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Hyannis, Massachusetts 02601
United States
www.ghd.com



Our ref: 12591428

November 28, 2022

**Attn: MEPA Office
Secretary of Environmental Affairs MEPA Office
100 Cambridge Street, Suite 900 Boston, MA 02114**

Original sent via email

**RE: Wareham Comprehensive Wastewater Management Planning Study (Project)
Environmental Notification Form**

To Whom It May Concern,

On behalf of the Town of Wareham (Applicant), GHD is pleased to submit this Environmental Notification Form (ENF) for the above referenced Project.

The Project is a Comprehensive Wastewater Management Planning Project designed to develop a Town-wide plan for wastewater management. The Project Area is the Town of Wareham, MA. Because the Project is a study, there is no facility or construction project planned at this time. Therefore, this ENF is submitted for the planning process that is expected to lead to improved wastewater management facilities.

Please feel free to contact GHD with any questions regarding this document or Project.

Regards

A handwritten signature in black ink, appearing to read 'Anastasia Rudenko', written in a cursive style.

Anastasia Rudenko
Project Manager

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Contents

Attachments

Attachment 1	Project Description
Attachment 2	Project Area Figures
Attachment 3	Distribution List
Attachment 4	Environmental Notification Form

Attachment 1

Project Description

Attachment 1 Project Description

The Comprehensive Wastewater Management Plan (Project) is a comprehensive wastewater management planning project for the Town of Wareham, Massachusetts. The Project Area is illustrated in Figure 1. The Project will result in a Comprehensive Wastewater Management Plan and Environmental Impact Report for the Town. Previous wastewater planning efforts in the Town are described in further detail in the attached draft Plan of Study.

Because the Project is a study, there is no facility or construction project planned at this time. Therefore, this document is submitted for the planning process that is proposed for the study and the Project. The project background, proposed planning process, and outline of the plan's scope is detailed in the attached draft Plan of Study, dated November 9, 2022.

The environmental review process that is proposed in the attached draft Plan of Study will include review of the following five (5) documents that will be prepared and submitted for review:

1. Environmental Notification Form
2. Needs Assessment Report
3. Alternatives Screening Analysis Report
4. Draft Recommended Plan and Environmental Impact Report
5. Final Recommended Plan and Environmental Impact Report

These documents will be submitted to DEP, MEPA, and other interested parties for review and comment. It is hoped that this approach will promote public involvement and comment needed to build a consensus for implementation of the Recommended Plan.



2023 Comprehensive Wastewater Management Plan

Plan of Study

TOWN OF WAREHAM

November 09, 2022



The Power of Commitment

DRAFT

Project name		Wareham CWMP					
Document title		2023 Comprehensive Wastewater Management Plan Plan of Study					
Project number		12591428					
File name		Document1					
Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
[Status code]							
[Status code]							
[Status code]							

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Contents

1. Introduction	1
2. Planning Background	1
3. CWMP Plan of Study Development	2
4. Plan of Study	2
4.1 Phase I - Needs Assessment	2
4.2 Phase II - Alternatives Screening Analysis	4
Task 1 – Identification and Development of Alternatives	5
Task 2 – Screening of Alternatives	5
4.3 Phase III - Recommended Plan (Completion of the CWMP)	6
Task 1 –Alternatives Ranking	6
Task 2 – Develop Recommended Plan	6
4.4 Phase IV - Public Participation	7
4.5 Phase V - MEPA Review	7
5. Project Schedule and Costs	8
6. Scope and limitations	8

Table index

Table 1	Tentative Project Schedule	8
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Figure index

No table of figures entries found.

1. Introduction

The purpose of the Plan of Study (POS) is to provide a listing of the steps needed for the Comprehensive Management Planning Project (CWMP) in the Town of Wareham, Massachusetts (Town). Outlining these tasks allows Town department staff, regional and State agencies, and the public to understand the CWMP process and efficiently provide input to the Project. The POS has been prepared as an attachment to the Environmental Notification Form (ENF) Application Form and is expected to have the following main uses:

- Initiation of the Massachusetts Environmental Policy Act (MEPA) review process.
- Submittal for Department of Environmental Protection (DEP) review as required.
- Budgeting and scheduling tool for Comprehensive Wastewater Management Planning.
- Development of public education and outreach materials throughout the Project.

This document was prepared in accordance with the guidelines provided in the 'Guide to Comprehensive Wastewater Management Planning', prepared by the Department of Environmental Protection Bureau of Municipal Facilities and dated January 1996.

2. Planning Background

The Town of Wareham initiated their last wastewater planning effort in the late 1990s with the completion occurring in early 2000s. The Town of Wareham Comprehensive Wastewater Management Plan/ Single Environmental Impact Report was completed in March 2002.

The 2002 Comprehensive Wastewater Management Plan (CWMP) recommended the upgrade to the existing wastewater treatment facility. Construction of the Wareham WPCF upgrade was completed in 2005. Some of the equipment at the facility is approaching the end of its design life and the facility is approaching its flow and load capacity.

Since the completion of the 2002 CWMP, a Massachusetts Estuary Project (MEP) report was completed for the Wareham River, Broad Marsh and Mark's Cover Embayment system. However, Total Maximum Daily Loads (TMDL) for Total Nitrogen have not yet been issued for this embayment system.

This new CWMP effort will build on the 2002 CWMP where appropriate to develop a plan that addresses the nutrient-related needs of the Town, as identified in the MEP reports, as well as other factors related to growth and condition of facilities. The following planning documents are an excerpt of what will be reviewed as part of this new CWMP effort:

- "Town of Wareham Comprehensive Wastewater Management Plan/ Single Environmental Impact Report" prepared by CDM, dated March 2002.
- "'Massachusetts Estuaries Project Linked Watershed-Embayment Model to Determine Critical Nitrogen Loading Thresholds for the Wareham River, Broad Marsh and Mark's Cover Embayment system, Wareham, Massachusetts, Final Updated Report' prepared by the University of Massachusetts Dartmouth School of Marine Science and Technology (SMAST) and the Massachusetts Department of Environmental Protection, dated May 2014.
- In addition, reports on various other topics will be considered including:
 - WPCF evaluations
 - I&I study
 - Regionalization efforts

3. CWMP Plan of Study Development

The Plan of Study provides the Town of Wareham with an approach and outline for the Comprehensive Wastewater Management Planning (CWMP) effort. A Comprehensive Planning effort typically consists of the following components:

- Needs Assessment – to identify areas where problems, concerns, or impacts may occur; where improvements are required; and to establish background on the planning area.
- Screening Analysis – where alternatives are identified and screened in the effort to develop the last component, a Recommended Plan.
- Recommended Plan – sometimes combined with an Environmental Impact Report or Statement, identifies the recommendations of the planning effort, costs, schedule, and mitigation measures.

Providing an outline of these tasks allows Town department staff, regional and State agencies, and the public to understand the next steps in the planning process and efficiently provide input to the project. The Wareham CWMP will build on the efforts conducted for the 2002 CWMP effort. The information compiled during the original planning effort will be updated, where appropriate, to reflect current conditions; and nutrient-related needs will be incorporated into the planning effort.

4. Plan of Study

The following presents a recommended outline for the CWMP, and is divided into the following five (5) phases:

Phase I – Needs Assessment

Phase II – Alternatives Screening Analysis

Phase III – Recommended Plan, Completion of CWMP

Phase IV – Public Participation

Phase V – MEPA Review

4.1 Phase I - Needs Assessment

Following acceptance of the ENF documents, work will proceed with this phase, which consists of evaluations of the existing conditions and the development of future wastewater projections. The comparison of these two conditions will define the wastewater needs of the study areas. This phase will result in the preparation of a Needs Assessment Report which will be submitted to DEP and MEPA for review and comment.

The following topics will be covered as part of the Needs Assessment Report:

1. Project Introduction
 - a. Project Focus and Scope
 - b. Discussion on Town Issues, Goals, and Vision
 - c. Planned Review Process
2. Project/Town Background Update
 - a. Definition of the Planning Area
 - i. Site Location
 - ii. Town Planning History

- iii. Known Regional Planning Efforts
 - iv. Population and Demographic Information in Planning Area
 - v. History of Nutrient Removal Related Projects
3. History of existing facilities including WWTF site, description of upgrades, services areas, and major historical planning documents.
 - a. Summary of Previous Planning Efforts
 - b. 2002 CWMP
 - c. Wastewater Treatment Facility evaluations
 - d. Collection system evaluations
 - e. Permit History
 4. Documentation of Planning and Evaluation Criteria to be used in the CWMP including:
 - a. Definition of Planning Period
 - b. Discussion of survey datum and flood levels. Discussion of new Federal Emergency Management Agency (FEMA) flood maps and possible impacts on existing facilities.
 - c. Discussion of Current and Anticipated Future Permit Limits.
 - d. Discussion of environmental and sustainability considerations including, but not limited to, optimizing existing infrastructure, energy efficiency, and alternative energy (with reference to the Commonwealth's Sustainable Development Principles, Water Policy, Water Conservation Standards, and Greenhouse Reduction Policy).
 5. Existing conditions, including a review and/or condition assessment of the following:
 - a. Natural Environment
 - i. Climate and Sea Level Rise
 - ii. Soils
 - iii. Water and Water Quality (hydrology, surface water, groundwater, water table etc.)
 - iv. Habitats (endangered species, wetlands, vernal pools)
 - b. Manmade Environment
 - i. Demographics analysis for today and future projections to the planning year.
 - ii. Areas of the Town utilizing individual septic systems and their approximate age and condition. This shall include an assessment of the suitability of areas of the Town for such systems based on such factors as soils and nutrient impacts, if any. It shall also include a review of pump out records.
 - iii. Areas of the Town utilizing innovative/alternative septic systems (I/A systems) and their approximate age and condition.
 - iv. Properties with private WWTF and effluent discharge permits. This will include summaries of wastewater flows and effluent quality as available from MassDEP.
 - v. Water quality problems in surface waters and drinking waters related to wastewater and treated effluent discharges to the groundwater and to surface waters.
 - vi. Areas of Need – Consider areas of need identified:
 - A. In past planning projects: Bourne, Agawam Beach, and Mayflower Ridge
 - B. By the Town during the first 60 days of the project and shall include up to ten (10).
 - vii. Existing Town-wide land use and zoning considerations.
 - c. Wastewater Infrastructure
 - i. Collection System and Pumping Stations – collection system condition shall be ascertained from Town personnel and the pump station evaluation shall include pump stations operated by the Town Wastewater Department.
 - A. SSO history

- ii. Discussion of anticipated sea level rise impacts on existing infrastructure (collection and treatment)
 - d. Wastewater (liquid) Treatment Facilities - description and design capacity for major existing WWTF facility processes
 - e. Effluent Disposal Facilities, including
 - i. From the 2021 facility evaluation
 - ii. River discharge options
 - iii. Other evaluations
 - f. Sludge Management Facilities (residual treatment, handling, and disposal)
 - g. Septage Treatment and Disposal
 - h. Operations and Maintenance including staffing, maintenance procedures, operating procedures for emergencies, and methods of finance.
 - i. Identify current staffing and discuss with operational staff any current needs, possible system deficiencies, and items needing improvement beyond routine maintenance.
 - ii. Review existing Asset Management systems or current practices and identify possible alternatives for the Town to consider.
 - i. Assessment of No Action Alternative (future conditions with no action taken).
6. Flows and Loads, including:
- a. Discussion of the general service area, plant rating, and current and future conditions in the Town. Discussion shall include a population projection discussion (growth characteristics).
 - b. Review existing flows and loads including septage. Develop a flow balance of users connected to the WWTF and their current water use.
 - i. Establish Town Existing Wastewater Flows, if needed (and if data is available).
 - A. Collect water use data from the Town.
 - B. Develop methodology for estimating wastewater flows.
 - I. Method 1—Wastewater flow allocation using Title 5 flows.
 - II. Method 2—Wastewater flow allocation development using water meter data using known similar establishments.
 - C. Develop draft wastewater flow memorandum.
 - D. Submit draft memorandum to DEP.
 - E. Update draft memorandum based on compiled comments from Owner and DEP.
 - c. Discussion of Compliance History
 - d. Estimate land use growth in the Town during the 20-year planning period. The analysis will be based on current zoning, land use, available plans, and comments from the Town.
 - e. Estimate existing and projected water consumption in the Town for the 20-year planning period. This estimate will be for properties served by public water supplies and private wells.
 - f. Project future wastewater flows and loads including septage for the 20-year planning period.
7. Summary of Needs
- a. Outline of the elements of the Needs Assessment that will be the subject of Phase II.

