

Future Railyard Enterprise Connector Road, Stormwater Engineering Feasibility Assessment



Services / Expertise

Urban Conventional & Retrofit Planning
Stormwater Project Scoping
Stormwater Project Engineering and Design
Stakeholder Coordination
Stormwater BMPs & GSI Design
Urban Hydraulic/Hydrologic Modeling
Stormwater Management Systems

Markets

Local & Regional Planning

Project Location

Burlington, Vermont

Date Completed

2017 - present

Project Owner

Chittenden County Regional Planning
Commission

Project ID

17-061-B

Project Manager

Gabe Bolin, PE

Project Team

Amy Macrellis
Branden Martin, EI



The northern end of the Railyard Enterprise Project's proposed extent, near Battery Street.

STONE worked with the Chittenden County Regional Planning Commission and the City of Burlington to identify practices and strategies to mitigate flooding issues near the Burlington Railyard, within the extents of the Railyard Enterprise Project (REP) and adjacent to the City's Main Wastewater Treatment Plant (WWTP). The REP is intended to address multimodal safety, mobility, and operational transportation issues in the Waterfront South Area of Burlington, ultimately improving connections between Pine and Battery Streets. The existing drainage network conveys combined sewer flows to the WWTP during storm events but is sometimes overwhelmed. The capacity of the combined system is sometimes exceeded during high-intensity storms, causing localized flooding extending into the proposed roadway corridor.

Stone first evaluated the engineering feasibility of separating stormwater runoff flows from the combined sewer system in the REP project area via a new separate storm sewer system network that runs along the proposed Connector Road and which would discharge via one or more outfalls to Lake Champlain. Though design constraints and risks substantially challenge implementation, including flat topography, contaminated soils, utility and rail infrastructure conflicts, and cultural resources, our initial hydraulic analysis indicated one of the proposed separate storm sewer system routes may be feasible.

Following consultation with the City, Stone completed a cost and risk analysis of feasible alternatives, and evaluated water quality treatment options for the proposed separate storm sewer system. We performed additional hydraulic analysis to further assess the separate storm sewer system concerning flooding and safe roadway operation. Stone ultimately developed 30% designs and conceptual costs for the feasible separate storm sewer system and water quality treatment enhancements while considering known project constraints and their relative risks. We identified multiple

Future Railyard Enterprise Connector Road, Stormwater Engineering Feasibility Assessment



means through which water quality treatment may be accomplished for contributing impervious surfaces associated with the connector road and other drainage and provided recommendations for deeper exploration of costs and benefits related to these water quality practices in future design phases.