

PARE PROJECT NO. 07146.00

**WATER SUPPLY SYSTEM MANAGEMENT PLAN
FOR THE
SMITHFIELD WATER SUPPLY BOARD
EXECUTIVE SUMMARY**

PREPARED FOR:

**TOWN OF SMITHFIELD, RHODE ISLAND
64 FARNUM PIKE
SMITHFIELD, RHODE ISLAND**

PREPARED BY:

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Executive Summary

Introduction and Goals

This Water Supply System Management Plan (WSSMP) has been prepared as required under the Rhode Island General Laws 46-15.3, as amended and titled "The Water Supply System Management Planning Act" (Act). The legislative authority to effectuate the goals and policies of this Act has been conferred to the RIWRB. To this end, the RIWRB has promulgated the Rules and Regulations for Water Supply System Management Planning, October 1998, as amended to implement the provisions of this Act.

The goal of this Plan is to comply with the provisions of the Water Supply System Planning Act through development of a comprehensive Water Supply System Management Plan (WSSMP) for the Smithfield Water Supply Board (SWSB) transmission and distribution system. The intent is to apply the components of the plan to successful execution for the purpose of achieving the effective and efficient protection, development, utilization, and conservation of the water system's resources in ways that satisfy both present and future needs of the SWSB's customer base.

The goals of the Smithfield Comprehensive Plan, to maintain the high quality of residential life within the subject service area, while controlling the future rate of growth, are recognized herein and their contents are referenced in the development of future water demand projections. Additionally, the region has opportunities for economic development through areas in and around the special planning districts of the community, as well as within other industrial and commercial zoned portions of the water supply service area.

The goal of this plan is furthermore consistent with the overall goal of the RI State Guide Plan Nos. 721, 722, 723, and 724 which is to develop a long range program to improve the quantity and quality of water required by the citizens within the service area in the most cost effective and environmentally sound manner.



The SWSB water supply system includes three booster pumping stations. The Longview Reservoir Booster Pump Station is located at the interconnection to the PWSB. This station supplies the North Providence and southeastern portion of Smithfield service areas, as well as the Limerock Booster Pump Station. The Limerock Booster Pump Station supplies the service area in the northeastern portion of Smithfield, the Island Woods and Rocky Hill storage reservoirs, and the Davis Booster Pump Station. Water from these two storage tanks is also supplied back through the Limerock station, through a pressure-reducing valve (PRV), to supply the area between the Longview and Limerock Stations. The Davis Booster Pump Station supplies the northwest service area in Smithfield and the Burlingame water storage reservoir. In 1997, the Limerock and Davis stations were constructed while the Longview Station was completely rehabilitated.

The system's water transmission mains are primarily involved in the conveyance of potable water between the booster pumping stations, the water supply service area, and the system storage facilities. The system employs a well dispersed, but skeletonized layout in an effort to provide water service throughout the area. As the system is supplied by a sole source, the entire distribution system is fully interconnected. The early portion of these mains date to 1963, are typically 6 to 16 inches in diameter, and are constructed of cement lined cast iron (CLCI), asbestos cement (AC), cement lined ductile iron (DI), and polyvinyl chloride (PVC) materials.

The SWSB maintains five (5) system interconnections with neighboring water utilities. Three of these interconnections are with the PWSB, only one of which is active for wholesale supply to the SWSB through the Longview Booster Pump Station. The other two interconnections for the wholesaling of water are maintained with the East Smithfield Water District (ESWD), only one of which is active for wholesale supply to the ESWD.

The SWSB estimates that accounting for private wells located within the service area, a population of approximately 9,200 is eligible to be served by SWSB.

The only active production source, which is the purchase of water from the PWSB through the Longview interconnection, is metered and is equipped with corresponding transmitters for continuous charting and digital display. This master meter was newly installed in 1997 and is checked and calibrated annually by the PWSB. Worksheet No. 9 of Appendix A provides the



large users with a demand greater than 3.0 million gallons per year. These major users are involved in a vast array of operations including residential, governmental, industrial, and commercial services.

In addition to the implied legal obligations associated with the SWSB ordinances defining the responsibility of the SWSB to furnish potable water to its customers, the SWSB is also legally bound to provide water to its wholesale customer. The company maintains legal agreements with the East Smithfield Water District for the supply of water. This agreement is included in Appendix E. No additional specific legal obligations or contract agreements exist regulating the purveyor's provision of water.

Non-account water has remained generally consistent over the years, with the exception of 2004 due to inaccurate data, and is currently well below the desired State goal of 15%.

The SWSB is currently working with Pare Corporation on the development of a Capital Improvement Plan (CIP), which is slated for final completion in late 2008. The CIP addresses current deficiencies and prioritizes improvements in terms of need, coordination/logistics, and funding. Improvements identified in the CIP are listed below in order of priority.

