

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

October 27, 2011

CONTACT: Carl McMorran, Operations Manager  
[cmcmorran@aquarionwater.com](mailto:cmcmorran@aquarionwater.com)  
603-926-3319 ext 116

Contents:

Project Summary	Estimated capital expenses by major category All projected figures for 2012-2014 are estimates.
Customer Meters	Aquarion is currently replacing direct read meters with radio meters, and expects to be fully converted to radio meters by late 2012 or early 2013. The 2012 proposal includes conversion of seasonal accounts to radio meters.
Hydrants	Aquarion has historically replaced 12 hydrants per year, on average. However, rising costs are reducing this figure.
Services	Aquarion has historically replaced 8 services per year, on average. However, more renewals are projected to reduce the number of times work is done on individual service lines (e.g., multiple leaks) and reduce overall costs.
Mains	Aquarion and Tata & Howard, our consulting engineer, evaluated potential 56 main replacement projects and developed priorities based on the factors below. Project factors were rated on a scale of 0 (low) to 3 (high), then summed by project to develop a relative priority. Projects that scored high were then placed on the WICA schedule based on schedule constraints, staff and management considerations, and the estimated project cost compared to Aquarion's overall capital budget.
Main Break History	How frequently do main breaks occur on this section of main compared to the system as a whole?
Pipe Age / Useful Life	How old is the pipe compared to its theoretical useful life and to other pipes in the system?
Material Integrity	Is pipe material robust (e.g., ductile iron) vs. other materials (e.g., asbestos cement) that are weaker?
Critical System Component	Is the particular section of pipe critical to providing fire flows or transmission functions such that its failure would cause a significant disruption of service?
Water Quality Issues	Does the section of main contribute to discolored water, loss of residual disinfectant or other water quality problems?
Hydraulic Capacity	Does the section of main restrict needed fire flows or cause undesired pressure losses?
Scheduled Work Coordination	Can the project be scheduled to optimize conflicts or synergies with municipal paving schedules, sewer work or other utility projects?
Staff Concerns / Other Factors	Problems identified by staff or other sources that don't fall into the above categories
Main Replacement Project Management	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 significant 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 2 to 3 valves 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.

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

October 27, 2011

	2011 Actual	Carried forward	2012	2013	2014	Project Totals
1 CUSTOMER METERS	\$ 135,297.54		\$ 230,860	\$ 115,500	\$ 94,950	\$ 576,608
2 HYDRANTS	\$ 32,133.00		\$ 32,700	\$ 32,700	\$ 32,700	\$ 130,233
3 SERVICES	\$ 43,986.24		\$ 80,600	\$ 80,600	\$ 80,600	\$ 285,786
MAIN REPLACEMENTS						
4 Atlantic Avenue - House 106 to Woodland Road continuing on to H539	\$ 698,936.67 <sup>(a)</sup>		\$ -	\$ -	\$ -	\$ 698,937
5 Atlantic Avenue - H539 to Maple Road	\$ -	\$ 42,500.00 <sup>(b)</sup>	\$ 532,000	\$ -	\$ -	\$ 574,500
6 Ocean Boulevard - Dumas Avenue to Winnacunnet Road	\$ -		\$ 74,000	\$ 675,000	\$ -	\$ 749,000
7 Rt 101 - Glade Path to Tide Mill Road	\$ -		\$ 10,000 <sup>(c)</sup>	\$ 107,000	\$ 900,000	\$ 1,017,000
8 Church Street - Highland Avenue to William Street	\$ -	\$ 24,300.00 <sup>(d)</sup>	\$ -	\$ -	\$ 10,000	\$ 34,300
9 CONTROL VALVES	\$ -		\$ -	\$ -	\$ -	\$ -
10 VALVES	\$ 22,449.10		\$ 10,800	\$ 10,800	\$ 10,800	\$ 54,849
11 PRODUCTION METERS	\$ 6,689.54 <sup>(e)</sup>		\$ 2,000	\$ 2,000	\$ 2,000	\$ 12,690
ANNUAL TOTALS	\$ 939,492.09	\$ 66,800.00	\$ 970,960	\$ 1,021,600	\$ 1,129,050	\$ 4,121,213