The Phase I – Draft Needs Assessment Report will be revised based on comments from the Town.

4.2 Phase II - Alternatives Screening Analysis

This phase will identify and screen wastewater alternatives to meet the needs of the planning areas established in the Needs Assessment Report. With input from the Town, potential alternative technologies and management strategies

will be screened to identify up to three alternatives including the “No Action Alternative” for further evaluation. This phase will culminate in the preparation of an Alternatives Screening Analysis Report to be submitted for DEP review and comment.

The main tasks for this phase are listed as follows:

Task 1 – Identification and Development of Alternatives

The evaluation will include the following:

- A baseline conditions alternative which will determine the level of treatment possible with optimum performance of existing wastewater collection, treatment, and disposal facilities. Included will be an evaluation of septage management, and repair or upgrade of on-site systems within the planning area.
- Identify service area where on-site systems are inadequate.
- Identify and develop decentralized treatment options for each service area including:
 - Alternative treatment systems (PRBs, shellfish, etc.)
 - Cluster systems
 - Package wastewater treatment plants
 - Combinations of the above
- Evaluate feasibility of centralized treatment options for each service area including:
 - Improvement in operation of existing facility (baseline conditions alternative).
 - Expansion/upgrade of existing facility including nitrogen control strategies.
 - Regional solutions – identify and develop options for wastewater treatment and residuals disposal and discuss costs and environmental benefits for each. Include alternatives for reuse and contractual services for processing and disposal.
- Identify collection system alternatives for centralized and decentralized options.
- Identify flow and load reduction measures, including water conservation.

Task 2 – Screening of Alternatives

2.1. Develop an evaluation matrix screening methodology to screen the various alternatives locations and technologies for wastewater treatment and disposal, including residuals disposal. The matrix will include the following factors:

- Relative Capital Costs
- Relative Operations and Maintenance Costs
- Flexibility
- Environmental considerations including energy use and sensitive environmental receptors.
- Effluent Quality
- Regulatory Requirements
- Potential for Air Emissions/Odors
- Land Requirements
- Anticipated Public Acceptance
- Ease of Implementation
- Maintenance Requirements and Complexity of Operation

- 2.2. Development of Alternatives—To include “no action”, “fix it first”, and, if appropriate, consideration of innovative approaches (decentralized systems, wastewater reuse) and regional solutions. With input from the Town, up to three (3) alternatives will be selected for further evaluation including:
 - i) No action.
 - ii) Up to three upgrade options for the existing water pollution control facility (at intervals of 2.0, 2.5 and 3.0 mgd average annual flow).
 - iii) One remote decentralized wastewater treatment facility.
 - iv) I/A systems
- 2.3. Submit the Draft Screening Alternatives Report to MEPA for review and comments.
- 2.4. Revise Draft Report based on public comments, and develop and submit Final Report to the Town.

4.3 Phase III - Recommended Plan (Completion of the CWMP)

Task 1 –Alternatives Ranking

Develop a method of ranking the alternatives which is based on the evaluation of the following:

- Significant environmental impacts;
- Monetary costs;
- Implementation capability;
- Regulatory constraints;
- Public acceptance;
- Reliability;
- Flexibility;
- Optimization of existing facilities; and
- Any other considerations deemed applicable.

Task 2 – Develop Recommended Plan

Utilizing input from the Town, develop a recommended plan. This plan will be detailed in the Comprehensive Wastewater Management Plan. The detailed description of the recommended plan will include:

- Estimated wastewater flows and loads.
- Recommended treatment processes and expected performance.
- Proposed facility and system component layouts.
- Recommended effluent disposal methods.
- Recommended residual disposal plan, as appropriate for septage, scum, grease, grit, screenings, and sludge.
- Detailed planning level capital cost estimate.
- Detailed Operation and Maintenance cost estimates.
- Recommendations for future monitoring and enforcement programs.
- Descriptions of legal/management/institutional issues and associated costs.
- Description of financing and user charge recommendations, including public and private Township, operation, and operations responsibilities.
- Recommended modifications to Town regulations, if necessary.

- A project implementation schedule for the recommended plan including detailed schedule for design and construction of wastewater facilities (or phased construction of facilities).

The Phase III – Draft Recommended Plan will be revised in accordance with Town comments.

4.4 Phase IV - Public Participation

This phase is the coordination of the public review process that proceeds throughout the whole project.

The public review process will contain items needed to properly disseminate information to the Town public. Proper public education is needed to ensure that the recommended plan will be approved by Town Meeting and by the voters in any Proposition 2½ override referendums.

The purpose of this phase is to create and coordinate a public review process which will inform project participants and the Town public, and facilitate the recommended plan's approval by Town Meeting and Town voters.

The main form of public participation for this project is expected to be periodic updates to the Sewer Commission, including a presentation when the plan is finalized. MassDEP will be notified of the date of each presentation.

State guidelines require at a minimum one Public Meeting and one Public Hearing be held for the project. Proposed meeting and hearings for the project are as follows:

- Draft Plan of Study public meeting planned date: TBD:
- Draft Needs Assessment Report public meeting date: TBD.
- Draft Alternatives Screening Analysis Report and Wastewater Recommended Plan/Environmental Impact Report public hearing date: TBD

4.5 Phase V - MEPA Review

This phase is the coordination of the environmental and public review process that proceeds throughout the whole project.

The environmental review process needs to follow the Massachusetts Environment Policy Act (MEPA) review process. The purpose of this phase is to create and coordinate an environmental and public review process which will inform project participants and the Town public, and facilitate the recommended plan's approval by Town Meeting and Town voters.

The approach for the environmental review process is to file the Plan of Study as an attachment to the Environmental Notification Form (ENF) document to initiate the MEPA Review Process. Subsequent environmental evaluations will be summarized in the Draft Comprehensive Wastewater Management Plan and Draft Environmental Impact Report (DCWMP/DEIR) and in the Final Comprehensive Wastewater Management Plan and Environmental Impact Report (FCWMP/FEIR).

The main tasks of this phase are listed below:

1. Create a Working Group for Project Review and Public Outreach - this Working Group will be established in the Plan of Study phase and will meet throughout the project to review project documents and provide project input. This group will also assist with the public participation program.
2. Prepare and conduct a public participation program.
3. Submit and coordinate the public review of the Environmental Notification Form.
4. Submit and coordinate the public review of the DCWMP/DEIR.
5. Submit and coordinate the public review of the FCWMP/FEIR.
6. Coordinate the needed public meetings and hearings to comply with State and regional regulations as well as meet the informational needs of the community.

5. Project Schedule and Costs

The tentative project schedule is outlined below. The tentative schedule may vary based on the public participation component of the project.

Table 1 Tentative Project Schedule

Milestone	Tentative Date
Plan of Study Public Meeting and Submission to MEPA	November 2022
Needs Assessment Public Meeting and submission to MEPA	February 2023
Alternatives Evaluation and Recommended Plan Public Meeting	June 2023
Alternatives Evaluation and Recommended Plan Vote	August 2023
Alternatives Evaluation and Recommended Plan Submission to MEPA	August 2023

The Town allocated \$479,000 for the development of the Comprehensive Wastewater Management Plan.

6. Scope and limitations

This report: has been prepared by GHD for TOWN OF WAREHAM and may only be used and relied on by TOWN OF WAREHAM for the purpose agreed between GHD and TOWN OF WAREHAM as set out in section [00] of this report.

GHD otherwise disclaims responsibility to any person other than TOWN OF WAREHAM arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

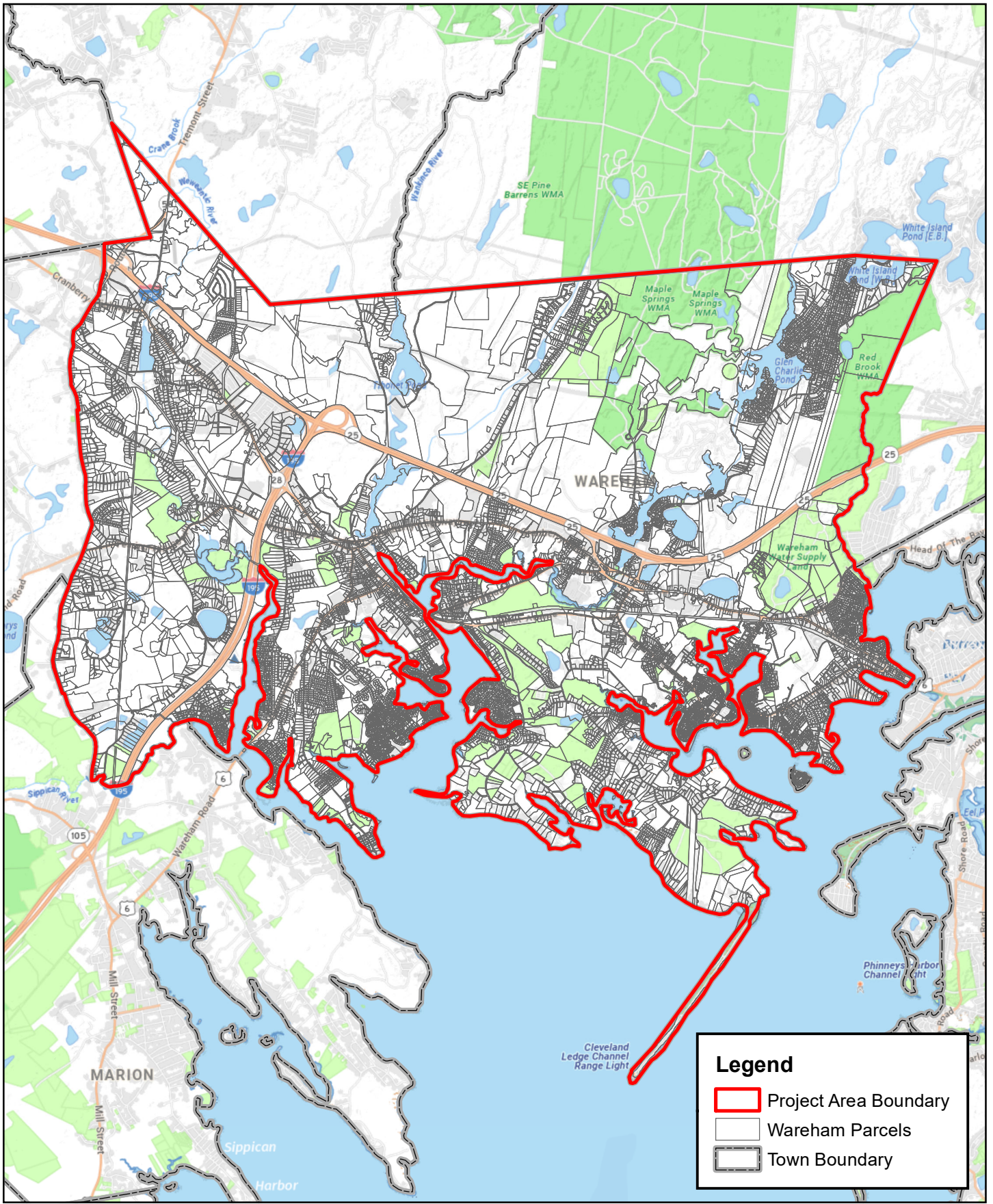
The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) [00] of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

Accessibility of documents

If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.

