



**ENVIRONMENTAL REVIEW
FOR CLEAN WATER SRF LOANS**
Water Division/Wastewater Engineering Bureau



RSA/Rule: Env-Wq 508

I. PROJECT APPLICANT City of Portsmouth

ADDRESS 680 Peverly Hill Road, Portsmouth, NH 03801

PROJECT Sagamore Avenue Sewer Extension

SRF PROJECT NUMBER CS-330106-17

II. INTRODUCTION

The City of Portsmouth, New Hampshire has applied for a Clean Water State Revolving Fund (CWSRF) loan through the State of New Hampshire Department of Environmental Services in accordance with provisions of Chapter Env-Wq 500 rules of the department. These rules prescribe procedures for the application process concerning the CWSRF of the department. This document will discuss the requirements of Part Env-Wq 508 of these rules, the environmental review.

III. BACKGROUND

The City of Portsmouth, NH intends to extend public sewer services to the southern portions of Sagamore Avenue and the surrounding area in accordance with the City’s September 2016 Consent Decree modification. This action is prompted in part by a number of properties in the area having one or more of the following issues: failed septic systems, difficult soil conditions, and/or lack of space to address wastewater flows with on-site systems. In addition, the New Hampshire Department of Environmental Services (NHDES) completed a Total Maximum Daily Load (TMDL) study for bacteria of Little Harbor and identified Sagamore Creek (adjacent to the project area) as a potential contributor to impaired water quality in Little Harbor. In 2016, the EPA and NHDES updated a Consent Decree to the City requiring construction of the new sewer extension begin no later than June 2020 and be substantially completed on or before June 30, 2022. The City has requested an extension to these Consent Decree deadlines to June 2021 and December 2022 respectively.

To meet the requirements of the Consent Decree, installation of a low-pressure sewer system (LPSS) is recommended due to the shallow ledge located during field inspections. This type of system reduces construction costs by using small diameter pipes that can be installed at shallower depths than conventional sewer system mains. This system requires each property have a grinder pump that discharges the sewerage into the small diameter main located in the roadway.

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The following document has been developed and is available for public review:

Portsmouth, New Hampshire Sagamore Avenue Sewer Extension Preliminary Design Report,
Wright-Pierce, February 2021.

IV. PURPOSE AND NEED

The City of Portsmouth is required under Provision IV.d of the Second Modification of Consent Decree 09-cv-283-PB to extend sewer service to the Sagamore Avenue area and Walker's Bungalow Road area (these areas include Sagamore Avenue, Walker Bungalow Road, Shaw Road, Cliff Road, Little Harbor Road, Sagamore Grove, and Wentworth House Road). The purpose of this project is to meet the requirements of this consent decree by constructing a sewer system to serve the residential, commercial, and recreational properties that reside in the project area.

V. ALTERNATIVES ANALYSIS

Wright-Pierce produced two technical letter reports dated October 2008 and February 2011 for the City of Portsmouth evaluating options for extending part of the City's existing sewer system to the Sagamore South Area, the Walker Bungalow Road Area, and a portion of Sagamore Avenue. The two alternatives for possible sewer extensions were (1) conventional gravity sewer and (2) low-pressure sewer.

Alternative 1 consisted of 8-inch diameter PVC gravity sewer pipes, standard 4-foot diameter precast concrete manholes, and City-owned pump station(s). All areas that could flow by gravity to the existing collection system would flow to a new pump station and then be pumped to the existing collection system. In addition, based on topography, some parcels would require private pump stations if the areas could not flow by gravity.

Alternative 2 consisted of conventional gravity sewer in areas that can flow by gravity to the existing collection system and low-pressure sewer for the remaining areas. Low pressure sewer systems consist of small grinder pump stations installed near each dwelling and a 2- or 3-inch common PVC forcemain.

The letter report produced planning level project cost estimates for the alternatives. Alternative 1 was estimated to cost the City approximately \$4 million dollars more than Alternative 2. The private costs for Alternative 1 were also approximately \$170,000 more expensive than Alternative 2. This cost difference is mostly driven by the topography of the area and the large amount of ledge. Because low-pressure sewers do not require as much depth, they require less ledge removal than conventional gravity sewers. Based on the results of the cost-benefit analysis performed as part of the conceptual report, a low-pressure sewer was recommended.

Following these technical letter reports, the limits of the project area were extended, and further preliminary investigations were performed. Based on these preliminary investigations, the installation of a low-pressure sewer system is recommended.

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A 'no-action' alternative is not feasible because it would not meet the requirements of the Consent Decree and would not alleviate the issues occurring within the project area or address the impaired water quality of Sagamore Creek.

