

Section 2

Existing Environment

The project is located on two municipally-owned abutting parcels at 250 and 280 Driftway. These two parcels, both of which are larger than 50 acres, comprise the Project Locus. The Project Site is defined as a smaller area within the Project Locus where the proposed work is limited to.

2.1 Project Site

The Project Site includes the existing Well 18B Corrosion Control Facility located at the Department of Public Works (DPW) Facility at 280 Driftway. In addition to the immediate area surrounding the treatment facility, the remainder of the Project Site is comprised of a linear area extending east toward Hatherly Pond where the pipe installation will occur. The pipe route extends eastward over the capped municipal landfill toward the Widows Walk Golf Course. On the landfill, the proposed pipe route is located along the margin between the grassed cap area and an area with unmanaged vegetation that includes oak, birch, pine trees, and greenbrier. Once the pipe enters the golf course, it follows the existing golf cart paths and passes through parking areas. The eastern limit of the Project Site is at the grassed slope east of the parking area where the settling tank is proposed. Piping will then pass out of the settling tank and will connect to an existing swale north of the parking lot which ultimately drains to the western golf course pond, Hatherly Pond.

The project location is shown on the USGS Site Location Map (Figure 1) provided in Appendix A. The site and surrounding area are also shown on the Massachusetts Department of Environmental Protection (MassDEP) Priority Resources Map (Figure 2), and Site Plan (Figure 3) in Appendix A. Photographs of the Project Site and surrounding area are provided in Appendix B.

2.2 Wetland Resource Areas

On April 7 2021, Tighe & Bond conducted wetland resource area delineations within the limits of the proposed project area. **Tighe & Bond's wetland delineation was conducted in** accordance with local, state and federal guidelines, including the Scituate Wetlands Protection Rules and Regulations, Wetlands Protection Act (M.G.L. c. 131 sec. 40) and associated Wetlands Protection regulations (310 CMR 10); Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0, U.S. Army Corps of Engineers, January 2012).

This section presents a discussion of wetland resource areas present at and near the Project Site. Figure 3 presents the delineated limits of wetland resource areas as well as DEP wetlands GIS data to show wetland resource areas beyond the limits of our delineation. The GIS data is used to depict the 100-foot buffer zone and 200-foot Riverfront Area limits in areas beyond the field delineation.

2.2.1 Hatherly Pond (Inland Bank & Land Under Waterbodies & Waterways)

Hatherly Pond is located on the golf course property and is understood to have been created by historic sand and gravel mining at the site. This pond is comprised of two

inland wetland resource areas, Land Under Waterbodies and Waterways (LUWW) and inland Bank. The limit of the pond is inland Bank. The area southern and eastern banks are forested and have a relatively steep slope above the Bank. The area adjacent to the Bank on the western edge of the pond managed as part of the golf course use and consists of open turf. The Bank and littoral zone of the pond was observed to contain wetland vegetation including cattail (*Typha* sp.) and willow (*Salix* sp.). The LUWW of the Pond appears to be contained within the former excavation and drains primarily through infiltration to groundwater. Because of the lack of a stream outlet the water level is expected to vary seasonally and in response to rainfall.

2.2.2 Herring River (200-foot Riverfront Area)

The Herring River is south of the Project Site on the opposite side of Driftway. This is a tidal coastal river that flows into the North River. The periphery of this river near the project site is comprised of Salt Marsh. As this river is depicted as a perennial stream on the current USGS quadrangle, it is afforded a 200-foot Riverfront Area. The Riverfront Area extends 200 feet landward from the mean high tide (MHT) line, depicted on Figure 3. The Riverfront Area is comprised of an area of coastal dune, a strip of vegetated upland dominated by Eastern red cedar (*Juniperus virginiana*), a paved bikepath, maintained grass areas, and the local road (Driftway).

2.2.3 Coastal Dune

An area of Coastal Dune is present above the MHT of the Herring River. The Coastal Dune includes areas of open sand and areas of with grass vegetation. A 100-foot buffer zone extends from the landward limit of the Coastal Dune.

2.2.4 Land Subject to Coastal Storm Flowage

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Project Site (panel 25023C0136K effective 11/4/2016) depicts a Zone AE flood hazard at the site with a base flood elevation of 16 feet. This floodplain area extends from the North River through the golf course parking lot to Hatherly Pond. The floodplain in this area is not in mapped as river floodway or coastal velocity zone. This floodplain is regulated as Land Subject to Coastal Storm Flowage (LSCCF) because it is contiguous with the Atlantic Ocean.

Tighe&Bond

SECTION 3

Section 3

Project Description

The proposed project involves improvements to the existing water treatment system for Well 18B. Work includes the modification of the treatment system and the means of discharging filter backwash.

3.1 Water Treatment System

The proposed work is required to support an existing greensand filtration water treatment system for Well 18B. Greensand filtration works by passing source water through a specially formulated filter media coated with an oxidizing agent, which causes manganese from the source water to precipitate out of solution as particulate matter. The particulate matter is then captured in the media and prevented from entering the distribution system. As part of normal operations, the filters are backwashed to remove the particulate manganese and the backwash must be discharged.

The project is designed to comply with the **EPA's** PWTF GP. The PWTF GP allows for the discharge of filter backwash water to surface waters if they meet specific treatment criteria. This project includes the addition of chemical and physical treatments to meet the criteria of the PWTF GP. Three additional treatment measures for the filter backwash water are included in this project:

- Dechlorination using sodium sulfite
- pH adjustment with either hydrochloric acid or potassium hydroxide as required
- Removal of solids using a settling tank

When the Well 18B treatment system brought into operation, the average anticipated discharge of treated filter backwash discharge is 20,400 gallons per day. This discharge will be directed into the proposed pipe system and settling basin, whereupon it will enter the swale south of Hatherly Pond. As the northeastern portion of Hatherly Pond falls within the Zone I Wellhead Protection Area for Well 18B, the discharge of the filter backwash water to the pond will help groundwater recharge in this area.

3.2 Proposed Construction Activities

The proposed backwash disposal system will connect to the existing system on the south side of the corrosion control facility. The system will primarily be constructed with three-inch HDPE pipe. It includes 700 linear feet (lf) of above ground pipe through the landfill, which will be supported on precast concrete anchor blocks. Where the above-ground pipe crosses an access road, an at-grade concrete encasement will be built with a ramp to enable vehicle traffic to cross over the conduit. Air release points will be provided at high points along the linear system. An additional 700 lf of below ground pipe will be installed at the golf course. The below ground installation will be in a shallow trench, excavated to a depth of approximately 3 feet below surface grade. This system is not intended to operate in the winter. The water line will connect to the filter backwash settling tank at the golf course property east of the parking area. An additional 100 lf of eight-inch HDPE pipe will run below ground from the settling tank and tie into an existing 12-inch HDPE pipe that discharges to an excavated swale upgradient of the pond.

All areas of excavation for underground piping will be restored in-kind upon completion of construction.

3.3 Construction Period Protection Measures

Work on the landfill avoids all ground disturbance and is subject to MassDEP review under a Landfill Post-Closure Use Permit. Work at the golf course site will include minor excavation and an erosion and sedimentation control barrier (i.e., compost filter tube) will be placed downslope of the trench during construction and will remain in place until construction is complete and soils are stabilized.