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

**Thomas S. Burack, Commissioner**

## WATER CONSERVATION PLAN APPROVAL

November 14, 2016

Brian Goetz
City of Portsmouth
Public Works Department
680 Peverly Hill Road
Portsmouth, NH 03801

**Subject: Portsmouth – Portsmouth Water Works (PWS ID #: 1951010)**
**Water Conservation Plan, NHDES # 150086**

Dear Mr. Goetz:

On October 19, 2016, the New Hampshire Department of Environmental Services ("DES") Drinking Water and Groundwater Bureau received a Water Conservation Plan (the "WCP"), signed on September 14, 2016, for Portsmouth Water Works located in Portsmouth, New Hampshire. Pursuant to RSA 485:61 and Env-Wq 2101, community water systems seeking permits from DES for a source of water that will serve as a replacement well for an existing source that is not being abandoned shall submit a water conservation plan to DES. Based on review of the WCP, DES has determined the WCP complies with Env-Wq 2101, *Water Conservation* rules.

Pursuant to Env-Wq 2101, the City of Portsmouth, Rockingham Planning Commission, consecutive water systems, and municipalities receiving water from the system were provided a copy of the WCP, along with other required materials.

DES approves the WCP based on the following conditions:

1. No later than source activation, all source meters, distribution meters, meters measuring water consuming processes, and any transfer meters and data loggers shall be installed.

2. No later than the source activation date, source meters and any other meters measuring water consuming processes prior to distribution shall be read at least monthly (no sooner than 27 days and no later than 33 days from the last meter reading).

3. Within three years of source approval, meters shall be installed on all service connections that are not currently metered.

4. Service meters shall be read on at least a quarterly basis.

5. Upon source activation, a water balance (the difference between the system input volume and the metered authorized consumption) shall be reported annually to DES. The water balance shall be reported by March 1 for the prior year using the online reporting tool.

6. Within 2 years of final source approval, a conservation rate structure shall be implemented and residents billed at least quarterly.

7. Residents shall be charged based on the amount of water each residence uses, and the rate shall be structured so that the cost per gallon(s) is either constant or increasing with the amount of water used.

8. Within three years of source approval, a meter maintenance plan shall be implemented in accordance with the schedule proposed in the WCP.

9. Within one year of source approval, a leak detection and repair program shall be implemented in accordance with the WCP.

10. Within one year of receiving source approval, a water efficiency and outreach program shall be implemented in accordance with the WCP.

11. The system shall continue reporting monthly production volumes to the DES Water Use Registration and Reporting program on a quarterly basis via the submittal of monthly operating reports.

12. Within 5 business days of obtaining final source approval, any consecutive water systems or privately owned redistribution systems receiving water from this system shall be sent a letter through certified mail with return receipts requested and informed of the proposed source activation date as well as a statement indicating that upon source activation, they will be required to comply with Env-Wq 2101.

13. Within 60 days of obtaining final source approval, the system shall send copies of the certified mail return receipts requested in #12., above, to DES.

14. From the date of this WCP Approval, all new non-metallic pipes installed in the system shall be outfitted with detectable tracer tape or detectable tracer wire, or be GPS located and maintained in a GIS system.

15. Every three years from the date of this approval, a *Water Conservation Plan Ongoing Compliance Reporting Form* shall be submitted to DES documenting how the system has maintained compliance with the WCP. The following records shall be maintained by the water system to include with the report:

    a. A leak log including the date a leak was discovered, the date a leak was repaired, the type of leak (ex. water main, service line, hydrant, valve), the approximate size of the leak (gpm), and the nearest address to the leak.

b. The title of water efficiency materials distributed and the date of distribution and/or a description of outreach activities and the dates they were completed.

c. Date of installation and replacement of all meters, as well as testing and calibration records.

d. Leak detection survey reports.

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

The online *Annual Water Balance Reporting Form* and the *Water Conservation Plan Ongoing Compliance Reporting Form* may be located by going to the DES website (www.des.nh.gov), clicking on the "A-Z List" in the top right corner of the page, clicking "Water Conservation," and scrolling down to "Forms/Applications."

Please feel free to contact me with any questions at (603) 271-0659 or via e-mail at kelsey.vaughn@des.nh.gov.

