

**AQUARION WATER COMPANY OF NEW HAMPSHIRE  
WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT**

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Contents:

Project Summary	Estimated capital expenses by major category All projected figures for 2018-2020 are estimates.
Hydrants	Aquarion has historically replaced 2 hydrants per year, on average.
Services	Aquarion has historically replaced 5 services per year, on average.
Main Replacements	Main replacements are prioritized based on GIS information. As of this date, the distribution system is separated into 1,291 pipe segments. Each segment is rated on each of the categories described below. Most ratings are based on a scale of 0 (low) to 3 (high); exceptions are noted below. The ratings for each category are summed to produce an overall rating for each pipe segment as shown in CM-2. The highest rated pipe segments are scheduled for replacement.

**PRIMARY FACTORS**

Bleeder (Non-revenue water)	3 - Main requires a bleeder to prevent freezing 0 - Main does not require a bleeder to prevent freezing
Hydraulic Capacity	3 - Hydrants do not provide satisfactory fire flow rates 2 - Hydraulic model indicates less than expected flow rates with little redundancy (i.e., parallel mains) 1 - Hydraulic model indicates less than expected flow rates with some redundancy 0 - Hydrants provide satisfactory fire flow rates
Main Break History Ratings	One point per break.
Pipe Material Ratings	3 - Galvanized Steel (GS) 3 - Universal Pipe (UP) 3 - Lead joint (LJ) 3 - Asbestos-cement (AC) 2 - Cast iron 0 - Copper (CU) 0 - Ductile iron (DI) 0 - High density polyethylene (HDPE) 0 - Plastic wrapped ductile iron (PWDI) 0 - Poly-vinyl-chloride (PVC) 0 - Unknown (UNK)
Pipe Age / Useful Life Ratings	3 - Installed in 1915 or sooner 2 - Installed between 1916 and 1925 1 - Installed between 1926 and 1940 0 - Installed after 1940

**SECONDARY FACTORS**

Critical System Component Ratings	3 - Primary transmission line w/ no redundancy 2 - Primary transmission line w/ redundancy 1 - Secondary transmission line 0 - Regular distribution main
Lining	1 - unlined cast iron

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Scheduled Work	3 - Paving or excavation projects by others scheduled in next two years
Coordination	2 - Paving or excavation projects by others scheduled in next three or four years 1 - Paving or excavation projects by others scheduled in more than four years 1 - Adjacent to another high scoring pipe segment 0 - No other scheduled projects -1 - Street was paved five years ago -2 - Street was paved four years ago -3 - Street was paved three years ago -4 - Street was paved two years ago -5 - Street was paved one year ago
Staff Concerns / Other Factors	Staff judgment is simply a way of expressing subjective factors that can have a large impact on projects. Some examples are to avoid disrupting the same neighborhood in consecutive years and choosing to postpone a project for more time to evaluate alternative replacement methods.
Budget Constraints	Execution of top priority main replacement projects may not leave enough funding for the runner up projects, so lower scoring and lower cost projects may be done instead.
Water Quality Issues	Dropped because water quality problems cannot be reliably linked to individual main segments. Most water quality issues have been traced back to source wells, not mains. Even water quality tuberculated mains tends to show up somewhere downstream of the source.
Main Replacement Project Management	Some main replacement projects are split into design and construction phases. Due to the amount of time required for surveys, design, permitting and other design phase factors, these activities are typically scheduled for the year prior to construction. Attempts to squeeze design and construction into a single calendar year have caused scheduling and budgeting problems. The design phase typically cannot be completed early enough in the year to allow for a sufficient construction period with respect to cold weather, road opening bans and year end accounting constraints.
Control Valves	Includes pressure reducing valves and other control valves; none are currently scheduled for replacement, but a breakdown or failure could occur that would require a replacement.
Valves	Aquarion has historically replaced 1 valve per year, on average.
Production Meters	Replacement / capitalized repairs of production meters is performed on an as needed basis when routine calibration show that the meters are not functioning accurately. Sometimes these replacements can be scheduled in advance when included as part of a pumping station upgrade.

