



OFFICE OF THE COMMISSIONER

1000 Commonwealth Avenue
Newton Centre, MA 02459-1449Ruthanne Fuller
Mayor

January 30, 2023

To: Jonathan Yeo, Chief Operating Officer
Maureen Lemieux, Chief Financial Officer

From: James McGonagle, Commissioner

Subject: Docket Request for MWRA Sewer Funds Borrowing Authorization
MWRA Sewer Infiltration/Inflow Local Financial Assistance Program, Phase 14

I respectfully request a docket item be submitted for authorization of a sewer grant and loan from the Massachusetts Water Resources Authority (MWRA), as follows:

- A loan of \$1,085,000 from the MWRA, payable in 1/10 installments over 10 years,
- A grant of \$3,255,000 from the MWRA.

This is part of an MWRA interest free Phase 14 sewer loan/grant program (25% loan/75% grant) of a total of \$4,340,000. This proposed borrowing will allow Public Works to implement a portion of the sewer improvements as outlined in the 5-year Capital Improvement Plan as follows.

Sewer CIP Project 9A Construction:

Sewer CIP Project 9A Rehabilitations will include construction of "Trenchless" and "Excavate and Replace" rehabilitations to eliminate sewer/underdrain cross connections and to eliminate infiltration from the sanitary sewer system. These projects will be constructed to reduce sewer infiltration and inflow sources and provide improvement to existing sewer structures. The objective of this project is to construct sanitary sewer rehabilitations that will eliminate infiltration and inflow to the sanitary sewer system, eliminate sanitary sewer contamination to the underdrain system, and repair underdrain access points that are contributing infiltration to the sanitary sewer system. The design of this sewer project area is completed.

Oak Hill Park Sewer CIP Project 9B Design and Construction:

Sewer CIP Project 9B Rehabilitations will include the design and construction of "Trenchless" and "Excavate and Replace" rehabilitations to eliminate sewer/underdrain cross connections and to eliminate infiltration from the sanitary sewer system in the Oak Hill Park Area. It has been determined that this area requires extensive sewer rehabilitation, and therefore is separated from Project 9A mentioned above. The design of this sewer project area will be completed this year.

Pending your approval, the Treasurer will submit a request to Bond Council which will be provided to the Clerk's Office for inclusion as a docket item to the Honorable City Council.

cc: Steve Curley, Comptroller
Ron Mendez, Treasurer
Shawna Sullivan, Deputy Commissioner DPW
Louis M. Taverna, City Engineer
Tom Fitzgerald, Director of Utilities
Doug Valovcin, Deputy Director of Utilities
Kelley Cadman, DPW Business Manager

MASSACHUSETTS WATER RESOURCES AUTHORITY
 CHARLESTOWN NAVY YARD, 100 FIRST AVENUE, BOSTON, MA 02129

MWRA INFILTRATION/INFLOW LOCAL FINANCIAL ASSISTANCE PROGRAM
 FINANCIAL ASSISTANCE APPLICATION
 Updated July 2019

FOR MWRA USE ONLY

PROJECT NO.: _____

APPLICANT: _____

NAME OF PROJECT: _____

DATE RECEIVED: _____

Section 1 - Financial Assistance Requested

Name of Applicant: City of Newton, Massachusetts

Address of Applicant: 1000 Commonwealth Avenue

Newton, Massachusetts 02459

Name of Authorized Representative: Louis M. Taverna, PE

Telephone Number of Representative: (617) 796-1020

Name of Applicant's Consultant Firm and Representative (if applicable):

Weston & Sampson, Patrick A. Terrien, PE Telephone No.: (978) 767-5123

The following attached exhibits are hereby made part of this application for financial assistance under the MWRA's Infiltration/Inflow Local Financial Assistance Program. The undersigned representative of the Applicant certifies that the information presented in this application and its exhibits is true, correct and complete to the best of their knowledge:

1/25/2023

(Date)

Louis M. Taverna

(Signature of Authorized Representative)

City Engineer

(Title)

