responsible Officer or Proponent
Andrew Bowman, President	
Name	
Trimount ESS LLC	
Firm/Agency	
1108 Lavaca Street, Suite 110-349	
Street	
Austin, TX 78701	
Municipality/State/Zip	
512.375.4052	
Phone	

CERTIFICATIONS:

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Signatures:

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Name		Name	
Everett Landco, LLC		**VHB**	
Firm/Agency		Firm/Agency	
125 High Street, Suite 2111		**99 High Street, 13th Floor**	
Street		Street	
Boston, MA 02110		**Boston, MA 02110**	
Municipality/State/Zip		Municipality/State/Zip	
617-936-4816		**617.607.2972**	
Phone		Phone	

8/12/2024	DocuSigned by: 7695AA5BDCBD44E...
Date	Signature of Responsible Officer or Proponent
Andrew Bowman, solely in his capacity as President of Phase 1 Proponent	
Name	
Trimount ESS LLC – Phase 1 Proponent	
Firm/Agency	
1108 Lavaca Street, Suite 110-349	
Street	
Austin, TX 78701	
Municipality/State/Zip	
512.375.4052	
Phone	

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Project Summary

Everett Landco, LLC (a Joint Venture led by Davis, in Partnership with Global Partners LP) and Trimount ESS LLC c/o Jupiter Power LLC (the "Proponents") are submitting this Expanded Environmental Notification Form (EENF) in accordance with the Massachusetts Environmental Policy Act (MEPA), Massachusetts General Law ("G.L.") Chapter 30, Section 61-62I and the regulations promulgated thereunder set forth at 301 CMR 11.00, for the proposed redevelopment of an approximately 86-acre former Brownfield site at 52 Beacham Street and 0 South Farm in the City of Everett (the "Project Site"). By transforming a symbol of the 20th-century fossil fuel industry into a mixed-use, 21st-century clean economy, the Everett Docklands Innovation District (EDID) project is poised to become a new symbol of Everett's commitment to sustainable development and economic growth.

This chapter describes the site context and existing conditions; introduces the Master Plan and Phase 1 projects; provides summaries of project benefits, impacts, and mitigation; provides a list of anticipated permits and approvals; and summarizes the anticipated project costs and schedule.

1.1 Site Context and Existing Conditions

The Project Site is located in the City of Everett in a historically industrial area that powered the region throughout much of the twentieth century. Comprising the former Exxon Mobil Terminal property, it is bounded by active and former rail to the north, industrial development to the east and south, and industrial and residential development to the west (**Figure 1.1**). Nearby uses include the former Mystic Generating Substation, Encore Boston Harbor, the Gateway Center shopping area, and the New England Produce Center. The Exxon Mobil Terminal was a petroleum products distribution and bulk storage terminal that operated between 1965 and 2022. The terminal consisted of a light fuel (gasoline, diesel and jet fuel) storage area known as the North Tank Farm (north of Beacham Street) and a heavy fuel oil and asphalt storage area known as the South Tank Farm (south of Beacham Street).

The entire Project Site is regulated under the Massachusetts Contingency Plan (MCP) and implementing regulations (310 CMR 40.000) via Release Tracking Number (RTN) 3-0000310. As described in Chapter 10, *Pre-Development Remediation Overview*, prior to Project commencement, the Project Site will undergo remediation in compliance with the MCP as part of a separate process. Partial Permanent Solutions with an Activity and Use Limitation (AUL) will be achieved as individual parcels are remediated and these remediated parcels may then proceed with development. Once all parcels are remediated, the Massachusetts Department of

Environmental Protection (MassDEP) will issue a Permanent Solution Statement (PSS) with an Activity and Use Limitation (AUL). This is considered the existing/pre-development condition (**Figure 1.2**).

The Project Site does not contain any environmentally sensitive areas. According to the most recently available data provided by the Massachusetts Natural Heritage and Endangered Species Program[1] (NHESP), no Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife or Certified or Potential Vernal Pools are mapped in the vicinity of the Project Site (**Figure 1.3**). The Project Site is not located within or near an Area of Critical Environmental Concern (ACEC). According to the Massachusetts Department of Environmental Protection (DEP), the Project Area is not located within an Outstanding Resource Water, or an area designated as a Zone II Wellhead Protection Area. According to the Natural Resources Conservation Service (NRCS) soil survey, soils at the Project Site are primarily mapped as Urban land, wet substratum, with a small portion mapped as Udorthents, wet substratum.

1.2 Project Description

The EDID comprises the "Master Plan Project" and consists of a mixed-use development including approximately 7.2M sf of industrial, high-tech manufacturing, lab/office, retail, maker, and residential space, as well as the Trimount Energy Storage Facility, which will provide up to 700± MW of energy storage. The proposed redevelopment will be constructed in two phases, with the Trimount Energy Storage Facility being constructed first (the "Phase 1 Project"), followed by the remainder of the Master Plan Project. The full program is provided in Table 1-1 below.

Table 1-1 Phase 1 and Master Plan Project Program

Program	Phase 1	Master Plan	Total Proposed
Site Area (acres)	20.4	65.6	86.0
Total GSF	5,800	7,191,000	7,196,800
Residential (sf)	-	2,815,000	2,815,000
Residential (units)	-	3,200	3,200
Retail	-	240,000	240,000
Maker Space	-	36,000	36,000
Lab-Office	-	3,300,000	3,300,000
High-Tech Manufacturing	-	400,000	400,000
Industrial	-	400,000	400,000
Phase 1 Office	5,000	-	5,000
Phase 1 Storage	800	-	800

1.2.1 Phase 1 Project

The Phase 1 Project, which comprises the Trimount Energy Storage Facility, represents an investment in Everett to strengthen the Commonwealth's energy grid and assist in the clean energy transition. It will help Massachusetts to meet its greenhouse gas (GHG) emissions reduction goals by enabling the use of offshore wind-generated power. The Phase 1 Project includes a battery energy storage system (BESS), which is crucial to the Commonwealth's approach to decarbonizing

how we meet peak electric demand and is a critical operational component of the successful development of offshore wind-generated power and other renewable energy sources. A BESS gathers and discharges electricity as needed during peak demand periods. It fills by amassing excess high-voltage electricity from the substation transformer, then empties by discharging electricity into the transmission line. Excess energy accumulates when power generation spikes occur at renewable energy plants. The BESS will also charge when decreased demand drops below the amount of electricity needed. In this way, a BESS helps renewable energy sites meet peak demand and maintain a safe, stable grid connection.

The Phase 1 Project Site consists of approximately 20.7 acres of land on two parcels at 52 Beacham Street (Parcel C, 9.6 acres) and 0 South Farm (Parcel A, 11.1 acres). These parcels are separated by Beacham Street (**Figure 1.4**), which also serves as the northern boundary of the Mystic River Designated Port Area (DPA). The Phase 1 Project includes a BESS, two on-site open-air substations, two small buildings for personnel and equipment storage totaling 5,800 sf, and a generation interconnect (Gen-Tie) line that will link the facility to the Eversource Substation 250 (adjacent to the former Mystic Generating Station) via a new underground conduit to be located within the existing public rights-of-way of Beacham, Robin, Dexter, and Alford streets.

1.2.2 Master Plan Project

The Master Plan Project is a transformative development that will act as a catalyst and a proof of concept for Everett's entire 500-acre Lower Broadway Economic Development District. Powered by a focus on innovation, sustainability, and community-building, the EDID will become a hub for technological advancement, creative industries, and urban living.

The Master Plan Project includes approximately 400,000 SF of industrial space, 400,000 SF of high-tech manufacturing space, 3,300,000 SF of lab/office space, 240,000 SF of retail space, 36,000 SF of maker space, and 2,815,000 SF of residential space (approximately 3,200 residential units) with ancillary roadways, parking and open space (**Figure 1.5**).

1.3 Summary of Project Benefits

1.3.1 Phase 1 Project

Trimount ESS LLC and its affiliate, Jupiter Power, are working with the City of Everett and its residents to develop the Phase 1 Project in a manner that is compatible with plans to revitalize this part of the city. Everett has historically served as the host of fuel storage and associated negative fossil fuel impacts: The Phase 1 Project will replace the old infrastructure with cleaner, sustainable energy infrastructure. The Project will:

- Help the Commonwealth meet its climate goals of 50% CO_2 reduction by 2030 and carbon neutrality by 2050;
- Support future offshore wind development;
- Reduce the use of fossil fuel peaking power plants through construction of zero-emissions energy storage;
- Invest $500+ million in the City of Everett;
- Boost annual tax revenues to the City of Everett and Everett public schools; and

› Create construction jobs.

1.3.2 Master Plan Project

The Master Plan Project aims to transform a historically important industrial site into a cleaner, healthier, more sustainable, and more resilient place. It will:

› Revitalize an expansive legacy Brownfield site;
› Provide housing for Everett's existing and future residents;
› Create new recreational spaces and community amenities;
› Include pedestrian and bike-friendly streets and enhanced transit links;
› Expand Everett's local economy and provide new opportunities for higher-paying jobs;
› Contribute approximately $23M in local real estate taxes; and
› Create construction jobs.

1.4 Summary of Impacts and Mitigation

1.4.1 Phase 1 Project

The Phase 1 Project will not result in Damage to the Environment, and it does not exceed any MEPA review thresholds. When operational, it will generate negligible traffic, water use, and wastewater. The Phase 1 Project will not result in any impacts to environmentally sensitive areas, nor will it generate GHG emissions. Construction period impacts will be minimized and mitigated to the maximum extent practicable through implementation of a Construction Management Plan.

1.4.2 Master Plan Project

The Master Plan Project is anticipated to result in environmental impacts including trip generation and water use and wastewater generation, as well as construction-period impacts. Due to its location, impacts to environmentally sensitive areas will be avoided. By redeveloping a former Brownfield site in an urban area with existing robust infrastructure, it avoids impacts that would be created by developing greenfield sites. Specific commitments to impact minimization and mitigation will be described in detail in the Draft Environmental Impact Report (DEIR).

1.5 Regulatory Context

1.5.1 MEPA

The Master Plan Project is subject to MEPA because it requires Agency Actions and exceeds several review thresholds, including one EIR-level threshold.

Anticipated Agency Actions include:

› State Financing (TBD, Master Plan only)
› MassDOT Access Permit (Master Plan only)

- MWRA 8(m) permit for work within an easement and sewer connection (Master Plan and Phase 1 Project); TRAC sewer permit (Master Plan only)
- DEP Chapter 91 License (Phase 1 only)
- DPU Section 72 Order approving New Transmission Lines & Comprehensive Zoning Exemption (Phase 1 only)

The Phase 1 Project does not exceed any review thresholds on its own. The Proponent is seeking a Phase 1 Waiver as described in Chapter 2.

The Master Plan Project exceeds the following review thresholds:

- 5(b)4.a. New discharge or Expansion in discharge to a sewer system of 100,000 or more gpd of sewage, industrial wastewater or untreated stormwater;
- 6(a)6. Generation of 3,000 or more New adt on roadways providing access to a single location.
- 6(a)7. Construction of 1,000 or more New parking spaces at a single location.
- 6(b)13. Generation of 2,000 or more New adt on roadways providing access to a single location.
- 6(b)14. Generation of 1,000 or more New adt on roadways providing access to a single location and construction of 150 or more New parking spaces at a single location.
- 6(b)15. Construction of 300 or more New parking spaces at a single location.

1.5.2 Chapter 91

The Phase 1 Project Site includes approximately 0.53 acres of formerly filled tidelands within a DPA subject to licensing under the Massachusetts Public Waterfront Act (Chapter 91) and implementing regulations (310 CMR 9.00). The Proponent will apply for a water-dependent industrial use license in compliance with 310 CMR 9.11. Please see Chapter 5 for details.

The Master Plan Project Site contains landlocked filled tidelands. In accordance with 301 CMR 13.00, the Secretary of the Executive Office of Energy and Environmental Affairs is required to issue a public benefit determination for certain projects in tidelands, including landlocked tidelands. Under both previously existing and existing/pre-development conditions, there is no public access to these filled tidelands. As a result of the Project, new uses that will improve the area will be established, including publicly accessible open space, retail space, maker space, roadways open to public travel, and parking, and private spaces such as residential buildings, parking areas, lab/office buildings, industrial buildings, high-tech manufacturing buildings, and portions of the BESS facility.

1.5.3 Department of Public Utilities

The Phase 1 Project Site is located in the City of Everett's Lower Broadway Economic Development, Employment Subdistrict (LB-E). The Phase 1 Project does not fully meet the zoning requirements of the LB-E district. Among other things, energy storage is not listed as a permitted use. In addition, a special permit is required for greater than 20,000 SF of development. Therefore, the Proponent is petitioning the Department of Public Utilities for a Comprehensive Zoning Exemption from the Zoning Ordinance of the City of Everett pursuant to G.L. c. 40A, § 3, which states:

> *"Lands or structures used, or to be used by a public service corporation may be exempted in particular respects from the operation of a zoning ordinance or by-law if, upon petition of the corporation, the department of telecommunications and cable or the department of public utilities shall, after notice given pursuant to section eleven and public hearing in the town or*

city, determine the exemptions required and find that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public."

The Phase 1 Project includes the construction of a Gen-Tie line, and therefore also must petition the DPU for authority to construct and use a line for the transmission of electricity pursuant to M.G.L. c. 164, § 72. In evaluating petitions, the DPU examines (1) the need for, or public benefits of, the present or proposed use; (2) the present or proposed use and any alternatives identified; and (3) the environmental impacts or any other impacts of the present or proposed use. The DPU then balances the interests of the general public against the local interests and determines whether the line is necessary for the purpose alleged and will serve the public convenience and is consistent with the public interest.

1.5.4 Wetlands

There are no jurisdictional wetland resource areas on the Master Plan Project Site.

The most recently issued FEMA Flood Insurance Rate Map (FIRM) for the Master Plan Site (panel 25017C0443E, effective June 4, 2010) indicates that no portion of the Project Site is located within a Zone AE floodplain. However, preliminary revised mapping (panel 25017C0443F) indicates that much of the northern portion of the Project Site is located within Zone AE zone with a base flood elevation (BFE) of 10 feet NAVD88. Land below the BFE is regulated under the Wetlands Protection Act (WPA) as Land Subject to Coastal Storm Flowage (LSCSF).

As part of the remediation process, the Proponent filed a Notice of Intent (NOI) for a Soil Treatment and Site Demolition project impacting LSCSF (DEP File No. 022-0137). The Commission issued an Order of Conditions (OOC) for this work on May 16, 2024. On June 6, 2024, the Proponent filed an additional NOI for a Remediation Protective Cover and Fill project that would result in elevations above 10 NAVD88 site-wide (DEP File No. 022-0139). The Commission issued an OOC for this work on June 26, 2024, thereby confirming that upon project completion, no area of the Site would be below the BFE. As a result, under the existing/pre-development condition contemplated in this filing, the Master Plan Project Site does not contain LSCSF.

On December 22, 2023, the Everett Conservation Commission issued a negative Determination of Applicability (DOA) confirming that two areas on the Master Plan Project Site (a holding pond and an isolated seasonally wet area) do not contain jurisdictional resource areas.

Wetland resource areas impacted by the Phase 1 Project's Gen-Tie line (which is outside of the Project Site) are discussed in Chapter 5, Wetlands and Waterways.

1.5.5 Permits and Approvals

Table 1-2 lists the permits and approvals from state and local governmental agencies that are anticipated to be required for the Project. No federal permits are anticipated at this time. It is possible that only some of the permits and approvals identified below will be required, and that there are other permits and approvals which will be identified in the course of project review.

Table 1-2 Anticipated Permits and Approvals

Agency	Permit/Approval	Phase
Federal		
Environmental Protection Agency (EPA)	NPDES Construction General Permit	Phase 1 & Master Plan
State		
Department of Environmental Protection (DEP) Waterways	Determination of Applicability: Water Dependent Use	Phase 1
	Chapter 91 License	Phase 1
Department of Public Utilities (DPU)	Section 72 Order Approving New Transmission Lines	Phase 1
	Comprehensive Zoning Exemption	Phase 1
Massachusetts Water Resources Authority (MWRA)	8(m) Permit	Phase 1 & Master Plan
	Toxic Reduction and Control (TRAC) Permit	Master Plan
Department of Transportation (MassDOT)	Access Permit	Master Plan
Local		
Everett Mayor's Office	Host Community Agreement	Phase 1
Everett City Council	PILOT Agreement	Phase 1
	Grant of Location for electric transmission line in public right-of-way	Phase 1
	Establish Master Plan Zoning Ordinance	Master Plan
	Establish Everett Docklands Innovation District	Master Plan
Everett Planning Board	Subdivision Approval/ANR Endorsement	Phase 1 & Master Plan
	Master Plan Special Permit	Master Plan
	Site Plan Approvals (each building)	Master Plan
Everett Fire Chief	Flammables Storage permit	Phase 1 & Master Plan
Everett Sewer Department	Sewer connection/use permit	Master Plan
Boston Public Improvement Commission (PIC)	Grant of Location for electric transmission line in public right-of-way	Phase 1
Boston Conservation Commission	Determination of Applicability	Phase 1

1.6 Stakeholder Engagement

Both the Phase 1 Project and the Master Plan Project began the stakeholder engagement process prior to the filing of this EENF. Outreach specifically related to Environmental Justice Populations is detailed in Section 4.5 of Chapter 4, *Environmental Justice & Public Health*. Community outreach associated with site remediation is described in Section 10.4 of Chapter 10, *Pre-Development Remediation Overview*. In addition, the Proponents have engaged with the following municipal officials, state agencies, and non-profit entities:

- Everett Mayor's Office
- Everett Mayor Carlo DeMaria
- Everett City Council
- Senator Sal DiDomenico
- Massachusetts Department of Environmental Protection (DEP)

- Everett City Councilor Wayne Matewsky
- Everett Planning Board
- Everett Planning Department
- Everett Engineering Department
- Chelsea - City Manager (Fidel Maltez)
- Cambridge - Councilor (Burhan Azeem)
- Boston - Chief of Planning and BPDA Director
- Massachusetts Attorney General Andrea Joy Campbell
- MEPA Office
- National Grid
- Eversource
- Massachusetts Bay Transportation Authority (MBTA)
- Mass Development
- Massachusetts Clean Energy Center (Mass CEC)
- Mass Mobility Hub
- Massachusetts Manufacturing Extension Partnership (MassMEP)

1.7 Project Schedule

The Phase 1 Project is anticipated to begin construction in Q1 2026 and will be operational by Q1 2028. Work associated with the balance of the Master Plan will begin construction after the Phase 1 Project commences.

1.8 Proponent Participation

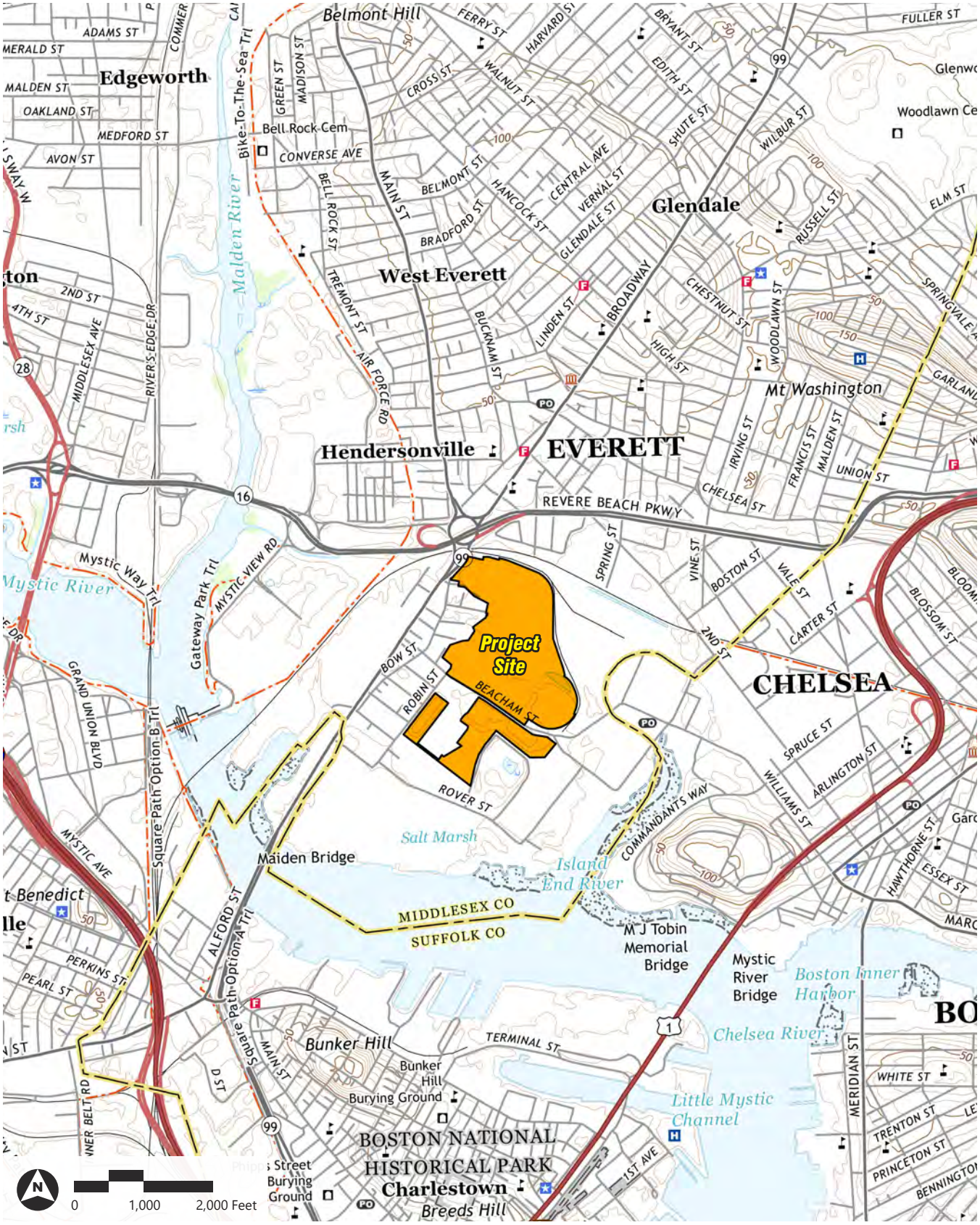
Trimount ESS LLC and Everett Landco, LLC have each contributed substantively to the preparation of this EENF.

Trimount has contributed to the preparation of this EENF solely in its capacity as the Proponent of Phase 1, which entails the construction and operation of the BESS system and a 345 kV gen-tie line and 115 kV gen-tie line running from this storage system to the Eversource Substation 250 in Boston, Massachusetts. Trimount's contributions are limited to those portions of the EENF Form and the subsequent chapters that concern Trimount's portion of Phase 1. Trimount makes no representations with respect to any other parts of the EENF.

Everett Landco, LLC has contributed to the preparation of this EENF solely in its capacity as the Proponent of the Master Plan Project and makes no representations with respect to the sections of the EENF contributed by Trimount.

Figure 1.1: Project Location Map

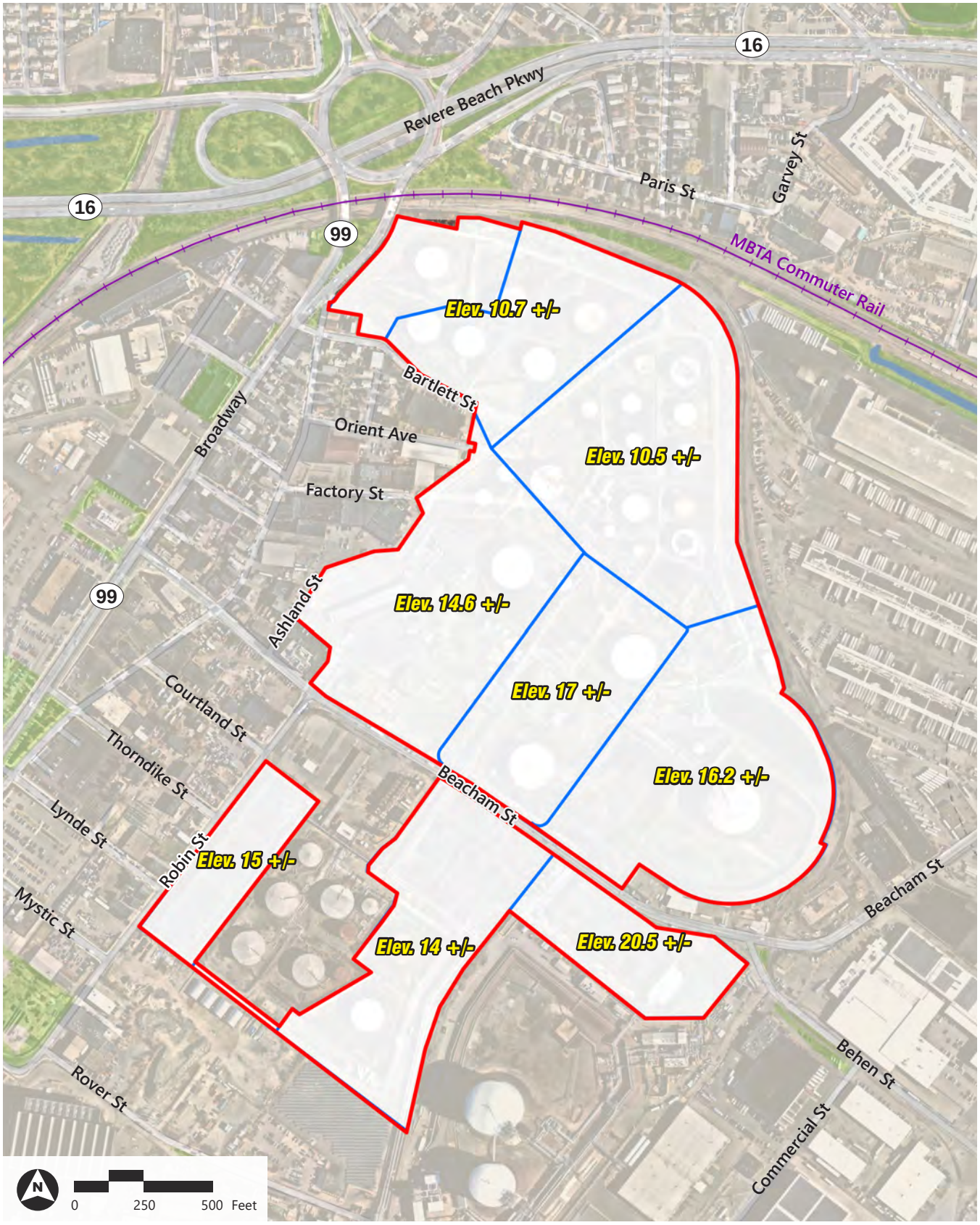
Everett Docklands Innovation District | 52 Beacham Street, Everett, MA 02149



Source: U.S. Geological Survey; Boston North Quadrangle; 2021

Figure 1.2: Existing/Pre-Development Conditions

Everett Docklands Innovation District | 52 Beacham Street, Everett, MA 02149

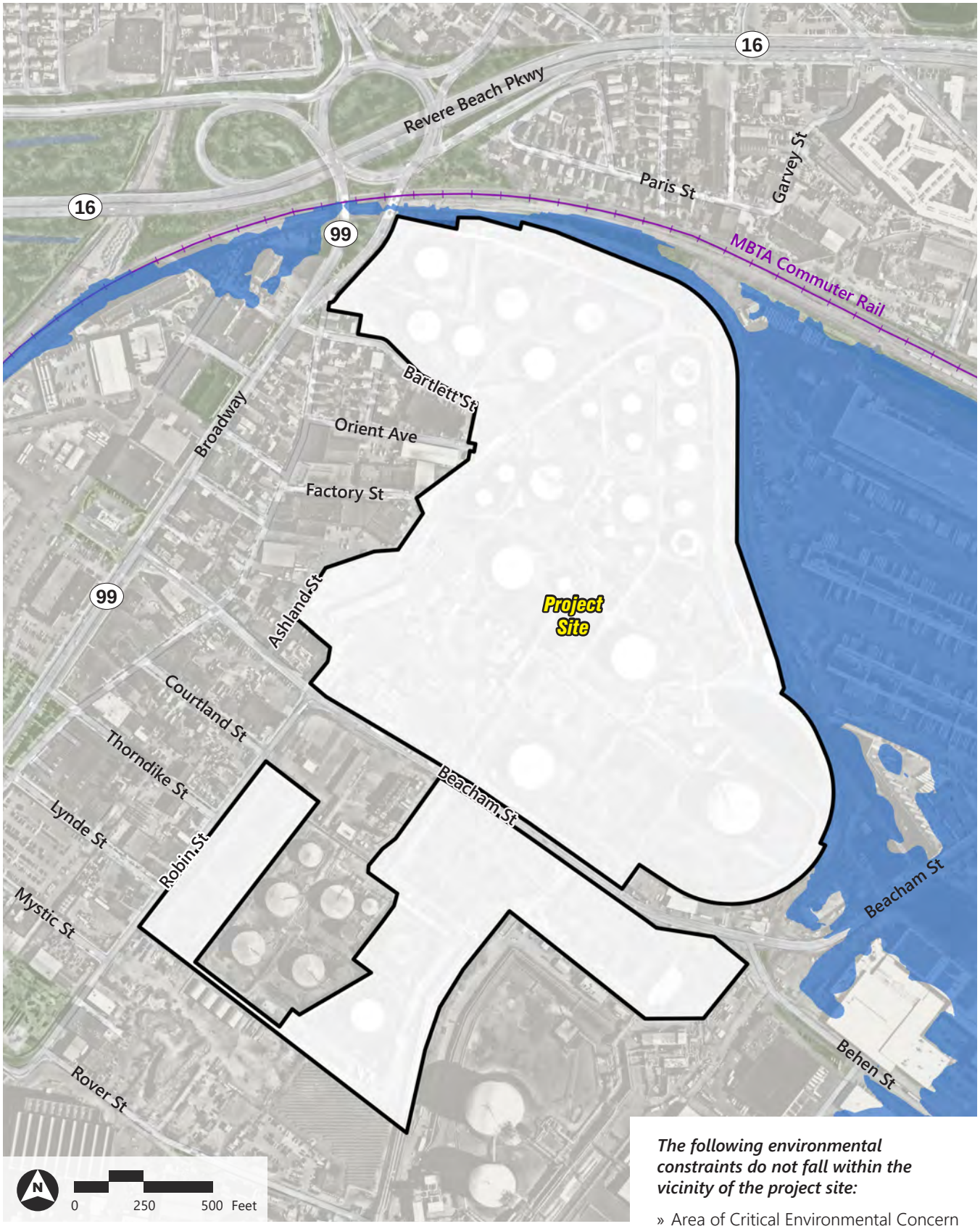


Source: Nearmap Aerial, ESRI World Topographic Base

Project Site Boundary

Figure 1.3: Environmental Constraints

Everett Docklands Innovation District | 52 Beacham Street, Everett, MA 02149



Source: Nearmap Aerial, ESRI World Topographic Base

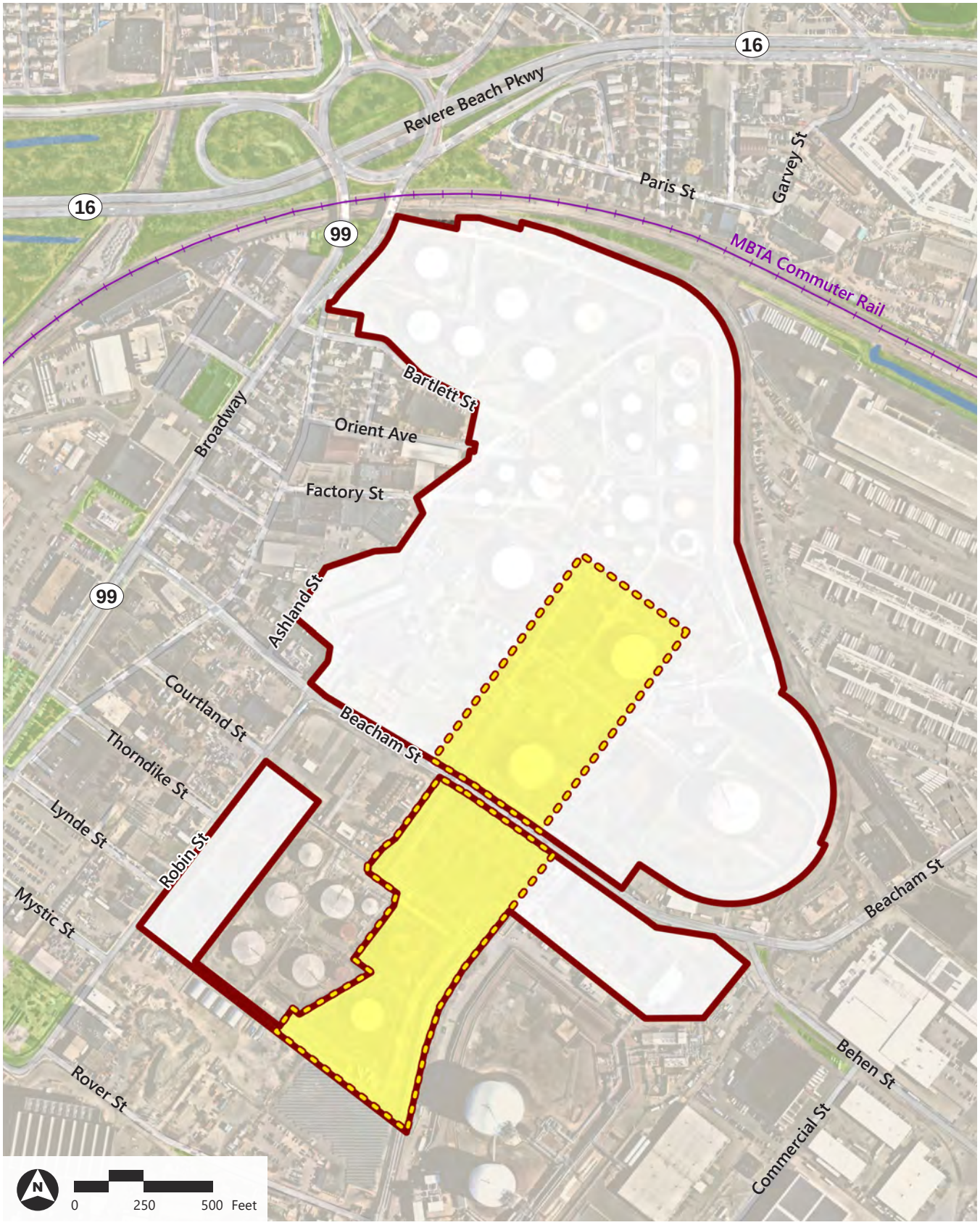
Post Infill Floodplain

The following environmental constraints do not fall within the vicinity of the project site:

- Area of Critical Environmental Concern
- Outstanding Resource Waters
- Zone II Wellhead Protection Area

Figure 1.4: Project Site Boundaries

Everett Docklands Innovation District | 52 Beacham Street, Everett, MA 02149



Source: Nearmap Aerial, ESRI World Topographic Base

Master Plan Project Site Boundary

Phase 1 Project Site Boundary

Figure 1.5: Proposed Phase 1 Plan

Everett Docklands Innovation District | 52 Beacham Street, Everett, MA 02149

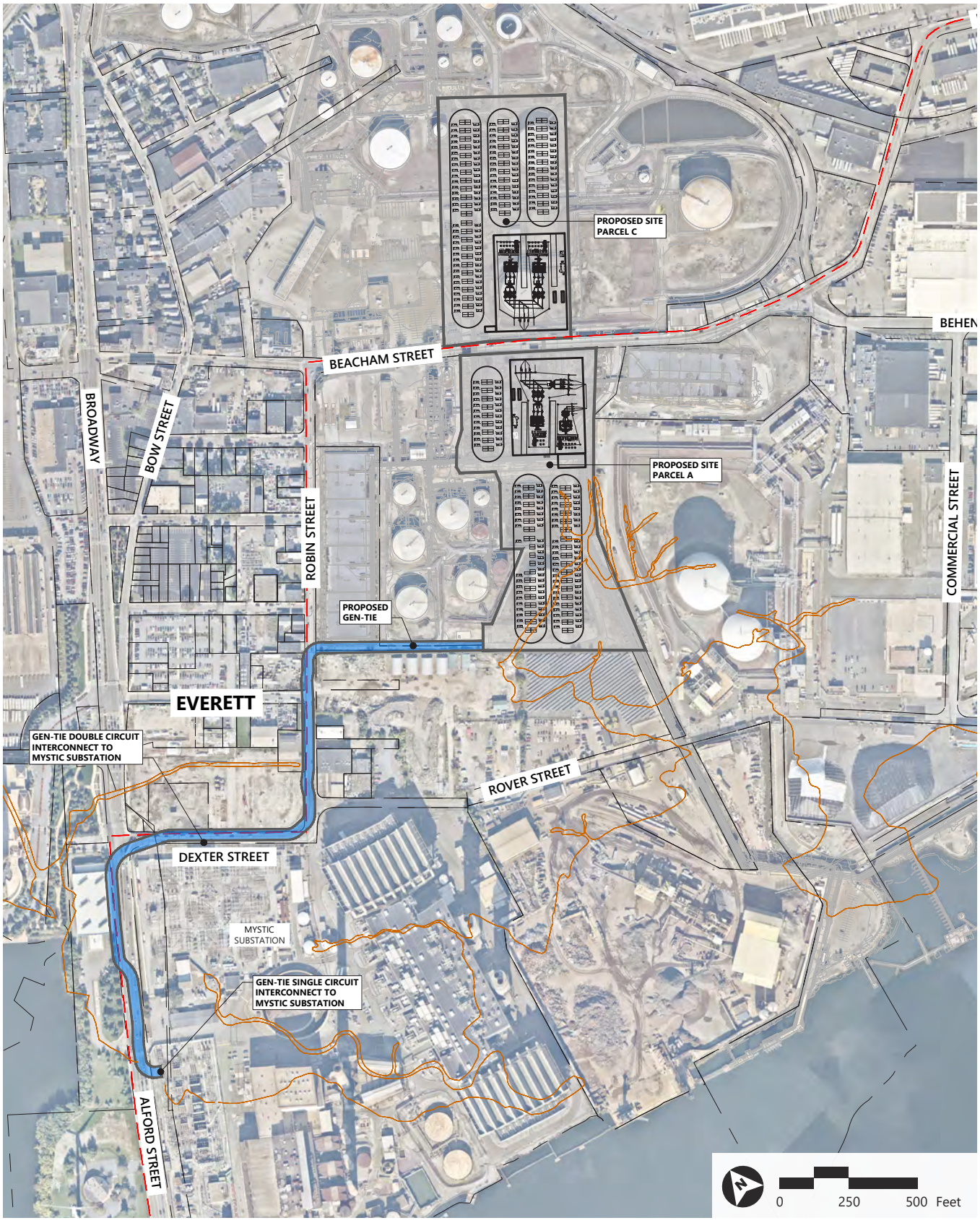
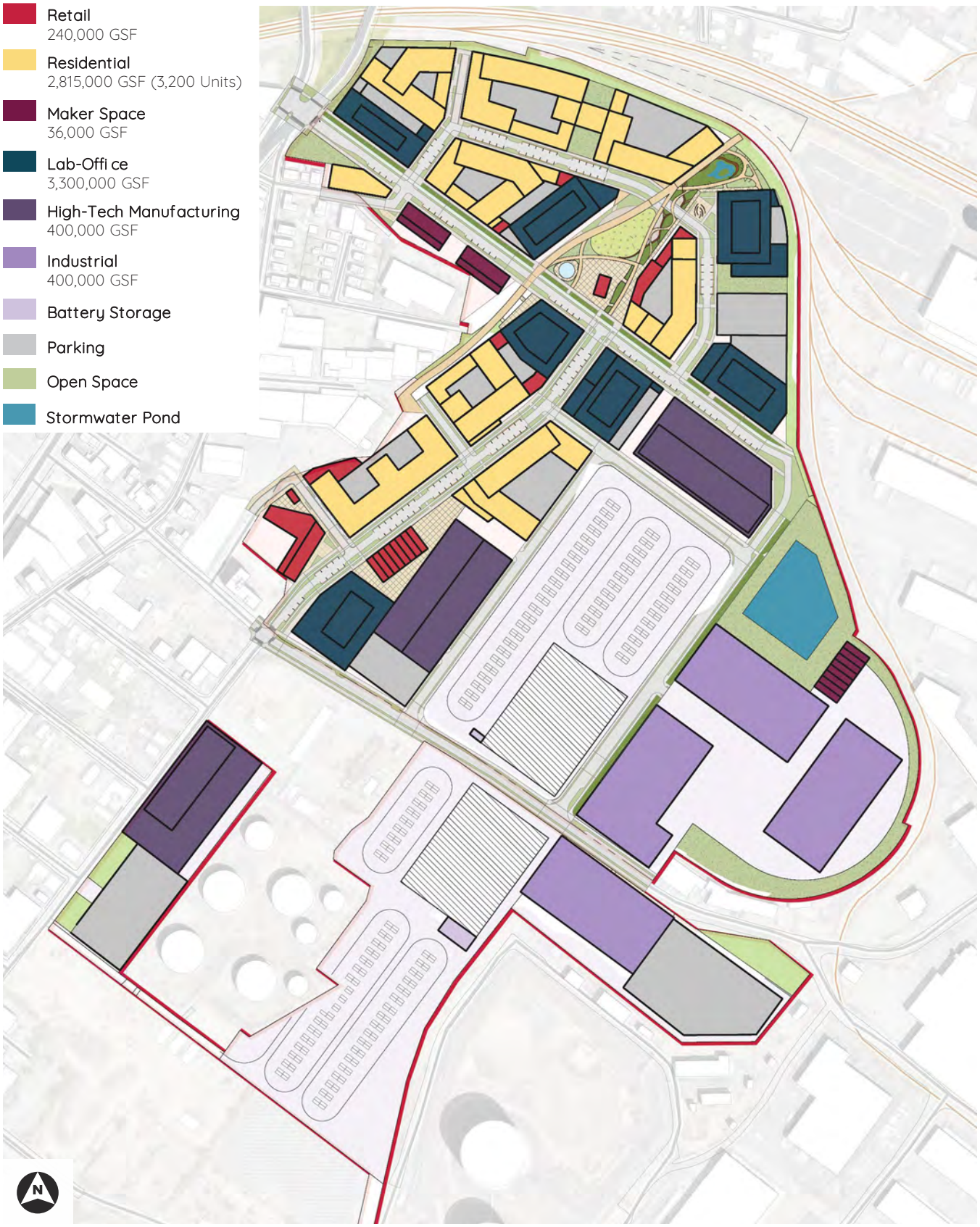


Figure 1.6: Proposed Master Plan

Everett Docklands Innovation District | 52 Beacham Street, Everett, MA 02149



2

Request for Phase 1 Waiver

This Chapter demonstrates how the Phase 1 Project meets the requirements at 301 CMR 11.11 for a waiver from certain review requirements, including a Phase 1 Waiver. The sections below present the applicable standards and describe how the Phase 1 Project meets each one.

2.1 Standards for all Waivers

As per 301 CMR 11.11(1) – Standards for all Waivers, the Secretary may waive any provision or requirement in 301 CMR 11.00 not specifically required by MEPA and may impose appropriate and relevant conditions or restrictions, provided that the Secretary finds that strict compliance with the provision or requirement would meet certain provisions, as follows:

› (a) result in an undue hardship for the Proponent, unless based on delay in compliance by the Proponent;

- The viability of the Phase 1 Project is based on its ability to meet deadlines set by ISO New England (ISONE), which is the independent, not-for-profit corporation responsible for keeping electricity flowing across the six New England states. ISONE requires that the Battery Energy Storage System (BESS) be operational by March 2028. If this deadline is not met, then the Phase 1 Proponent could lose its ISONE queue position, the existing interconnection agreement could be terminated, and the BESS project would not go forward.
- Under Chapter 8 of the Acts of 2021 ("An Act Creating a Next-Generation Roadmap For Massachusetts Climate Policy"), Massachusetts (a) must achieve stringent, economy-wide greenhouse gas (GHG) reduction limits of at least 50% in 2030 and at least 75% in 2040; (b) must achieve net-zero in 2050; and (c) must set emissions limits every five years and sub-limits for six sectors of the state economy. The statute adopts a procurement goal of 5,600 MW of offshore wind (OSW) by June 30, 2027, with the intent of having most of these MWs in operation by 2030 or soon thereafter. The Phase 1 Project is a critical project that will help the Commonwealth achieve these goals. Were it to be terminated as a result of a permitting delay, the Commonwealth would lose up to 700± MW of energy storage capacity and infrastructure that would otherwise facilitate off-shore wind development.
- To meet the ISONE deadline, the Phase 1 Proponent must begin construction by the first quarter of 2026. Prior to construction, a lengthy permitting process must be completed

that includes obtaining a Chapter 91 license from MassDEP and a Section 72 order for the transmission line and a comprehensive zoning exemption from the Department of Public Utilities (DPU). Those processes cannot be completed until MEPA review of the Phase 1 Project is complete.

- Delays that prevent the Phase 1 Proponent from meeting the ISONE deadline not only put the Commonwealth at risk of failing to meet its milestones, but also curtail the Phase 1 Proponent's efforts to undertake additional energy storage system projects elsewhere in the Commonwealth. Given the compressed construction timeline, the Phase 1 Proponent has dedicated substantial resources to environmental and geotechnical assessment, engineering design, permitting, and other efforts necessary for meeting ISONE's schedule.
- To enable the Phase 1 Proponent to meet the ISONE-imposed deadline, the owner of the Site (and Master Plan Proponent), Everett Landco, LLC, has directed substantial resources to preparing the Site for redevelopment, including expedited remediation of the Phase 1 Project Site in compliance with M.G.L. c. 21E.

› (b) not serve to avoid or minimize Damage to the Environment.

- The Phase 1 Project does not exceed any of the MEPA review thresholds at 301 CMR 11.03, and therefore will not result in Damage to the Environment. Both the Secretary of the Executive Office of Energy and Environmental Affairs and the Energy Facility Siting Board have determined that a BESS is not an "electric generating facility," and therefore does not exceed the MEPA review thresholds at 301 CMR 11.03(7)(a)1 or 301 CMR 11.03(7)(b)4. Further, on March 8, 2024, MassDEP determined that that BESS is considered a water-dependent use under Chapter 91, and therefore does not exceed the MEPA review thresholds at 301 CMR 11.03(3)(a)5 or 301 CMR 11.03(3)(b)5.

2.2 Determinations for Phase One Waiver

As per 301 CMR 11.11(4) – Determinations for Phase One Waiver, in the case of a partial waiver of a mandatory EIR review threshold that will allow the Phase 1 Proponent to proceed with phase one of the Project prior to preparing an EIR, the Secretary shall base the finding required in accordance with 301 CMR 11.11(1)(b) on a determination that:

› (a) the potential environmental impacts of phase one, taken alone, are insignificant [i.e., the project does not exceed an EIR impact threshold];

- The Phase 1 Project is located within the Master Plan Project Site boundary and is therefore being reviewed under MEPA to address any possible concern with segmentation under 301 CMR 11.01(2)(c). However, it does not on its own exceed any MEPA thresholds as described in Section 2.1 above.

› (b) ample and unconstrained infrastructure facilities and services exist to support phase one;

- The Phase 1 Project will occupy two parcels: Parcel C immediately north of Beacham Street and Parcel A immediately to the south of Beacham Street. Each parcel has frontage on Beacham Street, which serves as access for vehicles and for utilities.
- There is ample roadway infrastructure and capacity to support the very limited traffic generated by the Phase 1 Project. Phase 1 includes a rough access road on the east side of Parcel C that intersects with Beacham Street and another rough access path on the

southwest side of Parcel A that intersects Robin Street. These roads serve as secondary/ emergency access and do not impose additional burdens on public infrastructure.

- The Phase 1 Project's electrical needs are modest. It requires no capacity upgrades to allow for electrical interconnections.
- The Phase 1 Project does not require use of the municipal stormwater system. However, the Phase 1 Proponent is working with the City of Everett to explore the possibility of directing stormwater from portions of the Site, including Parcel A, to the municipal storm drain in Robin Street.
- The Phase 1 Proponent has confirmed that there is ample space within the existing public ways to accommodate the underground electric duct bank that will connect the facility to the Eversource Substation 250.

› (c) the Project is severable, such that phase one does not require the implementation of any other future phase of the Project or restrict the means by which potential environmental impacts from any other phase of the Project may be avoided, minimized or mitigated; and

- The viability of the Phase 1 Project does not depend on other phases of the Master Plan Project. As noted above, the primary vehicular and utility access to the Phase 1 Project Site is Beacham Street, an existing public way. The Phase 1 Project will discharge to an existing stormwater conduit with later phases. The existing capacity within the conduit is sufficient for Phase I. Later phases will make on-site stormwater improvements to ensure sufficient capacity in the conduit when they are developed. This will not impact the Phase 1 Project.
- Issuance of a Phase 1 Waiver would not affect any impact minimization or mitigation activities that may be associated with other phases of the Master Plan Project.

› (d) the Agency Action on phase one will contain terms such as a condition or restriction in a Permit, contract or other relevant document approving or allowing the Agency Action, or other evidence satisfactory to the Secretary, so as to ensure due compliance with MEPA and 301 CMR 11.00 prior to Commencement of any other phase of the Project.

- The Agency Actions required for the Phase 1 Project pertain only to that phase of development: different Agency Actions are required for other phases of the Master Plan Project. With respect to the Phase 1 Project, the DPU review process, in particular, is robust and requires detailed submissions and testimony on the Phase 1 Project. Among other things, the DPU examines the need for, and public benefits of, the proposed BESS, as well as the environmental impacts and any other impacts of the proposed BESS. The Secretary's Phase 1 Waiver decision may require that appropriate conditions be included in the Phase 1 Project's DPU approvals and/or Chapter 91 license.

3

Phase 1 Alternatives Analysis

This chapter provides an overview of potential development alternatives for the Phase 1 Project. It describes each project alternative, including the No-Build Alternative as the baseline for comparison and assessment of potential environmental impacts. This chapter also provides a comparison of potential environmental impacts and an evaluation of the alternatives.

3.1 Summary of Alternatives

The Eversource Substation 250 is among the most favorable locations for an interconnection of offshore power generation into the Boston load pocket because it has the required input and output capacity needed to handle the approximately 700 MW anticipated to be delivered from a wind energy project, designed to serve the current and modeled generating capacity. All of the Project alternatives would connect to this facility. The following sections provide a description of these alternatives.

3.1.1 No-Build Alternative

The No-Build Alternative would maintain the existing conditions at the Phase 1 Project Site, leaving in place the existing vacant land. Although the No-Build Alternative would not result in any new impacts (and therefore no Damage to the Environment), the No-Build Alternative is not considered as a viable option because it would not meet the Project goal of providing energy storage to meet peak demand.

3.1.2 Off-Site Alternative 1

Alternative 1 comprises a BESS and associated infrastructure located on approximately 5.0 acres of land under various ownership at 75-89 Norman Street in Everett and 0 Corporation Way in Medford bordering the Malden River. The facility would have a storage capacity of 400 MWs and would connect to the Eversource Substation 250 via an approximately 7,100-linear foot underground electric duct bank within existing public rights-of-way. An approximately 2,500 sf building would provide office space for on-site employees. Alternative 1 would impact 5.0 acres of formerly filled tidelands and would require a Chapter 91 License for a water-dependent use. It would not result in Damage to the Environment.

3.1.3 Off-Site Alternative 2

Alternative 2 comprises a BESS and associated infrastructure located at the Medford Street Pier at 100 Terminal Street in Boston's Charlestown neighborhood. The facility would include a substation and 2,500-sf building on approximately 1.25 acres of land. The BESS would be located on a pile-held floating barge with an overall footprint of 122,510 sf (2.8 acres). It would have a storage capacity of 400 MWs and would connect to the Eversource Substation 250 via a new underwater duct bank under the bed of the Mystic River. The barge would have a 22-ft hull depth and would require approximately 98,000 cubic yards of dredging, which would impact approximately 132,000 sf of Land Under Ocean. The proposed building would be located within Land Subject to Coastal Storm Flowage. The project would require an Order of Conditions, a Chapter 91 license, a Section 401 Water Quality Certification, and a USACE Section 404/10 permit. This alternative is the only one that would result in Damage to the Environment, exceeding the ENF review threshold at 301 CMR 11.03(3)(b)1.f. *Provided that a Permit is required, alteration of ½ or more acres of any other wetlands*.

3.1.4 Preferred Alternative (Phase 1 Project)

As described in Chapter 1, Section 1.2.1, the Preferred Alternative would be located on 20.4 acres of land at Beacham Street, 11.1 acres of which are within the Mystic River DPA. The Preferred Alternative includes a BESS and associated infrastructure. The facility would have a storage capacity of 700± MWs and would connect to the Eversource Substation 250 via an approximately 2,900-linear foot underground electric duct bank within existing public rights-of-way. The Preferred Alternative would impact 0.53 acres of formerly filled tidelands and would require a Chapter 91 License for a water-dependent use. It would not result in Damage to the Environment.

3.2 Quantitative Comparison of Alternatives

Table 3-1 below compares the impacts of each alternative. Please note that the Alternative 1 and 2 sites are currently 100 percent impervious and would remain so post-development. Under the previously existing condition the Preferred Alternative Site was entirely impervious. The Site will temporary be pervious at the completion of remediation activities. The Build condition will result in a 4-acre reduction in impervious cover as compared to the previously existing condition.

Table 3-1 Impact Comparison

	Off-Site Alternative 1	Off-site Alternative 2	Preferred Alternative
Total Site Area (acres)[a]	5.0	4.05	20.4
New Land Alteration (acres)	0	0	0
New Impervious Area (acres)	0	0	0
Wetlands (sf)	0	132,000	0
Waterways: Filled Tidelands (acres)	5.0	1.25	0.53
Waterways: Flowed Tidelands (acres)	0	2.8	0
Daily Vehicle Trips (Unadjusted)	8	8	12
Parking Spaces	5	5	10
Water Use (gpd)	207	207	413
Wastewater Generation (gpd)	188	188	375

a. Does not include below-grade duct bank.

3.3 Qualitative Comparison of Alternatives

The following criteria were developed to aid in the selection of a Preferred Alternative:

1. **Feasible Connection** – It must be feasible to connect the facility to the Eversource Substation 250, limiting the length to the maximum extent practicable.
2. **Adequate Area** – There must be an area of a size that can support the necessary infrastructure for a 700 MW/2800 MWh BESS.
3. **Available for Use** – The site must be available to be used for a BESS.

Table 3-2 below provides a qualitative summary of the extent to which each evaluated alternative is anticipated to meet these criteria.

Table 3-2 Selection Criteria Comparison

Phase 1 Project Criteria	Off-Site Alternative 1	Off-Site Alternative 2	Preferred Alternative
1. Feasible Connection	✓✓	✓	✓✓✓
2. Adequate Land Area	×	×	✓✓✓
3. Available for Use	×	✓✓✓	✓✓✓

× = Does not meet Phase 1 Project Criteria
✓ = Somewhat meets Phase 1 Project Criteria
✓✓ = Significantly meets Phase 1 Project Criteria
✓✓✓ = Fully meets Phase 1 Project Criteria

3.4 Alternative Selection

Alternative 1 was not selected because it is not large enough to support the desired use, and because the City of Everett determined that the use would be inconsistent with plans for the neighborhood.

Alternative 2 was not selected because it is not large enough to support the desired use; permitting at that location is more complex than the other locations; and it is not as commercially viable as the other alternatives.

Compared to other alternatives, the Preferred Alternative best meets the selection criteria and has been selected to move forward through design and permitting.

4

Environmental Justice and Public Health

This chapter identifies the Environmental Justice (EJ) populations located within one mile of the Master Plan Project Site, assesses existing public health conditions, assesses whether EJ communities are reasonably likely to be adversely affected by the Phase 1 Project, and describes proposed measures to enhanced public involvement, in compliance with MEPA's *Protocol for Public Involvement Protocol for Environmental Justice Populations* and *Interim Protocol for Analysis of Project Impacts on Environmental Justice Populations* (together, the "EJ Policy").

4.1 Key Findings

- The Master Plan Project Site includes a portion of one Census Block Group comprising an EJ Population (noting that there are no residential buildings within that area).
- Within one mile of the Master Plan Project Site (the "Designated Geographic Area" (DGA)), there are 55 EJ Populations;
- There are census blocks within the Master Plan Project's DGA wherein at least 5 percent of residents identify as having Limited English Proficiency, and who primarily speak one of the following languages at home: Arabic, Chinese, Spanish/Spanish Creole, French Creole and Portuguese/Portuguese Creole;
- Within 5 miles of the Master Plan Project Site there are 598 EJ Populations;
- Phase 1 Project-related impacts on EJ populations are generally temporary construction period impacts, which will be minimized and mitigated through implementation of a Construction Management Plan (CMP) to be developed in coordination with the City of Everett.
- Community engagement began during the pre-development phase as part of the site remediation process (see Chapter 10, *Pre-Development Remediation Overview*) and the Project Proponents have created outreach plans for future engagement.
- Community involvement strategies have included holding public meetings, meeting with individual community groups, providing information on the Project websites, and distributing the EJ screening form to the list of Tribes and Community Based Organizations (CBOs) provided by the MEPA office.
- Information about the Phase 1 Project and associated community outreach can be found at: https://www.trimountenergy.com/.

› Information about the Master Plan Project and associated community outreach will be provided on a forthcoming website.

4.1.1 Regulatory Context

EEA defines EJ as "the equal protection and meaningful involvement of all people and communities" regarding environmental issues, including the equitable allocation of benefits and burdens. The EJ Policy builds upon Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, which "directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law."

In accordance with the EJ Policy, the Proponent consulted EEA's Massachusetts 2020 Environmental Justice Populations Map (the "EJ Maps Viewer") to identify the presence of EJ populations as an initial screening tool. The EJ Maps Viewer displays information from the 2020 U.S. Census (EJ block groups) and the 2015 American Community Survey 5-Year Estimates (for English isolation criteria).

EJ Populations in Massachusetts are defined as:

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

B. A geographic portion of a neighborhood designated by the Secretary as an environmental justice population in accordance with law.

4.2 Identification of Environmental Justice Populations

In compliance with the *MEPA Protocol for Public Involvement Protocol for Environmental Justice Populations* (the "Public Involvement Protocol"), effective January 1, 2022, this section identifies the EJ populations in the vicinity of the Master Plan Project Site.

The area of study for EJ impacts for the Master Plan Project is the area within a one-mile radius of the Master Plan Project Site boundary (the DGA) because the Master Plan Project is not expected to exceed MEPA Review Thresholds related to air quality and is not expected to generate 150 or more average daily diesel truck trips over the course of one year. Refer to Figure 4.1 for the EJ populations within both the one- and five-mile radii of the Master Plan Project Site.

4.2.1 Characteristics of Environmental Justice Populations

A portion of the Master Plan Project Site is located within an EJ census tract with a Minority population. There are 55 EJ populations located within the DGA that meet the EJ criteria for Minority Population, Minority and Income, Minority and English Isolation, and Minority, Income

and English Isolation. Table 4-1 below provides a breakdown of census block groups and tracts by EJ category within the DGA. Appendix A provides the full breakdown of census tracts that meet EJ criteria within the 5-mile radius of the Master Plan Project Site.

Table 4-1 Environmental Justice Populations within 1-Mile of the Master Plan Project Site

Census		EJ Category	Town, County	Median Household Income	Total Minority Population	Households with English Isolation
Block Group	Tract					
2	3398.04	Minority	Medford, Middlesex County	$143,109	46.4%	0.0%
1	3398.03	Minority	Medford, Middlesex County	$96,250	59.3%	9.5%
2	3398.03	Minority	Medford, Middlesex County	$90,885	45.4%	13.7%
3	3414	Minority	Malden, Middlesex County	$77,126	61.3%	22.0%
5	3414	Minority	Malden, Middlesex County	$ -	60.1%	20.7%
2	3421.01	Minority	Everett, Middlesex County	$135,781	62.3%	2.4%
4	3421.01	Minority and English isolation	Everett, Middlesex County	$99,181	60.6%	24.7%
4	3421.02	Minority	Everett, Middlesex County	$58,264	69.7%	17.3%
1	3422.01	Minority and income	Everett, Middlesex County	$ 45,885	69.7%	3.8%
2	3422.01	Minority and English isolation	Everett, Middlesex County	$77,202	65.1%	50.0%
1	3423.01	Minority	Everett, Middlesex County	$89,250	61.2%	14.3%
2	3423.01	Minority	Everett, Middlesex County	$58,289	66.4%	13.5%
2	3423.02	Minority	Everett, Middlesex County	$78,013	63.2%	19.5%
1	3424.01	Minority	Everett, Middlesex County	$71,250	64.7%	0.9%
3	3424.01	Minority	Everett, Middlesex County	$89,387	69.8%	1.2%
1	3424.02	Minority	Everett, Middlesex County	$135,500	58.3%	1.9%
3	3424.02	Minority and English isolation	Everett, Middlesex County	$65,852	57.6%	37.6%
1	3425.01	Minority and English isolation	Everett, Middlesex County	$95,515	68.9%	27.7%
1	3425.02	Minority and English isolation	Everett, Middlesex County	$94,500	65.0%	27.8%
2	3425.02	Minority	Everett, Middlesex County	$65,362	74.4%	0.0%
1	3426	Minority	Everett, Middlesex County	$80,603	74.5%	6.1%
2	3426	Minority, income and English isolation	Everett, Middlesex County	$51,108	74.3%	32.7%
3	3426	Minority	Everett, Middlesex County	$58,849	68.1%	13.1%
1	3501.06	Minority	Somerville, Middlesex County	$109,234	43.7%	8.9%
1	3501.07	Minority	Somerville, Middlesex County	$107,315	51.1%	1.2%
1	3423.02	Minority	Everett, Middlesex County	$66,174	61.5%	10.4%
1	3421.02	Minority and income	Everett, Middlesex County	$49,299	70.0%	22.4%
3	3422.01	Minority and English isolation	Everett, Middlesex County	$70,370	69.5%	27.2%
4	3422.01	Minority	Everett, Middlesex County	$95,197	66.8%	20.4%
3	3423.02	Minority	Everett, Middlesex County	$59,542	68.7%	20.1%

Census		EJ Category	Town, County	Median Household Income	Total Minority Population	Households with English Isolation
Block Group	Tract					
2	3425.01	Minority and income	Everett, Middlesex County	$55,182	69.0%	4.0%
2	3424.01	Minority, income and English isolation	Everett, Middlesex County	$33,806	72.0%	30.7%
2	3424.02	Minority	Everett, Middlesex County	$93,850	60.5%	14.2%
1	3514.03	Minority and English isolation	Somerville, Middlesex County	$66,964	48.4%	31.5%
1	402	Minority and income	Boston, Suffolk County	$16,250	81.3%	12.3%
2	402	Minority	Boston, Suffolk County	$ 179,266	25.1%	3.5%
1	403	Minority	Boston, Suffolk County	$-	71.8%	4.3%
1	404.01	Minority	Boston, Suffolk County	$86,734	29.3%	6.5%
1	406	Minority	Boston, Suffolk County	$127,344	27.7%	0.0%
2	501.01	Minority, income and English isolation	Boston, Suffolk County	$22,910	76.4%	37.5%
1	408.01	Minority and income	Boston, Suffolk County	$12,116	86.8%	24.2%
2	408.01	Minority and income	Boston, Suffolk County	$31,151	82.7%	8.3%
3	509.01	Minority, income and English isolation	Boston, Suffolk County	$37,333	73.8%	43.4%
1	1602	Minority and English isolation	Chelsea, Suffolk County	$61,679	92.7%	45.7%
2	1602	Minority, income and English isolation	Chelsea, Suffolk County	$40,450	93.9%	59.0%
4	1602	Minority and income	Chelsea, Suffolk County	$51,827	82.6%	21.6%
1	1603	Minority	Chelsea, Suffolk County	$78,427	48.9%	20.5%
3	1604	Minority	Chelsea, Suffolk County	$105,880	45.1%	6.4%
4	1604	Minority and income	Chelsea, Suffolk County	$25,125	89.9%	22.4%
1	1605.01	Minority	Chelsea, Suffolk County	$75,156	90.4%	13.9%
3	1605.01	Minority	Chelsea, Suffolk County	$101,875	90.6%	16.3%
2	1603	Minority and income	Chelsea, Suffolk County	$51,429	42.5%	17.7%
1	1604	Minority, income and English isolation	Chelsea, Suffolk County	$47,330	87.5%	36.5%
2	1604	Minority, income and English isolation	Chelsea, Suffolk County	$35,069	90.2%	52.9%
1	1606.02	Minority	Chelsea, Suffolk County	$62,708	78.7%	20.7%

Notes Data is from EEA's EJ Maps Viewer. 2020 environmental justice block groups data was obtained from https://www.mass.gov/info-details/massgis-data-2020-environmental-justice-populations. Languages spoken in Massachusetts data was obtained from the American Community Survey 2011-2015 5-year estimates, Table B16001.

4.2.1.1 MEPA Language Criteria

According to the "Languages Spoken in Massachusetts" tab of MEPA's EJ Maps Viewer, there are blocks within the Master Plan Project's DGA with Limited English Proficiency (LEP) populations. LEP refers to anyone aged 5 or older who reported speaking English less than "very well," as classified by the U.S. Census Bureau. These populations report speaking other languages at home including Spanish/Spanish Creole, French Creole (Haitian), Portuguese/Portuguese Creole, Chinese, and

Arabic. Appendix A provides the full breakdown of census tracts, within the 5-mile radius of the Master Plan Project Site, with more than five percent of the populations comprising LEP individuals.

The MEPA EJ Screening Form was translated into Spanish, Haitian Creole, Portuguese, Chinese, and Arabic, and distributed to the EJ CBO list on July 1, 2024. The Proponent will provide oral interpretation upon request at the MEPA Site Consultation public meeting and any subsequent public/community meetings held during the MEPA review process to ensure meaningful community engagement.

4.3 Assessment of Existing Public Health Conditions

4.3.1 Department of Public Health Vulnerable Health Criteria

To understand potential health vulnerabilities faced by EJ populations within the DGA, Vulnerable Health EJ Criteria, as defined by the Massachusetts Department of Public Health EJ Tool (the "DPH EJ Tool"),[1] were identified. The DPH EJ Tool provides information at the community level (defined as municipalities). These criteria include four environmentally related health indicators to determine populations that may have higher than average rates of environmentally related health outcomes, including childhood asthma, heart attack, elevated blood lead, and low birth weight. The latter two health outcomes are also provided at the census tract level.

According to the DPH EJ Tool, in the City of Everett the rates of childhood asthma and heart attack are statistically significantly higher than the statewide averages. Both city-wide and in the census tract within which the Master Plan Project Site is located, the rate of elevated blood lead prevalence is not statistically different from the statewide average, and the rate of low birthweight is not statistically significantly different from the statewide average.

4.3.1.1 Potential Sources of Pollution

The DPH EJ Tool was also consulted to identify potential sources of pollution that may have impacted, or may currently impact, EJ populations within the DGA. These include the following Major Air and Waste Facilities:

- Large Quantity Toxic Users – 5
- Large Quantity Generators – 22
- MassDEP Tier Classified 21E Sites – 28
- MA Tier II Facilities – 32
- MassDEP Sites with Activity and Use Limitations (AUL) – 97
- MassDEP Public Water Suppliers - 1
- Wastewater Treatment Plants – 4
- Underground Storage Tanks – 20
- EPA Facilities (Toxic Release Inventory Sites) – 29

[1] Commonwealth of Massachusetts. 2021. *MA DPH Environmental Justice Tool.* https://matracking.ehs.state.ma.us/Environmental-Data/ej-vulnerable-health/environmental-justice.html

Under previously existing conditions (prior to site remediation), the Master Plan Project Site was a Tier II 21E site (RTN 3-0000310), and is included in the count above.

4.3.2 U.S. EPA EJ Screen

The U.S. Environmental Protection Agency's (EPA) "EJ Screen"[2] was also reviewed to identify existing public health conditions surrounding the Master Plan Project Site within the DGA (the "Project Buffer Area"). The EJ Screen report provides a percentile ranking by census block group compared against statewide averages for 12 environmental indicators (listed below).[3] The report generated by this tool (included in Appendix A) indicates the following percentile rankings for the Project Buffer Area:

1. 41st percentile for PM2.5
2. 36th percentile for Ozone
3. 86th percentile for NATA Diesel PM
4. 92nd percentile for Nitrogen Dioxide (NO_2)
5. 77th percentile for Toxic Releases to Air
6. 95th percentile for Traffic Proximity (count of vehicles per day at major roads divided by the distance)
7. 20th percentile for Lead Paint Indicator (percent of housing built before 1960)
8. 41st percentile for Superfund Proximity (count of National Priorities List/Superfund sites divided by the distance)
9. 81st percentile for RMP Proximity (count of facilities with Risk Management Program divided by the distance)
10. 94th percentile for Hazardous Waste Proximity (count of transfer, storage, and disposal facilities (TSDFs) and Large Quantity Generators (LQGs) divided by the distance)
11. 85th percentile for Underground Storage Tanks (USTs)
12. 93rd percentile for Wastewater Discharge Indicator (toxicity-weighted concentration/meter)
13. 0th percentile for Drinking Water Non-Compliance

The Buffer Report (Appendix A) indicates that the indicators listed below were shown to be at or above the 80th percentile of the statewide average for EJ populations within the DGA. It is useful to note that the City of Everett and many of its bordering communities are at or above the 80th percentile for many of the pollution indicators above. Areas that are well-served by major roadways tend to exceed the threshold for diesel PM, NO_2 and traffic proximity. It is also important to note

[2] United States Environmental Protection Agency. 2024 version. EJScreen. Retrieved: 07/21/24 from https://ejscreen.epa.gov/mapper/

[3] EJScreen was developed by EPA to highlight places that may be candidates for further review, analysis, or outreach to support the agency's environmental justice work. The EPA notes that the environmental indicators are only screening-level proxies for actual exposures or health risks, and that screening-level results do not, by themselves, determine the existence or absence of environmental justice concerns in a given location; do not provide a risk assessment; and have other significant limitations. EJScreen is not designed to take into account quantifiable cumulative or synergistic effects. https://www.epa.gov/ejscreen/purposes-and-uses-ejscreen Accessed 07/21/24.

that Massachusetts has much stronger environmental regulations compared to the rest of the U.S. This is demonstrated by the PM2.5 indicator, where the Master Plan Project's Buffer Zone is over 41st percentile for the state but only in the 9th percentile for the country.

- **NATA[4] Diesel PM** – While the Diesel Particulate Matter (PM) indicator in EJ Screen measures concentrations rather than cancer risk, the EPA's *Health Assessment Document for Diesel Engine Exhaust (Final 2002)* concludes that "long-term (i.e., chronic) inhalation exposure is likely to pose a lung cancer hazard to humans, as well as damage the lung in other ways depending on exposure. Short-term (i.e., acute) exposures can cause irritation and inflammatory symptoms of a transient nature, these being highly variable across the population…. [E]vidence for exacerbation of existing allergies and asthma symptoms is emerging."[5] It is important to remember that the air toxics data presented in the EJ Screen report provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations.

  The Diesel PM concentration in the Project Buffer Area (0.301 µg/m^3) is higher than both the average concentrations in the state (0.176 µg/m^3) and in the USA (0.191 µg/m^3).

- **Nitrogen Dioxide (NO_2)** – This indicator measures how much surface level NO_2 human beings might be exposed to, calculated as the average annual levels expressed as parts per billion by volume. The burning of fuel, usually from emissions from cars, trucks and buses, power plants, and off-road equipment, is the primary source of NO_2 in the air. NO_2 reacts with other chemicals in the air to form both particulate matter and ozone.

  Due to the Master Plan Project Site's urban setting and proximity to industrial facilities (including the former Mystic Power Plant), the value for this indicator in the Project Buffer Area (15 ppbv) is higher than the state average (8.8. ppbv) and the USA average (7.8 ppbv).

- **Traffic Proximity** – This indicator measures the count of vehicles (AADT, avg. annual daily traffic) at major roads within 10 kilometers, divided by distance in kilometers. Proximity to roads can provide access to jobs, health care, food, recreational opportunities, and other benefits. However, proximity to motor vehicle traffic is associated with increased exposures to ambient noise, toxic gases and particulate matter including diesel particulates. Any indicator of residential proximity addresses exposures relevant to the residences within a block group and would not capture most exposures that occur away from the home, such as at work, at school or during a commute.

  The value for this indicator in the Project Buffer Area is 17,000,000, while the state average is 6,100,000, and the USA average is just 1,700,000.

- **RMP Facility Proximity** – This indicator measures the count of facilities with RMPs (Potential Chemical Accident Management Plans) within 10 kilometers, divided by distance in

[4] The National Air Toxics Assessment (NATA) has been replaced with AirToxScreen. AirToxScreen calculates concentration and risk estimates from a single year's emissions data using meteorological data for that same year. The risk estimates assume a person breathes these emissions each year over a lifetime (or approximately 70 years). The EPA cautions that AirToxScreen results are best applied to larger areas – counties, states and the nation. Results for smaller areas, such as a census tract, are best used to guide follow-up local studies. AirToxScreen assessments should not be used: to pinpoint specific risk values in small areas such a census tract; to characterize or compare risks at local levels (such as between neighborhoods); to characterize or compare risks between states; to examine trends from one assessment year to another; as the sole basis for risk reduction plans or regulations; to control specific sources or pollutants; or to quantify benefits of reduced air toxics emissions. https://www.epa.gov/AirToxScreen/airtoxscreen-overview. Accessed 5/10/22.

[5] https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=29060. Accessed 05/28/22.

kilometers. The goal of an RMP is to prevent accidental releases of substances that can cause serious harm to the public and to mitigate the severity of releases that do occur.

Due to the proximity of the Master Plan Project Site to industrial facilities, the RMP facility proximity (0.66/km distance) is higher than the state average (0.37/km distance) and the USA average (0.57/km distance).

- **Hazardous Waste Proximity** – This indicator identifies the presence of facilities that are permitted as hazardous waste management facilities (TSDFs and LQGs). As with all proximity-based indicators, proximity alone may not represent any actual risk or exposure.

  Due to the density of the Master Plan Project Site's urban location, there are more proximate TSDFs and LQGs (40/km distance) than the state average (11/km distance).

- **Underground Storage Tanks –** Due to the industrial nature of the surrounding area, this indicator is within the 85th percentile, which indicates there are more nearby USTs (7/km^2 distance) than both the state (3.3/km^2 distance) and national (3.6/km^2 distance) averages.

- **Wastewater Discharge Indicator** – This indicator utilizes pollutant loadings from the Discharge Monitoring Report (DMR) Loading Tool along with the Risk-Screening Environmental Indicators (RSEI) model to estimate concentrations of pollutants in downstream water bodies and derive a toxicity-weighted concentration within 500 meters, divided by distance in kilometers. Water pollutants can have adverse human health or ecological effects depending on concentration in the water, exposure to the water, toxicity of the specific chemical, and other factors. People may be exposed to the discharged pollutants either directly or through indirect pathways.

  The value for this indicator in the Project Buffer Area is 350, while the state average is 760 and the USA average is 700,000.

4.4 Analysis of Likely Phase 1 Impacts on Environmental Justice Populations

This section examines how the potential impacts associated with the Phase 1 Project may affect EJ populations versus non-EJ populations. The Phase 1 Project will not result in Damage to the Environment, nor will it generate GHG emissions. When operational, it will generate negligible traffic and wastewater, and use negligible amounts of water. Construction period impacts will be minimized and mitigated to the maximum extent practicable through implementation of a Construction Management Plan (see Chapter 11 for construction management plan details).

