



City of Bowie

15901 Excalibur Road
Bowie, Maryland 20716

The Honorable Lawrence J. Hogan, Jr.
Governor of Maryland
State House
100 State Circle
Annapolis, MD 21401-1925

Dear Governor Hogan:

As a member of the Board of Public Works, I seek your assistance in obtaining \$15,000,000 in State funding to address a critical need to replace severely deteriorated public water mains.

The City's water/sewer utility includes 90 miles of water mains which were almost entirely installed during the 1960s. This piping is mostly unlined cast iron pipe that has deteriorated and suffers from severe tuberculation that has significant negative impacts to water quality and flow. The enclosed short paper provides additional information about this problem.

The City has begun a \$15M, multi-phased project to replace about 7 miles of water mains that are the most severely deteriorated. The cost burden for this effort is currently being charged to the rate payers. Since additional projects will be required after this first effort, these rate payers will likely suffer cost impacts indefinitely.

In September 2017, City staff met with Maryland Department of Environment (MDE) staff to seek funding support through the Water Quality Financing Administration. MDE staff explained that while low cost loans might be available, the City would not likely successfully compete for grants. Since Water Supply Financing grants are not a solution for the City, I am seeking your assistance in identifying other sources to address the deterioration of Bowie public water infrastructure.

Thank you for your assistance in this matter. I look forward to your response.

Sincerely,

Bowie City Council
Timothy J. Adams
Mayor

cc: Sheila C. McDonald, Esq.
Board of Public Works

Encl: City Of Bowie, Water Distribution System Recapitalization

CITY OF BOWIE, WATER DISTRIBUTION SYSTEM RECAPITILIZATION

Project Background:

The City of Bowie owns and operates a water/sewer utility that currently serves 7909 customers.

CITY OF BOWIE

City Water/Sewer Utility

- 7909 Customers
 - 7673 Residential
 - 236 Commercial
 - 25,000 Estimated Population Served

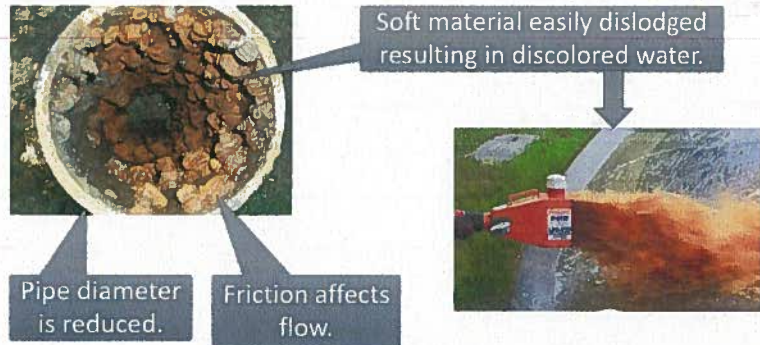
WSSC

- Serves nearly all remaining parts of City



With a few small exceptions, the water distribution system was constructed between 1960 and 1970, entirely of cast iron piping. The majority of the cast iron piping is unlined and subject to a corrosion that results in tuberculation. This corrosion severely impact the distribution system, negatively impacting flow

capacity and resulting in frequent incidents of poor water quality. Based on investigations conducted, the City estimates that 50 miles of the total 90 miles of water mains are affected by tuberculation.



Alternatives for correcting the problem have been evaluated. The results of that evaluation are that piping should be replaced.

Initial Recapitalization Program; ~ 7 miles

City Council has approved a "Capital Renewal Fee" added to all rate payer bills to fund an initial effort to replace approximately 7 miles of water main. While this program addresses only 14% of the tuberculated water mains, it will address those areas most significantly impacted as determined through investigation, testing and computer modeling.

A summary of funding needs for this program is provided in the table below.