Section 2 - Project Description

Describe the proposed project, including the following as applicable:

- a. **Type of Project:** Such as planning, design, construction, or a combination.
- b. **Objective of the Project:** Such as infiltration, inflow, or a combination of I/I reduction to be achieved through rehabilitation of manholes, pipeline sections, private inflow source removals, etc. For planning phase projects, the project objective may be the identification and/or quantification of I/I.
- c. **Location of the Project:** Such as a list of street names or a specific section of the community. If possible, please submit report maps and/or community sewer maps with the application. For initial planning phase projects, the project location may include the entire community.
- d. **Phased Program:** Is the project part of a phased program of I/I reduction and, if so, what are the other components of the overall program the community is pursuing?
- e. **Estimated Quantity of Infiltration and/or Inflow to be Reduced:** The applicant should estimate both the peak and annual average infiltration and/or inflow anticipated to be reduced following completion of the construction phase of the project. For initial planning phase projects, this item may not be applicable if the project objective is the identification and/or quantification of I/I (see Section 15 for detailed I/I reduction estimates).

a. Type of Project

The city is requesting money for design and construction projects. A summary of the projects is included below.

Design

- Oak Hill Park Area Sewers Replacement Design

Construction

- CIP Project 9 Rehabilitations and Oak Hill Park Area Sewers Replacement

b. Objective of the Project

The objective of CIP Project 9 Rehabilitations and Oak Hill Park Area Sewers Replacement is to construct sanitary sewer rehabilitations and replacement of sewers that will:

- a. Eliminate infiltration to the sanitary sewer system
- b. Eliminate inflow to the sanitary sewer system
- c. Eliminate sanitary sewer contamination to the underdrain system
- d. Repair underdrain access points that are contributing infiltration to the sanitary sewer system

The objective of Oak Hill Park Area Sewers Replacement Design is to design “Excavate and Replace” rehabilitations that will:

- a. Eliminate infiltration to the sanitary sewer system
- b. Eliminate inflow to the sanitary sewer system

c. Location of the Project

CIP Project 9 Rehabilitations will include repair of defects in sanitary sewer subareas A001, A002, A003, A010, A011, A013, and A015.

Oak Hill Park Area Sewers Replacement will include replacement of sanitary sewers in subarea A001.

d. Phased Program

CIP Project 9 is part of the City of Newton’s 11 Year Sewer Capital Improvement (CIP) Plan.

e. Estimated Quantity of Infiltration and/or Inflow to be Reduced

CIP Project 9 Rehabilitations and Oak Hill Park Area Sewers Replacement will remove an estimated 329,145 gallons per day of peak infiltration and an estimated 38,192 gallons per day of peak inflow from the sanitary sewer system.

Section 3 - Documentation of Project Need

Identify records that document the project's need, including, but not limited to:

- a. Facility Plans;
- b. I/I Reports;
- c. Sewer System Evaluation Surveys;
- d. Physical Surveys;
- e. Internal TV Inspection;
- f. DPW Maintenance Records;
- g. Flow Measurement Records; and,
- h. Pump Station Records.

CIP Project 9 – Inspection and Assessment Report (Weston & Sampson Engineers, Inc., April 21, 2020).

Section 4 - Project Schedule

Provide a realistic schedule outlining important milestones in the planning, design, and/or construction phase. If a schedule is attached to the financial assistance application separate from this section, please note the attachment here. The estimated project start date must be included.

Design

CIP Project 9 Design	January 2022 to May 2023
CIP Project 9 – Phase 1 Bid and Award	May 2023 to July 2023
CIP Project 9 – Phase 2 Bid and Award	February 2024 to April 2024
Oak Hill Park Area Sewers Replacement Design	April 2023 to December 2023
Oak Hill Park Area Sewers Replacement Bid and Award	To be determined

Construction

CIP Project 9 – Phase 1 Rehabilitations	July 2023 to April 2024
CIP Project 9 – Phase 1 Warranty Re-Test	March 2025 to June 2025
CIP Project 9 – Phase 2 Rehabilitations	April 2024 to January 2025
CIP Project 9 – Phase 2 Warranty Re-Test	April 2025 to July 2025
Oak Hill Park Area Sewers Replacement	To be determined

Section 5 - Map of Project

Attach a project map denoting the collection system and/or general plan of the proposed project site. If no map or plan is submitted with the application, an explanation must be provided.