Sincerely,

Kelsey Vaughn

Kelsey Vaughn
Water Conservation Program
Drinking Water and Groundwater Bureau

ec: Al Pratt, Portsmouth Water Works
Rockingham Planning Commission
Christine Bowman, NHDES
Steve Roy, NHDES

**WATER CONSERVATION PLAN: City of Portsmouth, New Hampshire**

A community water system seeking authorization for a source of water that will serve as a replacement well for an existing source that is not being abandoned must submit a water conservation plan to the New Hampshire Department of Environmental Services (NHDES) for approval demonstrating how the water system proposes to comply with water conservation standards pursuant to Env-Wq 2101, *Water Conservation* rules. THE CITY OF PORTSMOUTH is an existing large community water system.

Activities outlined in the water conservation plan will be completed by water system personnel under the supervision of a certified water system operator.

I certify that I have read the Water Conservation Plan, understand the responsibilities of the water system as referenced in the plan, and that all information provided is complete, accurate, and not misleading.

Owner Name: Brian Goetz, Deputy Director of Public Works

Owner Signature:  Date: September 14, 2016

I. Introduction

A. Contact Information

1. Name and location of system: **CITY OF PORTSMOUTH, NEW HAMPSHIRE**

2. Owner of system and mailing address:

**City of Portsmouth**
**Department of Public Works**
**680 Peverly Hill Road**
**Portsmouth, New Hampshire 03801**

3. Name and mailing address of designer of water conservation plan:

**Brian Goetz, Deputy Director of Public Works**
**680 Peverly Hill Road**
**Portsmouth, New Hampshire 03801**

B. System Overview

1. Brief description of the community being served (ex. number of units, apartments, partially attached condos, individual homes, shared common facilities, population, etc.): The City of Portsmouth's water system is a regional water provider for the New Hampshire Seacoast communities of Portsmouth, Newington, Greenland, New Castle, and portions of Madbury, Rye, Dover and Durham. The City also manages and operates the Pease Tradeport water system. Wholesale water delivery is also provided to the New Castle and Rye Water Districts.

2. Description of water sources, including water sources to be developed for non-potable uses such as irrigation: The primary source of water for the Portsmouth water system is the Bellamy Reservoir located in Madbury, New Hampshire. This reservoir has a rated capacity of nearly 900 million gallons and a sustainable yield of approximately 4 million gallons. Water from the reservoir is piped to the Madbury Water Treatment Facility, also located in Madbury. Treated water from this facility is combined with water from three Madbury wells and then pumped through a transmission main to a booster facility located in Newington. Three other wells serve the system from various points. The Portsmouth and Collins Wells are located in Portsmouth, and the Greenland Well is located in Greenland. The Greenland Well is being replaced with a new overburden production well but will not be abandoned (decommissioned and sealed) in accordance with We 100-1000, *Water Well Board Rules*.

The Pease Tradeport water system currently obtains water from two wells, the Harrison and Smith Wells. A third well, the Haven Well, is currently off-line due to PFC contamination from fire fighting foam. The City has an agreement with the Air Force to reimburse the City for the costs to treat this well and anticipates having this in service in the future.

3. Name designation of each proposed water source and any existing sources:

   Bellamy Reservoir, Madbury Well 2, Madbury Well 3, Madbury Well 4, Portsmouth Well, Collins Well, Greenland Well, Pease - Harrison Well, Pease - Smith Well

4. Number of connections proposed for each of the following classes:
   a) Residential: 6,000 (single family), 738 (multi-family)
   b) Industrial/Commercial/Institutional: 959
   c) Municipal: 78

5. Names of any consecutive water systems or privately owned redistribution systems proposed to receive water from the system:

**New Castle Water District –**
49 Main Street,
New Castle, NH 03854

**Rye Water District –**
60 Sagamore Road,
Rye, NH 03870

**Pease Trade Port –**
Pease Development Authority
55 International Drive
Portsmouth, NH 03801

6. **Description of any connections that will receive more than 20,000 gpd.** The following table lists the customers on the Portsmouth water systems that use 20,000 gpd, according to July 2016 consumption data:

| Name | Address | Town |
|---|---|---|
| G-P GYPSUM | 170 SHATTUCK WAY 122 OLD DOVER RD | Portsmouth |
| LONZA | 101 INTERNATIONAL DR | Portsmouth |
| RYE WATER DISTRICT | WENTWORTH RD | Rye |
| PEASE GOLF COURSE | 200 GRAFTON RD BILL END OF SEAS | Portsmouth |
| RED HOOK BREWERY | 1 RED HOOK WAY | Portsmouth |
| PUBLIC SERVICE CO | GOSLING RD PO# 2279877 | Portsmouth |
| NEW CASTLE WATER DIS | SHAPLEIGH ISLAND | New Castle |
| HIGH LINER FOODS | BORTHWICK AVE | Portsmouth |
| EP NEWINGTON ENERGY | RIVER RD | Newington |
| WATER COUNTRY/PALACE | 2300 LAFAYETTE RD | Portsmouth |
| PUBLIC SERVICE/ SCHI | GOSLING RD PO# 2279877 | Portsmouth |
| LIBERTY MUTUAL | 225 BORTHWICK AVE | Portsmouth |
| TYCOMM - 190362 | 2073 WOODBURY AVE | Portsmouth |
| ERIE SCIENTIFIC | 20 POST RD | Portsmouth |
| OPROCK NEWCASTLE TRS | 588 WENTWORTH RD | New Castle |
| OPROCK PORTSMOUTH MK | 1000 MARKET ST | Portsmouth |
| PDNED GREENLAND LLC | 1450 GREENLAND RD | Greenland |
| HOME DEPOT #3409 | 100 ARTHUR BRADY DR | Portsmouth |
| OPROCK PORTSMOUTH IN | 1 INTERNATIONAL DR | Portsmouth |

7. Total metered source withdrawal volumes for 2015:
   Average daily use (ADU): 4,628,406 gallons
   Lowest ADU: 3,427,000 gallons
   Highest ADU: 6,711,589 gallons

C. Transfer of Ownership

1. The system ownership is not proposed to be transferred.

II. System Side Management

A. Water Meters

1. Source and Other System Side Meters

a) No later than the source activation date, meters will be installed on each new and any existing water source.

b) No later than the source activation date, a distribution meter will be installed to measure flow at the point of entry into the water system.

c) An irrigation well is not proposed.

d) Meter information for each proposed and existing water source and other system side meters:

| Source | Bellamy Reservoir Raw |
|---|---|
| Meter Make | Siemens Sitrans Magflo |
| Meter Model | FE/FIT 02/010 |
| Meter Size (inches) | 20" |
| Meter Flow Range (gallons) | 500-4000 GPM |
| Meter Installation Date | 2006 |
| Last Meter Test/Calibration Date | 11/2/2015 |

| Source | Madbury Treated Effluent |
|---|---|
| Meter Make | Siemens Sitrans Magflo |
| Meter Model | FE/FIT 10/010 |
| Meter Size (inches) | 20" |
| Meter Flow Range (gallons) | 0-4000 GPM |
| Meter Installation Date | 2006 |
| Last Meter Test/Calibration Date | 11/2/2015 |

| Source | Madbury Well 2 |
|---|---|
| Meter Make | Fisher/Bailey MAG |
| Meter Model | 50XMII |
| Meter Size (inches) | 8" |
| Meter Flow Range (gallons) | 0-1000 GPM |
| Meter Installation Date | 1995 |
| Last Meter Test/Calibration Date | 11/3/2015 |

| Source | Madbury Well 3 |
|---|---|
| Meter Make | Fisher/Bailey MAG |
| Meter Model | 50XMII |
| Meter Size (inches) | 8" |
| Meter Flow Range (gallons) | 0-1000 GPM |
| Meter Installation Date | 1995 |
| Last Meter Test/Calibration Date | 11/3/2015 |

| Source | Madbury Well 4 |
|---|---|
| Meter Make | Fisher/Bailey MAG |
| Meter Model | 50XMII |
| Meter Size (inches) | 8" |
| Meter Flow Range (gallons) | 0-1000 GPM |
| Meter Installation Date | 1995 |
| Last Meter Test/Calibration Date | 11/3/2015 |