4.4.1 Climate Change Vulnerability

The Proponent utilized the Resilient Massachusetts Action Team (RMAT) Tool to determine potential climate risks to the Phase 1 Project Site and its immediate surroundings. The RMAT Tool identified the Phase 1 Project Site as having a moderate exposure to coastal flooding and high exposure to extreme precipitation-urban flooding and extreme heat (Appendix B). As noted in the Interim Protocol for Analysis of Project Impacts on Environmental Justice Populations (the "Project Impacts Protocol"), high-risk ratings could indicate elevated climate risks for EJ populations that immediately surround the Phase 1 Project. The Phase 1 Project Site itself is not vulnerable to flooding from the 2070 1% annual chance event (ACE) flood. The stormwater management system will adequately manage on-site stormwater from the 2070 50-year

precipitation event. The Project will not exacerbate climate impacts to the surrounding areas. Refer to Chapter 9, *Climate Change Adaptation and Resiliency*, for additional details.

4.4.2 Air Quality

Using the MEPA Emissions Footprint Estimation Tool required by the Public Involvement Protocol for Environmental Justice populations, without mitigation, the Phase 1 and the Master Plan Project would be estimated to generate 14 tons per year (tpy) and 86,150 tpy of stationary source GHG emissions, respectively. The Master Plan Project GHG emissions exceed the 2,000 tpy threshold requiring compliance with the MEPA GHG Policy. The associated stationary source GHG emissions assessment will be provided in the subsequent DEIR filing. The Proponent will also analyze Project-related mobile source air quality emissions with and without mitigation, as required, as part of the DEIR. For more detail about air quality related impacts refer to Chapter 8, *Phase I Greenhouse Gas and Air Quality*.

4.4.3 Traffic

The Phase 1 Project is anticipated to generate negligible traffic when operational (approximately 12 average daily trips) and will not adversely affect EJ populations.

4.4.4 Temporary Construction Period

Potential impacts associated with construction activities at the Phase 1 Project Site are related to air quality, noise, stormwater runoff, transportation, and site contamination. All construction impacts will be temporary and will be mitigated through a Construction Management Plan (CMP) to be developed in coordination with the City of Everett's Department of Transportation and Mobility. Construction related impacts will be mitigated through use of Best Management Practices (BMPs), which will be designed and implemented in compliance with federal, state, and local rules and regulations. Please see Chapter 11, *Phase 1 Construction Period Impacts*. Impacts to EJ Populations are specifically addressed in Section 11.10.

4.4.5 Project Benefits to EJ Populations

As described more fully in Sections 1.2 and 1.3 of Chapter 1, *Project Summary*, the Master Plan Project aims to transform a historically important industrial site into a cleaner, healthier, more sustainable, and more resilient place by revitalizing a former brownfield site, providing open space and pedestrian and bike-friendly streets, and enhancing transit links, all of which will directly benefit the nearby EJ populations. The Phase 1 Project will replace the old fossil-fuel-based infrastructure with cleaner, sustainable energy infrastructure to strengthen the Commonwealth's energy grid and assist in the clean energy transition, which will also directly benefit nearby EJ populations whose homes are powered by Eversource.[6]

[6] When wind energy is added to the electrical grid, it is typically comingled with electricity from other sources, such as fossil fuels, nuclear, hydro, and solar power. All sources of electricity generation contribute to the overall pool of electricity in the grid, which is then delivered to homes, businesses, and other consumers.

4.5 Proposed Measures to Enhance Public Involvement

The Proponents have strong track records of community engagement and inclusion that began during the previous site remediation effort (see Chapter 10, *Pre-Development Remediation*). They have identified specific neighborhoods, residents or other communities surrounding the Project Sites that may be affected and have developed targeted outreach and engagement strategies directed at such areas as described below. The Proponents are committed to conducting meaningful outreach and gaining feedback on the Project by focusing on the following guiding principles:

- **Accessibility:** Ensure that meeting venues are ADA compliant and provide accommodations such as wheelchair access, sign language interpreters, and assistive listening devices upon request;
- **Culturally-Sensitive Approach:** Respect cultural norms and preferences when engaging with diverse communities. Seek guidance from community leaders and cultural liaisons to ensure inclusivity and sensitivity in outreach efforts;
- **Feedback Mechanisms:** Establish multiple channels for stakeholders to provide feedback, including online surveys, dedicated email addresses, and public comment periods, to accommodate different communication preferences and schedules; and
- **Continuous Engagement:** Commit to ongoing communication and engagement throughout the project lifecycle, providing updates on progress, addressing concerns, and soliciting input from the community at key milestones.

4.5.1 Phase 1 Project

The Phase 1 Project Proponent is committed to a comprehensive community engagement process. They are continuing to work with environmental groups and others to identify community stakeholders and organizations for outreach and will continue to improve upon that list of groups in an ongoing and iterative process. The outreach strategy includes a comprehensive plan of outreach materials (website, direct hardcopy mailings, brochures, community meeting signage, notice publications), materials translated into the appropriate languages, and a schedule of public informational meetings to gather and incorporate community input. Details about the Phase 1 Project's ongoing community engagement efforts (including those associated with the MEPA review process) can be found at the project website (https://www.trimountenergy.com/). The Proponent has engaged in meaningful outreach and will continue to do so throughout the permitting and construction processes. Table 4-2 below lists outreach efforts to date.

Table 4-2 Phase 1 Project Outreach

Date	Organization	Outreach Type	Outreach Details
Nov 17, 2021	CLF	Environmental NGO meeting	Initial meeting with the Conservation Law Foundation to introduce the preliminary Phase 1 Project concept and discuss outreach strategies.
Sep 28, 2023; Dec 11, 2023	CLF	Environmental NGO meeting	Follow up discussions regarding outreach approach.
Feb. 13, 2024	ELM	Environmental NGO meeting	Introduced the Phase 1 Project to the Environmental League of Massachusetts, requested help identifying appropriate EJ community groups in Everett, and solicited feedback on the

Date	Organization	Outreach Type	Outreach Details
			outreach process.
Mar 12, 2024	Mass Clean Peak Coalition	Environmental NGO meeting	Introduced the Phase 1 Project to the Mass Clean Peak Coalition, requested help identifying appropriate EJ community groups in Everett and solicited feedback on the outreach process. Attendees included Clean Energy Group, Berkshire Environmental Action Team (BEAT), Massachusetts Climate Action Network (MCAN), and Slingshot.
Mar 20, 2024	Sierra Club	Environmental NGO meeting	Introduced the Phase 1 Project to Sierra Club staff, requested help identifying appropriate EJ community groups in Everett and solicited feedback on the outreach process.
Apr 10, 2024	Mystic River Watershed Association	Environmental NGO meeting	Introduced the Phase 1 Project to MyRWA, requested help identifying appropriate EJ community groups in Everett and to sought to better understand local community questions and concerns.
Apr 16, 2024	Everett Community Growers and La Comunidad	Community Group Meeting	Introduced the Phase 1 Project, solicited feedback, and sought to better understand local community questions and concerns.
May 24, 2024	Boston Globe	Interview/ News Article	*From oil to electricity: New England's biggest battery facility could soon rise in Everett* https://www.bostonglobe.com/2024/05/24/business/energy-storage-everett-battery-exxon/
June 4, 2024	Chelsea GreenRoots	Community Group Meeting	Introduced the Phase 1 Project, solicited feedback, and sought to better understand local community questions and concerns.
June 12, 2024	Everett Community Growers and La Comunidad	Community Group Meeting	Solicited feedback and sought to better understand local community questions and concerns.
July 1, 2024	MEPA CBO List	MEPA Advanced Notification	Distributed via email the required EJ Screening Form to the individuals and groups identified by the MEPA office as well as additional stakeholders.
July 16-17, 2024	General Community	Community Open House	See Section 4.5.1.1. below for details.
July 17, 2024	WGBH	Public Radio News Interview	A live interview with a representative of the Phase 1 Project was broadcast on WGBH's Boston Public Radio show, hosted by Jim Braude and Margery Eagan. The interview continues to be available at: https://www.wgbh.org/podcasts/boston-public-radio

4.5.1.1 Open Houses

The Open House events took place on July 16th and July 17th from 6pm to 9pm at the Connelly Center in Everett. At these events, Jupiter employees took groups through "tours" of posterboards set up around the room, providing a comfortable venue for conversation and inquiries. Sixty (60) members of the public attended across the two days.

The events were advertised in numerous ways:

› Invitations were mailed to households and businesses in the surrounding 0.75-mile radius, reaching approximately 2,000 people.

- As the Phase 1 Project will provide benefits to people in Everett outside of this 0.75-mile radius, invitations were mailed to every household that had a voter in the most recent Everett municipal election, reaching approximately 4,000 people.
- Digital mailers were sent to other stakeholders who had been engaged in the Phase 1 Project, ranging from City of Everett Planning Department employees to community groups to local news outlets, reaching approximately 50 people.
- Invitation flyers were posted at City Hall, the Everett Public Library, and the Connelly Center.
- The following news item was published in the July 11th edition of the Everett Leader Herald: *Battery Energy Storage Proposal on Former Exxon Stie to be Discussed*. https://everettleader.com/2024/07/11/battery-energy-storage-proposal-on-former-exxon-site-to-be-discussed/
- Door hangers were placed at homes in the two closest residential neighborhoods one week before the open house event.

To reach Everett's diverse community of people with Limited English Proficiency, the following actions were taken:

- All printed mailer invitations included details about the open house in English and Spanish.
- Digital mailers were translated into Spanish, Portuguese, and Haitian Creole. These translated digital mailers were distributed to community groups that have connections to non-English speakers.
- At the open houses there were two sets of posterboards in English (see Appendix A), and one set in Spanish. Printed booklets containing all posterboards were provided in Spanish, Portuguese, and Haitian Creole.
- All handouts at the open house were translated into Spanish, Portuguese, and Haitian Creole.
- On both days interpreters were present for Spanish, Portuguese, and Haitian Creole. One Portuguese and one Haitian Creole interpreter with experience interpreting for energy-related events were available. Jupiter leveraged its own Spanish-speaking employees as interpreters at the events.
- All interpreters (including Spanish-speaking Jupiter employees) engaged in practice sessions to ensure familiarity with the topics, vocabulary and materials presented.
- One person and one family group used the Haitian Creole interpreter, otherwise the other interpreters were not engaged.
- Translated materials continue to be available on the Phase 1 Project website: https://www.trimountenergy.com/community-engagement

4.5.1.2 Community Feedback

The Phase 1 Proponent received feedback from La Comunidad and Everett Community Growers requesting changes to the Phase 1 Project's urban design including additional greenery around the Site perimeter and space for public art. These requests have been incorporated and were displayed on the Draft Rendering posterboards at the Open Houses.

4.5.2 Master Plan Project

The Master Plan Project Proponent is also committed to a robust outreach process and is prioritizing direct outreach to community groups that serve EJ populations. Details about the

Master Plan Project's ongoing community engagement efforts (including those associated with the MEPA review process) will be posted on a forthcoming website.

The Master Plan Proponent initially solicited feedback from the Everett Planning Department to compile a list of community groups and identify the best points of contact. Where no points of contact were identified, ownership reached out to the general group contact via email. For groups where no meetings have occurred or been scheduled, ownership has made at least three attempts to schedule and received no recent responses. In addition, the Proponent shared the list of community groups with the Encore Casino developers and received confirmation that they had reached out to those same groups during permitting of their facility. In-person meetings were prioritized, though virtual meetings were accommodated at the request of community groups.

In addition to the outreach efforts identified in Table 4-3 below above, the Proponent has made several attempts to schedule meetings with the organizations below but has not yet been successful:

- Everett Haitian Community Center
- Everett Youth Initiative Council
- Latinos Unidos en Massachusetts (LUMA)

Table 4-3 Master Plan Project Outreach

Date	Organization	Outreach Type	Outreach Details
July 5, 2022	Planning Board	Public Meeting	Informal presentation to solicit feedback from the Planning Board members and members of the public prior to proceeding with the formal permitting process.
July 15, 2022; Jan 19, 2024; Feb 8, 2024	Conservation Law Foundation*	Virtual Meetings	Discussed CLF's key priorities for Master Plan development. Presented vision for the Master Plan development. Solicited input on key community groups with which to engage on outreach. Discussed proposed strategies for climate resiliency.
July 27, 2022	Everett Community Meeting	In-person meeting, Wynn Casino Event Space	Provided overview of site history, described the remediation plan, and shared initial Master Plan ideas. Received positive feedback. Questions were raised related to inclusionary housing, union participation, and the need for fire station on the lower Broadway area, among other issues.
Aug 8, 2022	City Council	Public Meeting	Presented initial Master Plan idea. Councilors generally were in favor of the proposal. Questions were raised regarding traffic, city services needed, and number of residential units.
Jan 22, 2024	Island End River Project	Virtual Meeting	IER presented proposed stormwater resiliency mitigation project to the Proponent team. Discussions focused on potential collaboration during future stages of the IER project, such as soil management.
March 6, 2024	Chelsea City Manager	In-person meeting	Introduction to the Project, high level timeline of remediation and redevelopment discussed.
Apr 5, 2024	Boston Harbor Now	In-person Meeting	Provided overview of remediation project and introduction to the Master Plan development.
May 1, 2024	Everett Youth Commission	Virtual Meeting	Provided overview of site history, described the remediation plan, and shared initial Master Plan ideas.
May 29, 2024	UMass Lowell Chancellor	Virtual Meeting	Provided overview of site history, described the remediation plan, and shared initial Master Plan ideas.

Date	Organization	Outreach Type	Outreach Details
	Chen		
Jun 7, 2024	Mystic River Watershed Association/ Resilient Mystic Collaborative	Virtual meeting	Provided overview of remediation project and introduction to the Master Plan development. Attendees expressed interest in: Public spaces with shade (heat island), jobs, pathways to the waterfront, commercial activity, green energy, and continued community outreach.
Jun 13, 2024	Green Roots*	In-person meeting	Provided overview of site history, described the remediation plan, and shared initial Master Plan ideas. Attendees asked questions about the zoning process, workforce housing, microgrids, and solar energy.
July 1, 2024	MEPA CBO List	MEPA Advanced Notification	Distributed via email the required EJ Screening Form to the individuals and groups identified by the MEPA office as well as additional stakeholders.
July 19, 2024	La Comunidad Inc.		Provided overview of site history, described the remediation plan, and shared initial Master Plan ideas.
Aug 13, 2024	Bunker Hill Community College	Virtual meeting	Provided overview of remediation project and introduction to the Master Plan development.
Aug 14, 2024	Somerville Mayor Ballantyne	Virtual meeting	Provided overview of remediation project and introduction to the Master Plan development.
Aug, 2024	Everett Community Growers	TBD	Meeting scheduled for end of August 2024, per request of Everett Community Growers.

* These organizations are members of the Commonwealth's Energy Transformation Advisory Board. https://www.mass.gov/orgs/energy-transformation-advisory-board Accessed 7/26/24.

4.5.2.1 Community Feedback

The feedback received during the meetings listed in Table 4-3 above has been incorporated into the Master Plan Project planning process. The primary topics of discussion have included inclusionary housing expectations; potential tenants for the retail, commercial and industrial spaces; opportunities for vocational/internship training; sustainability considerations; and open space.

4.5.3 ENF Pre-Filing Consultation

The Proponents held a pre-filing meeting with the MEPA Office on May 15, 2024. During this meeting, the Proponent and MEPA staff discussed the need for Environmental Justice Protocol compliance as the Project Site is located within one mile of an EJ population, and the Proponent provided an overview of the pre-filing public outreach held to date. An additional pre-filing meeting was held with the EEA EJ Office, MEPA Office, and DEP on July 25, 2024.

4.5.4 ENF Advance Notification

In accordance with the Public Involvement Protocol, the Proponent completed the 45-day advance notice to the MEPA determined Community Based Organizations (CBOs) by circulating the MEPA EJ Screening Form, which provides high-level details of the Project. The MEPA EJ

Screening Form, which was translated into Arabic, Chinese, Haitian Creole, Portuguese, and Spanish, was distributed on July 1, 2024 (see Appendix A).

4.5.5 Proposed Post-Filing Public Outreach

Following the filing of this EENF, the Proponents will hold a public site consultation to present the Project to the MEPA office, state agencies, and the public including state, tribal and local community groups, residents, businesses and environmental organizations. This presentation will also provide the attendees with the opportunity to ask questions about the Project. This will provide the public direct access to the Proponent and project team, allowing them to inquire about Project specifics and better understand how impacts will be mitigated. The Proponents will offer Arabic, Chinese, Haitian Creole, Portuguese and Spanish languages translation services on an as-requested basis.

As part of their stakeholder outreach plan, the Proponents will continue to promote public involvement through the following efforts:

- Update project websites to provide information about the project, post community notifications, and facilitate direct feedback to the Proponents;
- Post fact sheets in Arabic, Chinese, Haitian Creole, Portuguese and Spanish;
- Provide additional translation and interpretation services upon request;
- Distribute electronic copies of all MEPA filings (and hard copies, if requested) to the EJ CBO List; and
- Make hard copies of all MEPA filings available at the local public library within the DGA (Parlin Memorial Library located at 410 Broadway in Everett).

4.5.5.1 Phase 1 Project

The Phase 1 Project Proponent plans to engage in additional community outreach as described below:

- **Event Type**: Community group meetings, advertisements, mailers.
- **Target Groups**: General public and EJ groups within the project area
- **Topics**: General Project information to answer FAQs from the groups we're meeting with
- **Collateral Materials**: One-pagers and PowerPoint slide decks describing Jupiter and its projects in languages including English, Arabic, Chinese, Haitian Creole, Portuguese and Spanish.
- **Advertising Methods**: Emails to people and groups previously identified as interested parties; web postings with information about events and new project information; newspaper ads in the three local Everett papers; direct mail invitations; door hangers may also be used in adjacent neighborhoods for invitations to future public events.
- **Estimated Timing**: Trimount will be available as requested by local EJ groups and other community organizations. Jupiter plans to engage in additional outreach and publication activity prior to the public hearing for the DPU docket currently anticipated in Q4 2024.

4.5.5.2 Master Plan Project

The Master Plan Proponent plans to hold an initial community meeting to coincide with the filing of the Everett Special Permit application. Additional community/public meetings will be hosted

as needed during the Special Permit review period. The Proponent anticipates these meetings to take place during the last quarter of 2024 and/or the first half of 2025.

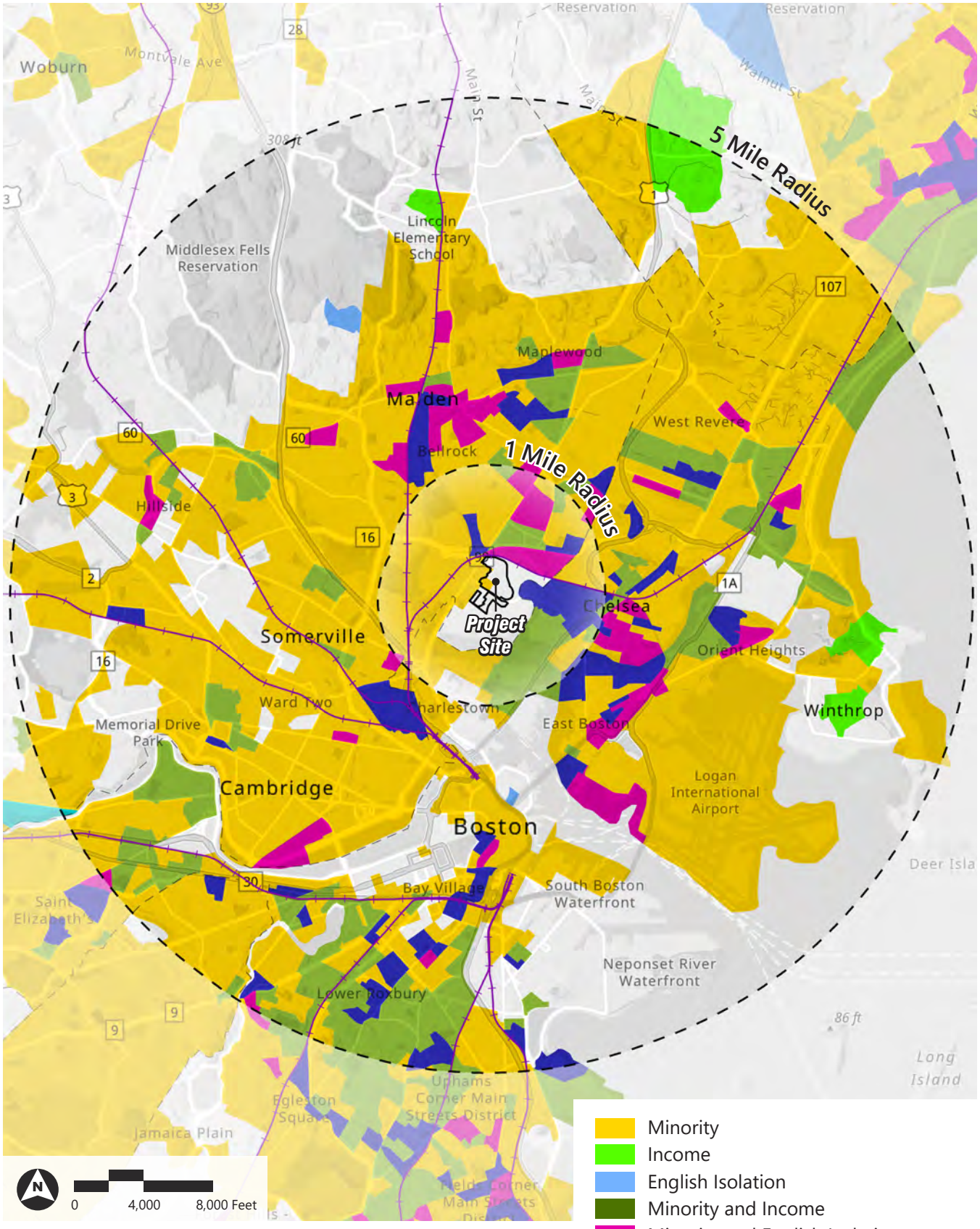
- **Event Type**: Open House with poster boards and information stations.
- **Target Groups**: Everett Residents, Community Groups listed in Table 4-3 above, and other interested parties. The Proponent will periodically provide updates to the community groups previously engaged and additional community members that express interest.
- **Topics**: Update on remediation efforts, infill program, Master Plan design, and incorporation of community feedback to date
- **Advertising Methods**: Email, physical mailing, and website posting in English, Arabic, Chinese, Spanish, Haitian Creole and Portuguese.
- **Estimated Timing**: Fourth quarter of 2024 for currently planned community meeting, first half of 2025 for subsequent meetings.

In addition, the project website will be regularly updated with milestones, any changes to plans, project approvals, and/or significant Project elements as they develop. All public filings will be posted on the Proponent's website along with a schedule of public hearings. All public hearings for local approvals will be advertised on the Master Plan Project website, at City Hall, and on the City's planning website.

The Proponent will explore opportunities to form advisory groups to help inform aspects of the Master Plan Project such as public art, recreational opportunities in public spaces, and other areas of community interest.

Figure 4.1: EJ Populations Map

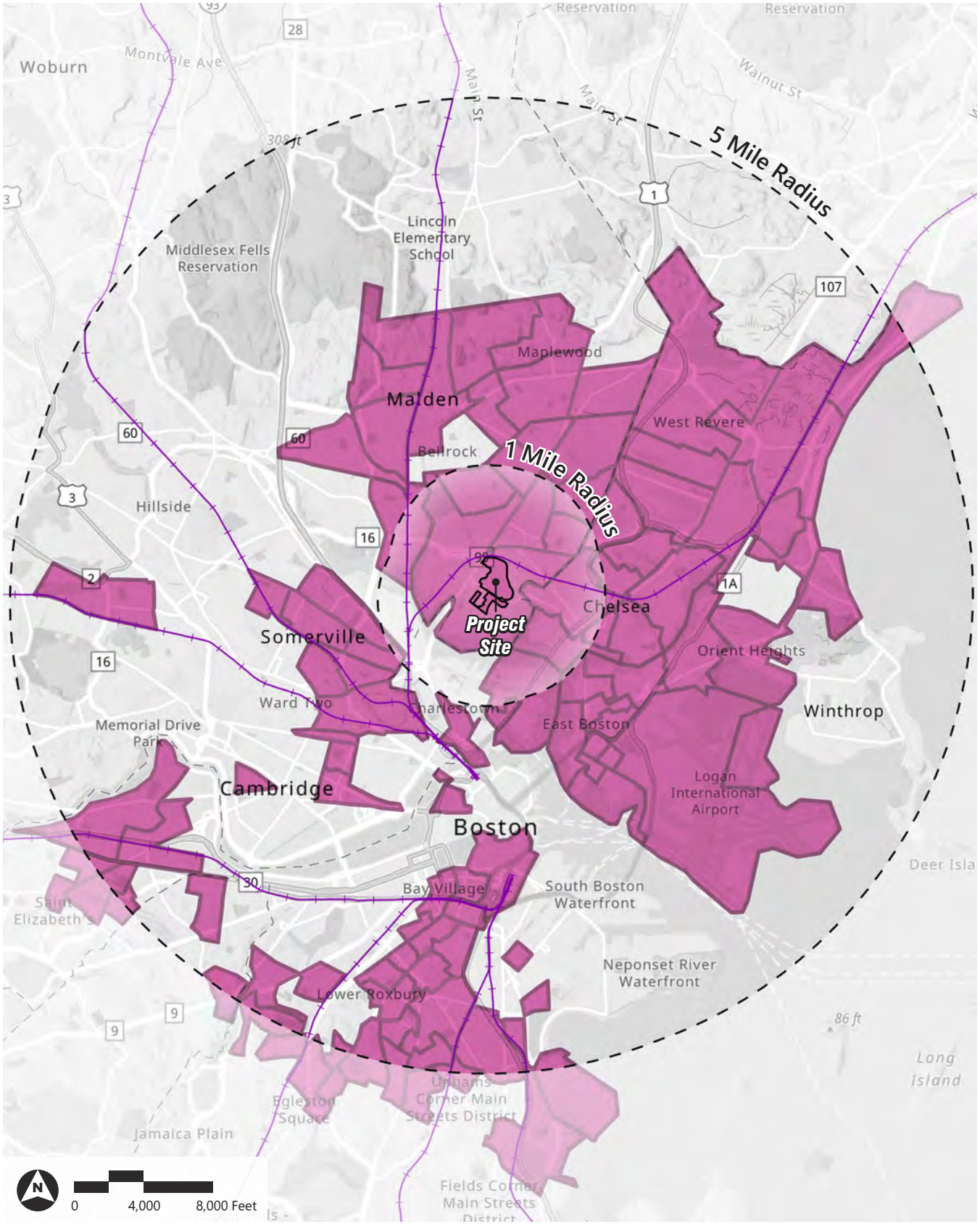
Everett Docklands Innovation District | 52 Beacham Street, Everett, MA 02149



Source: MassGIS 2020 EJ Populations Updated Nov 2022
https://www.mass.gov/info-details/massgis-data-2020-environmental-justice-populations

Figure 4.2: Languages Spoken

Everett Docklands Innovation District | 52 Beacham Street, Everett, MA 02149



Source: MassGIS 2020 EJ Populations Updated Nov 2022
https://www.mass.gov/info-details/massgis-data-2020-environmental-justice-populations

Languages Spoken

5

Phase 1 Wetlands and Waterways

This chapter identifies and discusses impacts to wetland resource areas, identifies Chapter 91 jurisdiction and demonstrates compliance with license requirements.

5.1 Key Findings

Key findings related to wetlands and waterways include the following:

- Work associated with the Phase 1 Project is subject to the Wetlands Protection Act and the Boston Wetlands Ordinance.
- A portion of the Phase 1 Project Site is subject to the jurisdiction of the Public Waterfront Act and its implementing regulations at 310 CMR 9.00 (together "Chapter 91").
- MassDEP has determined that the Phase 1 Project is a water-dependent industrial.
- The Phase 1 Project requires a Chapter 91 License.
- Depending on its final location, the Gen-Tie line may require a minor modification for work within filled former tidelands in the public right-of-way.

5.2 Wetlands

A portion of the Gen-Tie line is located within the Alford Street right-of-way in the City of Boston, a portion of which is identified on FEMA Flood Insurance Rate Map (FIRM) panel 25025C0014J (effective 3/16/2016) as being within Zone AE with a base flood elevation of 10 NAVD88. Approximately 340 linear feet of the underground Gen-Tie line is within this area. The Proponent will file a Request for Determination of Applicability with the Boston Conservation Commission for work within Land Subject to Coastal Storm Flowage (LSCSF). The work will not permanently alter LSCSF and will not impact flooding or storm damage prevention.

5.3 Chapter 91 Jurisdiction

The Phase I Project Site includes approximately 0.53 acres of formerly filled tidelands seaward of MassDEP's presumptive Historic High Water Line (USCGS 1894[1])(the "Site Tidelands"). The Site Tidelands are within the Mystic River Designated Port Area (DPA) (**Figure 5.1**). The former flowed tidelands in this area were associated with the historical marsh lands bordering the Mystic River. They appear to have been filled at some point between 1915 and 1927 to create land for industrial use by the New England Gas and Coke Company. Since that time, the land was in continuous use as a fuel storage facility, with the subsequent owners being Beacon Oil Company and Exxon Mobil Corp.

The Site Tidelands are considered Private tidelands because the land neither has a history of ownership by the Commonwealth, its political subdivisions, or a quasi-public agency or authority, nor does any portion lie seaward of the historic low-water mark or of a line running 100 rods (1,650 feet) seaward of the historic high-water mark.

Regardless of whether the Site Tidelands are separated from the high-water mark of the Mystic River by one or more interconnected public ways (Rover Street) that were in existence on January 1, 1984, the statutory and regulatory definitions of landlocked tidelands stipulate that all filled tidelands within a DPA remain subject to the licensing standards of Chapter 91. Therefore, the entirety of the filled tidelands constitutes a jurisdictional geographic area and a Waterways License is required pursuant to 310 CMR 9.05(1)(a).

5.3.1 Licensing History

The following license authorizes the existing fill on the Site (see **Appendix C**):

- **Board of Harbor and Land Commissioners License 2162** (July 19, 1898) – To build bulkheads and fill in and over the tide waters of Mystic River in the City of Everett.

Preceding site remediation, structures on the Site Tidelands included a portion of an empty fuel storage tank and associated aboveground piping that were erected in the early 1970s prior to the requirement to seek licenses for structures on filled tidelands. Removal of these structures, as well as additional fill, was approved by MassDEP on March 19, 2024, through a Minor Project Modification and approval for removal/demolition of existing structures under Administrative Request No. 24-WWAR-0012-APP.

In response to a Request for Determination of Applicability (RDA), MassDEP issued a Jurisdictional Determination (WW04-0000027) on March 8, 2024 (see **Appendix C**), confirming that the proposed construction and operation of a BESS on the Site Tidelands may be considered a Water Dependent Industrial Use pursuant to 310 CMR 9.12(2)(b)9 and 10:

- 9. Offshore renewable energy infrastructure facilities in the Commonwealth, including ocean wave energy facilities, ocean current energy facilities, tidal energy facilities, any ancillary facility thereto or any similar facility that obtains its energy from the ocean;
- 10. Infrastructure facilities used to deliver electricity, natural gas or telecommunications services to the public from an offshore facility located outside the Commonwealth.

[1] "North Shore of Boston Bay Massachusetts Topography", Register 2,190, Scale 1:10,000, 1894 developed during the by the EEA Massachusetts Office of Coastal Zone Management Chapter 91 Historic Mapping Project.

Further, based on technical input from MassDOER, MassDEP concluded that the BESS, if constructed at the proposed site, will provide sufficient incentive to secure a connection to an offshore facility.

5.4 Regulatory Compliance

The waterways regulations at 310 CMR 9.31(1) require MassDEP to determine that all projects requiring a license comply with the basic requirements for license eligibility. Table 5-1 lists the related regulatory standards; states why certain standards are not applicable to the Phase 1 Project; and demonstrates its compliance with applicable standards. The Project is not subject to 310 CMR 9.51 through 9.57, as it is not a non-water dependent use, and it is not located within the geographic area of an approved Municipal Harbor Plan.

Table 5-1 Basic Licensing Requirements

Regulation 310 CMR	Requirement Description	Applicable?	Standard	Phase 1 Project Compliance
9.31(1)(i)	Prohibition on Discrimination	Yes	This regulation prohibits discrimination in the access to services and facilities.	The Phase 1 Project will fully comply with this requirement.
9.31(2)	Proper Public Purpose Requirement	Yes	No license or permit shall be issued by the Department for any project on tidelands or Great Ponds, except for water-dependent use projects located entirely on private tidelands, unless said project serves a proper public purpose which provides greater benefit than detriment to the rights of the public in said lands.	The Phase 1 Project will fully comply with this requirement. It is a water-dependent use project located entirely on private tidelands.
9.32(a)	Categorical restrictions on fill and structures within Tidelands (outside of ACECs and DPAs)	No	The following project-related uses are categorically permitted: Fill and structures for any use on filled tidelands;	This standard is not applicable. Phase I is located entirely outside of an ACEC but a portion of Phase I is located on filled private tidelands within a DPA.
9.32(b)	Categorical restrictions on fill and structures within Tidelands (within DPAs)	Yes	The following project-related uses are categorically permitted: Fill or structures for any water dependent industrial use, and accessory uses thereto.	The Phase 1 Project fully complies with this standard. MassDEP issued a Jurisdictional Determination (WW04-0000027) on March 8, 2024, confirming that the proposed construction and operation of a BESS on the Site Tidelands is considered a Water Dependent Industrial Use pursuant to 310 CMR 9.12(2)(b)9 and 10.

Regulation 310 CMR	Requirement Description	Applicable?	Standard	Phase 1 Project Compliance
9.33	Environmental protection standards	Yes	Projects must comply with all applicable state environmental protection and permitting requirements.	The Phase 1 Project fully complies with this standard. It has been designed to comply with all applicable state environmental standards including MEPA, CZM policies, the Wetlands Protection Act, and Sections 401 and 404 of the U.S. Clean Water Act.
9.34 (1)	Conformance with municipal zoning	No	Projects must comply with applicable local zoning.	The Phase 1 Project will submit a Request for a Comprehensive Zoning Exemption from the Department of Public Utilities pursuant to Section 6 of Chapter 665 of the Acts of 1956.
9.34 (2)	Conformance with municipal harbor plan	No	Projects must comply with applicable Municipal Harbor Plans	This standard is not applicable, as the Phase 1 Project Site is not within an area governed by a Municipal Harbor Plan.
9.35(2)	Standards to preserve water-related public rights	Yes	This standard prohibits projects from significantly interfering with Public rights of navigation which exist in all waterways; Free passage over and through the water; and Access to town landings.	The Phase 1 Project fully complies with this standard. The Site Tidelands are approximately 1,625 feet from the shoreline at their closest location; as such, the Phase 1 Project does not impact flowed tidelands.
9.35(3)	Public Rights Applicable to Tidelands and Great Ponds	Yes	This standard prohibits projects from significantly interfering with public rights of fishing and fowling or on-foot passage.	The Phase 1 Project fully complies with this standard. The Site Tidelands are approximately 1,625 feet from the shoreline at their closest location; as such, the Phase 1 Project does not impact activities along the shoreline.
9.35(4)	Compensation for Interference with Public Rights in Commonwealth Tidelands and Great Ponds	No	Any water dependent use projects which include fill or structures for private use of Commonwealth Tidelands shall provide compensation to the public for interfering with its broad rights to use such lands for any lawful purpose.	This standard is not applicable because the Phase 1 Project Site does not contain Commonwealth Tidelands.
9.35(5)	Management of Areas Accessible to the Public	Yes	Projects must provide for the long-term management of tidelands that are accessible to the public related to	The Phase 1 Project is an industrial water-dependent use that includes electric battery storage and electrical substations. Public access

Regulation 310 CMR	Requirement Description	Applicable?	Standard	Phase 1 Project Compliance
			hours, activities, signage and physical restrictions.	to the site will be prohibited to protect public safety.
9.36	Standards to protect water-dependent uses	Yes	Projects must protect private access to littoral property, avoid disrupting operations of proximate and recently operating on-site water-dependent uses, and avoid pre-empting water-dependent use within a DPA.	The Phase 1 Project fully complies with this standard. It is an industrial water-dependent use within a DPA.
9.37	Engineering and construction standards	Yes	Projects shall comply with all applicable engineering and construction standards.	The Phase 1 Project fully complies with this standard. All structures will be certified by a Registered Professional Engineer.
9.38	Use standards for recreational boating facilities;	No	This regulation establishes standards for the construction and operation of recreational boating facilities.	This standard is not applicable because the Phase 1 l Project Site does not include any existing or proposed recreational boating facility.
9.39	Use standards for marinas, boats yards and boat ramps	No	This regulation establishes standards for the construction and operation of marinas, boatyards and boat ramps.	This standard is not applicable because the Phase 1 Project Site does not include any existing or proposed marina, boatyards or boat ramps.
9.40	Standards for dredging and dredged material disposal	No	This regulation governs the requirements for dredging in flowed tidelands and dredged material disposal.	This standard is not applicable because the Phase 1 Project does not include any dredging or dredged material disposal.

Figure 5.1: Chapter 91 Jurisdiction

Everett Docklands Innovation District | 52 Beacham Street, Everett, MA 02149

Source: MassGIS Data: Tidelands Jurisdiction (M.G.L. c.91)

Project Site
Public Way
Landlocked Tidelands
Jurisdiction
Historic High Water
Contemporary Water
Mystic River Designated Port Area

6

Phase 1 Water Resources

This section describes the existing infrastructure systems at the proposed Phase 1 Project Site (Parcels A and C) as well as future demands and proposed system modifications. The infrastructure systems addressed include stormwater drainage, sanitary sewer, and water supply.

As discussed elsewhere in this EENF, the Phase 1 Project Site will be delivered to the Phase 1 Proponent remediated and graded to elevation 17 NAVD88 on Parcel C and elevation 14 NAVD88 on Parcel A. For purposes of the water resources analysis, this delivery condition is considered the existing/pre-development condition for the purposes of the Phase 1 Project. Even under this more conservative analysis, the Phase 1 Project substantially improves stormwater drainage.

6.1 Key Findings

The key impact assessment findings related to water resources systems include:

- The Phase 1 Project will comply with applicable performance standards;
- The Phase 1 Project will incorporate on-site stormwater best management practices (BMPs) and treatment systems, which will significantly improve the overall quality of stormwater runoff and control peak rates of runoff in comparison to existing conditions;
- Were the remainder of the master plan not to be constructed, sufficient stormwater BMPs and treatment systems are in place under existing conditions that would not impact the Phase 1 Project;
- The Phase 1 Project is not expected to result in any increased peak flows, pollutants, or sediments that would potentially impact the local storm drainage systems;
- The water and wastewater utility systems that serve the Phase 1 Project Site are owned or managed by the City of Everett; the Phase 1 Project is expected to connect to these existing systems, which are available in public streets adjacent to the Phase 1 Project Site;
- Based on the current development program, the Phase 1 Project is estimated to generate a total of approximately 375 gallons per day (GPD) of sanitary sewage and will require approximately 413 GPD of potable water; and
- The existing City utility infrastructure systems are believed to be adequately sized to accept the demand associated with the development and operation of the Phase 1 Project.

6.2 Stormwater

6.2.1 Existing Conditions

In the existing/pre-development condition, Parcel A will be generally flat at an elevation of 14 NAVD88, and Parcel C will be generally flat at an elevation of 17 NAVD88. In the previously existing condition, both parcels had 100 percent impervious cover. In the existing/pre-development condition, both parcels are assumed to be in a temporary, partially pervious condition and will be stabilized until the start of Phase 1 construction. In this existing/pre-development condition, the drainage from the Parcel C is directed to a stormwater management system on the adjacent parcels which includes closed piping and detention ponds that manage stormwater peaks prior to discharging off-site through an existing culvert. The downstream system has capacity to manage the pre and post development flows associated with the redevelopment of Parcel C.

The existing/pre-development condition was analyzed hydrologically as three separate sub-catchment areas, as illustrated in **Figure 6.1**. Preliminary hydrologic data for the Phase 1 Project Site's existing/pre-development condition is provided in Table 6-1 below. Please note that, if the previously existing condition (i.e., the impervious condition) were to be analyzed, the curve numbers would be higher and thus more runoff would be expected.

Table 6-1 Existing Conditions Hydrologic Data

Drainage Area	Area (acres)	Curve Number	Time of Concentration (min)
Parcel C	9.563	86	8.8
Parcel A North	1.352	86	11.5
Parcel A South	9.702	86	16.8

The City of Everett owns and maintains an existing 12-inch RCP drainage main in Beacham Street between the two Parcels that discharges to the Island End River.

6.2.2 Proposed Conditions

The Phase 1 Project is seeking to reduce peak runoff rates improve stormwater quality in accordance with City and EPA requirements. The Phase 1 Project will necessarily increase impervious cover on the site in comparison to the temporary post-remediation condition in which it will be delivered to the Phase 1 Proponent but will decrease impervious cover when compared to the previously existing condition. The Proponent has endeavored where feasible to provide pervious landscape cover in areas not occupied by the BESS components to slow the rate of stormwater runoff. The proposed condition of the Phase 1 Site was analyzed hydrologically as three separate subcatchment areas, as illustrated in **Figure 6.2**. Preliminary hydrologic data for the proposed condition is provided in Table 6-2 below.

Table 6-2 Proposed Conditions Hydrologic Data

Drainage Area	Area (acres)	Curve Number	Time of Concentration (min)
Parcel C	9.563	95	7.8
Parcel A North	1.352	95	7.6
Parcel A South	9.702	93	8.5

Conceptually, the Phase 1 Project is currently contemplating stormwater detention chambers and sand filters as the primary stormwater control systems on both parcels. The Phase 1 Project will convey stormwater from the on-site system to new off-site drainage infrastructure proposed as part of Master Plan Project. This off-site infrastructure will ultimately discharge stormwater to the Beacham Street outlet headwall at the Island End River, which is the currently contemplated discharge point for the Master Plan Project. Should the remainder of the Master Plan Project not be constructed, sufficient stormwater BMPs and drainage systems are in place under existing conditions that would not impact the feasibility and construction of the Phase 1 Project Site.

The detention system for the Phase 1 Site has been sized to achieve the maximum possible volume of stormwater storage allowed by the proposed site program. The Phase 1 Project is expected to reduce peak runoff rates for various design storm events for the proposed condition as compared to the existing condition.

The rainfall-runoff response of the Phase 1 Project Site under existing and proposed conditions was evaluated for storm events with recurrence intervals of 2, 10, 25, 50, and 100 years. Rainfall volumes used for the 2-year, 10-year, 25-year, and 100-year analyses were based on the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Plus, Volume 10.3 data, 24-hour storm event for the site; they were 3.50, 5.59, 7.26, and 10.00 inches, respectively. The Phase 1 Project Site was also analyzed under the 2070 50-year storm as projected by the Resilient Massachusetts Action Team's (RMAT) Climate Resilience Design Standards Tool; that storm depth was 9.7 inches. Runoff coefficients for the pre- and post-development conditions, as previously shown in Tables 6-1 and 6-2 respectively, were determined using NRCS Technical Release 55 (TR-55) methodology as provided in HydroCAD. The analyses were based on the NOAA Atlas 14 Plus data allows for the Site to be more resilient, since the data reflects the higher end of the range of storms that have already been observed, and in anticipation of pending regulation changes.

Drainage areas used in the analyses are shown on Figures 6.1 and 6.2. The HydroCAD model is based on the NRCS Technical Release 20 (TR-20) Model for Project Formulation Hydrology. Detailed printouts of the HydroCAD analyses are attached in Appendix D. Table 4-3 presents a summary of the existing and proposed conditions peak discharge rates.

Table 6-3 Peak Discharge Rates (cfs)

	2-year (NOAA+)	10-year (NOAA+)	25-year (NOAA+)	50-year (RMAT)	100-year (NOAA+)
Parcel C					
Existing	21.35	40.21	55.31	77.2	79.88
Proposed	11.75	17.53	20.98	40.14	40.57
Parcel A North					
Existing	2.77	5.23	7.2	10.06	10.4
Proposed	2.04	4.62	6.09	7.75	7.93
Parcel A South					
Existing	17.30	32.66	44.95	62.80	64.99
Proposed	12.20	12.38	12.56	12.82	12.85
TOTAL SITE (Design Point 1L)					
Existing	38.38	72.59	100.04	139.84	144.70
Proposed	25.97	34.01	38.91	60.39	61.02

The sand filters have been conceptually sized using the MassDEP Stormwater Handbook to achieve 80% total suspended solids (TSS) removal and 50% phosphorous removal in accordance with the City of Everett's Municipal Separate Storm Sewer System (MS4) general permit and the anticipated EPA Residual Designation Authority action for the Mystic River Watershed.

6.3 Waste Water

6.3.1 Existing Conditions

Under existing/pre-development conditions, the site has no sewer infrastructure in place. Record drawings show an existing 12-inch VCP sewer pipe in Beacham Street owned by the City of Everett, with a manhole near the western limits of the Phase 1 Site.

6.3.2 Proposed Conditions

A new sanitary sewer connection to the main in Beacham is proposed to serve the new warehouse storage/office building on Parcel A. Table 6-4 below summarizes the proposed estimated sewer generation based on Massachusetts State Environmental Code (Title 5) generation rates. Based on the anticipated development program, the Proposed Phase 1 Project is estimated to generate approximately 375 GPD of new sanitary sewage flow. Final flow estimates will be determined as the Phase 1 Project's design advances.

Table 6-4 Phase 1 Project Sewage Generation

Proposed Use	Gross Floor Area	Generation Rate	Estimated Sewage Generation
Office	5,000 SF	75 GPD/1,000 SF	375 gpd

Source: Generation Rates based on Title 5, 310 CMR 15.203 guidelines, and existing and proposed areas are approximate and assumed numbers. Lab uses have no identified sewer generation rate – as such office generation rate has been used for office/lab space.
GPD = Gallons per Day
SF = square feet
NOTE: All measurements are approximate

6.4 Water Use

6.4.1 Existing Conditions

The pre-construction site will have no water infrastructure in place. There is an existing 16-inch cast iron water main in Beacham Street between Parcels A and C. There is also an existing inactive 10-inch cast iron water main on the north side of Beacham Street, per record drawings.

6.4.2 Proposed Conditions

Domestic water demand is based on estimated sewage generation with an added factor of 10 percent for consumption, system losses, and other use. Based upon standard sewage generation rates outlined in the MassDEP System Sewage Flow Design Criteria, 310 CMR 15.203, the Phase 1 Project will require approximately 413 GPD of water. A new connection to the existing 16-inch

water main in Beacham Street is proposed to serve the new warehouse/office building on Parcel A. Detailed routing and final demand estimates will be determined as design advances.

7

Phase 1 Transportation

This chapter describes existing and proposed transportation conditions at the Phase 1 Project Site.

7.1 Key Findings

Key findings related to transportation include:

- The Phase 1 Project will have very minimal transportation impacts, with just 12 anticipated net new average daily vehicular trips.
- The DEIR will include a full transportation impact assessment (TIA) for the Master Plan Site.

7.2 Existing Conditions

As described in Chapter 1, the Phase 1 Project at 52 Beacham Street will occupy two parcels: Parcel C immediately north of Beacham Street and Parcel A immediately to the south of Beacham Street. Each parcel has frontage on Beacham Street, which will continue to provide Site access. Under existing/pre-development conditions, no trips are generated from the Site.

7.3 Future Conditions

The Phase 1 Project, which includes a BESS, two on-site open-air substations, and two small buildings for personnel and equipment storage totaling 5,800 sf, will not exceed any MEPA review thresholds, including traffic.

With up to five employees on-site on any given day and three to four truck trips per week[1], the anticipated trip generation for the Phase 1 Project will be approximately 12 new daily vehicle trips. This level of activity will not have a perceptible impact on traffic conditions in the area, including along the Beacham Street corridor.

[1] Information provided by the Proponent based on operational knowledge of similar facilities.

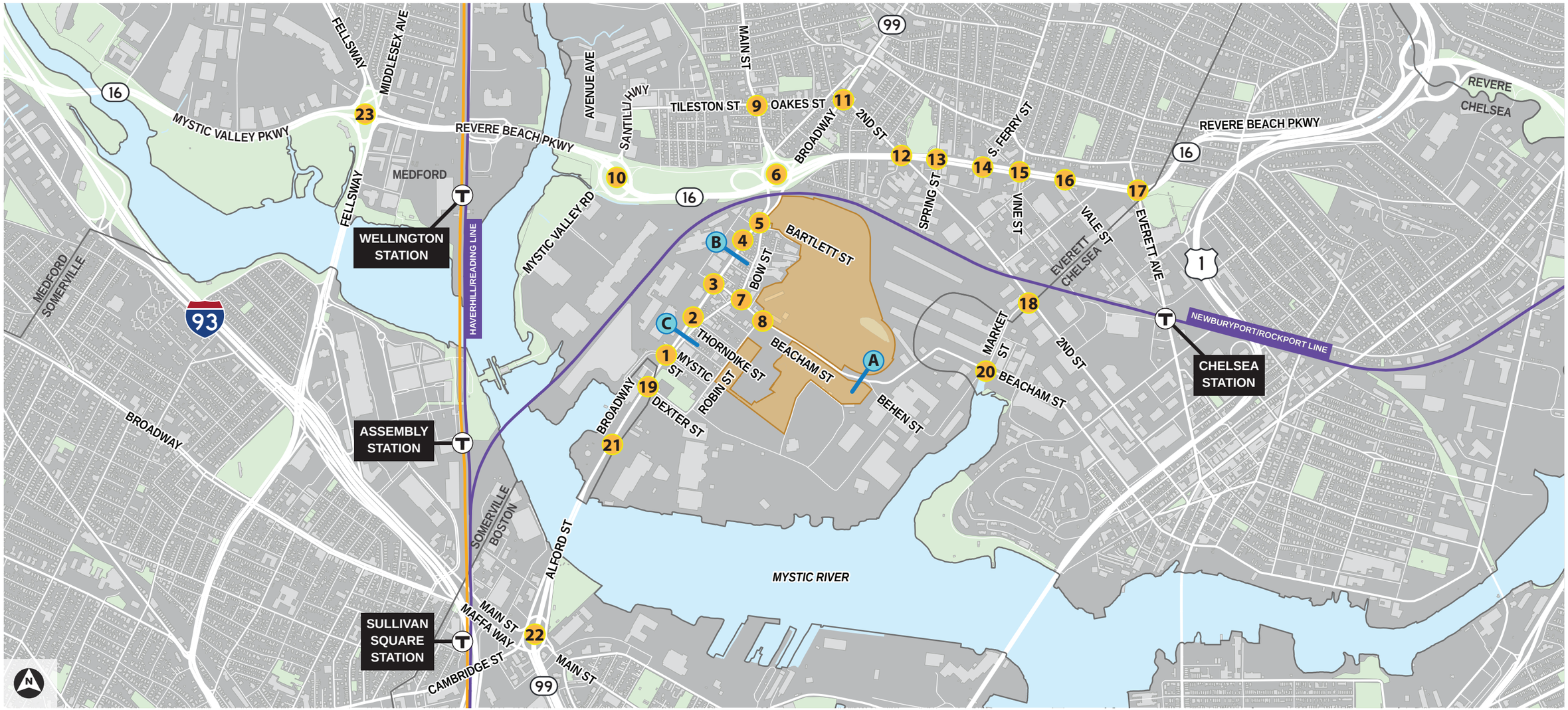
7.4 Transportation Impact Assessment

Because the Phase 1 Project will have very minimal transportation impacts, a TIA has not been conducted. As the environmental review process of the Master Plan Program continues, the study team will prepare a TIA based on the guidelines set forth in the Massachusetts Department of Transportation (MassDOT) TIA Guidelines, and consistent with federal, state, and local regulations and policies.

The TIA for the Master Plan Program will include evaluation of the site access, parking, trip generation, roadway and intersection analysis, public transportation, bicycle facilities, pedestrian realm, and Transportation Demand Management (TDM) measures. The study area intersections identified for the Master Plan Program TIA are shown in Figure 7-1.

Figure 7.1: Study Area Intersections

Everett Docklands Innovation District | 52 Beacham Street, Everett, MA 02149



Project Site

- Project Site

Public Transportation

- MBTA Orange Line
- MBTA Commuter Rail

48-Hour ATR Locations (volume, speed, classification)

- A — Beacham St, West of Benhan St
- B — Broadway, South of Bowdoin St
- C — Broadway, South of Thorndike St

Peak Hour TMCs (6 a.m. - 9 a.m. and 4 p.m. - 7 p.m)

1. Broadway at Mystic Street/Horizon Way (Encore)
2. Broadway at Thorndike Street
3. Broadway at Beacham Street
4. Broadway at Bowdoin Street
5. Broadway at Bartlett Street
6. Route 16 at Broadway and Main Street (Sweetser Circle)
7. Beacham Street at Bow Street
8. Beacham Street at Robin Street
9. Main Street at Tileston and Oakes Street
10. Revere Beach Parkway at Santilli Highway (Santilli Circle)
11. Broadway at Second Street/ Corey Street
12. Route 16 at Second Street
13. Route 16 at Spring Street
14. Route 16 at South Ferry Street
15. Route 16 at Vine Street
16. Route 16 at Vale Street
17. Route 16 at Everett Avenue
18. Second Street at Market Street
19. Alford Street at Dexter Street
20. Beacham Street at Market Street
21. Alford Street at Boston Water and Sewer Commission/Powerplant Driveway
22. Alford Street at Main Street, Maffa Way, and Cambridge Street (Sullivan Square)
23. Mystic Valley Parkway at Fellsway and Middlesex Avenue (Wellington Circle)

8

Phase 1 Greenhouse Gas and Air Quality

This chapter discusses potential Greenhous Gas (GHG) impacts resulting from the Phase 1 Project.

8.1 Key Findings

Key findings related to GHG and air quality include:

› The Phase 1 Project will result in negligible stationary and mobile source GHG emissions.

8.2 Regulatory Context

The Phase 1 Project does not exceed any MEPA review thresholds and would not on its own be required to prepare an EIR: Therefore, it would not be subject to the GHG Policy.

Based on the Emissions Footprint Estimation Tool, the Phase 1 Project would be expected to generate less than 2,000 tpy of GHG (CO_2) emissions from conditioned spaces (the tool estimates projected emissions of 14 tpy); those spaces would not likely be used or occupied by EJ populations; and the building is not located within a census block designated as an EJ population.

On June 5, 2024, the Phase 1 Proponent met with the Department of Energy Resources (DOER), who noted that the Phase 1 Project comprises a renewable energy storage use on a site historically used for fossil fuel energy storage.

Everett is a stretch energy code community.

8.3 Stationary Source GHG Emissions

The Phase 1 Project includes two buildings with a total of 5,000 sf of office space and 800 sf of storage space. The Proponent has committed to the following for these buildings:

- Provide electric air source heat pumps to supply 100% of the buildings' space and water heating;
- Commit to lower air infiltration standard under Section C406 of the Massachusetts stretch code; and
- Provide 25% Electric Vehicle Installed Parking with Level 2 plugs.

DOER confirmed that this commitment would negate the need for further building energy modeling and stationary source GHG analysis.

8.4 Mobile Source GHG Emissions

The Phase 1 Project will result in approximately 20 net new trips per day. As such, a mobile source GHG emissions analysis is not warranted.

9

Phase 1 Climate Change Adaptation and Resiliency

This chapter identifies the Project Site's vulnerability to the effects of climate change, describes the applicable climate change adaptation planning context, and details proposed adaptation and resiliency measures at the building and site levels.

9.1 Key Findings

Key findings related to climate change adaptation and resilience include the following:

- The Phase 1 Project Site grades are above the elevation of the 2070 1% annual chance event (ACE) flood.
- Critical project elements will be elevated on pads above the 2070 0.2% ACE wave action elevation and designed with redundant waterproofing.
- The Project's BESS containers have built-in heating and cooling systems that will allow them to maintain appropriate operating temperatures even in the predicted extreme ambient temperature scenarios.

9.2 Regulatory Context

The Project is subject to the MEPA Interim Protocol on Climate Change Adaptation and Resiliency (the "MEPA Interim Protocol"). This requires addressing the output report from the Resilient Massachusetts Action Team (RMAT) Climate Resilience Design Standards Tool (the "RMAT Tool"), which utilizes the Massachusetts Coast Flood Risk Model (MC-FRM). The RMAT Tool output report for the Phase 1 Project is included in **Appendix B.**

9.3 Projected Climate Conditions and Vulnerability

The RMAT Tool combines MC-FRM data with user inputs related to a site's location and the criticality of its assets to identify projected climate conditions for an algorithm-selected target

planning horizon and return period. Please note that under the previously existing condition upon which the RMAT is based, the Site is primarily impervious. Under the existing/pre-development condition, it is primarily pervious. The sections below describe the output of the RMAT Tool.

9.3.1 Coastal Flooding

This project received a "Moderate Exposure" rating based on the following:

- Exposed to the 1% annual coastal flood event as early as 2030
- Located within the 0.1% annual coastal flood event within the project's useful life
- Not located within the predicted mean high water shoreline by 2030

Please note that the RMAT tool does not account for the existing/predevelopment site elevations, and therefore does not correctly identify the Phase 1 Project Site's exposure to flooding.

Table 9-1 lists the outputs of the RMAT Tool, including the area weighted averages of the projected water elevations, along with the build condition site grades (which are the same as the existing/predevelopment grades).

Table 9-1 Current and Future Land and Water Elevations (Area Weighted Average)

	Feet NAVD88
Current 1% ACE BFE	10.0
2030 1% ACE Water Surface	10.0
2030 0.5% ACE Water Surface	10.3
2050 1% ACE Water Surface	11.7
2050 0.5% ACE Water Surface	12.2
2050 1% ACE Wave Action	12.4
2050 0.5% ACE Wave Action	12.9
2070 1% ACE Water Surface	13.7
Site Grade Parcel A	14.0
2070 0.5% ACE Water Surface	14.1
2070 1% ACE Wave Action	14.8
2070 0.5% ACE Wave Action	15.4
Critical Project Elements (minimum)	16.2
Site Grades Parcel C	17.0

BFE = Base Flood Elevation
ACE = Annual Chance Event

9.3.2 Extreme Precipitation

This project is not exposed to riverine flooding. It received a "High Exposure" rating to Urban Flooding based on the following:

- Increased impervious area
- Maximum annual daily rainfall exceeds 10 inches within the overall project's useful life
- Existing impervious area of the project site is greater than 50%
- No historic flooding at project site

The RMAT Tool recommends assessing the 2070 50-year (2% ACE) design storm with a projected 24-hour total precipitation depth of 9.7 inches. The peak discharge rates associated with this event are described in Chapter 6, Section 6.2.2. Under proposed conditions, the stormwater management system will significantly reduce runoff as compared to existing conditions for all return periods analyzed.

9.3.3 Extreme Heat

This project received a "High Exposure" rating based on the following:

- 30+ days increase in days over 90 deg. F within project's useful life
- Not located within 100 ft of existing water body
- Existing impervious area of the project site is greater than 50%
- No increase to the impervious area of the project site
- No tree removal

9.4 Adaptation and Resiliency Measures

As demonstrated in Table 9-1 above, the entirety of the Phase 1 Project Site is elevated above the 2070 1% ACE flood. Critical project elements will be elevated on pads above the 2070 0.5% ACE maximum wave action elevation (16.2 NAVD88) and designed with redundant waterproofing.

It is noteworthy that the Project Site lies landward of the proposed Island End River Flood Resiliency Project (EEA No. 16667), the goal of which is to prevent current and future flooding of adjacent upland areas. According to the Secretary's Certificate on that project's FEIR, it is designed to maintain a top-of-wall elevation of 14-15 feet NAVD88, and tide gates would prevent inland flooding via piped infrastructure. The Phase 1 Project Site is within the area that would be protected from flooding due to the the 2070 1% ACE stillwater elevation. According to that project's website (https://www.islandendriver.com/updates), it is anticipated to be constructed between 2025 and 2028.

BESS containers have built-in heating and cooling systems that allow them to maintain temperatures within the container so that the internal cells can operate properly even in extreme ambient temperature scenarios. As temperatures rise in Massachusetts, effective cooling becomes an increasingly important factor in mitigating the effects of a changing climate. As such, the battery containers Trimount will use can operate a cooling system effectively up to an ambient temperature of around 130 degrees Fahrenheit. Even with future extreme temperatures during the Phase 1 Project's design life projected to hit 90+ degrees F for as many as 30 days out of the year, the liquid cooling systems on each battery container are rated for a much higher temperature standard than even these future ambient temperature models predict.

10

Pre-Development Remediation Overview

Prior to Master Plan Project commencement, the Master Plan Project Site (the "Site") will have undergone remediation in compliance with the Massachusetts Contingency Plan (MCP) and implementing regulations (310 CMR 40.000), under Release Tracking Number (RTN) 3-0000310 (**Figure 10.1**). This work is separate from the Master Plan Project and is required regardless of any specific redevelopment program. It is not subject to MEPA review, as the remediation activities do not exceed any MEPA review thresholds. At the request of the MEPA Office, the Proponents are providing the information below to enhance the context of the Master Plan Project.

10.1 Previously Existing Conditions

The Site previously consisted of the North Tank Farm and the South Tank Farm, which operated as an oil refinery and/or a bulk product storage facility since approximately 1920. The oil refinery was constructed circa 1920 by Eastern Gas & Oil. The facility was later acquired by Beacon Oil in 1929 (Beacon Oil was acquired by the Standard Oil Company of New Jersey in 1929[1]). During full-scale operation, refinery operations were located in the North Tank Farm. After refinery operations ceased in 1965, site operations were limited to bulk storage of refined petroleum products in the North Tank Farm and asphalt production and distribution in the South Tank Farm until operations ceased in 2021 in anticipation of the property transaction.

During operations, key features of the North Tank Farm included 26 above ground storage tanks (ASTs) ranging in size from approximately 400,000 gallons to 16,000,000 gallons (safe fill capacity) and associated piping, a large "holding" pond[2], one loading rack, one 8,000-gallon steel underground storage tank (UST) that previously held fuel oil, a maintenance garage, and an administrative/office building. Located in the center of the Site was the former Exxon

[1] The Standard Oil Company of New Jersey was rebranded to Exxon Corporation in 1973. Exxon Corporation later merged with Mobil to form ExxonMobil in 1999.

[2] The holding pond, located in the southeastern portion of the North Tank Farm (Figure 3), was formerly used as part of the stormwater collection system. The holding pond was originally constructed in the mid-1950s to handle stormwater drainage and various process wastewaters. The holding pond is not part of the existing Site stormwater management system.

Massachusetts Pipeline (MPL) building and piping, which historically transported refined products to two separate facilities (Waltham and Dracut), until it was cleaned and made inert with nitrogen in 1990.

The South Tank Farm consisted of two individual parcels of approximately 16 and 4 acres, respectively, that were connected by a small private roadway along the southern boundary of the South Tank Farm. The South Tank Farm is bounded by commercial properties to the east, Beacham Street and the North Tank Farm to the north, Robin Street and residential and commercial properties to the west, and a metal recycling facility and energy distribution facility to the south. The South Tank Farm parcels were bisected by an existing business (known as Sprague Energy).[3] During operations, the South Tank Farm included two ASTs of approximately 3,400,000 gallons and 4,100,000 gallons (safe fill capacity) and 18 concrete bunkers ranging in size from 1,500,000 to 6,300,000 gallons. The 18 concrete bunkers in the South Tank Farm were constructed between approximately 1930 and 1955 to support refinery operations. Circa 1965, the concrete bunkers were taken out of service and were either leased for storage of other materials or cleaned and removed from operation. According to ExxonMobil records, the bunkers were "Out of Service – Permanently Closed."

Work to remove and mitigate all legacy structures and activities, including above-ground storage tanks (ASTs), pipes, and buildings is currently underway and will result in a vacant graded site, with base elevations above the floodplain, which will comprise the Existing/Pre-Development condition.

10.2 Work Regulated Under the Massachusetts Contingency Plan

The Proponent entered into an agreement on March 25, 2024, with the Massachusetts Attorney General's "Brownfields Covenant Program," which was designed to encourage the remediation and re-use of contaminated and underutilized properties (commonly known as "brownfields"). The Proponent, as an innocent party not responsible for any of the contamination on the Site, entered into the agreement with the Attorney General's Office for liability relief in exchange for a commitment to remediate a contaminated site in accordance with the requirements of G.L. c. 21E and the MCP and to undertake a project that contributes to the physical and economic revitalization of the Master Plan Project Site in Everett. As part of the agreement, the Proponent commenced an outreach effort to abutters and other interested parties near the Site, well beyond what was required by the Attorney General's office, initiating a community engagement effort that will continue throughout the MEPA review process.

10.2.1 Remediation Program

Remediation is being completed in the following phases:

- **Decommissioning**: Drain, clean and remove existing tanks, bunkers and pipes from service;
- **Preparation**: Remove all above-grade tanks, structures, and pipe infrastructure and demolish and crush foundations;

[3] The Sprague Energy property was owned and operated by ExxonMobil until 2001. A Partial Permanent Solution linked to RTN 3-0000310 has been achieved for the Sprague Energy property.

- **Treatment**: Treat soil in place through fixation (i.e., stabilization/solidification) so that concentrations of petroleum and lead greater than the Massachusetts Contingency Plan (MCP) Method 3 Ceiling Limits and non-stable non-aqueous phase liquids (NAPL) are no longer available to the environment; and
- **Infill Program**:
  - Resilience: Place additional Fill Soil where required, in compliance with recent MCP amendments to protect treated soil from future flooding and erosion.
  - Protective Cover: Cover soils with up to three feet of Protective Cover to prevent future human exposures.

Final grades will be developed on a parcel-by-parcel basis and are based on the average existing elevations within each phased area on the Site, plus the additional Clean Cover (up to 3 feet), which will be placed to cap the treated soils, provide resiliency and facilitate site access. As a result, elevations within each phase area will vary, but will be at or higher than a minimum elevation of 10.5 feet NAVD88.

It is anticipated that there will be no off-site disposal of soil during the remediation. Treated materials are expected to be reused on-site as fill material and subbase. The Fill Soil will either be from 1) existing site soil (i.e., berms and/or areas that need to be graded), 2) on-site aggregate base course (ABC) material crushed and managed in accordance with MassDEP requirements, or 3) imported soil from local construction projects. Acceptance of imported Fill Soil will have stringent criteria, including both chemical and geotechnical testing prior to use at the Site.

The current MCP remedy will require the placement of up to approximately 500,000 cubic yards (cy) of Fill Soil and up to approximately 200,000 cy of Clean Cover. A voluntary Administrative Consent Order (ACO) between the Master Plan Proponent and the Massachusetts Department of Environmental Protection (MassDEP) is anticipated to be executed in the near future. It will provide oversight and enforceability of soil imports of S-1 Reportable Concentrations (RCS-1). The Site currently contains both RCS-1 and RCS-2 soils. It is anticipated that RCS-2 materials may be imported from other urban construction sites, after consultation and approval by, and with the oversight of, MassDEP.

Once the Clean Cover is in place, a Permanent Solution Statement will be prepared in accordance with the MCP. The Permanent Solution will ensure that the Site is safe and that there will be no future exposures or impacts to human health or the environment. It will include an Activity and Use Limitation (AUL) that will outline the management protocols and procedures for any potential future sub-surface excavation that may be undertaken by utility and construction workers. It will also prohibit single family housing and agriculture for consumption. The Permanent Solution will be protective of public health and the environment, as required by the MCP.

10.2.2 Impact Minimization and Mitigation

A suite of mitigation measures is being used at the Site to prevent short-term impacts to the environment during MCP response actions. Mitigation measures proposed for this Project include a sediment and erosion control program, which includes structural and non-structural practices as described below.

10.2.2.1 Erosion and Sediment Control

An erosion and sedimentation control program has been implemented to minimize any off-Site impacts. The program incorporates Best Management Practices (BMPs) specified in guidelines developed by the DEP10 and the U.S. Environmental Protection Agency (EPA)[4].

Proper implementation of the erosion and sedimentation control program will:

- Minimize exposed soil areas through sequencing and temporary stabilization;
- Place structures to manage stormwater runoff and erosion; and
- Establish a vegetative cover or other forms of stabilization as soon as practicable.

The following sections describe the controls that will be used and practices that will be followed during construction. These practices comply with criteria contained in the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Large and Small Construction Activities issued by the EPA. A Stormwater Pollution Prevention Plan (SWPPP) has been developed for the Site.

10.2.2.2 Non-Structural Practices

Non-structural practices to be used during construction include temporary stabilization, temporary seeding, permanent seeding, pavement sweeping, and dust control. These practices are initiated as soon as practicable in appropriate areas within the Site.

Non-Structural Practices

Areas of exposed soil and/or stockpiles on the Site are not anticipated to remain inactive for an extended period throughout the duration of the construction period. However, there is no activity for a period of more than 30 days, temporary stabilization measures will be implemented within 30 days of the inactivity.

The exposed soil or stockpiles will be covered with a layer of straw mulch applied at a rate of 90 pounds per 1,000 SF. The mulch will be anchored with a tacking coat (non-tar) applied by hydroseeding. Steeper slopes (greater than 10 percent) will be covered with a bonded fiber matrix (EcoAegis® or similar) according to the recommendations provided by the manufacturer.

Permanent Seeding

Upon completion of final grading, any areas not covered by pavement or other forms of stabilization will be seeded with a native seed mix such as the New England Erosion Control/Restoration Mix for Dry Sites12 from New England Wetland Plants, or a similar mix as approved. The mix will be applied at a rate specified by the manufacturer and will be covered with mulch or bonded fiber matrix as described above.

Pavement Sweeping

The interior roads (once paved) and the portion of Beacham Street that fronts the Site shall be swept as needed during construction. The sweeping program will remove soil and other contaminants directly from paved surfaces before their release into stormwater runoff. Pavement

[4] EPA, 2007. Interim Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites. Office of Water. Report EPA 833-R-060-04

sweeping has been demonstrated to be an effective initial treatment for reducing pollutant loading into stormwater. A street sweeper shall be kept at the site or at a nearby location to facilitate this practice. Once construction has been completed, sweeping at the Site will occur as required under the Operation and Maintenance Plan.

Dust Control and Monitoring

The erosion and sediment control program includes provisions to minimize the generation of dust during dry and windy conditions. Dust is being controlled so that there is no visible fugitive dust leaving the Site or causing a nuisance condition. When necessary, larger areas of exposed soil will be wetted to prevent wind borne transport of fine-grained soil. Enough water shall be applied to wet the upper 0.5 inches of soil. The water will be applied as a fine spray to prevent erosion. A water truck will be kept on the property (or at a nearby location) to facilitate this practice.

Perimeter dust monitoring commenced at the Site on March 19, 2024, and will continue through the duration of the demolition and remediation activities. In total, there are 12 perimeter dust monitoring locations set up on the Site. The perimeter units are powered by solar panels and are linked to a telemetry system. A site-specific dust standard that is protective for nearby receptors located outside of the fence line was calculated based on the chemicals of concern at the property and the anticipated duration of the remediation activities. If dust exceedances are reported, notifications are provided to appropriate team members so additional dust control measures can be implemented.

Structural Practices

Structural erosion and sedimentation controls to be used on the Site include barriers, catch basin inlet protection, stabilized construction exits and truck wash areas, temporary sediment basins, diversion swales, temporary check dams, dewatering filters, and settling tanks.

Erosion Control Barriers

Prior to any ground disturbance, an approved erosion control barrier was installed around the perimeter of the Site. As remediation progresses, additional barriers will be installed around the base of stockpiles and other erosion prone areas. The barriers will be entrenched into the substrate to prevent underflow. If soil has accumulated to a depth which impairs proper functioning of the barrier, it will be removed by hand or by machinery operating upslope of the barriers. This material will be either reused on the Site or disposed of at a suitable off-site location. Any damaged sections of the barrier will be repaired or replaced immediately upon discovery.

Catch Basin Inlet Protection

The inlets of existing and proposed catch basins have been protected from soil inflow by installing Silt Sacks®. If soil has collected behind the barrier or in the Silt Sack® to a point where it impairs proper functioning, it will be removed and will be either reused onsite or disposed of at a suitable offsite location.

Stabilized Construction Exits and Truck Wash Areas

Stone anti-tracking pads have been installed at each access point to the work area to prevent the off-site transport of soil by construction vehicles. The stabilized construction exits are at least fifty feet long and consist of a 4-inch-thick layer of crushed stone (1.5 inches in diameter). The

anti-tracking pads will remain in place until a binder coat of pavement has been established on paved surfaces. A truck wash area with tire wash rack will also be installed to further prevent soil from being tracked offsite.

Temporary Sediment Basins

At the completion of the demolition and remediation activities, temporary basins will be installed to retain runoff for enough time to allow suspended soil particles to settle out prior to discharge. These temporary basins will be located at the low points within the Site (upslope of the perimeter barrier) and receive runoff via temporary diversion swales. Discharge from the basin will be controlled by a perforated riser surrounded by a crushed stone filter. Points of discharge from temporary basins will be stabilized with rip rap to minimize erosion. Once constructed, the temporary basins will be stabilized by covering them with bonded fiber matrix. If soil accumulates to a depth which impairs proper functioning of the basin, it shall be removed and either reused onsite or disposed of at a suitable offsite location. Any eroded or damaged areas shall be repaired immediately upon discovery.

Diversion Swales

Diversion swales may be constructed to collect runoff from remediation areas and convey it to the temporary basins. The swales will be lined with a non-woven erosion control blanket (BonTerra HP-90® or equivalent) installed according to the manufacturer's recommendations or a bonded fiber matrix. The temporary diversion swales will remain in place until the temporary basin is no longer required.

Temporary Check Dams

Temporary check dams, consisting of staked straw bales or crushed stone, may be installed at specified intervals within the diversion swales. If soil accumulates behind the check dams to a depth that impairs proper functioning, it shall be removed and be either reused onsite or disposed of at a suitable offsite location. Any damaged check dams shall be repaired or replaced immediately upon discovery.

Dewatering Filters

If necessary, soil laden water that collects in trenches or excavated areas will be pumped into straw bale basins or filter bags. The straw bale basins will consist of a ring of staked straw bales overlain by non-woven geotextile filter fabric and crushed stone. Discharge water will be pumped into the straw bale basin and allowed to drain through the fabric onto relatively flat stabilized surfaces. Dewatering filter bags may be used in place of straw bale basins. The bags will be placed on relatively flat terrain, free of brush and stumps, to avoid ruptures and punctures. A maximum of one six-inch discharge hose will be allowed per filter bag. To help prevent punctures, geotextile fabric will be placed beneath the filter bag when used in wooded locations. Unattended filter bags will be encircled with a straw bale and silt fence barrier.

10.2.3 Stormwater Management

Off-Site discharge of groundwater and stormwater is being managed under EPA National NPDES Dewatering and Remediation General Permit (DRGP) Authorizations. Two Notices of Intent (NOIs) have been submitted and subsequently authorized by EPA for the Site. These authorizations include:

- **Authorization #MAG912154** for water being managed from the North Tank Farm and South Tank Farm portions of the Site and the bunkers and discharging to the Island End River; and
- **Authorization #MAG912155** for water being managed from the South Tank Farm and discharging to the Mystic River.

Discharges associated with groundwater, stormwater and surface water related to site remediation, site dewatering, infrastructure dewatering/remediation and material dewatering is being managed under the DRGP. Prior to discharge, collected water is routed through a baffled sedimentation tank and bag filters to remove suspended solids and undissolved constituents, including metals, to within the limits established by the permit. Total flow is measured with a flow meter/totalizer. If necessary to meet NPDES DRGP Effluent Limitations, supplemental pre-treatment may include oil/water separators, pH control to adjust the pH to within the limits established by the permit, and/or other components as required such as carbon vessels used to treat site-specific contaminants. The DRGP applies to localized dewatering during remediation. The CGP is utilized in tandem with the DRGP to regulate discharges from site activities including soil disturbance. These discharges utilize the existing outfall to the Island End River. As each remediation phase is completed, the existing stormwater management systems in that area will be decommissioned, and stormwater will then be managed on site according to the proposed remediation phase stormwater management system.

Additionally, a Construction General Permit (CGP) was filed for the management of general stormwater discharges and management across the Site (MAR1004Z0). This interim condition will be managed with localized treatment systems to be operated on an as-needed basis. The current stormwater system has been designed to manage stormwater to mitigate impacts on downstream areas by providing appropriate stormwater controls and detention.