COST ITEM	QTY	UNITS	UNIT COST (\$K)	EXPANDED (\$K)
CONTRACTED SERVICES				
HEATHER HILLS WATER MAINS REPLACEMENT TO ADDRESS FIRE FLOW	2198	FT	\$0.36	\$791
PHASE 1 WATER MAIN RECAP				
DESIGN SERVICES	2.5	MILES	\$150.0	\$375
CONSTRUCTION	2.5	MILES	\$1,335.0	\$3,338
CONSTR MINGMNT, INSPECTION & ADMIN	12	MONTHS	\$30.0	\$360
PHASE 2 WATER MAIN RECAP				
DESIGN SERVICES	2.5	MILES	\$159.2	\$398
CONSTRUCTION	2.5	MILES	\$1,416.7	\$3,542
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PHASE 3 WATER MAIN RECAP				
DESIGN SERVICES	2.5	MILES	\$168.9	\$422
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CONSTR MINGMNT, INSPECTION & ADMIN	12	MONTHS	\$33.8	\$405
SUB TOTAL CONTRACTED SERVICES				\$13,772
IN HOUSE SERVICE				
FULL TIME PROJECT MANAGER	7	YEARS	\$104.0	\$728
SUB TOTAL IN HOUSE SERVICES				\$728
TOTAL PROJECT COST				\$14,500

The City has contracted design services for "Phase 1" of this program which includes 2.5 miles of pipe in a neighborhood known as Heather Hills. A diagram of the piping to be replaced and the schedule for this first phase project is shown below.



Figure 1: Heather Hills Water Main

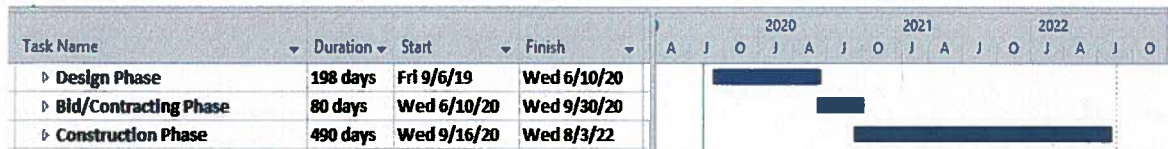


Figure 2: Phase 1, Heather Hills Water Main Recap Schedule

Phases 2 and 3 of the Initial Recapitalization Program are still in planning stages. Locations for pipe replacements are still being considered. The goal of the program is to address the highest need as determined by pipe condition, water quality and water flow problems. Inspections, flow testing, and computer modeling are underway in order to finalize the decision on water mains to be replaced. The overall schedule for this initial recapitalization program is shown below:

Task	Miles Replaced (estimated)	2020	2021	2022	2023	2024	2025	2026	2027
Construction Heather Hills Water Main (0.4 miles)	0.4	\$791,000							
Phase 1 Design		\$375,000							
Phase 1 Construction (est 2.5 miles)	2.5		\$3,698,000	→	→				
Phase 2 Design					\$998,000				
Phase 2 Construction (est 2.5 miles)	2.5					\$3,924,000	→	→	
Phase 3 Design								\$422,000	
Phase 3 Construction (est 2.5 miles)	2.5								\$4,164,000
Project Management Services			\$104,000	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000
Totals	7.9	\$1,166,000	\$3,802,000	\$104,000	\$502,000	\$4,028,000	\$104,000	\$526,000	\$4,268,000
Total Project Cost FY20-27									\$14,500,000

Future Requirements

As stated above, the Initial Recapitalization Program addresses about 14% of the estimated 50 miles of piping suffering from tuberculation. The system includes another 40 miles of piping (90 miles total) that will reach the end of its expected life over the next 50 years. This is based on the 100 year expected useful life of cast iron water mains. The City will need to significantly increase the rate of water main replacements in order to ensure a viable distribution system. A side by side comparison of current recapitalization plans versus long term needs is shown below.

- | | |
|--|--|
| <ul style="list-style-type: none"> • Current Recap Plan - 7 miles
<i>(Immediate Needs - Tuberculation)</i> <ul style="list-style-type: none"> • 2020-2028 (9 yrs) • 0.8 miles per year • \$14.5M <p><i>(At .8/year, entire recap is 113 years)</i></p> | <ul style="list-style-type: none"> • Needed System Wide Recap
<i>(100 yr life)</i> <ul style="list-style-type: none"> • 2020-2070 (50 yrs) • 1.8 miles per year • \$135M |
|--|--|



City of Bowie

15901 Excalibur Road
Bowie, Maryland 20716

The Honorable Nancy K. Kopp
Maryland State Treasurer
80 Calvert Street
Annapolis, MD 21401

Dear Treasurer Kopp:

As a member of the Board of Public Works, I seek your assistance in obtaining \$15,000,000 in State funding to address a critical need to replace severely deteriorated public water mains.