Attachment 2

Project Area Figures

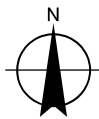


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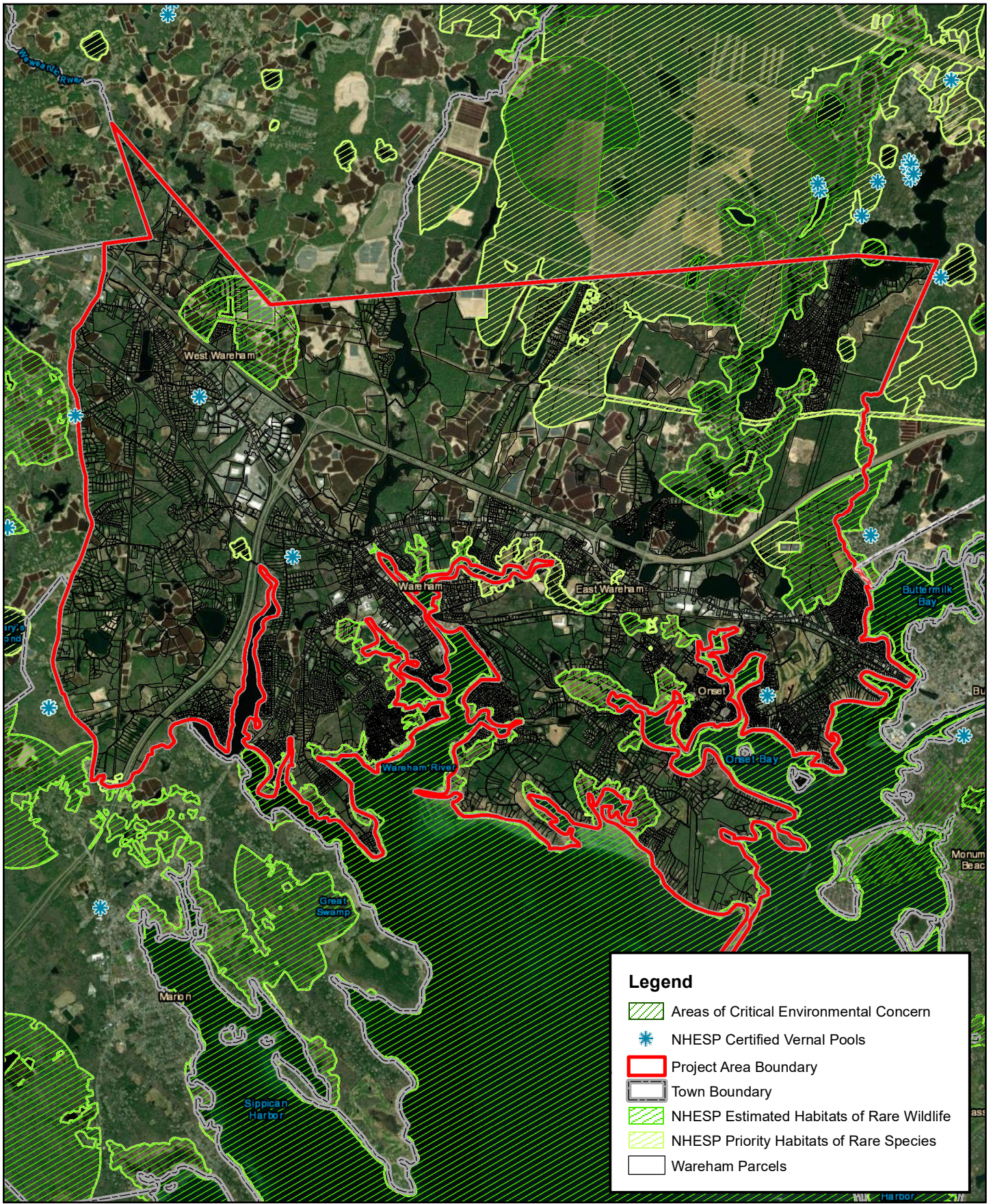
TOWN OF FALMOUTH, MA
MEP ENF SUBMISSION

PROJECT AREA BOUNDARY

Project No. 12591428
Revision No. -
Date 11/19/2022

FIGURE 1

Data source: MassGIS
MassGIS, NHESP. Created by: jjobrien



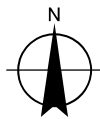
Legend

- Areas of Critical Environmental Concern
- NHESP Certified Vernal Pools
- Project Area Boundary
- Town Boundary
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Priority Habitats of Rare Species
- Wareham Parcels

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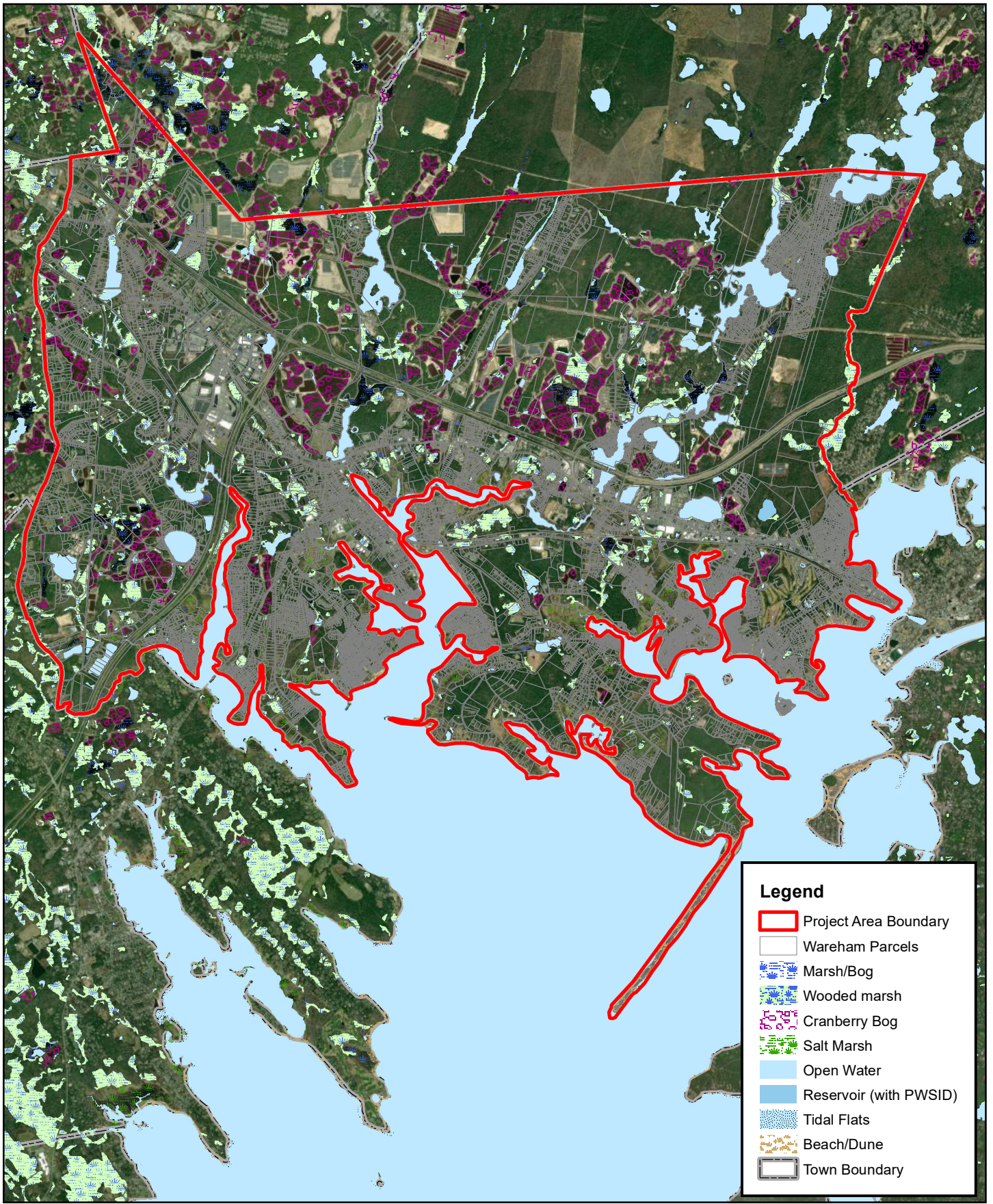


TOWN OF WAREHAM, MASSACHUSETTS
MEP ENF SUBMISSION

**RARE SPECIES HABITATS/
AREAS OF CRITICAL
ENVIRONMENTAL CONCERN**

Project No. 12591428
Revision No. -
Date 11/19/2022

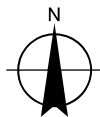
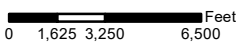
FIGURE 2



Legend

- Project Area Boundary
- Wareham Parcels
- Marsh/Bog
- Wooded marsh
- Cranberry Bog
- Salt Marsh
- Open Water
- Reservoir (with PWSID)
- Tidal Flats
- Beach/Dune
- Town Boundary

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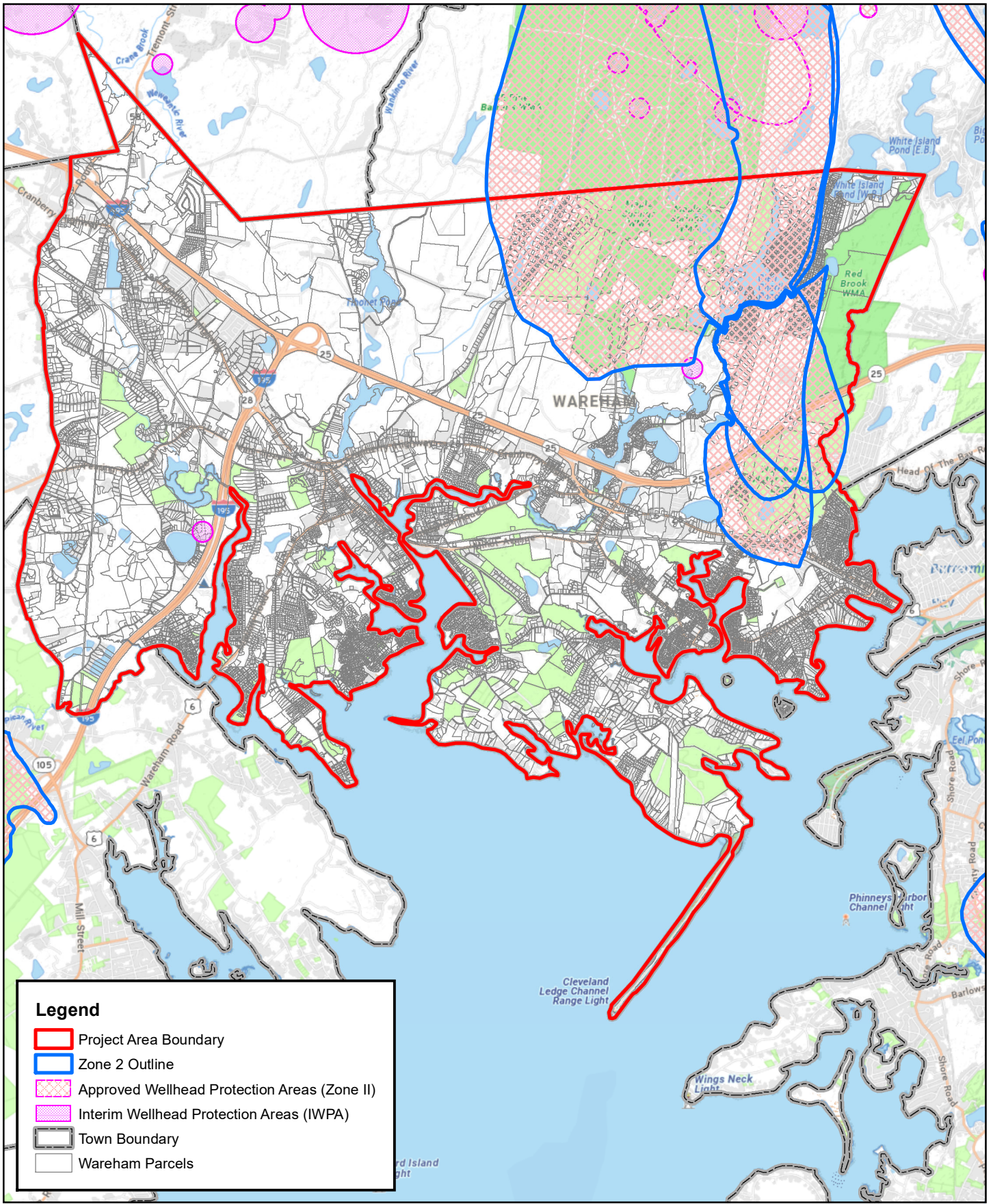
TOWN OF WAREHAM, MASSACHUSETTS
MEP ENF SUBMISSION