The remediation phase drainage design follows EPA CGP methodology for management of stormwater, sizing of stormwater management basins, and operations. In the final/post-remediation condition, a drainage design for the Site will be developed based on a future development plan and will follow the MassDEP Stormwater Management Guidelines and City of Everett Stormwater Management requirements. Almost the entirety of the existing site drainage is directed to the existing Beacham Street culvert, which is not a part of the Everett Municipal Separate Storm Sewer System (MS4) system. The remediation phase drainage system and the final developed condition are also planned to be directed to this culvert. The interim post-remediation stormwater management conditions will strive to meet the existing discharge of the on-site treatment system.

10.3 Additional Permitting and Review

Permits obtained as part of the pre-development remediation work include:

- NPDES CGP Authorization #MAR1004Z0, Construction Stormwater, 01/18/2024
- NPDES DRGP Authorization #MAG912154, Groundwater Remediation, Dewatering, and Hydrostatic Testing, 04/08/24
- NPDES DRGP Authorization #MAG912155, Groundwater Remediation, Dewatering, and Hydrostatic Testing, 4/15/2024
- MassDEP Beneficial Use Determination (BUD), forthcoming
- MassDEP Demolition Notification (BWP AQ06) Permit Number 10042560, 03/12/2024

- MassDEP Asbestos Notification Form (ANF-001) Permit Number 100402522, 03/11/2024
- MassDEP On-Site Rubble Crushing Notification Form, 07/30/2024
- MassDEP Chapter 91 Minor Modification to Harbor and Land Commissioners License No. 2162 to place fill and Authorization for removal/demolition of existing structures, 3/19/24
- City of Everett Demolition Permits B-24-294, B-24-414, B-24-513, and B-24-538, 04/11/24, 05/13/24, 05/28/24, and 06/18/24
- Everett Conservation Commission, Negative Determination of Applicability, 12/22/23, confirming that two areas on the Master Plan Project Site (a holding pond and an isolated seasonally wet area) do not contain jurisdictional resource areas
- Everett Conservation Commission, Orders of Conditions, 5/16/24 (DEP File No. 022-0137), and 6/26/24 (DEP File No. 022-0139) for work in previously developed Land Subject to Coastal Storm Flowage (LSCSF) (see Chapter 1, Section 1.5.4 for additional information)

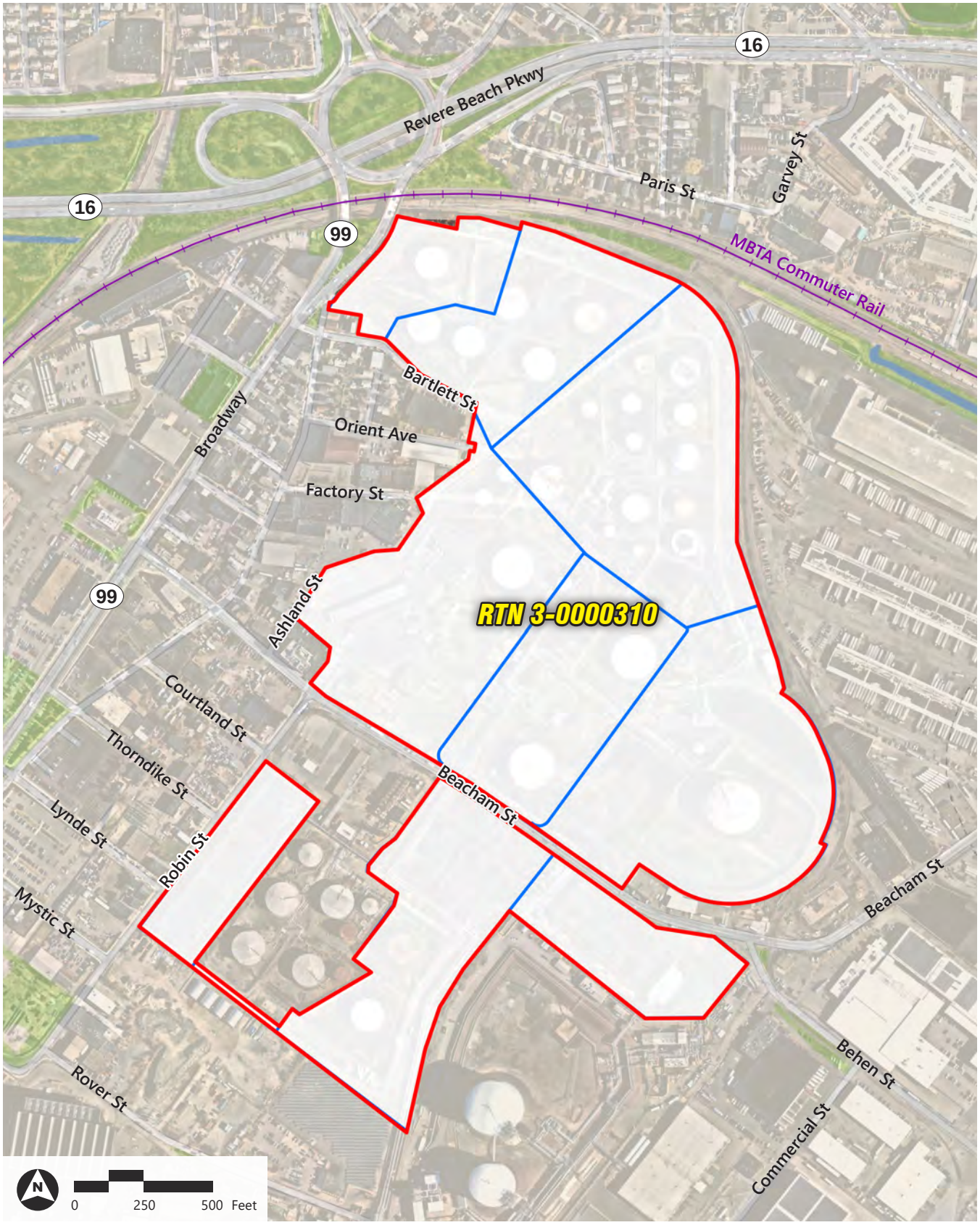
10.4 Community Engagement

The Master Plan Project Proponent has created a website providing information about the Pre-Development Remediation: https://everettlandco.com/everett/. It includes a history of the Site, describes ongoing activities, provides a public meeting schedule, reserve space to post public filings, and provides construction updates. It also includes a contact form that community members can use to contact the Proponent directly. To date, the Master Plan Proponent has met with the following to discuss remediation activities:

- July 27, 2022 – Everett Community Meeting at Wynn Casino Event Space;
- March 6, 2024 – Chelsea City Manager;
- Apr 5, 2024 – Boston Harbor Now;
- April 12, 2024 – Notification of public hearing for Remediation Project Notice of Intent sent via certified mail to 41 property owners within 100 feet of the Site (hearing details also posted on City of Everett Calendar https://cityofeverett.com/calendar/);
- May 1, 2024 – Everett Youth Commission;
- May 16, 2024 – Public Hearing held by the Everett Conservation Commission regarding the Remediation NOI;
- May 29, 2024 – UMass Lowell Chancellor Chen;
- Jun 7, 2024 – Mystic River Watershed Association/ Resilient Mystic Collaborative;
- June 11, 2024 – Notification of public hearing for Infill Project Notice of Intent sent via certified mail to 41 property owners within 100 feet of the Site (hearing details also posted on City of Everett Calendar https://cityofeverett.com/calendar/);
- June 20, 2024 – Public Hearing held by the Everett Conservation Commission regarding the Infill Program NOI;
- Jun 13, 2024 – Green Roots;
- July 19, 2024 – La Comunidad Inc;
- Aug 13, 2024 – Bunker Hill Community College; and
- Aug 14, 2024 – Somerville Mayor Ballantyne.

Figure 10.1: MCP Jurisdiction

Everett Docklands Innovation District | 52 Beacham Street, Everett, MA 02149



Source: Nearmap Aerial, ESRI World Topographic Base

RTN 3-0000310 Boundary

11

Phase 1 Construction Period Impacts

This chapter discusses potential impacts associated with the Phase 1 Project's construction period and identifies appropriate mitigation measures.

11.1 Key Findings

Key findings related to construction period impacts include:

- Impacts associated with the Phase 1 Project construction activities are temporary in nature and are typically related to truck traffic, air (dust), noise, stormwater runoff, solid waste, and vibration;
- A Construction Management Plan will be developed with input from the City of Everett and other appropriate agencies;
- The Proponent will take an active role regarding the reprocessing and recycling of construction waste;
- Construction staging areas will be located to minimize impacts to pedestrian and vehicular flow;
- Plans for controlling fugitive dust during demolition, excavation, and construction include implementing an outdoor construction management plan that includes provisions for wheel washing, project site vacuuming, truck covers and other dust mitigation measures;
- The Phase 1 Project will enforce anti-idling measures consistent with MGL Chapter 90 Section 16A and all diesel construction machinery will be fitted with oxidation catalysts to reduce emissions;
- The Phase 1 Project will implement mitigation measures to reduce or minimize noise from construction activities; and
- The Phase 1 Project will include installation of erosion and sedimentation controls to protect against discharge of any sediment material into on-site drainage systems and catch basins.

11.2 Construction Management

Impacts associated with the Project's construction activities are temporary in nature and are typically related to truck traffic, air (dust), noise, stormwater runoff, solid waste, and vibration. The CMP will be developed to reflect the input of the regulatory authorities having jurisdiction

over such plans. The CMP will include detailed information on construction activities, specific construction mitigation measures, and vehicle routing and staging to minimize impact on the surrounding neighborhood.

11.3 Public Safety

Access to the Phase 1 Project Site and construction staging areas will be provided in the CMP. Although specific construction and staging detail have not been finalized, the Phase 1 Project team will work to ensure that staging areas are situated to minimize public safety impacts. A variety of measures will be considered and implemented to protect the safety of pedestrians. Secure fencing and barricades will be used to establish the limit of work. Construction procedures will be designed to meet all OSHA safety standards for specific Site construction activities.

11.4 Air Quality

The Phase 1 Project will comply with air quality regulations at 310 CMR 7.01, 7.09-7.10. Retrofitted diesel construction vehicles, or vehicles that use alternate fuels, will be used. The Phase 1 Project will implement an outdoor construction management plan that includes provisions for wheel washing, project site vacuuming, truck covers and other dust control measures. The Commonwealth of Massachusetts' anti-idling law will be enforced during the construction phase of the Phase 1 Project with the installation of on-site anti-idling signage.

The Phase 1 Project will comply with the requirements of the Clean Construction Equipment Initiative aimed at reducing air emissions from diesel-powered construction equipment. Oxidation catalysts and catalyzed particulate filters will be utilized on all construction vehicles and equipment to reduce air quality degradation caused by emissions from heavy-duty, diesel-powered construction equipment. All pre-2007 diesel construction vehicles working on the Phase 1 Project will be retrofitted using retrofit technologies approved by the United States Environmental Protection Agency (EPA). Additionally, ultra-low-sulfur diesel (ULSD) fuel (15 parts per million) will be used for all off-road diesel equipment.

The erosion and sediment control program will include provisions to minimize the generation of dust during dry and windy conditions. Dust will be controlled so that there is no visible fugitive dust leaving the Site or causing a nuisance condition. When necessary, larger areas of exposed soil will be wetted to prevent wind borne transport of fine-grained soil. Enough water shall be applied to wet the upper 0.5 inches of soil. The water will be applied as a fine spray to prevent erosion. A water truck will be kept on the property (or at a nearby location) to facilitate this practice.

Perimeter dust monitoring locations will be set at various locations on the Site. If dust exceedances are reported, notifications will be provided to appropriate team members so additional dust control measures can be implemented.

11.5 Noise

The Proponent is committed to mitigating noise impacts from the construction of the Project. Construction work will comply with the requirements of the City of Everett noise regulations. Every reasonable effort will be made to minimize the noise impact of construction activities.

Mitigation measures are expected to include:

- Conforming to City of Everett work hour regulations;
- Using appropriate mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on continuously running equipment, such as air compressors and welding generators;
- Selecting the quietest of alternative items of equipment where feasible;
- Scheduling equipment operations to keep average noise levels low, to synchronize the noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels;
- Turning off idling equipment, and
- Locating noisy equipment at locations that protect sensitive locations by shielding or distance.

Intermittent increases in noise levels will occur in the short term during the construction of the new buildings. Work will comply with the requirements of the City of Everett Noise Ordinance.

11.6 Stormwater Runoff/Erosion

Prior to the beginning of construction, the Construction Manager will produce a Stormwater Pollution Prevention Program (SWPPP) to be submitted to the EPA to obtain a NPDES Construction General Permit (CGP).

Existing catch basins on and adjacent to the Phase 1 Project Site will be protected with silt sacks. Should dewatering be required, it will be conducted in accordance with Massachusetts Water Resources Authority (MWRA) Sewer Use Regulations at 360 C.M.R. §§ 10.007, 10.052, 10.072, and 10.092 as applicable. A Sewer Use Discharge Permit Application will be filed with MWRA and the City of Everett if required.

The entire perimeter of the construction site will be protected with a construction fence with debris net and erosion control measured to separate the construction activities and general public. Vehicular gates with wheel wash stations will be provided for construction traffic in alignment with the flow of traffic on perimeter roads to allow safe entrance and exiting for construction vehicles.

11.7 Transportation

Detailed CMPs will be developed and submitted to the City of Everett for approval. These plans will detail construction vehicle routing, staging, and roadway occupancy.

Construction vehicles will be necessary to move construction materials to and from the Phase 1 Project Site. Every effort will be made to reduce noise, control fugitive dust, and minimize other

disturbances associated with construction traffic. Truck staging and laydown areas for the Phase 1 Project will be carefully planned.

Contractors will be encouraged to devise access plans for their personnel that deemphasize auto use (such as seeking off-site parking, provide transit subsidies, on-site lockers for tools and equipment, etc.). Construction workers will also be encouraged to use public transportation to access the Phase 1 Project Site, as no new parking will be provided for them.

11.8 Site Contamination

The Phase 1 Project Site is within the limits of the Massachusetts Contingency Plan (MCP: 310 CMR 40.0000) site (MCP site) identified by Release Tracking Number (RTN) 3-0000310 for petroleum hydrocarbon contamination in soil and groundwater associated with historic bulk oil storage terminal operations.

Remedial response actions, described in detail in Chapter 10, will result in the Phase 1 Project Site achieving regulatory closure with a Permanent Solution Statement (PSS) with an Activity and Use Limitation (AUL). Closure relies on MCP regulatory conditions that includes a vapor intrusion evaluation by a Licensed Site Professional (LSP) prior to any new building construction, and best management practices for commercial gardening, and an Activity and Use Limitation (AUL) that includes remediation and maintenance of protective ground covers as well as the prohibition of single-family residential use and agriculture for consumption (neither of which are proposed as part of the Phase 1 Project). All soil used for remediation or maintenance of clean cover will consist of imported fill with contaminant concentrations less than MCP RCS-1 Reportable Concentrations (RCS-1), consistent with ongoing discussions with MassDEP in anticipation of signing an ACO. It is also anticipated that RCS-2 soils may be imported, consistent with the existing RCS-2 soils on site, with the oversight and approval of MassDEP. All Post-Permanent Solution work will be conducted in accordance with the MCP and the requirements of the regulatory conditions and AUL for RTN 3-310.

Excavation for below-grade foundation construction for new site utilities, and other improvements will generate excess soil that will require on-site reuse or off-site disposal. Chemical testing of the material will be undertaken during the design of the Phase 1 Project to define environmental quality and provide data required by appropriate facilities prior to accepting the material. Materials leaving the Phase 1 Project Site will be legally transported in accordance with local, State, and Federal requirements. All work will be conducted in accordance with the MCP, the requirements of the regulatory conditions and AUL for RTN 3-310, and all other MassDEP requirements.

Previous surface level structures at the Phase 1 Project Site were demolished as part of remediation enabling activities (Chapter 10) and there are currently no structures on the site. Construction debris may be encountered during excavation, including potential buried piping, structures, former foundations and/or remnant materials, such as asphalt, brick, concrete, wood, granite blocks, and other debris in the fill. The Proponent will ensure that handling, waste removal and reuse, recycling, or disposal during construction and operation will be in conformance with the City of Everett and the MassDEP regulations for solid waste reuse or disposal.

Enabling utility work for the Phase 1 Project is outside the limits of the MCP Site, and largely outside the limits of the Phase 1 Project Site within surrounding public-rights-of way. All

enabling utility work will be conducted in accordance with the MCP and all other MassDEP and City of Everett requirements.

11.9 Dewatering

Temporary dewatering will be required for underground construction for building foundations, utilities, and site improvements to remove stormwater and groundwater, if encountered. Temporary dewatering will be conducted within a temporary earth support system that will be designed and constructed as a groundwater seepage and impervious cut-off wall to maintain groundwater levels outside the exaction, if necessary. The temporary dewatering will be conducted in accordance with appropriate permits to be obtained by the Proponent from local, State, and Federal agencies, as applicable, to discharge into adjacent storm drains. It is anticipated that a National Pollutant Discharge Elimination System (NPDES) Dewatering and Remediation General Permit (DRGP) will be required from the EPA.

11.10 Construction Period Impacts on EJ Populations

EJ populations will experience the same temporary construction period impacts as described in this chapter. Mitigation measures during construction will be implemented to minimize impacts to EJ communities. The Proponent will develop a plan to control construction-related impacts including erosion, sedimentation, and other pollutant sources during construction and any land disturbance activities. A Construction Manager will be designated to develop a construction phasing and staging plan for coordinating construction activities with all appropriate utility companies and regulatory agencies. The construction-period mitigation measures will be developed with consideration of control on demolition phase impacts, noise, air quality/dust control, water quality, public safety and waste management.

Construction period impacts to EJ communities will be limited to those communities that contain or are adjacent to a regional highway route. During construction, it is expected that the majority of construction vehicles will use the regional highway system (e.g., I-95 and the Massachusetts Turnpike) to travel to/from the Phase 1 Project Site. There may also be a small number of construction vehicles that use local roadways in Everett if materials and equipment are sourced from nearby communities. More details will be provided when the contractor is selected and a detailed Construction Management Plan is prepared. Construction period impacts on the local transportation system, including access points, truck routes, and hours of construction and deliveries, will be minimized by coordination with the City of Everett. Additionally, measures will be evaluated and reviewed with the appropriate city agencies to ensure utilities are protected and fire access is maintained. Construction management and scheduling, such as identifying truck and materials delivery routes, and controlling noise, vibration and dust will minimize impacts on the surrounding environment.

As described above, the Proponent will develop a detailed Construction Management Plan (CMP) for approval by the City of Everett prior to construction. Each CMP will be developed to reflect the input of the regulatory authorities having jurisdiction over such plans. The CMP will include detailed information on construction activities, specific construction mitigation measures, and vehicle routing, work hours and staging to minimize impact on the surrounding neighborhood.

12

Phase 1 Mitigation and Draft Section 61 Findings

This Chapter describes the Phase 1 Project's required mitigation and provides draft Section 61 Findings for each Agency Action.

12.1 Proposed Mitigation

The Phase 1 Project will not result in Damage to the Environment, and it does not exceed any MEPA review thresholds. When operational, it will generate negligible traffic, water use, and wastewater. The Phase 1 Project will not result in any impacts to environmentally sensitive areas, nor will it generate GHG emissions. Construction period impacts will be minimized and mitigated to the maximum extent practicable through implementation of a Construction Management Plan. As such, no mitigation is warranted.

To mitigate the de minimis stationary source GHG emissions (projected to be 14 tpy), the Proponent commits to the following measures:

- Provide electric air source heat pumps to supply 100% of the buildings' space and water heating;
- Commit to lower air infiltration standard under Section C406 of the Massachusetts stretch code; and
- Provide 25% Electric Vehicle Installed Parking with Level 2 plugs.

12.2 Draft Section 61 Findings

Draft Section 61 findings for the Phase 1 Project's anticipated Agency Actions are provided below.

12.2.1 Department of Environmental Protection, Waterways Program

DRAFT ONLY

Findings Pursuant to MGL Chapter 30, Section 61

PROJECT NAME: Trimount Energy Storage

PROJECT LOCATION: Everett, MA

PROJECT PROPONENT: Trimount ESS LLC c/o Jupiter Power LLC

EEA NUMBER: TBD

Project Description

The Trimount Energy Storage Project is intended to strengthen the Commonwealth's energy grid and assist in the clean energy transition. It will help Massachusetts to meet its greenhouse gas (GHG) emissions reduction goals by providing a battery energy storage system (BESS), which is a critical operation component enabling the use of off-shore wind-generated power.

The Trimount Energy Storage Project is located on 20.7 acres of land on two parcels at 52 Beacham Street (Parcel C, 9.6 acres) and 0 South Farm (Parcel A, 11.1 acres), the latter of which is located in the Mystic Designated Port Area (DPA). The Project includes a BESS and associated infrastructure including two on-site substations, two small buildings for personnel and equipment storage and a generation interconnect (Gen-Tie) line that will link to the Eversource Substation 250 via a new underground conduit in the public rights-of-way of Beacham, Robin, Dexter, and Alford streets.

The Project requires a new Chapter 91 license for a water-dependent industrial use in a DPA. Depending on its final location, the Gen-Tie line may require a minor modification for work within filled former tidelands in the public right-of-way.

Project Impacts and Mitigation

The Phase 1 Project will not result in Damage to the Environment, and it does not exceed any MEPA review thresholds. When operational, it will generate negligible traffic, water use, and wastewater. The de minimis stationary source GHG emissions will be mitigated through the use of electric energy air source heat pumps for space and water heating. The Phase 1 Project will not result in any impacts to environmentally sensitive areas, nor will it generate GHG emissions. It will utilize 0.53 acres of filled Private tidelands for a water-dependent industrial use within a DPA. Construction period impacts will be minimized and mitigated to the maximum extent practicable through implementation of a Construction Management Plan.

Section 61 Findings

The Department of Environmental Protection hereby finds that pursuant to MGL c. 30, § 61, the construction of the Phase 1 Project as described above, and with the implementation by the

Proponent of the noted mitigation measures, all practicable means and measures will be taken to avoid or minimize adverse environmental impacts related to the Phase 1 Project.

Agency: _____

Commissioner: _____

Date: _____

12.2.2 Massachusetts Water Resources Authority

DRAFT ONLY

Findings Pursuant to MGL Chapter 30, Section 61

PROJECT NAME: Trimount Energy Storage

PROJECT LOCATION: Everett, MA

PROJECT PROPONENT: Trimount ESS LLC c/o Jupiter Power LLC

EEA NUMBER: TBD

Project Description

The Trimount Energy Storage Project is intended to strengthen the Commonwealth's energy grid and assist in the clean energy transition. It will help Massachusetts to meet its greenhouse gas (GHG) emissions reduction goals by providing a battery energy storage system (BESS), which is a critical operation component enabling the use of off-shore wind-generated power.

The Trimount Energy Storage Project is located on 20.7 acres of land on two parcels at 52 Beacham Street (Parcel C, 9.6 acres) and 0 South Farm (Parcel A, 11.1 acres), the latter of which is located in the Mystic Designated Port Area. The Project includes a BESS and associated infrastructure including two on-site substations, two small buildings for personnel and equipment storage and a generation interconnect (Gen-Tie) line that will link to the Eversource Substation 250 via a new underground conduit in the public rights-of-way of Beacham, Robin, Dexter, and Alford streets.

The Project requires an 8(m) permit for work within an MWRA easement.

Project Impacts and Mitigation

The Phase 1 Project will not result in Damage to the Environment, as it does not exceed any MEPA review thresholds. When operational, it will generate negligible traffic, water use, and wastewater. The de minimis stationary source GHG emissions will be mitigated through the use of electric energy air source heat pumps for space and water heating. The Phase 1 Project will not result in any impacts to environmentally sensitive areas, nor will it generate GHG emissions. It will utilize 0.53 acres of filled Private tidelands for a water-dependent industrial use within a DPA. Construction period impacts will be minimized and mitigated to the maximum extent practicable through implementation of a Construction Management Plan.

Section 61 Findings

The Massachusetts Water Resources Authority hereby finds that pursuant to MGL c. 30, § 61, the construction of the Phase 1 Project as described above, and with the implementation by the Proponent of the noted mitigation measures, all practicable means and measures will be taken to avoid or minimize adverse environmental impacts related to the Phase 1 Project.

Agency: _____

Commissioner: _____

Date: _____

12.2.3 Department of Public Utilities

DRAFT ONLY

Findings Pursuant to MGL Chapter 30, Section 61

PROJECT NAME: Trimount Energy Storage

PROJECT LOCATION: Everett, MA

PROJECT PROPONENT: Trimount ESS LLC c/o Jupiter Power LLC

EEA NUMBER: TBD

Project Description

The Trimount Energy Storage Project is intended to strengthen the Commonwealth's energy grid and assist in the clean energy transition. It will help Massachusetts to meet its greenhouse gas (GHG) emissions reduction goals by providing a battery energy storage system (BESS), which is a critical operation component enabling the use of off-shore wind-generated power.

The Trimount Energy Storage Project is located on 20.7 acres of land on two parcels at 52 Beacham Street (Parcel C, 9.6 acres) and 0 South Farm (Parcel A, 11.1 acres), the latter of which is located in the Mystic Designated Port Area. The Project includes a BESS and associated infrastructure including two on-site substations, two small buildings for personnel and equipment storage and a generation interconnect (Gen-Tie) line that will link to the Eversource Substation 250 via a new underground conduit in the public rights-of-way of Beacham, Robin, Dexter, and Alford streets.

The Project requires a Comprehensive Zoning Exemption from the Zoning Ordinance of the City of Everett pursuant to G.L. c. 40A, § 3, as well as authority to construct and use a line for the transmission of electricity pursuant to G.L. c. 164, § 72.

Project Impacts and Mitigation

The Phase 1 Project will not result in Damage to the Environment, as it does not exceed any MEPA review thresholds. When operational, it will generate negligible traffic, water use, and wastewater. The de minimis stationary source GHG emissions will be mitigated through the use of electric energy air source heat pumps for space and water heating. The Phase 1 Project will not result in any impacts to environmentally sensitive areas, nor will it generate GHG emissions. It will utilize 0.53 acres of filled Private tidelands for a water-dependent industrial use within a DPA.

Construction period impacts will be minimized and mitigated to the maximum extent practicable through implementation of a Construction Management Plan.

Section 61 Findings

The Department of Public Utilities hereby finds that pursuant to MGL c. 30, § 61, the construction of the Phase 1 Project as described above, and with the implementation by the Proponent of the noted mitigation measures, all practicable means and measures will be taken to avoid or minimize adverse environmental impacts related to the Phase 1 Project.

Agency: _____

Commissioner: _____

Date: _____

13

Circulation

This EENF has been circulated and distributed in accordance with 301 CMR 11.16 (3). It has been distributed to those community-based organizations (CBOs) and tribes whose contact information was provided by the EEA EJ Director, as well as additional interested parties.

13.1 Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114
mepa@mass.gov
tori.kim@state.ma.us

Department of Environmental Protection, Boston Office
Attn: Commissioner's Office
One Winter Street
Boston, MA 02108
helena.boccadoro@mass.gov

Massachusetts Historical Commission
Attn: Brona Simon
The MA Archives Building
220 Morrissey Boulevard
Boston, MA 02125
brona.simon@state.ma.us
(Hard copy submitted to MHC)

Massachusetts Department of Transportation
Public/Private Development Unit
Attn: J. Lionel Lucien
10 Park Plaza Suite #4150
Boston, MA 02116
MassDOTPPDU@dot.state.ma.us

DEP/Northeast Regional Office
Attn: MEPA Coordinator
150 Presidential Way
Woburn, MA 01801
john.d.viola@mass.gov

Massachusetts Department of Transportation
District Office #4
Attn: MEPA Coordinator
519 Appleton Street
Arlington, MA 02476
timothy.paris@dot.state.ma.us

Massachusetts Water Resource Authority
Attn: MEPA Coordinator
100 First Avenue
Charlestown Navy Yard
Boston, MA 02129
Hillary.Monahan@mwra.com

MEPA Office
Attn: EEA EJ Director
100 Cambridge Street, Suite 900
Boston, MA 02144
MEPA-EJ@mass.gov

Energy Facilities Siting Board
Attn: MEPA Coordinator
One South Station
Boston, MA 02110
andrew.greene@mass.gov
smitha.divakar@mass.gov

Department of Energy Resources
Attn: MEPA Coordinator
100 Cambridge Street, 10th Floor
Boston, MA 02114
paul.ormond@mass.gov
becca.edson@mass.gov

Department of Conservation and Recreation (DCR)
Attn: MEPA Coordinator
251 Causeway St., Suite 600
Boston, MA 02114
andy.backman@mass.gov

Coastal Zone Management
Attn: Project Review Coordinator
100 Cambridge Street, Suite 900
Boston, MA 02144
sean.duffy@mass.gov
patrice.bordonaro@mass.gov

13.2 City of Everett

Everett Planning Board
Attn: Director of the Planning & Development Department
484 Broadway
Everett, MA 02149
Matt.Lattanzi@ci.everett.ma.us

Everett City Council
Attn: City Councilors
484 Broadway, Room 38
Everett, MA 02149
Councilors@ci.everett.ma.us

Everett Health Department
Attn: Elaine Silva (Director of Public Health)
484 Broadway, Room 20
Everett, MA 02149
elaine.silva@ci.everett.ma.us

Everett Conservation Commission
Attn: Jon E. Norton (Chairman)
484 Broadway, Room 20
Everett, MA 02149
jon.norton@ci.everett.ma.us

13.3 Libraries

Parlin Memorial Library
410 Broadway
Everett, MA 02149

13.4 Environmental Justice Organizations

First Name	Last Name	Title	Affiliation	Email
Massachusetts Environmental Organizations				
Claire	B.W. Muller	Movement Building Director	Unitarian Universalist Mass Action Network	claire@uumassaction.org
Julia	Blatt	Executive Director	Mass Rivers Alliance	juliablatt@massriversalliance.org
Jodi	Valenta	Massachusetts State Director	The Trust for Public Land	Jodi.Valenta@tpl.org
Kerry	Bowie	Board President	Browning the GreenSpace	kerry@msaadapartners.com
Sylvia	Broude	Executive Director	Community Action Works	sylvia@communityactionworks.org
Heather	Clish	Director of Conservation & Recreation Policy	Appalachian Mountain Club	hclish@outdoors.org
Johannes	Epke	Staff Attorney	Conservation Law Foundation	jepke@clf.org
Brittney	Jenkins	Vice President	Conservation Law Foundation	Bjenkins@clf.org
Amy	Boyd Rabin	Vice President of Policy	Environmental League of Massachusetts	aboydrabin@environmentalleague.org
Zahra	Saifee	Policy & Advocacy Coordinator	Environmental League of Massachusetts	zsaifee@environmentalleague.org
Ben	Hellerstein	MA State Director	Environment Massachusetts	ben@environmentmassachusetts.org
Robb	Johnson	Executive Director	Mass Land Trust Coalition	robb@massland.org
Cindy	Luppi	New England Director	Clean Water Action	cluppi@cleanwater.org
Lena Miles	Entin Gresham	Interim Co-Directors	Neighbor to Neighbor Mass.	Lena@N2NMa.org Miles@N2NMa.org
Rob	Moir	Executive Director	Ocean River Institute	rob@oceanriver.org
Deb	Pasternak	Director, MA Chapter	Sierra Club MA	deb.pasternak@sierraclub.org
Heidi	Ricci	Director of Policy	Mass Audubon	hricci@massaudubon.org
Indigenous Organizations				
Alma	Gordon	President	Chappaquiddick Tribe of the Wampanoag Nation	tribalcouncil@chappaquiddickwampanoag.org
Cheryll	Toney Holley	Chair	Nipmuc Nation (Hassanamisco Nipmucs)	crwritings@aol.com
John	Peters, Jr.	Executive Director	Massachusetts Commission on Indian Affairs (MCIA)	john.peters@mass.gov
Melissa	Ferretti	Chair	Herring Pond Wampanoag Tribe	melissa@herringpondtribe.org
Patricia	D. Rocker	Council Chair	Chappaquiddick Tribe of the Wampanoag Nation, Whale Clan	rockerpatriciad@verizon.net
Raquel	Halsey	Executive Director	North American Indian Center of Boston	rhalsey@naicob.org
Cora	Pierce	Not Provided	Pocassett Wampanoag Tribe	Coradot@yahoo.com

First Name	Last Name	Title	Affiliation	Email
Elizabeth	Solomon	Not Provided	Massachusetts Tribe at Ponkapoag	Solomon.Elizabeth@gmail.com
Federal Tribes				
Bettina	Washington	Tribal Historic Preservation Officer	Wampanoag Tribe of Gay Head (Aquinnah)	thpo@wampanoagtribe-nsn.gov
Brian	Weeden	Chair	Mashpee Wampanoag Tribe	Brian.Weeden@mwtribe-nsn.gov
David	Weeden	THPO/Director	Mashpee Wampanoag Tribe	David.Weeden@mwtribe-nsn.gov
Nakia	Hendricks Jr.	Office Manager	Mashpee Wampanoag Tribe	106Review@mwtribe-nsn.gov
Local Organizations				
Antonio	Amaya	Executive Director	La Comunidad	lacomunidadinc@yahoo.com
David	Queeley	Director of Projects	Mystic River Watershed Association	david.queeley@mysticriver.org
Julie	Wormser	Deputy Director	Mystic River Watershed Association	julie.wormser@mysticriver.org
Joy	Gary	Executive Director	Boston Farms Community Land Trust	joy@bostonfarms.org
Aliya	Zwyer	Environmental Policy Coordinator	Save the Harbor/Save the Bay	zwyer@savetheharbor.org
Chris	Mancini	Executive Director	Save the Harbor/Save the Bay	Mancini@SaveTheHarbor.org
Jason	Rundle	Policy Coordinator	Save the Harbor/Save the Bay	Rundle@SaveTheHarbor.org
Kelly	Sherman	Manager of Waterfront Design	Boston Harbor Now	KSherman@BostonHarborNow.Org
Karen	Chen	Executive Director	Chinese Progressive Association	karen@cpaboston.org
Lee	Matsueda	Executive Director	Mass Community Labor United	lee@massclu.org
Bruce	Berman	Not Provided	Save the Harbor/Save the Bay	Bruce@bostonharbor.com
Lydia	Lowe	Executive Director	Chinatown Community Land Trust	lydia@chinatownclt.org
Noemi	Mimi Ramos	Executive Director	New England United for Justice	mimi.neunited4justice@gmail.com
Eugene	Benson	Former City Planning & Urban Affairs Professor	GreenRoots, Inc.	eugene.b.benson@gmail.com
Gladys	Vega	Executive Director	Chelsea Collaborative, Inc.	gladysv@chelseacollab.org
Roseann	Bongiovanni	Executive Director	GreenRoots, Inc.	RoseannB@GreenRootsChelsea.org
Magdalena	Ayed	Executive Director	Harborkeepers	Magdalena@Harborkeepers.org
Laura	Jasinski	Executive Director	Charles River Conservancy	ljasinski@thecharles.org
Heather	Miller	Not Provided	Charles River Watershed Assoc.	hmiller@crwa.org
Deb	Fastino	Executive Director	Coalition for Social Justice	dfastino@aol.com
Alexandra	Lennon-Simon	Executive Director	Groundwork Somerville	alexandra@groundworksomerville.org

13.5 Other Interested Parties

Name	Email
Anxhela Mile	amile@clf.org
Daniele Murat	Daniele@lacomunidad.inc
Jocelyn Solis	Jocelyn@lacomunidad.inc
John Walkey	johnw@greenrootsej.org
Samantha Lambert	sam.lambert@sierraclub.org
Nicole Fina	nfina@everettcommunitygrowers.org
Marissa Zampino	marissa.zampino@mysticriver.org

Appendix A

EJ Documentation

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 2, Census Tract 2081.01, Essex County, Massachusetts	Minority
Block Group 4, Census Tract 2081.01, Essex County, Massachusetts	Minority
Block Group 4, Census Tract 2081.02, Essex County, Massachusetts	Minority
Block Group 3, Census Tract 2081.01, Essex County, Massachusetts	Minority
Block Group 1, Census Tract 2081.02, Essex County, Massachusetts	Minority
Block Group 2, Census Tract 2081.02, Essex County, Massachusetts	Minority
Block Group 3, Census Tract 2081.02, Essex County, Massachusetts	Minority
Block Group 3, Census Tract 2082, Essex County, Massachusetts	Income
Block Group 1, Census Tract 2083.01, Essex County, Massachusetts	Income
Block Group 1, Census Tract 2084.01, Essex County, Massachusetts	Minority
Block Group 2, Census Tract 2084.02, Essex County, Massachusetts	Minority
Block Group 4, Census Tract 3394, Middlesex County, Massachusetts	Minority and income
Block Group 1, Census Tract 3395, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3395, Middlesex County, Massachusetts	Minority and income
Block Group 3, Census Tract 3395, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3395, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3396, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3396, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3396, Middlesex County, Massachusetts	Minority
Block Group 6, Census Tract 3396, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3397, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3398.02, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3398.04, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3399, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3399, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3400, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3394, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3391.01, Middlesex County, Massachusetts	Minority and income
Block Group 1, Census Tract 3397, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3397, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3364.02, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3364.02, Middlesex County, Massachusetts	Income
Block Group 1, Census Tract 3364.03, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3364.04, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3364.03, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3364.04, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3398.02, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3399, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3391.01, Middlesex County, Massachusetts	Minority
Block Group 5, Census Tract 3396, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3393, Middlesex County, Massachusetts	Minority and income
Block Group 2, Census Tract 3393, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3394, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3393, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3397, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3398.02, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3398.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3398.04, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3398.03, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3398.03, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3398.04, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3399, Middlesex County, Massachusetts	Minority
Block Group 5, Census Tract 3399, Middlesex County, Massachusetts	Minority and English isolation

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 2, Census Tract 3400, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3400, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3401, Middlesex County, Massachusetts	English isolation
Block Group 3, Census Tract 3401, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3411.01, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3411.01, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3411.01, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3411.02, Middlesex County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 3411.02, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3411.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3412, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3412, Middlesex County, Massachusetts	Minority and English isolation
Block Group 3, Census Tract 3412, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3413.01, Middlesex County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 3413.01, Middlesex County, Massachusetts	Minority and English isolation
Block Group 3, Census Tract 3413.01, Middlesex County, Massachusetts	Minority and income
Block Group 4, Census Tract 3413.01, Middlesex County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 3413.02, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3413.02, Middlesex County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 3415, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3415, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3412, Middlesex County, Massachusetts	Minority
Block Group 5, Census Tract 3412, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3414, Middlesex County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 3414, Middlesex County, Massachusetts	Minority and English isolation
Block Group 3, Census Tract 3414, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3414, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3415, Middlesex County, Massachusetts	Minority and English isolation
Block Group 5, Census Tract 3414, Middlesex County, Massachusetts	Minority
Block Group 5, Census Tract 3415, Middlesex County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 3416, Middlesex County, Massachusetts	Minority
Block Group 5, Census Tract 3416, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3417, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3417, Middlesex County, Massachusetts	Minority and income
Block Group 5, Census Tract 3417, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3415, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3416, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3416, Middlesex County, Massachusetts	Minority
Block Group 6, Census Tract 3416, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3417, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3416, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3417, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3418, Middlesex County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 3418, Middlesex County, Massachusetts	Minority and income
Block Group 3, Census Tract 3418, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3418, Middlesex County, Massachusetts	Minority, income and English isolation
Block Group 5, Census Tract 3418, Middlesex County, Massachusetts	Minority, income and English isolation
Block Group 6, Census Tract 3418, Middlesex County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 3419.01, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3419.03, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3419.03, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3419.04, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3419.04, Middlesex County, Massachusetts	Minority and income

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 2, Census Tract 3421.01, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3421.01, Middlesex County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 3421.02, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3421.02, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3421.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3422.01, Middlesex County, Massachusetts	Minority and income
Block Group 2, Census Tract 3422.01, Middlesex County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 3422.02, Middlesex County, Massachusetts	Minority and income
Block Group 3, Census Tract 3422.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3423.01, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3423.01, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3423.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3424.01, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3424.01, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3424.02, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3424.02, Middlesex County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 3425.01, Middlesex County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 3425.02, Middlesex County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 3425.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3426, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3426, Middlesex County, Massachusetts	Minority, income and English isolation
Block Group 3, Census Tract 3426, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3501.05, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3501.06, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3501.07, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3501.08, Middlesex County, Massachusetts	Minority and income
Block Group 2, Census Tract 3501.08, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3501.09, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3502.01, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3502.01, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3502.01, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3502.02, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3502.02, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3502.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3506, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3506, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3507.02, Middlesex County, Massachusetts	Minority and income
Block Group 1, Census Tract 3419.01, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3419.03, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3423.02, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3419.04, Middlesex County, Massachusetts	Minority and income
Block Group 1, Census Tract 3421.01, Middlesex County, Massachusetts	Minority and income
Block Group 3, Census Tract 3421.01, Middlesex County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 3421.02, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3422.01, Middlesex County, Massachusetts	Minority and English isolation
Block Group 4, Census Tract 3422.01, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3422.02, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3423.02, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3425.01, Middlesex County, Massachusetts	Minority and income
Block Group 2, Census Tract 3424.01, Middlesex County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 3507.02, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3424.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3503, Middlesex County, Massachusetts	Minority

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 2, Census Tract 3503, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3503, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3506, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3507.02, Middlesex County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 3508, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3508, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3510.01, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3511.01, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3511.01, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3511.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3512.03, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3512.03, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3512.04, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3512.04, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3514.03, Middlesex County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 3514.03, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3514.03, Middlesex County, Massachusetts	Minority
Block Group 5, Census Tract 3514.03, Middlesex County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 3514.04, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3514.04, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3514.04, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3515, Middlesex County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 3521.01, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3521.01, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3521.02, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3523, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3524, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3526, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3527, Middlesex County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 3529, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3530, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3531.01, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3531.01, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3531.02, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3531.02, Middlesex County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 3532, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3532, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3533, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3536, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3536, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3537, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3537, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3537, Middlesex County, Massachusetts	Minority, income and English isolation
Block Group 5, Census Tract 3537, Middlesex County, Massachusetts	Minority and income
Block Group 1, Census Tract 3538, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3538, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3538, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3539, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3539, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3540, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3540, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3540, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3541, Middlesex County, Massachusetts	Minority

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 2, Census Tract 3541, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3543, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3544, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3545, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3546.01, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3546.02, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3546.02, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3548, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3549.01, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3549.01, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3549.01, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3549.02, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3549.02, Middlesex County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 3550, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3550, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3561, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3563, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3563, Middlesex County, Massachusetts	Minority
Block Group 5, Census Tract 3563, Middlesex County, Massachusetts	Minority
Block Group 6, Census Tract 3563, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3510.01, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3510.01, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3512.03, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3513, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3512.04, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3513, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3513, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3514.03, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3514.04, Middlesex County, Massachusetts	Minority and income
Block Group 1, Census Tract 3515, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3515, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3515, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3538, Middlesex County, Massachusetts	Minority and income
Block Group 2, Census Tract 3521.01, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3530, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3531.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3521.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3523, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3523, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3522, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3525, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3525, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3526, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3527, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3529, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3528, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3545, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3532, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3532, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3533, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3536, Middlesex County, Massachusetts	Minority and income
Block Group 2, Census Tract 3533, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3539, Middlesex County, Massachusetts	Minority

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 1, Census Tract 3543, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3546.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3549.02, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3547, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3547, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3548, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3549.02, Middlesex County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 3550, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3567.01, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3567.01, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3567.03, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3594, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3594, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3594, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3594, Middlesex County, Massachusetts	Minority
Block Group 5, Census Tract 3594, Middlesex County, Massachusetts	Minority
Block Group 3, Census Tract 3703.01, Middlesex County, Massachusetts	Minority
Block Group 4, Census Tract 3703.01, Middlesex County, Massachusetts	Minority
Block Group 1, Census Tract 3703.02, Middlesex County, Massachusetts	Income and English isolation
Block Group 2, Census Tract 3571, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 3703.02, Middlesex County, Massachusetts	Minority
Block Group 2, Census Tract 4001, Norfolk County, Massachusetts	Minority
Block Group 1, Census Tract 4002.02, Norfolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 4003, Norfolk County, Massachusetts	Minority
Block Group 2, Census Tract 4008, Norfolk County, Massachusetts	Minority
Block Group 3, Census Tract 4008, Norfolk County, Massachusetts	Minority
Block Group 1, Census Tract 4009, Norfolk County, Massachusetts	Minority
Block Group 3, Census Tract 4009, Norfolk County, Massachusetts	Minority
Block Group 1, Census Tract 4001, Norfolk County, Massachusetts	Minority
Block Group 3, Census Tract 4001, Norfolk County, Massachusetts	Minority
Block Group 4, Census Tract 4001, Norfolk County, Massachusetts	Minority
Block Group 5, Census Tract 4001, Norfolk County, Massachusetts	Minority
Block Group 1, Census Tract 4002.01, Norfolk County, Massachusetts	Minority
Block Group 2, Census Tract 4002.02, Norfolk County, Massachusetts	Minority
Block Group 2, Census Tract 4003, Norfolk County, Massachusetts	Minority
Block Group 3, Census Tract 4003, Norfolk County, Massachusetts	Minority
Block Group 1, Census Tract 4004.01, Norfolk County, Massachusetts	Minority
Block Group 2, Census Tract 4004.01, Norfolk County, Massachusetts	Minority
Block Group 1, Census Tract 4008, Norfolk County, Massachusetts	Minority
Block Group 4, Census Tract 4005, Norfolk County, Massachusetts	Minority
Block Group 1, Census Tract 4007, Norfolk County, Massachusetts	Minority
Block Group 4, Census Tract 4008, Norfolk County, Massachusetts	Minority
Block Group 2, Census Tract 4009, Norfolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 1.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 6.01, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 6.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 7.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 7.01, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 7.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 7.03, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 7.04, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 7.04, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 7.04, Suffolk County, Massachusetts	Minority

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 4, Census Tract 7.04, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 8.04, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 8.06, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 101.03, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 3, Census Tract 101.03, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 101.04, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 102.04, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 102.04, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 102.04, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 102.05, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 102.05, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 102.05, Suffolk County, Massachusetts	Minority and income
Block Group 4, Census Tract 102.05, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 102.06, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 102.06, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 103, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 103, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 104.03, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 104.03, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 104.03, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 104.04, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 104.04, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 104.05, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 104.05, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 104.05, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 104.08, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 105, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 105, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 3, Census Tract 105, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 106, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 106, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 106, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 107.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 108.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 202, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 202, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 203.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 203.04, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 203.05, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 303.02, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 402, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 402, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 403, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 1.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 8.05, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 1.02, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1.02, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 101.03, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 203.04, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 6.04, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 304, Suffolk County, Massachusetts	English isolation
Block Group 2, Census Tract 6.04, Suffolk County, Massachusetts	Minority and English isolation
Block Group 4, Census Tract 7.01, Suffolk County, Massachusetts	Minority

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 1, Census Tract 7.03, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 8.04, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 8.05, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 8.05, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 8.06, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 8.07, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 101.04, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 101.04, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 104.04, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 104.04, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 203.05, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 404.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 406, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 501.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 502, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 502, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 502, Suffolk County, Massachusetts	Minority and English isolation
Block Group 3, Census Tract 503, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 504, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 408.01, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 501.01, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 501.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 408.01, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 502, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 503, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 503, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 504, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 505, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 506, Suffolk County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 506, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 507, Suffolk County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 507, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 3, Census Tract 509.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 510, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 507, Suffolk County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 509.01, Suffolk County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 509.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 510, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 510, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 511.01, Suffolk County, Massachusetts	Minority and English isolation
Block Group 3, Census Tract 511.01, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 511.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 606.04, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 607, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 607, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 610, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 612.03, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 701.02, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 701.02, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 701.03, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 702.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 702.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 702.02, Suffolk County, Massachusetts	Minority, income and English isolation

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 2, Census Tract 702.02, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 703.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 703.02, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 704.02, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 705.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 705.02, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 708.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 708.02, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 708.02, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 709.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 709.02, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 711.01, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 711.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 712.01, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 712.01, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 712.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 801, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 801, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 803, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 803, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 804.01, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 804.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 806.01, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 809, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 810.01, Suffolk County, Massachusetts	Minority and income
Block Group 4, Census Tract 810.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 5, Census Tract 810.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 811.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 811.02, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 811.02, Suffolk County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 813.02, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 814, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 814, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 814, Suffolk County, Massachusetts	Minority and income
Block Group 4, Census Tract 814, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 817, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 817, Suffolk County, Massachusetts	Minority and income
Block Group 4, Census Tract 817, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 818, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 818, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 906, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 907, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 909.01, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 913, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 511.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 808.01, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 512, Suffolk County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 512, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 512, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 812, Suffolk County, Massachusetts	Minority and income
Block Group 5, Census Tract 817, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 712.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 806.01, Suffolk County, Massachusetts	Minority and income

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 1, Census Tract 606.04, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 610, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 611.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 611.01, Suffolk County, Massachusetts	Minority and income
Block Group 4, Census Tract 910.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 701.04, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 701.04, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 701.04, Suffolk County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 701.02, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 3, Census Tract 711.01, Suffolk County, Massachusetts	Minority and English isolation
Block Group 3, Census Tract 703.02, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 704.02, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 705.02, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 707, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 707, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 711.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 709.02, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 805, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 805, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 3, Census Tract 806.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 808.01, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 809, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 809, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 810.01, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 810.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 815, Suffolk County, Massachusetts	Minority and income
Block Group 4, Census Tract 904, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 906, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 907, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 907, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 907, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 909.01, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 912, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 913, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 1601.02, Suffolk County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 1601.02, Suffolk County, Massachusetts	Minority and English isolation
Block Group 3, Census Tract 1601.02, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 1601.02, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 1601.03, Suffolk County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 1601.03, Suffolk County, Massachusetts	Minority and English isolation
Block Group 3, Census Tract 1601.03, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 1601.03, Suffolk County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 1602, Suffolk County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 1602, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 3, Census Tract 1602, Suffolk County, Massachusetts	Minority and English isolation
Block Group 4, Census Tract 1602, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 1603, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 1604, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 1604, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 1605.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1605.01, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 1605.01, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 1605.01, Suffolk County, Massachusetts	Minority, income and English isolation

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 5, Census Tract 1605.01, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 1605.02, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 3, Census Tract 1605.02, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 1605.02, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 5, Census Tract 1605.02, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 1606.01, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 1606.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1606.02, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1603, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 1604, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 1604, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 1, Census Tract 1606.01, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 1606.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 1606.02, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 1606.02, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 5, Census Tract 1606.02, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 1701.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1701.01, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 1701.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 1701.02, Suffolk County, Massachusetts	Minority and English isolation
Block Group 2, Census Tract 1701.02, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 1701.02, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 1701.02, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 1702, Suffolk County, Massachusetts	Minority and income
Block Group 2, Census Tract 1702, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 4, Census Tract 1702, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 1703.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1703.01, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 1703.01, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 1703.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 1703.02, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1703.02, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 1703.02, Suffolk County, Massachusetts	Minority
Block Group 5, Census Tract 1704, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1705.02, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 1705.02, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 1705.03, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 1705.04, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1705.04, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1706.01, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1707.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 1707.02, Suffolk County, Massachusetts	Minority, income and English isolation
Block Group 2, Census Tract 1707.02, Suffolk County, Massachusetts	Minority and income
Block Group 4, Census Tract 1707.02, Suffolk County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 1708, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 1801.01, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 1802, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1802, Suffolk County, Massachusetts	Income
Block Group 3, Census Tract 1802, Suffolk County, Massachusetts	Income
Block Group 1, Census Tract 1805, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 1805, Suffolk County, Massachusetts	Minority
Block Group 1, Census Tract 9813, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 1606.02, Suffolk County, Massachusetts	Minority

EJ Populations Within 5 Miles of the Project Site

Census Tract Information	EJ Criteria Description
Block Group 3, Census Tract 1702, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 1704, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1704, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 1704, Suffolk County, Massachusetts	Minority and income
Block Group 4, Census Tract 1704, Suffolk County, Massachusetts	Minority and English isolation
Block Group 1, Census Tract 1706.01, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 1706.01, Suffolk County, Massachusetts	Minority
Block Group 4, Census Tract 1706.01, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 1707.02, Suffolk County, Massachusetts	Minority and income
Block Group 5, Census Tract 1707.02, Suffolk County, Massachusetts	Minority
Block Group 2, Census Tract 1708, Suffolk County, Massachusetts	Minority and income
Block Group 3, Census Tract 1708, Suffolk County, Massachusetts	Minority and income
Block Group 1, Census Tract 1707.01, Suffolk County, Massachusetts	Minority and income
Block Group 4, Census Tract 1708, Suffolk County, Massachusetts	Minority
Block Group 3, Census Tract 1801.01, Suffolk County, Massachusetts	Income

Languages Spoken Within 5 Miles of the Project Site

Census Tract Information	Languages Spoken
Census Tract 3421.01, Middlesex County, Massachusetts	Spanish, Portuguese
Census Tract 3527, Middlesex County, Massachusetts	Portuguese
Census Tract 505, Suffolk County, Massachusetts	Spanish
Census Tract 611.01, Suffolk County, Massachusetts	Spanish, Chinese
Census Tract 810.01, Suffolk County, Massachusetts	Chinese
Census Tract 906, Suffolk County, Massachusetts	Spanish, French, Portuguese
Census Tract 1702, Suffolk County, Massachusetts	Spanish
Census Tract 3423, Middlesex County, Massachusetts	Spanish, Portuguese
Census Tract 3513, Middlesex County, Massachusetts	Portuguese
Census Tract 3526, Middlesex County, Massachusetts	Spanish
Census Tract 3549, Middlesex County, Massachusetts	African
Census Tract 501.01, Suffolk County, Massachusetts	Spanish
Census Tract 712.01, Suffolk County, Massachusetts	Spanish, Chinese
Census Tract 817, Suffolk County, Massachusetts	Spanish
Census Tract 904, Suffolk County, Massachusetts	Spanish, French
Census Tract 1605.02, Suffolk County, Massachusetts	Spanish
Census Tract 1705.01, Suffolk County, Massachusetts	Spanish, Arabic
Census Tract 7.01, Suffolk County, Massachusetts	Chinese
Census Tract 4009, Norfolk County, Massachusetts	Chinese
Census Tract 503, Suffolk County, Massachusetts	Spanish
Census Tract 607, Suffolk County, Massachusetts	Spanish, Chinese
Census Tract 1707.02, Suffolk County, Massachusetts	Spanish, Mon Khmer Cambodian, Arabic
Census Tract 504, Suffolk County, Massachusetts	Spanish
Census Tract 3425, Middlesex County, Massachusetts	Spanish, French, Portuguese
Census Tract 812, Suffolk County, Massachusetts	Spanish
Census Tract 913, Suffolk County, Massachusetts	Spanish, French, Portuguese
Census Tract 3412, Middlesex County, Massachusetts	Chinese, Vietnamese, Arabic
Census Tract 801, Suffolk County, Massachusetts	Spanish
Census Tract 804.01, Suffolk County, Massachusetts	Spanish
Census Tract 813, Suffolk County, Massachusetts	Spanish
Census Tract 404.01, Suffolk County, Massachusetts	Chinese
Census Tract 502, Suffolk County, Massachusetts	Spanish
Census Tract 506, Suffolk County, Massachusetts	Spanish
Census Tract 507, Suffolk County, Massachusetts	Spanish
Census Tract 509.01, Suffolk County, Massachusetts	Spanish
Census Tract 3422.02, Middlesex County, Massachusetts	Spanish, Portuguese
Census Tract 3424, Middlesex County, Massachusetts	Spanish, Portuguese
Census Tract 512, Suffolk County, Massachusetts	Spanish
Census Tract 610, Suffolk County, Massachusetts	Spanish, Chinese
Census Tract 6.01, Suffolk County, Massachusetts	Chinese
Census Tract 8.02, Suffolk County, Massachusetts	Spanish
Census Tract 1602, Suffolk County, Massachusetts	Spanish
Census Tract 1606.01, Suffolk County, Massachusetts	Spanish
Census Tract 1704, Suffolk County, Massachusetts	Spanish
Census Tract 910.01, Suffolk County, Massachusetts	Vietnamese
Census Tract 1706.01, Suffolk County, Massachusetts	Spanish
Census Tract 3524, Middlesex County, Massachusetts	French
Census Tract 3416, Middlesex County, Massachusetts	Chinese
Census Tract 4002, Norfolk County, Massachusetts	Chinese
Census Tract 402, Suffolk County, Massachusetts	Spanish
Census Tract 702, Suffolk County, Massachusetts	Chinese
Census Tract 703, Suffolk County, Massachusetts	Chinese
Census Tract 711.01, Suffolk County, Massachusetts	Spanish

Languages Spoken Within 5 Miles of the Project Site

Census Tract Information	Languages Spoken
Census Tract 803, Suffolk County, Massachusetts	Spanish
Census Tract 811, Suffolk County, Massachusetts	Spanish
Census Tract 818, Suffolk County, Massachusetts	Spanish
Census Tract 907, Suffolk County, Massachusetts	Spanish, Vietnamese
Census Tract 909.01, Suffolk County, Massachusetts	Spanish, Chinese
Census Tract 6.02, Suffolk County, Massachusetts	Spanish, Russian, Chinese
Census Tract 3398.01, Middlesex County, Massachusetts	Arabic
Census Tract 3417, Middlesex County, Massachusetts	Chinese
Census Tract 3421.02, Middlesex County, Massachusetts	Spanish, Portuguese
Census Tract 3426, Middlesex County, Massachusetts	Spanish, French, Portuguese
Census Tract 1601.01, Suffolk County, Massachusetts	Spanish
Census Tract 1703, Suffolk County, Massachusetts	Spanish
Census Tract 1705.02, Suffolk County, Massachusetts	Spanish
Census Tract 1707.01, Suffolk County, Massachusetts	Spanish
Census Tract 1708, Suffolk County, Massachusetts	Spanish, Arabic
Census Tract 3413, Middlesex County, Massachusetts	Chinese, Arabic
Census Tract 3415, Middlesex County, Massachusetts	Chinese
Census Tract 1603, Suffolk County, Massachusetts	Spanish
Census Tract 1604, Suffolk County, Massachusetts	Spanish
Census Tract 1606.02, Suffolk County, Massachusetts	Spanish
Census Tract 3501.04, Middlesex County, Massachusetts	Portuguese
Census Tract 3503, Middlesex County, Massachusetts	Portuguese
Census Tract 3399, Middlesex County, Massachusetts	Spanish, Portuguese
Census Tract 3411.01, Middlesex County, Massachusetts	Chinese
Census Tract 3535, Middlesex County, Massachusetts	French
Census Tract 1605.01, Suffolk County, Massachusetts	Spanish
Census Tract 3515, Middlesex County, Massachusetts	Spanish, Portuguese, Other Indic Languages
Census Tract 808.01, Suffolk County, Massachusetts	Spanish
Census Tract 3419.01, Middlesex County, Massachusetts	Portuguese
Census Tract 3502, Middlesex County, Massachusetts	Portuguese
Census Tract 1, Suffolk County, Massachusetts	Spanish, Chinese
Census Tract 408.01, Suffolk County, Massachusetts	Spanish, Chinese
Census Tract 510, Suffolk County, Massachusetts	Spanish
Census Tract 704.02, Suffolk County, Massachusetts	Chinese
Census Tract 1701, Suffolk County, Massachusetts	Spanish
Census Tract 511.01, Suffolk County, Massachusetts	Spanish
Census Tract 709, Suffolk County, Massachusetts	Spanish
Census Tract 815, Suffolk County, Massachusetts	Spanish
Census Tract 805, Suffolk County, Massachusetts	Spanish
Census Tract 203.01, Suffolk County, Massachusetts	Chinese
Census Tract 705, Suffolk County, Massachusetts	Chinese
Census Tract 9813, Suffolk County, Massachusetts	Spanish
Census Tract 3411.02, Middlesex County, Massachusetts	Chinese
Census Tract 3418, Middlesex County, Massachusetts	Spanish, French
Census Tract 3514.04, Middlesex County, Massachusetts	Spanish, Portuguese
Census Tract 701.01, Suffolk County, Massachusetts	Chinese
Census Tract 3422.01, Middlesex County, Massachusetts	Spanish, Portuguese
Census Tract 3514.03, Middlesex County, Massachusetts	Spanish, Portuguese
Census Tract 706, Suffolk County, Massachusetts	Chinese
Census Tract 9813, Suffolk County, Massachusetts	Spanish

EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Everett, MA

the User Specified Area
Population: 74
Area in square miles: 0.15

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
No language data available.	

COMMUNITY INFORMATION

Low income: 36 percent
People of color: 46 percent
Less than high school education: 4 percent
Limited English households: 2 percent
Unemployment: 0 percent
Persons with disabilities: 13 percent
Male: 62 percent
Female: 38 percent
81 years
Average life expectancy
$48,097
Per capita income
Number of households: 22
Owner occupied: 11 percent

BREAKDOWN BY RACE

White: 54%
Black: 5%
American Indian: 0%
Asian: 2%
Hawaiian/Pacific Islander: 0%
Other race: 0%
Two or more races: 0%
Hispanic: 39%

BREAKDOWN BY AGE

From Ages 1 to 4	5%
From Ages 1 to 18	20%
From Ages 18 and up	80%
From Ages 65 and up	0%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	0%
Speak Other Indo-European Languages	0%
Speak Asian-Pacific Island Languages	100%
Speak Other Languages	0%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2018-2022. Life expectancy data comes from the Centers for Disease Control.

Report for the User Specified Area
Report produced July 21, 2024 using EJScreen Version 2.3

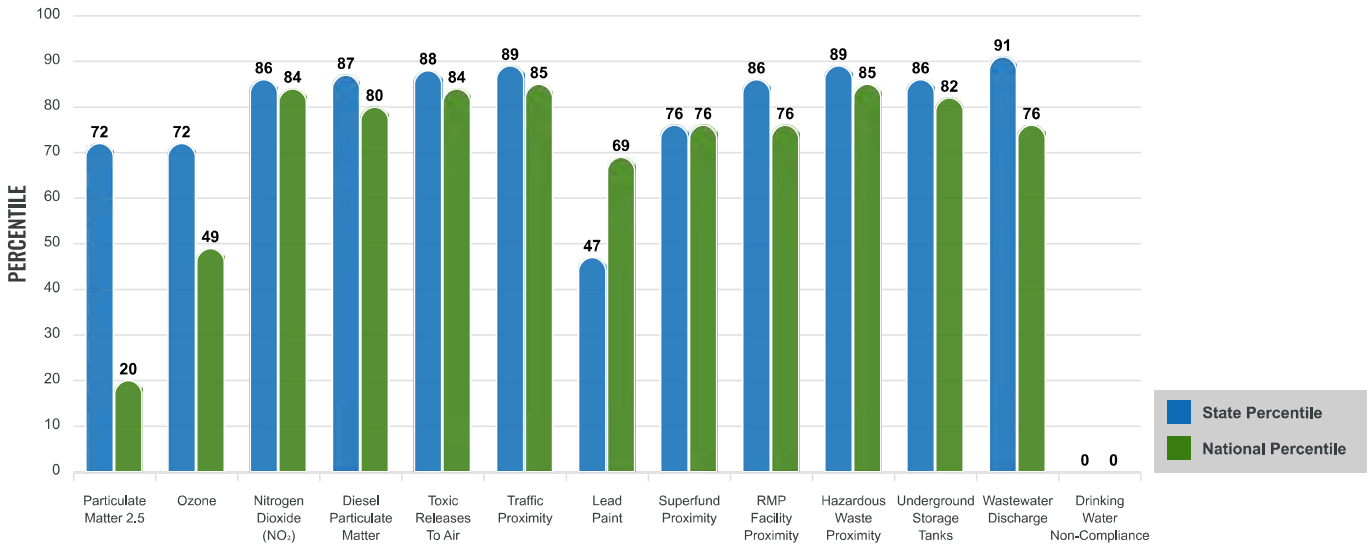
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

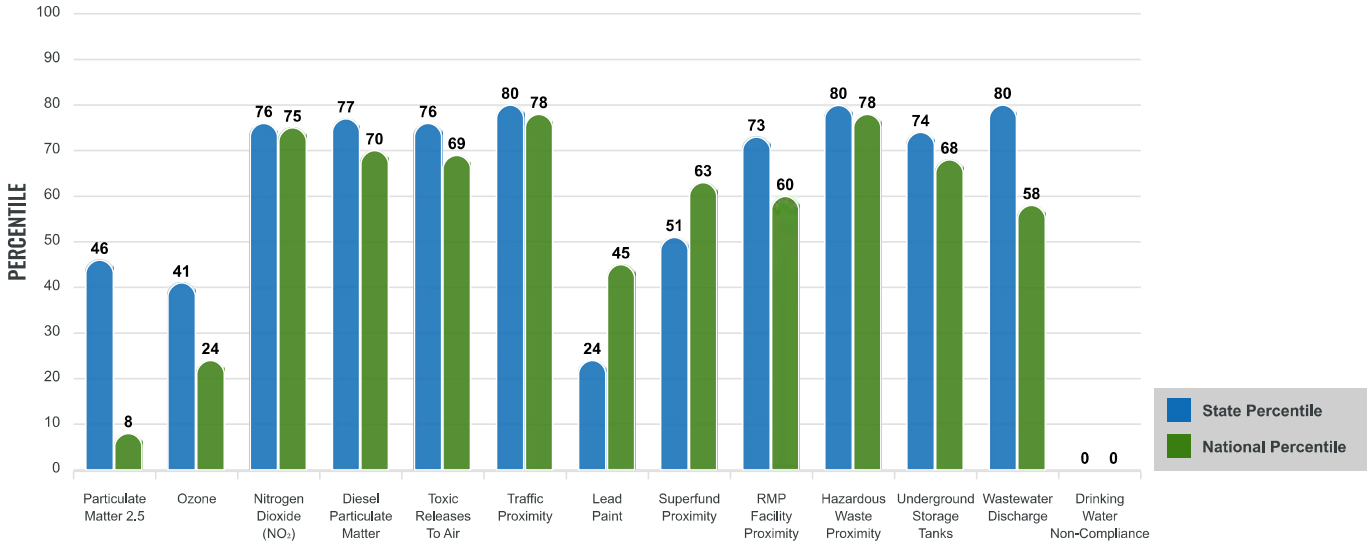
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



Report for the User Specified Area

Report produced July 21, 2024 using EJScreen Version 2.3

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
ENVIRONMENTAL BURDEN INDICATORS					
Particulate Matter 2.5 ($\mu g/m^3$)	6.45	6.52	41	8.45	9
Ozone (ppb)	37.2	37.9	36	41	27
Nitrogen Dioxide (NO_2) (ppbv)	15	8.8	92	7.8	96
Diesel Particulate Matter ($\mu g/m^3$)	0.301	0.176	86	0.191	83
Toxic Releases to Air (toxicity-weighted concentration)	3,800	2,800	77	4,600	83
Traffic Proximity (daily traffic count/distance to road)	17,000,000	6,100,000	95	1,700,000	99
Lead Paint (% Pre-1960 Housing)	0.24	0.51	20	0.3	53
Superfund Proximity (site count/km distance)	0.092	0.34	41	0.39	57
RMP Facility Proximity (facility count/km distance)	0.66	0.37	81	0.57	70
Hazardous Waste Proximity (facility count/km distance)	40	11	94	3.5	99
Underground Storage Tanks (count/km^2)	7	3.3	85	3.6	84
Wastewater Discharge (toxicity-weighted concentration/m distance)	350	760	93	700000	66
Drinking Water Non-Compliance (points)	0	3.2	0	2.2	0
SOCIOECONOMIC INDICATORS					
Demographic Index USA	1.57	N/A	N/A	1.34	65
Supplemental Demographic Index USA	1.23	N/A	N/A	1.64	30
Demographic Index State	1.84	1.19	79	N/A	N/A
Supplemental Demographic Index State	1.34	1.52	51	N/A	N/A
People of Color	46%	31%	75	40%	63
Low Income	36%	22%	79	30%	64
Unemployment Rate	0%	5%	0	6%	0
Limited English Speaking Households	2%	6%	51	5%	64
Less Than High School Education	4%	9%	43	11%	32
Under Age 5	5%	5%	61	5%	56
Over Age 64	0%	18%	0	18%	0

*Diesel particulate matter index is from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund 0
Hazardous Waste, Treatment, Storage, and Disposal Facilities 1
Water Dischargers 4
Air Pollution 1
Brownfields 0
Toxic Release Inventory 1

Other community features within defined area:

Schools 0
Hospitals 0
Places of Worship 1

Other environmental data:

Air Non-attainment ..... Yes
Impaired Waters ..... No

Selected location contains American Indian Reservation Lands* ..... No
Selected location contains a "Justice40 (CEJST)" disadvantaged community ..... Yes
Selected location contains an EPA IRA disadvantaged community ..... Yes

Report for the User Specified Area
Report produced July 21, 2024 using EJScreen Version 2.3

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	17%	17%	48	20%	29
Heart Disease	5.5	5.2	62	5.8	47
Asthma	11.5	11.2	67	10.3	82
Cancer	5.9	6.9	24	6.4	37
Persons with Disabilities	8.3%	12.1%	24	13.7%	19

CLIMATE INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	5%	12%	32	12%	42
Wildfire Risk	0%	0%	0	14%	0

CRITICAL SERVICE GAPS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	9%	9%	58	13%	45
Lack of Health Insurance	3%	3%	58	9%	16
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access Burden	No	N/A	N/A	N/A	N/A
Food Desert	No	N/A	N/A	N/A	N/A

Report for the User Specified Area

Report produced July 21, 2024 using EJScreen Version 2.3

From:	Rucha Ragalwar
To:	MEPA-EJ@mass. gov (MEPA-EJ@mass.gov); claire@uumassaction.org; juliablatt@massriversalliance.org; Jodi.Valenta@tpl.org; kerry@msaadapartners.com; sylvia@communityactionworks.org; hclish@outdoors.org; jepke@clf.org; Bjenkins@clf.org; aboydrabin@environmentalleague.org; zsaifee@environmentalleague.org; ben@environmentmassachusetts.org; robb@massland.org; cluppi@cleanwater.org; Lena@N2NMa.org; Miles@N2NMa.org; rob@oceanriver.org; deb.pasternak@sierraclub.org; hricci@massaudubon.org; tribalcouncil@chappaquiddickwampanoag.org; crwritings@aol.com; john.peters@mass.gov; melissa@herringpondtribe.org; rockerpatriciad@verizon.net; rhalsey@naicob.org; Coradot@yahoo.com; Solomon.Elizabeth@gmail.com; thpo; Brian.Weeden@mwtribe-nsn.gov; David.weeden; 106Review@mwtribe-nsn.gov; lacomunidadinc@yahoo.com; david.queeley@mysticriver.org; julie.wormser@mysticriver.org; joy@bostonfarms.org; zwyer@savetheharbor.org; Mancini@SaveTheHarbor.org; Rundle@SaveTheHarbor.org; KSherman@BostonHarborNow.Org; karen@cpaboston.org; lee@massclu.org; Bruce@bostonharbor.com; lydia@chinatownclt.org; mimi.neunited4justice@gmail.com; eugene.b.benson@gmail.com; gladysv@chelseacollab.org; RoseannB@GreenRootsChelsea.org; Magdalena@Harborkeepers.org; ljasinski@thecharles.org; hmiller@crwa.org; dfastino@aol.com; alexandra@groundworksomerville.org
Cc:	Stephanie Kruel
Subject:	MEPA Advance Notification - Everett Docklands Innovation District
Date:	Monday, July 1, 2024 10:53:08 AM
Attachments:	image001.png image002.png image003.png image004.png image005.png EJ Advance Notification_EDID Project.pdf

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MEPA Advance Notice Distribution List,

On behalf of Everett Landco LLC and Norman Street ES LLC c/o Jupiter Power LLC (the "Proponent"), VHB is pleased to present to you information on an upcoming Expanded Environmental Notification Form (EENF), for the Everett Docklands Innovation District project (the "Project") located in Everett, Massachusetts (the "Project Site"), to be filed no earlier than 45 days of this notice, in accordance with the *MEPA Public Involvement Protocol for Environmental Justice Populations* effective January 1, 2022.

The Project consists of the redevelopment of the approximately 100-acre former Exxon Mobil Fuel Storage facility to provide a new master planned mixed use district.
You are receiving this advance notice as Environmental Justice community-based and tribal organizations as identified by the MEPA Office. More information is available on the MEPA website here: Important Update Concerning MEPA Operations | Mass.gov

Attached is the Environmental Justice Screening Form with Project details provided in English, Arabic, Chinese, Haitian Creole, Portuguese and Spanish. A link to download the electronic version of the EENF will be provided on the date of the official submission. Within 7-10 days of filing, the EENF will be noticed in the MEPA *Environmental Monitor* commencing the 30-day public review and comment period.

Please contact me directly at 617-607-2713 or via e-mail at rragalwar@vhb.com if you have any questions or would like to be taken off of the distribution list for this Project.

Community-based organizations and tribal organizations are receiving this notification in accordance with the MEPA Public Involvement Protocol for Environmental Justice Populations, which took effect on January 1, 2022. More information is available on the MEPA website.

Thank you,

vhb
Rucha Ragalwar
Environmental Planner
|

P 617.607.2713
M 814.232.8039
www.vhb.com

99 High Street
13th Floor
Boston MA 02110-2354

About Jupiter Power

Jupiter Power develops, builds, finances, operates and manages trading of utility-scale standalone energy storage assets.

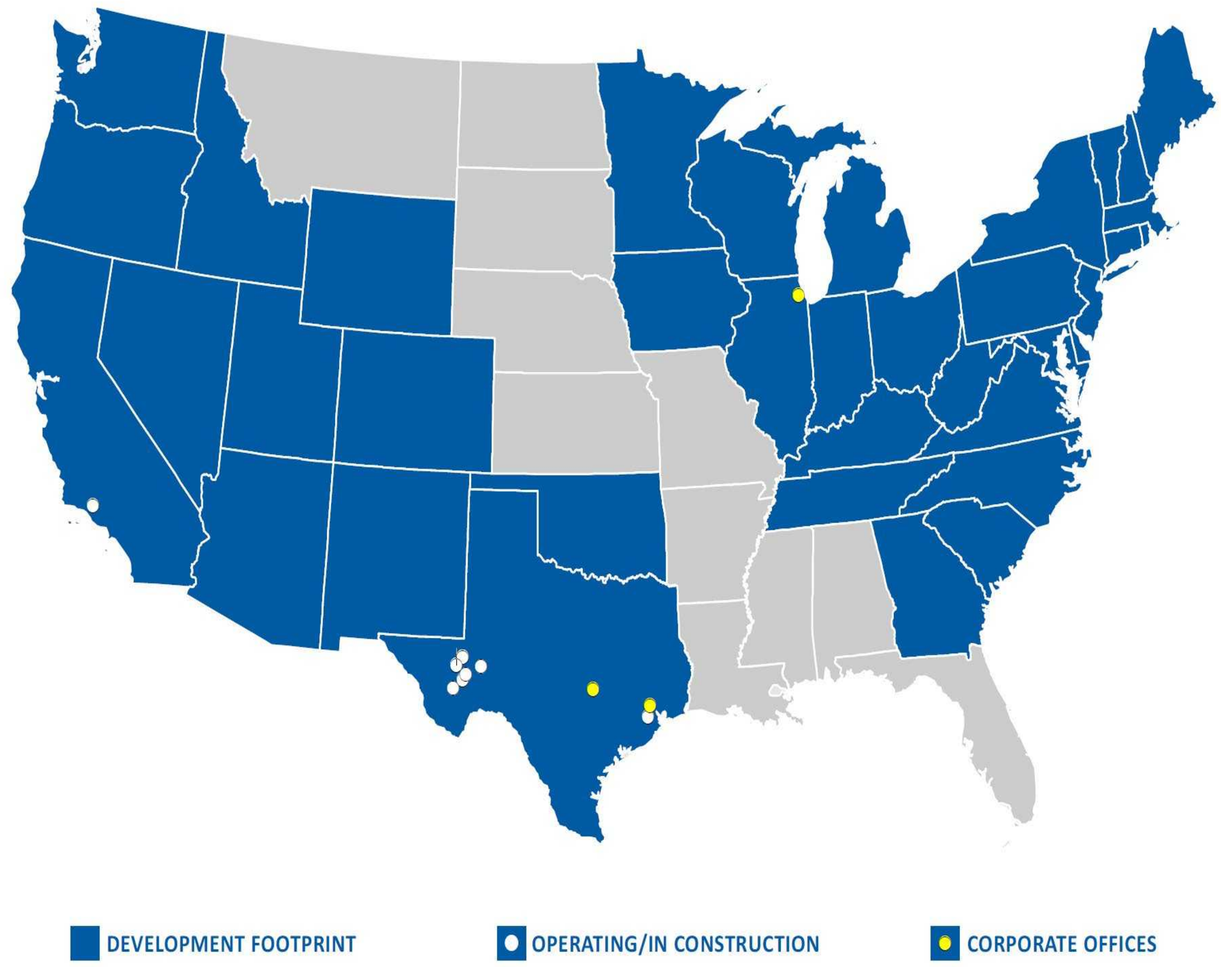
Jupiter Power's top priority is to operate safe and reliable energy storage projects.