The City's water/sewer utility includes 90 miles of water mains which were almost entirely installed during the 1960s. This piping is mostly unlined cast iron pipe that has deteriorated and suffers from severe tuberculation that has significant negative impacts to water quality and flow. The enclosed short paper provides additional information about this problem.

The City has begun a \$15M, multi-phased project to replace about 7 miles of water mains that are the most severely deteriorated. The cost burden for this effort is currently being charged to the rate payers. Since additional projects will be required after this first effort, these rate payers will likely suffer cost impacts indefinitely.

In September 2017, City staff met with Maryland Department of Environment (MDE) staff to seek funding support through the Water Quality Financing Administration. MDE staff explained that while low cost loans might be available, the City would not likely successfully compete for grants. Since Water Supply Financing grants are not a solution for the City, I am seeking your assistance in identifying other sources to address the deterioration of Bowie public water infrastructure.

Thank you for your assistance in this matter. I look forward to your response.

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Encl: City Of Bowie, Water Distribution System Recapitalization

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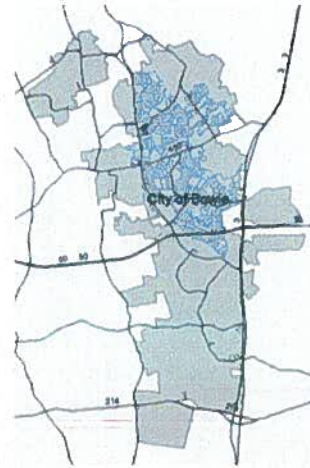
CITY OF BOWIE

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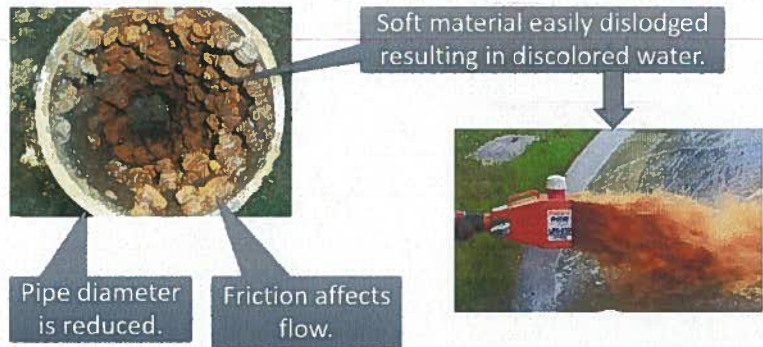
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Alternatives for correcting the problem have been evaluated. The results of that evaluation are that piping should be replaced.

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A summary of funding needs for this program is provided in the table below.

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The City has contracted design services for "Phase 1" of this program which includes 2.5 miles of pipe in a neighborhood known as Heather Hills. A diagram of the piping to be replaced and the schedule for this first phase project is shown below.

