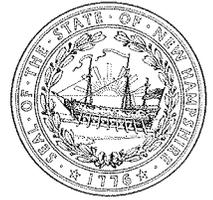




The State of New Hampshire  
**DEPARTMENT OF ENVIRONMENTAL SERVICES**



Thomas S. Burack, Commissioner

**WATER CONSERVATION PLAN APPROVAL**

September 26, 2011

Milford Water Utilities Department  
c/o David Boucher, Superintendent  
564 Nashua St.  
Milford, NH 03055

RE: Milford– Milford Water Utilities (PWSID: 1561010)  
Water Conservation Plan, August 2011, NHDES # 999492

Dear Mr. Bouchard:

On August 22, 2011, the New Hampshire Department of Environmental Services (“DES”) Drinking Water and Groundwater Bureau received a proposed water conservation plan, dated August 2011, for Milford Water Utilities located in Milford, NH (the “Plan”). Pursuant to RSA 485:61 and Env-Wq 2101, community water systems seeking permits from DES for new sources of groundwater shall submit a water conservation plan to DES. DES has determined the Plan complies with Env-Wq 2101.05, *Requirements for Existing Large Community Water Systems*.

On August 29, 2011, DES received a waiver request per Env-Wq 2101.09(b) to Env-Wq 2101.05 (b), the requirement for water meters to be installed at each water source. DES has determined that the waiver request is consistent with waiver standards, and specifically that the proposed metering arrangement will sufficiently meter all water withdrawn from the individual sources

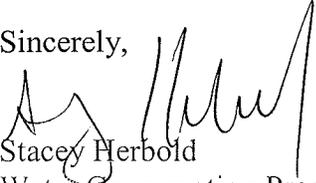
Pursuant to Env-Wq 2101.11, the Town of Milford, the Nashua Regional Planning Commission, and the Souhegan River Local Advisory Committee were provided the opportunity to comment on the Plan through September 23, 2011. DES received no comments.

On **September 26, 2014**, and every three years thereafter, the water system shall submit a detailed and completed compliance report form to DES documenting compliance with the Plan. Required information includes contact information for the water-system owner and for the individual responsible for carrying out plan tasks; dates tasks were performed; and data relating to meter reading, water audits, leak detection, and public outreach. A copy of the *Water Conservation Plan Compliance Report Form* may be located at the DES website, [www.des.nh.gov](http://www.des.nh.gov), on the Water Conservation Program homepage.

Revisions to the Plan shall not be implemented without further approval from DES.

Please feel free to contact me with any questions at (603) 271-6989 or via e-mail at [stacey.herbold@des.nh.gov](mailto:stacey.herbold@des.nh.gov) .

Sincerely,



Stacey Herbold  
Water Conservation Program  
Drinking Water and Groundwater Bureau  
Department of Environmental Services

cc: Derek Bennett, NHDES  
Christine Bowman, NHDES  
Wayne Ives, NHDES  
Jacquie Colburn, NHDES  
James Hewitt, P.E., Wright-Pierce  
George May, SoRLAC  
Kerrie Diers, NRPC

# **WATER CONSERVATION PLAN**

Prepared Pursuant to

NHDES Administrative Rule Env-Wq 2100,  
*Water Conservation Rules; Use Registration and Reporting*

As Required for a Proposed

**0.58 MGD Municipal Water Supply Well  
Curtis Well # 2A**

**Milford Water Utilities Department**

**Milford, New Hampshire**

August, 2011

Milford Water Utilities Department,  
Milford, NH

Curtis Well # 2A  
Water Conservation Plan

I. INTRODUCTION

The Milford Water System provides domestic water and fire protection to the residents and businesses in Milford, New Hampshire. The water system consists of 2 (two) gravel wells, well pump house, distribution piping and water storage tanks. A new gravel packed well is currently being installed as a back up to Well No. 2. The Final Report for Well No. 2A was submitted to NHDES on 8/5/2011.

A. *Contact Information*

1. *Name and location of system.*

Milford Water Utilities Department  
EPA PWID # 1561010  
Milford, NH 03055

2. *Owner of system and mailing address.*

Name: David Boucher, Superintendent.  
Address: 564 Nashua Street, Milford, NH 03055  
Company: Milford Water Utilities Department  
Phone Number: 603-249-0660 FAX: 603-672-1071  
Email: dboucher@milford.nh.gov

3. *Name and mailing address of designer of Water Conservation Plan.*

Name: James Hewitt, P.E., Project Engineer  
Address: 230 Commerce Way, Suite 302, Portsmouth, NH  
Company: Wright-Pierce  
Phone Number: 603-430-3728 FAX: 603-430-4083  
Email: jah@wright-pierce.com

In accordance to NHDES Administrative Rule Env-Wq 2100, "*Water Conservation; Use Registration and Reporting*", effective May 13, 2005, (formerly Env-Ws 390) the Milford Water Utilities Department will conduct the following water conservation measures subsequent to approval of the proposed 0.58 MGD well (Curtis Well # 2A).