Our Projects

Jupiter Power's batteries provide a suite of services, resulting in a more resilient, responsive, and cleaner power supply.

Jupiter's fleet of assets in operation or construction includes the largest energy storage portfolio in Texas, and one of the largest sets of development projects in the country – sixty projects totaling over 12,000 megawatts.

Jupiter is planning over 2,000 MW of projects in New York and New England



Trimount Energy is Reliable, Clean, and Cost Effective

How Trimount Cost-Effectively Supports a Clean Electric Grid

- **Fast Acting.** Batteries are extremely fast acting, capable of responding within fractions of a second to stabilize the electric grid. Even without climate change concerns, batteries would play a growing role on the electric grid today.

- **Supporting Renewables.** Wind and solar energy are great energy resources but they aren't always available. Batteries store energy when abundant and put it back into the grid when needed.

- **Saving money for consumers** The existing substation at Broadway/Alford Street and the Mystic River has available capacity following the retirement of the gas power plants. Trimount can re-use some of that capacity without needing to upgrade the electric grid and provide battery services at lower cost than would be available at other locations, therefore saving money for consumers.

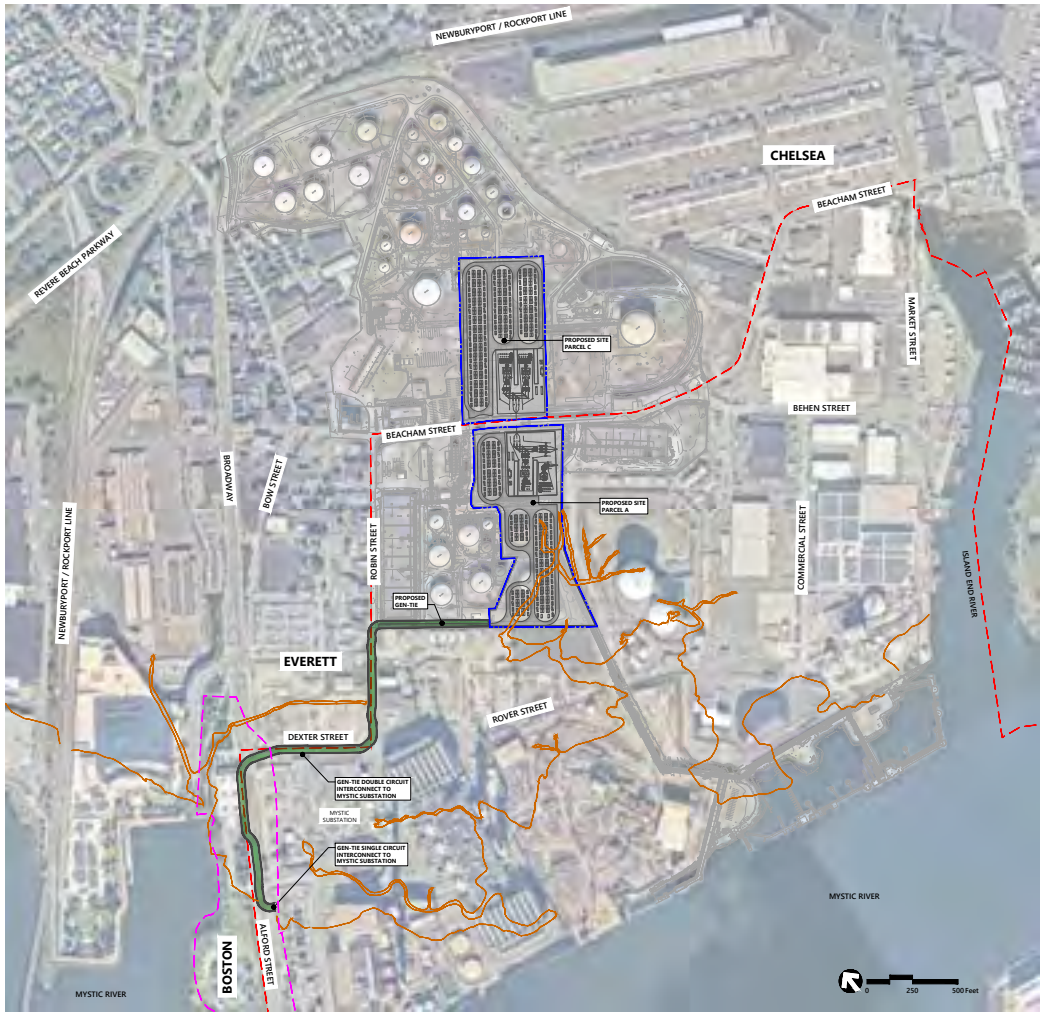
Trimount Energy Storage Supports Everett

Bringing Investment, Resiliency, Taxes, and Green Energy to Everett

- 20 acres of former Exxon oil terminal site
- Battery project facilitates environmental remediation of historically contaminated site
- $500+ million total project investment in Everett
- Significant local property tax revenues
- Extremely low traffic during operations phase
- Creating hundreds of jobs during site remediation, grading, and construction
- Supporting pre-apprenticeship opportunities with the building trades for the local population
- Repurposes historic Mystic substation from fossil fuel generation hub to emission-free energy storage

Taxes and Local Government Revenue

- Current property taxes on the 20-acre portion of the Exxon site are only several hundred thousand dollars per year.
- With a $500+ million total project investment in Everett, Jupiter Power will pay many times more.
- Battery storage is an approved Chapter 91 use at this location. Without this designation, the historic tidelands portion of the Designated Port Area would likely only be surface parking. Other eligible uses would likely provide much lower tax revenue to Everett.
- Jupiter is working with Everett on a tax agreement to spread local government revenues across 20 years and provide certainty for all parties.
- Jupiter is also negotiating a Host Community Agreement.

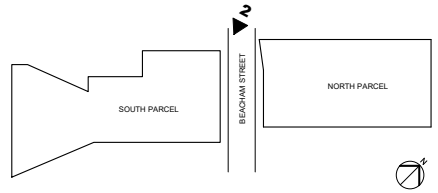


Draft Rendering

Updated View
Beacham Street

DRAFT

KEYPLAN



NOTE: IMAGES ARE SHOWN AS CONCEPTUAL DESIGN ONLY AND ARE NOT MEANT FOR CONSTRUCTION

HKS

ARCHITECT
HKS ARCHITECTS
125 S CLARK ST, #1100
CHICAGO, IL 60603

Jupiter POWER

DATE
07/16/2024

SHEET TITLE
EXTERIOR RENDERING 2

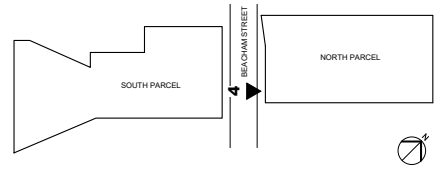
SHEET NO.
A5.2

Draft Rendering

Updated View
Beacham Street

DRAFT

KEYPLAN



NOTE: IMAGES ARE SHOWN AS CONCEPTUAL DESIGN ONLY AND ARE NOT MEANT FOR CONSTRUCTION

HKS

ARCHITECT
HKS ARCHITECTS
125 S CLARK ST, #1100
CHICAGO, IL 60603

Jupiter POWER

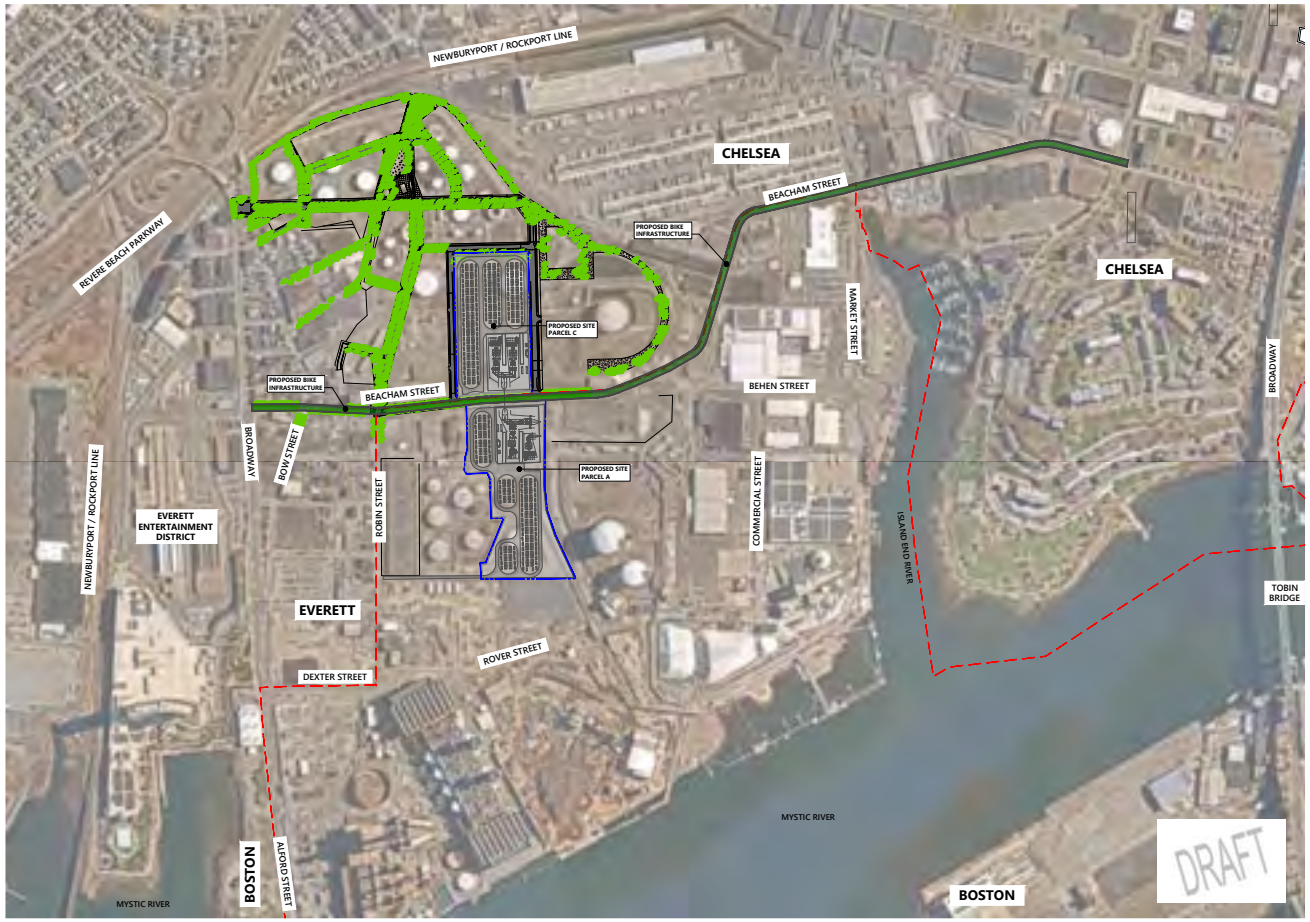
DATE
07/16/2024

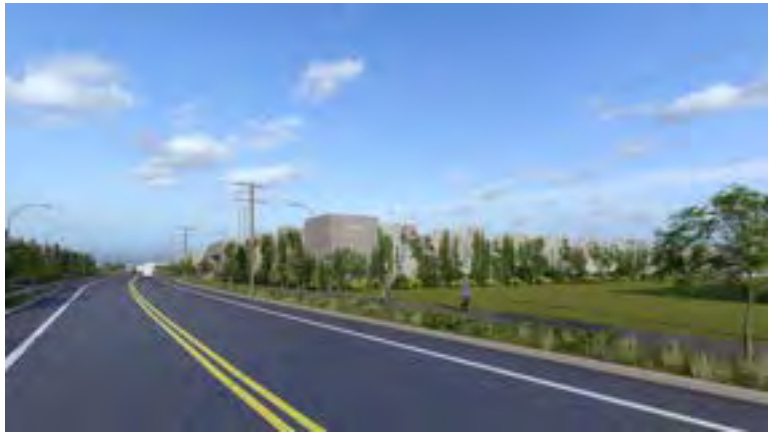
SHEET TITLE
EXTERIOR RENDERING 4

SHEET NO.
A5.4

Proposed Local Art Display

Improving Bike Path Connections Between Chelsea and Lower Broadway



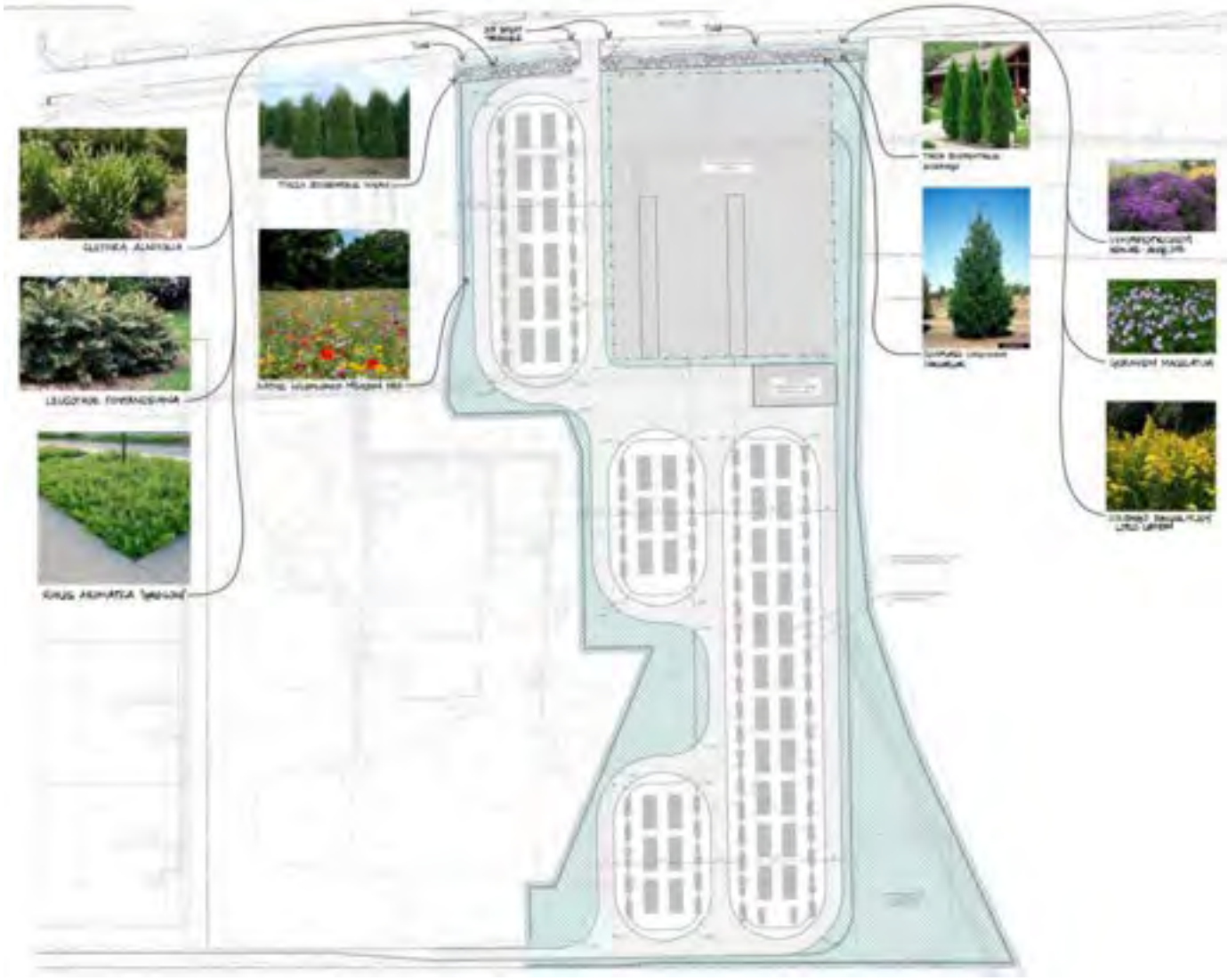


Draft Landscape Plan, Northern Parcel

Note: Plantings provided on the conceptual plan are preliminary and were chosen with native range and low water needs in mind to facilitate a low maintenance/sustainable landscape upon establishment.

Plan not to scale

Draft Landscape Plan, Southern Parcel



Note: Plantings provided on the conceptual plan are preliminary and were chosen with native range and low water needs in mind to facilitate a low maintenance/sustainable landscape upon establishment.

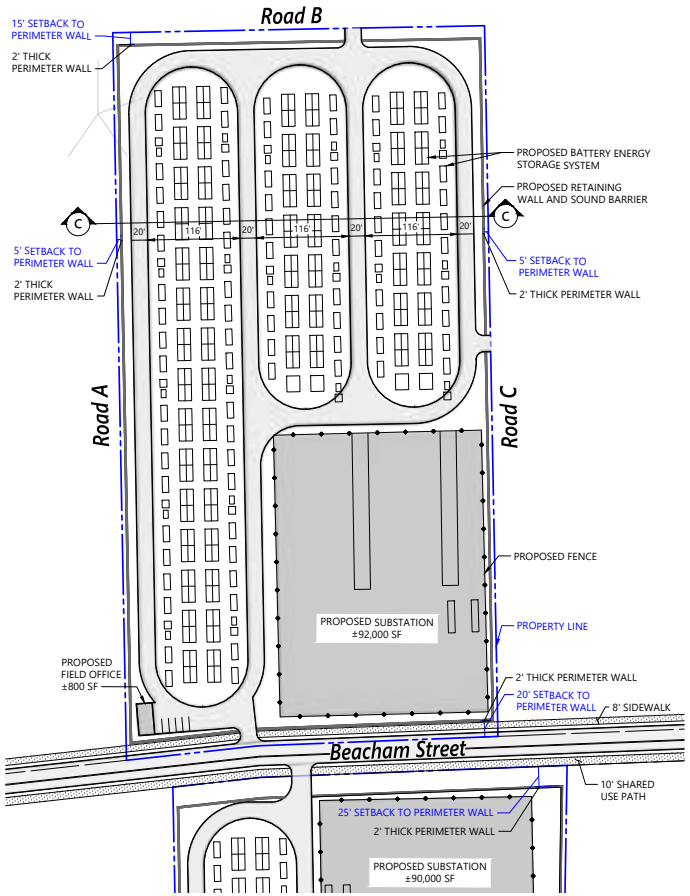
DRAFT

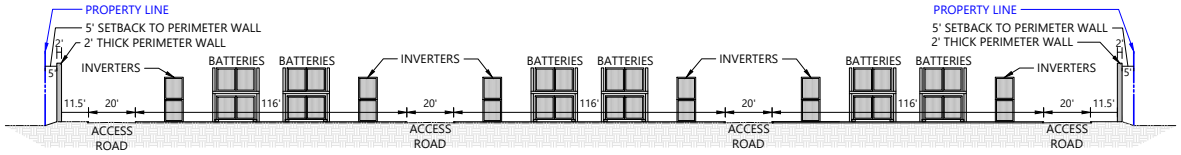
Plan not to scale

Site Plan:

Discussion Draft

Proposed Site Northern Parcel

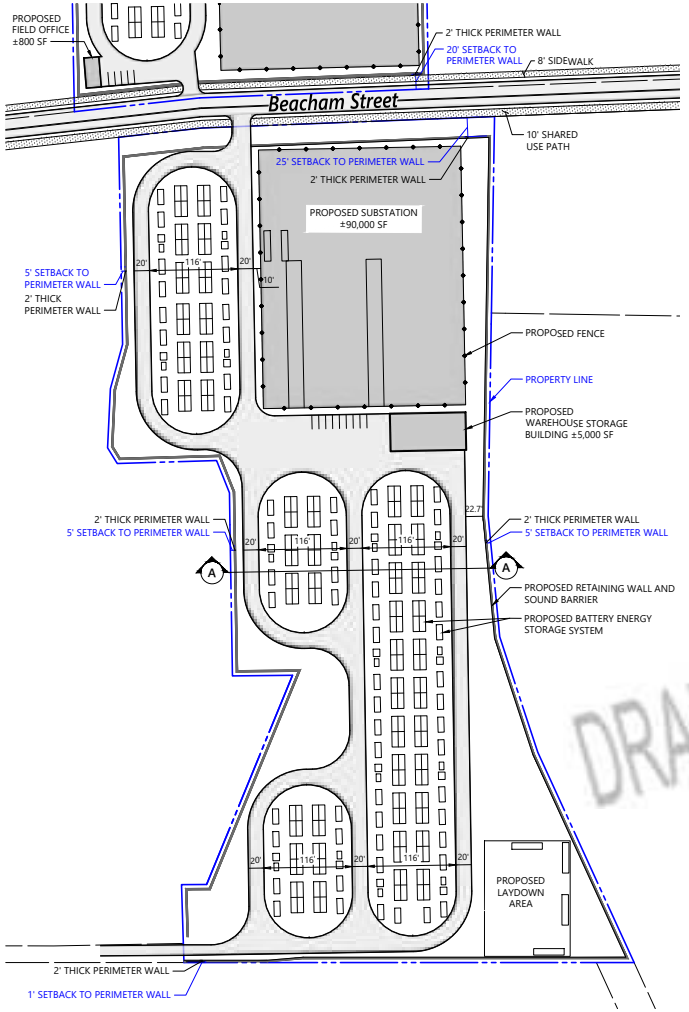


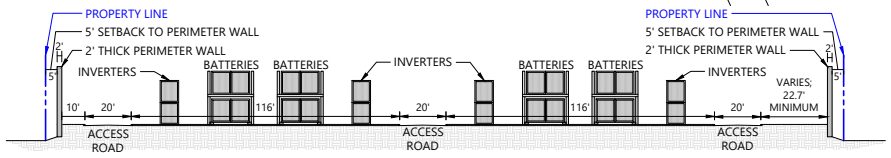


Section C-C

1" = 20'

Proposed Site Southern Parcel



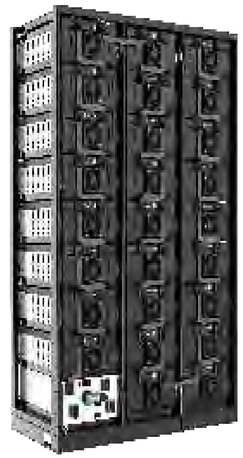


Section A-A

1" = 20'

Battery Energy Storage Systems (BESS)

Cell → Module → Rack → Container



•Testing, Monitoring, and Remote control at all levels within a battery energy storage system.

Jupiter is Committed to Robust Outreach and Engagement

Thank you for attending the open houses!

- Jupiter has been coordinating with City of Everett and Boston planning and utilities staff on site selection, planning, engineering, etc.
- Jupiter is working to coordinate and consult with state and local environmental and community organizations and get community feedback
- Jupiter is discussing potential pre-apprenticeship programs with the building trades
- Jupiter is coordinating with local fire departments and the state office of the Fire Marshal

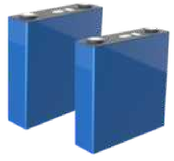
Permitting Next Steps:

- Filings with the Massachusetts Department of Public Utilities
- Negotiating a Host Community Agreement

Safety at Every Stage

Jupiter Power's top priority is to operate safe and reliable energy storage projects.
Our team ensures clear, open, and regular communication channels with all first responders.

Technology



CELL
Basic unit of a battery

MODULE
Collection of interconnected cells

RACK
Collection of interconnected modules

CONTAINER
Pre-fabricated, factory-tested

Jupiter Power incorporates the latest industry design standards - often above and beyond local code requirements. All projects follow the latest version of NFPA 855 and IFC/IBC codes.

Members of the Jupiter Power team helped develop the NFPA codes alongside industry partners.

- All energy storage components are UL tested.
- Designed to prevent small fires from spreading from one component to another.
- Internal setbacks are also designed to protect adjacent properties from any fire risks or health impacts.
- A Fire Response Command Post will be located outside the facility and will provide first responders with 24-7 contact with Jupiter fire experts as needed.

Jupiter POWER

FIRE & RISK ALLIANCE

Safety at Every Stage

Engineering Risk Assessment

Utilizing fire testing, data, and analysis, we can identify and mitigate risk appropriately

Site-Specific Analyses

- **Hazard Mitigation Analysis (HMA**): Evaluates battery storage system components, associated safety features and hypothesizes the system impact if all safety features were to fail. These reports are available for review during siting approval processes.

- **Community Risk Assessment (CRA):** An analysis that evaluates potential fire scenarios and off-gassing scenarios. The modeling of these scenarios establishes fire spread and plume dispersion to determine if a fire would impact the local community.

Testing and Data

- **UL9540A:** UL is a standards and testing body that conducts safety evaluations on many appliances and other items in our homes. They also conduct large scale fire testing on battery cells and components to evaluate system safety. Battery energy storage systems do not receive siting approval without completing this testing protocol.

- **New York Governor's Inter-Agency Fire Safety Working Group:** Preliminary results of data gathered from fires in 2023 have found no reported injuries and no harmful levels of toxins during or after fires. The Working Group assessed health risks from smoke at adjacent properties and water runoff from the fire suppression.

Safety at Every Stage

Plans & Training

Pre-construction risk assessments have allowed Jupiter and FRA to develop response plans that define the training we provide to emergency services to enhance their safety and to ensure incident mitigation and containment.

Plans

- **Emergency Response Plan (ERP):** Comprehensive plan that evaluates site equipment, safety features, potential failure modes and risk mitigation tactics. This plan serves as the platform for fire department training.
- **Emergency Response Action Plan (ERAP**): Condensed quick action plan is utilized by Jupiter and the fire services to provide guidance on resolving any alarm conditions.
- **Decommissioning Plan:** Plan for safe removal and recycling of equipment at end of life or disposal of equipment in the event of a fire.

Training

- **Classroom**: Hazards & response tactics for battery energy storage facility emergencies
- **Site Familiarization Tours**: Conducted with members of the fire services to familiarize them with site equipment, safety features, means of entry & egress. During site tours fire alarm scenarios are discussed along with the appropriate intervention strategy.
- **Exercises:** Training exercises are used to evaluate the effectiveness of our response plans. Exercises are scaled in complexity over a multi-year cycle.

Appendix B

Climate Adaptation Documentation

Climate Resilience Design Standards Tool Project Report

Trimount Energy Storage
Date Created: 1/29/2024 10:45:34 AM
Date Report Generated: 7/24/2024 4:17:33 PM
Project Contact Information: Stephanie Kruel (skruel@vhb.com)

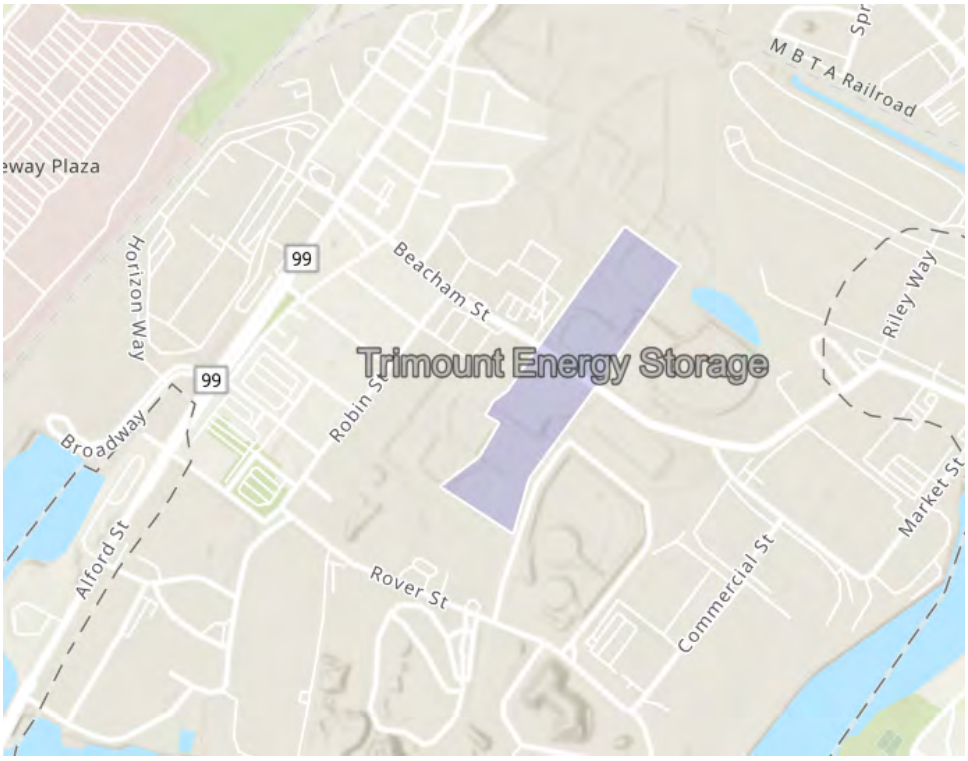
Created By: skruel
Tool Version: Version 1.2

Project Summary

Link to Project

Estimated Capital Cost: $500000000.00
End of Useful Life Year: 2076
Project within mapped Environmental Justice neighborhood: No

Ecosystem Service Benefits	Scores
Project Score	Low
Exposure	**Scores**
Sea Level Rise/Storm Surge	Moderate Exposure
Extreme Precipitation - Urban Flooding	High Exposure
Extreme Precipitation - Riverine Flooding	Not Exposed
Extreme Heat	High Exposure



Asset Preliminary Climate Risk Rating Summary

Number of Assets: 1

Asset Risk	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
Electric Grid Battery Storage	High Risk	High Risk	Low Risk	High Risk

Climate Resilience Design Standards Summary

	Target Planning Horizon	Intermediate Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge					
Electric Grid Battery Storage	2070	2050		200-yr (0.5%)	
Extreme Precipitation					
Electric Grid Battery Storage	2070			50-yr (2%)	Tier 3
Extreme Heat					
Electric Grid Battery Storage	2070		90th		Tier 3

Scoring Rationale - Project Exposure Score

The purpose of the Exposure Score output is to provide a preliminary assessment of whether the overall project site and subsequent assets are exposed to impacts of natural hazard events and/or future impacts of climate change. For each climate parameter, the Tool will calculate one of the following exposure ratings: Not Exposed, Low Exposure, Moderate Exposure, or High Exposure. The rationale behind the exposure rating is provided below.

Sea Level Rise/Storm Surge

This project received a "Moderate Exposure" because of the following:

- Exposed to the 1% annual coastal flood event as early as 2030
- Located within the 0.1% annual coastal flood event within the project's useful life
- Not located within the predicted mean high water shoreline by 2030

Extreme Precipitation - Urban Flooding

This project received a "High Exposure" because of the following:

- Increased impervious area
- Maximum annual daily rainfall exceeds 10 inches within the overall project's useful life
- Existing impervious area of the project site is greater than 50%
- No historic flooding at project site

Extreme Precipitation - Riverine Flooding

This project received a "Not Exposed" because of the following:

- No historic riverine flooding at project site
- The project is not within a mapped FEMA floodplain [outside of the Massachusetts Coast Flood Risk Model (MC-FRM)]
- Project is more than 500ft from a waterbody
- Project is not likely susceptible to riverine erosion

Extreme Heat

This project received a "High Exposure" because of the following:

- 30+ days increase in days over 90 deg. F within project's useful life
- Not located within 100 ft of existing water body
- Increased impervious area
- Existing impervious area of the project site is greater than 50%
- No tree removal

Scoring Rationale - Asset Preliminary Climate Risk Rating

A Preliminary Climate Risk Rating is determined for each infrastructure and building asset by considering the overall project Exposure Score and responses to Step 4 questions provided by the user in the Tool. Natural Resource assets do not receive a risk rating. The following factors are what influenced the risk ratings for each asset.

Asset - Electric Grid Battery Storage
Primary asset criticality factors influencing risk ratings for this asset:

- Asset must be operable at all times, even during natural hazard event
- Greater than 100,000 people would be directly affected by the loss/inoperability of the asset
- The infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
- Inoperability of the asset would not be expected to result in injuries
- Cost to replace is greater than $100 million
- Spills and/or releases of hazardous materials would be moderately difficult to clean up

Project Climate Resilience Design Standards Output

Climate Resilience Design Standards and Guidance are recommended for each asset and climate parameter. The Design Standards for each climate parameter include the following: recommended planning horizon (target and/or intermediate), recommended return period (Sea Level Rise/Storm Surge and Precipitation) or percentile (Heat), and a list of applicable design criteria that are likely to be affected by climate change. Some design criteria have numerical values associated with the recommended return period and planning horizon, while others have tiered methodologies with step-by-step instructions on how to estimate design values given the other recommended design standards.

Asset: Electric Grid Battery Storage — Infrastructure

Sea Level Rise/Storm Surge — High Risk

Target Planning Horizon: 2070
Intermediate Planning Horizon: 2050
Return Period: 200-yr (0.5%)

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.

Applicable Design Criteria

Projected Tidal Datums: APPLICABLE
Note: The site is exposed to Sea Level Rise/Storm Surge, but projected Tidal Datums are not available within the site. Additional site-specific analyses are recommended to identify projected Tidal Datums for the recommended planning horizon. Consult a professional coastal engineer or modeler to estimate projected Tidal Datums based on the recommended Standards and additional outputs provided through this Tool.

Projected Water Surface Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Electric Grid Battery Storage	2050	0.5% (200-Year)	12.5	12.2	12.2
	2070		14.4	14.0	14.1

Projected Wave Action Water Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Electric Grid Battery Storage	2050	0.5% (200-Year)	13.8	12.2	12.9
	2070		16.2	14.0	15.4

Projected Wave Heights: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(Feet)		
Electric Grid Battery Storage	2050	0.5% (200-Year)	2.0	0.0	0.9
	2070		2.5	0.0	1.6

Projected Duration of Flooding: APPLICABLE
Methodology to Estimate Projected Values

Projected Design Flood Velocity: APPLICABLE
Methodology to Estimate Projected Values

Projected Scour & Erosion: APPLICABLE
Methodology to Estimate Projected Values

Extreme Precipitation — High Risk

Target Planning Horizon: 2070
Return Period: 50-yr (2%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Electric Grid Battery Storage	2070	50-Year (2%)	9.7	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: NOT APPLICABLE

Extreme Heat — High Risk

Target Planning Horizon: 2070
Percentile: 90th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

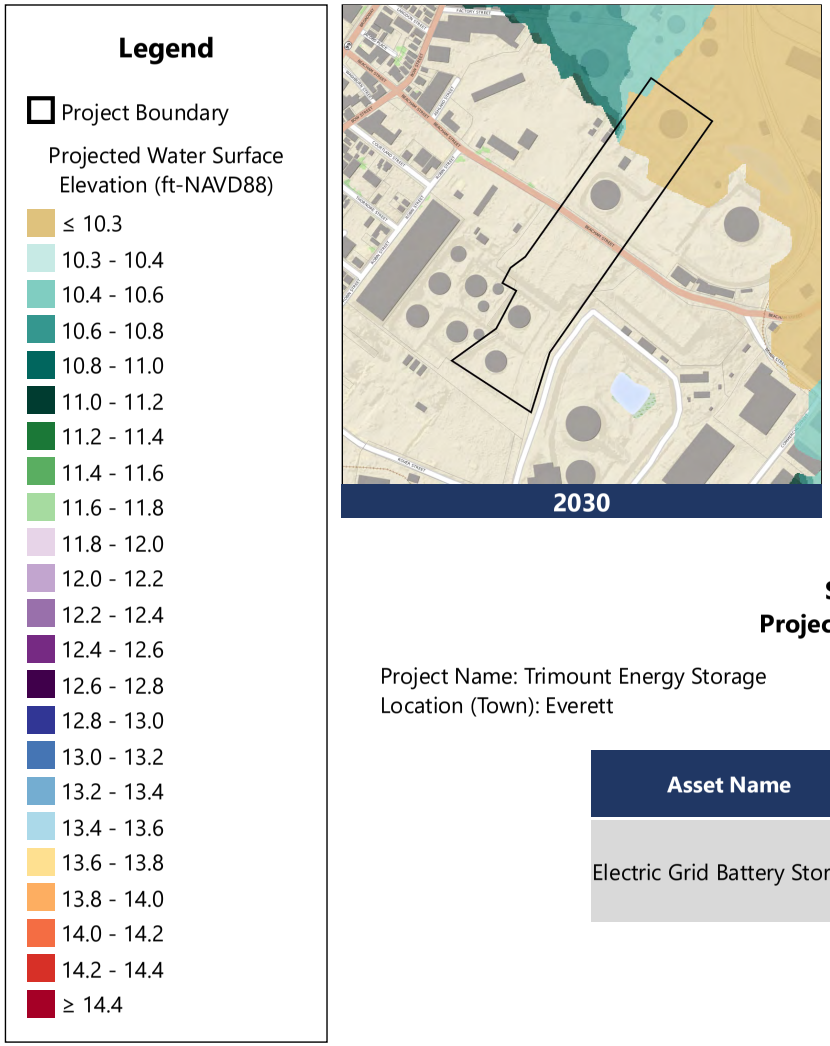
Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

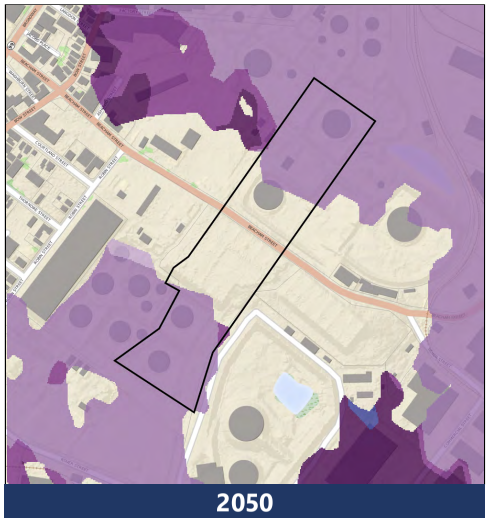
Sea Level Rise/Storm Surge Project Maps

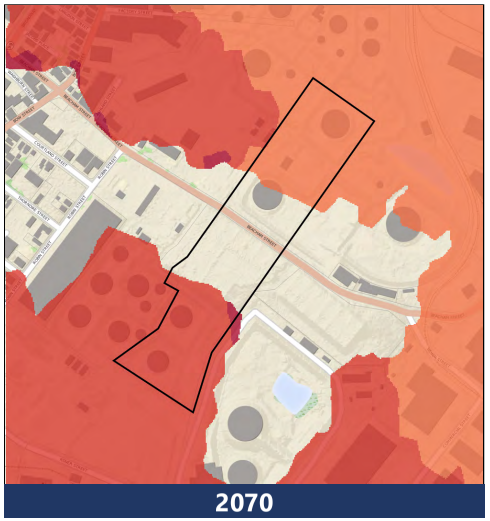
The following three maps illustrate the Projected Water Surface Elevation for the 2030, 2050, and 2070 planning horizons corresponding to the lowest return period (largest design storm) recommended across the assets identified for this project in the Tool. For projects that only have Natural Resource assets, the maps will show the Projected Water Surface Elevations corresponding to the 5% (20-year) return period. Refer to the Climate Resilience Design Standards Output - Sea Level Rise/Storm Surge Section for additional values associated with other assets. The maps include the project area as drawn by the user with a 0.1 mile minimum buffer, but do not reflect the location of specific assets on the site.

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values and maps provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, maps, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.







Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 0.5% (200-yr)

Project Name: Trimount Energy Storage
Location (Town): Everett

0.25 0.5 1.0 Miles

Created by: skruel
Date Created: 1/29/2024
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Electric Grid Battery Storage	2030	0.5% (200-yr)	11.1	10.3	10.3
	2050	0.5% (200-yr)	12.5	12.2	12.2
	2070	0.5% (200-yr)	14.4	14.0	14.1

Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 2030, 0.5% (200-yr)

Project Name: Trimount Energy Storage
Location (Town): Everett

0.05 0.1 0.25 Miles

Created by: skruel
Date Created: 1/29/2024
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Electric Grid Battery Storage	2030	0.5% (200-yr)	11.1	10.3	10.3

Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 2050, 0.5% (200-yr)

Project Name: Trimount Energy Storage
Location (Town): Everett

0.05 0.1 0.25 Miles

Created by: skruel
Date Created: 1/29/2024
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Electric Grid Battery Storage	2050	0.5% (200-yr)	12.5	12.2	12.2

Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 2070, 0.5% (200-yr)

Project Name: Trimount Energy Storage
Location (Town): Everett

0.05 0.1 0.25 Miles

Created by: skruel
Date Created: 1/29/2024
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Electric Grid Battery Storage	2070	0.5% (200-yr)	14.4	14.0	14.1

Project Inputs

Core Project Information

Name:	Trimount Energy Storage
Given the expected useful life of the project, through what year do you estimate the project to last (i.e. before a major reconstruction/renovation)?	2076
Location of Project:	Everett
Estimated Capital Cost:	$500,000,000
Who is the Submitting Entity?	Private Other VHB Stephanie Kruel (skruel@vhb.com)
Is this project being submitted as part of a state grant application?	No
Which grant program?	
What stage are you in your project lifecycle?	Permitting
Is climate resiliency a core objective of this project?	Yes
Is this project being submitted as part of the state capital planning process?	No
Is this project being submitted as part of a regulatory review process or permitting?	Yes
Brief Project Description:	Electric battery energy storage for grid resiliency and green energy transition.
Project Submission Comments:	

Project Ecosystem Service Benefits

Factors Influencing Output

- ✓ Project promotes decarbonization
- ✓ Project prevents pollution

Factors to Improve Output

- ✓ Incorporate nature-based solutions that may provide flood protection
- ✓ Incorporate nature-based solutions that may reduce storm damage
- ✓ Protect public water supply by reducing the risk of contamination, pollution, and/or runoff of surface and groundwater sources used for human consumption
- ✓ Incorporate green infrastructure or nature-based solutions that recharge groundwater
- ✓ Incorporate green infrastructure to filter stormwater
- ✓ Incorporate nature-based solutions that improve water quality
- ✓ Incorporate nature-based solutions that sequester carbon carbon
- ✓ Increase biodiversity, protect critical habitat for species, manage invasive populations, and/or provide connectivity to other habitats
- ✓ Preserve, enhance, and/or restore coastal shellfish habitats
- ✓ Incorporate vegetation that provides pollinator habitat
- ✓ Identify opportunities to remediate existing sources of pollution
- ✓ Provide opportunities for passive and/or active recreation through open space
- ✓ Increase plants, trees, and/or other vegetation to provide oxygen production
- ✓ Mitigate atmospheric greenhouse gas concentrations and other toxic air pollutants through nature-based solutions
- ✓ Incorporate education and/or protect cultural resources as part of your project

Is the primary purpose of this project ecological restoration?

No

Project Benefits

Provides flood protection through nature-based solutions	No
Reduces storm damage	No
Recharges groundwater	No
Protects public water supply	No
Filters stormwater using green infrastructure	No
Improves water quality	No
Promotes decarbonization	Yes
Enables carbon sequestration	No
Provides oxygen production	No
Improves air quality	No
Prevents pollution	Yes
Remediates existing sources of pollution	No
Protects fisheries, wildlife, and plant habitat	No
Protects land containing shellfish	No
Provides pollinator habitat	No
Provides recreation	No
Provides cultural resources/education	No

Project Climate Exposure

Is the primary purpose of this project ecological restoration?	No
Does the project site have a history of coastal flooding?	No
Does the project site have a history of flooding during extreme precipitation events	No

(unrelated to water/sewer damages)?	
Does the project site have a history of riverine flooding?	No
Does the project result in a net increase in impervious area of the site?	Yes
Are existing trees being removed as part of the proposed project?	No

Project Assets

Asset: Electric Grid Battery Storage
Asset Type: Utility Infrastructure
Asset Sub-Type: Energy (electric, gas, petroleum, renewable)
Construction Type: New Construction
Construction Year: 2026
Useful Life: 50

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Infrastructure must be accessible/operable at all times, even during natural hazard event.

Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.
Impacts would be regional (more than one municipality and/or surrounding region)

Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.
Greater than 100,000 people

Identify if the infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
The infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

Will the infrastructure reduce the risk of flooding?
No

If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the infrastructure would not be expected to result in injuries

If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?
Spills and/or releases of hazardous materials are expected with moderately difficult cleanup

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Significant – Inoperability is likely to impact other facilities, assets, or buildings and result in cascading impacts that will likely affect their ability to operate

If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?
Greater than or equal to $100 million

Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.
No

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?
Loss of infrastructure is not expected to reduce the ability to maintain government services

What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?
Reduced morale and public support

Report Comments

N/A

Climate Resilience Design Standards Tool Project Report

Everett Docklands Innovation District
Date Created: 6/28/2022 1:02:37 PM
Date Report Generated: 7/16/2024 7:46:03 PM
Project Contact Information: Stephanie Kruel (skruel@vhb.com)

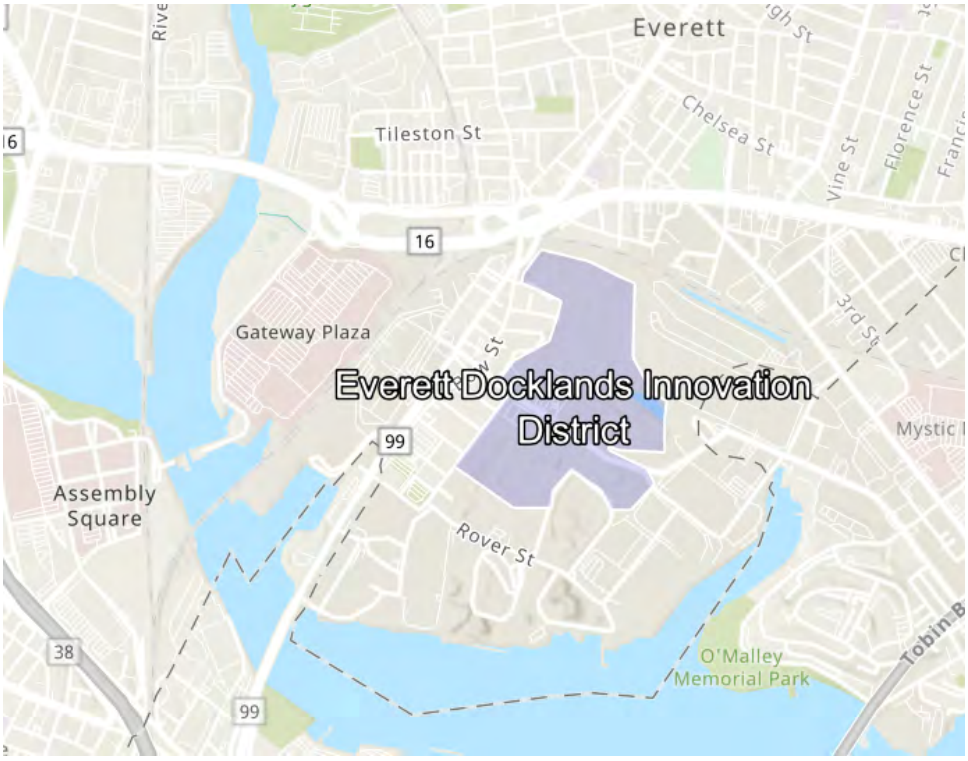
Created By: skruel
Tool Version: Version 1.2

Project Summary

Link to Project

Estimated Capital Cost: $10000000000.00
End of Useful Life Year: 2086
Project within mapped Environmental Justice neighborhood: Yes

Ecosystem Service Benefits	Scores
Project Score	Low
Exposure	**Scores**
Sea Level Rise/Storm Surge	Moderate Exposure
Extreme Precipitation - Urban Flooding	High Exposure
Extreme Precipitation - Riverine Flooding	Not Exposed
Extreme Heat	High Exposure



Asset Preliminary Climate Risk Rating Summary

Number of Assets: 4

Asset Risk	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
Residential Buildings	Moderate Risk	High Risk	Low Risk	High Risk
Industrial Buildings	Moderate Risk	High Risk	Low Risk	High Risk
Lab/Office/Retail Buildings	Moderate Risk	High Risk	Low Risk	High Risk
Battery Energy Storage System	High Risk	High Risk	Low Risk	High Risk

Climate Resilience Design Standards Summary

	Target Planning Horizon	Intermediate Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge					
Residential Buildings	2070	2050		100-yr (1%)	
Industrial Buildings	2070	2050		100-yr (1%)	
Lab/Office/Retail Buildings	2070	2050		100-yr (1%)	
Battery Energy Storage System	2070	2050		200-yr (0.5%)	
Extreme Precipitation					
Residential Buildings	2070			25-yr (4%)	Tier 2
Industrial Buildings	2070			25-yr (4%)	Tier 2
Lab/Office/Retail Buildings	2070			25-yr (4%)	Tier 2

Battery Energy Storage System	2070		50-yr (2%)	Tier 3
Extreme Heat				
Residential Buildings	2070	50th		Tier 2
Industrial Buildings	2070	50th		Tier 2
Lab/Office/Retail Buildings	2070	50th		Tier 2
Battery Energy Storage System	2070	90th		Tier 3

Scoring Rationale - Project Exposure Score

The purpose of the Exposure Score output is to provide a preliminary assessment of whether the overall project site and subsequent assets are exposed to impacts of natural hazard events and/or future impacts of climate change. For each climate parameter, the Tool will calculate one of the following exposure ratings: Not Exposed, Low Exposure, Moderate Exposure, or High Exposure. The rationale behind the exposure rating is provided below.

Sea Level Rise/Storm Surge

This project received a "Moderate Exposure" because of the following:

- Exposed to the 1% annual coastal flood event as early as 2030
- Located within the 0.1% annual coastal flood event within the project's useful life
- Not located within the predicted mean high water shoreline by 2030

Extreme Precipitation - Urban Flooding

This project received a "High Exposure" because of the following:

- Increased impervious area
- Maximum annual daily rainfall exceeds 10 inches within the overall project's useful life
- Existing impervious area of the project site is greater than 50%
- No historic flooding at project site

Extreme Precipitation - Riverine Flooding

This project received a "Not Exposed" because of the following:

- No historic riverine flooding at project site
- The project is not within a mapped FEMA floodplain [outside of the Massachusetts Coast Flood Risk Model (MC-FRM)]
- Project is more than 500ft from a waterbody
- Project is not likely susceptible to riverine erosion

Extreme Heat

This project received a "High Exposure" because of the following:

- 30+ days increase in days over 90 deg. F within project's useful life
- Increased impervious area
- Existing impervious area of the project site is greater than 50%
- Located within 100 ft of existing water body
- No tree removal

Scoring Rationale - Asset Preliminary Climate Risk Rating

A Preliminary Climate Risk Rating is determined for each infrastructure and building asset by considering the overall project Exposure Score and responses to Step 4 questions provided by the user in the Tool. Natural Resource assets do not receive a risk rating. The following factors are what influenced the risk ratings for each asset.

Asset - Residential Buildings
Primary asset criticality factors influencing risk ratings for this asset:

- Asset may inaccessible/inoperable for more than a day but less than a week after natural hazard event
- Less than 10,000 people would be directly affected by the loss/inoperability of the asset
- Some alternative programs and/or services are available to support the community

- Cost to replace is between $30 million and $100 million
- There are no hazardous materials in the asset

Asset - Industrial Buildings
Primary asset criticality factors influencing risk ratings for this asset:

- Asset can be inaccessible/inoperable more than a week after natural hazard event without consequences
- Less than 1,000 people would be directly affected by the loss/inoperability of the asset
- Inoperability of the asset would not be expected to result in injuries
- Cost to replace is between $30 million and $100 million
- Spills and/or releases of hazardous materials would be moderately difficult to clean up

Asset - Lab/Office/Retail Buildings
Primary asset criticality factors influencing risk ratings for this asset:

- Asset can be inaccessible/inoperable more than a week after natural hazard event without consequences
- Less than 10,000 people would be directly affected by the loss/inoperability of the asset
- Inoperability of the asset would not be expected to result in injuries
- Cost to replace is between $30 million and $100 million
- Spills and/or releases of hazardous materials would be relatively easy to clean up

Asset - Battery Energy Storage System
Primary asset criticality factors influencing risk ratings for this asset:

- Asset must be operable at all times, even during natural hazard event
- Greater than 100,000 people would be directly affected by the loss/inoperability of the asset
- The infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
- Inoperability of the asset would not be expected to result in injuries
- Cost to replace is greater than $100 million
- Spills and/or releases of hazardous materials would be moderately difficult to clean up

Project Climate Resilience Design Standards Output

Climate Resilience Design Standards and Guidance are recommended for each asset and climate parameter. The Design Standards for each climate parameter include the following: recommended planning horizon (target and/or intermediate), recommended return period (Sea Level Rise/Storm Surge and Precipitation) or percentile (Heat), and a list of applicable design criteria that are likely to be affected by climate change. Some design criteria have numerical values associated with the recommended return period and planning horizon, while others have tiered methodologies with step-by-step instructions on how to estimate design values given the other recommended design standards.

Asset: Residential Buildings — Building/Facility

Sea Level Rise/Storm Surge — Moderate Risk

Target Planning Horizon: 2070
Intermediate Planning Horizon: 2050
Return Period: 100-yr (1%)

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.

Applicable Design Criteria

Projected Tidal Datums: APPLICABLE
Note: The site is exposed to Sea Level Rise/Storm Surge, but projected Tidal Datums are not available within the site. Additional site-specific analyses are recommended to identify projected Tidal Datums for the recommended planning horizon. Consult a professional coastal engineer or modeler to estimate projected Tidal Datums based on the recommended Standards and additional outputs provided through this Tool.

Projected Water Surface Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Residential Buildings	2050	1% (100-Year)	12.2	11.7	11.7
	2070		14.0	13.6	13.7

Projected Wave Action Water Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Residential Buildings	2050	1% (100-Year)	15.2	11.7	13.1
	2070		17.4	13.6	15.1

Projected Wave Heights: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(Feet)		
Residential Buildings	2050	1% (100-Year)	4.5	0.0	1.8
	2070		5.0	0.0	1.8

Projected Duration of Flooding: APPLICABLE
Methodology to Estimate Projected Values

Projected Design Flood Velocity: APPLICABLE
Methodology to Estimate Projected Values

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation High Risk

Target Planning Horizon: 2070
Return Period: 25-yr (4%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Residential Buildings	2070	25-Year (4%)	8.5	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: NOT APPLICABLE

Extreme Heat High Risk

Target Planning Horizon: 2070
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Asset: Industrial Buildings Building/Facility

Sea Level Rise/Storm Surge Moderate Risk

Target Planning Horizon: 2070
Intermediate Planning Horizon: 2050
Return Period: 100-yr (1%)

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.

Applicable Design Criteria

Projected Tidal Datums: APPLICABLE
Note: The site is exposed to Sea Level Rise/Storm Surge, but projected Tidal Datums are not available within the site. Additional site-specific analyses are recommended to identify projected Tidal Datums for the recommended planning horizon. Consult a professional coastal engineer or modeler to estimate projected Tidal Datums based on the recommended Standards and additional outputs provided through this Tool.

Projected Water Surface Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Industrial Buildings	2050	1% (100-Year)	12.2	11.7	11.7
	2070		14.0	13.6	13.7

Projected Wave Action Water Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Industrial Buildings	2050	1% (100-Year)	15.2	11.7	13.1
	2070		17.4	13.6	15.1

Projected Wave Heights: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(Feet)		
Industrial Buildings	2050	1% (100-Year)	4.5	0.0	1.8
	2070		5.0	0.0	1.8

Projected Duration of Flooding: APPLICABLE
Methodology to Estimate Projected Values

Projected Design Flood Velocity: APPLICABLE
Methodology to Estimate Projected Values

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation High Risk

Target Planning Horizon: 2070
Return Period: 25-yr (4%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best

practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Industrial Buildings	2070	25-Year (4%)	8.5	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: NOT APPLICABLE

Extreme Heat High Risk

Target Planning Horizon: 2070
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Asset: Lab/Office/Retail Buildings Building/Facility

Sea Level Rise/Storm Surge Moderate Risk

Target Planning Horizon: 2070
Intermediate Planning Horizon: 2050
Return Period: 100-yr (1%)

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

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construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.

Applicable Design Criteria

Projected Tidal Datums: APPLICABLE
Note: The site is exposed to Sea Level Rise/Storm Surge, but projected Tidal Datums are not available within the site. Additional site-specific analyses are recommended to identify projected Tidal Datums for the recommended planning horizon. Consult a professional coastal engineer or modeler to estimate projected Tidal Datums based on the recommended Standards and additional outputs provided through this Tool.

Projected Water Surface Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Lab/Office/Retail Buildings	2050	1% (100-Year)	12.2	11.7	11.7
	2070		14.0	13.6	13.7

Projected Wave Action Water Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Lab/Office/Retail Buildings	2050	1% (100-Year)	15.2	11.7	13.1
	2070		17.4	13.6	15.1

Projected Wave Heights: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(Feet)		
Lab/Office/Retail Buildings	2050	1% (100-Year)	4.5	0.0	1.8
	2070		5.0	0.0	1.8

Projected Duration of Flooding: APPLICABLE
Methodology to Estimate Projected Values

Projected Design Flood Velocity: APPLICABLE
Methodology to Estimate Projected Values

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation High Risk

Target Planning Horizon: 2070
Return Period: 25-yr (4%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Lab/Office/Retail Buildings	2070	25-Year (4%)	8.5	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: NOT APPLICABLE

Extreme Heat High Risk

Target Planning Horizon: 2070
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Asset: Battery Energy Storage System Infrastructure

Sea Level Rise/Storm Surge High Risk

Target Planning Horizon: 2070
Intermediate Planning Horizon: 2050
Return Period: 200-yr (0.5%)

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.

Applicable Design Criteria

Projected Tidal Datums: APPLICABLE
Note: The site is exposed to Sea Level Rise/Storm Surge, but projected Tidal Datums are not available within the site. Additional site-specific analyses are recommended to identify projected Tidal Datums for the recommended planning horizon. Consult a professional coastal engineer or modeler to estimate projected Tidal Datums based on the recommended Standards and additional outputs provided through this Tool.

Projected Water Surface Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Battery Energy Storage System	2050	0.5% (200-Year)	12.7	12.1	12.2
	2070		14.4	14.0	14.1

Projected Wave Action Water Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Battery Energy Storage System	2050	0.5% (200-Year)	16.0	12.1	13.5
	2070		18.1	14.0	15.6

Projected Wave Heights: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(Feet)		
Battery Energy Storage System	2050	0.5% (200-Year)	5.0	0.0	1.6
	2070		5.5	0.0	2.0

Projected Duration of Flooding: APPLICABLE
Methodology to Estimate Projected Values

Projected Design Flood Velocity: APPLICABLE
Methodology to Estimate Projected Values

Projected Scour & Erosion: APPLICABLE
Methodology to Estimate Projected Values

Extreme Precipitation High Risk

Target Planning Horizon: 2070
Return Period: 50-yr (2%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Battery Energy Storage System	2070	50-Year (2%)	9.7	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: NOT APPLICABLE

Extreme Heat High Risk

Target Planning Horizon: 2070
Percentile: 90th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

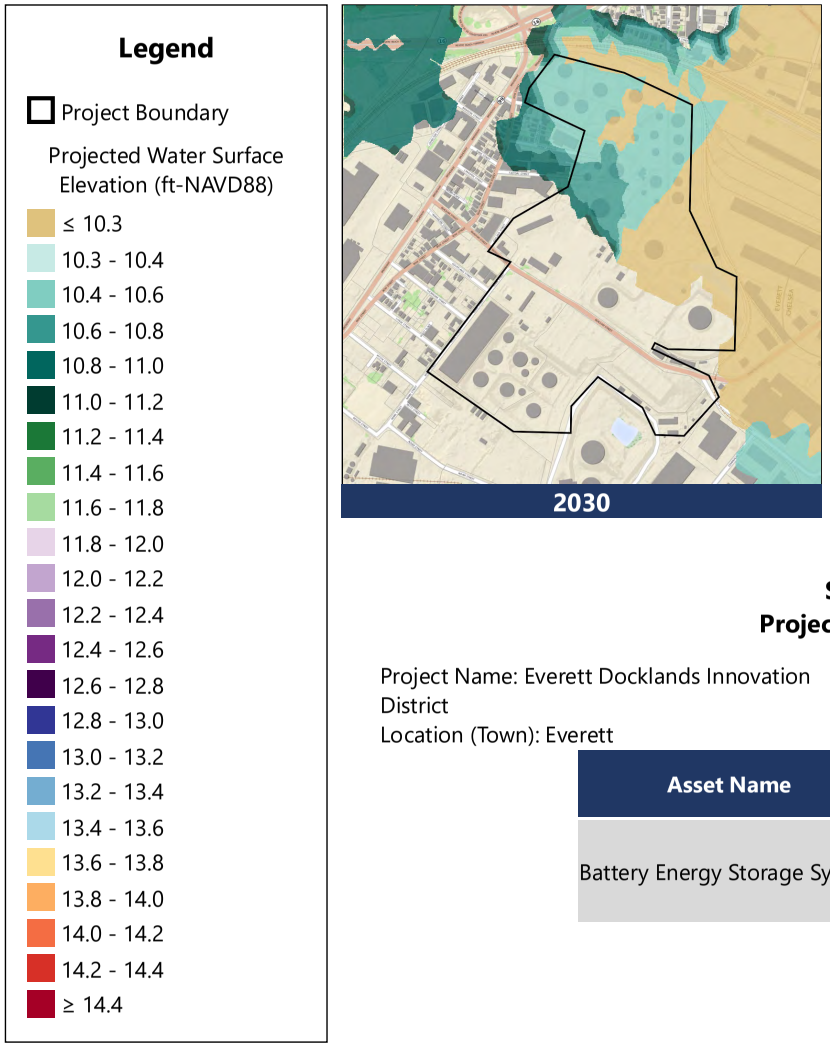
Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

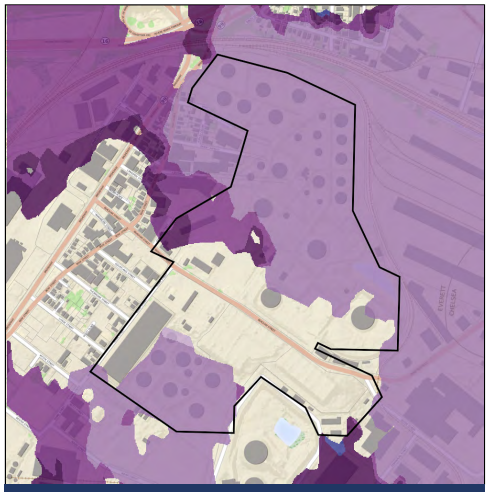
Sea Level Rise/Storm Surge Project Maps

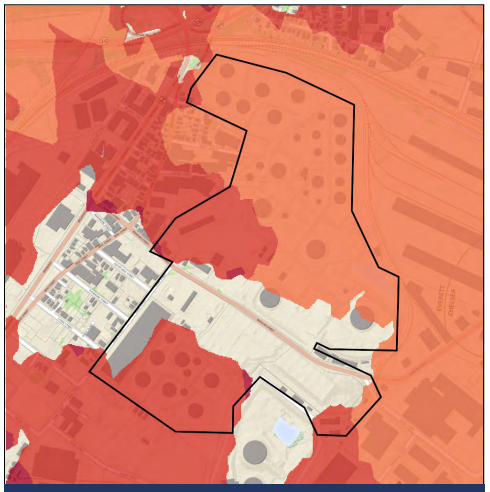
The following three maps illustrate the Projected Water Surface Elevation for the 2030, 2050, and 2070 planning horizons corresponding to the lowest return period (largest design storm) recommended across the assets identified for this project in the Tool. For projects that only have Natural Resource assets, the maps will show the Projected Water Surface Elevations corresponding to the 5% (20-year) return period. Refer to the Climate Resilience Design Standards Output - Sea Level Rise/Storm Surge Section for additional values associated with other assets. The maps include the project area as drawn by the user with a 0.1 mile minimum buffer, but do not reflect the location of specific assets on the site.

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values and maps provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, maps, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.







Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 0.5% (200-yr)

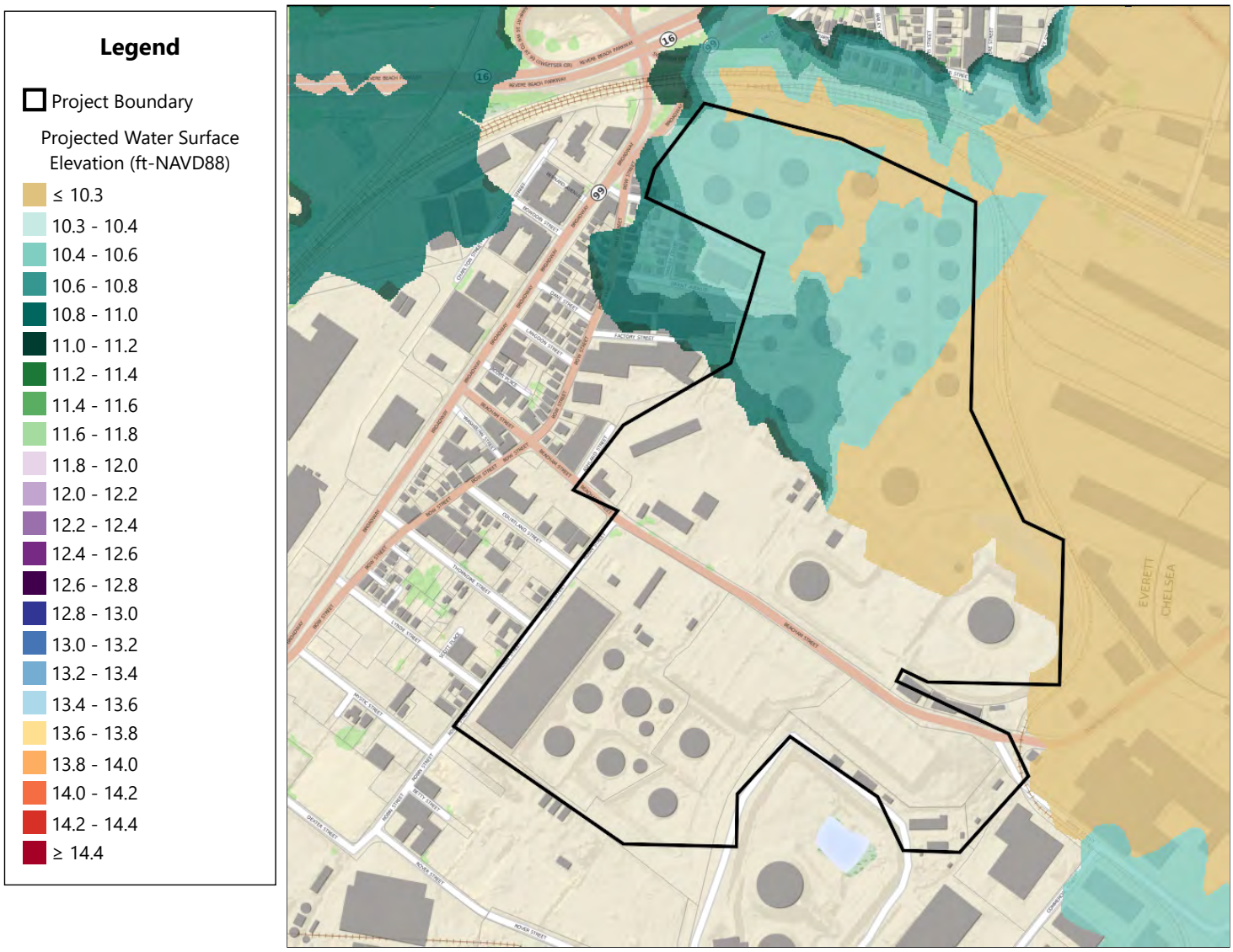
Project Name: Everett Docklands Innovation District
Location (Town): Everett

0.25 0.5 1.0 Miles

Created by: skruel
Date Created: 6/28/2022
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Battery Energy Storage System	2030	0.5% (200-yr)	11.2	10.3	10.4
	2050	0.5% (200-yr)	12.7	12.1	12.2
	2070	0.5% (200-yr)	14.4	14.0	14.1



Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 2030, 0.5% (200-yr)

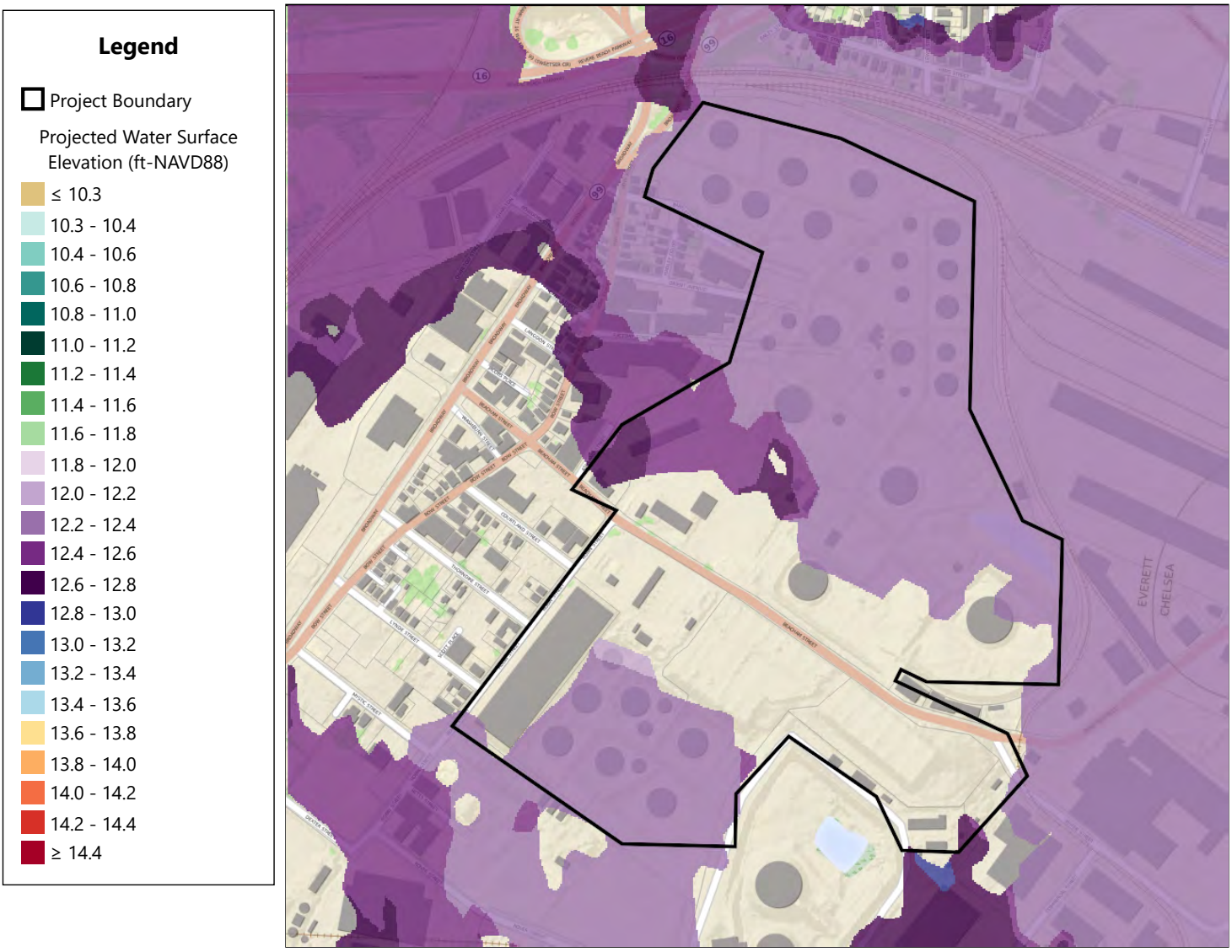
Project Name: Everett Docklands Innovation District
Location (Town): Everett

0.05 0.1 0.25 Miles

Created by: skruel
Date Created: 6/28/2022
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Battery Energy Storage System	2030	0.5% (200-yr)	11.2	10.3	10.4



Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 2050, 0.5% (200-yr)

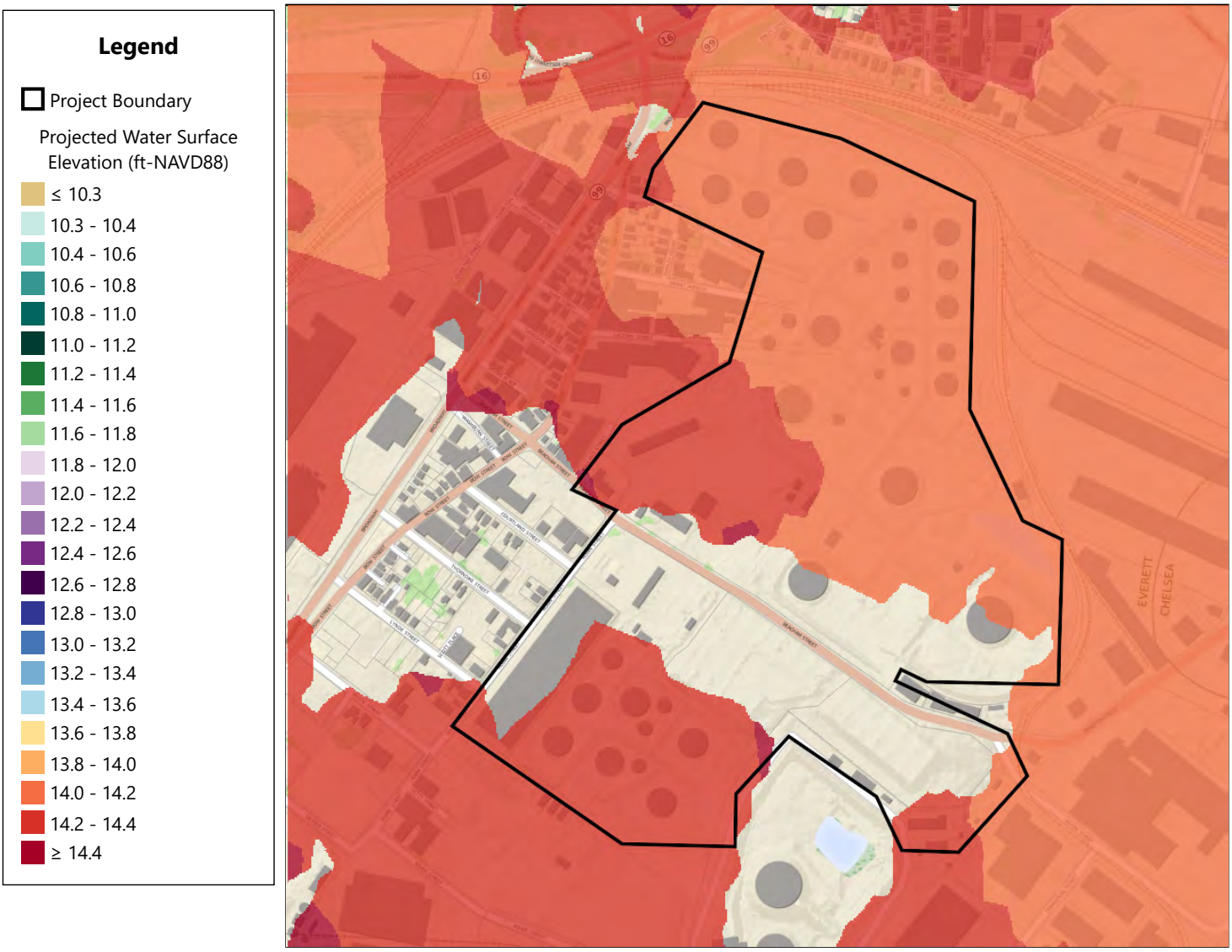
Project Name: Everett Docklands Innovation District
Location (Town): Everett

0.05 0.1 0.25 Miles

Created by: skruel
Date Created: 6/28/2022
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Battery Energy Storage System	2050	0.5% (200-yr)	12.7	12.1	12.2



Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 2070, 0.5% (200-yr)

Project Name: Everett Docklands Innovation District
Location (Town): Everett

0.05 0.1 0.25 Miles

Created by: skruel
Date Created: 6/28/2022
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Battery Energy Storage System	2070	0.5% (200-yr)	14.4	14.0	14.1

Project Inputs

Core Project Information

Name:	Everett Docklands Innovation District
Given the expected useful life of the project, through what year do you estimate the project to last (i.e. before a major reconstruction/renovation)?	2086
Location of Project:	Everett
Estimated Capital Cost:	$10,000,000,000
Who is the Submitting Entity?	Private Other Davis Stephanie Kruel (skruel@vhb.com)
Is this project being submitted as part of a state grant application?	No
Which grant program?	
What stage are you in your project lifecycle?	Permitting
Is climate resiliency a core objective of this project?	Yes
Is this project being submitted as part of the state capital planning process?	No
Is this project being submitted as part of a regulatory review process or permitting?	Yes
Brief Project Description:	Mixed use redevelopment
Project Submission Comments:	

Project Ecosystem Service Benefits

Factors Influencing Output

- ✓ Project promotes decarbonization
- ✓ Project improves air quality

Factors to Improve Output

- ✓ Incorporate nature-based solutions that may provide flood protection
- ✓ Incorporate nature-based solutions that may reduce storm damage
- ✓ Protect public water supply by reducing the risk of contamination, pollution, and/or runoff of surface and groundwater sources used for human consumption
- ✓ Incorporate green infrastructure or nature-based solutions that recharge groundwater
- ✓ Incorporate green infrastructure to filter stormwater
- ✓ Incorporate nature-based solutions that improve water quality
- ✓ Incorporate nature-based solutions that sequester carbon carbon
- ✓ Increase biodiversity, protect critical habitat for species, manage invasive populations, and/or provide connectivity to other habitats
- ✓ Preserve, enhance, and/or restore coastal shellfish habitats
- ✓ Incorporate vegetation that provides pollinator habitat
- ✓ Identify opportunities to remediate existing sources of pollution
- ✓ Provide opportunities for passive and/or active recreation through open space
- ✓ Increase plants, trees, and/or other vegetation to provide oxygen production
- ✓ Identify opportunities to prevent pollutants from impacting ecosystems
- ✓ Incorporate education and/or protect cultural resources as part of your project

Is the primary purpose of this project ecological restoration?