Project No. 12591428
Revision No. -
Date 11/19/2022

DEP WETLANDS

FIGURE 3

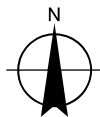
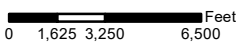
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Legend

- Project Area Boundary
- Zone 2 Outline
- Approved Wellhead Protection Areas (Zone II)
- Interim Wellhead Protection Areas (IWPA)
- Town Boundary
- Wareham Parcels

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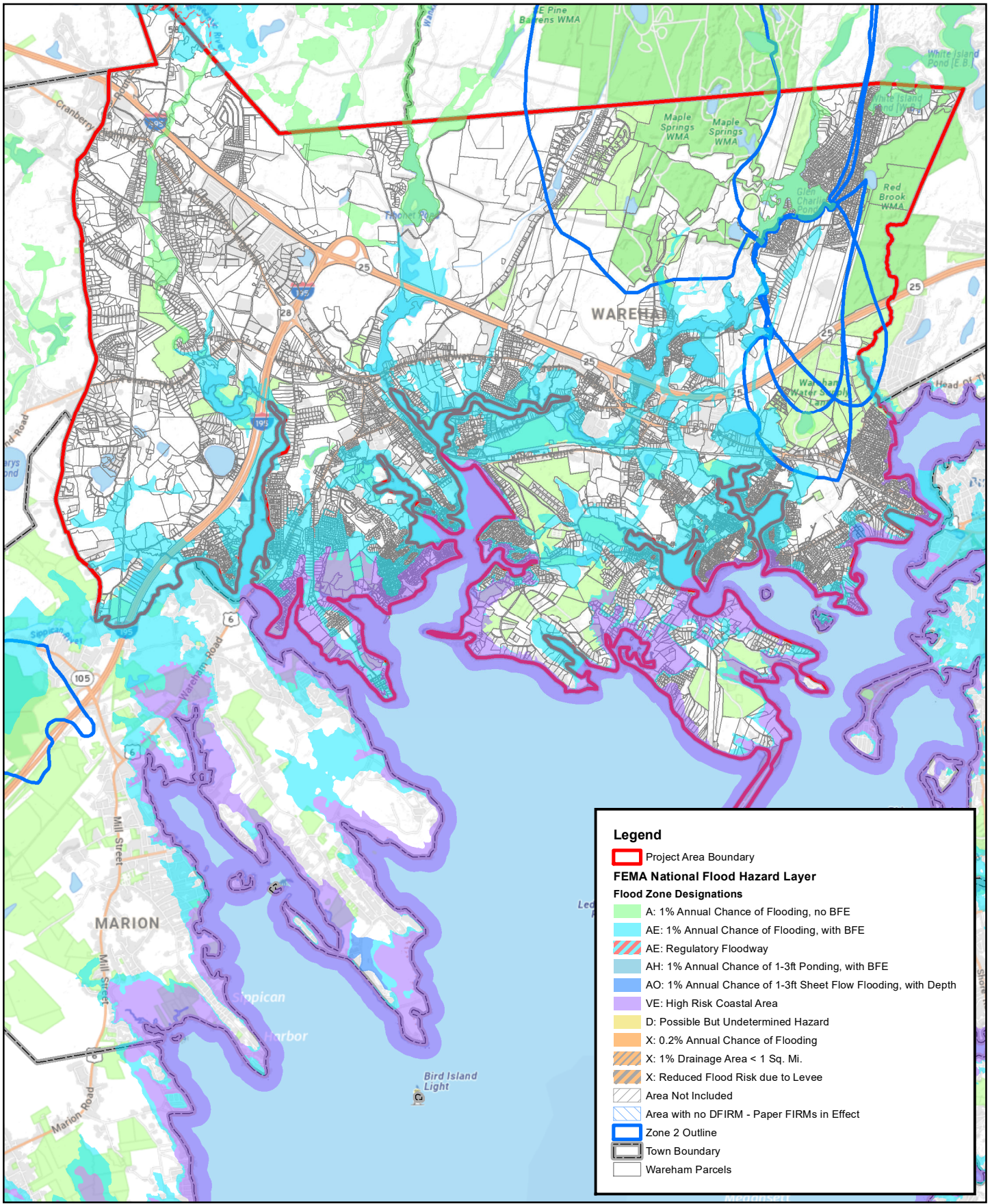
TOWN OF WAREHAM, MASSACHUSETTS
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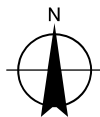
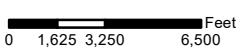
WATER SUPPLY PROTECTION AREAS

FIGURE 4

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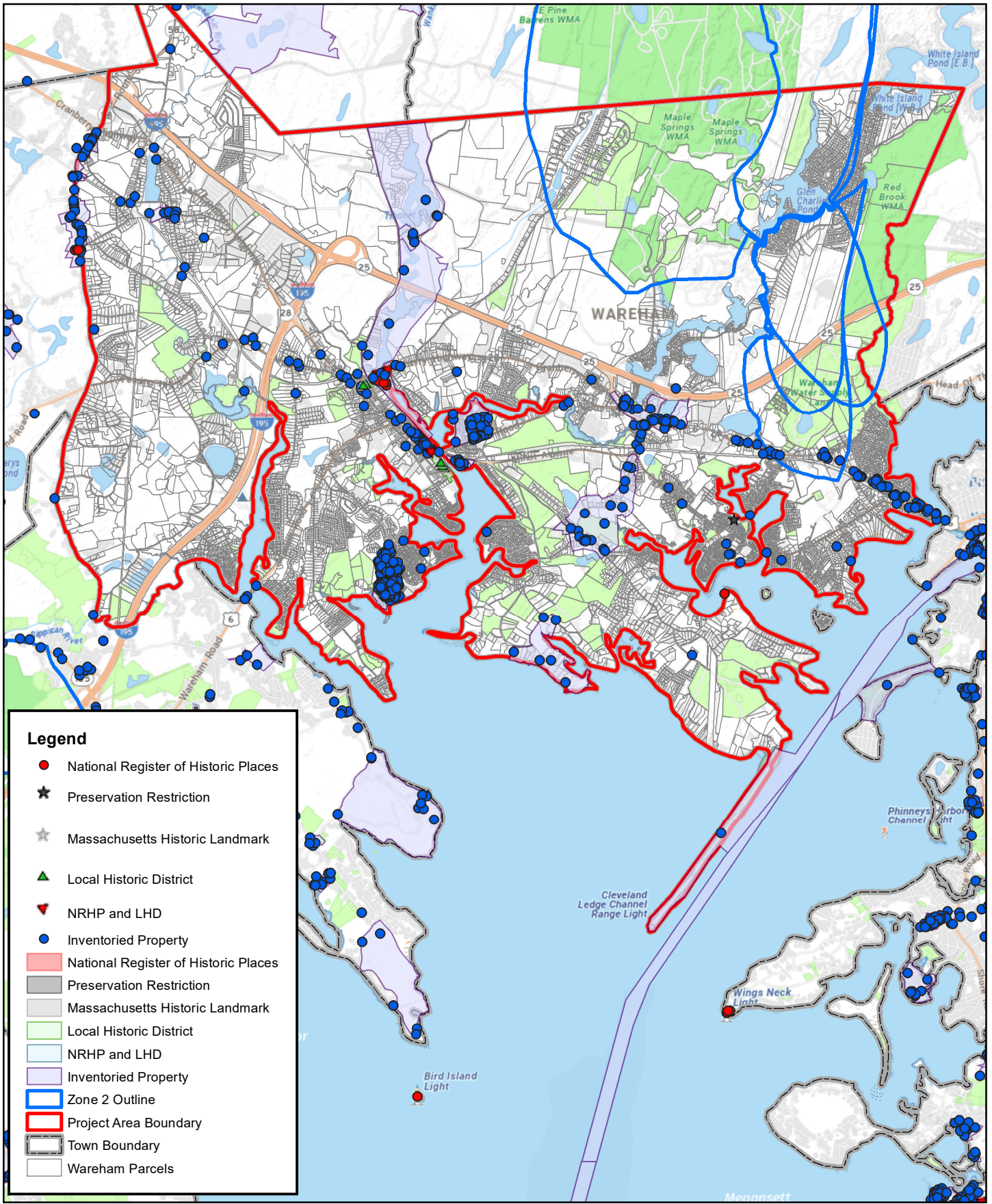
TOWN OF WAREHAM, MASSACHUSETTS
MEP ENF SUBMISSION

Project No. 12591428
Revision No. -
Date 11/19/2022

FEMA FLOOD ZONES

Map Projection: Lambert Conformal Conic
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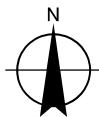
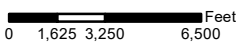
FIGURE 5



Legend

- National Register of Historic Places
- ★ Preservation Restriction
- ☆ Massachusetts Historic Landmark
- ▲ Local Historic District
- ▼ NRHP and LHD
- Inventoried Property
- National Register of Historic Places
- Preservation Restriction
- Massachusetts Historic Landmark
- Local Historic District
- NRHP and LHD
- Inventoried Property
- Zone 2 Outline
- Project Area Boundary
- Town Boundary
- Wareham Parcels

