



Town of Milton Water System Improvements

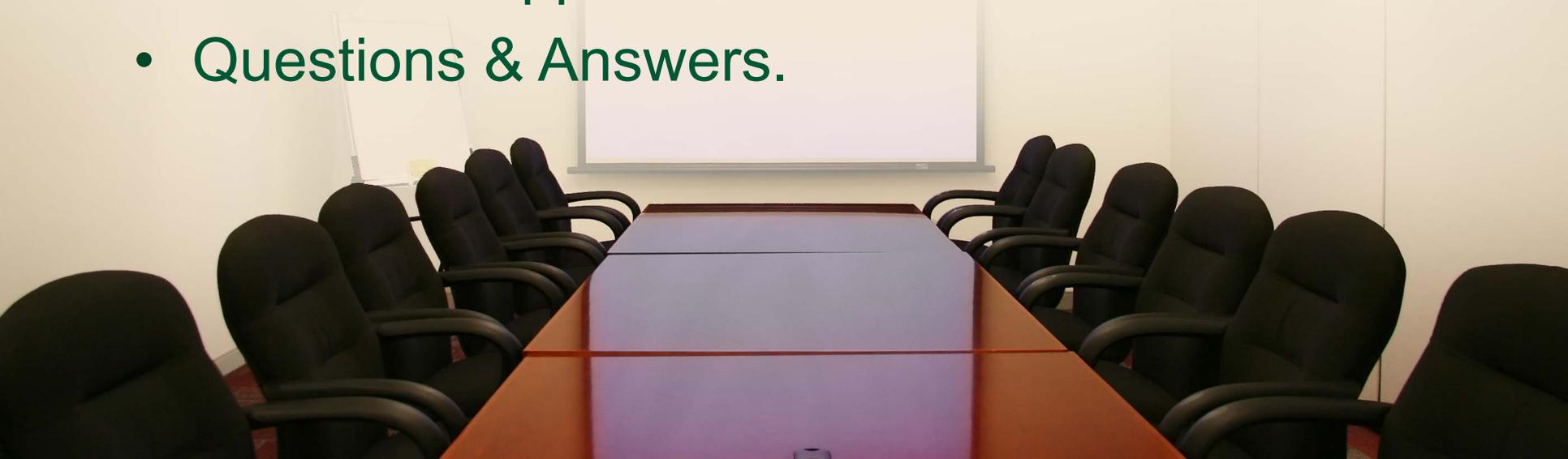
February 4, 2013

Prepared by Pennoni Associates, Inc.

Providing Engineering Services Since 1966

Presentation Agenda

- Introduction & Overview.
- Review of Information.
- Report of Findings.
- Recommendations.
- Alternatives Selected.
- SRF Loan Application.
- Questions & Answers.



Review of Information

Meetings with Town Officials and Committees

- Meetings with the Town Manager.
- Meetings with Public Works Officers.
- Water Committee Meetings.
- Site Review of Town Water Facilities.
- Status of Maintenance Schedule and on-going Water System Improvements.