No

Project Benefits

Provides flood protection through nature-based solutions	No
Reduces storm damage	No
Recharges groundwater	No
Protects public water supply	No
Filters stormwater using green infrastructure	No
Improves water quality	No
Promotes decarbonization	Yes
Enables carbon sequestration	No
Provides oxygen production	No
Improves air quality	Yes
Prevents pollution	No
Remediates existing sources of pollution	No
Protects fisheries, wildlife, and plant habitat	No
Protects land containing shellfish	No
Provides pollinator habitat	No
Provides recreation	No
Provides cultural resources/education	No

Project Climate Exposure

Is the primary purpose of this project ecological restoration?	No
Does the project site have a history of coastal flooding?	No
Does the project site have a history of flooding during extreme precipitation events (unrelated to water/sewer damages)?	No

Does the project site have a history of riverine flooding?	No
Does the project result in a net increase in impervious area of the site?	Yes
Are existing trees being removed as part of the proposed project?	No

Project Assets

Asset: Residential Buildings
Asset Type: Typically Occupied
Asset Sub-Type: Residential building - Private Housing
Construction Type: New Construction
Construction Year: 2026
Useful Life: 60

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Building may be inaccessible/inoperable for more than a day, but less than a week after natural hazards events without consequences

Identify the geographic area directly affected by permanent loss or significant inoperability of the building/facility.
Impacts limited to site only

Identify the population directly served that would be affected by the permanent loss of use or inoperability of the building/facility.
Less than 10,000 people

Identify if the building/facility provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
The building/facility does not provide services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

If the building/facility became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the building/facility would not be expected to result in injuries

If there are hazardous materials in your building/facility, what are the extent of impacts related to spills/releases of these materials?
There are no hazardous materials in the building/facility

If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Minor – Inoperability will not likely affect other facilities, assets, or buildings

If this building/facility was damaged beyond repair, how much would it approximately cost to replace?
Between $30 million and $100 million

Is this a recreational facility which can be vacated during a natural hazard event?
No

If the building/facility became inoperable for longer than acceptable in Question 1, what are the public and/or social services impacts?
Some alternative programs and/or services are available to support the community

If the building/facility became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected

If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the building is not able to serve or operate its intended users or function)?
Loss of building is not expected to reduce the ability to maintain government services.

If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to loss of confidence in government (i.e. the building is not able to serve or operate its intended users or function)?
No Impact

Asset: Industrial Buildings
Asset Type: Typically Occupied
Asset Sub-Type: Other
Construction Type: New Construction
Construction Year: 2026
Useful Life: 60

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Building may be inaccessible/inoperable more than a week after natural hazard event without consequences

Identify the geographic area directly affected by permanent loss or significant inoperability of the building/facility.
Impacts limited to site only

Identify the population directly served that would be affected by the permanent loss of use or inoperability of the building/facility.
Less than 1,000 people

Identify if the building/facility provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
The building/facility does not provide services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

If the building/facility became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the building/facility would not be expected to result in injuries

If there are hazardous materials in your building/facility, what are the extent of impacts related to spills/releases of these materials?
Spills and/or releases of hazardous materials would be moderately difficult to clean up

If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?

Minor – Inoperability will not likely affect other facilities, assets, or buildings
If this building/facility was damaged beyond repair, how much would it approximately cost to replace?
Between $30 million and $100 million
Is this a recreational facility which can be vacated during a natural hazard event?
No
If the building/facility became inoperable for longer than acceptable in Question 1, what are the public and/or social services impacts?
Many alternative programs and/or services are available to support the community
If the building/facility became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected
If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the building is not able to serve or operate its intended users or function)?
Loss of building is not expected to reduce the ability to maintain government services.
If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to loss of confidence in government (i.e. the building is not able to serve or operate its intended users or function)?
No Impact
Asset: Lab/Office/Retail Buildings
Asset Type: Typically Occupied
Asset Sub-Type: Non-residential building (office, commercial, retail)
Construction Type: New Construction
Construction Year: 2026
Useful Life: 60
Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Building may be inaccessible/inoperable more than a week after natural hazard event without consequences
Identify the geographic area directly affected by permanent loss or significant inoperability of the building/facility.
Impacts limited to site only
Identify the population directly served that would be affected by the permanent loss of use or inoperability of the building/facility.
Less than 10,000 people
Identify if the building/facility provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
The building/facility does not provide services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
If the building/facility became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the building/facility would not be expected to result in injuries
If there are hazardous materials in your building/facility, what are the extent of impacts related to spills/releases of these materials?
Spills and/or releases of hazardous materials would be relatively easy to clean up
If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Minor – Inoperability will not likely affect other facilities, assets, or buildings
If this building/facility was damaged beyond repair, how much would it approximately cost to replace?
Between $30 million and $100 million
Is this a recreational facility which can be vacated during a natural hazard event?
No
If the building/facility became inoperable for longer than acceptable in Question 1, what are the public and/or social services impacts?
Many alternative programs and/or services are available to support the community
If the building/facility became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected
If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the building is not able to serve or operate its intended users or function)?
Loss of building is not expected to reduce the ability to maintain government services.
If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to loss of confidence in government (i.e. the building is not able to serve or operate its intended users or function)?
No Impact
Asset: Battery Energy Storage System
Asset Type: Utility Infrastructure
Asset Sub-Type: Energy (electric, gas, petroleum, renewable)
Construction Type: New Construction
Construction Year: 2026
Useful Life: 50
Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Infrastructure must be accessible/operable at all times, even during natural hazard event.
Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.
Impacts would be regional (more than one municipality and/or surrounding region)
Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.
Greater than 100,000 people

Identify if the infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
The infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
Will the infrastructure reduce the risk of flooding?
No
If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the infrastructure would not be expected to result in injuries
If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?
Spills and/or releases of hazardous materials are expected with moderately difficult cleanup
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Significant – Inoperability is likely to impact other facilities, assets, or buildings and result in cascading impacts that will likely affect their ability to operate
If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?
Greater than or equal to $100 million
Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.
No
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?
Loss of infrastructure is not expected to reduce the ability to maintain government services
What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?
Reduced morale and public support

Report Comments

N/A

Appendix C

Waterways Documentation

Commonwealth of Massachusetts.

IRREVOCABLE
CHAP. 785 ACTS OF 1963

No. 2162

Whereas, the New England Gas and Coke Company of Boston, in the County of Suffolk, and Commonwealth aforesaid, has applied to the Board of Harbor and Land Commissioners for license to build bulkheads and fill solid in and over the tide-waters of Mystic River in the city of Everett, and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the Mayor and Aldermen of the city of Everett;

Now, said Board, having heard all parties desiring to be heard, and having fully considered said application, hereby, ~~subject to the approval of the Governor and Council,~~ authorizes and licenses the said New England Gas and Coke Company, subject to the provisions of the nineteenth chapter of the Public Statutes, and of all laws which are or may be in force applicable thereto, to build bulkheads and fill solid in and over the tide-waters of Mystic River in conformity with the accompanying plan No. 2162.

Said bulkheads are to be built on lines described as follows: Beginning at a point marked A on said plan, at the westerly end of the bulkhead authorized to be built by the licensee under license No. 2083, granted by the Board December 10, 1897, and in the Bulkhead Line approved by the Secretary of War June 20, 1899, and running westerly, in said Bulkhead Line, 630 feet, more or less, to a point marked B, in the boundary line of said Company's premises; thence running northwesterly, in said boundary line, 120 feet, more or less, to a point marked C; thence running northeasterly, in said boundary line, 280 feet, more or less, to

~~This License is also granted in consideration of the payment into the treasury of the Commonwealth~~ by the said ..... for the rights and privileges hereby granted in land of ~~said~~ Commonwealth, of the further sum of ..... ~~being the amount determined by the Governor and Council to be just and equitable therefor.~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same, and the accompanying plan, are recorded, within one year from the date hereof, in the Registry of Deeds for the South District of the County of Middlesex.

In Witness Whereof, ... said Board of Harbor and Land Commissioners have hereunto set their hands this Nineteenth day of July in the year eighteen hundred and ninety-eight.

Woodward Emery,
Colston White,
Chas C. Paine,
Harbor and Land Commissioners.

A true Copy. Attest:
Frederick N. Wales.
Clerk of Board.

~~COMMONWEALTH OF MASSACHUSETTS.~~

BOSTON, ... 189 .

~~Approved by the Governor and Council.~~

LINE BETWEEN UPLD DITCH

LINE BETWEEN UPLAND AND MARSH

LINE BETWEEN UPLAND AND MARSH AND LAND COMMIS

SEE HARBOR AND WHARF

EXISTING BULKHEAD AND

500

U.S. PIERHEAD LINE

END RIVER

ISLAND

THE NEW ENGLAND GAS & COKE CO.

CLARK THOMPSON DITCH

SWAN JOSEPH PROPERTY 60ft.50

488 St. PROPERTY LINE.

SWAN JOSEPH PROPERTY 488 St. LINE

PROPOSED FILLING

I-J=850'± O

J-O=430'± A-O=420'±

E-J=210'± PROPERTY LINE.

193'± 40' R

K-J=1230'± M

E-L=820'± L

KIPPY ST.

BETTY ST.

ROVER ST.

ROBBIN ST.

SULLIVAN

STAKE 128.88 74.85 55.2'

K-L=187.25 K 40'±

L-H=540'± LINE

THE NEW ENGLAND GAS & COKE CO.

PROPOSED FILLING

E-F=620' LINE

B-F=520'± F

C-O=280'± C

PROPOSED FILLING

B-I=600'±

A-B=630'±

ERSKINE

JOHN

PROPERTY

LINE BETWEEN UPLAND AND MARSH

THE NEW ENGLAND GAS & COKE CO.

PROPERTY 837 LINE

LINE OF SEWER

PROPERTY OF EVERETT CITY

OUTLET OPEN CULV.

H-L=540'±

G-H=290'±

PROPOSED

39.8±

U.S. BULKHEAD LINE

F-G=830'±

RIGHT OF WAY OF SEWER

U.S. PIERHEAD LINE

EXT. AVE. ME

LOW WATER

MYSTIC RIVER

10'-0" Gr. 14.00

SLOPE 1½ TO 1 DIKE SLOPE 1½ TO 1.

TOP OF MARSH Gr. 10.50

SECTION OF DIKE.

O TO O, H TO L & I TO J.

SCALE 1 IN. = 10 FT.

20'-0" Gr. 14.00

SLOPE 1½ TO 1 DIKE SLOPE 1½ TO 1.

TOP OF MARSH Gr. 10.00

SECTION OF DIKE.

K TO M & N TO J.

SCALE 1 IN. = 10 FT.

Gr. 14.00 20'-0"

SLOPE 1½ TO 1 M.H.W. Gr. 10.44 SLOPE 1½ TO 1.

DIKE

M.L.W. 0.64

PRESENT SURFACE OF GROUND

SECTION OF DIKE AT "A" "A"

SCALE 1 IN. = 10 FT.

12"x12" H.P. 6'x10" 6'x6" Gr. 14.00 6'x10" Filling Line 1½" TIE ROD Gr. 12 Gr. 9.4 6'x10" M.H.W. Gr. 10.44 M.L.W. Gr. 0.64 6'x10" 3" plank 20 FT. long 35 Piles Bottom lined 3" Plank 35 Piles 6'-0" 6'-0" 6'-0" 8" Piles 30 Ft. long

DETAIL OF BULKHEAD

A TO B, B TO C, C TO O, E TO F, F TO G & G TO H.

SCALE 1 IN. = 10 FT.

THE NEW ENGLAND GAS & COKE CO.

PROPOSED STRUCTURE, DIKE WALL & FILLING

AT THE EVERETT WORKS.

SCALES PLAN. 1 IN. = 100 FT. SECTIONS 1 IN. = 10 FT. MARCH 19, 1898.

EVERETT, MASS.

No. 2162.

Approved by Harbor and Land Comm'r.

July 19, 1898.

Harbormaster

Chester White

Chas C. Doten

2162

2162

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

100 Cambridge Street 9th Floor Boston, MA 02114 • 617-292-5500

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

March 8, 2024

Everett Landco, LLC
c/o Christopher Wagner - Vanasse Hangen Brustlin, Inc. (VHB)
101 Walnut Street
Watertown, Massachusetts 02472

Re: Chapter 91 Jurisdictional Determination - WW04-0000027
Application No. 23-WW04-0014-APP
0 South Farm, Filled Tidelands of the Mystic River, Mystic River Designated Port Area, Everett, Middlesex County

Dear Mr. Wagner:

Enclosed please find the Jurisdictional Determination for the above referenced Request for Determination of Applicability (RDA) Application issued by the Department of Environmental Protection Waterways Regulation Program pursuant to M.G.L. Chapter 91 and 310 CMR 9.06. This Determination may be recorded at the Southern Middlesex District County Registry of Deeds and a copy will be maintained in the Department files.

Please contact the Waterways Regulation Program at dep.waterways@mass.gov if you have any questions.

Sincerely,

Daniel J. Padien
Program Chief
Waterways Regulation Program

cc: Michael Cantalupa, The Davis Companies
Honorable Carlo DeMaria, Mayor, City of Everett
Everett Conservation Commission
Everett Planning Board

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
100 Cambridge Street 9th Floor Boston, MA 02114 • 617-292-5500

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

Jurisdictional Determination No: WW04-0000027 Municipality: Everett, Essex County
Waterways Application No.: 23-WW04-0014-APP

DETERMINATION OF APPLICABILITY- 310 CMR 9.00

Issued to: Everett Landco, LLC
125 High Street, Ste. 2111
Boston, MA

Location: 0 South Farm
Everett, MA 02149
Parcel No.: H0-05-00162A

Pursuant to 310 CMR 9.06, the Department of Environmental Protection, Waterways Regulation Program ("Department") has considered the Request for a Determination of Applicability (RDA) Application and its supporting documentation to determine if the proposed construction and operation of a Battery Electric Energy Storage System (BESS) at the subject parcel and located within the filled tidelands presented in the RDA may be considered a Water Dependent Industrial Use pursuant to 310 CMR 9.12(2)(b)9 and 10. The Department has made the following determinations:

[X] **The Determination is Positive:** The above referenced site for which this determination is issued includes filled tidelands, a geographic area subject to the jurisdiction of G.L. Chapter 91 and its regulations at 310 CMR 9.00, pursuant to 310 CMR 9.04(1).

[ ] **The Determination is Negative:** The above referenced site for which this determination is issued includes areas landward of the historic high water mark (HHWM) and therefore outside of the geographic not subject to jurisdiction under M.G.L. Chapter 91 and its regulations at 310 CMR 9.00, pursuant to 310 CMR 9.04(1)

Everett Landco, LLC c/o the Davis Companies (the "Applicant"), acting through its consultant, Vanasse Hangen Brustlin, Inc. (VHB) has requested a Determination of Applicability regarding whether the construction and maintenance of a battery energy storage system (BESS) and associated structures is a water-dependent industrial use, pursuant to 310 CMR 9.12(b)9 and/or 10. The proposed facility is to be located at 0 South Farm, in the City of Everett, Middlesex County (the "project site").

The Applicant submitted the following documentation in support of this request:

1) A letter in support of this request, prepared by VHB, Inc., dated September 12, 2023;
2) Exhibit 1 - A map titled *"Site Location Map, Potential Battery Energy Storage System, Everett, MA"*, prepared by VHB, Inc. dated December 22, 2023;
3) Exhibit 2 - A plan set (Sheets 1-3) titled *"Potential Battery Energy Storage System, Conceptual Site Plan"*, by VHB, Inc. dated December 22, 2023;
4) Exhibit 3 – A map titled *"Mystic River Designated Port Area (DPA)"*, obtained from the Massachusetts Office of Coastal Zone Management, dated May 2021;
5) Exhibit 4 – A PowerPoint presentation titled *"First Cape Cod Resource Integration Study, Preliminary Results, Planning Advisory Committee",* presented by ISO New England, dated March 17, 2021;
6) Exhibit 5 – A PowerPoint presentation titled *"Second Cape Cod Resource Integration Study, Status Update, Planning Advisory Committee",* presented by ISO New England, September 21, 2022;
7) Applicant's correspondence to the Department:
    a. Email from Michael Cantalupa to Daniel Padien providing additional analysis/support for the water-dependent nature of project, based on importance for off-shore wind development, sent on January 23, 2024.
    b. Email from Michael Cantalupa to Daniel Padien providing additional information related to the Mystic substation importance to the proposed project and future off-shore wind projects and its ability to serve existing off-shore wind projects off Cape Cod and interconnections, dated February 12, 2024.
    c. Email from Michael Cantalupa to Daniel Padien providing a Waterways License history of the site, dated February 15, 2024.
8) Comment letters in support of the proposed project provided by:
    a. Greenberg Traurig, LLP, on behalf of Distrigas of Massachusetts, LLC, dated January 26, 2024, and
    b. Northeast Clean Energy Council (NECEC) dated February 2, 2023.
9) Massachusetts Department of Energy Resources (MassDOER) memorandum dated March 4, 2024.
10) Notification list.

Consideration of Future Off-Shore Power Generation

The proposed project consists of a battery energy storage system (BESS) and Gen-Tie Line to store electric power to be produced by an anticipated offshore wind project to be located off the Massachusetts coast. Electric power is anticipated to be delivered to the substation via two (2) 1,200 MW high voltage direct current (HVDC) undersea transmission cables making landfall in the immediate vicinity of the BESS and in close proximity to the Mystic Substation and Gen-Tie Line interconnection. Based on technical support provided to the Department during its review of this application by the Massachusetts Department of Energy Resources (MassDOER), the Department acknowledges the critical importance of robust battery energy storage in delivering wind -generated power to the regional electric grid. This is due to the inherent variable nature of wind generated power levels caused by reliance on favorable weather conditions.

The Applicant anticipates that the BESS will have a storage capacity of 500 to 1,000 MW. Energy will be discharged from the BESS to the regional grid through a Gen-Tie Line following several routes along the Robin, Dexter, and Alford Streets rights-of-way providing a direct interconnection to the Mystic Substation.

The Applicant seeks a determination by the Department that the proposed future use of the BESS to accept power from a future offshore wind energy project may be considered a water dependent industrial use pursuant to 310 CMR 9.12(2)(b)9 or 10, which include:

> *9. Offshore renewable energy infrastructure facilities in the Commonwealth, including ocean wave energy facilities, ocean current energy facilities, tidal energy facilities, any ancillary facility thereto or any similar facility that obtains its energy from the ocean;*
>
> *10. Infrastructure facilities used to deliver electricity, natural gas or telecommunications services to the public from an offshore facility located outside the Commonwealth.*

Based on technical input provided to the Department during its review of the application by MassDOER and as reported in multiple studies cited above, the Department accepts the following assertions by the Applicant:

1. Battery energy storage is a critical operational component to the successful development of offshore wind-generated power.
2. The Mystic Substation is among the most favorable locations for an interconnection of offshore power generation into the Boston load pocket because the Mystic Substation has the required input and output capacity needed to handle the 500 to 1,000 MW anticipated to be delivered from a wind energy project designed to serve the current and modeled generating capacity.
3. The development of a modern, resilient electric grid sufficient to accommodate a significant percentage of its power from renewable sources must – at times – be planned and developed in phases. Based on technical input from MassDOER, the Department concludes that the BESS, if constructed at the proposed site, will provide sufficient incentive to secure a connection to an offshore facility.

Jurisdictional Assessment

The BESS project site consists of approximately ±11.05-acres of previously developed land within a ±15.76-acre parcel located entirely within the Mystic River Designated Port Area (DPA). Approximately 23,000 SF (0.53±) of the project site is located seaward of the *historic high water mark* (HHWM[1]) as defined at 310 CMR 9.02 and is therefore located within *filled tidelands*, a geographic area subject to M.G.L. c. 91 pursuant to 310 CMR 9.04(2).

Department licensing records indicate that the subject property has been largely used for energy production since it was filled following the issuance of Board of Harbor and Land Commissioners' License 2162 to the New England Gas and Coke Company in 1898. The most recent such use of the project site was by the prior owner, Exxon Mobil Corporation, for storage of petroleum and accessory uses thereto. The Department understands that the soon to be decommissioned petroleum storage facilities on the project site supported the operation of the adjacent marine terminal for the transfer of materials between ship and shore and bulk storage of materials, which are water dependent industrial uses pursuant to 310 CMR 9.12(2)(b)1.

Findings

Based on the Department's review of the project site, and the materials listed herein, and in consideration of its jurisdiction pursuant to M.G.L. Chapter 91, 310 CMR 9.00 and the procedures set forth therein, the Department hereby finds that:

1) The applicant has met the requirements of 310 CMR 9.06(1)(a) - (c) by submitting the applicable information stipulated therein on the forms required by the Department.

2) The applicant has demonstrated compliance with the requirements of 310 CMR 9.06(2) by attestation on the application form, and by submitting USPS return receipts confirming delivery to the persons identified at 310 CMR 9.13(1)(a).

3) Pursuant to the discretionary authority at 310 CMR 9.06(3), the Department required the applicant to publish a public notice of the filing of the Request for Determination of Applicability announcing that the Department would accept public comments on the matter for 21 days, through February 6, 2024. This notice was published in The Boston Herald on January 16, 2024. The Department received two (2) public comments during the public comment period, both expressing support of the proposed project. The Department did not require a public hearing of this matter. Based on the foregoing, the Department finds that the proponent has complied with the requirements of 310 CMR 9.06(3) and (4).

4) Pursuant to the provisions of 310 CMR 9.06(5), this Determination of Applicability (a.k.a. Jurisdictional Determination) is issued within 60 days of the close of the public comment period, which ended on February 6, 2024.

5) Pursuant to the provisions of 310 CMR 9.06(6), this Determination of Applicability/Jurisdictional Determination is issued subject to the appeal provisions set forth at 310 CMR 9.17.

6) The project site is located within the Mystic River Designated Port Area (DPA) as defined at 310 CMR 9.02.

7) The historic high water line at the project site derives from a chart titled "*North Shore of Boston Bay Massachusetts Topography*", Register 2,190, Scale 1:10,000, 1894 developed during the by the EEA Massachusetts Office of Coastal Zone Management Chapter 91 Historic Mapping Project.

8) The filled tidelands on the project site are separated from the high water mark of the Mystic River by one or more interconnected public ways that were in existence on January 1, 1984. However, the statutory and regulatory definitions of *landlocked tidelands* stipulate that all filled tidelands within a DPA remain subject to the licensing standards of Chapter 91. Therefore, the Department hereby finds that the entirety of the filled tidelands on the project site constitute a geographic area subject to 310 CMR 9.00.

9) The proposed use of the BESS facility as described – to receive and store electric power generated by offshore wind – and the Gen-Tie Line and substation connection is consistent with the provisions of 310 CMR 9.12(2)(b) 9 and 10.

Conclusion

Based on the foregoing, the Department has determined that:

1) The HHWM, derived from the 1894 US Coast & Geodetic Survey Plan, is the most reliable, landward shoreline which can be ascertained with reference to topographic and hydrologic survey, prior to human alteration and is the landward extend of Chapter 91 jurisdiction traversing the project site. Accordingly, those lands lying landward of the high water mark and seaward of the HHWM are defined as Filled Tidelands pursuant to 310 CMR 9.02, and are subject to jurisdiction pursuant to M.G.L Chapter 91 and the regulations at 310 CMR 9.00;

2) The HVDC cables connecting the offshore wind project with the Mystic Substation meet the definition of infrastructure facility set forth at 310 CMR 9.02 independently of the BESS.

3) The proposed BESS project and Gen-Tie Line and substation connection and associated future structures that would be operationally related to the offshore wind project and HVDC cables will support the development of offshore wind and offshore wind interconnection at the Everett location as: the site's proximity to the coast allows offshore wind to interconnect without siting significant new on-land upgrades; the site's proximity to existing energy infrastructure potentially allows for interconnection of offshore wind without significant costly upgrades; and the site's proximity to the Boston load zone balances new generation with existing and growing electric load.

4) The proposed use of the BESS facility as described and the Gen-Tie Line and substation connection – to receive and store electric power generated by offshore wind – is consistent with the provisions of 310 CMR 9.12(2)(b) 9 and 10.

5) The proposed BESS project requires a Waterways License pursuant to 310 CMR 9.05(1)(a) within geographic areas subject to jurisdiction.

Please be advised that construction and maintenance of the BESS and associated structures, any change in use, construction, or activities listed in 310 CMR 9.05(1) onsite located in/on/over/under any Filled or Flowed Tidelands on the project site are subject to licensing under, and compliance with, M.G.L Chapter 91 and the regulations at 310 CMR 9.00, including but not limited to the provisions of 310 CMR 9.11, 9.12, 9.13 and 9.14. This Determination does not relieve the Applicant from complying with all other applicable Federal, State, or local statutes, ordinances, by-laws, or regulations.

Issued by the Department of Environmental Protection Waterways Regulation Program.

IN WITNESS WHEREAS, said Department of Environmental Protection have hereunto set his hands this 8th day of March in the year 2024.

Daniel J. Padien
Program Chief
Waterways Regulation Program

Encl: Notice of Appeal Rights

NOTICE OF APPEAL RIGHTS

Who has the right to appeal?
The following persons shall have the right to an adjudicatory hearing concerning this decision by the Department to grant or deny a license or permit, in accordance with 310 CMR 9.17(1): (a) an Applicant who has demonstrated property rights in the lands in question, or which is a public agency; (b) any person aggrieved by the decision of the Department to grant a license or permit who has submitted written comments within the public comment period; (c) ten (10) residents of the Commonwealth who, pursuant to M.G.L. Chapter 30A, § 10A, have submitted comments within the public comment period with at least 5 of the 10 residents residing in the municipality(s) in which the license or permitted activity is located. The appeal shall clearly and specifically state the facts and grounds for the appeal and the relief sought, and each appealing resident shall file an affidavit stating the intent to be part of the group and to be represented by its authorized representative; (d) the municipal official in the affected municipality who has submitted written comments within the public comment period; and (e) MassCZM, for any project identified in 310 CMR 9.13(2)(a) for MassCZM participation or, in an Ocean Sanctuary, if it has filed a notice of participation within the public comment period.

How can I request an adjudicatory hearing?
A person requesting an adjudicatory hearing must submit a "Notice of Claim" to the Department, with a copy of the MassDEP Adjudicatory Hearing Fee Transmittal Form and include the details specified below, within twenty-one (21) days of the date of issuance of this decision. The MassDEP Transmittal Form is available at the following website:

https://www.mass.gov/doc/adjudicatory-hearing-fee-transmittal-form. The Notice of Claim must be made in writing and sent by certified mail or hand delivery to**:**

MassDEP
Office of Appeals and Dispute Resolution
Case Administrator
100 Cambridge Street, Suite 900
Boston, MA 02114

A copy of the complete Notice of Claim must be sent at the same time by certified mail or hand delivery to: (1) the Applicant, (2) the municipal official of the city or town where the project is located, and (3) the issuing office of the MassDEP, which in this case is located at**:**

MassDEP
Waterways Regulation Program
100 Cambridge Street, Suite 900
Boston, MA 02114

The MassDEP Adjudicatory Hearing Fee Transmittal Form and a valid check payable to "The Commonwealth of Massachusetts" in the amount of one hundred dollars ($100) must be mailed to**:**

MassDEP
Commonwealth Master Lockbox
P.O. Box 4062
Boston, MA 02211

What information must be included in the hearing request?

Pursuant to 310 CMR 9.17(3), any Notice of Claim requesting an adjudicatory hearing must include the following**:**

(a) the MassDEP Waterways Application File Number;
(b) the complete name, address, fax number and telephone number of the Applicant;
(c) the address of the project;
(d) the complete name, address, fax number, and telephone number of the party filing the request and, if represented by counsel, the name, address, fax number, and phone number of the attorney;
(e) if claiming to be a person aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found in 310 CMR 9.02;
(f) a clear statement that a formal adjudicatory hearing is being requested;
(g) a clear statement of the facts which are the grounds for the proceedings, the specific objections to the MassDEP's written decision, and the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written decision; and
(h) a statement that a copy of the request has been sent to: the Applicant and the municipal official of the city or town where the project is located.

Dismissal of request

The request for appeal will be dismissed if the filing fee is not paid, unless the appellant is exempt or is granted a waiver.

Exemptions

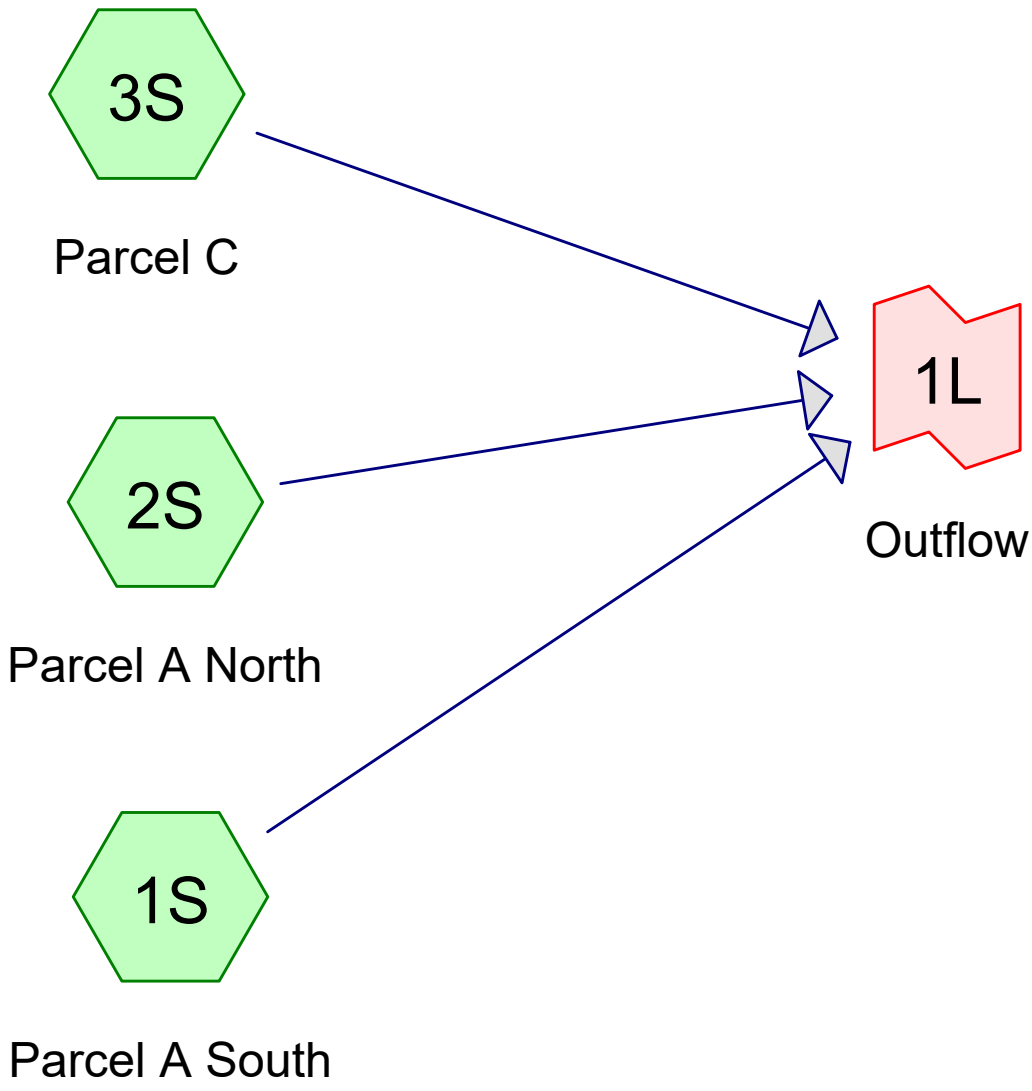
The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

Waiver

The Department may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

Appendix D

Stormwater Documentation



Subcat Reach Pond Link

Routing Diagram for 15924.00_EX
Prepared by VHB, Inc, Printed 8/2/2024

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yrNOAA+	Type III 24-hr		Default	24.00	1	3.50	2
2	10-yrNOAA+	Type III 24-hr		Default	24.00	1	5.59	2
3	25-yr NOAA+	Type III 24-hr		Default	24.00	1	7.26	2
4	50-yr RMAT	Type III 24-hr		Default	24.00	1	9.70	2
5	100-yr NOAA+	Type III 24-hr		Default	24.00	1	10.00	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
20.617	86	<50% Grass cover, Poor, HSG C (1S, 2S, 3S)
20.617	**86**	**TOTAL AREA**

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Parcel A South Runoff Area=9.702 ac 0.00% Impervious Runoff Depth=2.10"
Flow Length=710' Slope=0.0200 '/' Tc=16.8 min CN=86 Runoff=17.30 cfs 1.697 af

Subcatchment 2S: Parcel A North Runoff Area=1.352 ac 0.00% Impervious Runoff Depth=2.10"
Flow Length=396' Slope=0.0200 '/' Tc=11.5 min CN=86 Runoff=2.77 cfs 0.236 af

Subcatchment 3S: Parcel C Runoff Area=9.563 ac 0.00% Impervious Runoff Depth=2.10"
Flow Length=233' Slope=0.0200 '/' Tc=8.8 min CN=86 Runoff=21.35 cfs 1.672 af

Link 1L: Outflow Inflow=38.38 cfs 3.605 af
Primary=38.38 cfs 3.605 af

Total Runoff Area = 20.617 ac Runoff Volume = 3.605 af Average Runoff Depth = 2.10"
100.00% Pervious = 20.617 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: Parcel A South

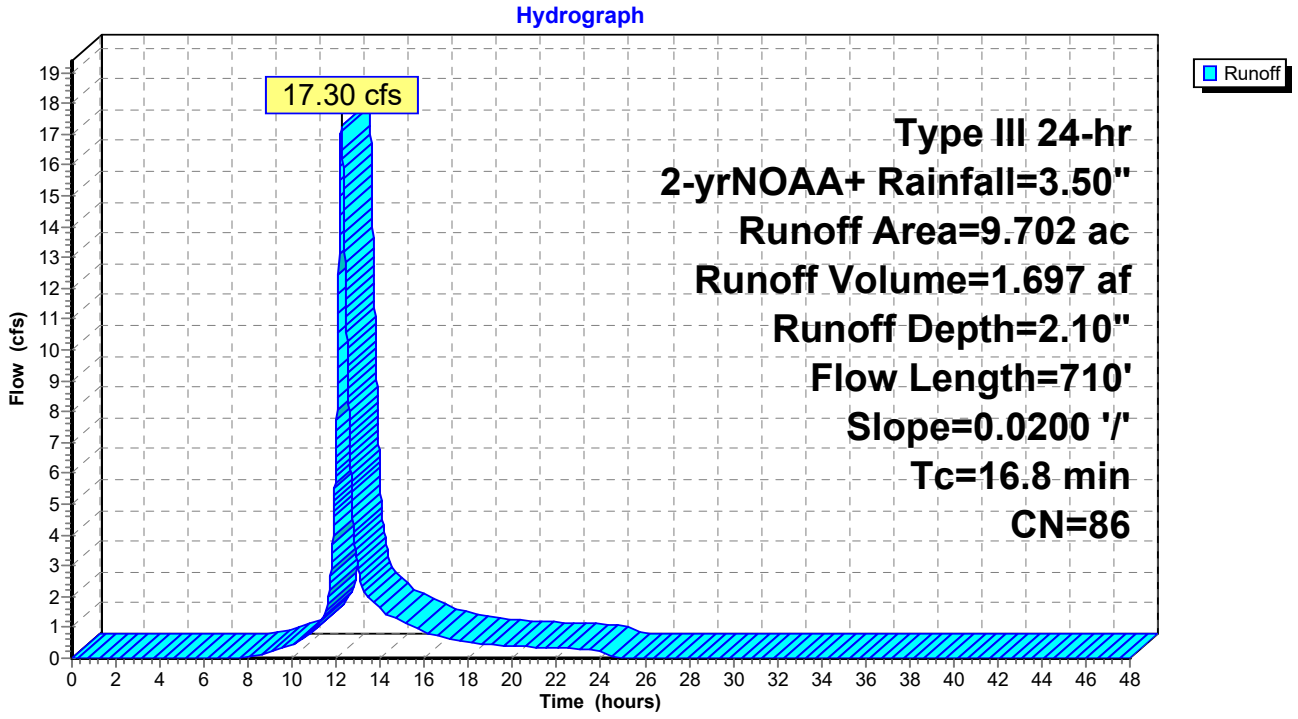
Runoff = 17.30 cfs @ 12.23 hrs, Volume= 1.697 af, Depth= 2.10"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yrNOAA+ Rainfall=3.50"

Area (ac)	CN	Description
9.702	86	<50% Grass cover, Poor, HSG C
9.702		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
11.1	660	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.8	710	Total			

Subcatchment 1S: Parcel A South



Summary for Subcatchment 2S: Parcel A North

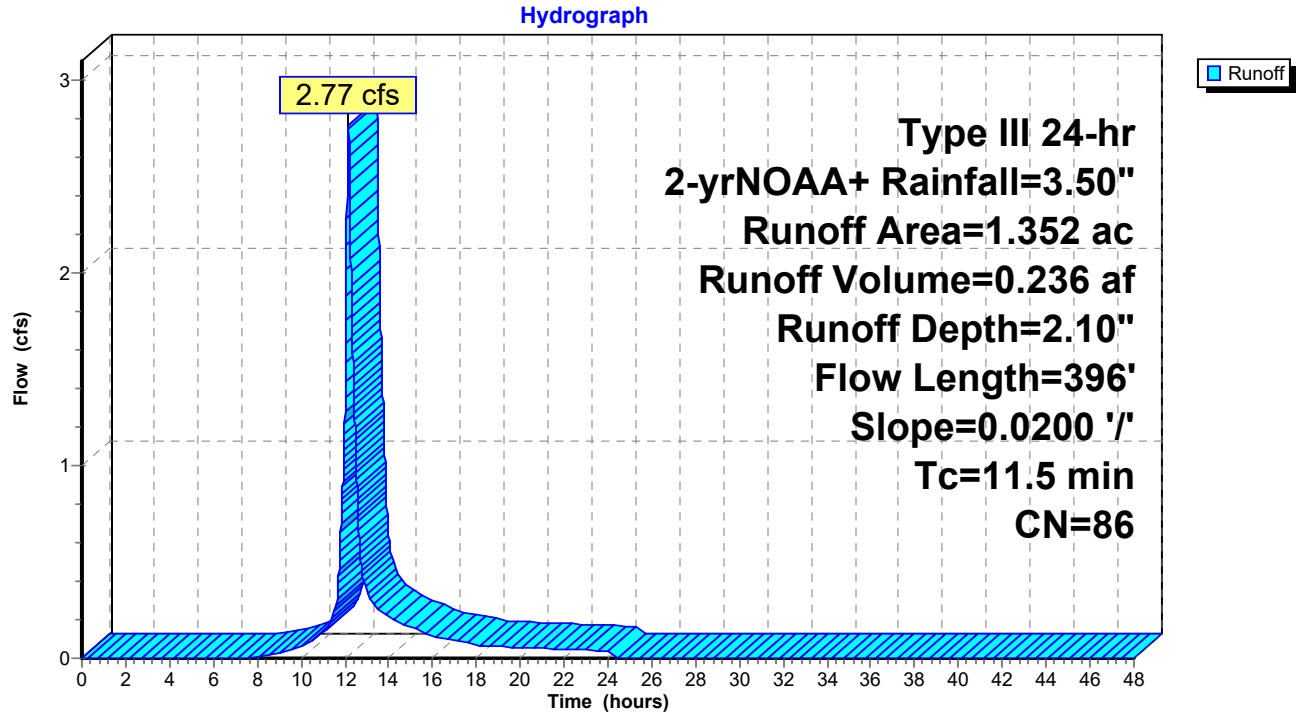
Runoff = 2.77 cfs @ 12.16 hrs, Volume= 0.236 af, Depth= 2.10"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yrNOAA+ Rainfall=3.50"

Area (ac)	CN	Description
1.352	86	<50% Grass cover, Poor, HSG C
1.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
5.8	346	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.5	396	Total			

Subcatchment 2S: Parcel A North



Summary for Subcatchment 3S: Parcel C

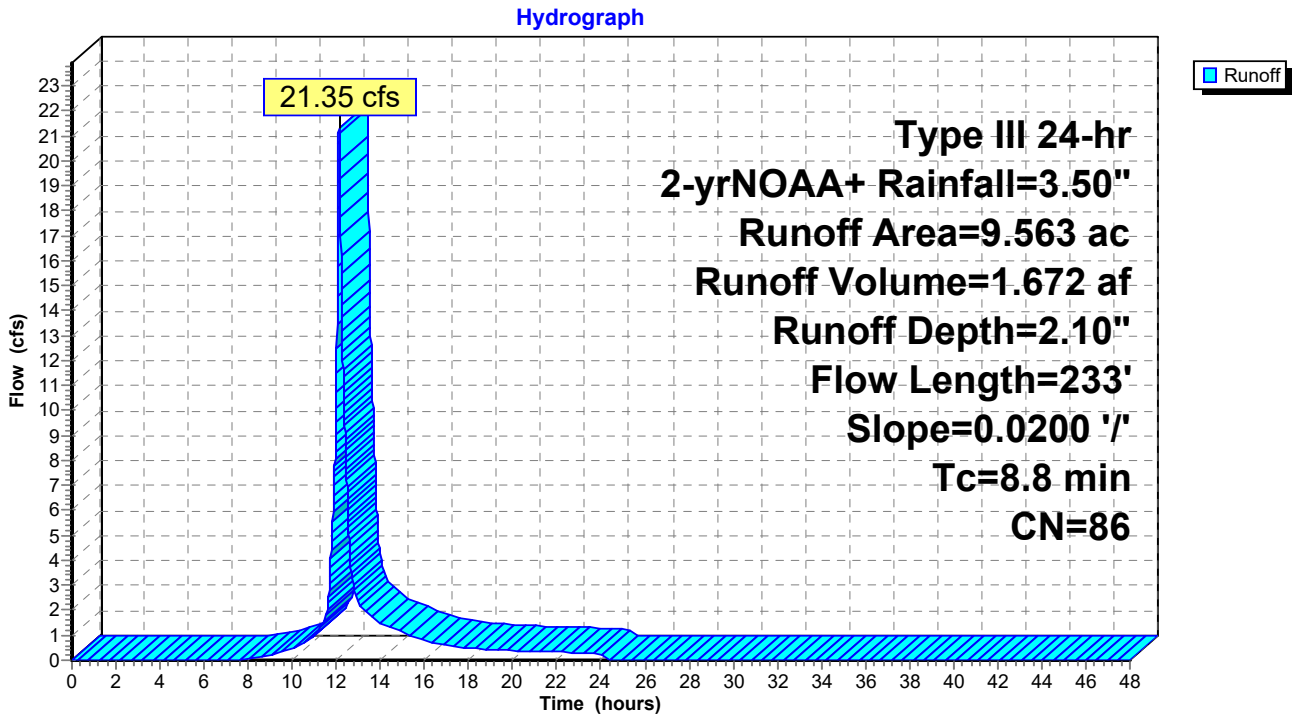
Runoff = 21.35 cfs @ 12.12 hrs, Volume= 1.672 af, Depth= 2.10"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yrNOAA+ Rainfall=3.50"

Area (ac)	CN	Description
9.563	86	<50% Grass cover, Poor, HSG C
9.563		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
3.1	183	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.8	233	Total			

Subcatchment 3S: Parcel C

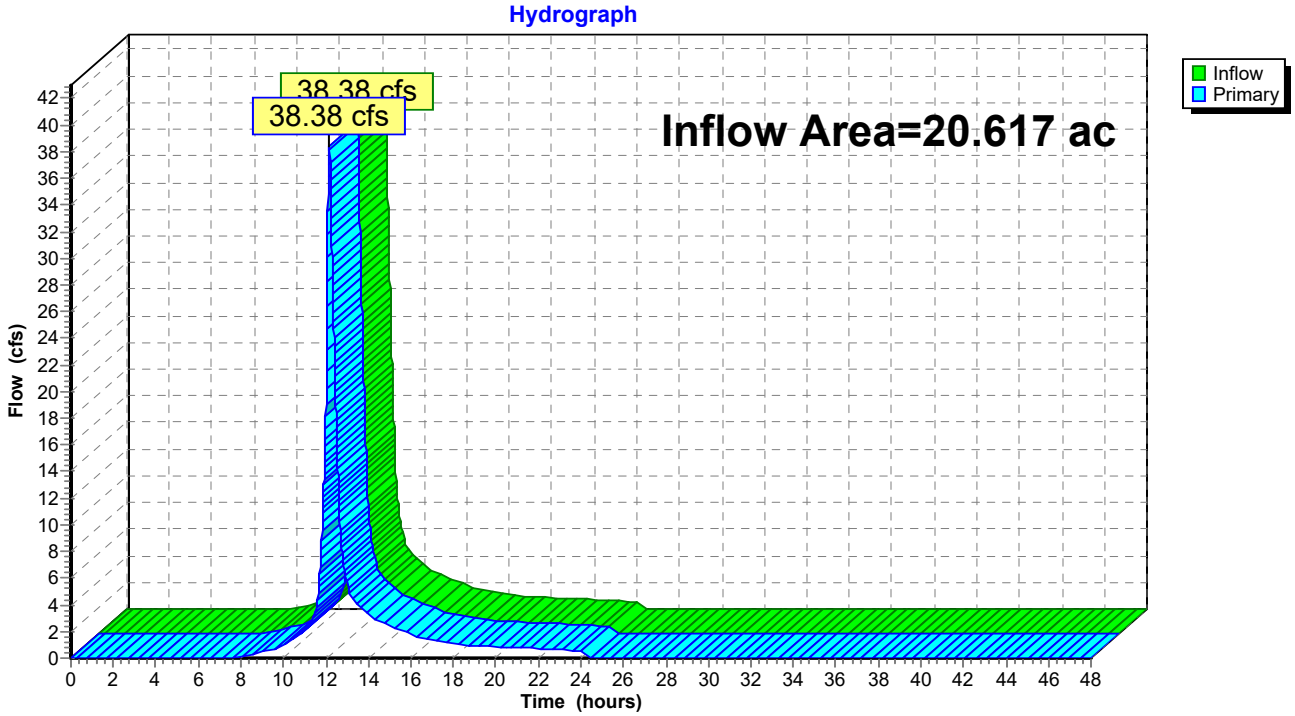


Summary for Link 1L: Outflow

Inflow Area = 20.617 ac, 0.00% Impervious, Inflow Depth = 2.10" for 2-yrNOAA+ event
Inflow = 38.38 cfs @ 12.15 hrs, Volume= 3.605 af
Primary = 38.38 cfs @ 12.15 hrs, Volume= 3.605 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: Outflow



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Parcel A South Runoff Area=9.702 ac 0.00% Impervious Runoff Depth=4.02"
Flow Length=710' Slope=0.0200 '/' Tc=16.8 min CN=86 Runoff=32.66 cfs 3.251 af

Subcatchment 2S: Parcel A North Runoff Area=1.352 ac 0.00% Impervious Runoff Depth=4.02"
Flow Length=396' Slope=0.0200 '/' Tc=11.5 min CN=86 Runoff=5.23 cfs 0.453 af

Subcatchment 3S: Parcel C Runoff Area=9.563 ac 0.00% Impervious Runoff Depth=4.02"
Flow Length=233' Slope=0.0200 '/' Tc=8.8 min CN=86 Runoff=40.21 cfs 3.204 af

Link 1L: Outflow Inflow=72.59 cfs 6.908 af
Primary=72.59 cfs 6.908 af

Total Runoff Area = 20.617 ac Runoff Volume = 6.908 af Average Runoff Depth = 4.02"
100.00% Pervious = 20.617 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: Parcel A South

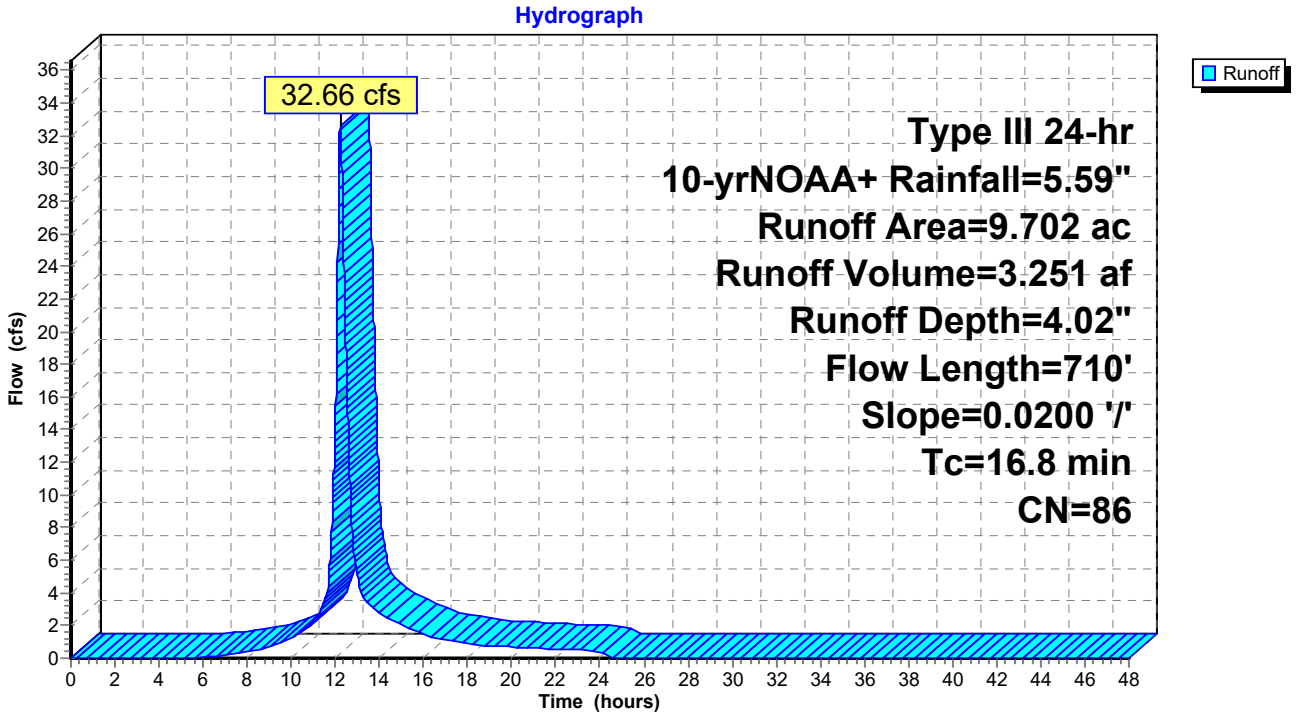
Runoff = 32.66 cfs @ 12.23 hrs, Volume= 3.251 af, Depth= 4.02"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yrNOAA+ Rainfall=5.59"

Area (ac)	CN	Description
9.702	86	<50% Grass cover, Poor, HSG C
9.702		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
11.1	660	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.8	710	Total			

Subcatchment 1S: Parcel A South



Summary for Subcatchment 2S: Parcel A North

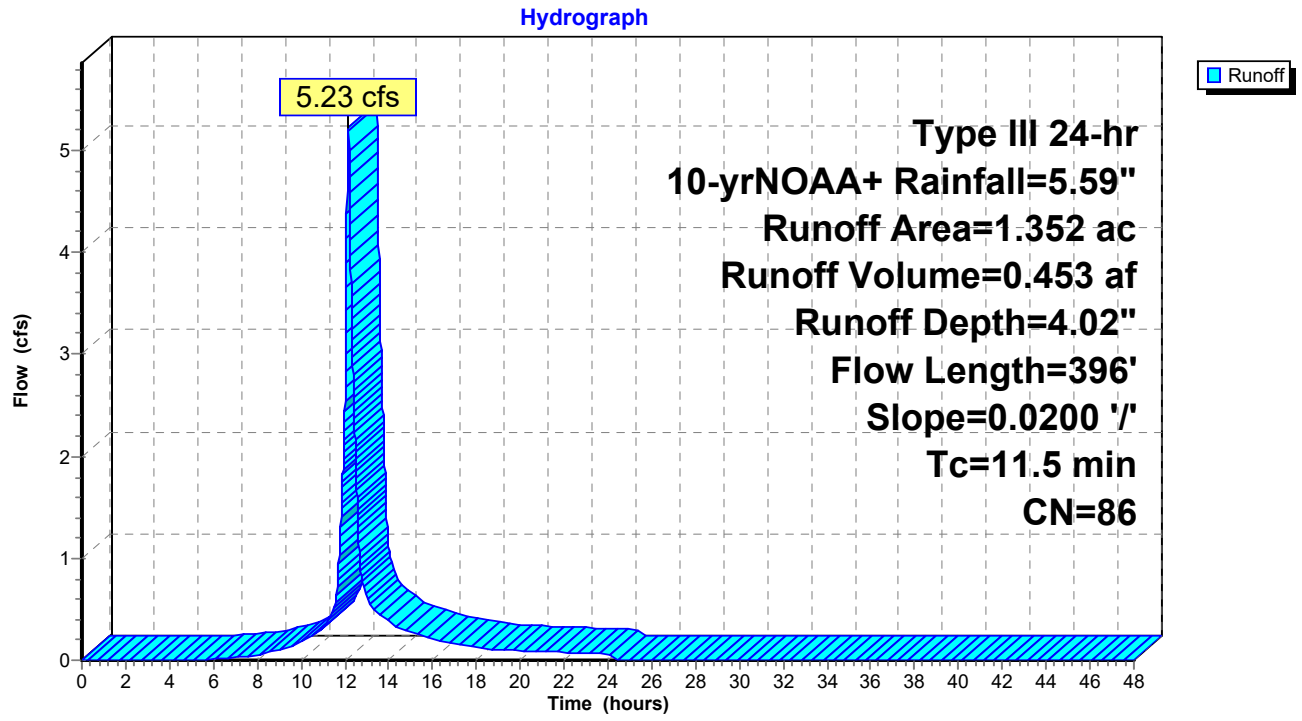
Runoff = 5.23 cfs @ 12.15 hrs, Volume= 0.453 af, Depth= 4.02"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yrNOAA+ Rainfall=5.59"

Area (ac)	CN	Description
1.352	86	<50% Grass cover, Poor, HSG C
1.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
5.8	346	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.5	396	Total			

Subcatchment 2S: Parcel A North



Summary for Subcatchment 3S: Parcel C

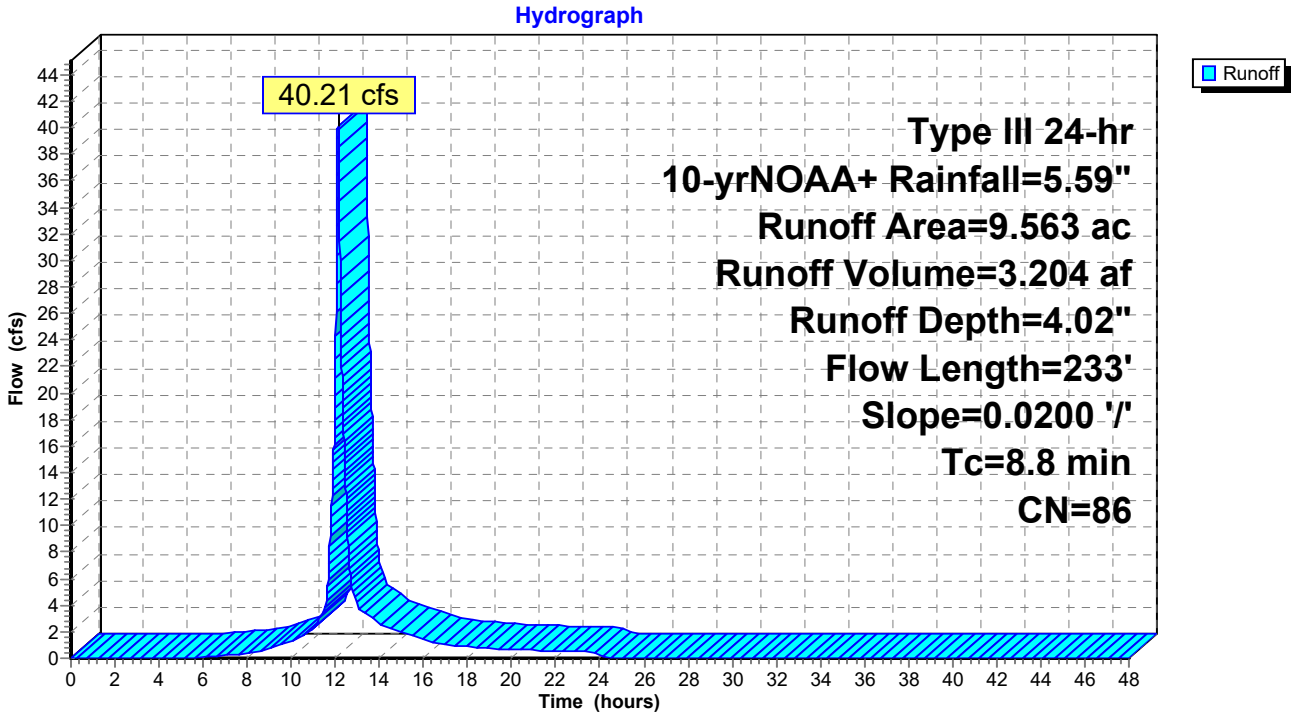
Runoff = 40.21 cfs @ 12.12 hrs, Volume= 3.204 af, Depth= 4.02"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yrNOAA+ Rainfall=5.59"

Area (ac)	CN	Description
9.563	86	<50% Grass cover, Poor, HSG C
9.563		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
3.1	183	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.8	233	Total			

Subcatchment 3S: Parcel C

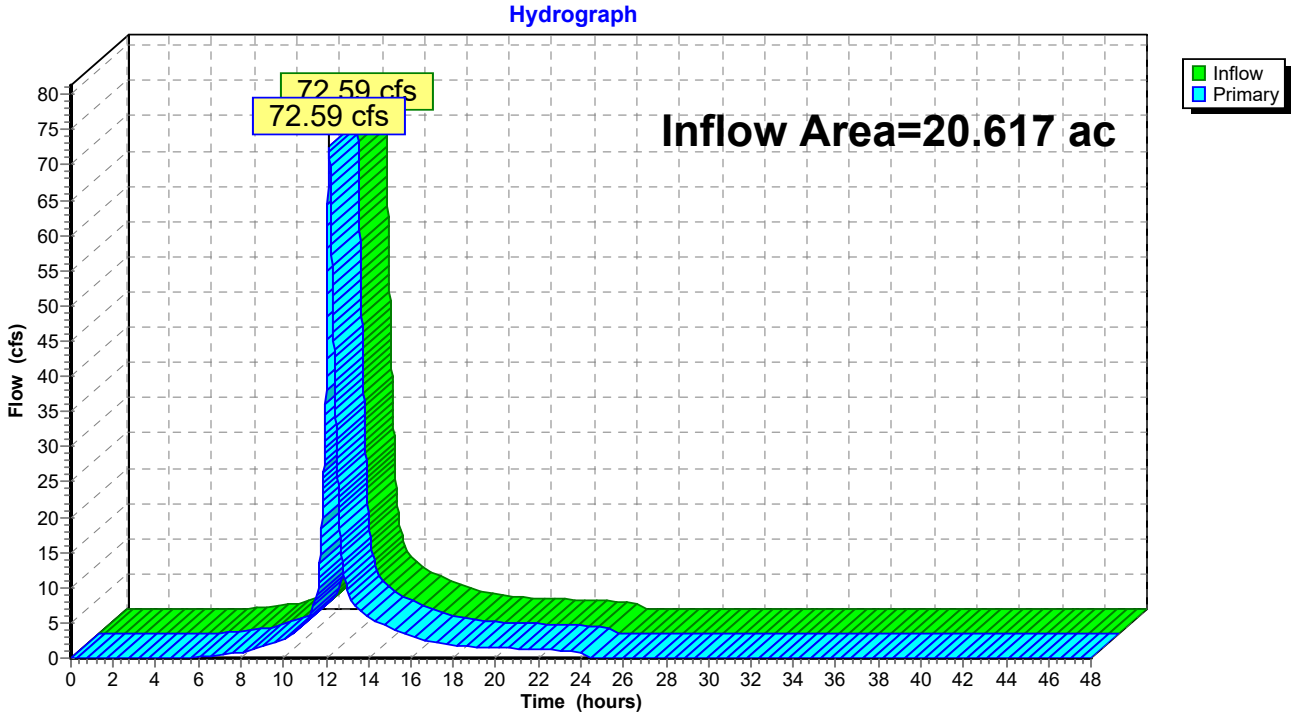


Summary for Link 1L: Outflow

Inflow Area = 20.617 ac, 0.00% Impervious, Inflow Depth = 4.02" for 10-yrNOAA+ event
Inflow = 72.59 cfs @ 12.15 hrs, Volume= 6.908 af
Primary = 72.59 cfs @ 12.15 hrs, Volume= 6.908 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: Outflow



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Parcel A South Runoff Area=9.702 ac 0.00% Impervious Runoff Depth=5.62"
Flow Length=710' Slope=0.0200 '/' Tc=16.8 min CN=86 Runoff=44.95 cfs 4.541 af

Subcatchment 2S: Parcel A North Runoff Area=1.352 ac 0.00% Impervious Runoff Depth=5.62"
Flow Length=396' Slope=0.0200 '/' Tc=11.5 min CN=86 Runoff=7.20 cfs 0.633 af

Subcatchment 3S: Parcel C Runoff Area=9.563 ac 0.00% Impervious Runoff Depth=5.62"
Flow Length=233' Slope=0.0200 '/' Tc=8.8 min CN=86 Runoff=55.31 cfs 4.475 af

Link 1L: Outflow Inflow=100.04 cfs 9.649 af
Primary=100.04 cfs 9.649 af

Total Runoff Area = 20.617 ac Runoff Volume = 9.649 af Average Runoff Depth = 5.62"
100.00% Pervious = 20.617 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: Parcel A South

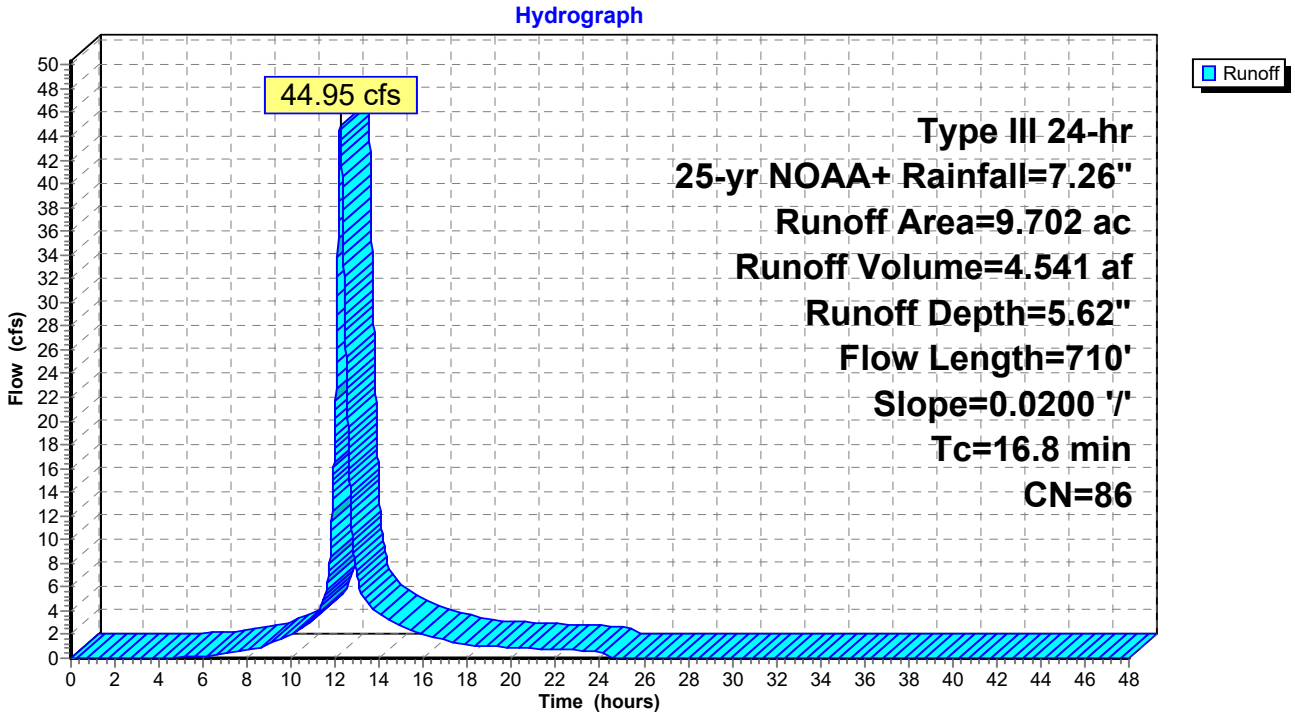
Runoff = 44.95 cfs @ 12.22 hrs, Volume= 4.541 af, Depth= 5.62"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr NOAA+ Rainfall=7.26"

Area (ac)	CN	Description
9.702	86	<50% Grass cover, Poor, HSG C
9.702		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
11.1	660	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.8	710	Total			

Subcatchment 1S: Parcel A South



Summary for Subcatchment 2S: Parcel A North

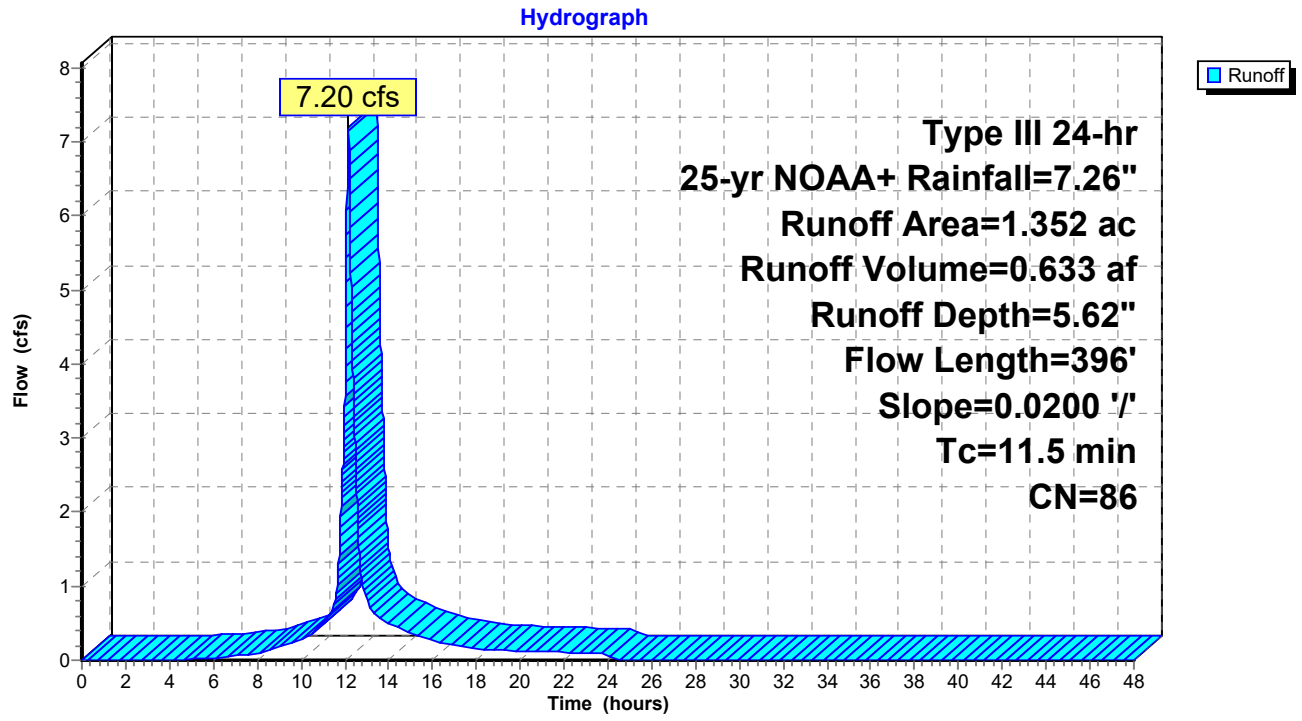
Runoff = 7.20 cfs @ 12.15 hrs, Volume= 0.633 af, Depth= 5.62"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr NOAA+ Rainfall=7.26"

Area (ac)	CN	Description
1.352	86	<50% Grass cover, Poor, HSG C
1.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
5.8	346	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.5	396	Total			

Subcatchment 2S: Parcel A North



Summary for Subcatchment 3S: Parcel C

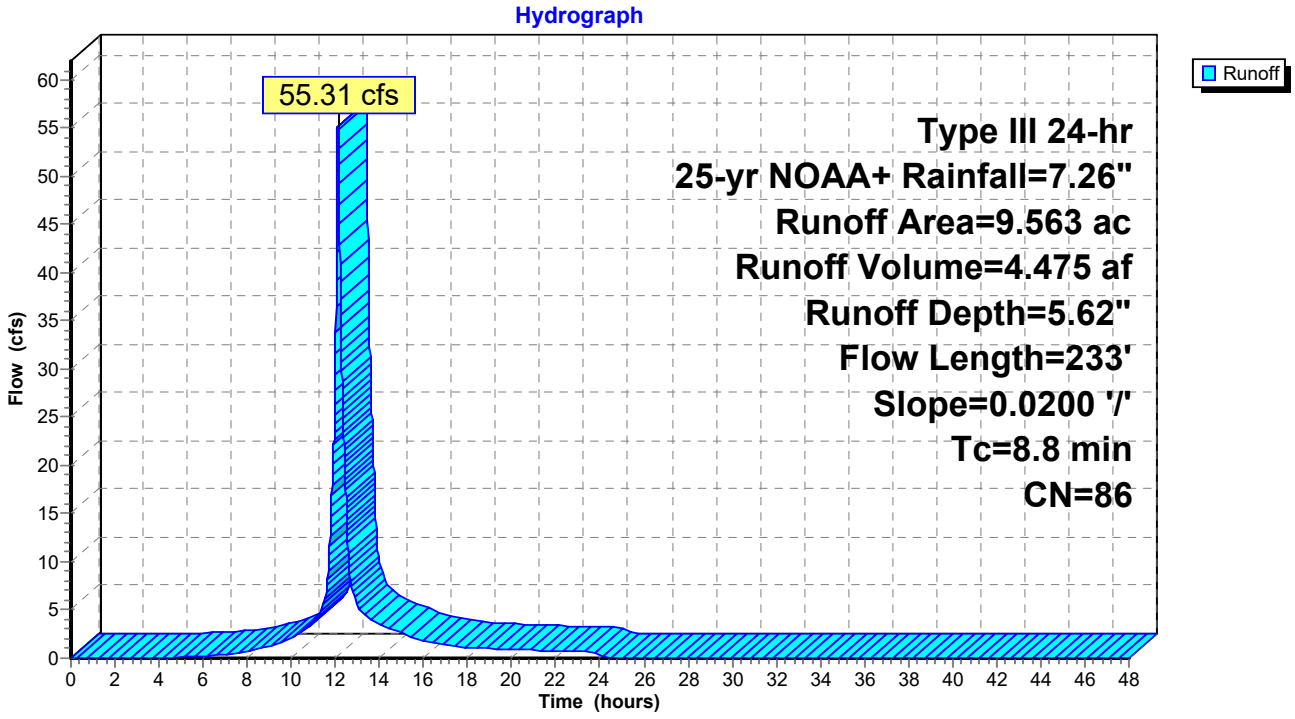
Runoff = 55.31 cfs @ 12.12 hrs, Volume= 4.475 af, Depth= 5.62"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr NOAA+ Rainfall=7.26"

Area (ac)	CN	Description
9.563	86	<50% Grass cover, Poor, HSG C
9.563		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
3.1	183	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.8	233	Total			