All numbers are estimates

- (a) total includes design and bid costs in 2009, 2010 and 2011.
- (b) total includes design and bid costs in 2009, 2010 and 2011, which will be included in 2012 WICA filing.
- (c) Alternatives analysis
- (d) Designed in 2010. Estimated construction costs = \$395,000, currently scheduled for after 2014.
- (e) \$4,935 in 2010 carried forward into 2011 (project put into service in last quarter of 2010)

Aquarion Water Company of New Hampshire

October 27, 2011

WICA Customer Meter Replacements

Account 334

A	B	C	D	G	H
<b>COMPLETED PROJECTS</b>					
	<b>METER SIZE</b>	<b>ACTUAL NUMBER</b>	<b>COST / METER</b>	<b>PROJECT COST</b>	<b>COMPLETION DATE</b>
<b>2011</b>					
	5/8-inch	927	\$ 132.21	\$ 122,563.30	9/30/2011
	1-inch	56	\$ 122.51	\$ 6,860.62	9/30/2011
	1.5-inch	13	\$ 119.94	\$ 1,559.24	9/30/2011
	2-inch	35	\$ 123.27	\$ 4,314.38	9/30/2011
			<b>2011 TOTAL</b>	<b>\$ 135,297.54</b>	
<b>PROPOSED PROJECTS</b>					
	<b>METER SIZE</b>	<b>ESTIMATED NUMBER</b>	<b>ESTIMATED COST / METER</b>	<b>ESTIMATED PROJECT COST (Based on 2011 \$)</b>	<b>ESTIMATED COMPLETION DATE</b>
<b>2012</b>					
	5/8-inch	1,634	\$ 133	\$ 217,330	9/30/2012
	1-inch	70	\$ 123	\$ 8,610	9/30/2012
	1.5-inch	10	\$ 120	\$ 1,200	9/30/2012
	2-inch	30	\$ 124	\$ 3,720	9/30/2012
			<b>2012 TOTAL</b>	<b>\$ 230,860</b>	
<b>2013</b>					
	5/8-inch	827	\$ 133	\$ 109,970	9/30/2013
	1-inch	30	\$ 123	\$ 3,690	9/30/2013
	1.5-inch	5	\$ 120	\$ 600	9/30/2013
	2-inch	10	\$ 124	\$ 1,240	9/30/2013
			<b>2013 TOTAL</b>	<b>\$ 115,500</b>	
<b>2014</b>					
	5/8-inch	706	\$ 133	\$ 93,840	9/30/2014
	1-inch	3	\$ 123	\$ 370	9/30/2014
	1.5-inch	3	\$ 120	\$ 360	9/30/2014
	2-inch	3	\$ 124	\$ 380	9/30/2014
			<b>2014 TOTAL</b>	<b>\$ 94,950</b>	
			<b>2012 - 2014 TOTAL</b>	<b>\$ 441,310</b>	

