



1.0 INTRODUCTION

On behalf of the Town of Scituate (Town, Applicant), GZA GeoEnvironmental, Inc. (GZA) has prepared this Notice of Intent (NOI) application to describe the proposed Project that includes repair of an existing, storm-damaged outfall structure that extends seaward from the face of the seawall along the Town-owned parcel 40-1-11-A (0 Oceanside Drive, a.k.a. No. 46) and the adjacent "Passage Way." The Town of Scituate, Department of Public Works, Engineering Division documented storm-related damages attributed to the declared disaster DR-4372-MA (RILEY), which occurred between 3/2/2018 and 3/3/2018. The Town subsequently submitted damage claims to Federal Emergency Management Agency (FEMA). The Project is being partially funded through FEMA, with a match provided by the Town.

The objective of the Project is to restore the storm-damaged structure to its pre-disaster functionality. This application is submitted in accordance with the requirements of the Wetlands Protection Act Regulations (WPA, 310 CMR 10.00) and the Town of Scituate – Wetlands Protection Rules and Regulations (Scituate Code of Bylaws Section 30770).

Refer to the attached **Figure 1 - Locus Plan** for the proposed project site location.

2.0 EXISTING CONDITIONS

On February 4, March 16, and April 14, 2020, GZA personnel visited the project site and performed visual and tactile inspections, hand measurements, photographic documentation, and limited topographic survey using a Real-Time Kinematic (RTK) Differential Global Positioning System (DGPS) at each site location. In addition, GZA retained Greenman-Pedersen, Inc. (GPI) to provide Unmanned Aircraft Services (UAS) for the collection of aerial imagery and topographic survey data at each site for base plan development. Existing conditions photographs are included in **Appendix C**.

The No. 46 Oceanside Drive Outfall penetrates the existing concrete seawall and stone revetment, and extends onto the beach along Oceanside Drive in the area of the "Passage Way," located roughly along a seaward extension of 11th Avenue, and the western limit of Town-owned parcel 40-1-11-A (0 Oceanside Drive, a.k.a. No. 46). The outfall structure consists of a 30-inch-diameter HDPE drainpipe within an approximately 4.5-foot-wide by 5-foot-deep reinforced concrete encasement terminating with an approximately 8-foot-long precast concrete outfall head structure (OHS), supported by concrete-filled pipe piles. The outfall structure extends seaward from the face the existing concrete seawall at an oblique angle, for approximately 88 linear feet toward the northeast. According to prior construction documents, the existing outfall structure is supported by five rows of two, concrete-filled, steel pipe piles.

During visits to the site, GZA observed the existing precast concrete OHS was detached from the concrete-encased outfall pipe and two corresponding pile supports. Four existing piles (two rows of two) were exposed above existing grade near the seaward end of the structure. The remaining OHS was severely deteriorated and partially embedded in the sediment below the existing beach grade near the seaward end of the outfall pipe. The existing OHS pile supports also appeared to be damaged, with insufficient exposed pile height to properly support the OHS. GZA also observed beach erosion, scour, and undermining of the existing concrete-encased outfall pipe, immediately upstream of the OHS.

At the time of GZA's visits to the site, the existing beach grade at the seaward end of the outfall was approximately elevation 0 feet and the outfall pipe discharge invert was approximately elevation +1.5 feet (NAVD88). Mean High Water level (MHW) at the site is approximately elevation +3.9 feet (NAVD88). Accordingly, the damaged elements of the structure were located in the intertidal zone with frequent exposure to typical tidal action and extreme storm forces.

Based on field observations by GZA and discussions with the Town, the existing OHS is damaged beyond the point of practical repair and requires replacement to restore the structure to its pre-disaster functionality



3.0 PROPOSED PROJECT

The proposed project is characterized as In-Kind Restoration and includes:

1. Demolition and removal of the existing, damaged precast concrete OHS.
2. Extraction, removal, and replacement of the two existing, damaged seaward pipe piles.
3. Minor demolition and preparation of the seaward end of the existing concrete-encased to receive a new pre-cast concrete OHS.
4. Installation of a new pre-cast concrete OHS (including minimal cast-in-place concrete infill).
5. Disposal of demolition and construction related debris.
6. Site preparation and restoration.

The proposed structure will be restored using in-kind materials and dimensions in its existing, pre-disaster footprint. The work will be performed with land-based equipment and procedures that involve working with the tides. The land-side equipment access and construction staging area will be located in the Town-owned parcel and “Passage Way” between the Oceanside Drive roadway and seawall. A land-based crane will be setup in the land-side staging area and used to extract and drive piles, remove demolition debris from the beach, set the new pre-cast OHS, deliver equipment and materials to the site of work in the tidal zone, and remove equipment and materials from the beach during high tide.

Site features to remain will be protected during the work. Areas of disturbance due to the work are expected to be temporary and minor, however areas disturbed by construction activities will be restored to pre-construction conditions at the completion of the project. Erosion and sediment controls will be used during the work.