| Source | Portsmouth Well |
|---|---|
| Meter Make | Foxboro |
| Meter Model | 823DP |
| Meter Size (inches) | 8" |
| Meter Flow Range (gallons) | 0-750 GPM |
| Meter Installation Date | 1999 |
| Last Meter Test/Calibration Date | 11/2/2015 |

| Source | Collins Well |
|---|---|
| Meter Make | Foxboro |
| Meter Model | 823DP |
| Meter Size (inches) | 6" |
| Meter Flow Range (gallons) | 0-750 GPM |
| Meter Installation Date | 1996 |
| Last Meter Test/Calibration Date | 11/2/2015 |

| Source | Greenland Well |
|---|---|
| Meter Make | Foxboro |
| Meter Model | IDP10 |
| Meter Size (inches) | 10" |
| Meter Flow Range (gallons) | 0-750 GPM |
| Meter Installation Date | 1997 |
| Last Meter Test/Calibration Date | 11/3/2015 |

| Source | Pease - Harrison Well |
|---|---|
| Meter Make | Khrone |
| Meter Model | 1FC010D |
| Meter Size (inches) | 4" |
| Meter Flow Range (gallons) | 0-400 GPM |
| Meter Installation Date | 1999 |
| Last Meter Test/Calibration Date | 11/2/2015 |

| | |
|---|---|
| Source | Pease - Smith Well |
| Meter Make | Ultra Mag |
| Meter Model | UM06-08 |
| Meter Size (inches) | 8" |
| Meter Flow Range (gallons) | 0-350 GPH |
| Meter Installation Date | 2009 |
| Last Meter Test/Calibration Date | 11/2/2015 |

e) No later than the source activation date, source meters and other system side meters will be read in real time by the water system's computer SCADA controls and totalized daily.

2. Service Meter Installation, Reading, and Maintenance

a) Service meters are installed on all service connections, including public sector service connections and all points of transfer to consecutive water systems or privately owned distribution systems.

b) Service meters will continue to be read daily by the water system's Automatic Meter Reading (AMR) system.

c) Service meters will continue to be read by the AMR system.

d) It is expected it will take 1 day to read all service meters.

e) Service meters will be maintained in accordance with II.A.3.e), below.

3. Meter Selection, Installation, and Maintenance

a) All meters will be American Water Works Association (AWWA) certified, with the exception of b), below. The City bids out water meters and only awards to bidders that meet AWWA certification standards. The current meter bid was awarded to Badger Meter, Inc.

b) AWWA does not have standards for magnetic flow meters. If a magnetic flow meter is proposed, the meter make, model, size and manufacturer specifications will be forwarded to the NHDES Water Conservation program for review. The meter will not be installed until receiving approval for its use from NHDES.

c) The selected size of the meters will be based on projected flow rates.

d) Meters will be installed as specified by the manufacturer, including requirements for horizontal or vertical placement, distance of straight run of pipe upstream and downstream of the meter and strainer installation. If the manufacturer does not supply installation specifics, meters will be installed in accordance with the "Manual of Water Supply Practices M6, Water Meters-Selection, Installation, Testing, and Maintenance" (AWWA, 2012).

e) The following meter testing and calibration schedule or meter change-out schedule will be implemented and has been in place with Portsmouth for many years. If the manufacturer's

accuracy warranty extends beyond the schedule below, the meter will be tested or changed-out no later than the warranty expiration date. Meters larger than 2" are tested annually by a third party meter testing service.

| Meter Size (inches) | Testing Rate (years) |
|---|---|
| <1" | 10 yrs |
| 1" - 2" | 4 yrs |
| 3" | 2 yrs |
| >3" | 1 yr |

f) A log of the date meters have been installed, tested, calibrated, repaired, and replaced will be maintained and is currently maintained by the Water/Sewer Billing Foreman. Calibration certificates will be kept on file.

B. Water Balance and Water Audit

1. The system currently has service meters installed. The most recently available water balance (system input volume – authorized metered consumption) is included in Appendix C.

2. The yearly water balance will be reported to NHDES using the NHDES online water balance reporting tool and will be submitted no later than March 1 of each year. The electronic reporting form is located on the Water Conservation homepage of the NHDES website. The City does not currently utilize this form but will transition to this method following the approval and implementation of this conservation plan.