**Aquarion Water Company of New Hampshire  
Water Conservation and Infrastructure Adjustment Project Summary**

	Actual completed thru 30-Sep-17	Projected thru 30-Sep-18		Projected thru 30-Sep-19		Projected thru 30-Sep-20		Project Totals	
		Low	High	Low	High	Low	High	Low	High
MAIN REPLACEMENTS									
Lafayette Road - High Street to Winnacunnet Road	\$ 813,883								
Hampton River Crossings		\$ 643,000	\$ 926,000					\$ 643,000	\$ 926,000
Ninth St		\$ 59,000	\$ 85,000					\$ 59,000	\$ 85,000
Seventh St		\$ 59,000	\$ 85,000					\$ 59,000	\$ 85,000
Sixth St		\$ 60,000	\$ 90,000					\$ 60,000	\$ 90,000
Tenth St		\$ 59,000	\$ 85,000					\$ 59,000	\$ 85,000
Mill Rd - Atlantic Avenue to Pine Road				\$ 864,000	\$ 1,243,000			\$ 864,000	\$ 1,243,000
Ocean Boulevard - Dumas Avenue to Highland Avenue						\$ 920,000	\$ 1,323,000	\$ 920,000	\$ 1,323,000
CONTROL VALVES	\$ -								
PRODUCTION METERS	\$ -		\$ 3,500		\$ 3,500		\$ 3,500		\$ 10,500
HYDRANTS	\$ -		\$ 5,000		\$ 5,000		\$ 5,000		\$ 15,000
SERVICE LINES	\$ 30,578		\$ 35,000		\$ 35,000		\$ 35,000		\$ 105,000
VALVES	\$ 160		\$ 1,000		\$ 1,000		\$ 1,000		\$ 3,000
Hydrant / Service Line / Valve Threshold	\$ (50,000)		\$ 50,000		\$ 50,000		\$ 50,000		\$ 150,000
Hydrant / Service Line / Valve Net	\$ -		\$ -		\$ -		\$ -		\$ -
ANNUAL TOTALS	\$ 813,883	\$ 880,000	\$ 1,274,500	\$ 864,000	\$ 1,246,500	\$ 920,000	\$ 1,326,500	\$ 2,664,000	\$ 3,847,500

Aquarion Water Company of New Hampshire  
WICA Main Replacement Projects

Account 881

Project	Town	Material	Length (feet)	Diameter (inches)	Total Cost/ Estimated Costs	Actual thru Sep 30, 2017	Projected Sep 30, Low	thru 2018 High	Projected Low	2019 High	Projected Low	2020 High	Prioritization Factors	Comments
Lafayette Road - High Street to Winnacunnet Road	Hampton	Cast iron	1,404	6/8		\$ 813,883								
Hampton River Crossings	Hampton	Plastic	3,000	4			\$ 643,000	\$ 926,000					Inadequate fire flow	
Ninth St	Hampton	Galvanized	270	2			\$ 59,000	\$ 85,000					Pipe age and material	
Seventh St	Hampton	Galvanized	270	2			\$ 59,000	\$ 85,000					Pipe age and material	
Sixth St	Hampton	Galvanized	280	2			\$ 60,000	\$ 90,000					Pipe age and material	
Tenth St	Hampton	Galvanized	270	2			\$ 59,000	\$ 85,000					Pipe age and material	
Mill Rd - Atlantic Avenue to Pine Road	North Hampton	Asbestos / Cast iron	4,000	8					\$ 864,000	\$ 1,243,000			Breaks and material Paving schedule	
Ocean Boulevard - Dumas Avenue to Highland Avenue	Hampton	Cast iron	4,200	8							\$ 920,000	\$ 1,323,000	Pipe age and material	
<b>TOTALS</b>						\$ 813,883	\$ 880,000	\$ 1,271,000	\$ 864,000	\$ 1,243,000	\$ 920,000	\$ 1,323,000		

Aquarion Water Company of New Hampshire  
WICA Hydrant Replacements

Account 335

COMPLETED PROJECTS			1-Oct-16	to	30-Sep-17	
Hydrant #		Location	Town	Number	Project Cost	Completion Date
			<b>TOTAL</b>	-	\$ -	
PROPOSED PROJECTS						
Hydrant Replacements			Town	Number	Average Annual Cost	Completion Date
1-Oct-17	to	30-Sep-18	To be determined	1	\$ 5,000	30-Sep-2018
1-Oct-18	to	30-Sep-19	To be determined	1	\$ 5,000	30-Sep-2019
1-Oct-19	to	30-Sep-20	To be determined	1	\$ 5,000	30-Sep-2020
			<b>TOTAL</b>	<b>3</b>	<b>\$ 15,000</b>	

Comments

Hydrant replacements are not scheduled more than a year in advance because hydrants are not replaced unless identified as malfunctioning during hydrant maintenance activities.