Refer to the attached Permit Drawings in **Appendix A** for additional information about the proposed work.

4.0 REGULATORY COMPLIANCE AND IMPACTS

The proposed work will be performed using the best available measures to minimize the adverse impacts to the resource areas defined under the Massachusetts Wetlands Protection Act (WPA) and local wetlands ordinances. The Project has been designed to limit both temporary and permanent impacts at the site. However, the proposed work will result in unavoidable temporary impacts. **Table 1** summarizes the total impacts proposed within each resource area.

Table No. 1 – Summary of Resource Area Impacts	
Resource Area	Impact
LSCSF	±12,000 SF; Temporary Only for access and staging landward of seawall.
Coastal Beach	±50 SF; Permanent but within footprint of existing man-made structure. ±1,500 SF; Temporary for construction access at site of repair.
Coastal Bank	None. Coastal Bank exists within 100 feet of the proposed work, but no associated impacts are anticipated.



4.1 LAND SUBJECT TO COASTAL STORM FLOWAGE (310 CMR 10.04)

Massachusetts WPA Regulations define Land Subject to Coastal Storm Flowage (LSCSF) as, *“land subject to any inundation caused by coastal storms up to and include that caused by the 100-year storm, surge of record or storm of record, whichever is greater.”*

The proposed work occurring within the LSCSF resource area, between the Mean High Water (MHW) line and the FEMA 100-year flood elevation will be the temporary staging of equipment and material landward of the seawall. No permanent alterations are proposed in the LSCSF area. The proposed work will temporarily impact up to approximately 12,000 square feet of LSCSF area to repair the storm-damaged outfall. The temporary impacts in this area will be limited to minor construction access and staging activity in the currently unoccupied and sparsely vegetated lot between Oceanside Drive and the seawall. The proposed work will not significantly impact the land’s ability to buffer storm waves. The site will be restored to pre-construction conditions after the completion of work. There are no additional performance standards for LSCSF resource area provided under the Massachusetts WPA Regulations.

4.2 COASTAL BEACH (310 CMR 10.27)

Massachusetts WPA Regulations define Coastal Beach as, *“unconsolidated sediment subject to wave, tidal and coastal storm action which forms the gently sloping shore of a body of saltwater and includes tidal flats. Coastal beaches extend from the mean low water line landward to the dune line, coastal bank line or the seaward edge of existing man-made structures, when these structures replace one of the above lines, whichever is closest to the ocean.”*

The Coastal Beach resource area extends from the Mean Low Water (MLW) line to the seaward edge of the existing man-made structures (e.g. concrete seawalls and stone revetments). The proposed work includes minor demolition, repair, and reconstruction of an existing, storm-damaged foreshore structure within its original footprint and will not extend any further seaward. The proposed work will involve alteration of approximately 50 square feet of Coastal Beach corresponding to the footprint of the damaged OHS and piles to be replaced in-kind. Minor temporary impact for construction access and staging may occur in the immediate area around the OHS. The site will be restored to pre-construction conditions after the completion of work.

In accordance with 310 CMR 10.27, when a coastal beach is determined to be significant to storm damage prevention, flood control, or protection of wildlife habitat, 310 CMR 10.27(3) through (7) shall apply. When a tidal flat is determined to be significant to marine fisheries or the protection of wildlife habitat, 310 CMR 10.27(6) shall apply. **Table 2** lists the performance standards for Coastal Beach and describes how the proposed project will address the performance standards.

Table No. 2 – Performance Standards for Work in Coastal Beach	
Performance Standard	Proposed Project
310 CMR 10.27(3) <i>Any project on a coastal beach, except any project permitted under 310 CMR 10.30(3)(a), shall not have an adverse effect by increasing erosion, decreasing the volume or changing the form of any such coastal beach or an adjacent or downdrift coastal beach.</i>	The proposed work is limited to the restoration of an existing, damaged structure, with in-kind materials and dimensions, in its existing footprint. Temporary impacts will be minor and limited to minor disturbance associated temporary construction access. Temporary areas of disturbance within the Coastal Beach resource area will be restored to pre-construction conditions.