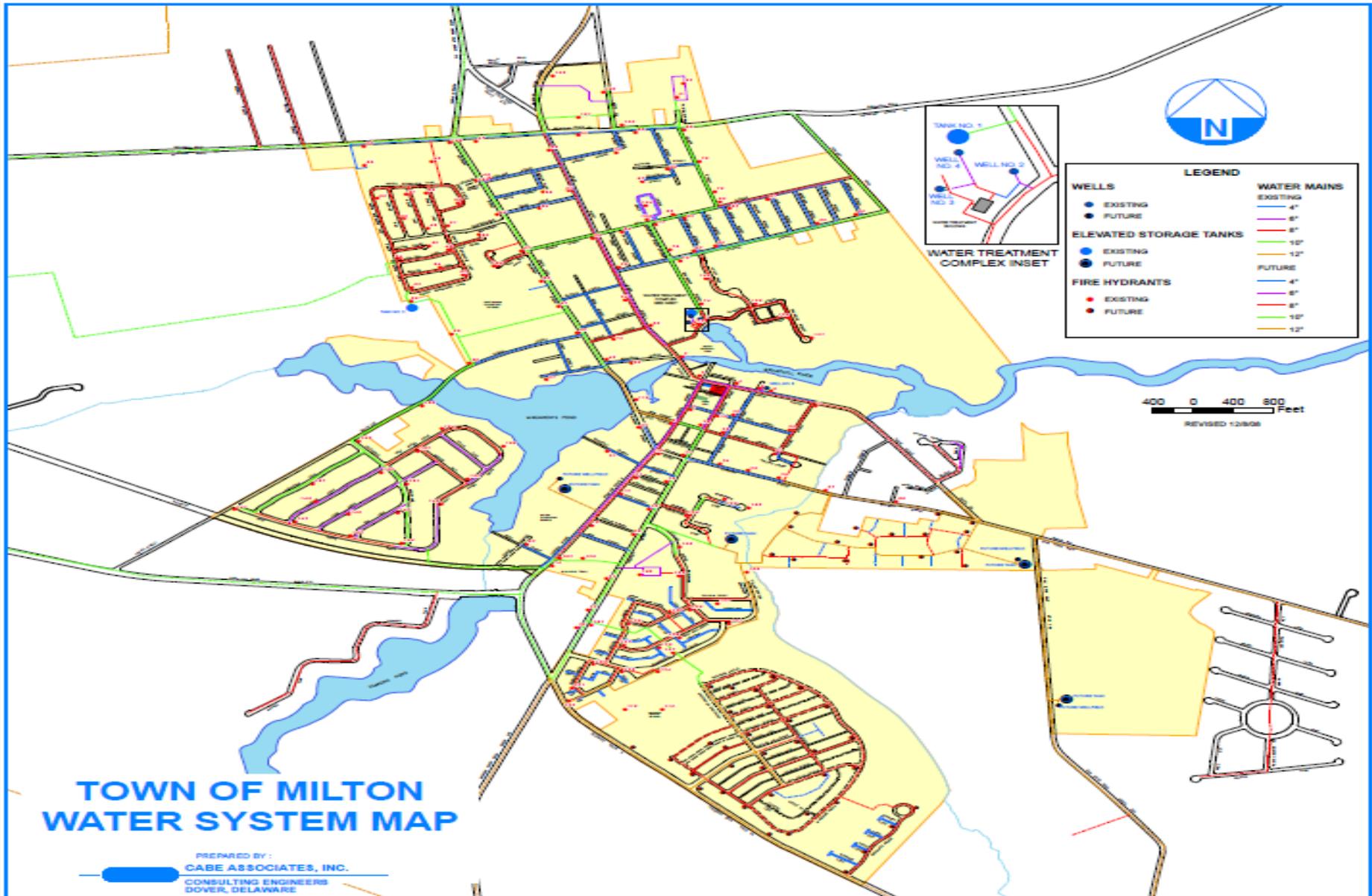
Existing Water Facilities Plan Preliminary Engineering Report

- 2012 Referendum Information.
- 2008 Preliminary Engineering Report/Water Facilities Plan.
- Available maps, schematics, data and status of alternatives and costs provided for the previous referendum.
- Population Data and Water Consumption Information.