3. The water system will prepare and submit a water audit and response plan if more than 15% of the system input volume cannot be accounted for by authorized metered consumption. The response plan will identify how the water system intends to reduce losses to below 15% within two years.

4. Water audits will be calculated in accordance with the "Manual of Water Supply Practices M36, Water Audits and Loss Control Programs" (AWWA, 2016).

C. Leak Detection and Repair

1. A leak detection program will continue to be implemented upon source activation. The intent of this program is to survey the entire water system infrastructure every three years. The Portsmouth Water Division received a NHDES leak detection survey grant in 2014. The grant provided funds for an independent leak detection service to survey for leaks in the Pease Tradeport portion of the water system. Thirty-one (31) miles of water main were surveyed. Four leaks were identified and fixed.

Subsequently, the surveyor was contracted by the City to survey other portions of the system and other areas where leaks were suspected.

The water operations staff also utilize water system pressures, tank levels, and pumpage via the water system's real-time SCADA system. Daily totals and tank level trends are compared with historical usage to determine if any excessive usage or potential leaks are occurring.

2. All new non-metal pipes will either be GPS located and stored in a GIS system or equipped with detectable tracer tape or detectable tracer wire.

3. Leak detection will be conducted in accordance with the "Manual of Water Supply Practices M36, Water Audits and Loss Control Programs" (AWWA, 2016).

4. Leaks will be repaired within 60 days of discovery unless a waiver is obtained in accordance with Env-Wq 2101.23.

5. A log of all leaks will be maintained, including the date the leak was discovered, the date the leak was repaired, the type of leak (ex. service, main, hydrant, valve), the size of the leak (gpm) and the closest street address.

D. Pressure Management

1. The Portsmouth water system has two pressure zones – the Portsmouth core system and the Pease Tradeport water system. Normal operating pressures are as follows:

- Portsmouth: 50 to 60 PSI
- Pease: 65 to 75 PSI

2. Neither system has pressures over 100 PSI.

I. Consumption Side Management

A. Conservation Rate Structure and Billing

1. A conservation rate structure has been implemented by the City of Portsmouth since 2006. Currently, customers are billed at a base rate for monthly use up to 10 units (7,480 gallons) at one rate and at a higher rate for use above that amount. The City also adopted a three-tier rate of increasing cost for irrigation customers. Rates are adjusted annually by the City Council.

2. The rate structure (as of July 2016) is as follows:
Each customer pays a monthly base fee of $4.75 per service
Tier 1: First 10 units of water consumed will be billed at a rate of $4.15 per unit.
Tier 2: Consumption above 10 units of water will be billed at $5.00 per unit.

3. Irrigation water rate structure (as of July 2016) is as follows:
Each customer pays a monthly base fee of $4.75 per service
Tier 1: First 10 units of consumption will be billed at the rate of $5.00 per unit.
Tier 2: Consumption above 10 units and up to 20 units will be billed at the rate of $9.70 per unit.
Tier 3: Consumption above 20 units will be billed at the rate of $12.05 per unit.

4. Customers are billed monthly. This will continue.

B. Educational Outreach Initiative

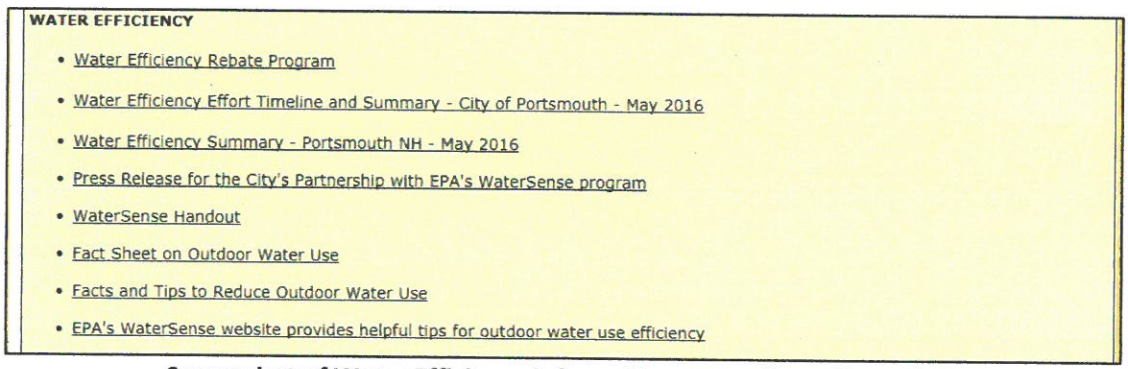
1. The City will continue its Water Efficiency Outreach via:

**(1)** The City will continue to distribute water efficiency outreach materials twice a year via bill inserts, Consumer Confidence Reports, the City website, tweets, press releases, the Monthly Water Supply Status Reports, and other methods. The materials distributed can include NHDES Water Efficiency Fact Sheets located at http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm#efficiency or EPA WaterSense materials located at http://www.epa.gov/watersense/.

**(2)** The City of Portsmouth is a WaterSense partner and promotes the WaterSense program through outreach materials.

**(3)** No later than the source activation date, the system will hold a yearly water efficiency event. Past efforts have included a water conservation retrofit kit program and a rain barrel program. Currently, the City is offering rebates to water customers who install high efficiency washing machines and low-flow toilets. This will continue. Additionally, the City recently adopted (2016) a Watersense certification for new irrigation systems. This will continue. Finally, the City will continue to maintain a booth during the annual Market Square Days event held every year. Water Efficiency information will be included as part of this booth.

**(4)** The City will continue to update Water Efficiency information on the City website. Currently, the URL for this information is: http://www.cityofportsmouth.com/publicworks/index.htm - Water:




**Screenshot of Water Efficiency information currently on City website**

2. The system will maintain a log indicating how the system has complied with III. B.1., above. The log will include dates the outreach and education actions were taken and what was done.

II. Reporting and Implementation

A. Upon source activation, and by no later than March 1 of each year, a water balance for the previous year will be submitted to NHDES using the electronic reporting form located on the Water Conservation homepage of

the NHDES website (www.des.nh.gov). Therefore, with approval of this conservation plan the City will utilize the NHDES form for reporting water balance.

B. The water system will continue to report monthly production volumes, quarterly to the NHDES Water Use Registration via their submittal of monthly operating reports. Monthly means once every calendar month, but no sooner than 27 days after and no later than 33 days after the previous reading.

C. The water system will submit a form supplied by NHDES once every three years from the date of the water conservation plan approval documenting how compliance with the requirements of Env-Wq 2101, *Water Conservation* rules, is being achieved. The system will use the meter, leak, and outreach and education logs to complete the form.

Appendix A
Definitions

**Authorized metered consumption**: billed metered water plus unbilled metered water.

**Community water system (CWS):** a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

**Consecutive water system:** a public water system that buys or otherwise receives some or all of its finished water from one or more wholesale systems for at least 60 days per year.

**Final source approval:** the date of final well siting approval or the date of issuance of the large groundwater withdrawal permit.

**Large community water system:** a community water system that serves more than 1,000 persons.

**Privately owned redistribution system (PORS):** A system for the provision of piped water for human consumption which does not meet the definition of a public water system and meets all of the following criteria:

(1) Obtains all of its water from, but is not owned or operated by, a public water system; (2) serves a population of at least 25 people, 10 household units or 15 service connections, whichever is fewest, for at least 60 days per year; and (3) has exterior pumping facilities, not including facilities used to reduce pressure, or exterior storage facilities which are not part of building plumbing.

**Public water system (PWS):** a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

**Small community water system:** a community water system that serves 1,000 people or less.

**Source activation date:** the date the source is placed into use.

**System input volume:** the volume of water input to the water supply system after treatment, analysis and storage.

**Water balance:** the difference between the system input volume and authorized metered consumption.

**Water conservation:** any beneficial reduction in water losses, waste or use.

**Wholesale system:** a public water system or an industrial, commercial or institutional (ICI) water user that treats source water and then sells or otherwise delivers finished water to a consecutive water system or privately owned distribution system.