Table No. 2 – Performance Standards for Work in Coastal Beach	
Performance Standard	Proposed Project
<p>310 CMR 10.27(4)</p> <p><i>Any groin, jetty, solid pier, or other such solid fill structure which will interfere with littoral drift, in addition to complying with 310 CMR 10.27(3), shall be constructed as follows: (a) It shall be the minimum length and height demonstrated to be necessary to maintain beach form and volume. In evaluating necessity, coastal engineering, physical oceanographic and/or coastal geologic information shall be considered. (b) Immediately after construction any groin shall be filled to entrapment capacity in height and length with sediment of grain size compatible with that of the adjacent beach. (c) Jetties trapping littoral drift material shall contain a sand bypass system to transfer sediments to the downdrift side of the inlet or shall be periodically dredged to provide beach nourishment to ensure that downdrift or adjacent beaches are not starved of sediments.</i></p>	<p>The proposed work is limited to the restoration of an existing, damaged structure, with in-kind materials and dimensions, in its existing footprint and will not extend farther seaward.</p>
<p>310 CMR 10.27(5)</p> <p><i>Notwithstanding 310 CMR 10.27(3), beach nourishment with clean sediment of a grain size compatible with that on the existing beach may be permitted.</i></p>	<p>No beach nourishment is proposed.</p>
<p>310 CMR 10.27(6)</p> <p><i>In addition to complying with the requirements of 310 CMR 10.27(3) and (4), a project on a tidal flat shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water-dependent, have no adverse effects, on marine fisheries and wildlife habitat caused by: (a) alterations in water circulation; (b) alterations in the distribution of sediment grain size; and (c) changes in water quality, including, but not limited to, other than natural fluctuations in the levels of dissolved oxygen, temperature or turbidity, or the addition of pollutants.</i></p>	<p>The proposed work is limited to the restoration of an existing, damaged structure, with in-kind materials and dimensions, in its existing footprint and will not extend farther seaward. The proposed work will be performed within the tidal cycle to avoid inundation of the work area. Sedimentation and erosion control measures will be in place during construction activities.</p>
<p>310 CMR 10.27(7)</p> <p><i>Notwithstanding the provisions of 310 CMR 10.27(3) through (6), no project may be permitted which will have any adverse effect on specified habitat sites or rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.</i></p>	<p>No Estimated Habitat for Rare Species or Priority Habitat for Rare Wildlife are listed in the vicinity of the proposed project sites on the current maps published by the Natural Heritage and Endangered Species Program.</p>



4.3 100-FOOT BUFFER ZONE

Massachusetts WPA Regulations define Buffer Zone as, “100-ft area horizontally (on a true lateral) landward of approved delineation of applicable wetland resource areas.” The WPA further states that any activities undertaken within 100 feet of an area specified in 310 CMR 10.02(1)(a) will be conducted per (310 CMR 10.02(2)(b)), “in a manner so as to reduce the potential for any adverse impacts to the resource area during construction, and with post-construction measures implemented to stabilize any disturbed areas.”

The proposed Project will occur entirely within existing coastal wetland resource areas and will not impact the 100-foot buffer zone.

4.4 OTHER REGULATED RESOURCE AREAS

GZA has also considered whether the Project Site falls within other environmental regulatory boundaries that would require additional permits. There are no Outstanding Resource Waters, Areas of Critical Environmental Concern, Certified Vernal Pools, Estimated Habitat for Rare Species, or Priority Habitat for Rare Wildlife associated with the Project Site.

4.5 COMPLIANCE WITH STORMWATER PERMITTING

The project must comply with WPA Regulations, 310 CMR 10.05(6)(k) for Stormwater Management Standards. The project does not propose new impervious surfaces, no new point source discharges, no expansion or alternation of the existing onsite stormwater management system, or significant changes to the existing local drainage patterns. The Stormwater Report and Checklist is provided in **Appendix E**.

5.0 **CONSTRUCTION PROCEDURES**

The general construction process consists of:

1. Mobilization of equipment and materials to the land-side construction staging area in the unoccupied lot between Oceanside Drive and the existing seawall.
2. Site preparation activity such as minor grading or leveling for the crane setup, deployment of erosion and sediment control measures, site delineation and signage installation.
3. Demolition, removal, and disposal of the existing damaged OHS and two pipe piles.
4. Installation of two new pipe piles to support the new OHS.
5. Installation of the new precast concrete OHS, including cast-in-place concrete infill.
6. Site restoration and demobilization.

Proposed work will be accessed on foot and by lifting equipment and materials on and off the beach using a land-based crane. The land-based crane will remain in the unoccupied lot between Oceanside Drive and the seawall. Equipment and materials will be stored landward of the existing seawall or removed from the site when not in use.

Equipment, materials, debris, or other items will be stored such that they will be protected from rising water when not being utilized. Site features to remain will be protected throughout the duration of the construction work. Areas temporarily disturbed by construction activities will be restored to pre-construction conditions at the completion of the project.



5.1 MEASURES TO MINIMIZE RESOURCE AREA IMPACTS

Measures to minimize impacts to the Resource Areas noted above include the following:

- Temporary barriers, fencing and signage will be placed at the work site during construction.
- Contractor will have a spill kit/absorbent pads on each piece of equipment.
- Each vehicle shall be inspected daily for leaks; any leaking equipment shall be removed from the site immediately and shall not return to service until repaired.
- The contractor will provide a contingency plan for approval in the event a piece of equipment is stuck to remove the equipment immediately.
- The work area will be left in a condition such that rising water and/or adverse weather will not cause damage to the work area or adjacent areas.
- The contractor will perform the work during favorable tides for the various aspects of the work. The contractor will work the tides to minimize impacts to resource areas.
- Sedimentation and erosion control measures will be in place during construction activities.
- Proposed work shall comply with all Federal, State and Local Codes and Regulations.
- Proposed work shall comply with the Local Conservation Commission's Order of Conditions.