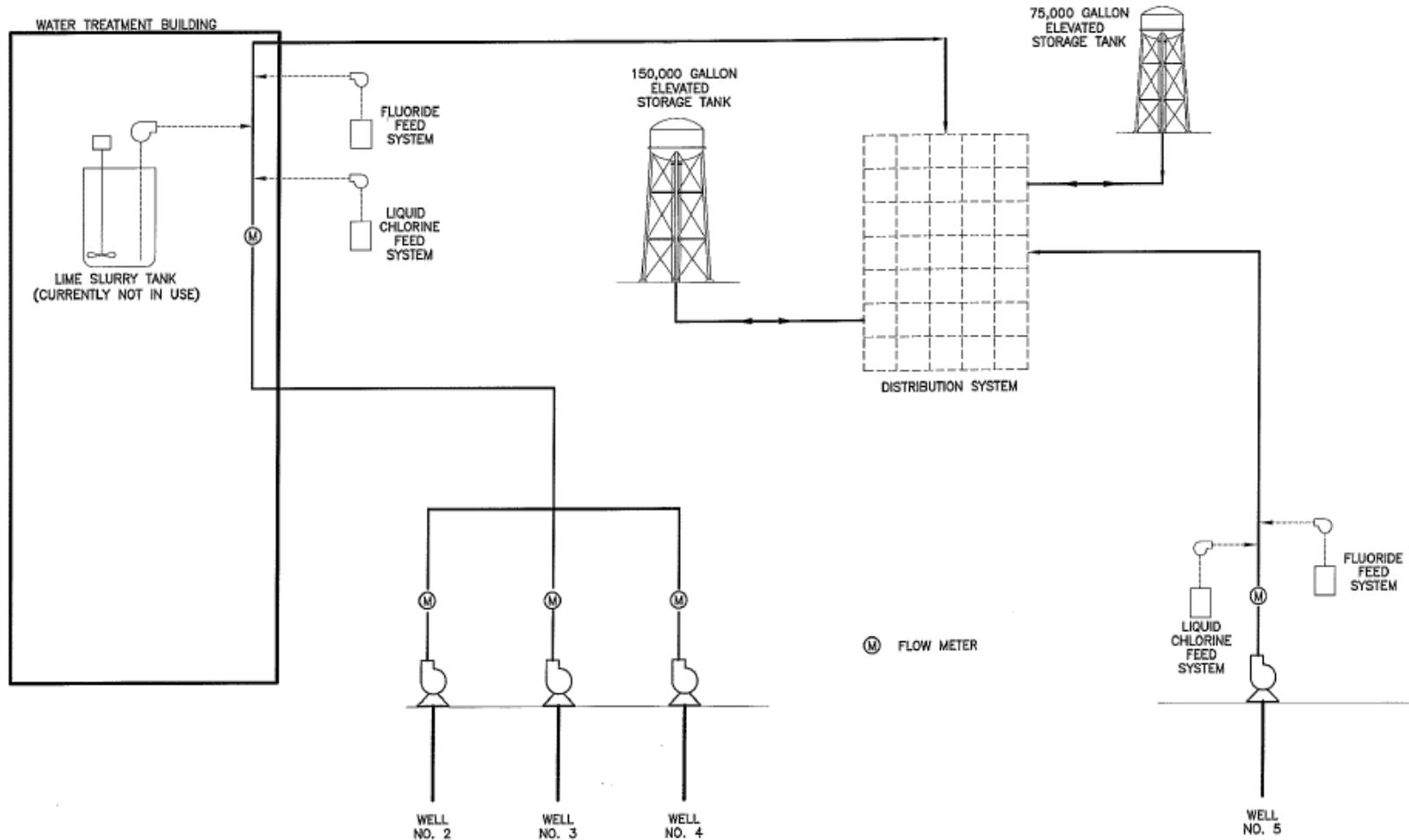
Review of Past and Pending Correspondence

- DNREC Division of Water Resources.
- Delaware River Basin Commission.
- Office of Drinking Water & Funding Agency Correspondence.

Existing Water System Map



Existing System Schematic



Water Use & Population

Figure A-Milton Population and Water Use per 100 Gallons indicated by Town Records.