- CIP 1 is a new interconnection with the Town of Lincoln. The interconnection would be located on George Washington Highway (Rt. 116) at the Lincoln/Smithfield town line. The scope of work associated with CIP 1 would include approximately 1,300 linear feet of 12-inch ductile iron (DI) water main and a new booster pump station.
- CIP 2 consists of installing approximately 9,300 linear feet 16-inch DI water main along George Washington Highway and Farnum Pike (Rt. 104). The new water main would connect to an existing 16-inch water main on George Washington Highway west of Douglas Pike (Rt. 7) and extend approximately 5,700 feet west toward Farnum Pike. From the intersection of Farnum Pike and George Washington Highway, the water main would extend approximately 3,700 feet north to the existing 12-inch PVC water main.
- CIP 3 consists of installing approximately 8,500 feet of new 12-inch ductile iron water main along Harris Road. This new water main would connect to the 12-inch water main that is proposed as part of the Oaks at Harris Development. The water main



planning periods are 1.1 MGD and 1.7 MGD respectively.

Supply Management

The respective 5-year ADD and MDD were determined to be 1.1 mgd and 2.0 mgd. Based on the current water use agreement with PWSB of 1.965 mgd on a maximum day demand, the projected 5-year MDD is meeting the current limit of the contract with the PWSB. Therefore, the analysis indicates that with the current water use agreement, there is adequate supply for an average day and the system is at capacity with the 5-year MDD.

The respective 20-year ADD and MDD were previously determined to be 1.7 mgd and 3.1 mgd. The projected 20-year MDD is above the current limit of the contract with the PWSB. Therefore, the analysis indicates that with the current water use agreement, there is adequate supply for an average day but there is not adequate supply to meet the 20-year MDD.

The SWSB must look to alternative supply sources in order to meet the future demands of the 5 and 20-year planning periods. Fully understanding this need, the SWSB has been actively pursuing an emergency interconnection with the Town of Lincoln. This initiative, further detailed below, is outlined and detailed in the SWSB Capital Improvements Plan, which is currently being developed.

- CIP 1 is a new emergency interconnection with the Town of Lincoln. The interconnection would be located on George Washington Highway (Rt. 116) at the Lincoln/Smithfield town line. The scope of work associated with CIP 1 would include approximately 1,300 linear feet of 12-inch ductile iron (DI) water main and a new booster pump station.

Demand Management

The SWSB initiated a residential retrofit program in 1998 in response to recommendations in the July 1998 WSMP. These kits were offered at a cost of \$4.00 to start. This cost was later removed when the Board found interest in the kits at the specified cost to be low. The SWSB promotes its existing system-wide residential retrofit program, and all new residential and remodeling construction is required to install water conservation devices in accordance with the State of Rhode Island plumbing code standards.



The SWSB shall implement the following goals for their MUTAP within three (3) years of the approval of this WSSMP.

- Complete MUTAP reviews and develop a final report.
- Issue final reviews with suggested measures to each major user.

The SWSB provides public education in a number of forms to convey information to their service population. Current and past methods, as detailed in 2.9.9 Public Education, include but not are limited to the following:

- The SWSB has distributed water education rulers and printed literature to area schools.
- The SWSB has also coordinated with the Greenville Water District on teaming for future educational outreach programs.
- Water conservation letters inclusive of doors door conservation cards are distributed regularly to area hotels.
- The SWSB also actively utilizes its website and mailings for postings of water bans and general information.
- Information is also printed on bills or provided with bill stuffers.
- The SWSB provides a Consumer Confidence Report Annually (see Appendix I).
- Information with regard to public education is contained in Appendix G.

The SWSB shall implement the following goals for public education within one (1) year of the approval of this WSSMP.

- Develop one informative newsletter/correspondence to be contained within at least one billing statement for all customers. The newsletter/correspondence shall focus on conservation measures by the SWSB and measure that users can adopt (residential retrofit, MUTAP, etc.).

The SWSB shall implement the following goals for public education within two (2) years of the approval of this WSSMP.

- Develop a school program in concert with the East Smithfield Water District and the Greenville Water District and present to at least two area schools a year.



with regard to future demands projections and the Town Planner was consulted on the development of future demand projections.

The SWSB meets regularly with both the East Smithfield Water Department and the Greenville Water Department. The SWSB has had discussions with the East Smithfield Water Department on emergency management and rate structures. The SWSD and the East Smithfield Water Department have also been actively discussing regionalization issues. These discussions remain on going and at this time and there has been no definitive outcomes developed.

In October of 2007, the SWSB entered into a Water System Mutual Aid Agreement with the following neighboring suppliers: Cumberland Water Department, Lincoln Water Commission, Pawtucket Water Supply Board, East Smithfield Water District, and Smithfield Water Supply Board (see Appendix L). The purpose of this agreement is so that each participating utility can obtain assistance in the form of personnel, equipment, materials, and other associated services necessary from other participating utilities for continued operation of their utility in the event of an Emergency.