Appendix B
Notification Process

**Public Notification Instructions**

Once a final draft of the water conservation plan is agreed upon by the applicant and NHDES, NHDES will send a signature line to the applicant for addition to the plan along with a summary of the requirements of Env-Wq 2101, *Water Conservation* rules. Within 10 working days of receiving the summary from NHDES, the applicant is required to provide a copy of the water conservation plan via certified mail with return receipt requested to the governing board of the municipality in which a proposed source is located, all municipalities that will receive water from the water system (if any), all wholesale customers (if any) and the regional planning commission serving the location of the proposed source. In most cases, only the municipality and the regional planning commission will require notification. All signed copies of the certified mail return receipts (the green cards) must be forwarded to NHDES along with the final, signed water conservation plan.

**Additional Attachments**

The applicant must provide the governing boards with a summary of the requirements of Env-Wq 2101, which may be found at http://des.nh.gov/organization/divisions/water/dwgb/water_conservation/index.htm, and request that the governing board amend local site planning requirements to reflect the requirements of Env-Wq 2101 or to promote water efficiency.

NOTIFICATIONS REQUIRED UPON WATER CONSERVATION PLAN SUBMISSION:

1. Municipalities and Wholesale Customers:

City of Dover
288 Central Avenue
Dover, NH 03820

Town of Durham
8 Newmarket Road
Durham, NH 03824

Town of Greenland
11 Town Square
Greenland, NH 03840

Town of Madbury
13 Town Hall Road
Madbury, NH 03823

Town of New Castle and New Castle Water District
49 Main Street
New Castle, NH 03854

Town of Newington
205 Nimble Hill Road
Newington, NH 03801

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

Rye Water District
60 Sagamore Road
Rye, NH 03870

2. Regional Planning Commission:

Rockingham Planning Commission
156 Water Street
Exeter, NH 03833

**Notification of Consecutive Water Systems and Privately Owned Redistribution Systems**
Within 5 working days of obtaining final approval of the source from NHDES, the system is required to notify any consecutive water system or privately owned redistribution system receiving water from the system, that pursuant to Env-Wq 2101.13, the systems must implement a water conservation plan and should contact the NHDES Water Conservation Program using the following contact information:

Kelsey Vaughn, Water Conservationist
New Hampshire Department of Environmental Services
Drinking Water and Groundwater Bureau
PO Box 95
Concord, NH 03302-0095
kelsey.vaughn@des.nh.gov
Phone: (603) 271-0659
Fax: (603) 271-0656

NOTIFICATIONS REQUIRED UPON SOURCE APPROVAL:

Town of New Castle and New Castle Water District
49 Main Street
New Castle, NH 03854

Rye Water District
60 Sagamore Road
Rye, NH 03870

Pease Trade Port
Pease Development Authority
55 International Drive
Portsmouth, NH 03801

Appendix C
Water Balance

The City of Portsmouth performed a comprehensive Water Supply Master Plan Update in 2012, which was completed and published in 2013. A comprehensive analysis of water loss was performed as part of the Water Supply Master Plan Update. The following table is excerpted from that plan:

**TABLE 1-12 (Portsmouth Water Supply Master Plan – Tighe & Bond, 2013)**
Portsmouth Water System – Total Annual Water Use by Account Category (July 2012 data)

| | Accounts | Total Gallons | MGD | % of Use |
|---|---|---|---|---|
| Commercial | 976 | **514,420,544** | 1.41 | 32.7% |
| Residential | 6,843 | **497,254,692** | 1.36 | 31.6% |
| Industrial | 81 | **204,114,484** | 0.56 | 13.0% |
| Other Districts | 2 | **45,374,428** | 0.12 | 2.9% |
| Municipal | 66 | **39,956,641** | 0.11 | 2.5% |
| Irrigation | 238 | **12,041,028** | 0.03 | 0.8% |
| TOTAL | 8,206 | **1,313,161,817** | 3.60 | **N/A** |
| Pease Golf Use (unbilled) | | 10,600,656 | 5.79 | 0.7% |
| Hydrant Flushing | | 1,500,000 | 10.21 | 0.1% |
| Other known leaks | | 122,256 | 19.86 | 0.0% |
| Meter Adjustments | | 18,555,000 | 39.60 | 1.2% |
| **Total Billed and other use** | | **1,343,939,729** | 3.68 | **85.4%** |
| **Total System Water Produced** | | **1,572,904,437** | 4.31 | **N/A** |
| **Water Balance** | | **228,964,708** | 0.63 | **14.6%** |