VI. DETAILS of PROJECT

Within the City's right-of-way or easements, the project includes the installation of approximately 400 linear feet of conventional gravity sewer in areas that can flow by gravity to the City's existing collection system and the installation of approximately 8,000 linear feet of low-pressure sewer for the majority of the area. The low-pressure sewer system will be equipped with small grinder pump stations installed near each dwelling and common force main.

Each residence will have a cover for the individual grinder pump installed. This will be considered a permanent impact of approximately 200 square feet. Temporary impacts within the right-of-way include approximately 8,400 linear feet from pipe installation. Existing pavement will be removed and replaced in-kind, either by trench patching or by mill and overlay, totaling approximately 135,000 square feet temporarily impacted. Proposed temporary impacts on private property, outside the City's right-of-way or easements, include approximately 5,000 linear feet of service pipe installation, and approximately 50,000 square feet of natural features such as shrubs and trees along with hardscaped features such as driveway pavement or retaining walls. All trees, shrubs, and hardscaped features will be replaced in kind. Approximately 33 trees are expected to be removed during the project.

The total project cost for the proposed project is estimated to be \$4,400,000.

VII. ENVIRONMENTAL CONCERNS AND MITIGATION

The environmental concerns of the project are minimal. No adverse environmental impacts are anticipated from the project. The primary impacts are short-term impacts which will affect the area only during the period of construction. The following categories of impacts will illustrate the potential negative and positive effects anticipated from the project:

Air: Air impacts will be limited to some dust created during the construction portion of the project. Dust will be prevented and controlled through the use of water or dust retardant chemicals. No long-term air impacts are anticipated; mitigation measures will be employed if needed.

Noise: The noise from construction activities should be limited in duration. Noise impacts, if encountered, will be minimized by scheduling work to reduce effects in the area. No long-term noise impacts are anticipated.

Surface Water, Groundwater, Wetlands, and Shoreland: This project will need to address the following permitting requirements:

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- The NH Shoreland Water Quality Protection Act (SWQPA) establishes the standards and regulations for use and development within the Shoreland Protection Area adjacent to public bodies of water. Sagamore Creek is considered a tidal waterway, which is protected by the SWQPA. A standard Shoreland Permit is required before construction of the sewer extension work within the Shoreland Protection Area can commence.
- The NHDES Wetlands Bureau regulates activity in and around jurisdictional wetlands. The temporary primary wetland impacts anticipated by the Sagamore Avenue Sewer Extension will be within the Tidal Buffer Zone (TBZ), which is the area within 100' from the highest observable tide line (HOTL). A Standard Dredge and Fill Wetlands Permit will be required as the project proposes to establish new utility assets within the 100' TBZ. Additional coastal requirements will also need to be satisfied as required in Env-Wt 600 as work is being proposed within the TBZ. The application will be submitted to the local Conservation Commission prior to submission to NHDES.
- This project qualifies for an Alteration of Terrain General Permit by Rule.
- The project will require a Construction General Permit.
- The State of New Hampshire requires that a use and occupancy permit be completed. This permit will be completed and submitted by the City.

Erosion will be minimized by using proper erosion control methods such as straw bales, silt fences and rapid re-seeding of affected areas. Best management practices will be employed in this effort.

Floodplain: The majority of the proposed utility replacement work is located outside of the 100-year flood plain (elevation 9'). It is not expected that work will occur within the 100-year flood plain.

Plants & Wildlife: A Natural Heritage Bureau DataCheck was conducted. Although species were identified in the vicinity of the proposed project, no impacts are expected as a result of the project.

Recreation and Historic: The Division of Historical Resources (NHDHR) reviewed the project and require a Phase 1A Archeological Survey be conducted for the Sagamore Avenue extension area. This survey was completed in November 2020; NHDHR has concurred with the results of the survey. As such, no archaeologically sensitive areas that will be affected by this project.

Social and Economic: The social and economic impacts from the project are expected to be favorable. Due to the site conditions, installation of a new septic system would be cost prohibitive for residents in this area. The new sewer system gives the residents a more cost-effective solution.

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Whereas this project constitutes only a minor project and no significant environmental impacts are anticipated, a Finding of No Significant Impact (FONSI) is proposed.

VIII. INTERGOVERNMENTAL REVIEW

Results from the Intergovernmental Review, coordinated by the New Hampshire Office of Strategic Initiatives, were received on April 23, 2019. The results summary indicates presumed concurrence with the proposed project.

Following the 2019 request, the proposed project area was extended. The Office of Strategic initiatives was contacted and notified of the modified project extents. It was determined by their office that an acknowledgement and waiver would be required. The waiver was received on February 1, 2021, stating that additional review was not required as the request is for a continuation of a previously funded project.

IX. PUBLIC REVIEW

The City has authorized funding in the amount of \$4,400,000 for the Sagamore Avenue Sewer Extension project on July 15, 2019.

A public notice will be published by the City of Portsmouth and a thirty-day public comment period will be held in accordance with the CWSRF rules.

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