B. System Overview

1. Reason for new source.

**Curtis Well 2A is being developed as a new source to serve as a backup to existing Well 2 at the Curtis Wellfield. Well 2 has declined in specific capacity in recent years and backup Curtis Well 2A will allow for full utilization of the Curtis Wellfield's permitted total daily volume (1400 gpm).**

2. Number of existing and proposed connections for each of the following classes:

- a) Residential;

**2,204**

- b) Industrial/commercial/institutional; and

**529**

- c) Municipal.

**Included in municipal customer count**

3. *Description of any connections that currently receive or will receive more than 20,000 gpd.*

**There are currently no connections that receive greater than 20,000 gpd**

C. *Water Use Trends and Supporting Data / Population Trends:*

3. *Existing and anticipated seasonal fluctuation in population.*

**Milford has minimal population fluctuation throughout the year. We do not anticipate this changing significantly in the future.**

4. *Anticipated growth in population.*

**1.8% per year based on prior billing records**

5. *Maximum day yield of existing sources based on 24-hour pumping.*

**1.584 MGD**

6. *Average daily water use.*

**0.924 MGD**

7. *Maximum daily water use.*

**1.26 MGD**

8. *Minimum hourly flows (if available).*

**N/A**

II. SYSTEM SIDE MANAGEMENT

A. *Source Meters*

1. Name designation of each water source.

**Curtis Well Field Wells and Pennichuck Water Works Interconnection.**

2. Meter make, model, size, flow range, and date of last calibration for each existing water source.

| <b>Meter Parameter</b>          | <b>Curtis Well Field Wells</b> | <b>Pennichuck Water Works Interconnection</b>                            |
|---------------------------------|--------------------------------|--|
| <b>Make</b>                     | <b>Badger</b>                  | <b>Neptune</b>   |
| <b>Model</b>                    | <b>PMT-I</b>                   | <b>HPT</b>   |
| <b>Size</b>                     | <b>8"</b>                      | <b>6"</b>  |
| <b>Flow range</b>               | <b>0-1250 gpm</b>              | <b>20-2500 gpm</b>   |
| <b>Date of last calibration</b> | <b>8/4/10</b>                  | <b>Meter is replaced with a new meter annually. Last install: 1/5/11</b> |

3. Meter make, model, size, and flow range of each proposed source meter (if known).

**Proposed Well 2A will be metered using the existing Curtis Well Field Wells flow meter.**

4. Frequency that source meters will be tested.

**Annually**

5. Frequency that source meters will be read (at least every 30 days).

**Curtis Well Field Wells Meter: Daily**

**Pennichuck Water Works Interconnection: Weekly**

6. Statement that source meters will be selected, installed, and maintained in compliance with “Manual of Water Supply Practices, Water Meters-Selection, Installation, Testing, and Maintenance,” document identification number AWWA M6, American Water Works Association, 1999.

**All source meters will be selected, installed and maintained with the procedures and protocols described in the “Manual of Water Supply Practices, Water Meters-Selection, Installation, Testing and Maintenance”, document identification number AWWA M6, American Water Works Association, 1999.**

*B. Service Meters*

1. How many un-metered connections exist?

**Zero**

2. Proposed timeframe for installing meters on unmetered connections (no later than within three years of source water approval).

**N/A**

3. Will separate irrigation meters be installed?

**Offered upon request.**

4. Frequency that service meters will be read (at least every 90 days).

**Every 90 Days**

5. Description of all methods that will be used to read service meters.

**The meters are read using a Neptune AMR system.**

6. Expected number of days needed to read all service meters.

**It takes approximately 8 days to read all service meters**

7. Statement that all service connections will be metered prior to system startup.

**All service connections will be metered prior to system start up. All services are current metered.**

8. Statement that service meters will be selected, installed, and maintained in accordance with “Manual of Water Supply Practices, Water Meters-Selection, Installation, Testing, and Maintenance,” document identification number AWWA

M6, American Water Works Association, 1999. The report must reflect the recommendations of this manual and include the rate of service meter change out.

**All service meters are selected, installed and maintained with the procedures and protocols described in the “Manual of Water Supply Practices, Water Meters-Selection, Installation, Testing and Maintenance”, document identification number AWWA M6, American Water Works Association, 1999. The Milford Water Utilities Department began a customer meter replacement program in 2003. A total of approximately 3,000 meters have been / will be changed out by the end of 2012. The Milford Water Utilities Department will continue to replace meters at a rate of approximately 10% per year.**

C. *Estimating Unaccounted for water (non-revenue water)/ Water Audit*

1. Most recent water audit, differentiating between apparent and real losses, and estimate of unaccounted for water and the year it was estimated.