See Attachment 1 for a locus map of the CIP Project areas. Oak Hill Park Area Sewers are in the CIP Project 9 Area.

Section 6 - Project Funding

The applicant must list all sources of funding proposed for the project.

For funding through the MWRA I/I Local Financial Assistance Program, the applicant must provide documentation of the authorization to execute the Financial Assistance Agreement and repay the loan portion of financial assistance. **Documentation of authorization may be in the form of a Town Meeting Action, City Council Vote, or other binding action. If available, documentation should be attached to the application.**

If funding through the MWRA I/I Local Financial Assistance Program will not cover 100 percent of the project costs, the applicant must demonstrate that sufficient funds are available to cover the additional project costs from other resources. Documentation of the

availability of other resources may be in the form of a Town Meeting Action, City Council Vote, or other binding action. If available, documentation should be attached to the application.

<u>Source</u>	<u>Amount</u>	<u>Date Available</u>
1. MWRA I/I Financial Assistance		
Phase 14 Grant (75% of \$4,340,000)	\$ 3,255,000	February 2023
Phase 14 Loan (25% of \$4,340,000)	\$ 1,085,000	February 2023
2. Community Funding	\$ 7,243,258	February 2023
3. General Obligation Bond		
4. Non-MWRA Grant		
5. Clean Water State Revolving Fund		
6. Other (Specify Source)		
TOTAL		
	\$11,583,258	

Section 7 - Summary of Costs

Provide a detailed tabulation of the estimated cost of each project phase (i.e. Planning, Design, Construction, Construction Services, etc.) and major tasks under each project phase. Major tasks to be detailed may include those listed as eligible project costs in Section 2.7 of the MWRA I/I Local Financial Assistance Program Guidelines or other project tasks that may or may not be eligible for MWRA financial assistance funding.

Note: If construction paving costs represent more than ten percent (10%) of the project cost, they should be identified as a separate project phase or subtask in the list below.

For each engineering task, a breakdown of the cost into staff labor category, staff hours, hourly rates, direct labor costs, indirect labor costs, other direct costs and/or expenses, etc. should be included on an attached summary table.

The **total project cost** and **estimated total eligible project cost** should be provided at the bottom of the table.

<u>Project Phases and Subtask</u>	<u>Estimated Total Project Cost</u>	<u>Estimated Eligible Project Cost</u>
CIP Project 9 Construction of Rehabilitations	\$ 7,071,758	\$ 7,071,758
CIP Project 9 Construction Services	\$ 1,200,000	\$ 1,200,000
Oak Hill Park Area Sewers Replacement Design	\$ 311,500	\$ 311,500

Oak Hill Park Area Sewers Replacement	\$ 2,500,000	\$ 2,500,000
Oak Hill Park Area Sewers Replacement Construction Services	\$ 500,000	\$ 500,000

TOTAL COST: \$11,583,258 \$11,583,258

Date of Cost Estimate: April 21, 2020 ENR Index: N/A

Source of Cost Estimate: Preliminary Design (CIP Project 9 – Inspection and Assessment Report (Weston & Sampson Engineers, Inc., April 21, 2020)).

Section 8 - Interdependent Projects

Explain whether financing has been received or is being requested for this project, or a separate phase of the project, from a non-MWRA grant, the Clean Water State Revolving Fund (CWSRF) program, or another grant/loan program.

Specify related and/or interdependent projects or portions of projects. For example, if the applicant is performing the design phase of a project under community funding or CWSRF funding, and MWRA financial assistance is being requested for the construction phase under this application, then the construction phase is dependent on completion of the design phase.