Subcatchment 3S: Parcel C

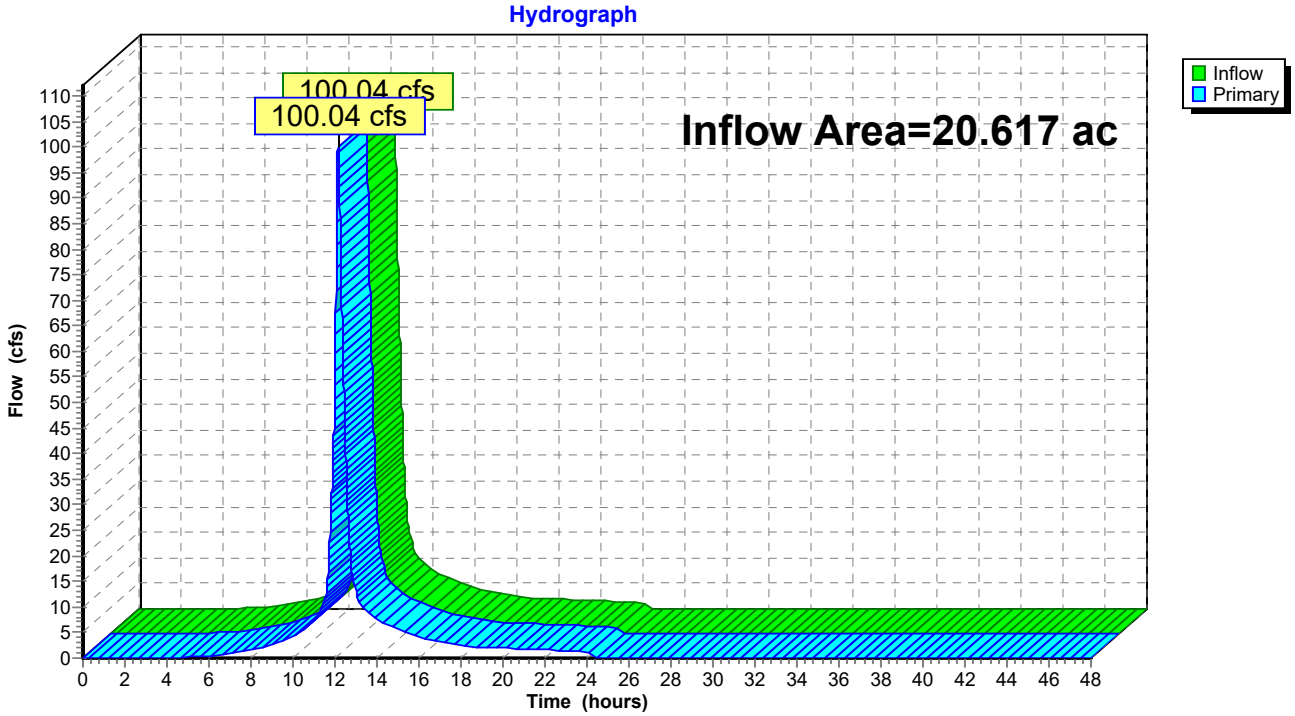


Summary for Link 1L: Outflow

Inflow Area = 20.617 ac, 0.00% Impervious, Inflow Depth = 5.62" for 25-yr NOAA+ event
Inflow = 100.04 cfs @ 12.15 hrs, Volume= 9.649 af
Primary = 100.04 cfs @ 12.15 hrs, Volume= 9.649 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: Outflow



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Parcel A South Runoff Area=9.702 ac 0.00% Impervious Runoff Depth=7.99"
Flow Length=710' Slope=0.0200 '/' Tc=16.8 min CN=86 Runoff=62.80 cfs 6.458 af

Subcatchment 2S: Parcel A North Runoff Area=1.352 ac 0.00% Impervious Runoff Depth=7.99"
Flow Length=396' Slope=0.0200 '/' Tc=11.5 min CN=86 Runoff=10.06 cfs 0.900 af

Subcatchment 3S: Parcel C Runoff Area=9.563 ac 0.00% Impervious Runoff Depth=7.99"
Flow Length=233' Slope=0.0200 '/' Tc=8.8 min CN=86 Runoff=77.20 cfs 6.365 af

Link 1L: Outflow Inflow=139.84 cfs 13.723 af
Primary=139.84 cfs 13.723 af

Total Runoff Area = 20.617 ac Runoff Volume = 13.723 af Average Runoff Depth = 7.99"
100.00% Pervious = 20.617 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: Parcel A South

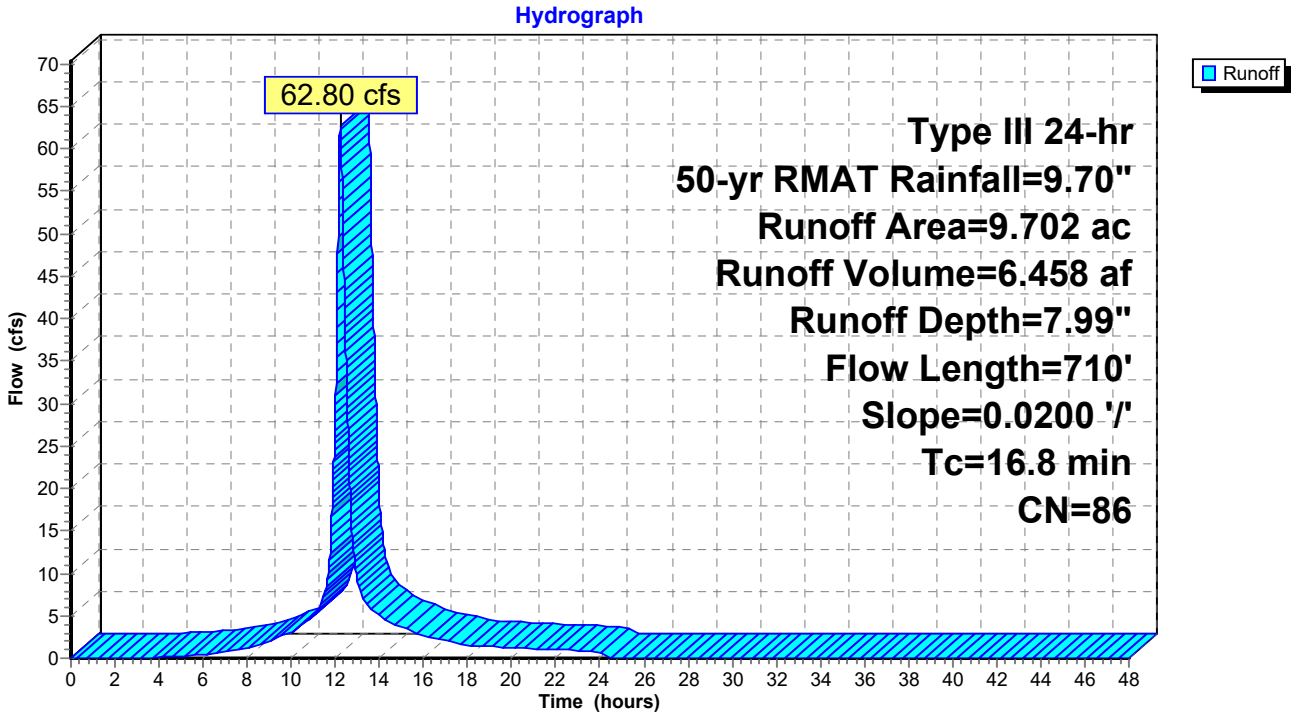
Runoff = 62.80 cfs @ 12.22 hrs, Volume= 6.458 af, Depth= 7.99"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr RMAT Rainfall=9.70"

Area (ac)	CN	Description
9.702	86	<50% Grass cover, Poor, HSG C
9.702		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
11.1	660	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.8	710	Total			

Subcatchment 1S: Parcel A South



Summary for Subcatchment 2S: Parcel A North

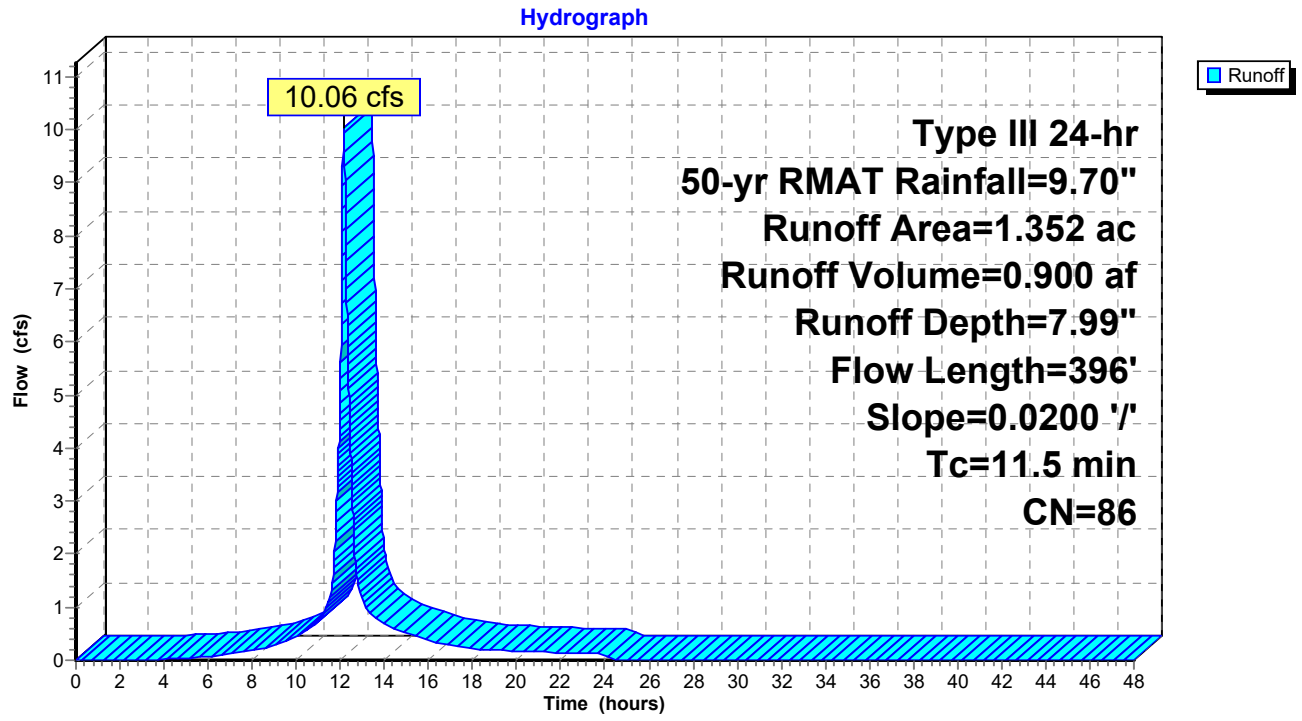
Runoff = 10.06 cfs @ 12.15 hrs, Volume= 0.900 af, Depth= 7.99"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr RMAT Rainfall=9.70"

Area (ac)	CN	Description
1.352	86	<50% Grass cover, Poor, HSG C
1.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
5.8	346	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.5	396	Total			

Subcatchment 2S: Parcel A North



Summary for Subcatchment 3S: Parcel C

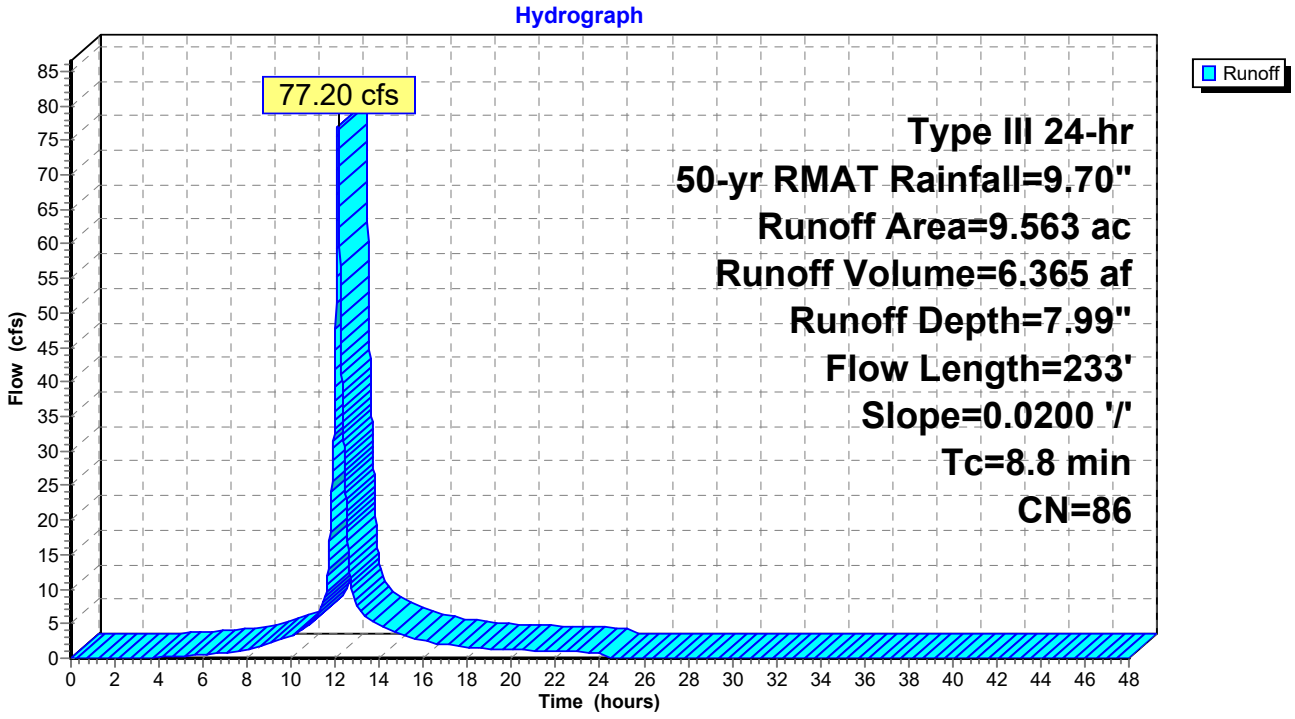
Runoff = 77.20 cfs @ 12.12 hrs, Volume= 6.365 af, Depth= 7.99"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr RMAT Rainfall=9.70"

Area (ac)	CN	Description
9.563	86	<50% Grass cover, Poor, HSG C
9.563		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
3.1	183	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.8	233	Total			

Subcatchment 3S: Parcel C

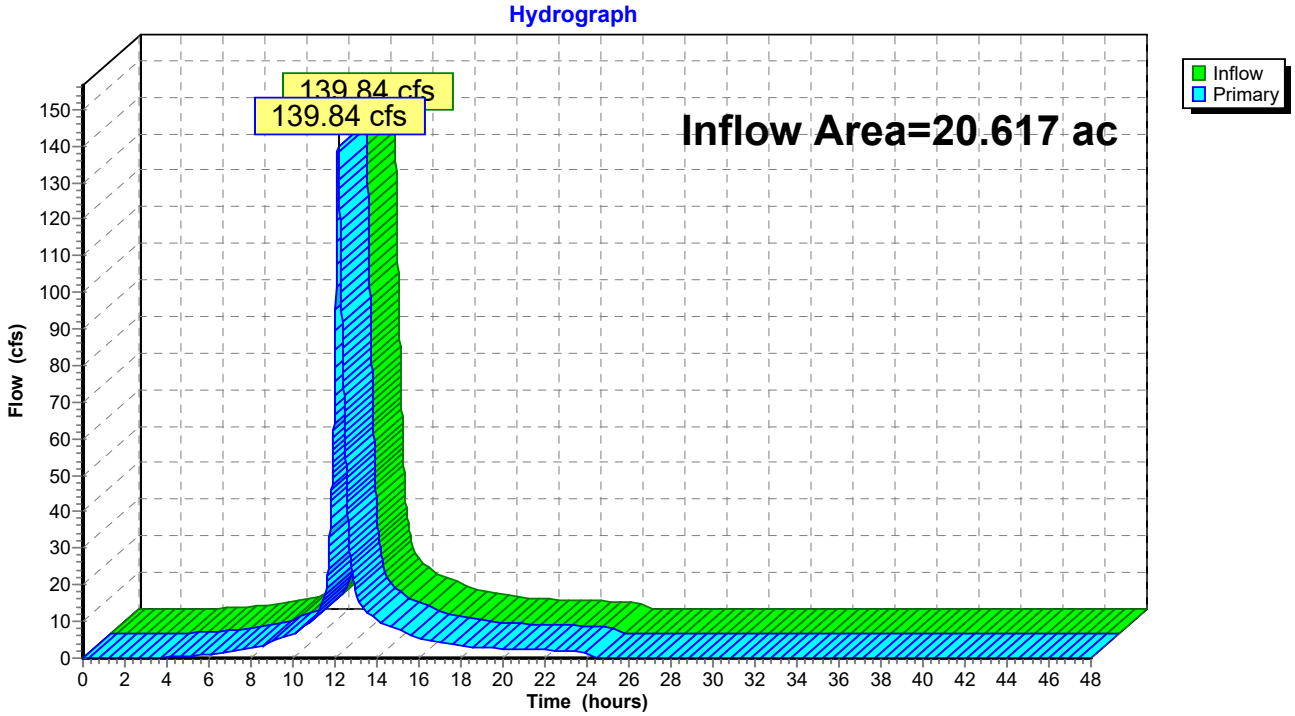


Summary for Link 1L: Outflow

Inflow Area = 20.617 ac, 0.00% Impervious, Inflow Depth = 7.99" for 50-yr RMAT event
Inflow = 139.84 cfs @ 12.15 hrs, Volume= 13.723 af
Primary = 139.84 cfs @ 12.15 hrs, Volume= 13.723 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: Outflow



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Parcel A South Runoff Area=9.702 ac 0.00% Impervious Runoff Depth=8.28"
Flow Length=710' Slope=0.0200 '/' Tc=16.8 min CN=86 Runoff=64.99 cfs 6.695 af

Subcatchment 2S: Parcel A North Runoff Area=1.352 ac 0.00% Impervious Runoff Depth=8.28"
Flow Length=396' Slope=0.0200 '/' Tc=11.5 min CN=86 Runoff=10.40 cfs 0.933 af

Subcatchment 3S: Parcel C Runoff Area=9.563 ac 0.00% Impervious Runoff Depth=8.28"
Flow Length=233' Slope=0.0200 '/' Tc=8.8 min CN=86 Runoff=79.88 cfs 6.599 af

Link 1L: Outflow Inflow=144.70 cfs 14.227 af
Primary=144.70 cfs 14.227 af

Total Runoff Area = 20.617 ac Runoff Volume = 14.227 af Average Runoff Depth = 8.28"
100.00% Pervious = 20.617 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: Parcel A South

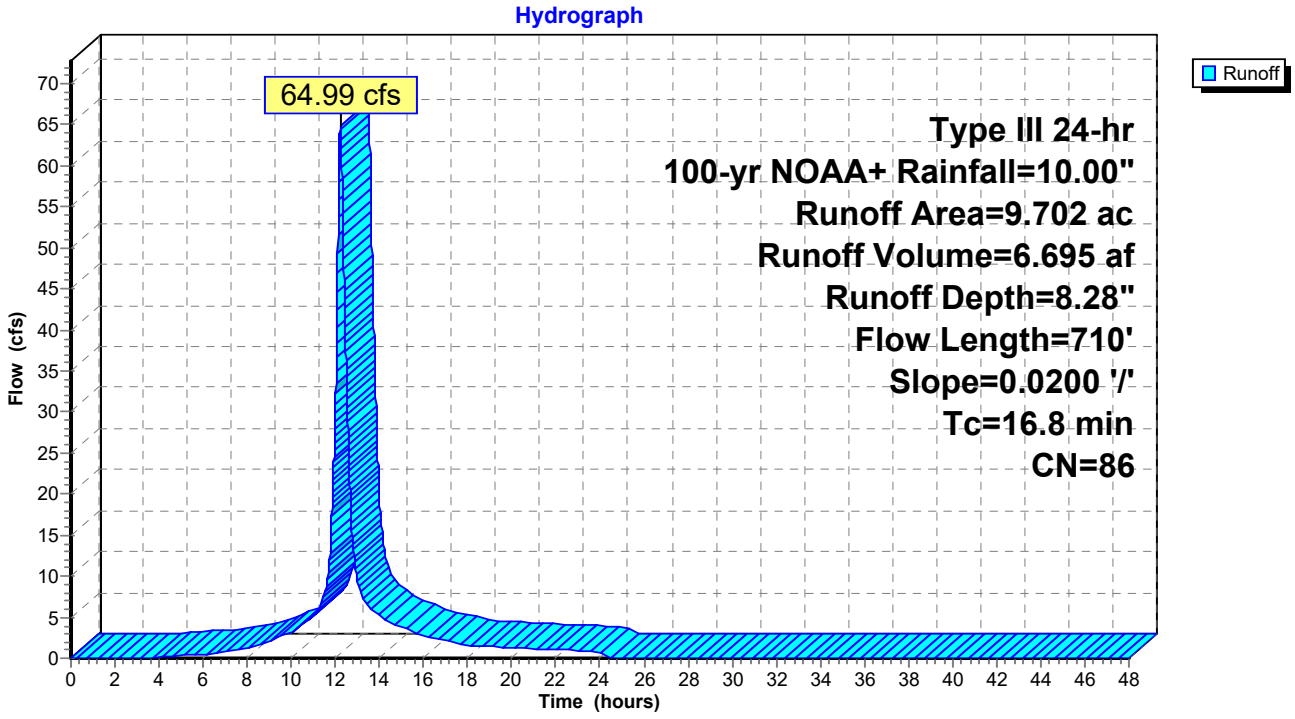
Runoff = 64.99 cfs @ 12.22 hrs, Volume= 6.695 af, Depth= 8.28"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr NOAA+ Rainfall=10.00"

Area (ac)	CN	Description
9.702	86	<50% Grass cover, Poor, HSG C
9.702		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
11.1	660	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.8	710	Total			

Subcatchment 1S: Parcel A South



Summary for Subcatchment 2S: Parcel A North

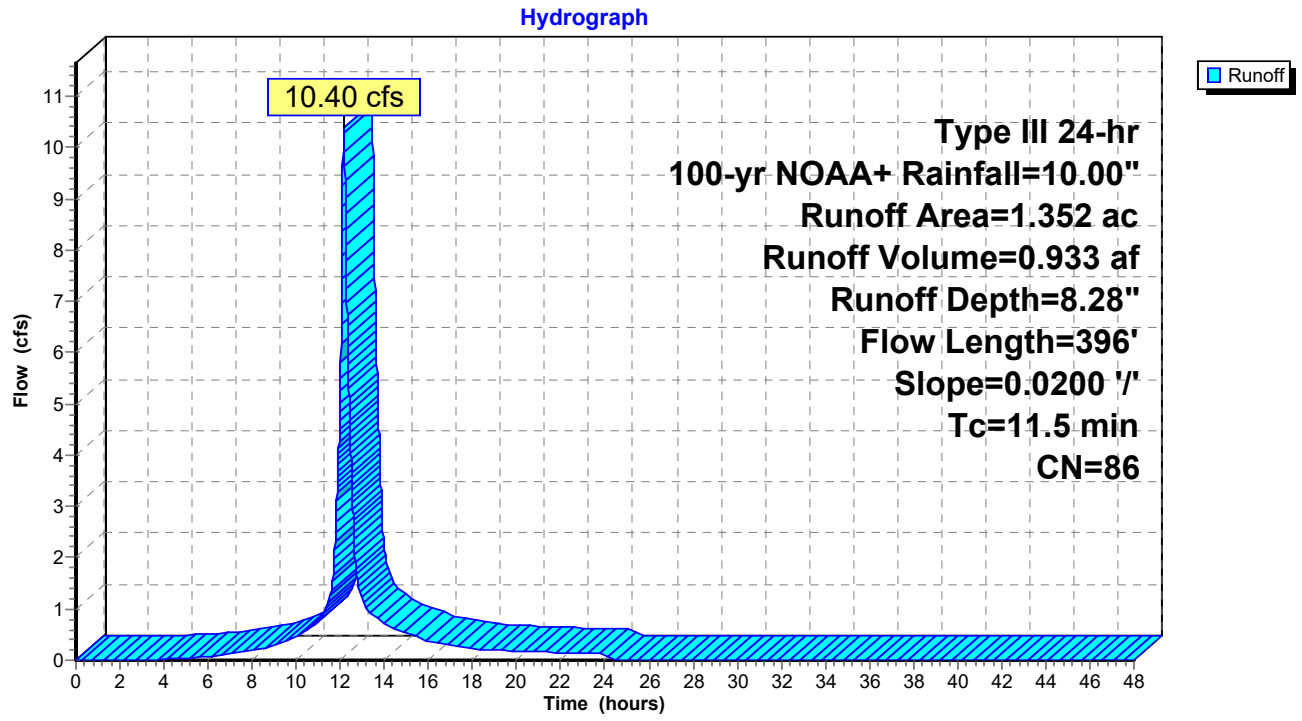
Runoff = 10.40 cfs @ 12.15 hrs, Volume= 0.933 af, Depth= 8.28"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr NOAA+ Rainfall=10.00"

Area (ac)	CN	Description
1.352	86	<50% Grass cover, Poor, HSG C
1.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
5.8	346	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.5	396	Total			

Subcatchment 2S: Parcel A North



Summary for Subcatchment 3S: Parcel C

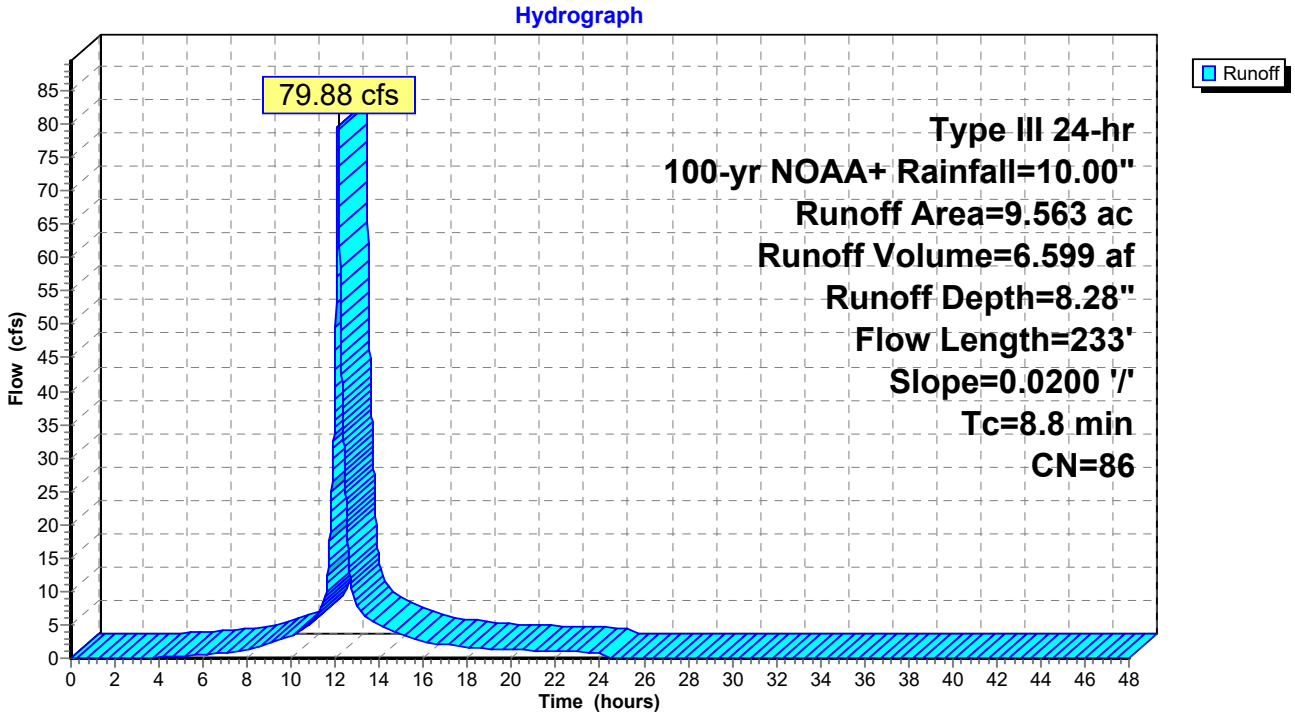
Runoff = 79.88 cfs @ 12.12 hrs, Volume= 6.599 af, Depth= 8.28"
Routed to Link 1L : Outflow

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr NOAA+ Rainfall=10.00"

Area (ac)	CN	Description
9.563	86	<50% Grass cover, Poor, HSG C
9.563		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
3.1	183	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.8	233	Total			

Subcatchment 3S: Parcel C

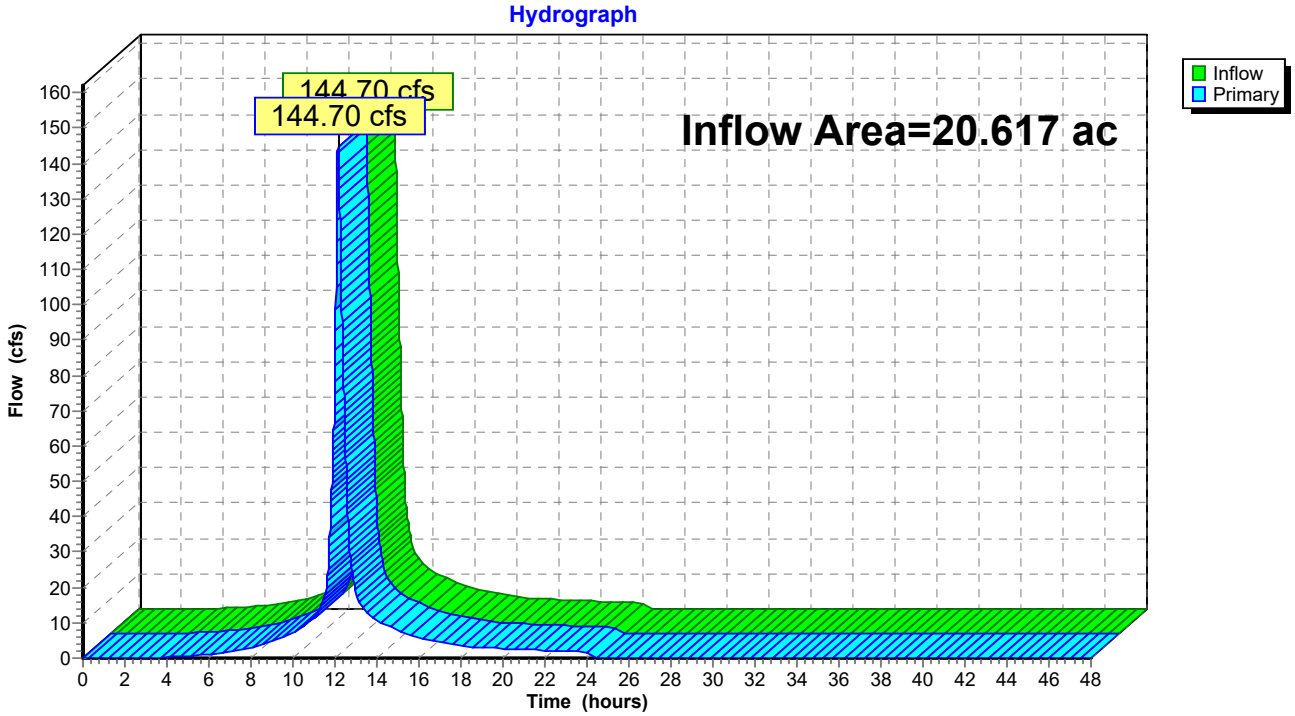


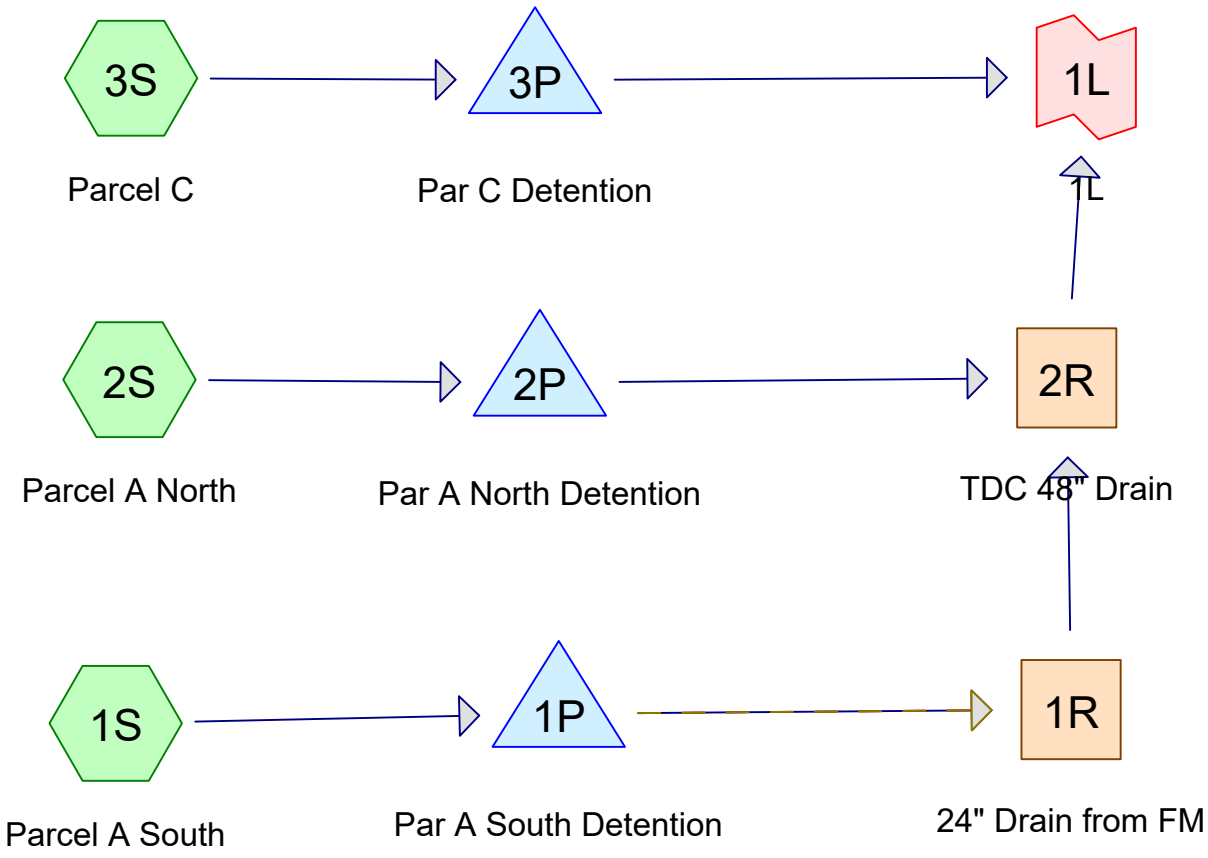
Summary for Link 1L: Outflow

Inflow Area = 20.617 ac, 0.00% Impervious, Inflow Depth = 8.28" for 100-yr NOAA+ event
Inflow = 144.70 cfs @ 12.15 hrs, Volume= 14.227 af
Primary = 144.70 cfs @ 12.15 hrs, Volume= 14.227 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: Outflow





Subcat Reach Pond Link

Routing Diagram for 15924.00_PR
Prepared by VHB, Inc, Printed 8/2/2024

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yrNOAA+	Type III 24-hr		Default	24.00	1	3.50	2
2	10-yrNOAA+	Type III 24-hr		Default	24.00	1	5.59	2
3	25-yr NOAA+	Type III 24-hr		Default	24.00	1	7.26	2
4	RMAT 50-yr	Type III 24-hr		Default	24.00	1	9.70	2
5	100-yr NOAA+	Type III 24-hr		Default	24.00	1	10.00	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.223	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S)
16.394	98	Paved parking, HSG D (1S, 2S, 3S)
20.617	**94**	**TOTAL AREA**

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Parcel A South Runoff Area=9.702 ac 73.05% Impervious Runoff Depth=2.73"
Flow Length=362' Tc=8.5 min CN=93 Runoff=27.53 cfs 2.211 af

Subcatchment 2S: Parcel A North Runoff Area=1.352 ac 84.02% Impervious Runoff Depth=2.94"
Flow Length=79' Slope=0.0100 '/' Tc=7.6 min CN=95 Runoff=4.15 cfs 0.331 af

Subcatchment 3S: Parcel C Runoff Area=9.563 ac 85.44% Impervious Runoff Depth=2.94"
Flow Length=278' Tc=7.8 min CN=95 Runoff=29.15 cfs 2.342 af

Reach 1R: 24" Drain from FM Avg. Flow Depth=1.25' Max Vel=5.89 fps Inflow=12.20 cfs 2.213 af
24.0" Round Pipe n=0.013 L=460.0' S=0.0057 '/' Capacity=17.01 cfs Outflow=12.20 cfs 2.213 af

Reach 2R: TDC 48" Drain Avg. Flow Depth=0.94' Max Vel=6.35 fps Inflow=14.24 cfs 2.543 af
48.0" Round Pipe n=0.013 L=887.0' S=0.0068 '/' Capacity=118.14 cfs Outflow=14.23 cfs 2.543 af

Pond 1P: Par A South Detention Peak Elev=4.78' Storage=0.229 af Inflow=27.53 cfs 2.211 af
Outflow=12.20 cfs 2.213 af

Pond 2P: Par A North Detention Peak Elev=15.82' Storage=0.094 af Inflow=4.15 cfs 0.331 af
Outflow=2.04 cfs 0.331 af

Pond 3P: Par C Detention Peak Elev=10.30' Storage=0.868 af Inflow=29.15 cfs 2.342 af
Outflow=11.75 cfs 2.342 af

Link 1L: 1L Inflow=25.97 cfs 4.885 af
Primary=25.97 cfs 4.885 af

Total Runoff Area = 20.617 ac Runoff Volume = 4.884 af Average Runoff Depth = 2.84"
20.48% Pervious = 4.223 ac 79.52% Impervious = 16.394 ac

Summary for Subcatchment 1S: Parcel A South

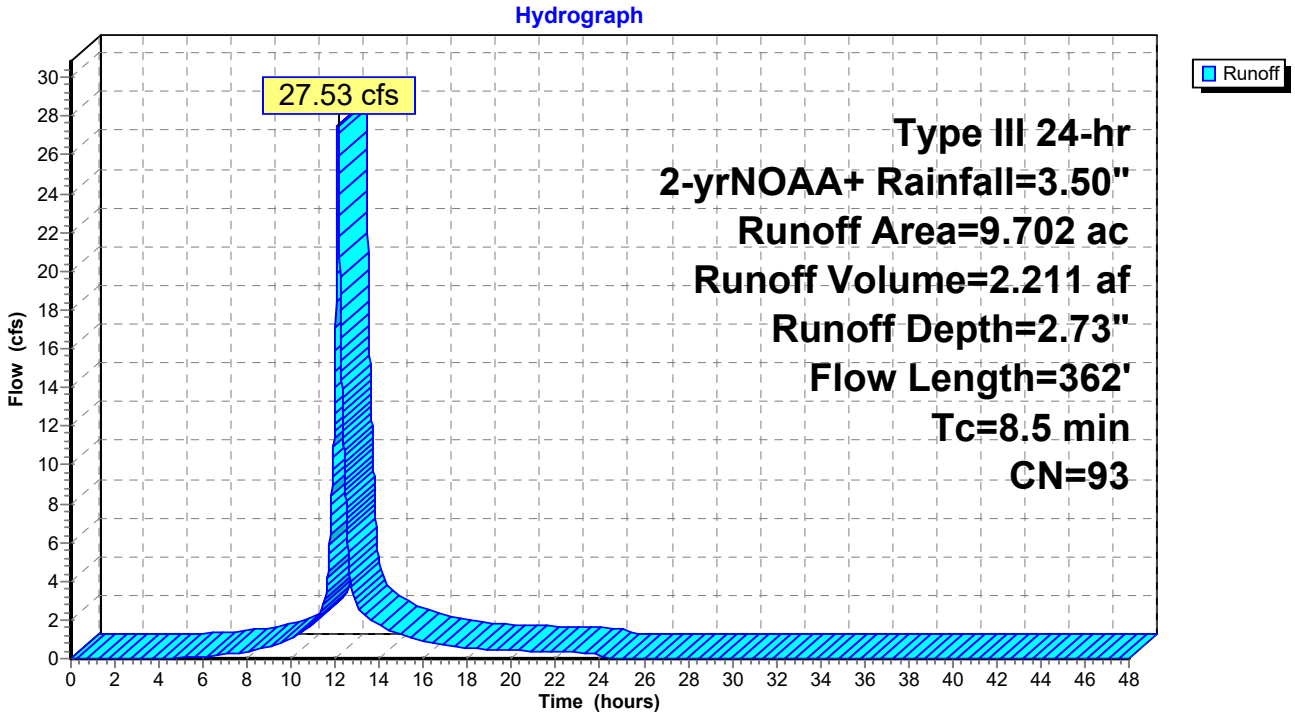
Runoff = 27.53 cfs @ 12.12 hrs, Volume= 2.211 af, Depth= 2.73"
Routed to Pond 1P : Par A South Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yrNOAA+ Rainfall=3.50"

Area (ac)	CN	Description
7.087	98	Paved parking, HSG D
2.615	80	>75% Grass cover, Good, HSG D
9.702	93	Weighted Average
2.615		26.95% Pervious Area
7.087		73.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0240	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
2.3	150	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	162	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.5	362	Total			

Subcatchment 1S: Parcel A South



Summary for Subcatchment 2S: Parcel A North

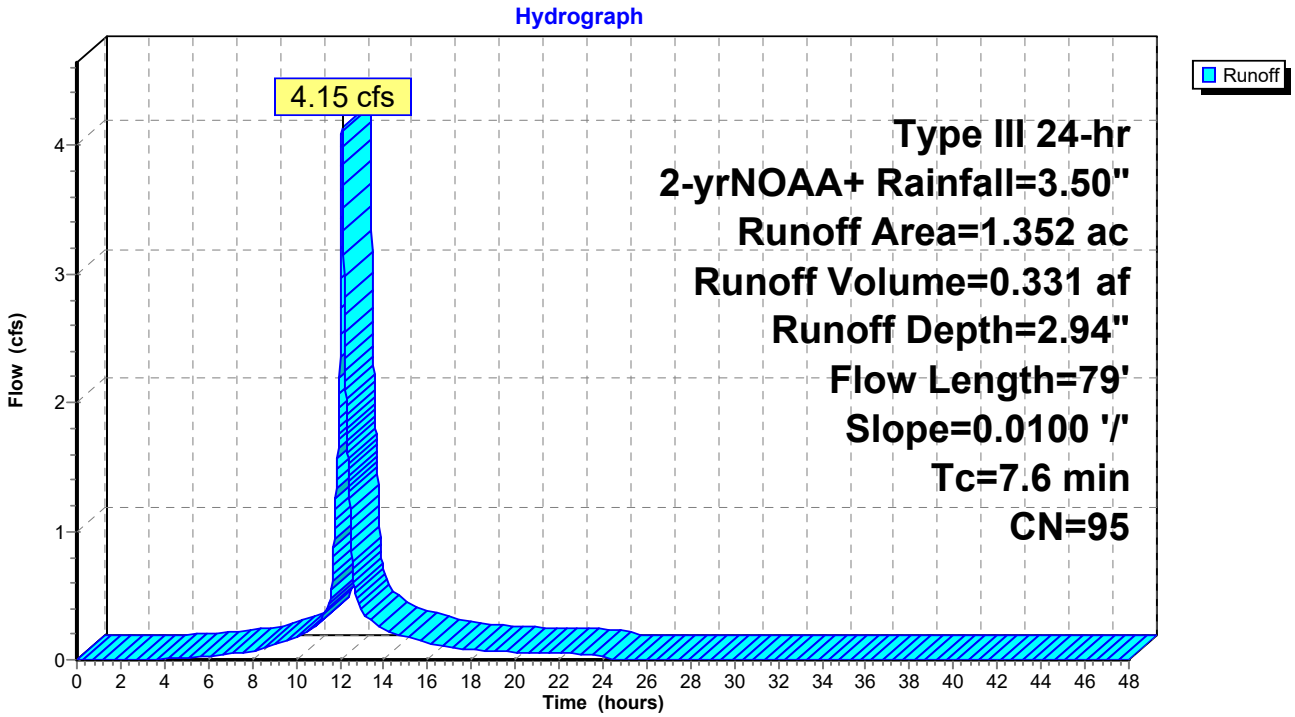
Runoff = 4.15 cfs @ 12.10 hrs, Volume= 0.331 af, Depth= 2.94"
Routed to Pond 2P : Par A North Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yrNOAA+ Rainfall=3.50"

Area (ac)	CN	Description
1.136	98	Paved parking, HSG D
0.216	80	>75% Grass cover, Good, HSG D
1.352	95	Weighted Average
0.216		15.98% Pervious Area
1.136		84.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	48	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
0.3	31	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	79	Total			

Subcatchment 2S: Parcel A North



Summary for Subcatchment 3S: Parcel C

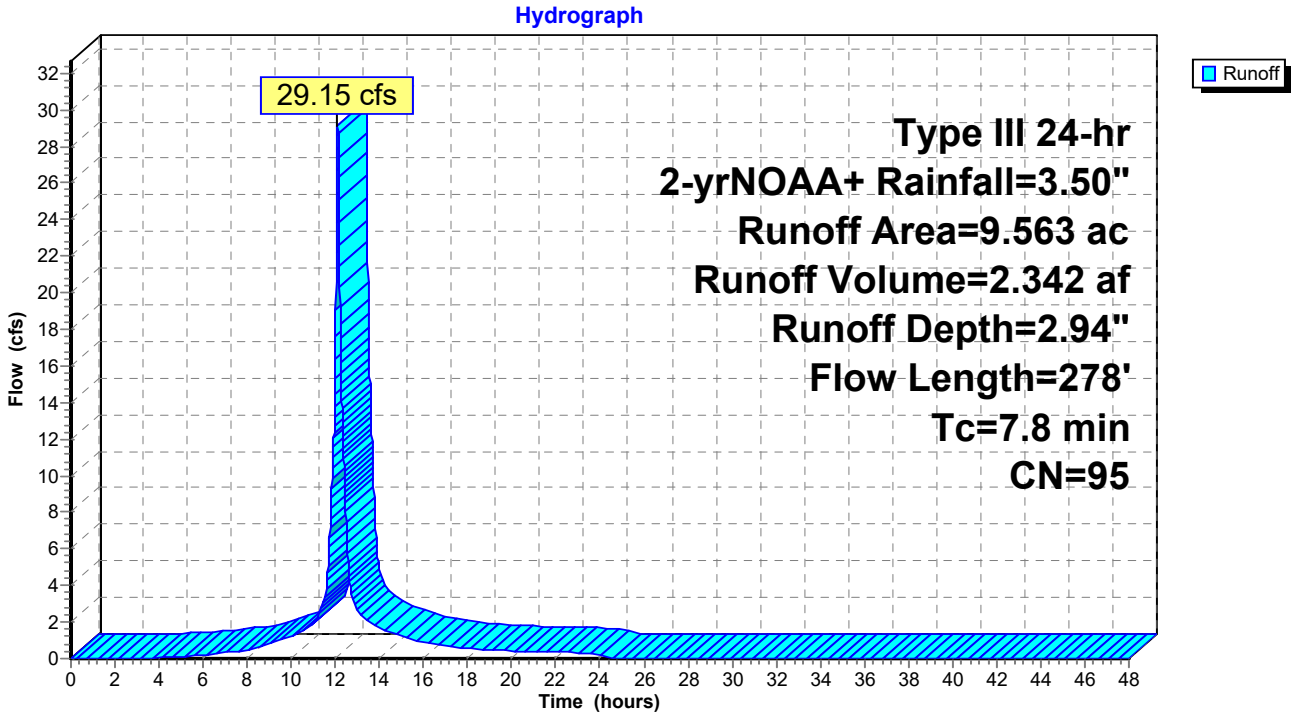
Runoff = 29.15 cfs @ 12.11 hrs, Volume= 2.342 af, Depth= 2.94"
Routed to Pond 3P : Par C Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yrNOAA+ Rainfall=3.50"

Area (ac)	CN	Description
8.171	98	Paved parking, HSG D
1.392	80	>75% Grass cover, Good, HSG D
9.563	95	Weighted Average
1.392		14.56% Pervious Area
8.171		85.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
0.5	32	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	196	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.8	278	Total			

Subcatchment 3S: Parcel C



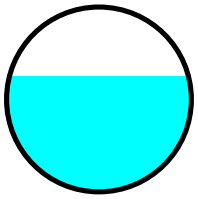
Summary for Reach 1R: 24" Drain from FM

Inflow Area = 9.702 ac, 73.05% Impervious, Inflow Depth = 2.74" for 2-yrNOAA+ event
Inflow = 12.20 cfs @ 12.35 hrs, Volume= 2.213 af
Outflow = 12.20 cfs @ 12.36 hrs, Volume= 2.213 af, Atten= 0%, Lag= 1.1 min
Routed to Reach 2R : TDC 48" Drain

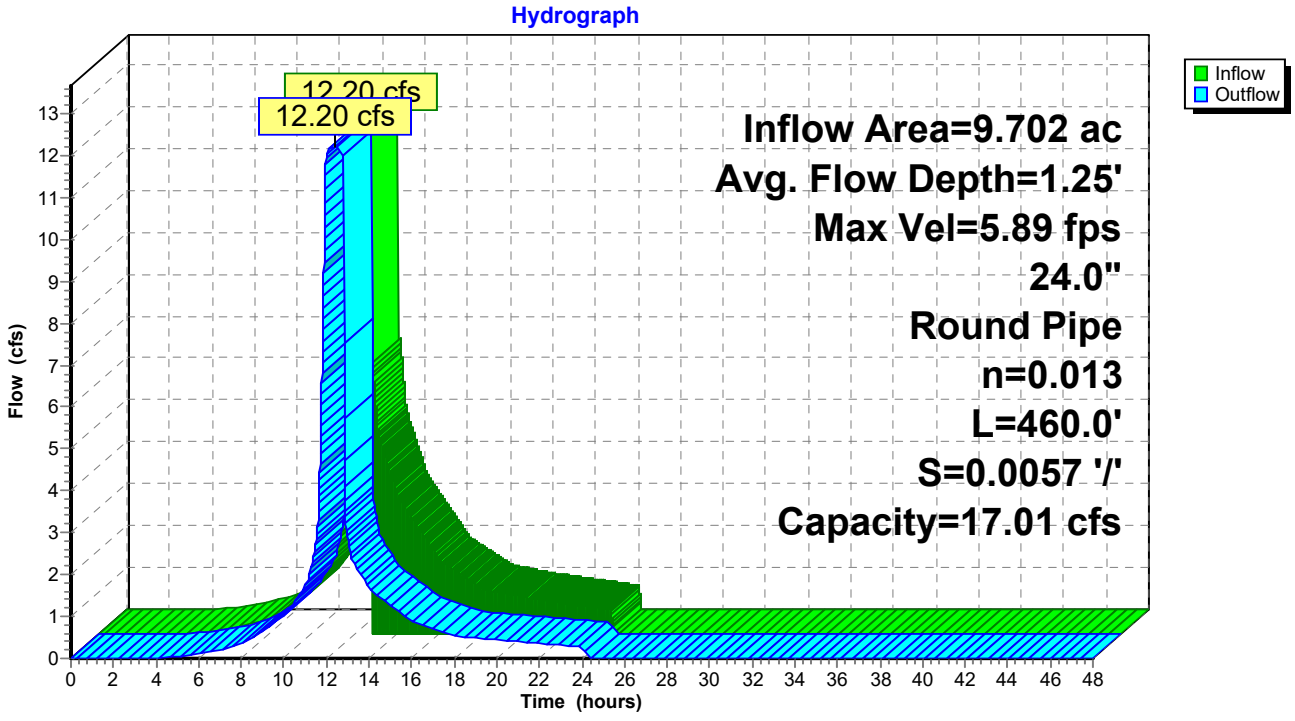
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 5.89 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 2.52 fps, Avg. Travel Time= 3.0 min

Peak Storage= 953 cf @ 12.36 hrs
Average Depth at Peak Storage= 1.25' , Surface Width= 1.93'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 17.01 cfs

24.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 460.0' Slope= 0.0057 '/'
Inlet Invert= 14.20', Outlet Invert= 11.60'



Reach 1R: 24" Drain from FM



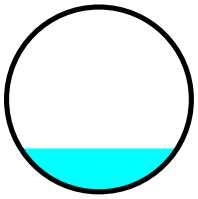
Summary for Reach 2R: TDC 48" Drain

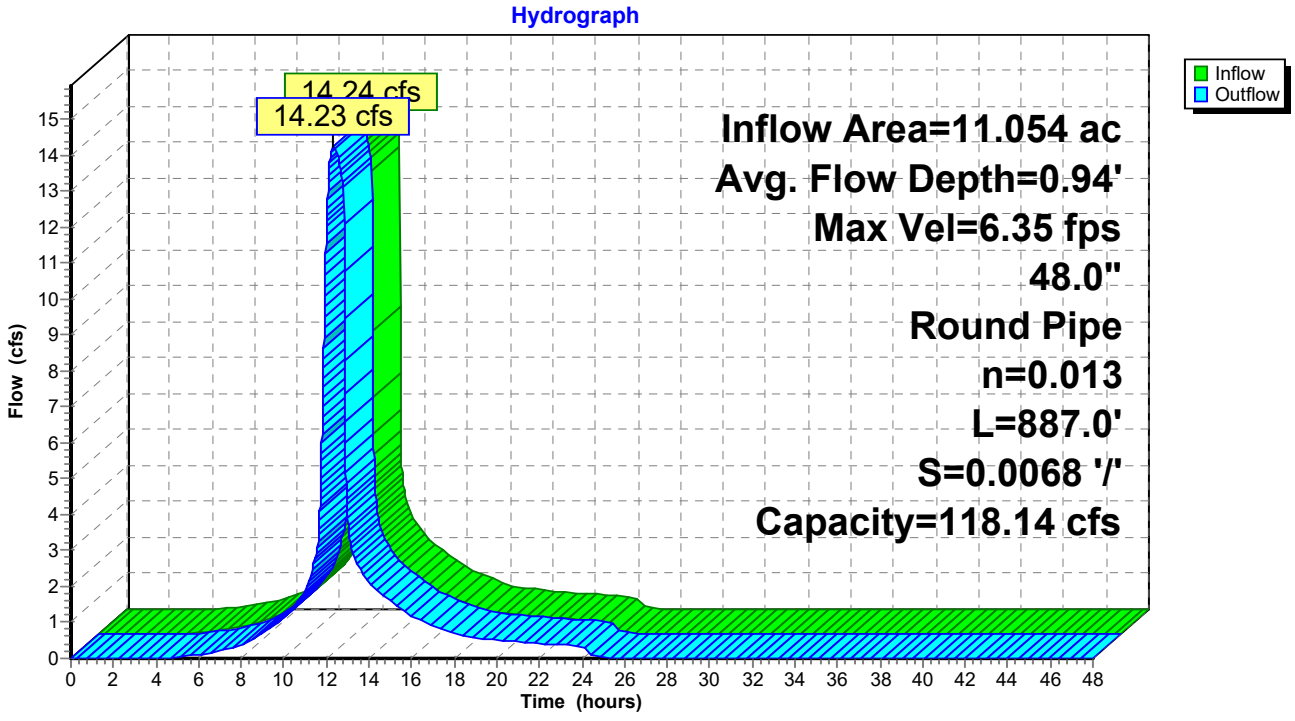
Inflow Area = 11.054 ac, 74.39% Impervious, Inflow Depth = 2.76" for 2-yrNOAA+ event
Inflow = 14.24 cfs @ 12.29 hrs, Volume= 2.543 af
Outflow = 14.23 cfs @ 12.32 hrs, Volume= 2.543 af, Atten= 0%, Lag= 2.0 min
Routed to Link 1L : 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 6.35 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 1.71 fps, Avg. Travel Time= 8.7 min

Peak Storage= 1,989 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.94' , Surface Width= 3.39'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 118.14 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 887.0' Slope= 0.0068 '/'
Inlet Invert= 11.50', Outlet Invert= 5.50'





Summary for Pond 1P: Par A South Detention

Inflow Area = 9.702 ac, 73.05% Impervious, Inflow Depth = 2.73" for 2-yrNOAA+ event
Inflow = 27.53 cfs @ 12.12 hrs, Volume= 2.211 af
Outflow = 12.20 cfs @ 12.35 hrs, Volume= 2.213 af, Atten= 56%, Lag= 13.7 min
Primary = 12.20 cfs @ 12.35 hrs, Volume= 2.213 af
Routed to Reach 1R : 24" Drain from FM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 4.78' @ 12.35 hrs Surf.Area= 0.317 ac Storage= 0.229 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.2 min (795.2 - 791.9)

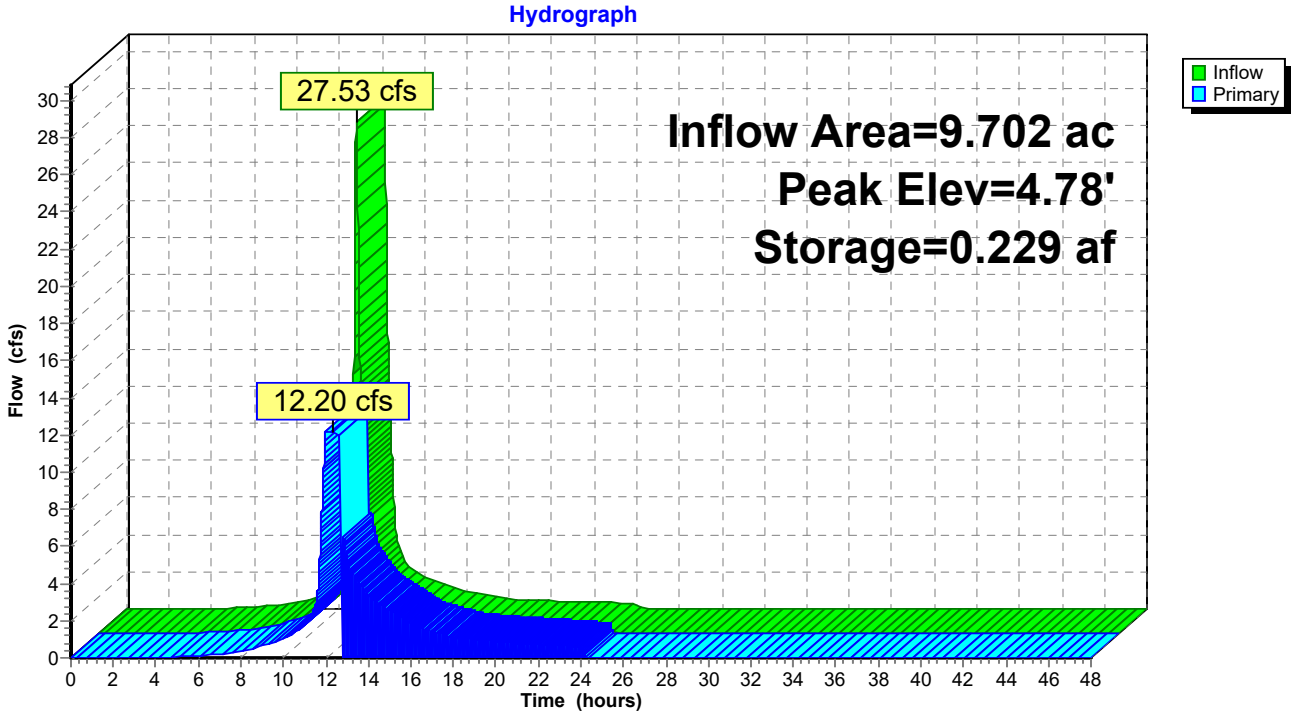
Volume	Invert	Avail.Storage	Storage Description
#1A	3.50'	0.000 af	**13.79'W x 999.77'L x 9.17'H Field A** 2.902 af Overall - 2.902 af Embedded = 0.000 af x 30.0% Voids
#2A	3.50'	2.341 af	**StormTrap ST1 DoubleTrap 8-0** x 142 Inside #1 Inside= 82.7"W x 96.0"H => 51.06 sf x 14.06'L = 718.0 cf Outside= 82.7"W x 110.0"H => 63.21 sf x 14.06'L = 888.9 cf 2 Rows adjusted for 3,604.4 cf perimeter wall 13.79' x 998.44' Core + 0.00' x 0.67' Border = 13.79' x 999.77' System
		2.341 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices (Turned on 2762 times)
#1	Primary	3.52'	**Heidra1600 X 2.00** Discharges@14.70' Turns Off<3.51' (Priority Group) 8.0" Diam. x 930.0' Long Discharge, Hazen-Williams C= 130 Flow (gpm)= 320.0 500.0 750.0 1,000.0 1,250.0 1,500.0 1,710.0 Head (feet)= 68.00 65.00 60.00 53.00 47.00 35.00 21.00 -Loss (feet)= 2.06 4.71 9.97 16.99 25.69 36.00 45.89 =Lift (feet)= 65.94 60.29 50.03 36.01 21.31 -1.00 -24.89
#2	Primary	3.52'	**Heidra1600 X 2.00** Discharges@14.70' Turns Off<3.51' (Priority Group) 8.0" Diam. x 930.0' Long Discharge, Hazen-Williams C= 130 Flow (gpm)= 320.0 500.0 750.0 1,000.0 1,250.0 1,500.0 1,710.0 Head (feet)= 68.00 65.00 60.00 53.00 47.00 35.00 21.00 -Loss (feet)= 2.06 4.71 9.97 16.99 25.69 36.00 45.89 =Lift (feet)= 65.94 60.29 50.03 36.01 21.31 -1.00 -24.89

Primary OutFlow Max=12.20 cfs @ 12.35 hrs HW=4.78' TW=15.45' (Dynamic Tailwater)
↑ **1=Heidra1600** (Pump Controls 6.10 cfs)
└ **2=Heidra1600** (Pump Controls 6.10 cfs)

Pond 1P: Par A South Detention



Summary for Pond 2P: Par A North Detention

Inflow Area = 1.352 ac, 84.02% Impervious, Inflow Depth = 2.94" for 2-yrNOAA+ event
Inflow = 4.15 cfs @ 12.10 hrs, Volume= 0.331 af
Outflow = 2.04 cfs @ 12.28 hrs, Volume= 0.331 af, Atten= 51%, Lag= 10.5 min
Primary = 2.04 cfs @ 12.28 hrs, Volume= 0.331 af
Routed to Reach 2R : TDC 48" Drain

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 15.82' @ 12.28 hrs Surf.Area= 0.058 ac Storage= 0.094 af

Plug-Flow detention time= 70.6 min calculated for 0.331 af (100% of inflow)
Center-of-Mass det. time= 70.0 min (849.7 - 779.7)

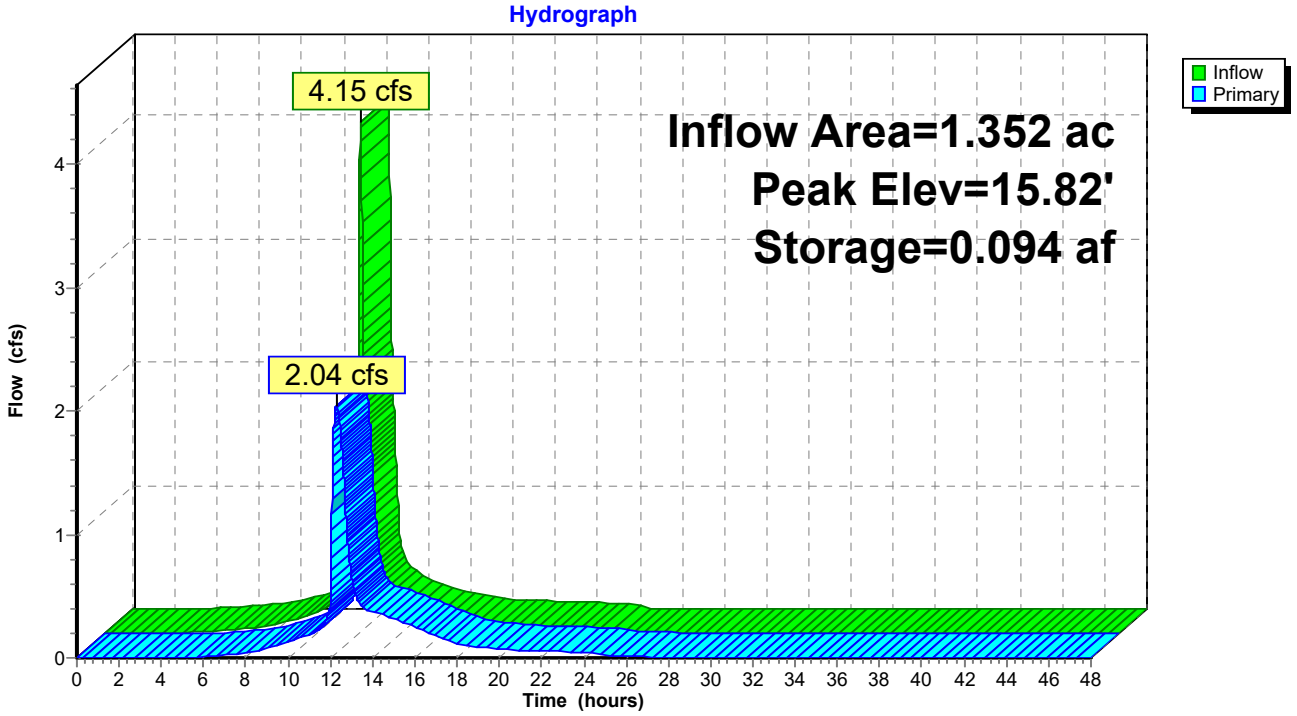
Volume	Invert	Avail.Storage	Storage Description
#1A	13.95'	0.000 af	**13.79'W x 183.81'L x 5.67'H Field A** 0.330 af Overall - 0.330 af Embedded = 0.000 af x 30.0% Voids
#2A	13.95'	0.250 af	**StormTrap ST1 SingleTrap 5-0** x 26 Inside #1 Inside= 82.7"W x 60.0"H => 29.76 sf x 14.06'L = 418.5 cf Outside= 82.7"W x 68.0"H => 39.08 sf x 14.06'L = 549.5 cf 26 Chambers in 2 Rows 13.79' x 182.81' Core + 0.00' x 0.50' Border = 13.79' x 183.81' System
		0.250 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	13.95'	**24.0" Round Culvert** L= 400.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 13.95' / 11.80' S= 0.0054 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	17.95'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	13.95'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	14.95'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	15.95'	**16.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.04 cfs @ 12.28 hrs HW=15.82' TW=12.44' (Dynamic Tailwater)
- **1=Culvert** (Passes 2.04 cfs of 13.09 cfs potential flow)
  - **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  - **3=Orifice/Grate** (Orifice Controls 0.55 cfs @ 6.29 fps)
  - **4=Orifice/Grate** (Orifice Controls 1.49 cfs @ 3.80 fps)
  - **5=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: Par A North Detention



Summary for Pond 3P: Par C Detention

Inflow Area = 9.563 ac, 85.44% Impervious, Inflow Depth = 2.94" for 2-yrNOAA+ event
Inflow = 29.15 cfs @ 12.11 hrs, Volume= 2.342 af
Outflow = 11.75 cfs @ 12.35 hrs, Volume= 2.342 af, Atten= 60%, Lag= 14.7 min
Primary = 11.75 cfs @ 12.35 hrs, Volume= 2.342 af
Routed to Link 1L : 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 10.30' @ 12.35 hrs Surf.Area= 0.308 ac Storage= 0.868 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 202.5 min (982.4 - 779.9)

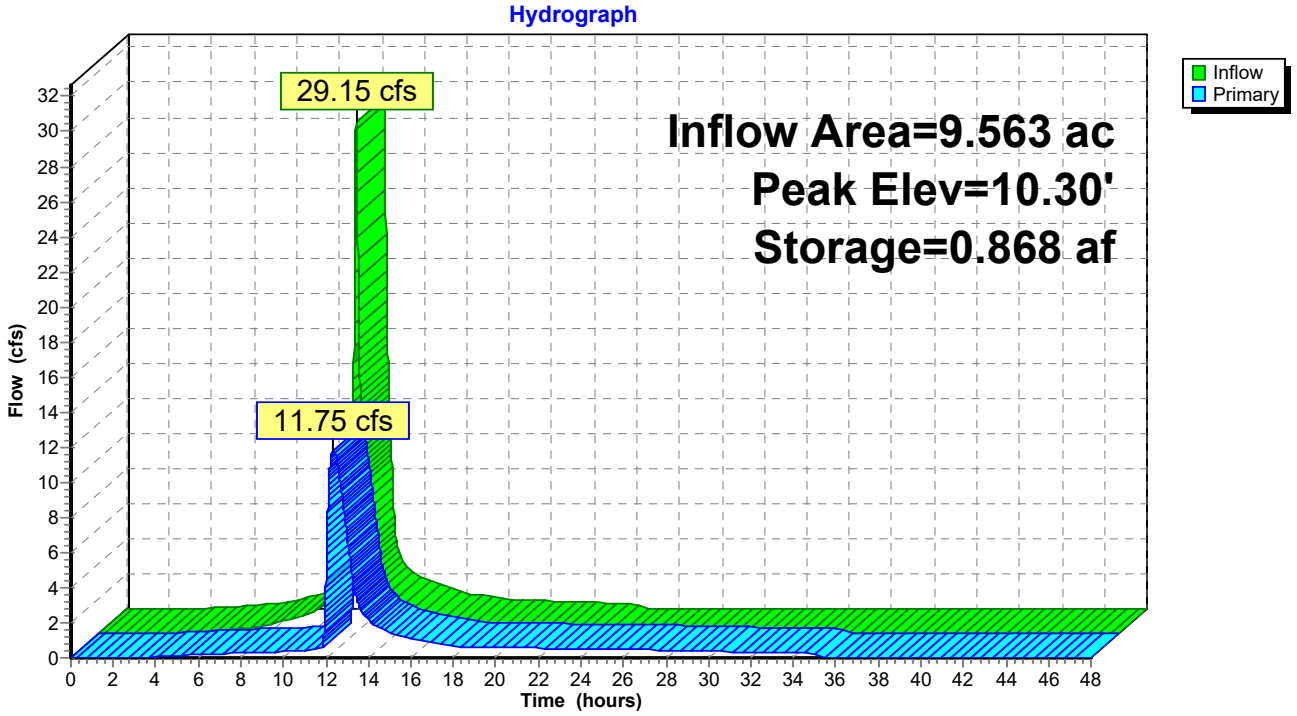
Volume	Invert	Avail.Storage	Storage Description
#1A	6.75'	0.000 af	**13.79'W x 971.65'L x 9.17'H Field A** 2.820 af Overall - 2.820 af Embedded = 0.000 af x 30.0% Voids
#2A	6.75'	2.275 af	**StormTrap ST1 DoubleTrap 8-0** x 138 Inside #1 Inside= 82.7"W x 96.0"H => 51.06 sf x 14.06'L = 718.0 cf Outside= 82.7"W x 110.0"H => 63.21 sf x 14.06'L = 888.9 cf 2 Rows adjusted for 3,508.4 cf perimeter wall 13.79' x 970.31' Core + 0.00' x 0.67' Border = 13.79' x 971.65' System
		2.275 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	6.50'	**24.0" Round Culvert** L= 46.2' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 6.50' / 5.50' S= 0.0216 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	13.75'	**8.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	6.75'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	8.75'	**48.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=11.75 cfs @ 12.35 hrs HW=10.30' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 11.75 cfs of 25.32 cfs potential flow)
  ├─**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 0.77 cfs @ 8.86 fps)
  └─**4=Orifice/Grate** (Orifice Controls 10.97 cfs @ 5.49 fps)

Pond 3P: Par C Detention

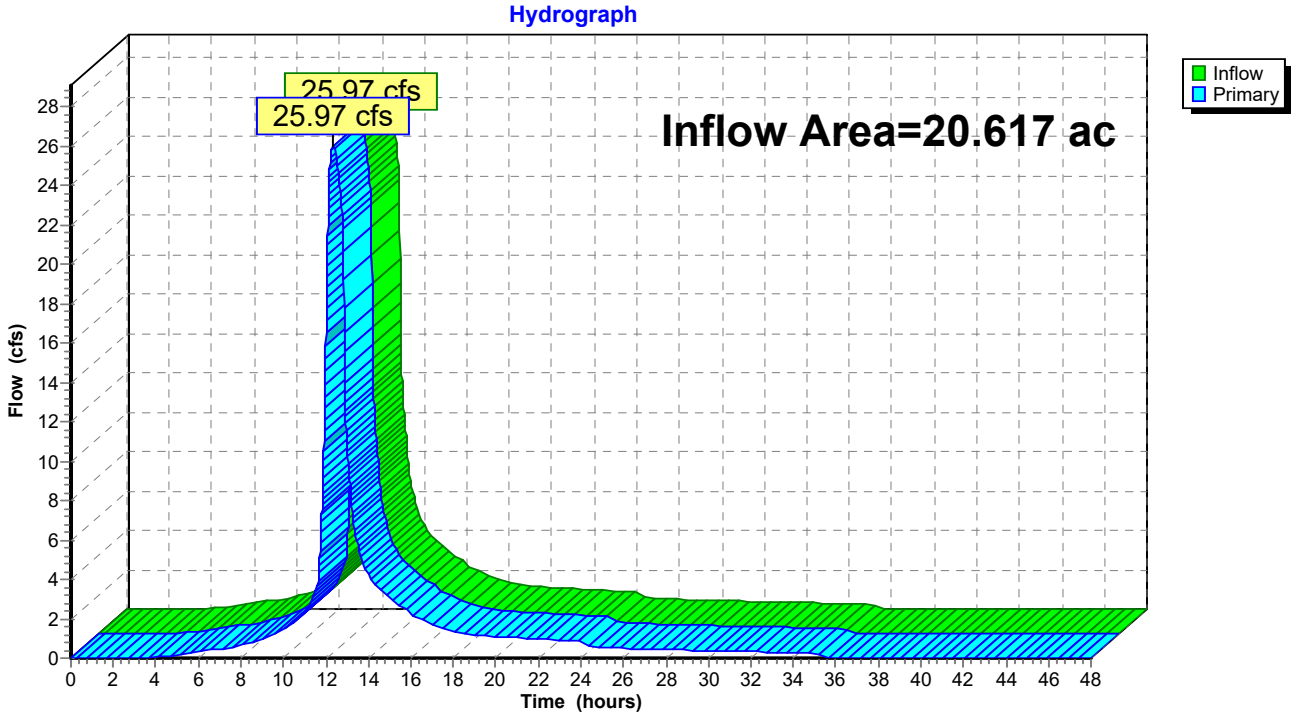


Summary for Link 1L: 1L

Inflow Area = 20.617 ac, 79.52% Impervious, Inflow Depth = 2.84" for 2-yrNOAA+ event
Inflow = 25.97 cfs @ 12.34 hrs, Volume= 4.885 af
Primary = 25.97 cfs @ 12.34 hrs, Volume= 4.885 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: 1L



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Parcel A South Runoff Area=9.702 ac 73.05% Impervious Runoff Depth=4.78"
Flow Length=362' Tc=8.5 min CN=93 Runoff=46.64 cfs 3.863 af

Subcatchment 2S: Parcel A North Runoff Area=1.352 ac 84.02% Impervious Runoff Depth=5.00"
Flow Length=79' Slope=0.0100 '/' Tc=7.6 min CN=95 Runoff=6.86 cfs 0.564 af

Subcatchment 3S: Parcel C Runoff Area=9.563 ac 85.44% Impervious Runoff Depth=5.00"
Flow Length=278' Tc=7.8 min CN=95 Runoff=48.17 cfs 3.988 af

Reach 1R: 24" Drain from FM Avg. Flow Depth=1.27' Max Vel=5.91 fps Inflow=12.38 cfs 3.867 af
24.0" Round Pipe n=0.013 L=460.0' S=0.0057 '/' Capacity=17.01 cfs Outflow=12.38 cfs 3.867 af

Reach 2R: TDC 48" Drain Avg. Flow Depth=1.02' Max Vel=6.67 fps Inflow=16.92 cfs 4.430 af
48.0" Round Pipe n=0.013 L=887.0' S=0.0068 '/' Capacity=118.14 cfs Outflow=16.85 cfs 4.430 af

Pond 1P: Par A South Detention Peak Elev=6.63' Storage=0.768 af Inflow=46.64 cfs 3.863 af
Outflow=12.38 cfs 3.867 af

Pond 2P: Par A North Detention Peak Elev=16.53' Storage=0.129 af Inflow=6.86 cfs 0.564 af
Outflow=4.62 cfs 0.563 af

Pond 3P: Par C Detention Peak Elev=11.97' Storage=1.342 af Inflow=48.17 cfs 3.988 af
Outflow=17.53 cfs 3.988 af

Link 1L: 1L Inflow=34.01 cfs 8.418 af
Primary=34.01 cfs 8.418 af

Total Runoff Area = 20.617 ac Runoff Volume = 8.415 af Average Runoff Depth = 4.90"
20.48% Pervious = 4.223 ac 79.52% Impervious = 16.394 ac

