Riverfront Area Alternatives Analysis

Project Address: 311 Rockland Street, Hingham MA

Plan Reference: Definitive Site Plan – 311 Rockland Street, Hingham MA

Date: June 2024

Revised: October 8, 2024

Introduction

According to the Wetlands Protection Act 310 CMR 10.58 (4)(d), the issuing authority may allow for land alteration of up to 10% of the Riverfront Area within a lot, for lots created after October 6, 1997. The total area of riverfront within the lot is 23,182± SF, meaning the maximum amount of land alteration allowed within the Riverfront Area for this site is 2,318± SF.

The current area of riverfront alteration within the lot is 2,275± sf (9.8% of RA), and includes the proposed driveway, and retaining walls. The proposed rain garden nearest to Rockland Street is not included in this alteration area because according to 310 CMR 10.58.(4)(d)(1), proponents may "exclude areas used for structural stormwater management measures, provided there is no practicable alternative to sitting these structures within the riverfront area and provided a wildlife corridor is maintained". This alternatives analysis addresses the fact that there are no feasible alternative conditions for the proposed work within the riverfront area. Therefore, work shall comply with 310 CMR 10.58.(4).

Stormwater management is proposed to be in accordance with the DEP Stormwater Management Regulations. The project has been designed to limit any potential impacts to the wildlife habitat functions or impairments to groundwater or surface water quality.

The following list provides the alternative conditions considered for the bituminous concrete driveway/ retaining wall, and rain garden within the riverfront area:

1. Bituminous Concrete Driveway/ Retaining Wall Analysis
    a. Location
    b. Size
    c. Material
2. Rain Garden (Stormwater Management System)
    a. Location
    b. Size
    c. Material

Please see the evaluation of each alternative solution below:

Bituminous Concrete Driveway/ Retaining Wall Analysis

Alternative Locations

The proposed bituminous concrete driveway and retaining walls located within the riverfront area were considered at other locations on the site, to minimize alteration to the riverfront area resource.

Other locations along Rockland Street were considered, and resulted in essentially the same, if not more alteration to the riverfront area, and were therefore not favorable. The current location allows for site access with appropriately sized stormwater management. In addition, driveway grading had to be considered for the site, because of various ledge outcrops resulting in steep slopes. The proposed retaining walls located within the riverfront area help minimize alteration due to grading. Therefore, the proposed driveway and retaining wall layout are the most feasible location for this project.

Ther current owner has access to adjacent property with frontage along Hull Street. A common driveway off this frontage was considered, but the Town of Hingham Zoning By-law requires a common drive way to be constructed " ..shall satisfy the frontage requirements as defined in section VI…" The access over the lot on Hull Street does not have the required frontage, therefore this alternative is not a viable option.

A no action alternative for the driveway and retaining wall would not meet the applicants' needs of finding an adequate spot for vehicular driveway access to the proposed dwelling at 311 Rockland Street. Therefore, this alternative is not feasible.

Alternative Size

The current width of the driveway (14' wide) allows for emergency vehicles such as firetrucks to safely access and exit the site. Shrinking the driveway width would compromise the safety for these vehicles to maneuver the site.

There are no other feasible alternatives to the current size of the retaining walls.

Alternative Material

Alternative materials such as gravel for the driveway may compromise the safety of vehicles going up and down the proposed driveway, due to relatively steeper grades.

Rain Garden Analysis

Alternative Locations

For the rain garden located nearest to Rockland Street, locations outside of the riparian area are not feasible because of stormwater runoff from the driveway collects down near Rockland Street, within a trench drain. This location is the lowest stormwater collection point in the driveway. This rain garden as proposed, also provides compensatory flood storage, and will contain native plantings, which will benefit not only the riverfront area, but other wetland resources.

Alternative Size

The current size of the proposed rain gardens is designed in accordance with Massachusetts Stormwater Standards, with a focus on recharge and water quality volume (Standards 3 and 4). These rain gardens are sized appropriately to meet these standards and should not be decreased in size.

Alternative Materials/ Systems

As listed in Volume 2 Chapter 2, there are several Stormwater Treatment BMP's other than rain gardens, which could be considered as an alternative solution for this project. Alternative systems for stormwater treatment would result in similar alteration areas, and may not provide flood storage capacity, as provided in the rain garden adjacent to Rockland Street. Therefore, the proposed rain gardens are the most feasible stormwater system for this project.

Proposed Alternative

The project, as proposed, has a site layout which considers the necessity to minimize impacts to the Riverfront Area and vegetation on-site, while allowing for adequate vehicular access to the site, and stormwater treatment.