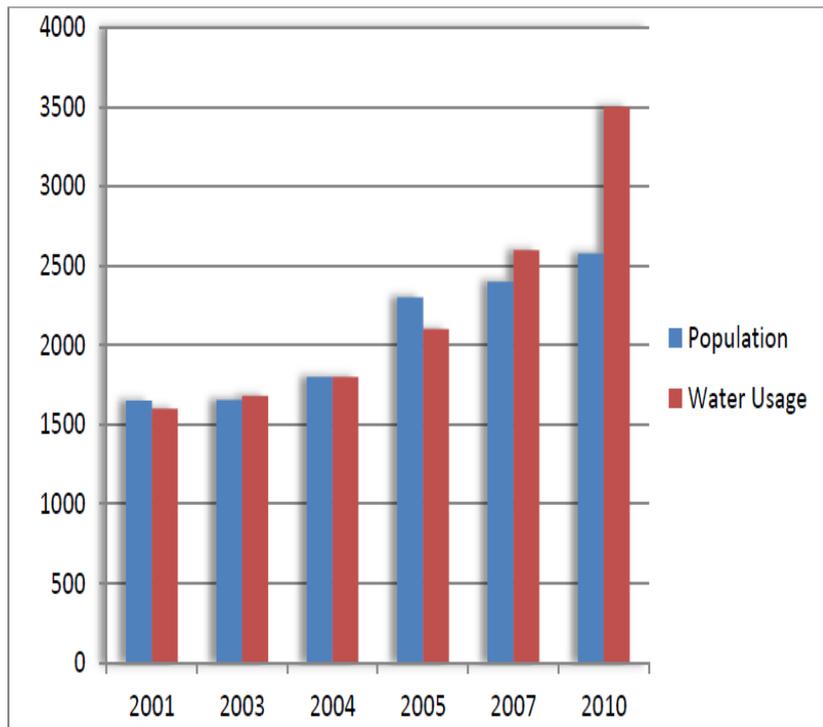
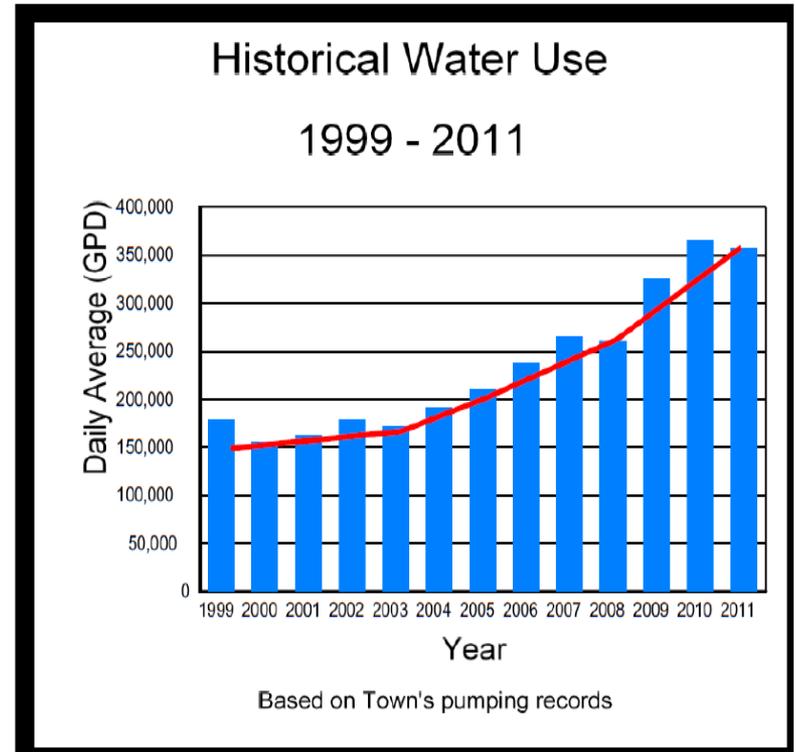


Figure B-Historical Water Use Table from 2012 Referendum Presentation by Cabe Associates, Inc.



Report Findings

- The Town needs increased water supply. Population and Water Usage Data have increased since the 2008 Water Study and 500,000 gallon/day Water Allocation.
- Town Pumping Records indicate Water Allocation Permit is not adequate to meet demand during high-use days during summer.
- 2011 & 2012 Water Usage Data indicates the 500,000 Gallon/Day Permit Allocation was exceeded approximately 8 to 12 days per month during June, July & August.
- During Peak Demand times, the existing Water Supply System pumps at or near maximum capacity to meet demand.
- Well #5 is not used.
- Town Records indicate approximately 10 Million Gallons of unmetered water per quarter.
- The Town is participating in a water audit and system improvement program with the assistance of Delaware Rural Water Association.
- Improvements are being made to the existing system to account for and minimize losses in the existing system.
- The Town has installed new meters, repaired leaks, taken defective hydrants out of service and is improving the flow measurement from the supply wells.
- There are areas of Town that have dead end mains and exhibit low water pressure.
- A Capital Improvement Program and Sinking Fund to finance major improvements is not in place.

Report Recommendations

- Continue with Environmental Reporting.
 - Comply with Water Allocation Permit Application Requirements.
 - Continue with AWWA format Water Audit.
 - Improve existing water system to better account for unmetered water within the system.
- Evaluate Upgrades to existing wells to provide adequate supply for existing and future need.
 - Evaluate Existing Well #5 and Treatment Building as an alternative well and back-up Treatment Facility.
 - Establish Interconnectivity and loop dead ended mains in areas of poor service pressure in Town.
- Establish a Capital Improvement Program to finance improvements.
 - Select an alternative after the water test data from Well #5 is completed, the new meters have been installed and read and the new hydrant flow testing has been performed in the fall of 2012.
 - Update the existing Water Facility Plan to be current with 2012 information and re-apply for funding.

Alternatives Considered

Increase Pumping Allocation of Existing Wells

- Lower Initial Cost.
- Uses Existing Infrastructure.
- Addresses improvements to the existing system to account for efficient usage.
- Requires time to permit, complete maintenance, meter, flow test and monitor the existing system.