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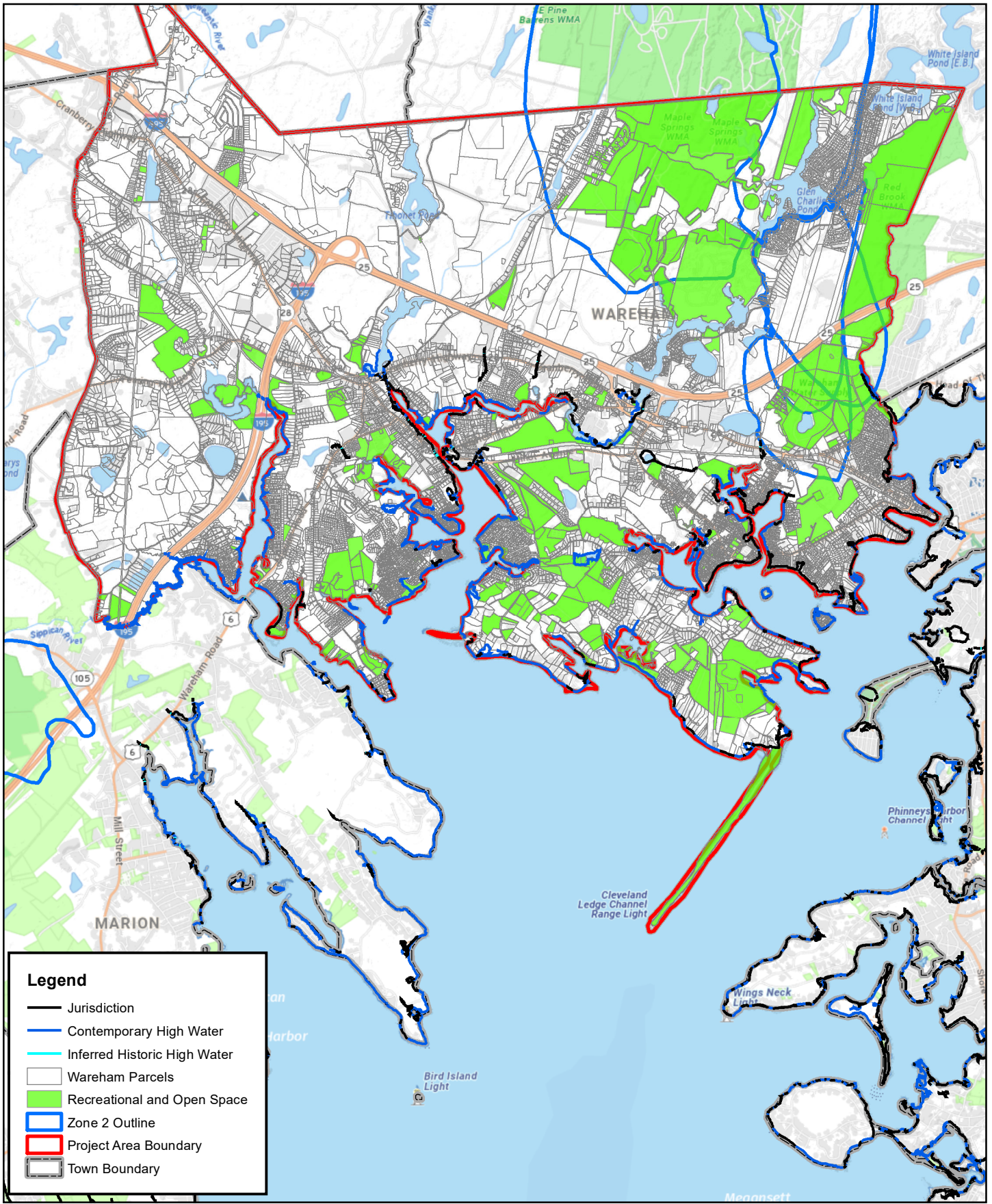
TOWN OF WAREHAM, MASSACHUSETTS
MEP ENF SUBMISSION

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Date 11/19/2022

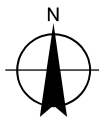
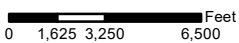
HISTORIC RESOURCES/DISTRICTS

FIGURE 6

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane Massachusetts Mainland FIPS 2001 Feet



Paper Size ANSI A



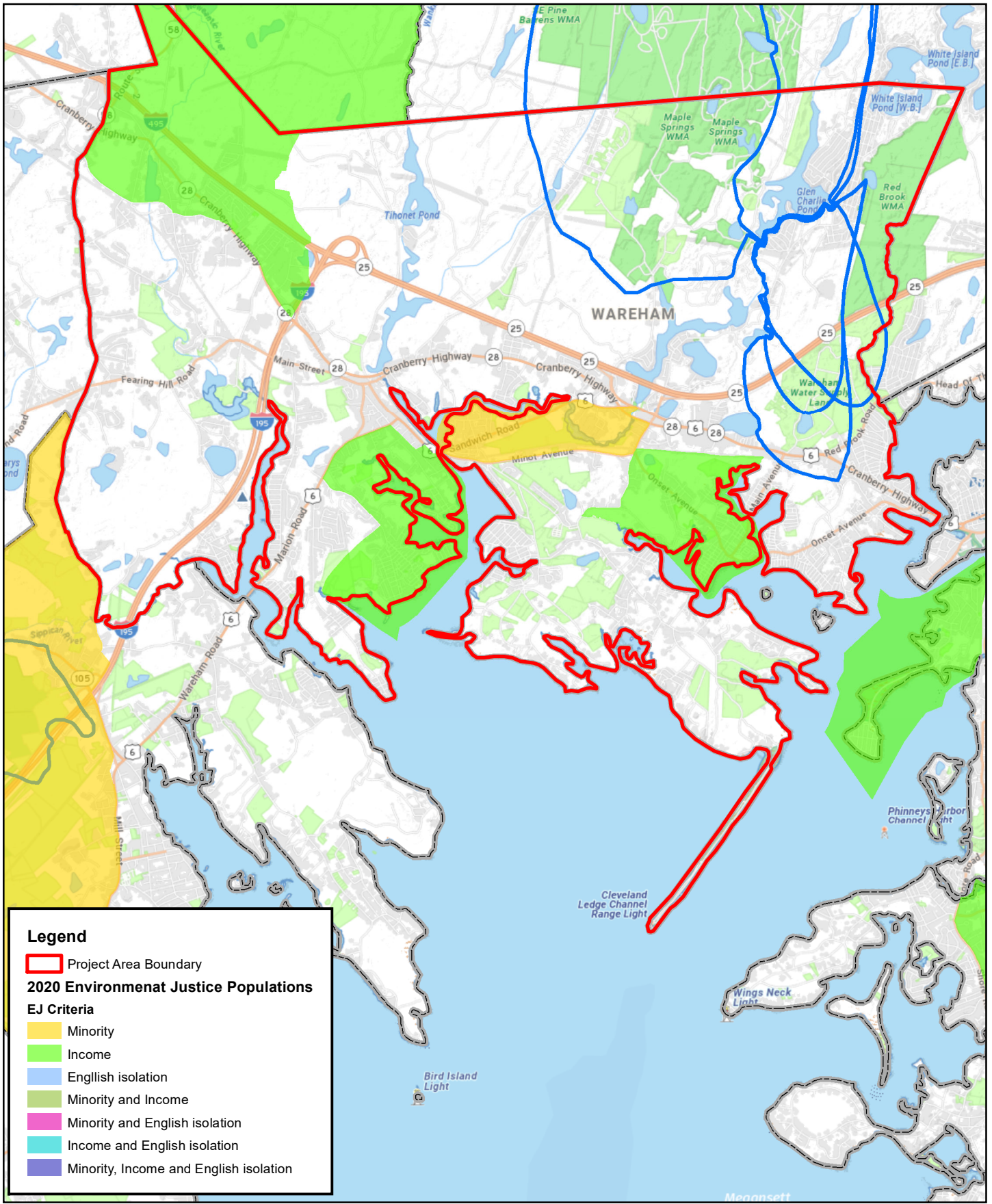
TOWN OF WAREHAM, MASSACHUSETTS
MEP ENF SUBMISSION

Project No. 12591428
Revision No. -
Date 11/19/2022

CHAPTER 91 JURISDICTIONS AND
RECREATIONAL OPEN SPACE

FIGURE 7

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane Massachusetts Mainland FIPS 2001 Feet



Legend

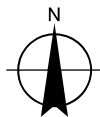
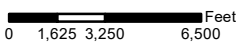
Project Area Boundary

2020 Environmental Justice Populations

EJ Criteria

- Minority
- Income
- English isolation
- Minority and Income
- Minority and English isolation
- Income and English isolation
- Minority, Income and English isolation

Paper Size ANSIA



TOWN OF WAREHAM, MASSACHUSETTS
MEP ENF SUBMISSION

**ENVIRONMENTAL JUSTICE
POPULATIONS**

Project No. 12591428
Revision No. -
Date 11/19/2022

FIGURE 8

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane Massachusetts Mainland FIPS 2001 Feet

Attachment 3

Distribution List

Attachment 3 Distribution List

A copy of the Environmental Notification Form has been sent to the following:

Secretary of Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114
Attn: MEPA Office

Department of Environmental Protection
Commissioners Office
One Winter Street
Boston, MA 02108
Attn: MEPA Coordinator

MassDEP Southeastern Regional Office
20 Riverside Drive
Lakeville, MA 02347
Attn: MEPA Coordinator

Massachusetts Department of Transportation
Public/Private Development Unit
10 Park Plaza, Suite 4160
Boston, MA 02116

MassDOT Highway District 5 Office
1000 County Street
Taunton, MA 02780
Attn: MEPA Coordinator

Massachusetts Historical Commission
The MA Archives Building
220 Morrissey Boulevard
Boston, MA 02125

Southeastern Regional Planning and Economic
Development District
88 Broadway
Taunton, MA 02780

Wareham Board of Selectmen
54 Marion Road
Wareham, MA 02571

Wareham Planning Board
54 Marion Road
Wareham, MA 02571

Wareham Conservation Commission
54 Marion Road
Wareham, MA 02571

Wareham Board of Health
54 Marion Road
Wareham, MA 02571

Wareham Main Library
59 Marion Road
Wareham, MA 02571

Massachusetts Office of Coastal Zone Management
251 Causeway Street., Suite 800
Boston, MA 02114
Attn: Project Review Coordinator

Division of Marine Fisheries – South Shore
836 South Rodney French Blvd
New Bedford, MA 02744
Attn: Environmental Reviewer

Massachusetts Department of Agricultural Resources
138 Memorial Avenue, Suite 42
West Springfield, MA 01089
Attn: MEPA Coordinator

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

Department of Conservation and Recreation
251 Causeway Street, 9th Floor
Boston, MA 02114
Attn: MEPA Coordinator

MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114
Attn: EEA EJ Director

Department of Public Health
Director of Environmental Health
250 Washington Street
Boston, MA 02108

Department of Energy Resources
100 Cambridge St., 9th Floor
Boston, MA 02114
Attn: MEPA Coordinator

Energy Facilities Siting Board
Department of Public Utilities
1 South Station, 5th floor
Boston, MA 02110
Attn: MEPA Coordinator

Attachment 4

Environmental Notification Form

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: Wareham Comprehensive Wastewater Management Planning Project		
Street Address: Wareham, Massachusetts		
Municipality: Town of Wareham	Watershed:	
Universal Transverse Mercator Coordinates:	Latitude: 41.76077 Longitude: -70.68381	
Estimated commencement date: 11/2023	Estimated completion date: 08/2023	
Project Type: Planning Study	Status of project design: 0%complete	
Proponent: Town of Wareham		
Street Address: 6 Tonys Lane		
Municipality: Wareham	State: MA	Zip Code: 02571
Name of Contact Person: Anastasia Rudenko, PE		
Firm/Agency: GHD Inc.	Street Address: 1545 Iyannough Road	
Municipality: Hyannis	State: MA	Zip Code: 02601
Phone: 774-470-1637	Fax: 774-470-1637	E-mail: Anastasia.rudenko@ghd.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))	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
a Rollover EIR? (see 301 CMR 11.06(13))	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
a Special Review Procedure? (see 301 CMR 11.09)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
a Phase I Waiver? (see 301 CMR 11.11)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)
NOTE 1: The Project is a Planning Study and no construction is currently planned. The Project is scoped to identify anticipated permitting needs, environmental impacts, and other possible changes. This note is referenced throughout the remainder of this document.