Aquarion Water Company of New Hampshire  
WICA Service Line Replacements

Account 333

<b>COMPLETED PROJECTS</b>						<b>1-Oct-16</b>	<b>to</b>	<b>30-Sep-17</b>	
<b>Service Address</b>		<b>Town</b>	<b>Length (feet)</b>	<b>Diameter (inches)</b>	<b>Cost</b>			<b>Completion Date</b>	
72	Mooring Avenue	Hampton	26	3/4	\$ 681			11/30/2016	
24	Stickney Terrace	Hampton	29	3/4	\$ 1,964			10/31/2016	
26	Sandpiper Path	North Hampton	25	3/4	\$ 2,491			10/31/2016	
57	Cable Road	Rye	33	3/4	\$ 340			11/30/2016	
91	Presidential Circle	Hampton	23	3/4	\$ 2,734			10/31/2016	
7	Lamson Lane	Hampton	27	3/4	\$ 1,852			10/31/2016	
8	Toppan Lane	Hampton	12	3/4	\$ 408			10/31/2016	
178	Kings Highway	Hampton	5	3/4	\$ 599			11/30/2016	
409	Winnacunnet Road	Hampton	25	3/4	\$ 1,726			11/30/2016	
10	Carlson Road	Hampton	17	3/4	\$ 5,174			3/31/2017	
1088	Ocean Boulevard	Hampton	18	3/4	\$ 587			5/31/2017	
32	Mooring Avenue	Hampton	22	3/4	\$ 5,667			5/31/2017	
87	Presidential Circle	Hampton	33	3/4	\$ 2,526			6/30/2017	
8	Greene St.	Hampton	13	3/4	\$ 3,829			7/31/2017	
<b>TOTAL</b>			14		\$ 30,578				
<b>PROPOSED PROJECTS</b>									
<b>Service Line Replacements</b>			<b>Town</b>	<b>Number</b>		<b>Average Annual Cost</b>	<b>Completion Date</b>		
<b>1-Oct-17</b>	<b>to</b>	<b>30-Sep-18</b>	To be determined	10		\$ 35,000	30-Sep-2018		
<b>1-Oct-18</b>	<b>to</b>	<b>30-Sep-19</b>	To be determined	10		\$ 35,000	30-Sep-2019		
<b>1-Oct-19</b>	<b>to</b>	<b>30-Sep-20</b>	To be determined	10		\$ 35,000	30-Sep-2020		
<b>TOTAL</b>				30		\$ 105,000			

**Comments** Service lines are not scheduled for replacement unless they are identified as leaking or defective. When identified as such, they are typically replaced as soon as possible.



Aquarion Water Company of New Hampshire  
WICA Valve Replacements

Account 331

A		B		C		D		E		F	
COMPLETED PROJECTS											
				1-Oct-16		to		30-Sep-17			
Valve #		Location		Town				Actual Cost	Completion Date		
10640876		Central Rd @ Perkins Ave		Rye				\$ 160	10/31/2016		
				<b>TOTAL</b>			1	\$ 160			
PROPOSED PROJECTS											
Valve Replacements				Town		Projected Number	Average Annual Cost		Completion Date		
1-Oct-17	to	30-Sep-18		To be determined		1	\$ 1,000		30-Sep-2018		
1-Oct-18	to	30-Sep-19		To be determined		1	\$ 1,000		30-Sep-2019		
1-Oct-19	to	30-Sep-20		To be determined		1	\$ 1,000		30-Sep-2020		
				<b>TOTAL</b>		<b>3</b>	<b>\$ 3,000</b>				

**Comments**

Valve replacements are not scheduled more than a year in advance because valves are not replaced unless identified as malfunctioning during valve exercising activities.



Aquarion Water Company of New Hampshire  
WICA Production Meter Replacements

Project	Town	Estimated Cost	Actual 2017	Projected 2018	Projected 2019	Projected 2020	Comments
No production meter replaced							
Average one production meter replacement annually	Average cost: \$3,500 / meter	\$ 10,500	\$ -	\$ 3,500	\$ 3,500	\$ 3,500	
	<b>TOTALS</b>	\$ 10,500	\$ -	\$ 3,500	\$ 3,500	\$ 3,500	





























Year	SAPID	Street	Description	Town	Class	Size	Material	Lining	Length	Installed	Breaks	Hydraulic	Critical	Bleeder	Other Project Year	Main Breaks	Bleeder?	Pipe Age	Pipe Material	Hydraulic	First Level Total	Critical Customer	Lining	Schedule	Final Total	Estimated Cost Low	Estimated Cost High
	10785776	Woodland Rd	Woodland Rd: Hunter Dr - Little River Rd	Hampton	Distribution Main	12	DI	CL	227	1995	-	-	0		2017	0	0	0	0	0	0	0	0	-5	-5	\$ 50,000	\$ 72,000