COMMENTS

Aquarion Water Company of New Hampshire

October 27, 2011

WICA Hydrant Replacements

Account 335

A	B	C	D	E	F
<b>COMPLETED PROJECTS</b>					
Hydrant #	HYDRANT LOCATION	Town	Number	ACTUAL PROJECT COST	COMPLETION DATE
<b>2011</b>					
	<b>Scheduled Replacements</b>		2		
H019	Ocean Boulevard	Hampton		\$ 3,461.42	12/28/2010
H021	Ocean Boulevard	Hampton		\$ 4,818.33	05/18/2011
	<b>Emergency / Reactive Replacements</b>		6		
H033	Boars Head	Hampton		\$ 3,658.73	11/15/2010
H134	Holly Lane	Hampton		\$ 2,975.21	11/15/2010
H216	Wheaton Lane	Hampton		\$ 4,255.86	09/22/2011
H911	Ocean Boulevard	Rye		\$ 5,035.22	05/24/2011
H208	Ring's Terrace	Hampton		\$ 3,721.11	09/15/2011
H516	Post Road	North Hampton		\$ 4,207.12	04/27/2011
		<b>2011 TOTAL</b>	<b>8</b>	<b>\$ 32,133.00</b>	
<b>PROPOSED PROJECTS</b>					
Hydrant #	HYDRANT LOCATION	Town	Number	ESTIMATED PROJECT COST	ESTIMATED COMPLETION DATE
<b>2012</b>					
	<b>Scheduled Replacements</b>	To be determined	2	\$ 6,600	9/30/2011
	Probable number of hydrant replacements that will identified by Nov 1, 2011				
	<b>Emergency / Reactive Replacements</b>	To be determined	6	\$ 26,100	9/30/2011
	Hydrants that must be replaced due to unpredicted damage or malfunction				
		<b>2012 TOTAL</b>	<b>8</b>	<b>\$ 32,700</b>	
<b>2013</b>					
	<b>Scheduled Replacements</b>	To be determined	2	\$ 6,600	9/30/2012
	Probable number of hydrant replacements that will identified by Nov 1, 2012				
	<b>Emergency / Reactive Replacements</b>	To be determined	6	\$ 26,100	9/30/2012
	Hydrants that must be replaced due to unpredicted damage or malfunction				
		<b>2013 TOTAL</b>	<b>8</b>	<b>\$ 32,700</b>	
<b>2014</b>					
	<b>Scheduled Replacements</b>	To be determined	2	\$ 6,600	9/30/2013
	Probable number of hydrant replacements that will identified by Nov 1, 2013				
	<b>Emergency / Reactive Replacements</b>	To be determined	6	\$ 26,100	9/30/2013
	Hydrants that must be replaced due to unpredicted damage or malfunction				
		<b>2014 TOTAL</b>	<b>8</b>	<b>\$ 32,700</b>	
		<b>2012 - 2014 TOTAL</b>		<b>\$ 98,100</b>	

COMMENTS No specific hydrants have been identified yet for replacement.