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?
 No thresholds are currently exceeded. The Project is expected to recommend nitrogen management facilities that may exceed thresholds.

Which State Agency Permits will the project require? N/A

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: N/A

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage			
New acres of land altered		N/A	
Acres of impervious area		N/A	
Square feet of new bordering vegetated wetlands alteration		N/A	
Square feet of new other wetland alteration		N/A	
Acres of new non-water dependent use of tidelands or waterways		N/A	
STRUCTURES			
Gross square footage		N/A	
Number of housing units		N/A	
Maximum height (feet)		N/A	
TRANSPORTATION			
Vehicle trips per day		N/A	
Parking spaces		N/A	
WASTEWATER			
Water Use (Gallons per day)		N/A	
Water withdrawal (GPD)		N/A	
Wastewater generation/treatment (GPD)		N/A	
Length of water mains (miles)		N/A	
Length of sewer mains (miles)		N/A	
Has this project been filed with MEPA before? <input type="checkbox"/> Yes (EEA # _____) <input checked="" type="checkbox"/> No			
Has any project on this site been filed with MEPA before? <input checked="" type="checkbox"/> Yes (EEA # <u>12562</u> _____) <input type="checkbox"/> No			

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION: See Attachment 1

Describe the existing conditions and land uses on the project site: **See Attachment 1**

Describe the proposed project and its programmatic and physical elements: **See Attachment 1**

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.

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:

See Attachment 1

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.*

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

See Attachment 1

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

See Attachment 1

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:

Is the project within or adjacent to an Area of Critical Environmental Concern? **See Note 1, page 1**

- Yes (Specify _____)
 No

if yes, does the ACEC have an approved Resource Management Plan? ___ Yes ___ No; **See Note 1, page 1**
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/nhosp/regulatory_review/priority_habitat/priority_habitat_home.htm)

- Yes (Specify _____) No **See Note 1, page 1**

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 **See Note 1, page 1**

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? Yes (Specify _____) No

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. _____ **See Note 1, page 1**

(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:_____ **See Note 1, page 1**

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? ___Yes ___No **See Note 1, page 1**

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: **See Note 1, page 1**

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? site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification): **See Note 1, page 1**

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes ___ No ___; **See Note 1, page 1** if yes, describe which portion of the site and how the project will be consistent with the AUL: _____.

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN? Yes ___ No ___; if yes, please describe:_____ **See Note 1, page 1**

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: **See Note 1, page 1**

(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 ___ ; **See Note 1, page 1** 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: **See Note 1, page 1**

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 X; 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 will 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.
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.
- 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.
- 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.
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).
6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).
7. List of municipal and federal permits and reviews required by the project, as applicable.
8. Printout of output report from RMA Climate Resilience Design Standards Tool, available [here](#).
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.

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: **See Note 1, page 1**

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows: **See Note 1, page 1**

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Footprint of buildings	_____	_____	_____
Internal roadways	_____	_____	_____
Parking and other paved areas	_____	_____	_____
Other altered areas	_____	_____	_____
Undeveloped areas	_____	_____	_____
Total: Project Site Acreage	_____	_____	_____

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?
See Note 1, page 1

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:
See Note 1, page 1

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:
See Note 1, page 1

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:
See Note 1, page 1

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:
See Note 1, page 1

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:
See Note 1, page 1

III. Consistency

- A. Identify the current municipal comprehensive land use plan
Title: **Wareham Master Plan** Date: **01/27/2020**

- B. Describe the project's consistency with that plan with regard to: **See Note 1, page 1**
 - 1) economic development _____
 - 2) adequacy of infrastructure _____
 - 3) open space impacts _____
 - 4) compatibility with adjacent land uses _____

- C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)
RPA: **Southeastern Regional Planning & Economic Development District**

Title: SRPEDD 2022 Annual Report Date: 2022

- D. Describe the project's consistency with that plan with regard to: **See Note 1, page 1**
 - 1) economic development _____
 - 2) adequacy of infrastructure _____
 - 3) open space impacts _____

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:

See Note 1, page 1

(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

See Note 1, page 1

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.

See Note 1, page 1

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

4. 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:
See Note 1, page 1

B. 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:
See Note 1, page 1

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:

<u>Coastal Wetlands</u>	<u>Area (square feet) or Length (linear feet)</u>	<u>Temporary or Permanent Impact?</u>
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	_____	_____
 <u>Inland Wetlands</u>		
Bank (lf)	_____	_____
Bordering Vegetated Wetlands	_____	_____
Isolated Vegetated Wetlands	_____	_____
Land under Water	_____	_____
Isolated Land Subject to Flooding	_____	_____
Borderi ng 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; 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:

B. 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 ___ Change ___ Total ___
If yes, how many square feet of solid fill or pile-supported structures (in sf)?

C. 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.

D. 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:

E. 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:

F. 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.)

- G. 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 ___length (ft) ___width (ft)___depth (ft);
 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? 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:
- 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:

See Note 1, page 1

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

See Note 1, page 1

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:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
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:

	<u>Permitted Flow</u>	<u>Existing Avg Daily Flow</u>	<u>Project Flow</u>	<u>Total</u>
Capacity of water supply well(s) (gpd)	_____	_____	_____	_____
Capacity of water treatment plant (gpd)	_____	_____	_____	_____

F. 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?

G. 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:

See Note 1, page 1

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

See Note 1, page 1

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):

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Discharge of sanitary wastewater	_____	_____	_____
Discharge of industrial wastewater	_____	_____	_____
TOTAL	_____	_____	_____

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Discharge to groundwater	_____	_____	_____
Discharge to outstanding resource water	_____	_____	_____
Discharge to surface water	_____	_____	_____
Discharge to municipal or regional wastewater facility	_____	_____	_____
TOTAL	_____	_____	_____

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:

	<u>Permitted</u>	<u>Existing Avg Daily Flow</u>	<u>Project Flow</u>	<u>Total</u>
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):

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
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.

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:

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:

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:

See Note 1, page 1

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

See Note 1, page 1

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:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Number of parking spaces	_____	_____	_____
Number of vehicle trips per day	_____	_____	_____
ITE Land Use Code(s):	_____	_____	_____

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

<u>Roadway</u>	<u>Existing</u>	<u>Change</u>	<u>Total</u>
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____

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

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?

C. 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 will the project will participate in the TMA:

D. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities? ___ Yes ___ No; if yes, generally describe:

E. 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)?

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:

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:

See Note 1, page 1

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

See Note 1, page 1

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:

B. Will the project involve any

1. Alteration of bank or terrain (in linear feet)? _____
2. Cutting of living public shade trees (number)? _____
3. Elimination of stone wall (in linear feet)? _____

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:

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:

See Note 1, page 1

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

See Note 1, page 1

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:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Capacity of electric generating facility (megawatts)	_____	_____	_____
Length of fuel line (in miles)	_____	_____	_____
Length of transmission lines (in miles)	_____	_____	_____
Capacity of transmission lines (in kilovolts)	_____	_____	_____

B. If the project involves construction or expansion of an electric generating facility, what are:

1. the facility's current and proposed fuel source(s)?
2. 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:

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

III. Consistency

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

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:

See Note 1, page 1

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

See Note 1, page 1

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:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
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:

See Note 1, page 1

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

See Note 1, page 1

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:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
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:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
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

See Note 1, page 1

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:

See Note 1, page 1

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:

See Note 1, page 1

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

- I. 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 X 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.

See Note 1, page 1. Climate risks identified using the RMAT tool will be considered as part of the Planning Study.

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).

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

The Planning Study will consider the climate risks identified by the RMA tool to evaluate impacts of sea level rise on existing infrastructure and the study will incorporate discussions on climate resilience design into management of the Town's wastewater collection system and treatment facility assets.

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

A. If no, explain why.

See Note 1, page 1. Later stages of the Planning Study will review climate risks and evaluate wastewater management alternatives that meets the needs of the planning area.

B. If yes, describe alternatives considered.

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](#).

See Note 1, page 1.

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.

EJ Populations within Wareham:

- **Block Group 1, Census Tract 5451, Plymouth County, Massachusetts – Income**
 - **Block Group 4, Census Tract 5452, Plymouth County, Massachusetts – Income**
 - **Block Group 2, Census Tract 5452, Plymouth County, Massachusetts – Minority**
 - **Block Group 3, Census Tract 5452, Plymouth County, Massachusetts – Income**
 - **Block Group 3, Census Tract 5453, Plymouth County, Massachusetts – Income**
 - **Block Group 1, Census Tract 5453, Plymouth County, Massachusetts – Minority and Income**
 - **Block Group 1, Census Tract 5452, Plymouth County, Massachusetts – Minority**
 - **Block Group 1, Census Tract 5454, Plymouth County, Massachusetts – Minority and Income**
- 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.

N/A

- 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 Environmental Justice Populations ("MEPA EJ Public Involvement Protocol"). If the project is exempt from Part II of the protocol, please specify.

N/A

II. 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).

See Note 1, page 1

- 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) generate 150 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

See Note 1, page 1

- 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.

N/A

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.

See Note 1, page 1. At this stage of the Planning Study no CBOs or tribes have yet been informed of ways to request a community meeting. As outlined in the Draft Plan of Study (see Attachment 1), coordination of the public review is part of Phase IV and V of the project. As part of these phases the Town will identify relevant CBOs and tribes to disseminate information and coordinate a public review.

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

- 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.

See Section III.A.2.

- 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.

See Section III.A.2.

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) Wareham Week (Date) 11/24/2022

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

Signatures:



Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing ENF (if different from above)
	Guy Campinha		Anastasia Rudenko PE, BCEE, ENV SP
Name (print or type)		Name (print or type)	
Wareham Water Pollution Control Facility		GHD	
Firm/Agency		Firm/Agency	
6 Tony's Lane		1545 Iyannough Road	
Street		Street	
Wareham, MA 02571		Hyannis, MA	
Municipality/State/Zip		Municipality/State/Zip	
(508) 295-6144		(774)470-1637	
Phone		Phone	

Climate Resilience Design Standards Tool Project Report

Wareham CWMP

Date Created: 11/14/2022 11:49:37 AM

Created By: GHDHyannis

Date Report Generated: 11/14/2022 12:26:44 PM

Tool Version: Version 1.2

Project Contact Information: TBD ([TBD](#))

Project Summary

[Link to Project](#)

Estimated Capital Cost: \$125000000.00

End of Useful Life Year: 2075

Project within mapped Environmental Justice neighborhood: Yes

Ecosystem Service	Scores
Benefits	
Project Score	Moderate
Exposure	
Sea Level Rise/Storm Surge	High
Surge	Exposure
Extreme Precipitation - Urban Flooding	High
Extreme Precipitation - Riverine Flooding	High
Extreme Heat	Moderate



Asset Preliminary Climate Risk Rating

Number of Assets: 1

Summary

Asset Risk	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
WWTP	High Risk	High Risk	High Risk	High Risk

Climate Resilience Design Standards Summary

	Target Planning Horizon	Intermediate Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge					
WWTP	2070	2050		200-yr (0.5%)	
Extreme Precipitation					
WWTP	2070			50-yr (2%)	Tier 3
Extreme Heat					
WWTP	2070		50th		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 "High Exposure" because of the following:

- Located within the predicted mean high water shoreline by 2030
- 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

Extreme Precipitation - Urban Flooding

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

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

Extreme Precipitation - Riverine Flooding

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

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

Extreme Heat

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

- Existing impervious area of the project site is between 10% and 50%
- 10 to 30 day increase in days over 90 deg. F within project's useful life
- Located within 100 ft of existing water body
- No increase to the impervious area of the project site
- 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 - WWTP

Primary asset criticality factors influencing risk ratings for this asset:

- Asset must be operable at all times, even during natural hazard event
- Greater than 10,000 people would be directly affected by the loss/inoperability of the asset
- The building/facility provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
- Inoperability of the asset would result in moderate or severe injuries or moderate or severe impacts to chronic illnesses
- Cost to replace is greater than \$100 million
- Spills and/or releases of hazardous materials are expected with difficult remediation and pose a severe threat to public health or safety

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: WWTP

Building/Facility

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

This project is located in an area with uncertainty for future tidal datums. These uncertain zones are either dynamic in terms of geomorphology or are restricted by manmade features (i.e., culverts, tide gates, etc.) that should be evaluated in more detail at the site-scale.