**An in-house water audit was completed on the Milford Water Utilities Department in July, 2011. The results are as follows:**

**Total gallons supplied = 337,902,000.**

**Total gallons billed = 335,245,103.**

**Apparent loss = 2,656,897 gallons or 0.8% of system input.**

**This value seems lower than the expected minimum given Milford's water system size and pressure based on the AWWA M6 manual but given the information available at this time, this is the unaccounted for water value the Water Utilities Department is reporting. The Water Utilities Department will be conducting annual meter calibration, water auditing, and leak detection. Unaccounted for water will be revised annually as part of the conservation plan requirements.**

2. Frequency that water audit will be conducted (at least annually).

**Annually**

3. Statement that the water system shall prepare and submit a response plan to the department within 60 days if the percentage of unaccounted for water in the water system exceeds 15 percent of the total water introduced to the water system. The response plan shall identify how the water system intends to reduce the percentage of unaccounted-for water to below 15 percent within two years.

**The water system shall prepare and submit a response plan to the department within 60 days if the percentage of unaccounted for water in the water system exceeds 15 percent of the total water introduced to the water system. The response plan shall identify how the water system intends to**

**reduce the percentage of unaccounted-for water to below 15 percent within two years.**

4. Frequency that water audit will be conducted (at least annually per “Manual of Water Supply Practices, Water Audits and Leak Detection” document identification number AWWA M36, American Water Works Association, 1999).  
**Annually**

5. Statement that water audit will be calculated in accordance with “Manual of Water Supply Practices, Water Audits and Leak Detection” document identification number AWWA M36, American Water Works Association, 1999.

**Water audits will be calculated in accordance with “Manual of Water Supply Practices, Water Audits and Leak Detection” document identification number AWWA M36, American Water Works Association, 1999.**

2. *D. Leak Detection*

1. *Summary of findings for the most recent leak detection surveys including the following information:*

a) Year(s) conducted.

**2010**

b) Number of leaks found.

**One leak was found on a bleeder on a fire hydrant.**

c) Estimated losses recovered.

**N/A.**

d) Percent of system surveyed.

**Approximately 25%**

2. *Are pipe locations known?*

**Yes**

3. *Breakdown of pipe material, age, and length.*

**This was not completed as part of the survey**

4. *Availability of contact points and adequacy of spacing.*

**Valves and Hydrants are adequately spaced for proper leak detection throughout the distribution system.**

5. *Is pipe material non-metallic? If yes, as leaks are difficult to acoustically detect in non-metallic systems, what additional measures will be taken to detect leaks?*

**There is minimal non-metallic pipe in the system. No additional measures are being taken at this time to detect leaks on non-metallic pipe.**

6. *Will future leak detection surveys be conducted in-house or contracted out?*

**Both in-house and contracted.**

7. *If in-house, what equipment will be used and what training will be required?*

**A Metrotect acoustic microphone The Department staff is already trained in the use of this piece of equipment.**

8. *If in house, describe the leak detection method to be used.*

**Acoustical Detection**

9. *Will zone meters be installed to assist with leak detection identification and location?*

**No**

10. *Statement that a comprehensive leak detection survey will be conducted every two years.*

**A comprehensive leak detection survey will be conducted a minimum of every two years**

11. *Will leak detection be done all at one time or staggered throughout the two years? If staggered, what is the timeline and what percentage of the system will be surveyed during each initiative?*

**Leak Detection will be staggered over the two year period. The Water Utilities Department plans on 50 percent surveying 50 percent on the system during each initiative.**

12. *Statement that leak detection will be conducted in accordance with “Manual of Water Supply Practices, Water Audits and Leak Detection” document identification number AWWA M36, American Water Works Association, 1999.*

**Leak detection will be conducted in accordance with “Manual of Water Supply Practices, Water Audits and Leak Detection” document identification number AWWA M36, American Water Works Association, 1999.**

13. *Statement that leaks will be repaired within 60 days of discovery unless a waiver is obtained in accordance with Env-Wq 2101.09.*

**Leaks will be repaired within 60 days of discovery unless a waiver is obtained in accordance with Env-Wq 2101.09.**

*E. Pressure Management*

1. *Existing minimum distribution pressure.*

**25 psi**

2. *Existing maximum distribution pressure.*

**114 psi**

3. *How is or will pressure be monitored and what will be done to reduce pressures in zones found to be in excess of 80 psi?*