Aquarion Water Company of New Hampshire

October 27, 2011

WICA Services

Account 333

A	B	C	D	E	F	G	H
<b>PROPOSED PROJECTS</b>							
#	SERVICE ADDRESS	Town	NUMBER	LENGTH (FEET)	PIPE DIAMETER (INCHES)	PROJECT COST	COMPLETION DATE
<b>2011</b>							
	<b>Scheduled Replacements</b>		2				
	39 Pearl Street	Hampton			1	\$ 5,872.69	5/25/2011
	32 Greystone Village	North Hampton			1	\$ 2,267.04	6/1/2011
	<b>Emergency / Reactive Replacements</b>		8				
	14 Ocean Boulevard	North Hampton			1	\$ 5,272.22	6/24/2011
	35 Pearl Street	Hampton			1	\$ 3,545.67	5/25/2011
	4 Godfrey Ave	Hampton			1	\$ 6,605.90	6/20/2011
	188 North Shore Rd	Hampton			1	\$ 4,690.48	7/28/2011
	23 Johnson Ave	Hampton			1	\$ 5,354.86	7/28/2011
	7 Brown Ave	Hampton			1	\$ 5,377.45	8/23/2011
	520 Winnacunnet Rd	Hampton			1	\$ 2,493.33	9/22/2011
	30 Greystone Village	North Hampton			1	\$ 2,506.60	9/22/2011
		<b>2011 TOTAL</b>	10			\$ 43,986.24	
<b>PROPOSED PROJECTS</b>							
#	SERVICE ADDRESS	Town	NUMBER	LENGTH (FEET)	PIPE DIAMETER (INCHES)	ESTIMATED PROJECT COST	ESTIMATED COMPLETION DATE
<b>2012</b>							
	<b>Scheduled Replacements</b>	To be determined	2	50	1	\$ 7,600	9/30/2012
	Probable number of service replacements that will identified by Nov 1, 2011						
	<b>Emergency / Reactive Replacements</b>	As needed	20	50	1	\$ 73,000	9/30/2012
	Services that must be replaced due to unpredicted damage or malfunction						
		<b>2012 TOTAL</b>	22		<b>2012 TOTAL</b>	\$ 80,600	
<b>2013</b>							
	<b>Scheduled Replacements</b>	To be determined	2	50	1	\$ 7,600	9/30/2013
	Probable number of service replacements that will identified by Nov 1, 2012						
	<b>Emergency / Reactive Replacements</b>	As needed	20	50	1	\$ 73,000	9/30/2013
	Services that must be replaced due to unpredicted damage or malfunction						
		<b>2013 TOTAL</b>	22		<b>2013 TOTAL</b>	\$ 80,600	
<b>2014</b>							
	<b>Scheduled Replacements</b>	To be determined	2	50	1	\$ 7,600	9/30/2014
	Probable number of service replacements that will identified by Nov 1, 2013						
	<b>Emergency / Reactive Replacements</b>	As needed	20	50	1	\$ 73,000	9/30/2014
	Services that must be replaced due to unpredicted damage or malfunction						
		<b>2014 TOTAL</b>	22		<b>2014 TOTAL</b>	\$ 80,600	
					<b>2012 - 2014 TOTAL</b>	\$ 241,800	

COMMENTS No specific services have been identified yet for replacement. Most of these are identified in the fall when seasonal meters are removed.

Aquarion Water Company of New Hampshire

October 27, 2011

WICA Main Replacement Projects

Account 331

PROJECT NAME	Town	LENGTH (FEET)	PIPE DIAMETER (INCHES)	TOTAL ESTIMATED COST	Actual 2009	Actual 2010	Actual 2011	Carryover 2009-2011	Projected 2012	Projected 2013	Projected 2014	Comments	PRIORITIZATION FACTORS
Atlantic Avenue - House 106 to Woodland Road continuing on to H539	North Hampton	2,460	8	\$ 698,937	\$ 39,983.57	\$ 14,368.72	\$ 644,584.38						High rank in main break history, pipe age / useful life, material integrity, hydraulic capacity and water quality issues.
Atlantic Avenue - H539 to Maple Road	North Hampton	1,700	8	\$ 574,500				\$ 42,500	\$ 532,000			Third phase of 6,400-ft project between Mill Road and Maple Road.	High rank in main break history, pipe age / useful life, material integrity, hydraulic capacity and water quality issues.
Ocean Boulevard - Dumas Avenue to Winnacunnet Road	Hampton	2,100	12	\$ 749,000					\$ 74,000	\$ 675,000			Frequent main breaks. This main must be renewed so it can support flows to the beach while the Rt 101 main is being replaced.
Rt 101 - Glade Path to Tide Mill Road	Hampton	3,200	12						\$ 10,000	\$ 107,000	\$ 900,000		Deteriorated pipe with leaks that crosses a salt marsh.
Church Street - Highland Avenue to William Street	Hampton	700	12	\$ 24,300		\$ 14,300					\$ 10,000	This project has been designed, but has dropped down the priority list in favor of Ocean Boulevard and Rt 101.	Main break history, pipe age / useful life, material integrity and critical system component.
<b>TOTALS</b>				\$ 2,046,737	\$ 39,983.57	\$ 28,668.72	\$ 644,584.38	\$ 42,500	\$ 616,000	\$ 782,000	\$ 910,000		

Aquarion Water Company of New Hampshire  
WICA Control Valves

October 27, 2011

**Control Valves**

PROJECT NAME	Town	TOTAL ESTIMATED COST	Actual 2010	Carryover to 2011	Projected 2011	Projected 2012	Projected 2013	Comments
None		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	None are currently scheduled for replacement
	<b>TOTALS</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	