Summary for Subcatchment 1S: Parcel A South

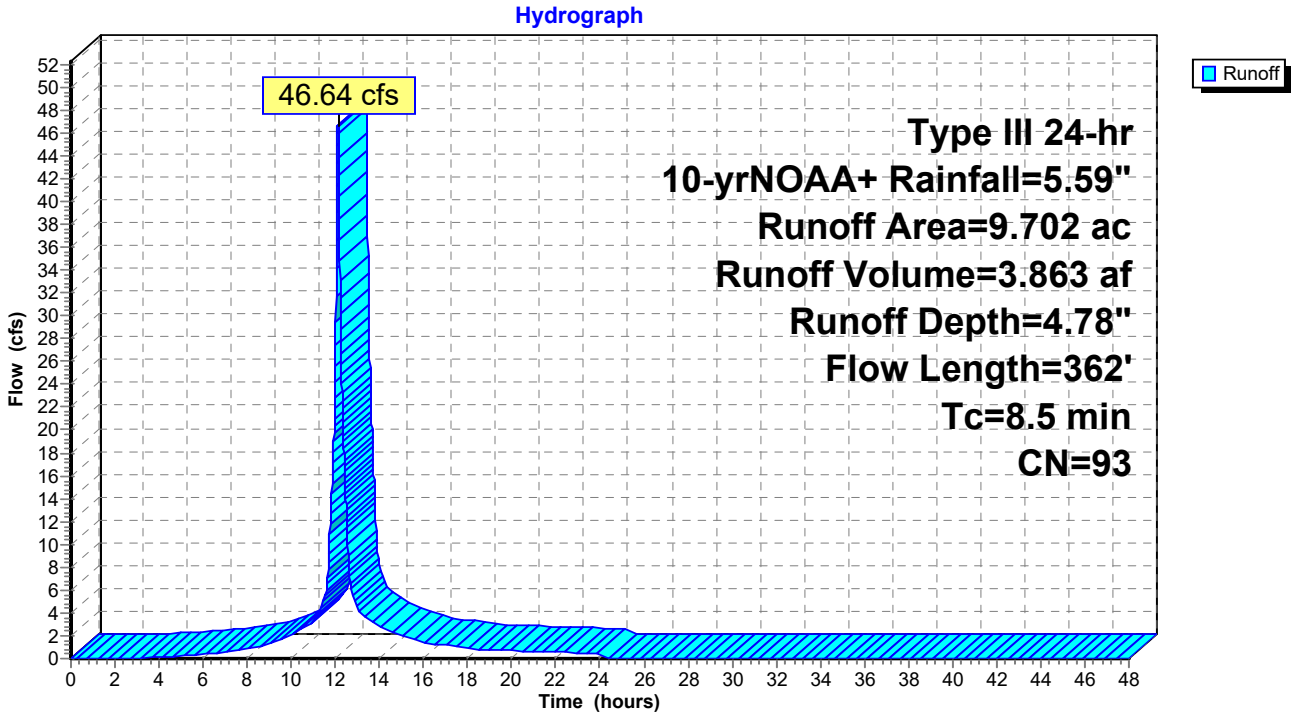
Runoff = 46.64 cfs @ 12.12 hrs, Volume= 3.863 af, Depth= 4.78"
Routed to Pond 1P : Par A South Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yrNOAA+ Rainfall=5.59"

Area (ac)	CN	Description
7.087	98	Paved parking, HSG D
2.615	80	>75% Grass cover, Good, HSG D
9.702	93	Weighted Average
2.615		26.95% Pervious Area
7.087		73.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0240	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
2.3	150	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	162	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.5	362	Total			

Subcatchment 1S: Parcel A South



Summary for Subcatchment 2S: Parcel A North

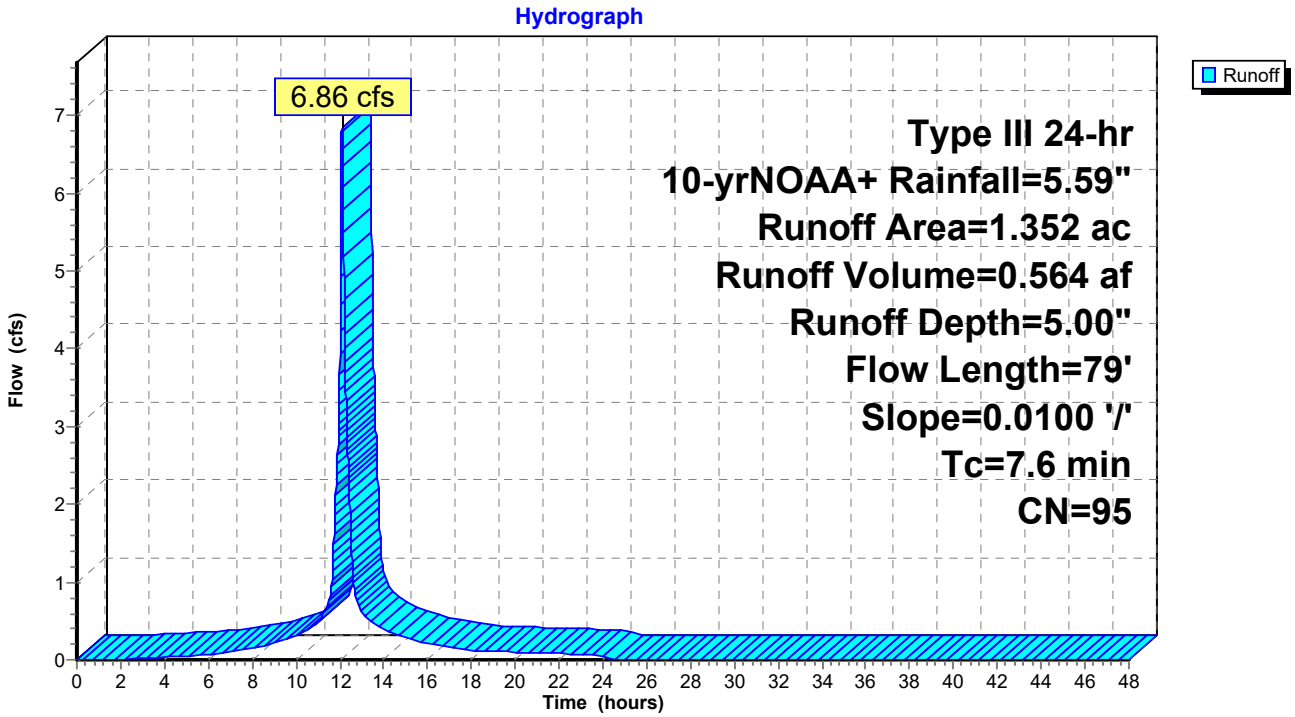
Runoff = 6.86 cfs @ 12.10 hrs, Volume= 0.564 af, Depth= 5.00"
Routed to Pond 2P : Par A North Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yrNOAA+ Rainfall=5.59"

Area (ac)	CN	Description
1.136	98	Paved parking, HSG D
0.216	80	>75% Grass cover, Good, HSG D
1.352	95	Weighted Average
0.216		15.98% Pervious Area
1.136		84.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	48	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
0.3	31	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	79	Total			

Subcatchment 2S: Parcel A North



Summary for Subcatchment 3S: Parcel C

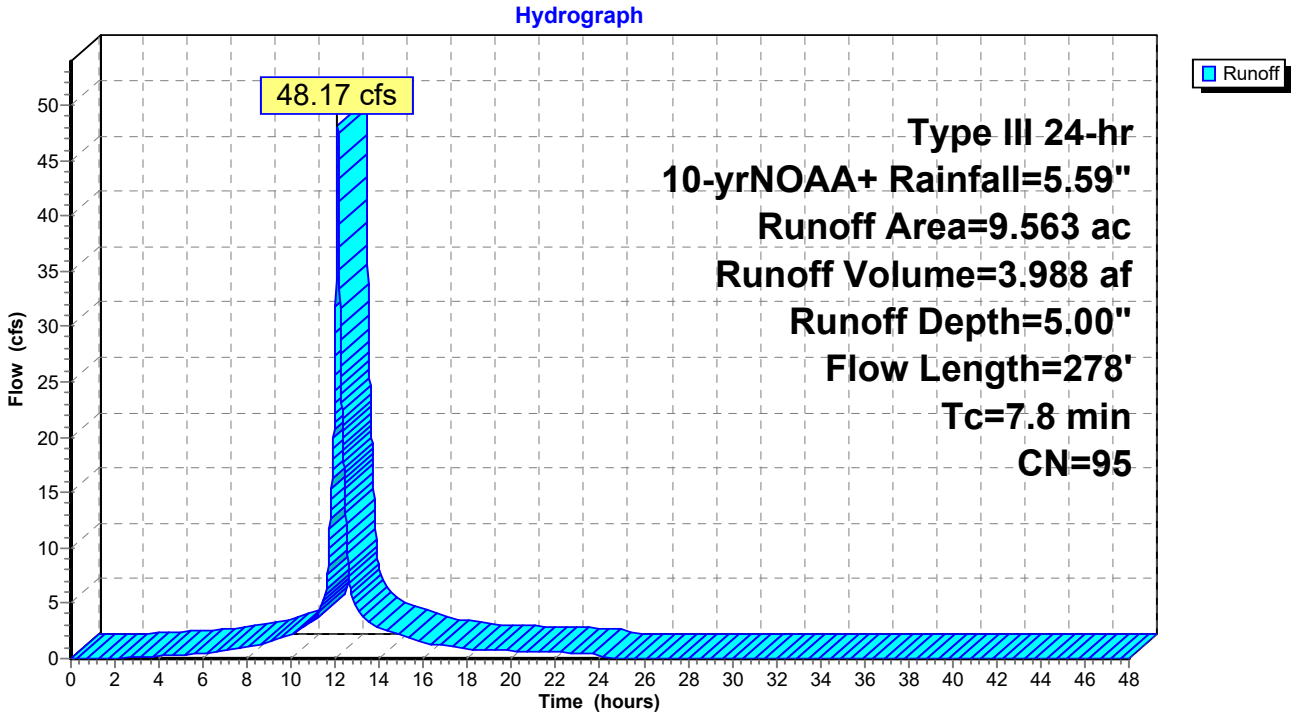
Runoff = 48.17 cfs @ 12.11 hrs, Volume= 3.988 af, Depth= 5.00"
Routed to Pond 3P : Par C Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yrNOAA+ Rainfall=5.59"

Area (ac)	CN	Description
8.171	98	Paved parking, HSG D
1.392	80	>75% Grass cover, Good, HSG D
9.563	95	Weighted Average
1.392		14.56% Pervious Area
8.171		85.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
0.5	32	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	196	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.8	278	Total			

Subcatchment 3S: Parcel C



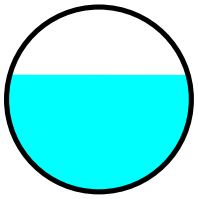
Summary for Reach 1R: 24" Drain from FM

Inflow Area = 9.702 ac, 73.05% Impervious, Inflow Depth = 4.78" for 10-yrNOAA+ event
Inflow = 12.38 cfs @ 12.50 hrs, Volume= 3.867 af
Outflow = 12.38 cfs @ 12.52 hrs, Volume= 3.867 af, Atten= 0%, Lag= 1.0 min
Routed to Reach 2R : TDC 48" Drain

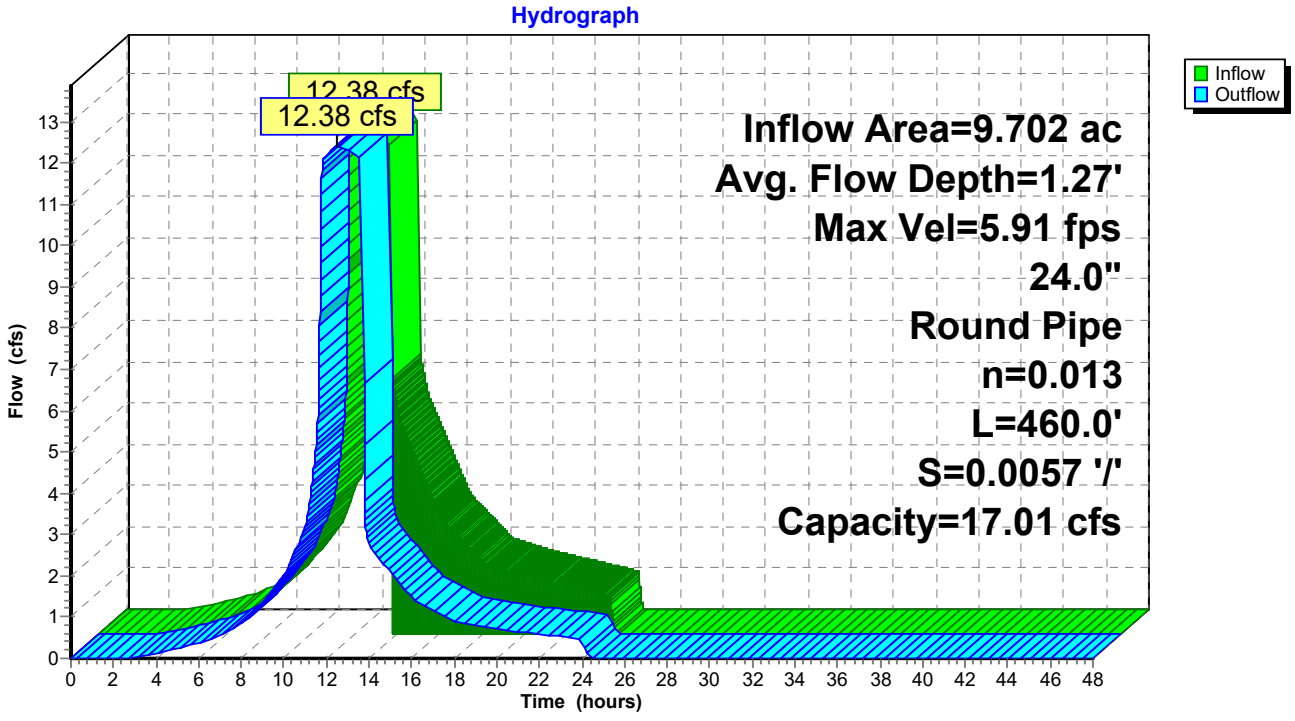
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 5.91 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 2.94 fps, Avg. Travel Time= 2.6 min

Peak Storage= 965 cf @ 12.52 hrs
Average Depth at Peak Storage= 1.27' , Surface Width= 1.93'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 17.01 cfs

24.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 460.0' Slope= 0.0057 '/'
Inlet Invert= 14.20', Outlet Invert= 11.60'



Reach 1R: 24" Drain from FM



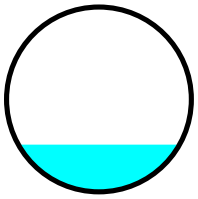
Summary for Reach 2R: TDC 48" Drain

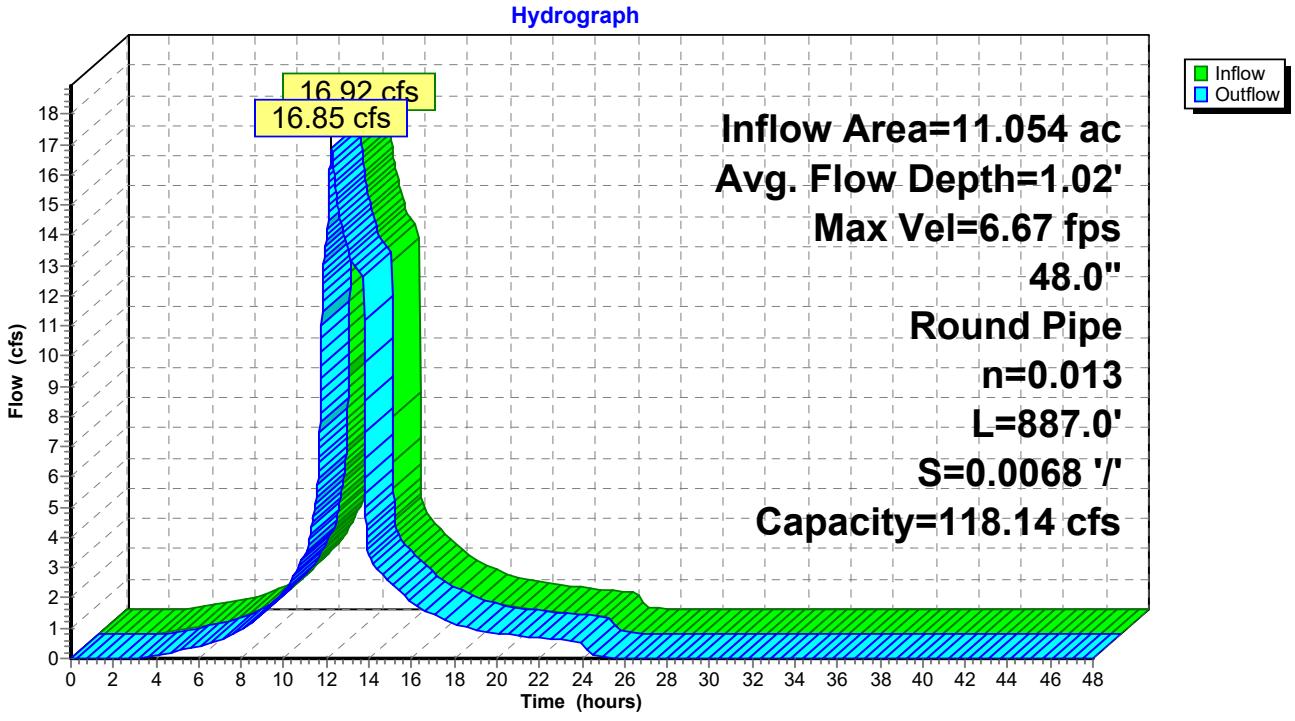
Inflow Area = 11.054 ac, 74.39% Impervious, Inflow Depth = 4.81" for 10-yrNOAA+ event
Inflow = 16.92 cfs @ 12.21 hrs, Volume= 4.430 af
Outflow = 16.85 cfs @ 12.24 hrs, Volume= 4.430 af, Atten= 0%, Lag= 1.9 min
Routed to Link 1L : 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 6.67 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 1.96 fps, Avg. Travel Time= 7.5 min

Peak Storage= 2,243 cf @ 12.24 hrs
Average Depth at Peak Storage= 1.02' , Surface Width= 3.49'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 118.14 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 887.0' Slope= 0.0068 '/'
Inlet Invert= 11.50', Outlet Invert= 5.50'





Summary for Pond 1P: Par A South Detention

Inflow Area = 9.702 ac, 73.05% Impervious, Inflow Depth = 4.78" for 10-yrNOAA+ event
Inflow = 46.64 cfs @ 12.12 hrs, Volume= 3.863 af
Outflow = 12.38 cfs @ 12.50 hrs, Volume= 3.867 af, Atten= 73%, Lag= 23.1 min
Primary = 12.38 cfs @ 12.50 hrs, Volume= 3.867 af
Routed to Reach 1R : 24" Drain from FM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 6.63' @ 12.50 hrs Surf.Area= 0.317 ac Storage= 0.768 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 12.8 min (790.2 - 777.3)

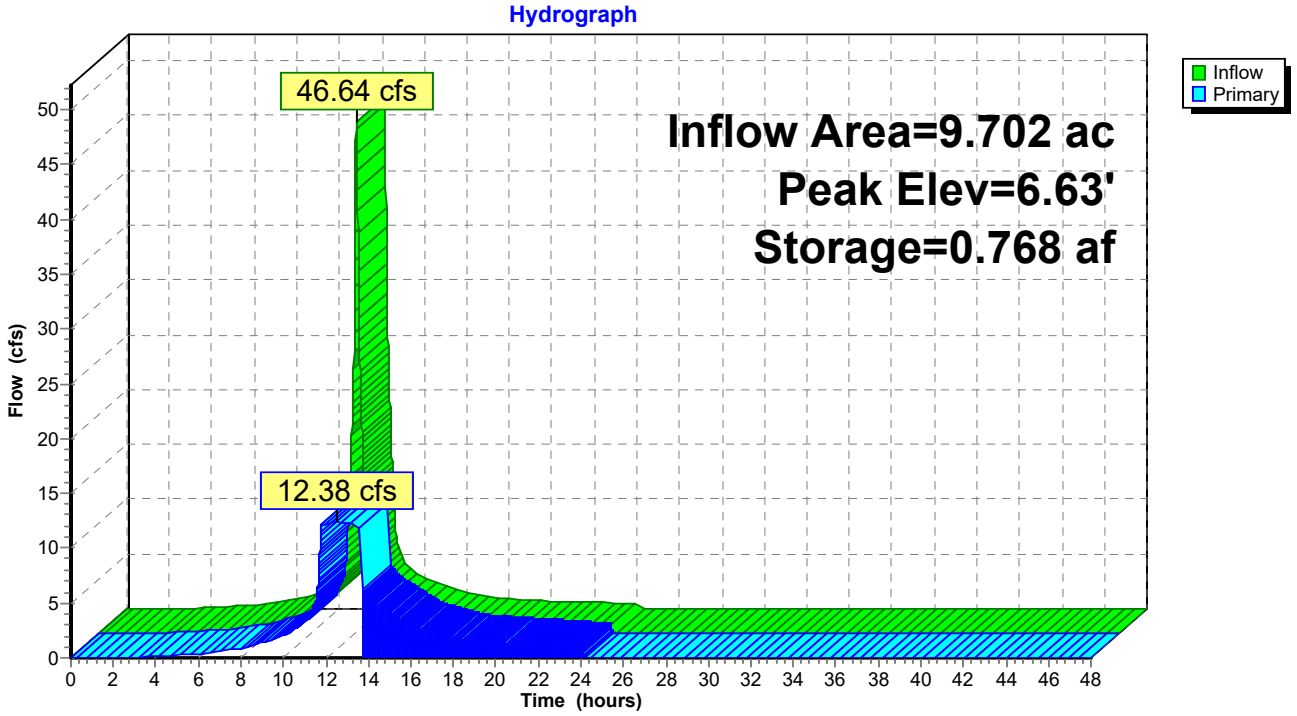
Volume	Invert	Avail.Storage	Storage Description
#1A	3.50'	0.000 af	**13.79'W x 999.77'L x 9.17'H Field A** 2.902 af Overall - 2.902 af Embedded = 0.000 af x 30.0% Voids
#2A	3.50'	2.341 af	**StormTrap ST1 DoubleTrap 8-0** x 142 Inside #1 Inside= 82.7"W x 96.0"H => 51.06 sf x 14.06'L = 718.0 cf Outside= 82.7"W x 110.0"H => 63.21 sf x 14.06'L = 888.9 cf 2 Rows adjusted for 3,604.4 cf perimeter wall 13.79' x 998.44' Core + 0.00' x 0.67' Border = 13.79' x 999.77' System
		2.341 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices (Turned on 2900 times)
#1	Primary	3.52'	**Heidra1600 X 2.00** Discharges@14.70' Turns Off<3.51' (Priority Group) 8.0" Diam. x 930.0' Long Discharge, Hazen-Williams C= 130 Flow (gpm)= 320.0 500.0 750.0 1,000.0 1,250.0 1,500.0 1,710.0 Head (feet)= 68.00 65.00 60.00 53.00 47.00 35.00 21.00 -Loss (feet)= 2.06 4.71 9.97 16.99 25.69 36.00 45.89 =Lift (feet)= 65.94 60.29 50.03 36.01 21.31 -1.00 -24.89
#2	Primary	3.52'	**Heidra1600 X 2.00** Discharges@14.70' Turns Off<3.51' (Priority Group) 8.0" Diam. x 930.0' Long Discharge, Hazen-Williams C= 130 Flow (gpm)= 320.0 500.0 750.0 1,000.0 1,250.0 1,500.0 1,710.0 Head (feet)= 68.00 65.00 60.00 53.00 47.00 35.00 21.00 -Loss (feet)= 2.06 4.71 9.97 16.99 25.69 36.00 45.89 =Lift (feet)= 65.94 60.29 50.03 36.01 21.31 -1.00 -24.89

Primary OutFlow Max=12.38 cfs @ 12.50 hrs HW=6.63' TW=15.47' (Dynamic Tailwater)
↑ **1=Heidra1600** (Pump Controls 6.19 cfs)
└ **2=Heidra1600** (Pump Controls 6.19 cfs)

Pond 1P: Par A South Detention



Summary for Pond 2P: Par A North Detention

Inflow Area = 1.352 ac, 84.02% Impervious, Inflow Depth = 5.00" for 10-yrNOAA+ event
Inflow = 6.86 cfs @ 12.10 hrs, Volume= 0.564 af
Outflow = 4.62 cfs @ 12.20 hrs, Volume= 0.563 af, Atten= 33%, Lag= 5.9 min
Primary = 4.62 cfs @ 12.20 hrs, Volume= 0.563 af
Routed to Reach 2R : TDC 48" Drain

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 16.53' @ 12.20 hrs Surf.Area= 0.058 ac Storage= 0.129 af

Plug-Flow detention time= 59.5 min calculated for 0.563 af (100% of inflow)
Center-of-Mass det. time= 59.0 min (825.8 - 766.9)

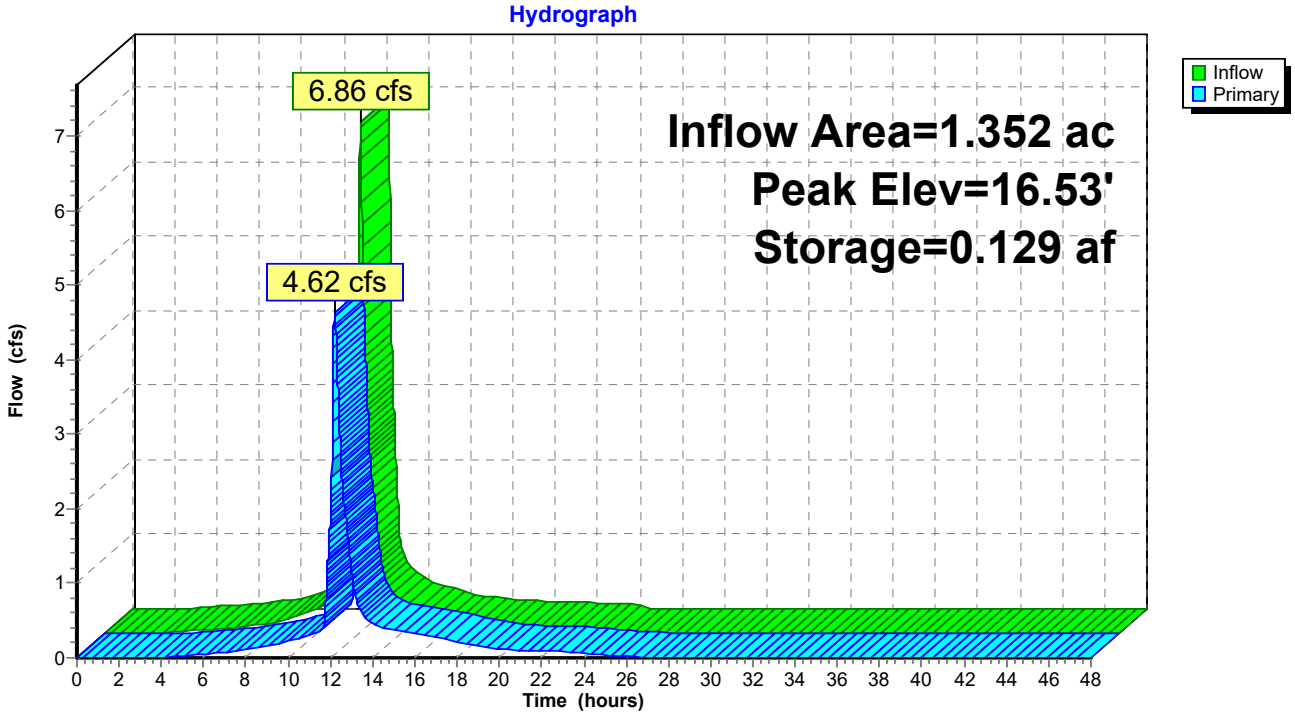
Volume	Invert	Avail.Storage	Storage Description
#1A	13.95'	0.000 af	**13.79'W x 183.81'L x 5.67'H Field A** 0.330 af Overall - 0.330 af Embedded = 0.000 af x 30.0% Voids
#2A	13.95'	0.250 af	**StormTrap ST1 SingleTrap 5-0** x 26 Inside #1 Inside= 82.7"W x 60.0"H => 29.76 sf x 14.06'L = 418.5 cf Outside= 82.7"W x 68.0"H => 39.08 sf x 14.06'L = 549.5 cf 26 Chambers in 2 Rows 13.79' x 182.81' Core + 0.00' x 0.50' Border = 13.79' x 183.81' System
		0.250 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	13.95'	**24.0" Round Culvert** L= 400.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 13.95' / 11.80' S= 0.0054 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	17.95'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	13.95'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	14.95'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	15.95'	**16.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.62 cfs @ 12.20 hrs HW=16.53' TW=12.52' (Dynamic Tailwater)
└─**1=Culvert** (Passes 4.62 cfs of 17.35 cfs potential flow)
  ├─**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 0.65 cfs @ 7.48 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 2.18 cfs @ 5.55 fps)
  └─**5=Orifice/Grate** (Orifice Controls 1.79 cfs @ 2.68 fps)

Pond 2P: Par A North Detention



Summary for Pond 3P: Par C Detention

Inflow Area = 9.563 ac, 85.44% Impervious, Inflow Depth = 5.00" for 10-yrNOAA+ event
Inflow = 48.17 cfs @ 12.11 hrs, Volume= 3.988 af
Outflow = 17.53 cfs @ 12.38 hrs, Volume= 3.988 af, Atten= 64%, Lag= 16.7 min
Primary = 17.53 cfs @ 12.38 hrs, Volume= 3.988 af
Routed to Link 1L : 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 11.97' @ 12.38 hrs Surf.Area= 0.308 ac Storage= 1.342 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 153.5 min (920.6 - 767.0)

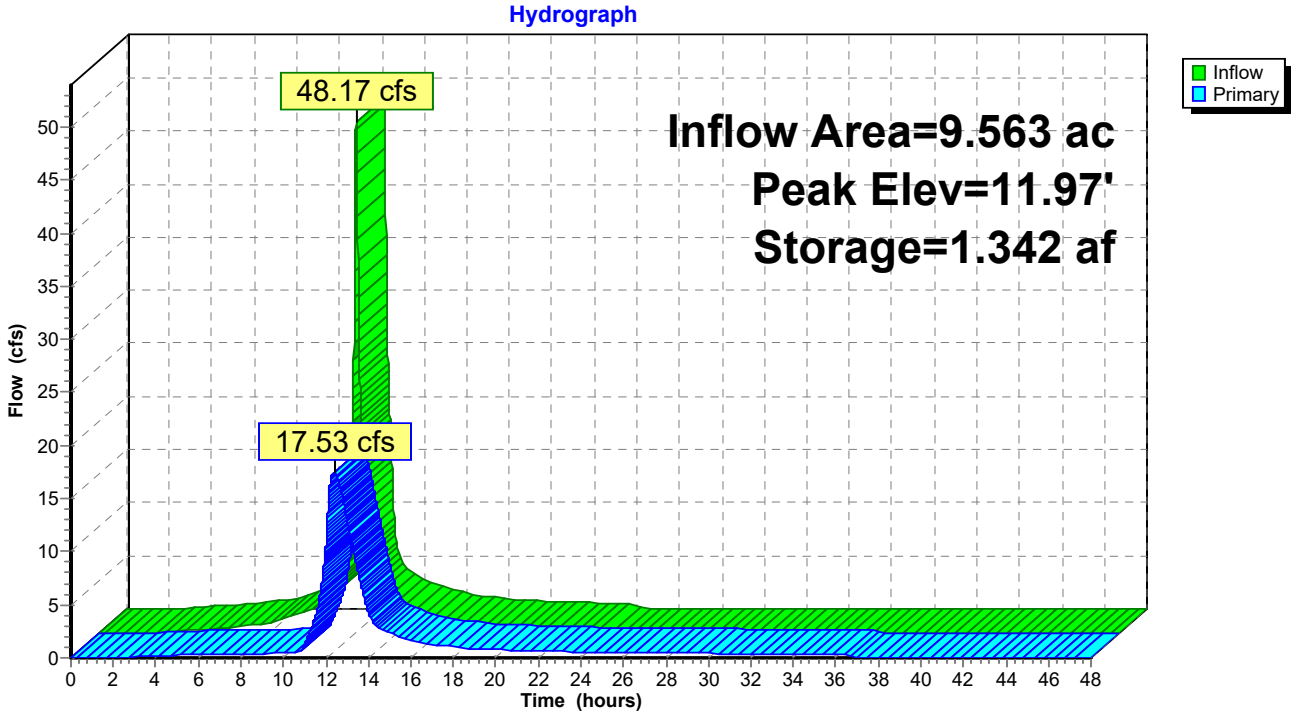
Volume	Invert	Avail.Storage	Storage Description
#1A	6.75'	0.000 af	**13.79'W x 971.65'L x 9.17'H Field A** 2.820 af Overall - 2.820 af Embedded = 0.000 af x 30.0% Voids
#2A	6.75'	2.275 af	**StormTrap ST1 DoubleTrap 8-0** x 138 Inside #1 Inside= 82.7"W x 96.0"H => 51.06 sf x 14.06'L = 718.0 cf Outside= 82.7"W x 110.0"H => 63.21 sf x 14.06'L = 888.9 cf 2 Rows adjusted for 3,508.4 cf perimeter wall 13.79' x 970.31' Core + 0.00' x 0.67' Border = 13.79' x 971.65' System
		2.275 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	6.50'	**24.0" Round Culvert** L= 46.2' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 6.50' / 5.50' S= 0.0216 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	13.75'	**8.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	6.75'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	8.75'	**48.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=17.53 cfs @ 12.38 hrs HW=11.97' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 17.53 cfs of 31.98 cfs potential flow)
  ├─**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 0.94 cfs @ 10.82 fps)
  └─**4=Orifice/Grate** (Orifice Controls 16.59 cfs @ 8.29 fps)

Pond 3P: Par C Detention

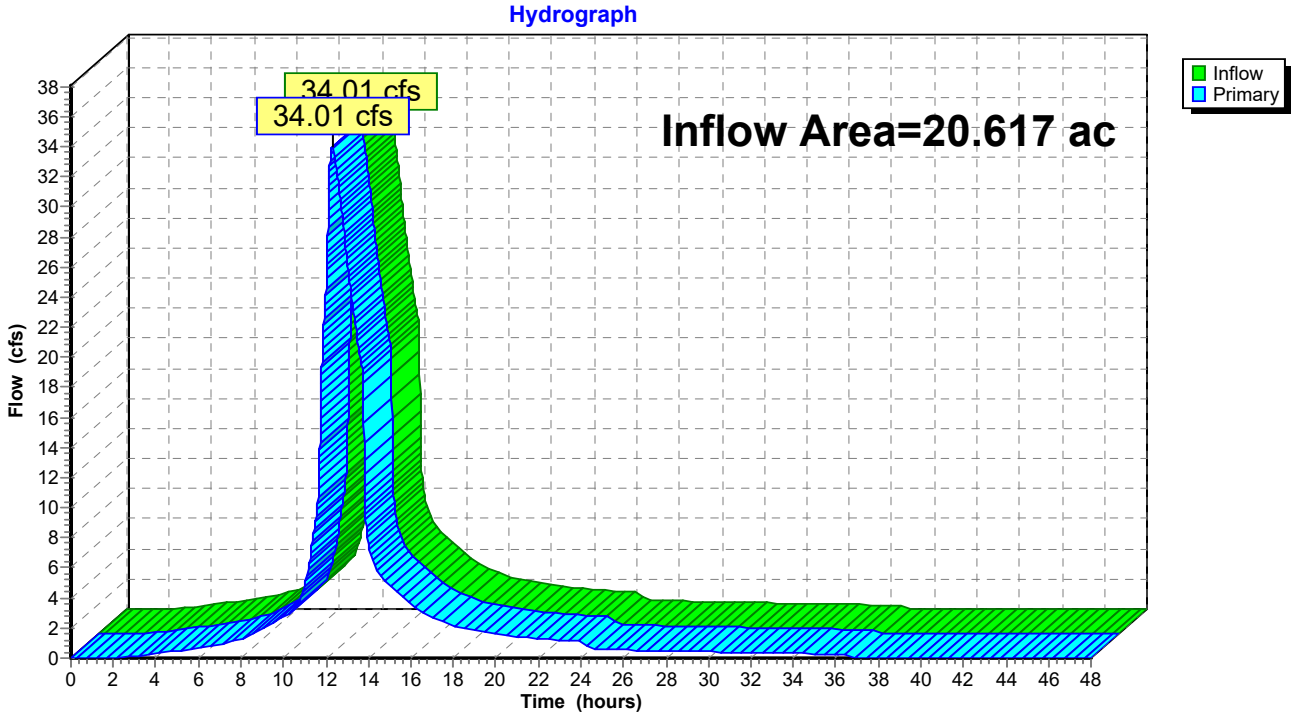


Summary for Link 1L: 1L

Inflow Area = 20.617 ac, 79.52% Impervious, Inflow Depth = 4.90" for 10-yrNOAA+ event
Inflow = 34.01 cfs @ 12.28 hrs, Volume= 8.418 af
Primary = 34.01 cfs @ 12.28 hrs, Volume= 8.418 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: 1L



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Parcel A South Runoff Area=9.702 ac 73.05% Impervious Runoff Depth=6.43"
Flow Length=362' Tc=8.5 min CN=93 Runoff=61.72 cfs 5.198 af

Subcatchment 2S: Parcel A North Runoff Area=1.352 ac 84.02% Impervious Runoff Depth=6.66"
Flow Length=79' Slope=0.0100 '/' Tc=7.6 min CN=95 Runoff=9.00 cfs 0.751 af

Subcatchment 3S: Parcel C Runoff Area=9.563 ac 85.44% Impervious Runoff Depth=6.66"
Flow Length=278' Tc=7.8 min CN=95 Runoff=63.22 cfs 5.311 af

Reach 1R: 24" Drain from FM Avg. Flow Depth=1.28' Max Vel=5.92 fps Inflow=12.56 cfs 5.201 af
24.0" Round Pipe n=0.013 L=460.0' S=0.0057 '/' Capacity=17.01 cfs Outflow=12.56 cfs 5.201 af

Reach 2R: TDC 48" Drain Avg. Flow Depth=1.07' Max Vel=6.84 fps Inflow=18.50 cfs 5.951 af
48.0" Round Pipe n=0.013 L=887.0' S=0.0068 '/' Capacity=118.14 cfs Outflow=18.45 cfs 5.951 af

Pond 1P: Par A South Detention Peak Elev=8.35' Storage=1.273 af Inflow=61.72 cfs 5.198 af
Outflow=12.56 cfs 5.201 af

Pond 2P: Par A North Detention Peak Elev=16.99' Storage=0.152 af Inflow=9.00 cfs 0.751 af
Outflow=6.09 cfs 0.750 af

Pond 3P: Par C Detention Peak Elev=13.28' Storage=1.714 af Inflow=63.22 cfs 5.311 af
Outflow=20.98 cfs 5.311 af

Link 1L: 1L Inflow=38.91 cfs 11.262 af
Primary=38.91 cfs 11.262 af

Total Runoff Area = 20.617 ac Runoff Volume = 11.260 af Average Runoff Depth = 6.55"
20.48% Pervious = 4.223 ac 79.52% Impervious = 16.394 ac

Summary for Subcatchment 1S: Parcel A South

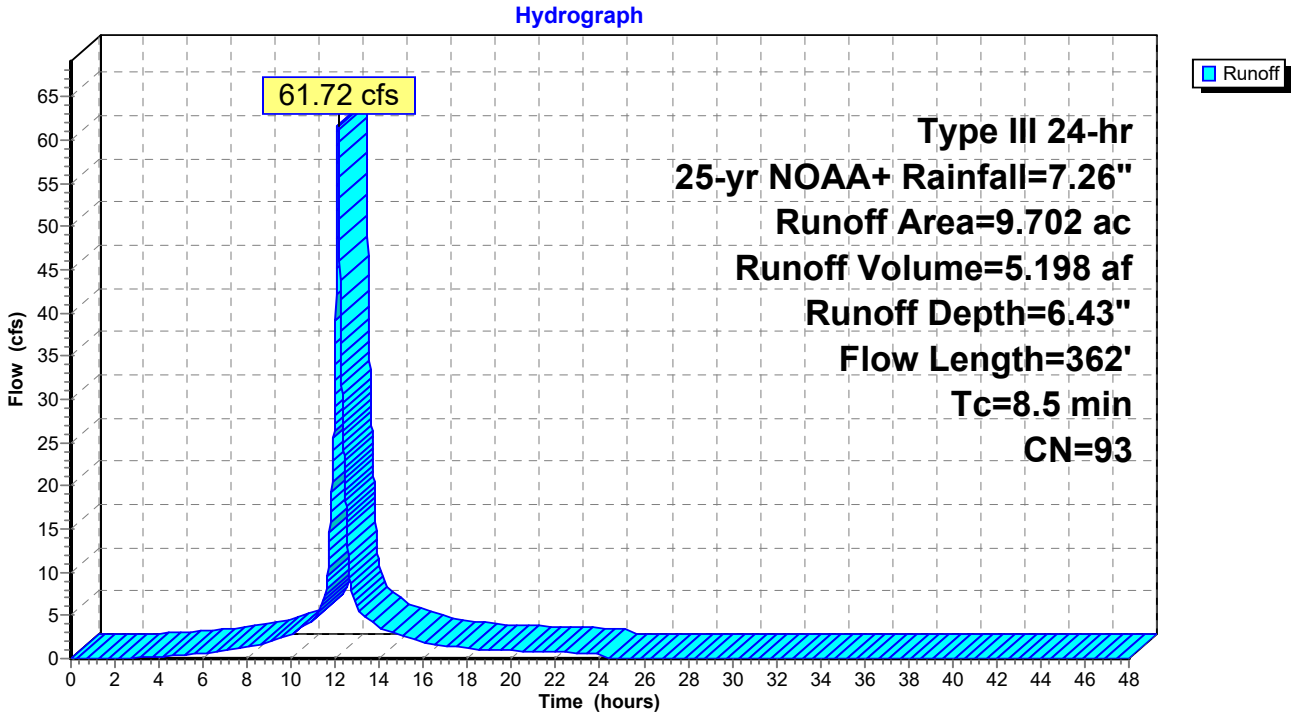
Runoff = 61.72 cfs @ 12.12 hrs, Volume= 5.198 af, Depth= 6.43"
Routed to Pond 1P : Par A South Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr NOAA+ Rainfall=7.26"

Area (ac)	CN	Description
7.087	98	Paved parking, HSG D
2.615	80	>75% Grass cover, Good, HSG D
9.702	93	Weighted Average
2.615		26.95% Pervious Area
7.087		73.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0240	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
2.3	150	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	162	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.5	362	Total			

Subcatchment 1S: Parcel A South



Summary for Subcatchment 2S: Parcel A North

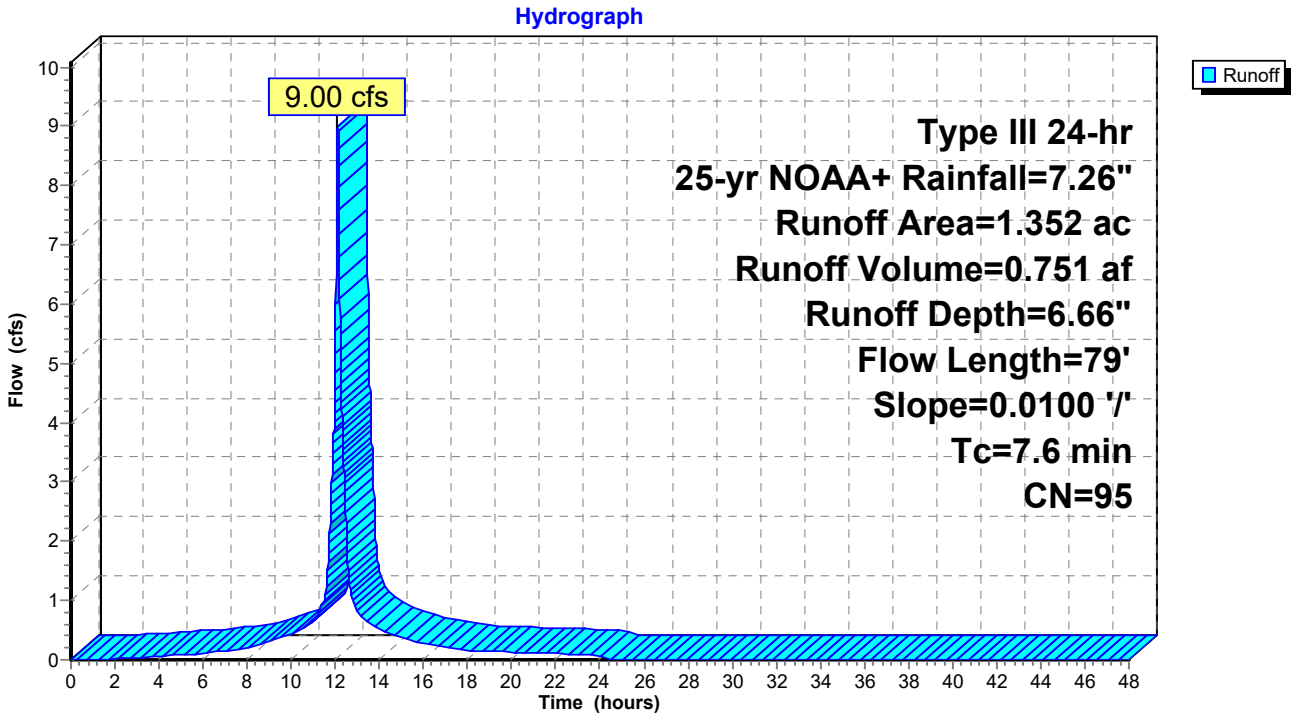
Runoff = 9.00 cfs @ 12.10 hrs, Volume= 0.751 af, Depth= 6.66"
Routed to Pond 2P : Par A North Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr NOAA+ Rainfall=7.26"

Area (ac)	CN	Description
1.136	98	Paved parking, HSG D
0.216	80	>75% Grass cover, Good, HSG D
1.352	95	Weighted Average
0.216		15.98% Pervious Area
1.136		84.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	48	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
0.3	31	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	79	Total			

Subcatchment 2S: Parcel A North



Summary for Subcatchment 3S: Parcel C

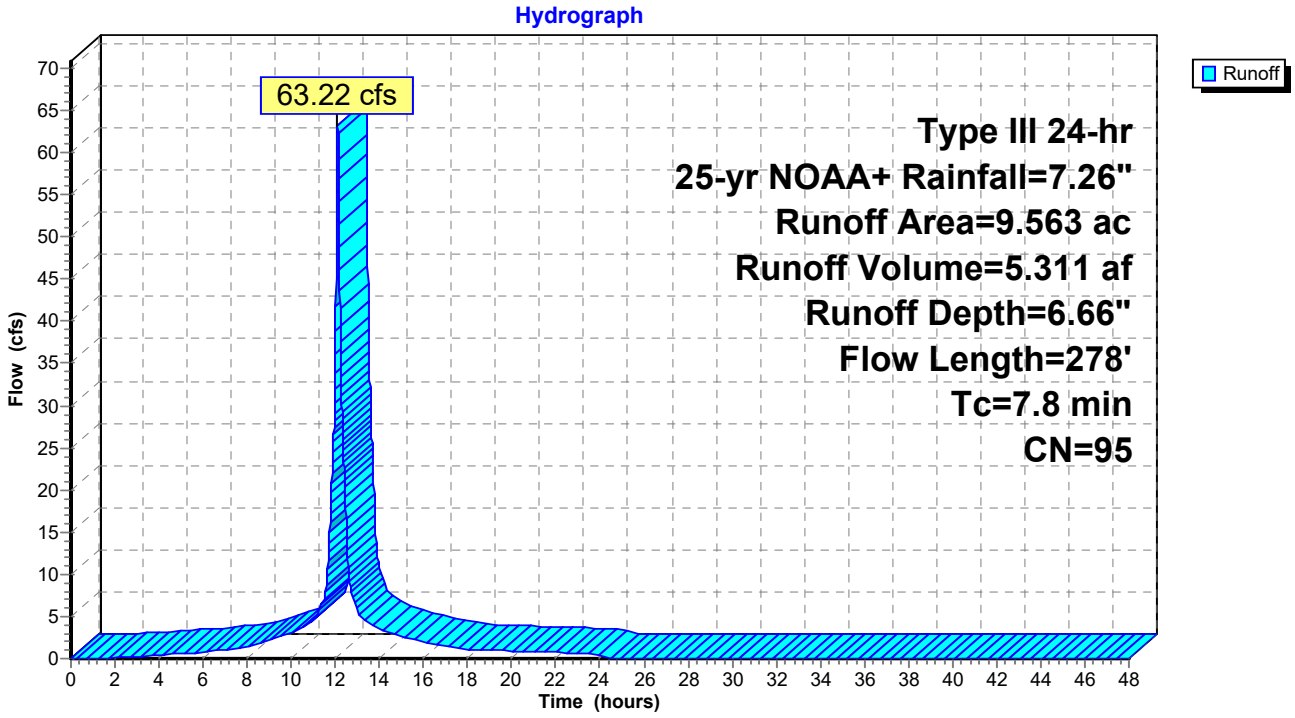
Runoff = 63.22 cfs @ 12.11 hrs, Volume= 5.311 af, Depth= 6.66"
Routed to Pond 3P : Par C Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr NOAA+ Rainfall=7.26"

Area (ac)	CN	Description
8.171	98	Paved parking, HSG D
1.392	80	>75% Grass cover, Good, HSG D
9.563	95	Weighted Average
1.392		14.56% Pervious Area
8.171		85.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
0.5	32	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	196	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.8	278	Total			

Subcatchment 3S: Parcel C



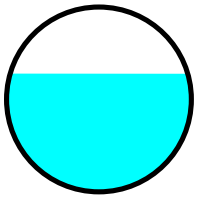
Summary for Reach 1R: 24" Drain from FM

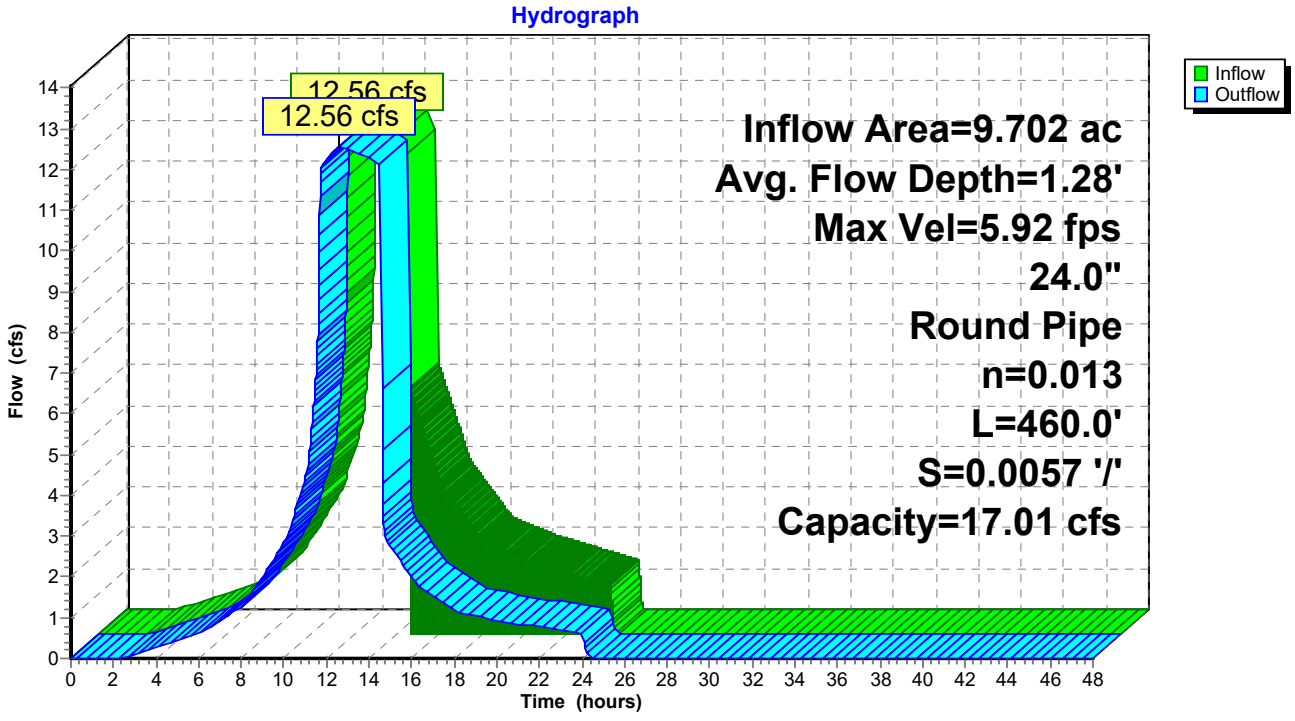
Inflow Area = 9.702 ac, 73.05% Impervious, Inflow Depth = 6.43" for 25-yr NOAA+ event
Inflow = 12.56 cfs @ 12.56 hrs, Volume= 5.201 af
Outflow = 12.56 cfs @ 12.58 hrs, Volume= 5.201 af, Atten= 0%, Lag= 1.1 min
Routed to Reach 2R : TDC 48" Drain

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 5.92 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 3.21 fps, Avg. Travel Time= 2.4 min

Peak Storage= 975 cf @ 12.58 hrs
Average Depth at Peak Storage= 1.28' , Surface Width= 1.92'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 17.01 cfs

24.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 460.0' Slope= 0.0057 '/'
Inlet Invert= 14.20', Outlet Invert= 11.60'





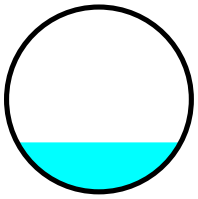
Summary for Reach 2R: TDC 48" Drain

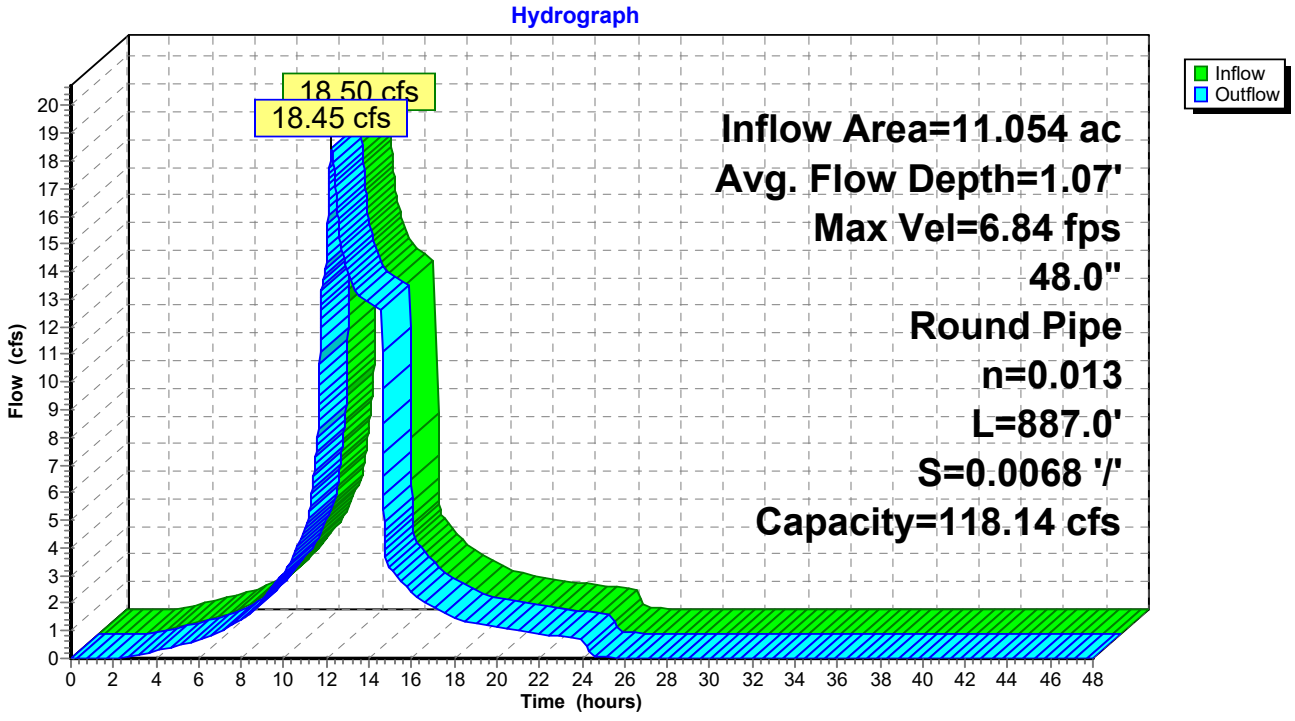
Inflow Area = 11.054 ac, 74.39% Impervious, Inflow Depth = 6.46" for 25-yr NOAA+ event
Inflow = 18.50 cfs @ 12.21 hrs, Volume= 5.951 af
Outflow = 18.45 cfs @ 12.24 hrs, Volume= 5.951 af, Atten= 0%, Lag= 1.8 min
Routed to Link 1L : 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 6.84 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 2.12 fps, Avg. Travel Time= 7.0 min

Peak Storage= 2,392 cf @ 12.24 hrs
Average Depth at Peak Storage= 1.07' , Surface Width= 3.54'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 118.14 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 887.0' Slope= 0.0068 '/'
Inlet Invert= 11.50', Outlet Invert= 5.50'





Summary for Pond 1P: Par A South Detention

Inflow Area = 9.702 ac, 73.05% Impervious, Inflow Depth = 6.43" for 25-yr NOAA+ event
Inflow = 61.72 cfs @ 12.12 hrs, Volume= 5.198 af
Outflow = 12.56 cfs @ 12.56 hrs, Volume= 5.201 af, Atten= 80%, Lag= 26.9 min
Primary = 12.56 cfs @ 12.56 hrs, Volume= 5.201 af
Routed to Reach 1R : 24" Drain from FM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 8.35' @ 12.56 hrs Surf.Area= 0.317 ac Storage= 1.273 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 23.3 min (793.5 - 770.2)

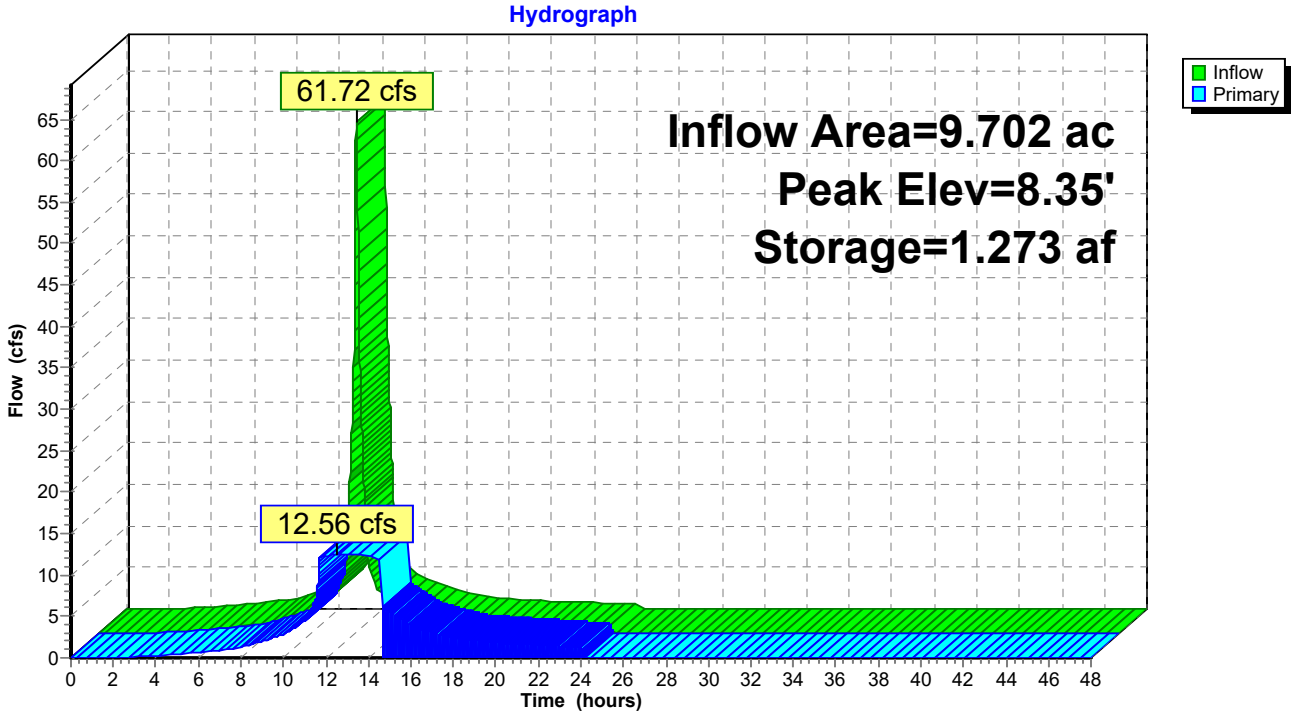
Volume	Invert	Avail.Storage	Storage Description
#1A	3.50'	0.000 af	**13.79'W x 999.77'L x 9.17'H Field A** 2.902 af Overall - 2.902 af Embedded = 0.000 af x 30.0% Voids
#2A	3.50'	2.341 af	**StormTrap ST1 DoubleTrap 8-0** x 142 Inside #1 Inside= 82.7"W x 96.0"H => 51.06 sf x 14.06'L = 718.0 cf Outside= 82.7"W x 110.0"H => 63.21 sf x 14.06'L = 888.9 cf 2 Rows adjusted for 3,604.4 cf perimeter wall 13.79' x 998.44' Core + 0.00' x 0.67' Border = 13.79' x 999.77' System
		2.341 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices (Turned on 2912 times)
#1	Primary	3.52'	**Heidra1600 X 2.00** Discharges@14.70' Turns Off<3.51' (Priority Group) 8.0" Diam. x 930.0' Long Discharge, Hazen-Williams C= 130 Flow (gpm)= 320.0 500.0 750.0 1,000.0 1,250.0 1,500.0 1,710.0 Head (feet)= 68.00 65.00 60.00 53.00 47.00 35.00 21.00 -Loss (feet)= 2.06 4.71 9.97 16.99 25.69 36.00 45.89 =Lift (feet)= 65.94 60.29 50.03 36.01 21.31 -1.00 -24.89
#2	Primary	3.52'	**Heidra1600 X 2.00** Discharges@14.70' Turns Off<3.51' (Priority Group) 8.0" Diam. x 930.0' Long Discharge, Hazen-Williams C= 130 Flow (gpm)= 320.0 500.0 750.0 1,000.0 1,250.0 1,500.0 1,710.0 Head (feet)= 68.00 65.00 60.00 53.00 47.00 35.00 21.00 -Loss (feet)= 2.06 4.71 9.97 16.99 25.69 36.00 45.89 =Lift (feet)= 65.94 60.29 50.03 36.01 21.31 -1.00 -24.89

Primary OutFlow Max=12.56 cfs @ 12.56 hrs HW=8.35' TW=15.48' (Dynamic Tailwater)
1=Heidra1600 (Pump Controls 6.28 cfs)
2=Heidra1600 (Pump Controls 6.28 cfs)

Pond 1P: Par A South Detention



Summary for Pond 2P: Par A North Detention

Inflow Area = 1.352 ac, 84.02% Impervious, Inflow Depth = 6.66" for 25-yr NOAA+ event
Inflow = 9.00 cfs @ 12.10 hrs, Volume= 0.751 af
Outflow = 6.09 cfs @ 12.20 hrs, Volume= 0.750 af, Atten= 32%, Lag= 5.8 min
Primary = 6.09 cfs @ 12.20 hrs, Volume= 0.750 af
Routed to Reach 2R : TDC 48" Drain

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 16.99' @ 12.20 hrs Surf.Area= 0.058 ac Storage= 0.152 af

Plug-Flow detention time= 54.1 min calculated for 0.750 af (100% of inflow)
Center-of-Mass det. time= 53.9 min (814.6 - 760.7)

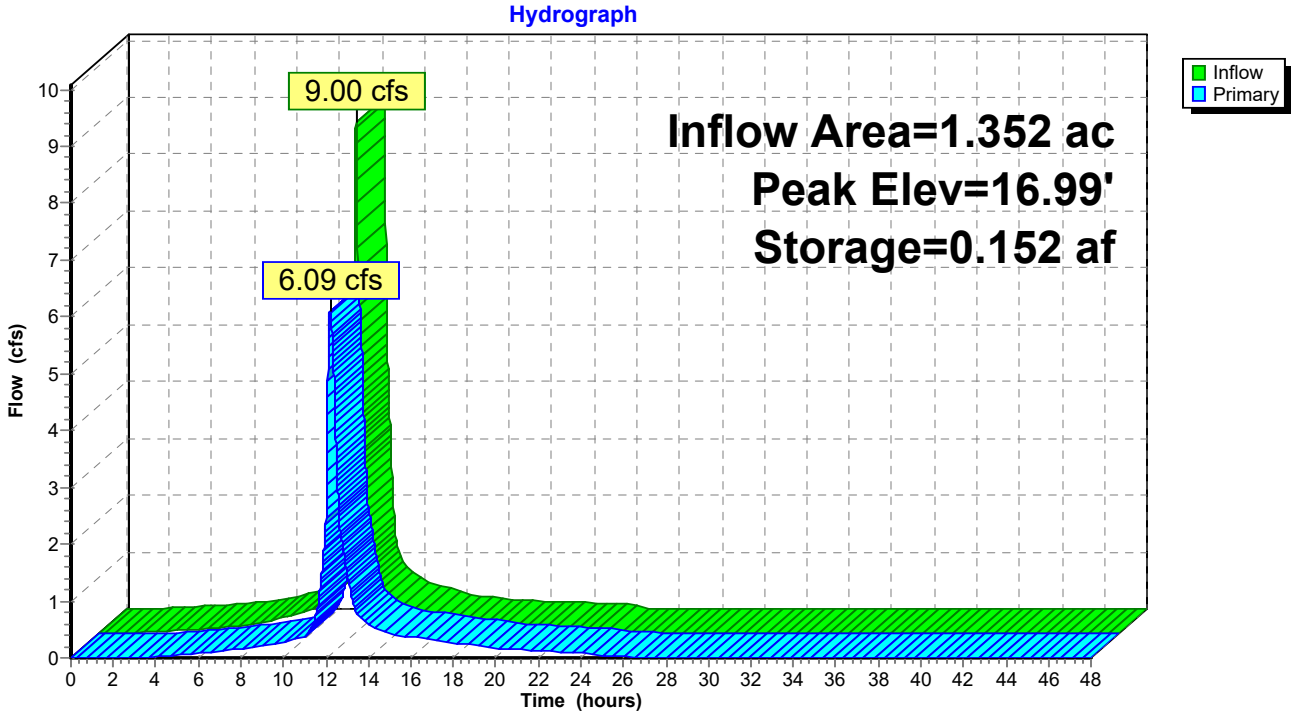
Volume	Invert	Avail.Storage	Storage Description
#1A	13.95'	0.000 af	**13.79'W x 183.81'L x 5.67'H Field A** 0.330 af Overall - 0.330 af Embedded = 0.000 af x 30.0% Voids
#2A	13.95'	0.250 af	**StormTrap ST1 SingleTrap 5-0** x 26 Inside #1 Inside= 82.7"W x 60.0"H => 29.76 sf x 14.06'L = 418.5 cf Outside= 82.7"W x 68.0"H => 39.08 sf x 14.06'L = 549.5 cf 26 Chambers in 2 Rows 13.79' x 182.81' Core + 0.00' x 0.50' Border = 13.79' x 183.81' System
		0.250 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	13.95'	**24.0" Round Culvert** L= 400.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 13.95' / 11.80' S= 0.0054 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	17.95'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	13.95'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	14.95'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	15.95'	**16.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.09 cfs @ 12.20 hrs HW=16.99' TW=12.57' (Dynamic Tailwater)
- **1=Culvert** (Passes 6.09 cfs of 17.69 cfs potential flow)
  - **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  - **3=Orifice/Grate** (Orifice Controls 0.71 cfs @ 8.17 fps)
  - **4=Orifice/Grate** (Orifice Controls 2.53 cfs @ 6.45 fps)
  - **5=Orifice/Grate** (Orifice Controls 2.85 cfs @ 4.27 fps)

Pond 2P: Par A North Detention



Summary for Pond 3P: Par C Detention

Inflow Area = 9.563 ac, 85.44% Impervious, Inflow Depth = 6.66" for 25-yr NOAA+ event
Inflow = 63.22 cfs @ 12.11 hrs, Volume= 5.311 af
Outflow = 20.98 cfs @ 12.41 hrs, Volume= 5.311 af, Atten= 67%, Lag= 18.5 min
Primary = 20.98 cfs @ 12.41 hrs, Volume= 5.311 af
Routed to Link 1L : 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 13.28' @ 12.41 hrs Surf.Area= 0.308 ac Storage= 1.714 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 131.4 min (892.3 - 760.8)

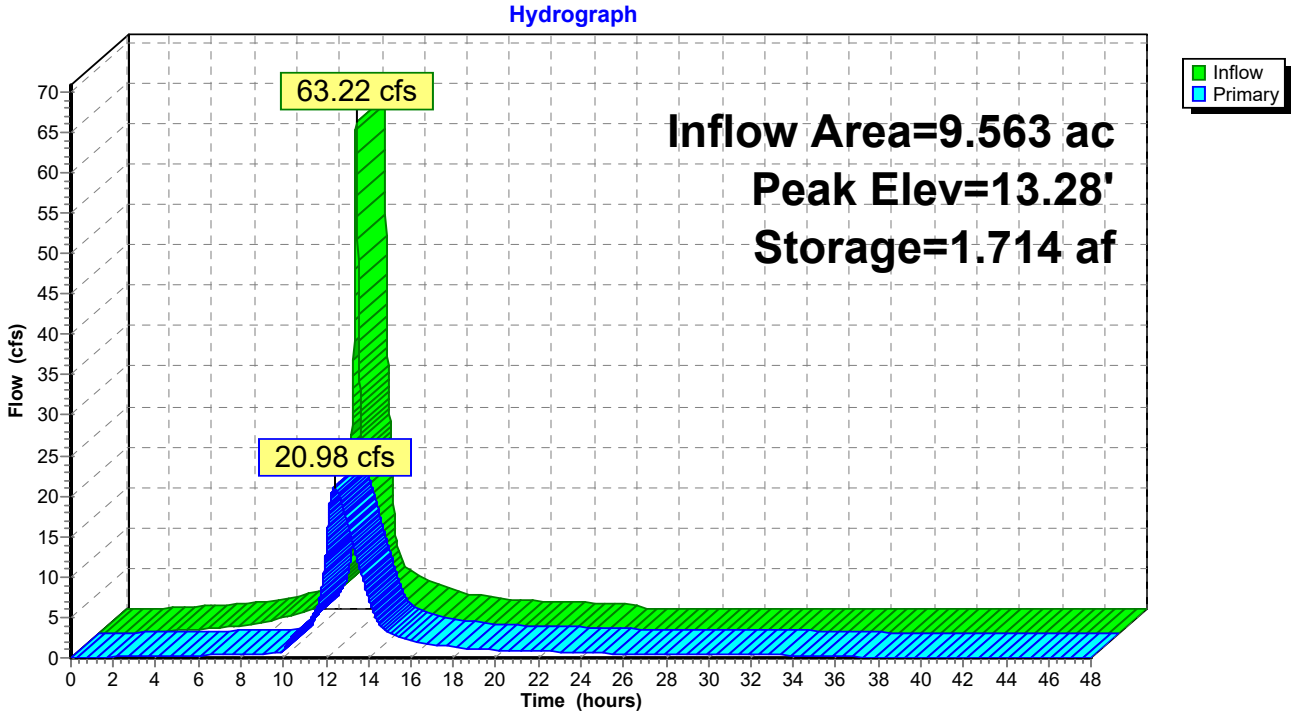
Volume	Invert	Avail.Storage	Storage Description
#1A	6.75'	0.000 af	**13.79'W x 971.65'L x 9.17'H Field A** 2.820 af Overall - 2.820 af Embedded = 0.000 af x 30.0% Voids
#2A	6.75'	2.275 af	**StormTrap ST1 DoubleTrap 8-0** x 138 Inside #1 Inside= 82.7"W x 96.0"H => 51.06 sf x 14.06'L = 718.0 cf Outside= 82.7"W x 110.0"H => 63.21 sf x 14.06'L = 888.9 cf 2 Rows adjusted for 3,508.4 cf perimeter wall 13.79' x 970.31' Core + 0.00' x 0.67' Border = 13.79' x 971.65' System
		2.275 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	6.50'	**24.0" Round Culvert** L= 46.2' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 6.50' / 5.50' S= 0.0216 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	13.75'	**8.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	6.75'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	8.75'	**48.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=20.98 cfs @ 12.41 hrs HW=13.28' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 20.98 cfs of 36.36 cfs potential flow)
  ├─**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 1.06 cfs @ 12.14 fps)
  └─**4=Orifice/Grate** (Orifice Controls 19.92 cfs @ 9.96 fps)

Pond 3P: Par C Detention

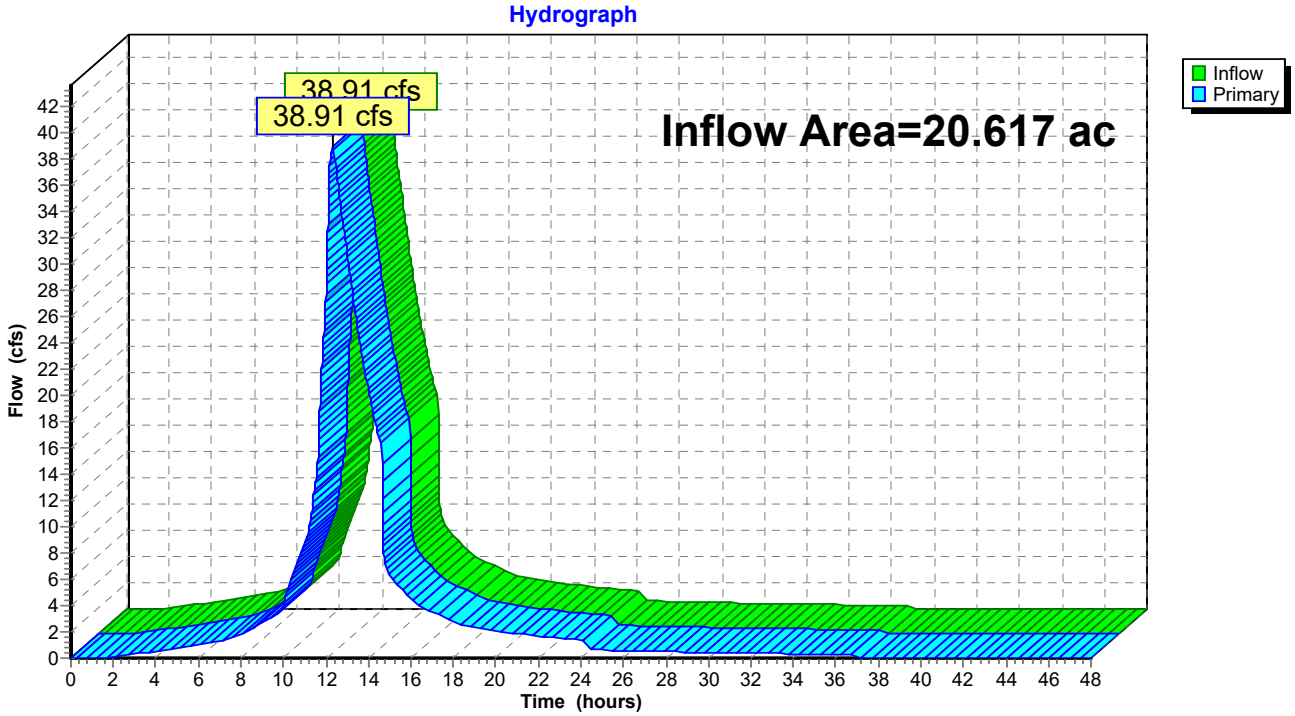


Summary for Link 1L: 1L

Inflow Area = 20.617 ac, 79.52% Impervious, Inflow Depth = 6.56" for 25-yr NOAA+ event
Inflow = 38.91 cfs @ 12.31 hrs, Volume= 11.262 af
Primary = 38.91 cfs @ 12.31 hrs, Volume= 11.262 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: 1L