Financing is being requested through the MWRA Phase 14 Financial Assistance Program.

Section 9 - Intermunicipal Projects

If the project will serve two or more municipalities, or one community's project extends into another community, the applicant must explain the circumstances. State whether the municipalities have, or propose to have an intermunicipal agreement or other legally binding documents covering financing, construction, and/or operation of the proposed improvements. If not, detail historic cooperative service relationships between the parties.

This project does not serve two or more communities.

Section 10 - Project Permits and Certificates

Review the list below and note the permits or certificates which: (1) have been obtained, (2) will be obtained, or (3) may be required prior to initiation of the project.

	<u>Has been Obtained</u>	<u>Will be Obtained</u>	<u>May be Required</u>
U. S. ARMY CORPS OF ENGINEERS	_____	_____	_____
MA DIVISION OF WATERWAYS Chapter 91 License	_____	_____	_____
LOCAL CONSERVATION COMMISSION	_____	_____	_____
DEP - DIVISION OF AIR QUALITY	_____	_____	_____
DPW HIGHWAY PERMIT	_____	_____	_____
LOCAL SEWER PERMIT	_____	_____	_____
DCR CONSTRUCTION PERMIT	_____	_____	_____
MBTA/CONRAIL LICENSE	_____	_____	_____
DWPC (401) WATER QUALITY CERT.	_____	_____	_____
CZM CONSISTENCY CERTIFICATE	_____	_____	_____
MEPA - Environment Notification Form (ENF) and/or Environmental Impact Report (EIR)	_____	_____	_____
FLOOD INSURANCE PARTICIPATION	_____	_____	_____
HISTORIC - Mass. Historical Commission	_____	_____	_____
LEGISLATION - Legislation from the Mass. General Court could be required prior to: construction in dedicated conservation land, construction by one community within the municipal boundaries of another, and easements in state owned land.	_____	_____	_____

OTHER Street Opening Permit, Trench Permit, MWRA One-Time-Only Discharge Request Permit, MWRA Request to Conduct a Root Control Project.

Section 11 - Construction Plans, Specifications, and Bidding Documents

For proposed construction projects and equipment/materials purchases, the applicant should outline the status of the plan, specification, and bidding document preparation and the time schedule for completion. If these documents are not required for the project, an explanation must be included in this section.

If available, a copy of the final engineering plans, specifications, and bidding documents for each contract or equipment/material purchase should be submitted with the application.

A copy of the contract documents will be forwarded to the MWRA when they are available.

Section 12 - Engineering Agreement

For proposed planning, design, and/or construction projects, the applicant should outline the status of an engineering agreement and time schedule for its completion (if a Consulting Engineer will be used for any portion of the project). If no engineering agreement is required for the project, an explanation must be included in this section.

If available, a copy of the proposed or executed engineering agreement for each contract should be submitted with the application.

A copy of the engineering agreements between the City of Newton and Weston & Sampson Engineers, Inc. will be forwarded to the MWRA when available.

Section 13 - Force Account Work

If the applicant proposes to perform funding eligible portions of the project (planning, design, construction services or construction activities) using its own staff (force account work), a description of the force account activities must be provided. List the type of force account task, staff titles, affiliated department, estimated hours to perform task, and direct labor rates (or range) for each title. **Please note that charges for overhead, overtime, and/or the use of vehicles or equipment owned by the applicant, and staff time to obtain permits or licenses are ineligible.**

Not applicable.

Section 14 - Other Project Information

The applicant is encouraged to provide any other additional information that may enable the Authority to determine that the project is a viable I/I reduction project and assess eligible project costs.

Elimination of sewer/underdrain cross connections and pipeline infiltration will reduce flow to Newton's sewer system.