Projected Water Surface Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
WWTP	2050	0.5% (200-Year)	14.9	14.6	14.7
	2070		18.0	17.7	17.8

Projected Wave Action Water Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
WWTP	2050	0.5% (200-Year)	18.0	14.6	16.2
	2070		21.5	17.7	19.4

Projected Wave Heights: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(Feet)		
WWTP	2050	0.5% (200-Year)	5.0	0.0	2.1
	2070		5.0	0.0	2.3

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

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
WWTP	2070	50-Year (2%)	8.9	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Extreme Heat

High Risk

Target Planning Horizon: 2070
 Percentile: 50th 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): APPLICABLE

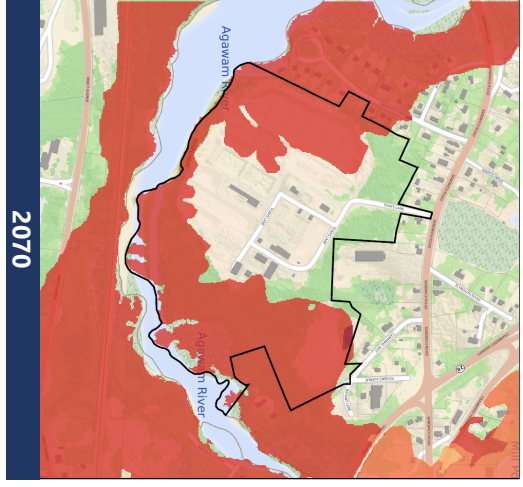
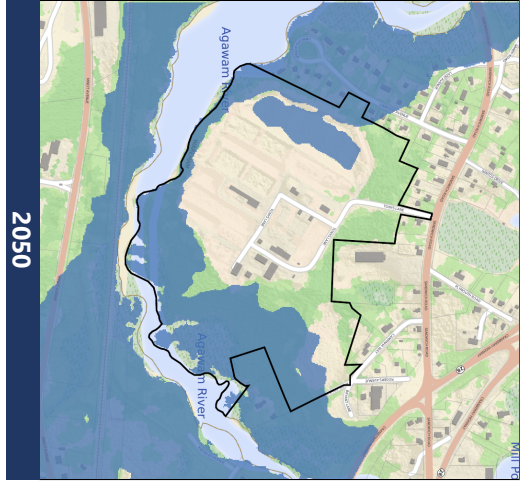
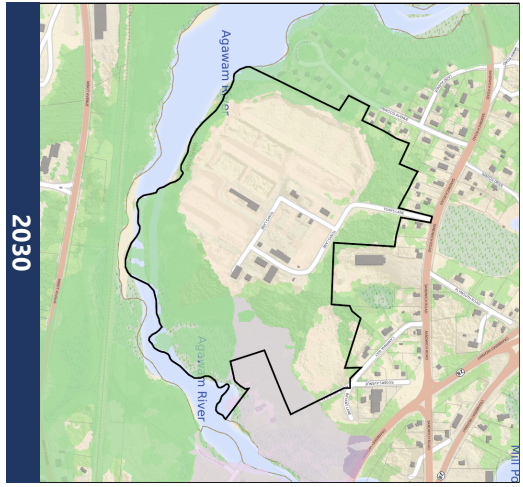
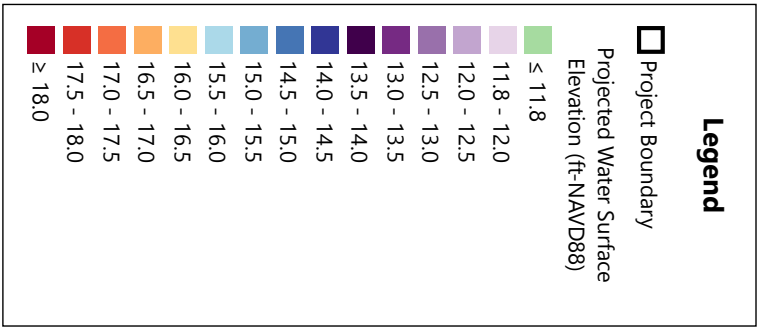
[Methodology to Estimate Projected Values](#) : Tier 3

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)**

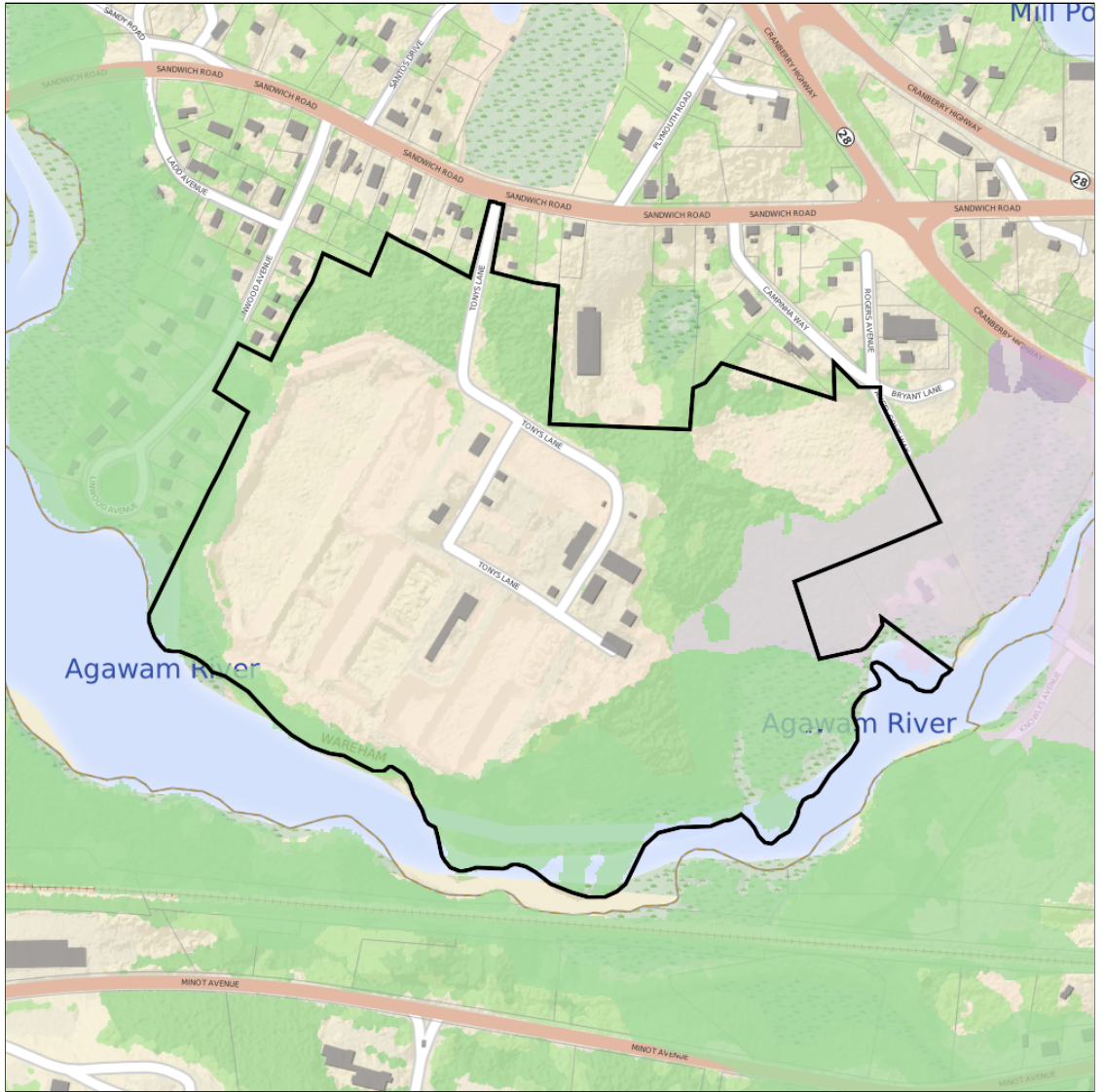
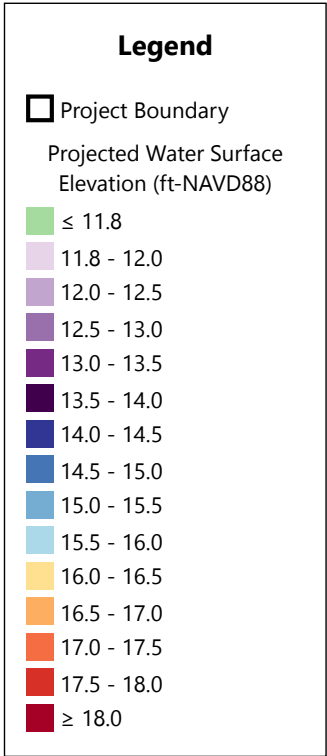
Project Name: Wareham CWMP
Location (Town): Wareham



Created by: GHDHyannis
Date Created: 11/14/2022
Tool Version: 1.2



Asset Name	Planning Horizon	Return Period	Max/Min Area Weighted Average (ft-NAVD88)	
			Max	Min
WWTP	2030	0.5% (200-yr)	11.9	11.8
	2050	0.5% (200-yr)	14.9	14.6
	2070	0.5% (200-yr)	18.0	17.7