Increase Elevated Storage Capacity

- Higher Initial Cost.
- Complies with State Fire Prevention Regulations.
- May Result in Lower Fire Insurance Rates.
- Requires Land Acquisition to site Water Tower.

Interconnection with another Water Utility Provider

- Can be performed immediately and be financed by the Private Utility.
- Interconnection may include guarantees and impact future customers and service areas.
- May become a source of sale of surplus water.

SRF Loan Pre-Applications

Town of Milton Submitted Two SRF Loan Pre-Applications

Pre-Application #1

\$1,725,000 for

Miscellaneous System Improvements

SRF PPL Ranking #7

Pre-Application #2

\$1,675,000 for

500 Gallon Elevated Storage Tank

SRF PPL Ranking #10



Delaware Health & Social Services
Division of Public Health

DRINKING WATER STATE REVOLVING FUND

LOAN PRE-APPLICATION

JUNE 2012

2013 Federal Allotment

Delaware Health and Social Services
Division of Public Health
Drinking Water State Revolving Fund
417 Federal Street
Dover, DE 19901
Phone (302) 744-4739



Selected Alternatives

Well #5 Rehabilitation

- Uses Existing Infrastructure.
- Will be located in a deeper aquifer and include a back-up generator, well house and water quality treatment.
- Will provide Milton with a source of water on the south side of the Broadkill River.
- Will provide a fourth production well to keep up with peak demand and permit maintenance to other parts of the system.

Water Tower No. 2 Foundation Repair

- Based upon estimate prepared by the Town's Structural Engineer Baker-Ingram Associates.
- Addresses expensive capital maintenance item to Water Tower No. 2 located at Shipbuilder's Village Development.
- Added to the SRF Loan application package by recommendation of the Water Committee on January 16, 2013 and by Town Council on January 24, 2013.

Wagamon's West Shores to Federal Water Main Loop

- Connects the water system on the north side to the water system on the south side.
- Currently, plans indicate only a 6 and 8-inch main connect the sources of supply to the water system on the south side of the Broadkill River.
- This alternative will connect the 10-inch water main from Wagamon's West Shores to Federal and Chestnut Street and provide improved service to the system and 2 schools on the south side.

Well #5 Rehabilitation

Project Description

A. WELL #5 REHABILITATION/REPLACEMENT

SCOPE: DRILL A NEW PRODUCTION WELL TO APPROX. 500 FEET DEEP

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNITS</u>	<u>QUANTITY</u>	<u>INSTALLED UNIT PRICE</u>	<u>TOTAL</u>
1	Planning and Research	L.S.	1	\$5,000.00	\$5,000.00
2	Permitting	L.S.	1	\$1,500.00	\$1,500.00
3	Test Drilling	L.S.	1	\$50,000.00	\$50,000.00
4	Production Well Drilling	L.S.	1	\$250,000.00	\$250,000.00
5	Well Sampling and Testing	L.S.	1	\$10,000.00	\$10,000.00
6	Well Pump and Well Head	L.S.	1	\$75,000.00	\$75,000.00
7	Concrete Meter Pit	L.S.	1	\$20,000.00	\$20,000.00
8	Meter, Valves and Piping	L.S.	1	\$25,000.00	\$25,000.00
9	Piping Connection to System	L.S.	1	\$50,000.00	\$50,000.00
10	Well House	L.S.	1	\$75,000.00	\$75,000.00
11	Site Work and Foundation	L.S.	1	\$25,000.00	\$25,000.00
12	Disinfection, Fluoride, pH systems	L.S.	1	\$40,000.00	\$40,000.00
11	Electrical and Controls	L.S.	1	\$30,000.00	\$30,000.00
12	Back-Up Generator & Quiet Pack	L.S.	1	\$70,000.00	\$70,000.00
13	Restoration	L.S.	1	\$7,000.00	\$7,000.00
				Subtotal	\$733,500.00
	Bonds & Insurance			\$0.05	\$36,675.00
	Mobilization / Demobilization			\$0.05	\$36,675.00
				Subtotal	\$73,350.00
				Well #5 Replacement Total:	\$806,850.00