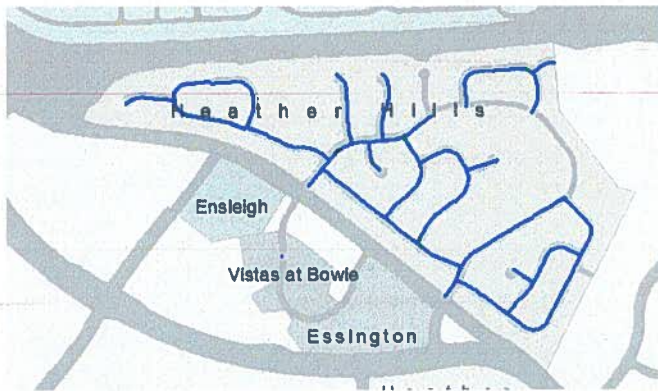


Figure 1: Heather Hills Water Main

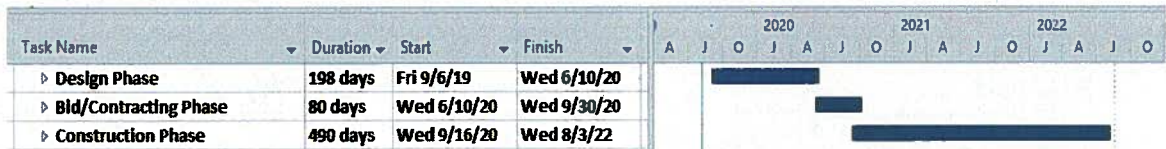


Figure 2: Phase 1, Heather Hills Water Main Recap Schedule

Phases 2 and 3 of the Initial Recapitalization Program are still in planning stages. Locations for pipe replacements are still being considered. The goal of the program is to address the highest need as determined by pipe condition, water quality and water flow problems. Inspections, flow testing, and computer modeling are underway in order to finalize the decision on water mains to be replaced. The overall schedule for this initial recapitalization program is shown below:

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Total Project Cost FY20-27									\$14,500,000

Future Requirements

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- **Current Recap Plan - 7 miles**
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 - 0.8 miles per year
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 - **Needed System Wide Recap**
(100 yr life)
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- (At .8/year, entire recap is 113 years)*



City of Bowie

15901 Excalibur Road
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The Honorable Peter Franchot
Comptroller of Maryland
80 Calvert Street
PO Box 466
Annapolis, MD 21404-0466

Dear Comptroller Franchot:

As a member of the Board of Public Works, I seek your assistance in obtaining \$15,000,000 in State funding to address a critical need to replace severely deteriorated public water mains.

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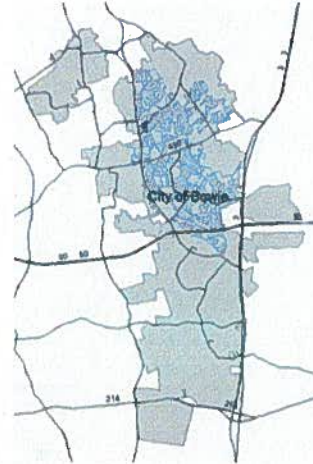
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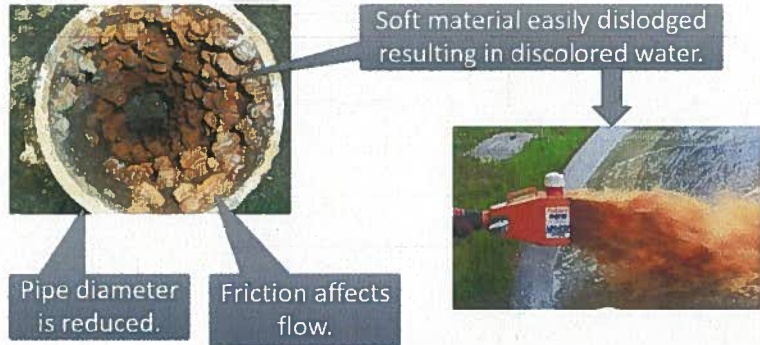
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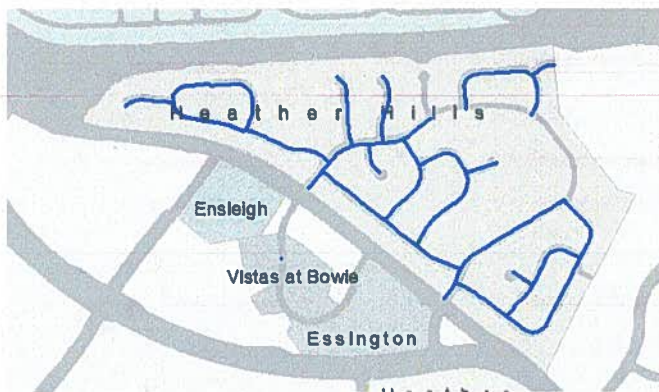


Figure 1: Heather Hills Water Main

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				A	J	O	J	A	J	O	J	A	J	O
Design Phase	198 days	Fri 9/6/19	Wed 6/10/20											
Bld/Contracting Phase	80 days	Wed 6/10/20	Wed 9/30/20											
Construction Phase	490 days	Wed 9/16/20	Wed 8/3/22											

Figure 2: Phase 1, Heather Hills Water Main Recap Schedule

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