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

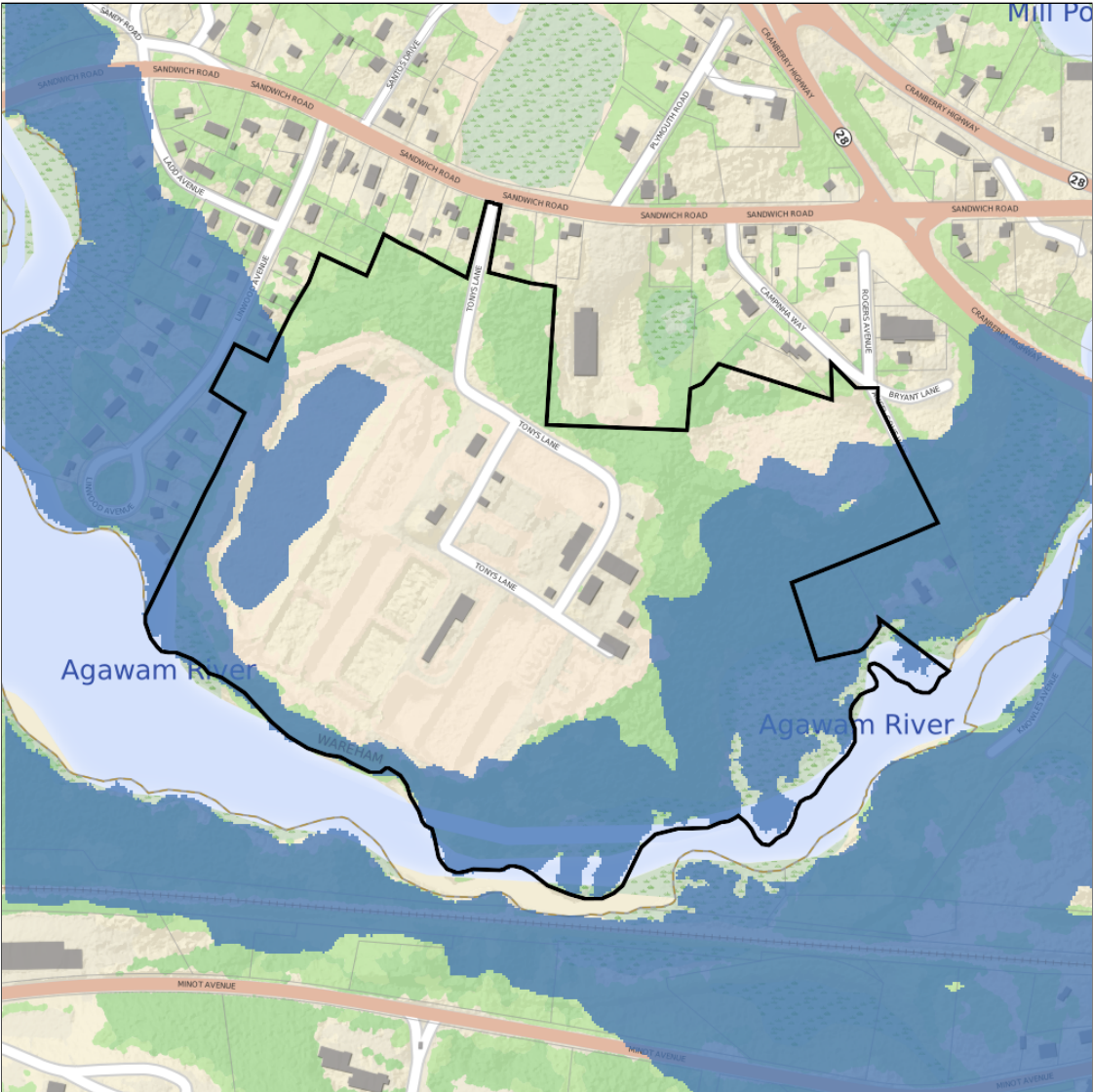
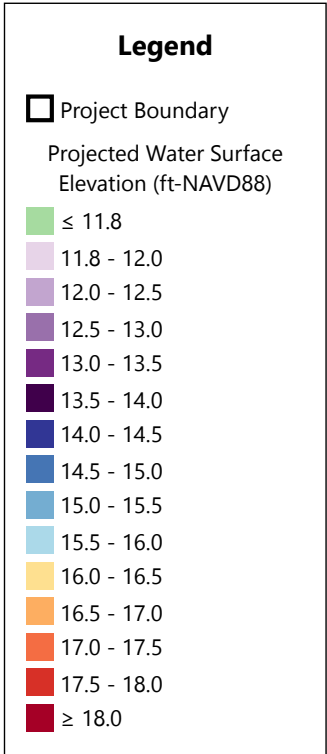
Project Name: Wareham CWMP
Location (Town): Wareham



Created by: GHDHyannis
Date Created: 11/14/2022
Tool Version: 1.2



Asset Name	Planning Horizon	Return Period	Max		Area Weighted Average (ft-NAVD88)
			Min	Min	
WWTP	2030	0.5% (200-yr)	11.9	11.8	11.8



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

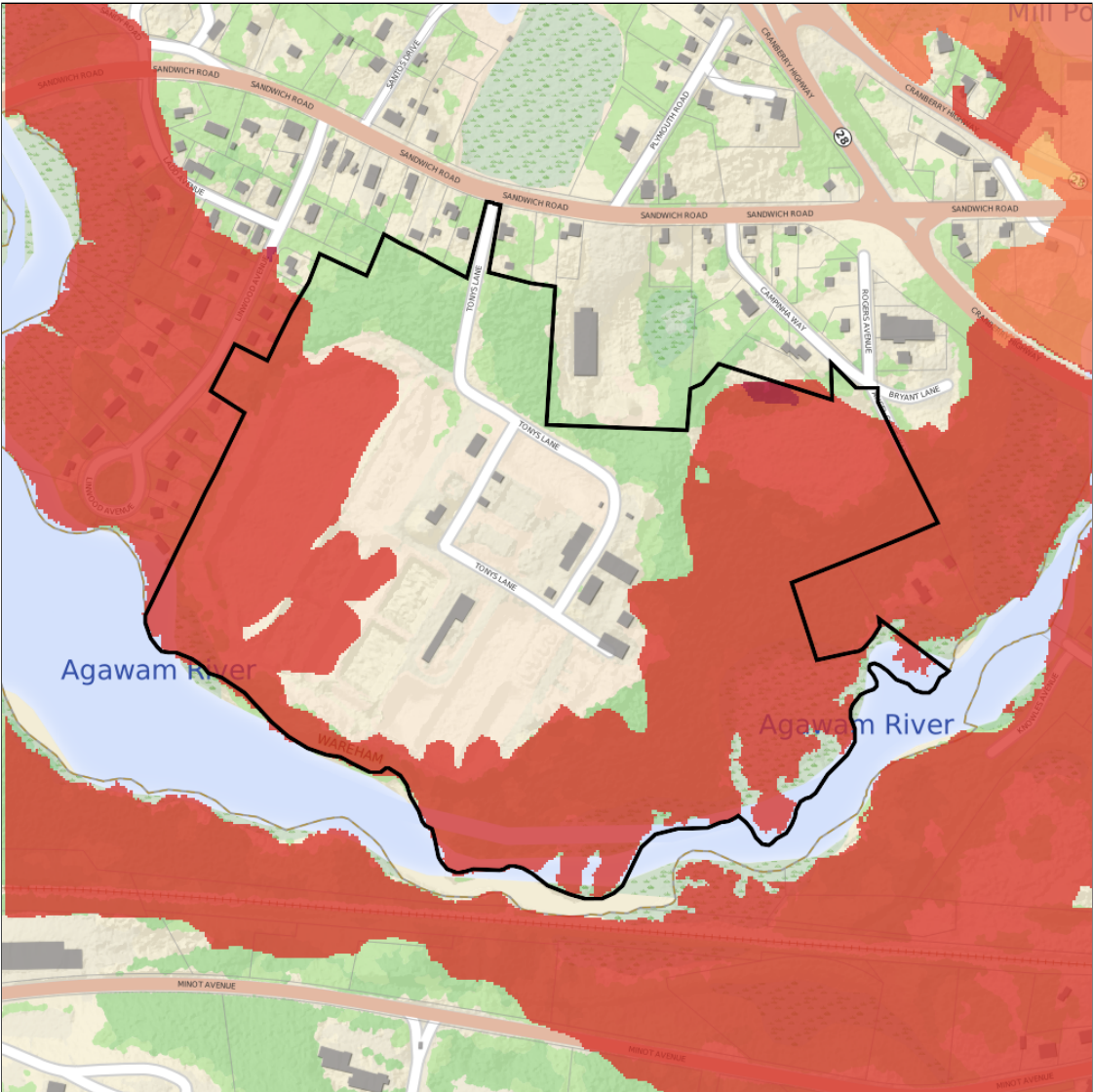
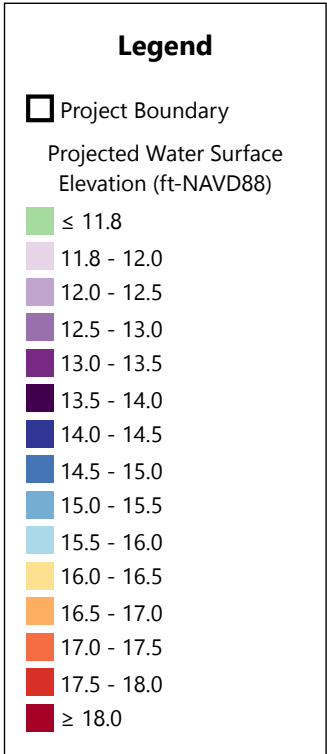
Project Name: Wareham CWMP
Location (Town): Wareham



Created by: GHDHyannis
Date Created: 11/14/2022
Tool Version: 1.2



Asset Name	Planning Horizon	Return Period	Max/Min		Area Weighted Average (ft-NAVD88)
WWTP	2050	0.5% (200-yr)	14.9	14.6	14.7



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

Project Name: Wareham CWMP
Location (Town): Wareham



Created by: GHDHyannis
Date Created: 11/14/2022
Tool Version: 1.2



Asset Name	Planning Horizon	Return Period	Area Weighted Average	
			Max	Min
WWTP	2070	0.5% (200-yr)	18.0	17.7
			(ft-NAVD88)	
			17.8	

Project Inputs

Core Project Information

Name:	Wareham CWMP
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)?	2075
Location of Project:	Wareham
Estimated Capital Cost:	\$125,000,000
Who is the Submitting Entity?	City/Town Wareham TBD (TBD)
Is this project identified as a priority project in the Municipal Vulnerability Preparedness (MVP) plan or the local or regional Hazard Mitigation Plan (HMP)?	No
Is this project being submitted as part of a state grant application?	No
Which grant program?	
What stage are you in your project lifecycle?	Planning
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:	The Project is a Comprehensive Wastewater Management Planning Project designed to develop a Town-wide plan for wastewater management. The Project Area is the Town of Wareham, MA. Because the Project is a study, there is no facility or construction project planned at this time
Project Submission Comments:	

Project Ecosystem Service Benefits

Factors Influencing Output

- ✓ Project protects public water supply
- ✓ Project promotes decarbonization
- ✓ Project improves water quality
- ✓ Project protects fisheries, wildlife, and plant habitat
- ✓ Project protects land containing shellfish
- ✓ Project provides oxygen production
- ✓ Project prevents pollution

Factors to Improve Output

- ✓ Identify opportunities to remediate existing sources of pollution
- ✓ 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	Yes
Filters stormwater using green infrastructure	No
Improves water quality	Yes
Promotes decarbonization	Yes
Enables carbon sequestration	No
Provides oxygen production	Yes
Improves air quality	Maybe
Prevents pollution	Yes
Remediates existing sources of pollution	Maybe
Protects fisheries, wildlife, and plant habitat	Yes
Protects land containing shellfish	Yes
Provides pollinator habitat	No
Provides recreation	No
Provides cultural resources/education	Maybe

Project Climate Exposure

Is the primary purpose of this project ecological restoration?	No
Does the project site have a history of coastal flooding?	Unsure
Does the project site have a history of flooding during extreme precipitation events (unrelated to water/sewer damages)?	Unsure
Does the project site have a history of riverine flooding?	Unsure
Does the project result in a net increase in impervious area of the site?	Unsure

Are existing trees being removed as part of the proposed project?

Unsure

Project Assets

Asset: WWTP

Asset Type: Typically Occupied

Asset Sub-Type: Other

Construction Type: Renovation

Construction Year: 2025

Useful Life: 50

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.

Building 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 building/facility.

Impacts would be limited to local area and/or municipality

Identify the population directly served that would be affected by the permanent loss of use or inoperability of the building/facility.

Greater 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 provides 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 result in moderate or severe injuries or moderate or severe impacts to chronic illnesses

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 are expected with difficult remediation and pose a severe threat to public health or safety (E.g. wastewater treatment plant; biohazard laboratory)

If the building/facility 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 will likely affect their ability to operate

If this building/facility was damaged beyond repair, how much would it approximately cost to replace?

Greater than or equal to \$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?

No 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?

Impact on natural resources will require remediation/rehabilitation

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)?

Government agency will no longer be able to maintain 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)?

Loss of confidence in government agency

Report Comments

N/A