Water Main Loop

B. WAGAMON'S WEST SHORES WATER LOOP

SCOPE: LOOP EXISTING DEAD-ENDED WATER MAINS TO IMPROVE SERVICE

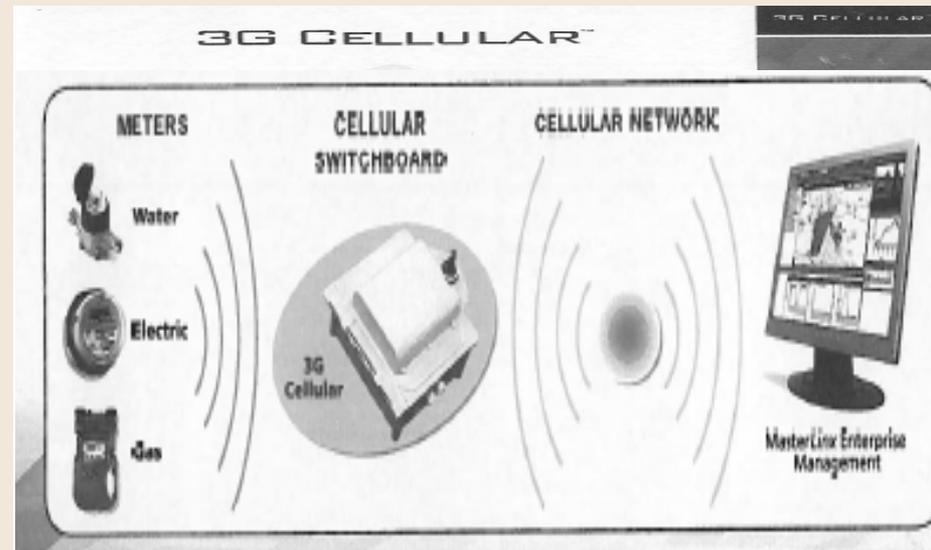
<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNITS</u>	<u>QUANTITY</u>	<u>INSTALLED UNIT PRICE</u>	<u>TOTAL</u>
1	Mobilization	LS	1	\$10,000.00	\$10,000.00
2	10-inch PVC	LF	2130	\$70.00	\$149,100.00
3	12-inch Directional Drill	LF	321	\$400.00	\$128,400.00
3	20-inch steel casing	LF	70	\$400.00	\$28,000.00
4	Fire Hydrants	Each	5	\$4,500.00	\$22,500.00
5	Water Valves	Each	8	\$1,500.00	\$12,000.00
Subtotal					\$350,000.00
Wagamon's Water Main Loop Total:					\$350,000.00



Control System Integration

C. WATER SYSTEM CONTROL INTEGRATION SCOPE: UPDATE 3G WATER SYSTEM CONTROLS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNITS</u>	<u>QUANTITY</u>	<u>INSTALLED UNIT PRICE</u>	<u>TOTAL</u>
1	Comprehensive Review of Existing System	LS	1	\$6,500.00	\$6,500.00
2	Integration of New System Components	LS	1	\$2,500.00	\$2,500.00
3	Installation of System Updates	LS	1	\$36,000.00	\$36,000.00
4	Testing and Operation	LS	1	\$5,000.00	\$5,000.00
				Subtotal	\$50,000.00
Water System Control Integration Total:					\$50,000.00



Water Tower Foundation Repair



SRF Full Application

Estimated Construction Cost

- Well#5 Rehabilitation \$806,850.00
- Control System Integr. \$50,000.00
- Water Main Loop \$350,000.00
- Foundation Repair \$100,000.00
- Construction Cost \$1,306,850.00
- Contingency (15%) \$196,150.00
- Engineering/Inspection \$222,000.00
- Total Estimate \$1,725,000.00**



DELAWARE HEALTH AND
SOCIAL SERVICES
Division of Public Health
Office of Drinking Water

DRINKING WATER STATE REVOLVING FUND

LOAN APPLICATION 2012 FULL APPLICATION 2013 ALLOCATION

Delaware Health and Social Services
Division of Public Health
Heather Warren
417 Federal Street
Dover, DE 19901
Phone (302) 744-4739

LOAN PROGRAM & FINANCING

- Full Application for \$1,725,000.00 Water System Improvements.
- 1.5% Interest Rate.
- 20 Year Repayment Period.
- Principal Forgiveness Available.
- \$1,725,000.00 Principal Loan Amount.
- Approximate Annual Payment of \$100,395.00 or \$8,366.25/month.
- SRF reports applications may be submitted after March 20, 2013.



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