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Parcel A South Runoff Area=9.702 ac 73.05% Impervious Runoff Depth=8.85"
Flow Length=362' Tc=8.5 min CN=93 Runoff=83.57 cfs 7.157 af

Subcatchment 2S: Parcel A North Runoff Area=1.352 ac 84.02% Impervious Runoff Depth=9.10"
Flow Length=79' Slope=0.0100 '/' Tc=7.6 min CN=95 Runoff=12.11 cfs 1.025 af

Subcatchment 3S: Parcel C Runoff Area=9.563 ac 85.44% Impervious Runoff Depth=9.10"
Flow Length=278' Tc=7.8 min CN=95 Runoff=85.08 cfs 7.249 af

Reach 1R: 24" Drain from FM Avg. Flow Depth=1.30' Max Vel=5.95 fps Inflow=12.82 cfs 7.158 af
24.0" Round Pipe n=0.013 L=460.0' S=0.0057 '/' Capacity=17.01 cfs Outflow=12.82 cfs 7.158 af

Reach 2R: TDC 48" Drain Avg. Flow Depth=1.12' Max Vel=7.03 fps Inflow=20.34 cfs 8.182 af
48.0" Round Pipe n=0.013 L=887.0' S=0.0068 '/' Capacity=118.14 cfs Outflow=20.30 cfs 8.182 af

Pond 1P: Par A South Detention Peak Elev=11.02' Storage=2.053 af Inflow=83.57 cfs 7.157 af
Outflow=12.82 cfs 7.158 af

Pond 2P: Par A North Detention Peak Elev=17.72' Storage=0.188 af Inflow=12.11 cfs 1.025 af
Outflow=7.75 cfs 1.024 af

Pond 3P: Par C Detention Peak Elev=14.54' Storage=2.073 af Inflow=85.08 cfs 7.249 af
Outflow=40.14 cfs 7.249 af

Link 1L: 1L Inflow=60.39 cfs 15.431 af
Primary=60.39 cfs 15.431 af

Total Runoff Area = 20.617 ac Runoff Volume = 15.430 af Average Runoff Depth = 8.98"
20.48% Pervious = 4.223 ac 79.52% Impervious = 16.394 ac

Summary for Subcatchment 1S: Parcel A South

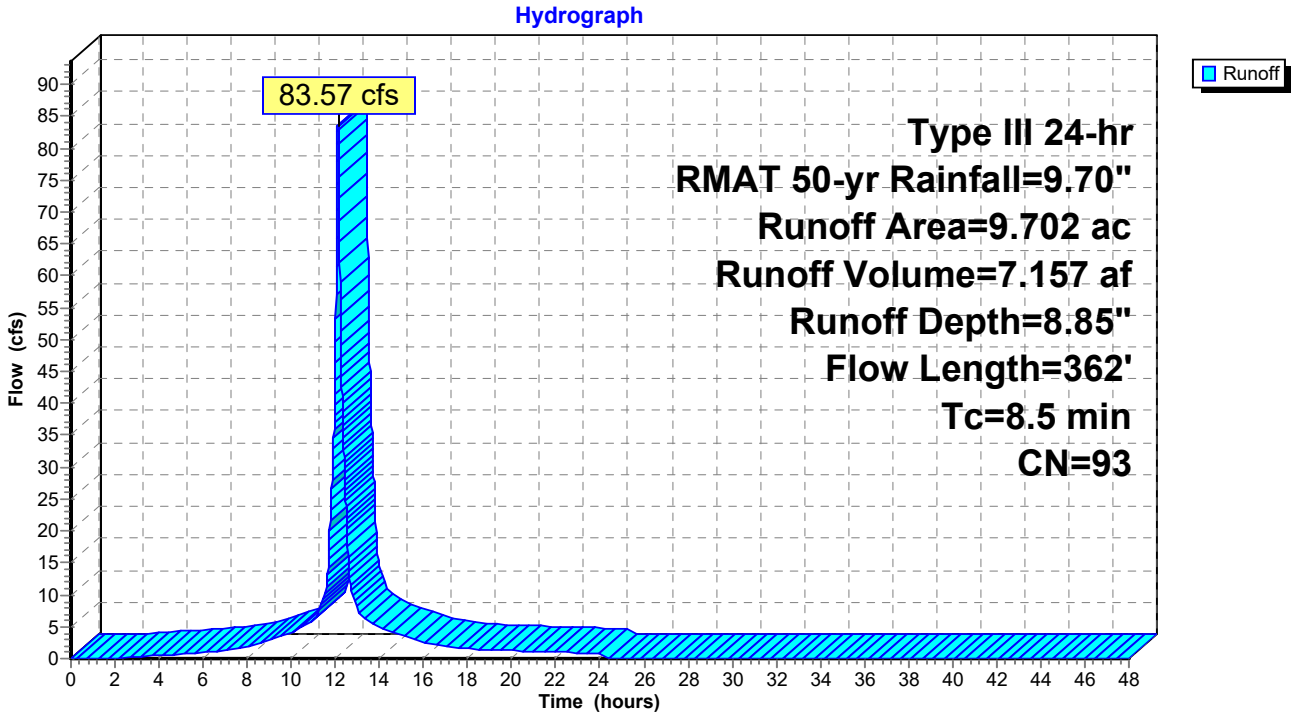
Runoff = 83.57 cfs @ 12.12 hrs, Volume= 7.157 af, Depth= 8.85"
Routed to Pond 1P : Par A South Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr RMAT 50-yr Rainfall=9.70"

Area (ac)	CN	Description
7.087	98	Paved parking, HSG D
2.615	80	>75% Grass cover, Good, HSG D
9.702	93	Weighted Average
2.615		26.95% Pervious Area
7.087		73.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0240	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
2.3	150	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	162	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.5	362	Total			

Subcatchment 1S: Parcel A South



Summary for Subcatchment 2S: Parcel A North

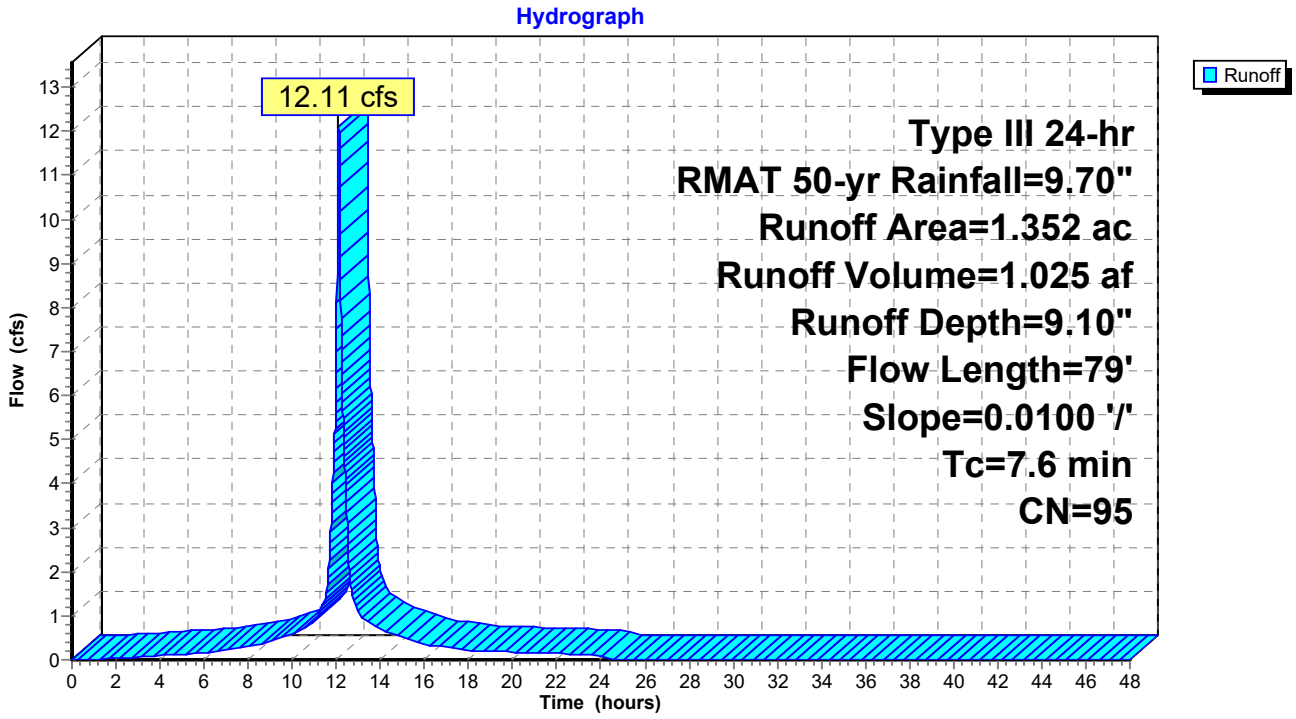
Runoff = 12.11 cfs @ 12.10 hrs, Volume= 1.025 af, Depth= 9.10"
Routed to Pond 2P : Par A North Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr RMAT 50-yr Rainfall=9.70"

Area (ac)	CN	Description
1.136	98	Paved parking, HSG D
0.216	80	>75% Grass cover, Good, HSG D
1.352	95	Weighted Average
0.216		15.98% Pervious Area
1.136		84.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	48	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
0.3	31	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	79	Total			

Subcatchment 2S: Parcel A North



Summary for Subcatchment 3S: Parcel C

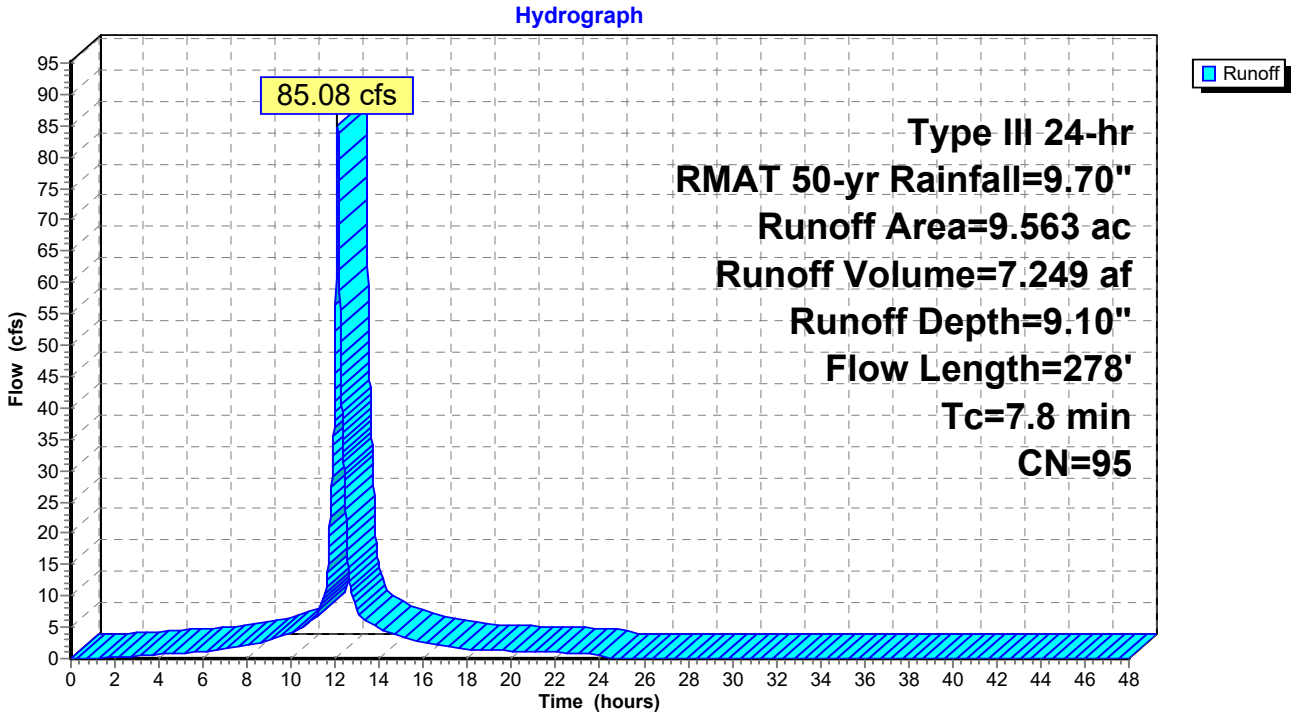
Runoff = 85.08 cfs @ 12.11 hrs, Volume= 7.249 af, Depth= 9.10"
Routed to Pond 3P : Par C Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr RMAT 50-yr Rainfall=9.70"

Area (ac)	CN	Description
8.171	98	Paved parking, HSG D
1.392	80	>75% Grass cover, Good, HSG D
9.563	95	Weighted Average
1.392		14.56% Pervious Area
8.171		85.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
0.5	32	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	196	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.8	278	Total			

Subcatchment 3S: Parcel C



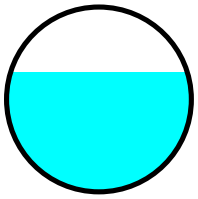
Summary for Reach 1R: 24" Drain from FM

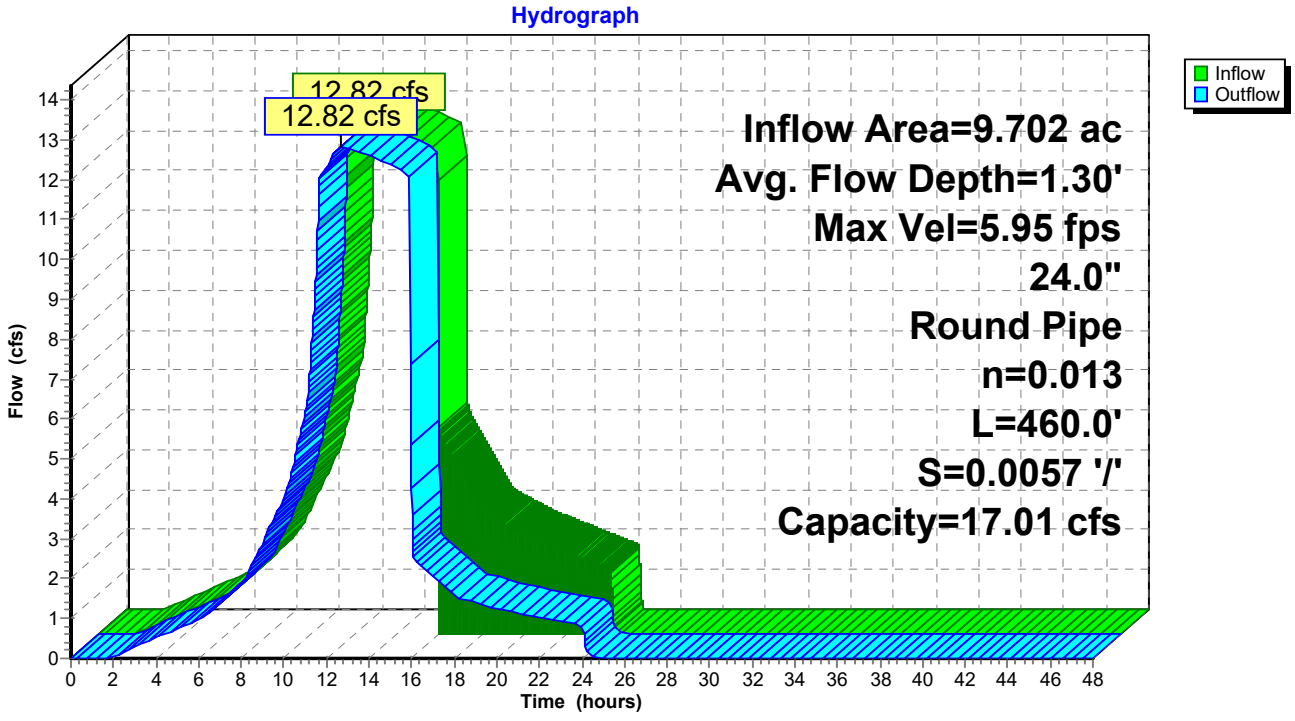
Inflow Area = 9.702 ac, 73.05% Impervious, Inflow Depth = 8.85" for RMAT 50-yr event
Inflow = 12.82 cfs @ 12.63 hrs, Volume= 7.158 af
Outflow = 12.82 cfs @ 12.65 hrs, Volume= 7.158 af, Atten= 0%, Lag= 1.2 min
Routed to Reach 2R : TDC 48" Drain

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 5.95 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 3.54 fps, Avg. Travel Time= 2.2 min

Peak Storage= 992 cf @ 12.65 hrs
Average Depth at Peak Storage= 1.30' , Surface Width= 1.91'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 17.01 cfs

24.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 460.0' Slope= 0.0057 '/'
Inlet Invert= 14.20', Outlet Invert= 11.60'





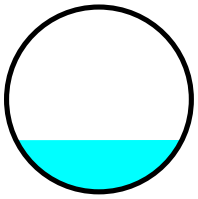
Summary for Reach 2R: TDC 48" Drain

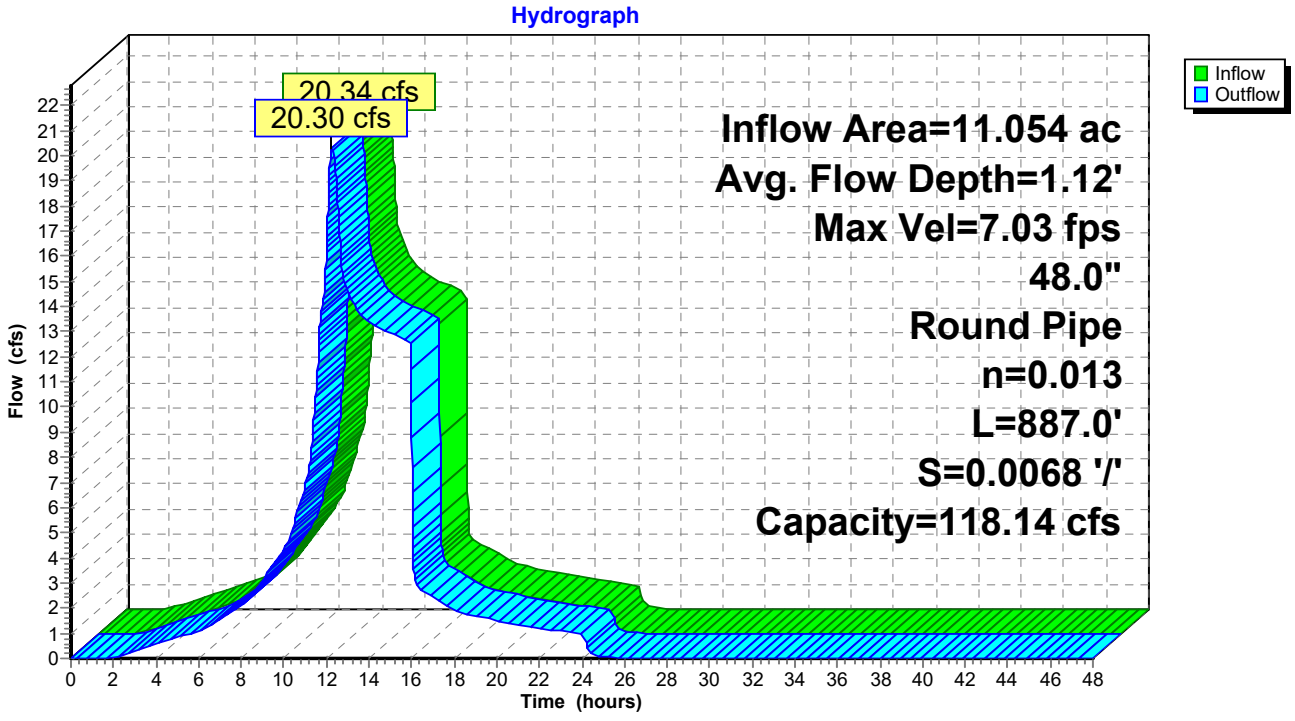
Inflow Area = 11.054 ac, 74.39% Impervious, Inflow Depth = 8.88" for RMAT 50-yr event
Inflow = 20.34 cfs @ 12.22 hrs, Volume= 8.182 af
Outflow = 20.30 cfs @ 12.25 hrs, Volume= 8.182 af, Atten= 0%, Lag= 1.8 min
Routed to Link 1L : 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 7.03 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 2.33 fps, Avg. Travel Time= 6.3 min

Peak Storage= 2,561 cf @ 12.25 hrs
Average Depth at Peak Storage= 1.12' , Surface Width= 3.59'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 118.14 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 887.0' Slope= 0.0068 '/'
Inlet Invert= 11.50', Outlet Invert= 5.50'





Summary for Pond 1P: Par A South Detention

Inflow Area = 9.702 ac, 73.05% Impervious, Inflow Depth = 8.85" for RMAT 50-yr event
Inflow = 83.57 cfs @ 12.12 hrs, Volume= 7.157 af
Outflow = 12.82 cfs @ 12.63 hrs, Volume= 7.158 af, Atten= 85%, Lag= 31.1 min
Primary = 12.82 cfs @ 12.63 hrs, Volume= 7.158 af
Routed to Reach 1R : 24" Drain from FM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 11.02' @ 12.63 hrs Surf.Area= 0.317 ac Storage= 2.053 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 41.4 min (804.4 - 763.0)

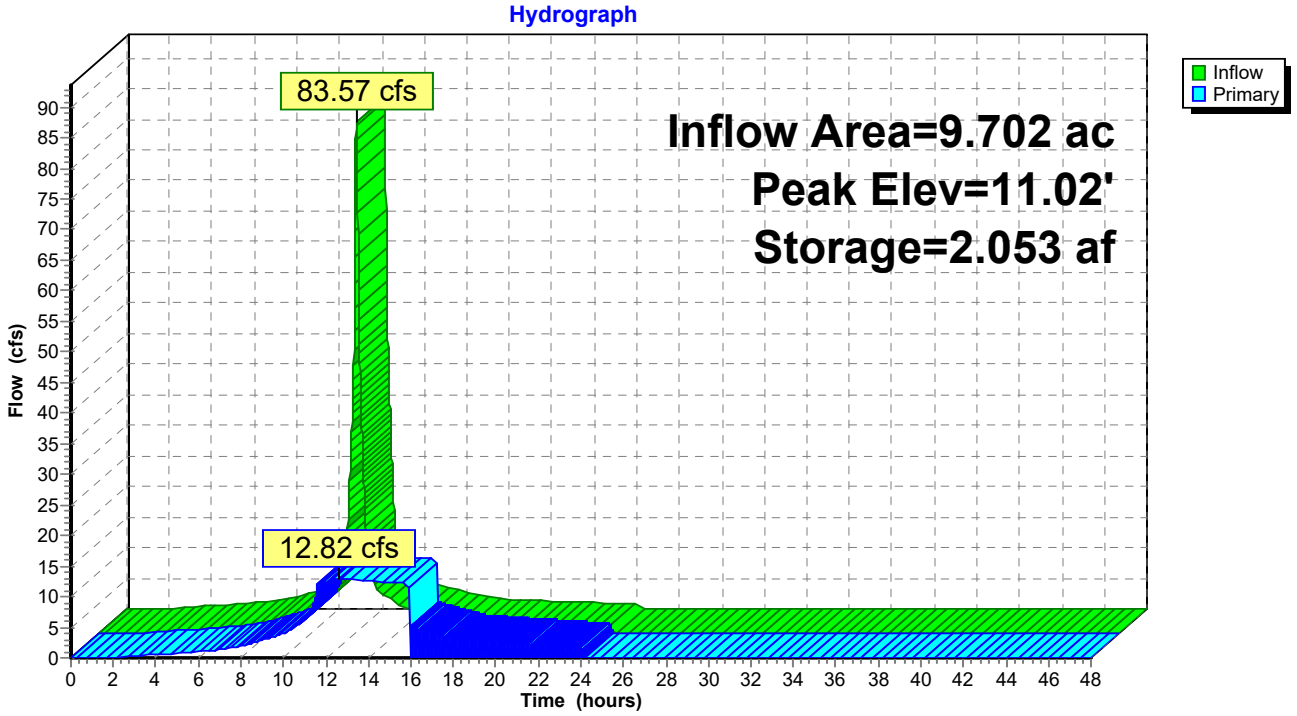
Volume	Invert	Avail.Storage	Storage Description
#1A	3.50'	0.000 af	**13.79'W x 999.77'L x 9.17'H Field A** 2.902 af Overall - 2.902 af Embedded = 0.000 af x 30.0% Voids
#2A	3.50'	2.341 af	**StormTrap ST1 DoubleTrap 8-0** x 142 Inside #1 Inside= 82.7"W x 96.0"H => 51.06 sf x 14.06'L = 718.0 cf Outside= 82.7"W x 110.0"H => 63.21 sf x 14.06'L = 888.9 cf 2 Rows adjusted for 3,604.4 cf perimeter wall 13.79' x 998.44' Core + 0.00' x 0.67' Border = 13.79' x 999.77' System
		2.341 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices (Turned on 2866 times)
#1	Primary	3.52'	**Heidra1600 X 2.00** Discharges@14.70' Turns Off<3.51' (Priority Group) 8.0" Diam. x 930.0' Long Discharge, Hazen-Williams C= 130 Flow (gpm)= 320.0 500.0 750.0 1,000.0 1,250.0 1,500.0 1,710.0 Head (feet)= 68.00 65.00 60.00 53.00 47.00 35.00 21.00 -Loss (feet)= 2.06 4.71 9.97 16.99 25.69 36.00 45.89 =Lift (feet)= 65.94 60.29 50.03 36.01 21.31 -1.00 -24.89
#2	Primary	3.52'	**Heidra1600 X 2.00** Discharges@14.70' Turns Off<3.51' (Priority Group) 8.0" Diam. x 930.0' Long Discharge, Hazen-Williams C= 130 Flow (gpm)= 320.0 500.0 750.0 1,000.0 1,250.0 1,500.0 1,710.0 Head (feet)= 68.00 65.00 60.00 53.00 47.00 35.00 21.00 -Loss (feet)= 2.06 4.71 9.97 16.99 25.69 36.00 45.89 =Lift (feet)= 65.94 60.29 50.03 36.01 21.31 -1.00 -24.89

Primary OutFlow Max=12.82 cfs @ 12.63 hrs HW=11.02' TW=15.50' (Dynamic Tailwater)
1=Heidra1600 (Pump Controls 6.41 cfs)
2=Heidra1600 (Pump Controls 6.41 cfs)

Pond 1P: Par A South Detention



Summary for Pond 2P: Par A North Detention

Inflow Area = 1.352 ac, 84.02% Impervious, Inflow Depth = 9.10" for RMAT 50-yr event
Inflow = 12.11 cfs @ 12.10 hrs, Volume= 1.025 af
Outflow = 7.75 cfs @ 12.21 hrs, Volume= 1.024 af, Atten= 36%, Lag= 6.4 min
Primary = 7.75 cfs @ 12.21 hrs, Volume= 1.024 af
Routed to Reach 2R : TDC 48" Drain

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 17.72' @ 12.21 hrs Surf.Area= 0.058 ac Storage= 0.188 af

Plug-Flow detention time= 49.3 min calculated for 1.024 af (100% of inflow)
Center-of-Mass det. time= 49.0 min (803.6 - 754.6)

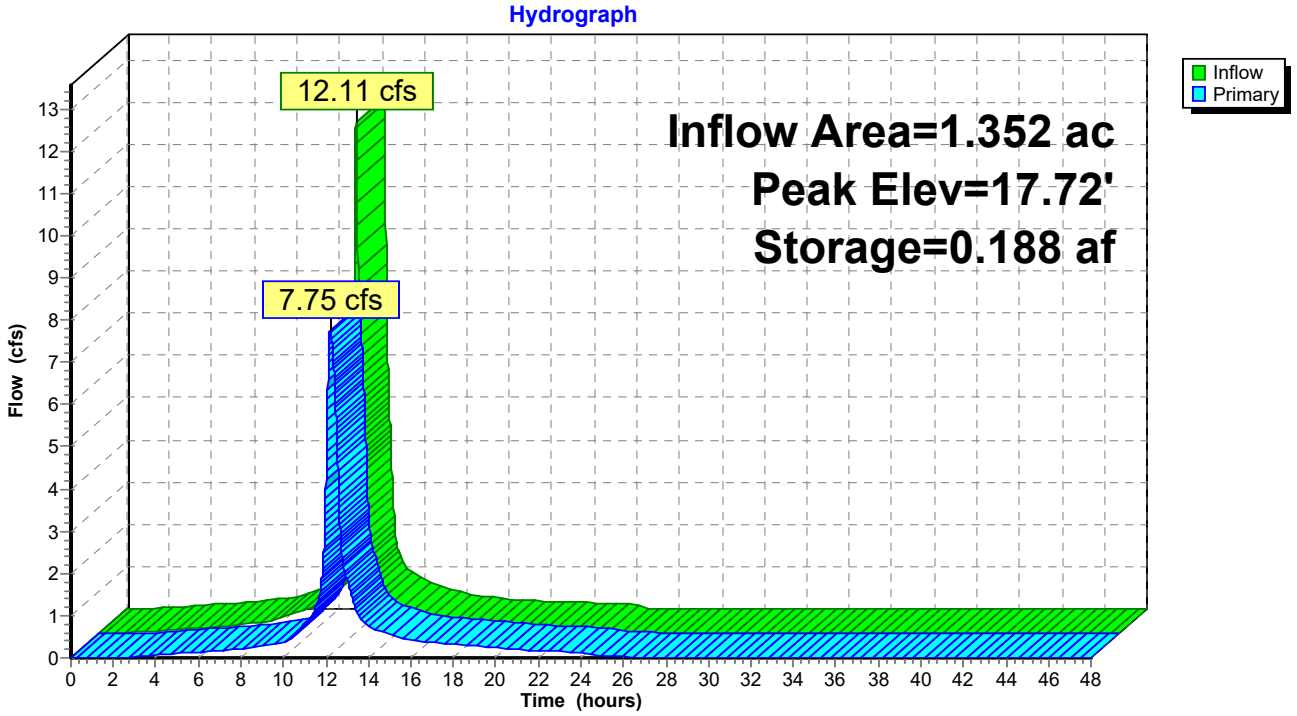
Volume	Invert	Avail.Storage	Storage Description
#1A	13.95'	0.000 af	**13.79'W x 183.81'L x 5.67'H Field A** 0.330 af Overall - 0.330 af Embedded = 0.000 af x 30.0% Voids
#2A	13.95'	0.250 af	**StormTrap ST1 SingleTrap 5-0** x 26 Inside #1 Inside= 82.7"W x 60.0"H => 29.76 sf x 14.06'L = 418.5 cf Outside= 82.7"W x 68.0"H => 39.08 sf x 14.06'L = 549.5 cf 26 Chambers in 2 Rows 13.79' x 182.81' Core + 0.00' x 0.50' Border = 13.79' x 183.81' System
		0.250 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	13.95'	**24.0" Round Culvert** L= 400.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 13.95' / 11.80' S= 0.0054 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	17.95'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	13.95'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	14.95'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	15.95'	**16.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.75 cfs @ 12.21 hrs HW=17.72' TW=12.62' (Dynamic Tailwater)
└─**1=Culvert** (Passes 7.75 cfs of 19.60 cfs potential flow)
  ├─**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 0.80 cfs @ 9.14 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 3.00 cfs @ 7.64 fps)
  └─**5=Orifice/Grate** (Orifice Controls 3.95 cfs @ 5.93 fps)

Pond 2P: Par A North Detention



Summary for Pond 3P: Par C Detention

Inflow Area = 9.563 ac, 85.44% Impervious, Inflow Depth = 9.10" for RMAT 50-yr event
Inflow = 85.08 cfs @ 12.11 hrs, Volume= 7.249 af
Outflow = 40.14 cfs @ 12.29 hrs, Volume= 7.249 af, Atten= 53%, Lag= 11.2 min
Primary = 40.14 cfs @ 12.29 hrs, Volume= 7.249 af
Routed to Link 1L : 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 14.54' @ 12.29 hrs Surf.Area= 0.308 ac Storage= 2.073 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 109.5 min (864.3 - 754.8)

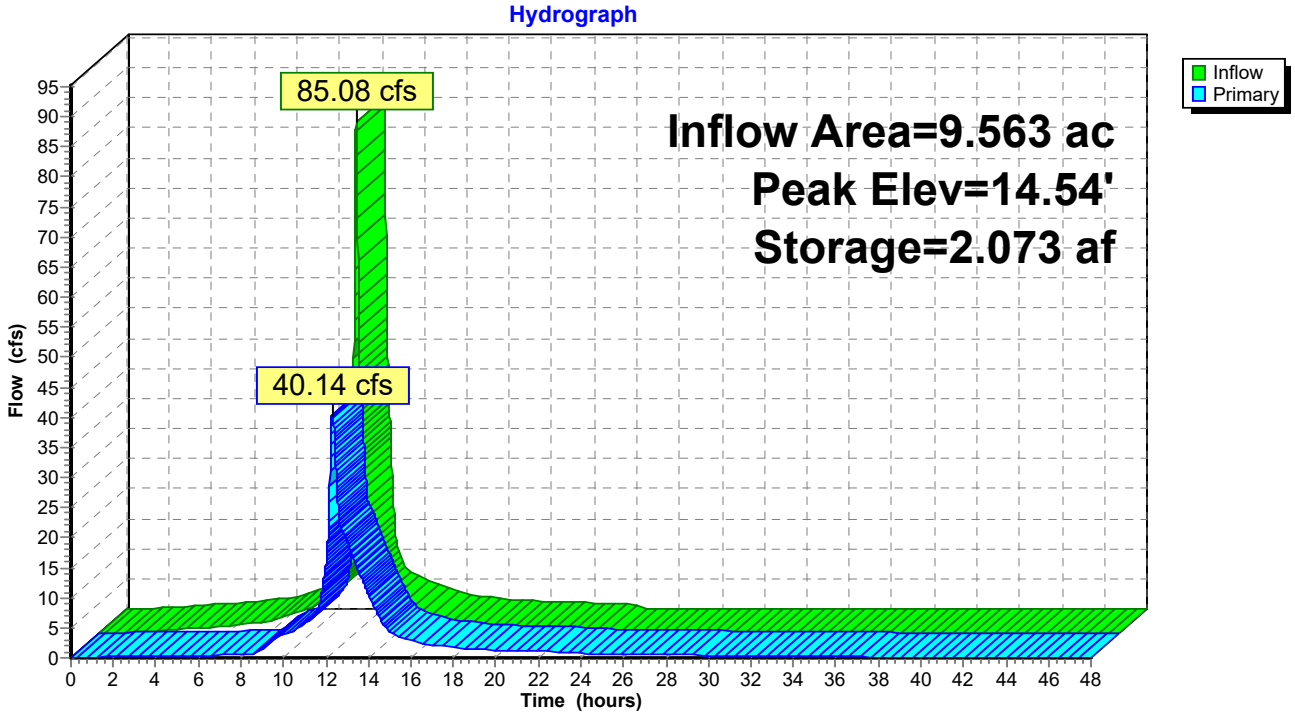
Volume	Invert	Avail.Storage	Storage Description
#1A	6.75'	0.000 af	**13.79'W x 971.65'L x 9.17'H Field A** 2.820 af Overall - 2.820 af Embedded = 0.000 af x 30.0% Voids
#2A	6.75'	2.275 af	**StormTrap ST1 DoubleTrap 8-0** x 138 Inside #1 Inside= 82.7"W x 96.0"H => 51.06 sf x 14.06'L = 718.0 cf Outside= 82.7"W x 110.0"H => 63.21 sf x 14.06'L = 888.9 cf 2 Rows adjusted for 3,508.4 cf perimeter wall 13.79' x 970.31' Core + 0.00' x 0.67' Border = 13.79' x 971.65' System
		2.275 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	6.50'	**24.0" Round Culvert** L= 46.2' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 6.50' / 5.50' S= 0.0216 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	13.75'	**8.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	6.75'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	8.75'	**48.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=40.14 cfs @ 12.29 hrs HW=14.54' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 40.14 cfs @ 12.78 fps)
  ├─**2=Sharp-Crested Rectangular Weir** (Passes < 18.00 cfs potential flow)
  ├─**3=Orifice/Grate** (Passes < 1.16 cfs potential flow)
  └─**4=Orifice/Grate** (Passes < 22.66 cfs potential flow)

Pond 3P: Par C Detention

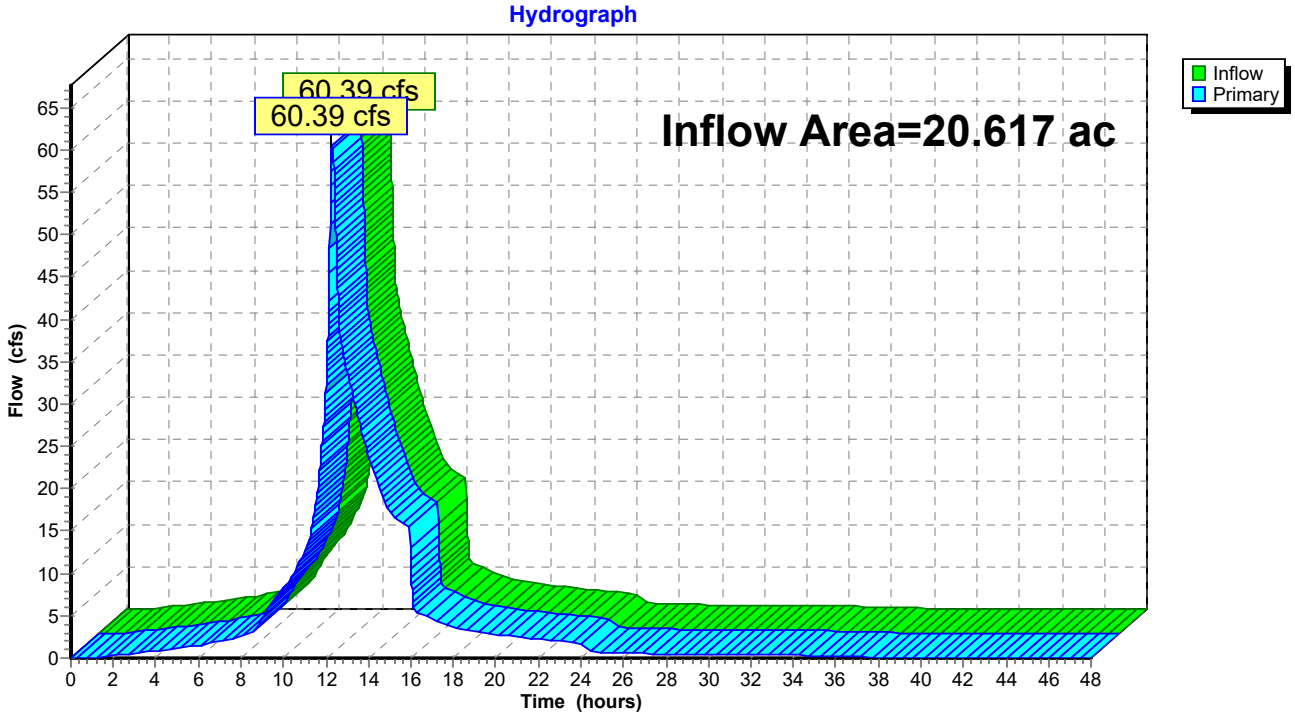


Summary for Link 1L: 1L

Inflow Area = 20.617 ac, 79.52% Impervious, Inflow Depth = 8.98" for RMAT 50-yr event
Inflow = 60.39 cfs @ 12.27 hrs, Volume= 15.431 af
Primary = 60.39 cfs @ 12.27 hrs, Volume= 15.431 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: 1L



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Parcel A South Runoff Area=9.702 ac 73.05% Impervious Runoff Depth=9.15"
Flow Length=362' Tc=8.5 min CN=93 Runoff=86.25 cfs 7.398 af

Subcatchment 2S: Parcel A North Runoff Area=1.352 ac 84.02% Impervious Runoff Depth=9.40"
Flow Length=79' Slope=0.0100 '/' Tc=7.6 min CN=95 Runoff=12.49 cfs 1.059 af

Subcatchment 3S: Parcel C Runoff Area=9.563 ac 85.44% Impervious Runoff Depth=9.40"
Flow Length=278' Tc=7.8 min CN=95 Runoff=87.76 cfs 7.487 af

Reach 1R: 24" Drain from FM Avg. Flow Depth=1.30' Max Vel=5.95 fps Inflow=12.85 cfs 7.399 af
24.0" Round Pipe n=0.013 L=460.0' S=0.0057 '/' Capacity=17.01 cfs Outflow=12.85 cfs 7.399 af

Reach 2R: TDC 48" Drain Avg. Flow Depth=1.13' Max Vel=7.05 fps Inflow=20.55 cfs 8.457 af
48.0" Round Pipe n=0.013 L=887.0' S=0.0068 '/' Capacity=118.14 cfs Outflow=20.51 cfs 8.457 af

Pond 1P: Par A South Detention Peak Elev=11.35' Storage=2.152 af Inflow=86.25 cfs 7.398 af
Outflow=12.85 cfs 7.399 af

Pond 2P: Par A North Detention Peak Elev=17.81' Storage=0.193 af Inflow=12.49 cfs 1.059 af
Outflow=7.93 cfs 1.058 af

Pond 3P: Par C Detention Peak Elev=14.69' Storage=2.117 af Inflow=87.76 cfs 7.487 af
Outflow=40.57 cfs 7.487 af

Link 1L: 1L Inflow=61.02 cfs 15.944 af
Primary=61.02 cfs 15.944 af

Total Runoff Area = 20.617 ac Runoff Volume = 15.943 af Average Runoff Depth = 9.28"
20.48% Pervious = 4.223 ac 79.52% Impervious = 16.394 ac

Summary for Subcatchment 1S: Parcel A South

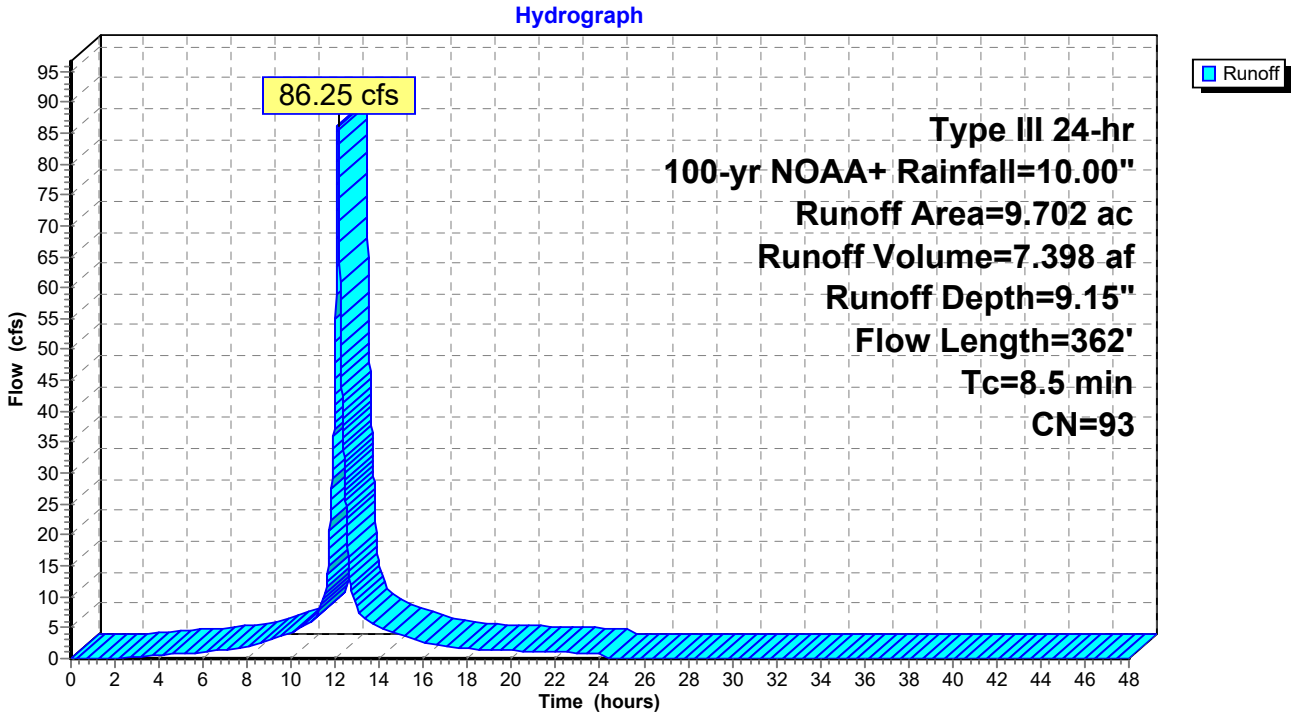
Runoff = 86.25 cfs @ 12.12 hrs, Volume= 7.398 af, Depth= 9.15"
Routed to Pond 1P : Par A South Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr NOAA+ Rainfall=10.00"

Area (ac)	CN	Description
7.087	98	Paved parking, HSG D
2.615	80	>75% Grass cover, Good, HSG D
9.702	93	Weighted Average
2.615		26.95% Pervious Area
7.087		73.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0240	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
2.3	150	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	162	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.5	362	Total			

Subcatchment 1S: Parcel A South



Summary for Subcatchment 2S: Parcel A North

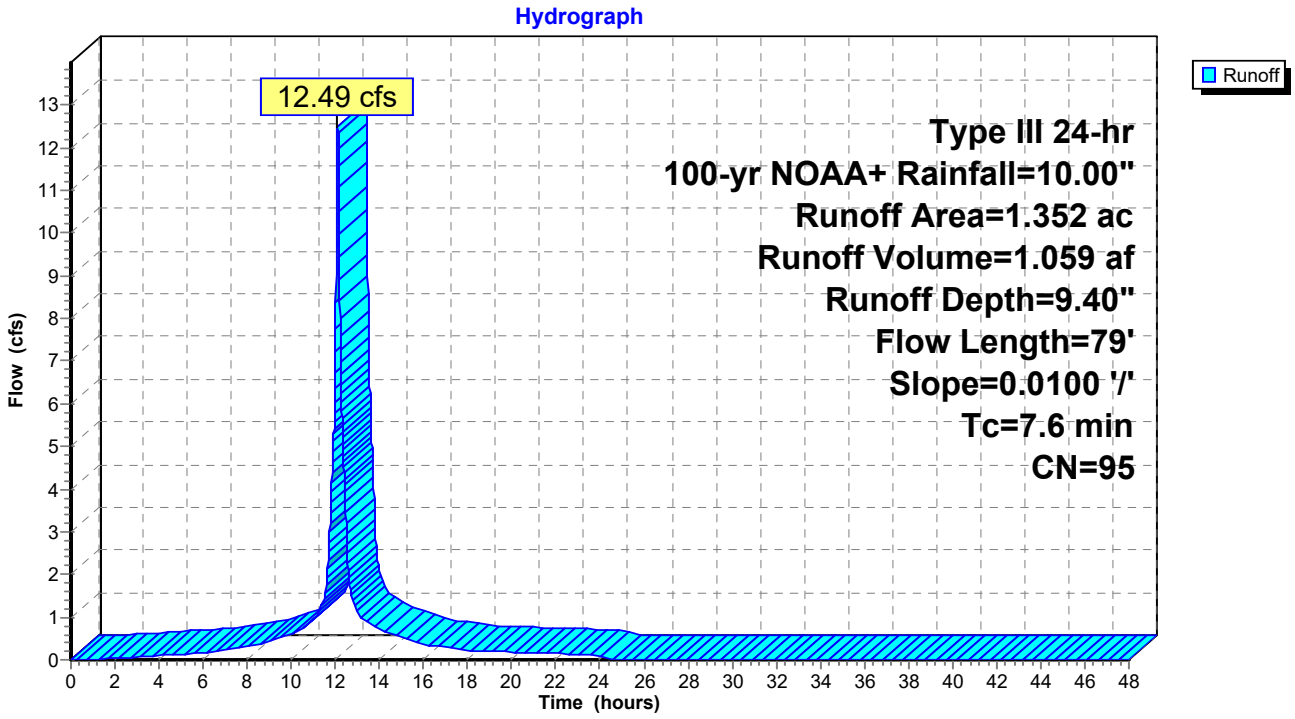
Runoff = 12.49 cfs @ 12.10 hrs, Volume= 1.059 af, Depth= 9.40"
Routed to Pond 2P : Par A North Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr NOAA+ Rainfall=10.00"

Area (ac)	CN	Description
1.136	98	Paved parking, HSG D
0.216	80	>75% Grass cover, Good, HSG D
1.352	95	Weighted Average
0.216		15.98% Pervious Area
1.136		84.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	48	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
0.3	31	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	79	Total			

Subcatchment 2S: Parcel A North



Summary for Subcatchment 3S: Parcel C

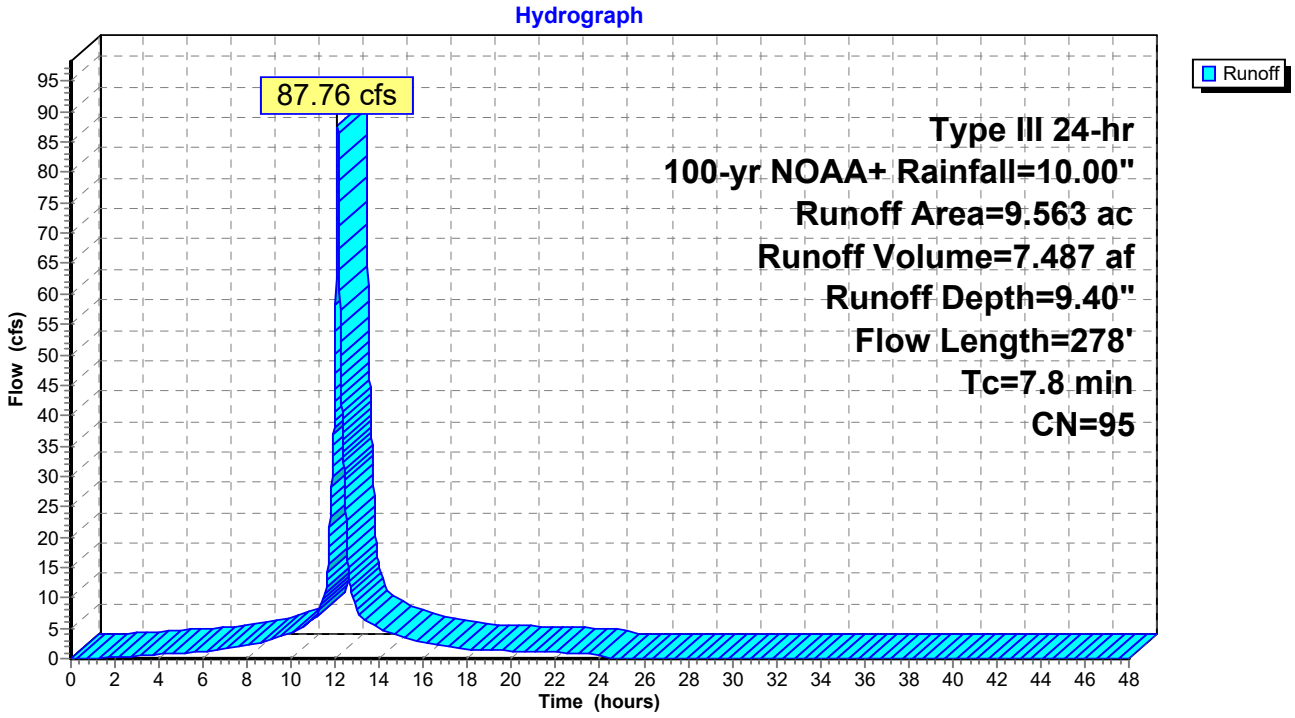
Runoff = 87.76 cfs @ 12.11 hrs, Volume= 7.487 af, Depth= 9.40"
Routed to Pond 3P : Par C Detention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr NOAA+ Rainfall=10.00"

Area (ac)	CN	Description
8.171	98	Paved parking, HSG D
1.392	80	>75% Grass cover, Good, HSG D
9.563	95	Weighted Average
1.392		14.56% Pervious Area
8.171		85.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.14"
0.5	32	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	196	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.8	278	Total			

Subcatchment 3S: Parcel C



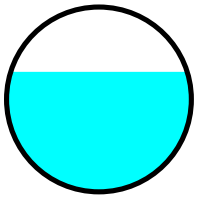
Summary for Reach 1R: 24" Drain from FM

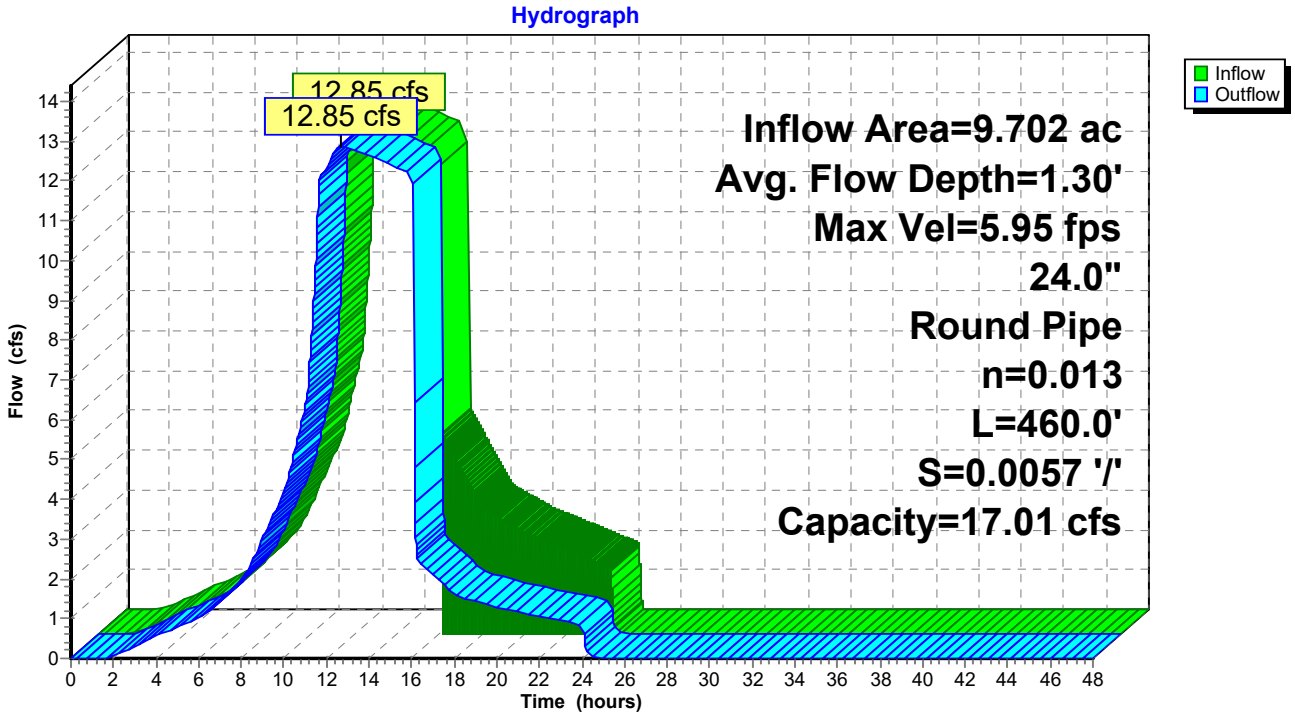
Inflow Area = 9.702 ac, 73.05% Impervious, Inflow Depth = 9.15" for 100-yr NOAA+ event
Inflow = 12.85 cfs @ 12.64 hrs, Volume= 7.399 af
Outflow = 12.85 cfs @ 12.66 hrs, Volume= 7.399 af, Atten= 0%, Lag= 1.2 min
Routed to Reach 2R : TDC 48" Drain

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 5.95 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 3.58 fps, Avg. Travel Time= 2.1 min

Peak Storage= 994 cf @ 12.66 hrs
Average Depth at Peak Storage= 1.30' , Surface Width= 1.91'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 17.01 cfs

24.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 460.0' Slope= 0.0057 '/'
Inlet Invert= 14.20', Outlet Invert= 11.60'





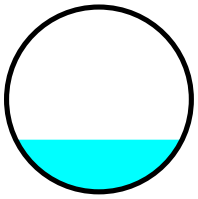
Summary for Reach 2R: TDC 48" Drain

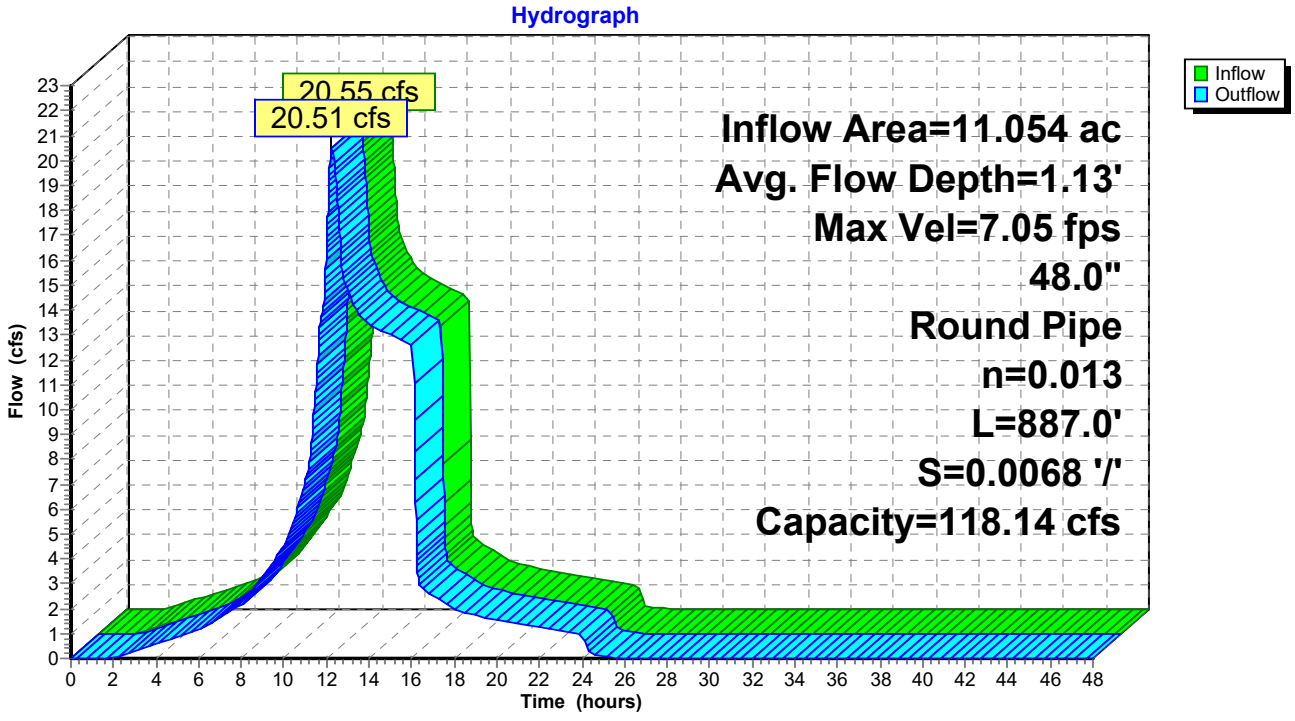
Inflow Area = 11.054 ac, 74.39% Impervious, Inflow Depth = 9.18" for 100-yr NOAA+ event
Inflow = 20.55 cfs @ 12.22 hrs, Volume= 8.457 af
Outflow = 20.51 cfs @ 12.25 hrs, Volume= 8.457 af, Atten= 0%, Lag= 1.8 min
Routed to Link 1L : 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 7.05 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 2.35 fps, Avg. Travel Time= 6.3 min

Peak Storage= 2,580 cf @ 12.25 hrs
Average Depth at Peak Storage= 1.13' , Surface Width= 3.60'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 118.14 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 887.0' Slope= 0.0068 '/'
Inlet Invert= 11.50', Outlet Invert= 5.50'





Summary for Pond 1P: Par A South Detention

Inflow Area = 9.702 ac, 73.05% Impervious, Inflow Depth = 9.15" for 100-yr NOAA+ event
Inflow = 86.25 cfs @ 12.12 hrs, Volume= 7.398 af
Outflow = 12.85 cfs @ 12.64 hrs, Volume= 7.399 af, Atten= 85%, Lag= 31.7 min
Primary = 12.85 cfs @ 12.64 hrs, Volume= 7.399 af
Routed to Reach 1R : 24" Drain from FM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 11.35' @ 12.64 hrs Surf.Area= 0.317 ac Storage= 2.152 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 43.8 min (806.1 - 762.3)

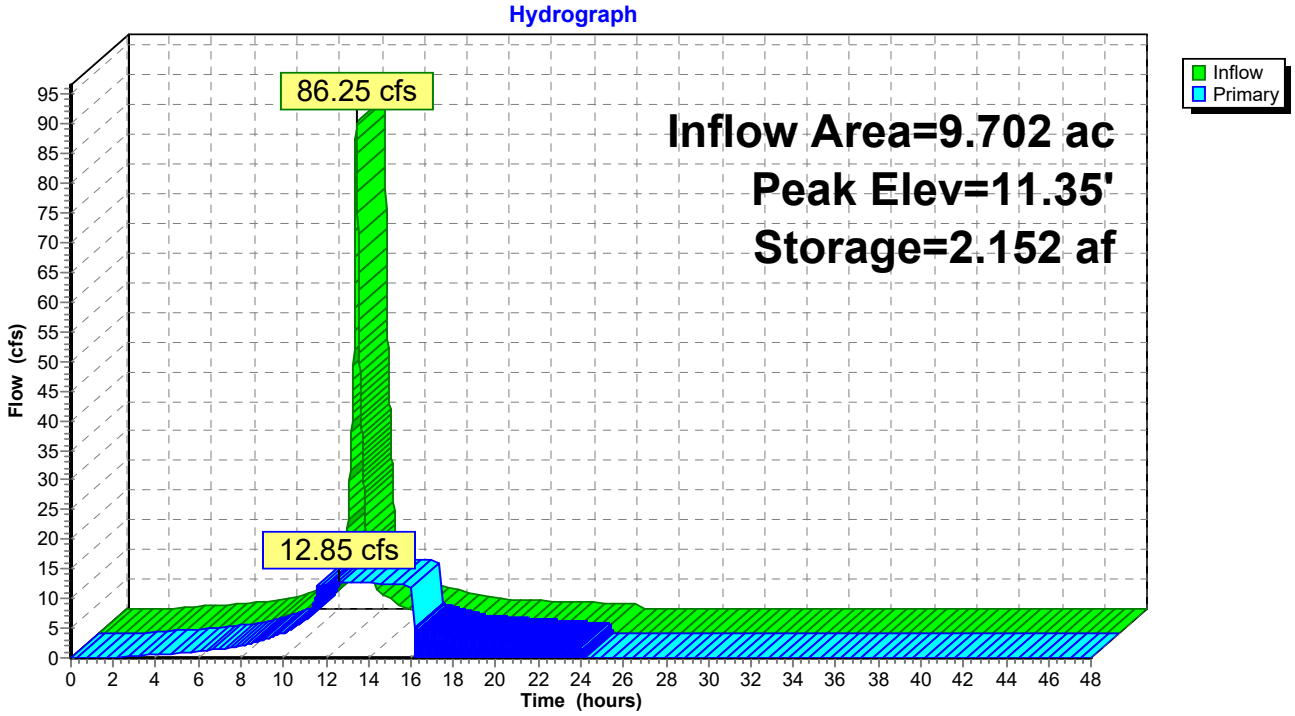
Volume	Invert	Avail.Storage	Storage Description
#1A	3.50'	0.000 af	**13.79'W x 999.77'L x 9.17'H Field A** 2.902 af Overall - 2.902 af Embedded = 0.000 af x 30.0% Voids
#2A	3.50'	2.341 af	**StormTrap ST1 DoubleTrap 8-0** x 142 Inside #1 Inside= 82.7"W x 96.0"H => 51.06 sf x 14.06'L = 718.0 cf Outside= 82.7"W x 110.0"H => 63.21 sf x 14.06'L = 888.9 cf 2 Rows adjusted for 3,604.4 cf perimeter wall 13.79' x 998.44' Core + 0.00' x 0.67' Border = 13.79' x 999.77' System
		2.341 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices (Turned on 2858 times)
#1	Primary	3.52'	**Heidra1600 X 2.00** Discharges@14.70' Turns Off<3.51' (Priority Group) 8.0" Diam. x 930.0' Long Discharge, Hazen-Williams C= 130 Flow (gpm)= 320.0 500.0 750.0 1,000.0 1,250.0 1,500.0 1,710.0 Head (feet)= 68.00 65.00 60.00 53.00 47.00 35.00 21.00 -Loss (feet)= 2.06 4.71 9.97 16.99 25.69 36.00 45.89 =Lift (feet)= 65.94 60.29 50.03 36.01 21.31 -1.00 -24.89
#2	Primary	3.52'	**Heidra1600 X 2.00** Discharges@14.70' Turns Off<3.51' (Priority Group) 8.0" Diam. x 930.0' Long Discharge, Hazen-Williams C= 130 Flow (gpm)= 320.0 500.0 750.0 1,000.0 1,250.0 1,500.0 1,710.0 Head (feet)= 68.00 65.00 60.00 53.00 47.00 35.00 21.00 -Loss (feet)= 2.06 4.71 9.97 16.99 25.69 36.00 45.89 =Lift (feet)= 65.94 60.29 50.03 36.01 21.31 -1.00 -24.89

Primary OutFlow Max=12.85 cfs @ 12.64 hrs HW=11.35' TW=15.50' (Dynamic Tailwater)
1=Heidra1600 (Pump Controls 6.43 cfs)
2=Heidra1600 (Pump Controls 6.43 cfs)

Pond 1P: Par A South Detention



Summary for Pond 2P: Par A North Detention

Inflow Area = 1.352 ac, 84.02% Impervious, Inflow Depth = 9.40" for 100-yr NOAA+ event
Inflow = 12.49 cfs @ 12.10 hrs, Volume= 1.059 af
Outflow = 7.93 cfs @ 12.21 hrs, Volume= 1.058 af, Atten= 36%, Lag= 6.5 min
Primary = 7.93 cfs @ 12.21 hrs, Volume= 1.058 af
Routed to Reach 2R : TDC 48" Drain

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 17.81' @ 12.21 hrs Surf.Area= 0.058 ac Storage= 0.193 af

Plug-Flow detention time= 48.8 min calculated for 1.058 af (100% of inflow)
Center-of-Mass det. time= 48.5 min (802.5 - 754.0)

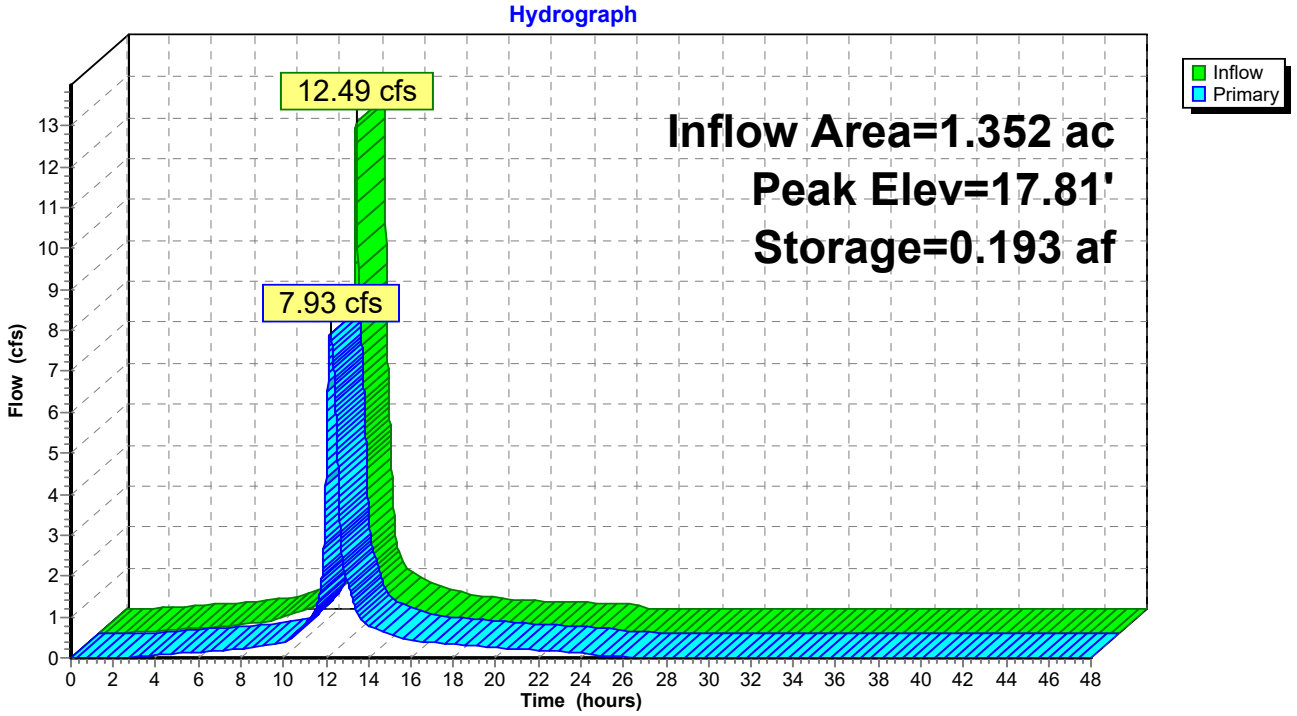
Volume	Invert	Avail.Storage	Storage Description
#1A	13.95'	0.000 af	**13.79'W x 183.81'L x 5.67'H Field A** 0.330 af Overall - 0.330 af Embedded = 0.000 af x 30.0% Voids
#2A	13.95'	0.250 af	**StormTrap ST1 SingleTrap 5-0** x 26 Inside #1 Inside= 82.7"W x 60.0"H => 29.76 sf x 14.06'L = 418.5 cf Outside= 82.7"W x 68.0"H => 39.08 sf x 14.06'L = 549.5 cf 26 Chambers in 2 Rows 13.79' x 182.81' Core + 0.00' x 0.50' Border = 13.79' x 183.81' System
		0.250 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	13.95'	**24.0" Round Culvert** L= 400.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 13.95' / 11.80' S= 0.0054 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	17.95'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	13.95'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	14.95'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	15.95'	**16.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.93 cfs @ 12.21 hrs HW=17.81' TW=12.62' (Dynamic Tailwater)
└─**1=Culvert** (Passes 7.93 cfs of 19.83 cfs potential flow)
  ├─**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 0.81 cfs @ 9.25 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 3.06 cfs @ 7.78 fps)
  └─**5=Orifice/Grate** (Orifice Controls 4.07 cfs @ 6.11 fps)

Pond 2P: Par A North Detention



Summary for Pond 3P: Par C Detention

Inflow Area = 9.563 ac, 85.44% Impervious, Inflow Depth = 9.40" for 100-yr NOAA+ event
Inflow = 87.76 cfs @ 12.11 hrs, Volume= 7.487 af
Outflow = 40.57 cfs @ 12.30 hrs, Volume= 7.487 af, Atten= 54%, Lag= 11.6 min
Primary = 40.57 cfs @ 12.30 hrs, Volume= 7.487 af
Routed to Link 1L : 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 14.69' @ 12.30 hrs Surf.Area= 0.308 ac Storage= 2.117 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 107.4 min (861.6 - 754.2)

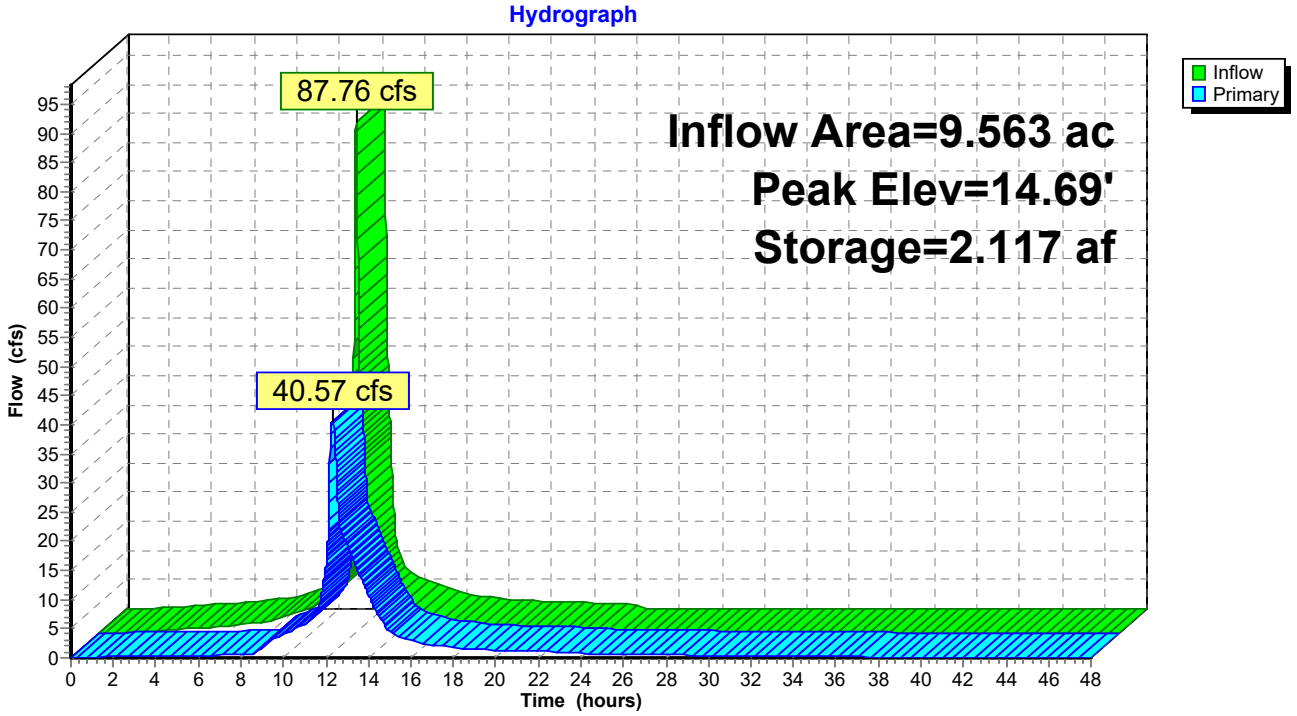
Volume	Invert	Avail.Storage	Storage Description
#1A	6.75'	0.000 af	**13.79'W x 971.65'L x 9.17'H Field A** 2.820 af Overall - 2.820 af Embedded = 0.000 af x 30.0% Voids
#2A	6.75'	2.275 af	**StormTrap ST1 DoubleTrap 8-0** x 138 Inside #1 Inside= 82.7"W x 96.0"H => 51.06 sf x 14.06'L = 718.0 cf Outside= 82.7"W x 110.0"H => 63.21 sf x 14.06'L = 888.9 cf 2 Rows adjusted for 3,508.4 cf perimeter wall 13.79' x 970.31' Core + 0.00' x 0.67' Border = 13.79' x 971.65' System
		2.275 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	6.50'	**24.0" Round Culvert** L= 46.2' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 6.50' / 5.50' S= 0.0216 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	13.75'	**8.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	6.75'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	8.75'	**48.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=40.57 cfs @ 12.30 hrs HW=14.69' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 40.57 cfs @ 12.91 fps)
  ├─**2=Sharp-Crested Rectangular Weir** (Passes < 23.42 cfs potential flow)
  ├─**3=Orifice/Grate** (Passes < 1.17 cfs potential flow)
  └─**4=Orifice/Grate** (Passes < 22.98 cfs potential flow)

Pond 3P: Par C Detention



Summary for Link 1L: 1L

Inflow Area = 20.617 ac, 79.52% Impervious, Inflow Depth = 9.28" for 100-yr NOAA+ event
Inflow = 61.02 cfs @ 12.28 hrs, Volume= 15.944 af
Primary = 61.02 cfs @ 12.28 hrs, Volume= 15.944 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: 1L