Aquarion Water Company of New Hampshire

October 27, 2011

WICA Valve Replacements

Account 331

A	B	C	D	E	F
<b>COMPLETED PROJECTS</b>					
<b>Valve #</b>	<b>VALVE LOCATION</b>	<b>Town</b>		<b>ACTUAL COST</b>	<b>COMPLETION DATE</b>
<b>2011</b>					
	<b>Scheduled Replacements</b>		-		
	<b>Emergency / Reactive Replacements</b>		7		
HV019	Ocean Boulevard @ Seashell	Hampton		\$ 2,090.54	12/6/2010
HV033	Boars Head Terrace	Hampton		\$ 1,614.25	11/15/2010
GV0215	Sanborn Road @ Trafford Road	Hampton		\$ 5,994.04	6/7/2011
GV0611	Ocean Boulevard	Hampton		\$ 3,422.55	6/7/2011
GV0620	High Street @ Mill Pond Lane	Hampton		\$ 5,100.18	9/15/2011
GV0505	Fairfield Dr	Hampton		\$ 2,490.00	9/22/2011
GV1154	Ocean Boulevard	Hampton		\$ 1,737.54	6/7/2011
		<b>2011 TOTAL</b>	7	<b>\$ 22,449.10</b>	
<b>PROPOSED PROJECTS</b>					
<b>Valve #</b>	<b>VALVE LOCATION</b>	<b>Town</b>	<b>Number</b>	<b>ESTIMATED PROJECT COST</b>	<b>ESTIMATED COMPLETION DATE</b>
<b>2012</b>					
	<b>Scheduled Replacements</b>	To be determined	1	\$ 1,200	9/30/2012
	Probable number of valve replacements that will identified by Nov 1, 2011				
	<b>Emergency / Reactive Replacements</b>	As needed	6	\$ 9,600	9/30/2012
	Valves that must be replaced due to unpredicted damage or malfunction				
		<b>2012 TOTAL</b>	7	<b>\$ 10,800</b>	
<b>2013</b>					
	<b>Scheduled Replacements</b>	To be determined	1	\$ 1,200	9/30/2013
	Probable number of valve replacements that will identified by Nov 1, 2012				
	<b>Emergency / Reactive Replacements</b>	As needed	6	\$ 9,600	9/30/2013
	Valves that must be replaced due to unpredicted damage or malfunction				
		<b>2013 TOTAL</b>	7	<b>\$ 10,800</b>	
<b>2014</b>					
	<b>Scheduled Replacements</b>	To be determined	1	\$ 1,200	9/30/2014
	Probable number of valve replacements that will identified by Nov 1, 2013				
	<b>Emergency / Reactive Replacements</b>	As needed	6	\$ 9,600	9/30/2014
	Valves that must be replaced due to unpredicted damage or malfunction				
		<b>2014 TOTAL</b>	7	<b>\$ 10,800</b>	
		<b>2011 - 2013 TOTAL</b>		<b>\$ 32,400</b>	

COMMENTS:

Aquarion Water Company of New Hampshire  
WICA Production Meters

October 27, 2011

Account 304

Production Meters

PROJECT NAME	Town	TOTAL ESTIMATED COST	Carried over from 2010	Actual 2011	Projected 2012	Projected 2013	Projected 2014	Comments
Replace Tide Mill PRV Meter	Hampton	\$ 6,690	\$ 4,935.01	\$ 1,754.53	\$ -	\$ -	\$ -	
Future projects		\$ 6,000	\$ -	\$ -	\$ 2,000	\$ 2,000	\$ 2,000	Reactive capital replacements and repairs.
	<b>TOTALS</b>	\$ 12,690	\$ 4,935.01	\$ 1,754.53	\$ 2,000	\$ 2,000	\$ 2,000	