Section 15 - Estimated I/I Reduction and Potential Cost Benefit of I/I Removal

The applicant should provide as complete information as possible on the estimated infiltration and/or inflow reduction that is anticipated to be achieved when the construction phase of the project is concluded. For projects that will reduce groundwater infiltration, the peak month (usually within the Spring season) infiltration reduction and average annual infiltration reduction should be estimated. For projects that will reduce stormwater inflow, the design storm peak hour inflow rate reduction, design storm inflow volume reduction, and average annual inflow reduction should be estimated. The "design storm" is defined (by DEP) as a storm with a one year return period, a one hour peak rainfall intensity of about 0.87 inches, and a six hour cumulative rainfall of about 1.72 inches (see DEP's Guidelines for Performing I/I Analyses and Sewer System Evaluation Surveys).

Using these I/I reduction estimates, Authority staff will run the MWRA wholesale rate model for the preceding fiscal year to estimate the dollar value of the rate reduction that would have been realized by the applicant if the estimated flow reduction had taken place in the previous year. MWRA staff will provide the results of the rate model analysis to the community. This information may be helpful in analyzing the project's potential cost benefit. As a standard, the analysis will be performed holding all other MWRA service area community flows constant. However, if requested by the applicant, rate model runs can be made to simulate the net affect other community potential flow reductions may have on the applicant's wholesale sewer rate.

The applicant may submit the I/I reduction information with the financial assistance application. However, at the applicant's discretion, the I/I reduction information form may be submitted to the MWRA prior to the submittal of the full application. This would allow the community to review the results of the Authority's wholesale rate analysis and use the information as a decision making tool when evaluating one or more I/I projects. For more information on this process, the applicant is encouraged to contact MWRA Community Support Program staff.

Estimated Project Infiltration Reduction:

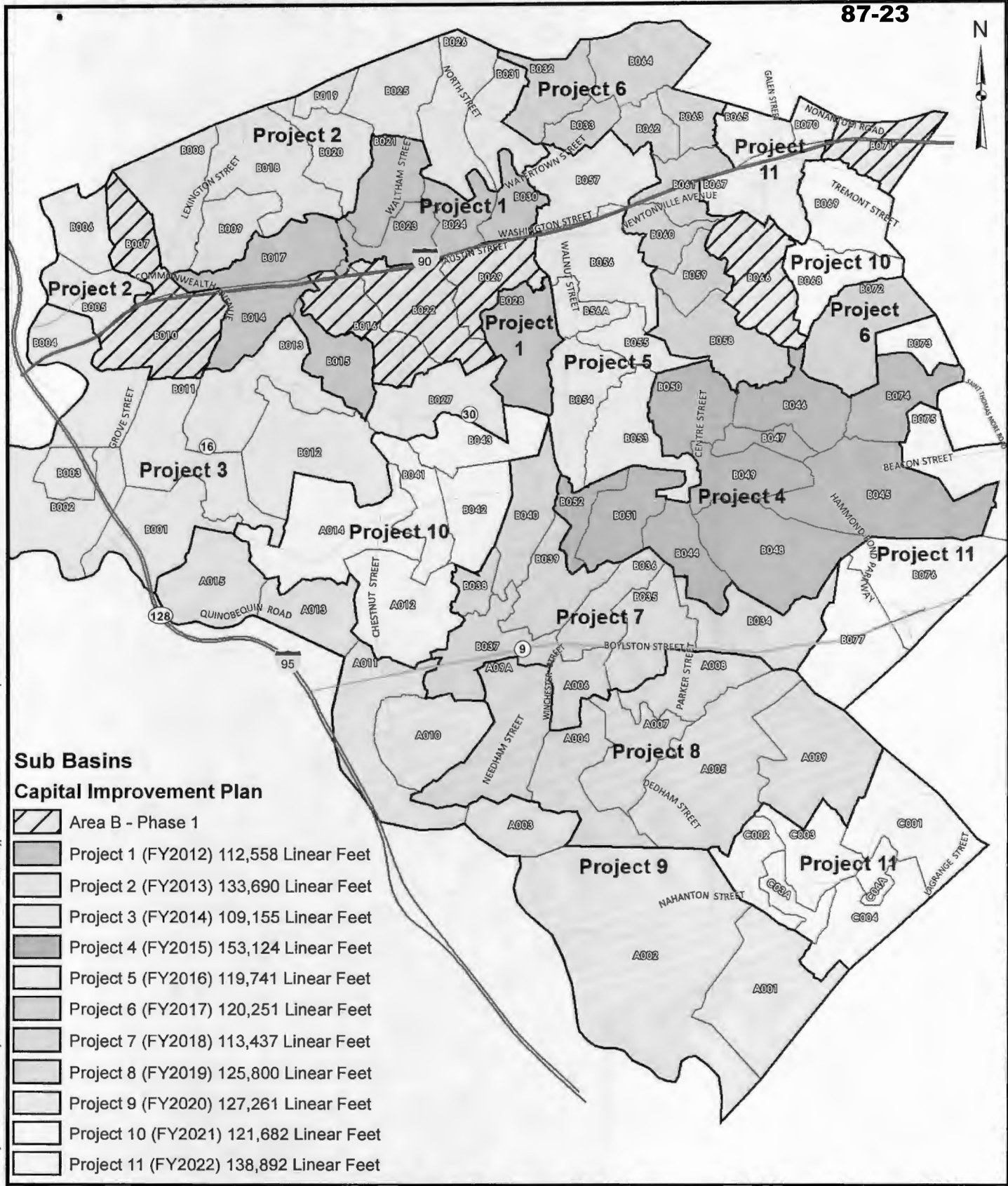
- (1) Peak month reduction: N/A mgd; (2) Annual average reduction: N/A mgd.