**Milford has homeowner's install pressure reducing valves.**

4. *What will be the timeframe for reduction (at least within 1 year of source water approval)?*

**The pressure reduction to customers is currently in place.**

5. *If pressure reduction is not technically feasible, what additional steps will the water system take to monitor and repair leakage within these zones?*

**The Water Utilities Department will conduct leak surveys in this area of the system on a biannual basis.**

*F. Intentional Water Loss*

1. *Are there "bleeders" used within the system at dead ends to improve water quality or prevent freeze-up? If yes, what looping opportunities exist?*

**No**

2. *Are storage tanks intentionally allowed to overflow because of system hydraulics or water quality concerns? If yes, what opportunities exist for the installation of altitude valves or tank mixing systems?*

**No**

III. CONSUMPTION SIDE MANAGEMENT

A. CONSERVATION RATE STRUCTURE AND BILLING

1. *Description of proposed rate structure and timeline for implementation (no later than 5 years from source water approval). If unknown, provide a statement that the water system will adopt a rate structure that complies with 2101.05 (o) and that DES will be notified of the new structure no later than the first billing cycle after source water approval.*

**The Milford Water Utilities Department bills all its customers the same rate regardless of quantity used, namely, \$ 1.97 for each 100 cubic feet of water (748 gallons). There are no plans to change this rate structure.**

2. *If irrigation meters are installed, will irrigation water be billed at a different rate?*

**No**

3. *Will a seasonal rate structure be utilized in addition to the general rate structure?*

**No**

4. *Proposed billing frequency (minimum is quarterly).*

**Quarterly**

5. *Informative billing practices to be used (ex. water use in gallons / usage history).*

**The Water Utilities Department provides a courtesy customer notification based on prior billing history if water usage increases significantly in a given billing cycle.**

**B. Educational Outreach Initiative**

1. *Informational materials that will be used.*

**The Milford Water Utilities Department has an on-going water conservation outreach program that includes the distribution of a poster that lists the top ten ways to minimize indoor and outdoor water use. These posters were posted in several Milford department offices, on the Town of Milford website, and on the local public access cable channel.**

2. *Rate of dissemination.*

**Materials are available online and at the Water Utilities Department Office.**

3. *Does the water system intend on becoming a WaterSense partner?*  
<http://www.epa.gov/watersense/>

**Not at this time**

4. *Will a rebate program be offered to replace older fixtures with WaterSense certified fixtures?*

**No**

5. *Will customer audits be offered?*

**No**

6. *Other outreach plans?*

**None**

IV. ZONING ORDINANCE / BYLAWS

A. *Are connections to the water system subject to any of the following water efficiency ordinances or bylaws?*

1. *Indoor*

a) Water efficient fixtures beyond the existing plumbing code.

**No**

2. *Landscaping*

a) Minimum topsoil requirements.

**No**

b) Use of native/drought tolerant plants and grasses.

**No**

c) Area and slope restrictions for turf grass.

**No**

3. *Irrigation System*

a) Prohibition or restrictions to irrigation systems.

**Outdoor Water Use Restriction during the "odd even day lawn watering program" during periods of drought.**

b) Require soil moisture sensors.

**No**

c) Require rain sensors.

**No**

4. *Other water efficiency ordinances?*

**None**

V. WATER USE RESTRICTIONS

A. *What is the water system's plan relative to implementing water restrictions?*

**The Milford Water Utilities Department supplies notification of the water restriction to its customers. A bulletin is distributed to all customers, broadcast on local cable television and on the Department's Website.**

B. *Who is responsible for enforcing restrictions?*

**Milford Water Utilities Department**

## VI. REPORTING AND IMPLEMENTATION

1. **“The water system will submit a form supplied by DES once every three years documenting how compliance with the requirements of Env-Wq 2101 is being achieved.”**
2. **“Activities outlined in the water conservation plan will be completed by water system personnel under the supervision of a certified water system operator.”**

### **Public Notification**

Within seven days of submitting the conservation plan to DES, the Milford Water Utilities Department shall provide a copy of the application and report via certified mail to the governing board of the department in which a proposed source is located, all municipalities that will receive water from the water system and the regional planning commission serving the location of the proposed source. All signed copies of the Certified Mail Return Receipt will be forwarded to DES.

The Milford Water Utilities Department will forward the Final conservation plan to the governing boards:

Nashua Regional Planning Committee  
9 Executive Park Drive, Suite 201  
Merrimack, NH 03054

Fred Kind  
Milford Conservation Commission  
1 Union Square  
Milford, NH 03056-04240

### **Additional Attachments**

A summary of the requirements of Env-Wq 2101 is included as an attachment to this plan.