Estimated Project Inflow Reduction:

- (1) Design storm peak hour inflow rate reduction: N/A mgd;
 (2) Design storm inflow volume reduction: N/A mg;
 (3) Average annual inflow reduction: N/A mgd.













Comments:

CIP Project 9 Rehabilitations and Oak Hill Park Area Sewers Replacement will remove an estimated 329,145 gallons per day of peak infiltration and an estimated 38,192 gallons per day of peak inflow from the sanitary sewer system. Oak Hill Park area sewers are in the CIP Project 9 area.



Sub Basins

Capital Improvement Plan

-  Area B - Phase 1
-  Project 1 (FY2012) 112,558 Linear Feet
-  Project 2 (FY2013) 133,690 Linear Feet
-  Project 3 (FY2014) 109,155 Linear Feet
-  Project 4 (FY2015) 153,124 Linear Feet
-  Project 5 (FY2016) 119,741 Linear Feet
-  Project 6 (FY2017) 120,251 Linear Feet
-  Project 7 (FY2018) 113,437 Linear Feet
-  Project 8 (FY2019) 125,800 Linear Feet
-  Project 9 (FY2020) 127,261 Linear Feet
-  Project 10 (FY2021) 121,682 Linear Feet
-  Project 11 (FY2022) 138,892 Linear Feet

**NEWTON, MA
SANITARY SEWER SYSTEM**

**11 YEAR
CAPITAL IMPROVEMENT PLAN**



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CITY OF NEWTON

IN CITY COUNCIL

DRAFT

ORDERED:

That, in accordance with the recommendation of the Public Facilities Committee through its Chair Alison Leary and the Finance Committee through its Chair Rebecca Walker-Grossman, the Commissioner of Public Works be and is hereby authorized to incur expenditures in an amount not to exceed four million three hundred forty thousand dollars (\$4,340,000) received from the Massachusetts Water Resources Authority. The City Treasurer is authorized to borrow all or any portion of the one million eighty-five thousand dollars (\$1,085,000) that has been made available to the City as an interest-free loan from the Massachusetts Water Resources Authority. The remaining funds, three million two hundred fifty-five thousand dollars (\$3,255,000), have been received as an outright grant to the City from the Massachusetts Water Resources Authority for the purpose of funding the design and construction of Sewer CIP Project 9.

Under Suspension of Rules
Readings Waived and Approved
DRAFT

(SGD) Carol Moore
City Clerk

(SGD) RUTHANNE FULLER
Mayor

Date: _____