

REPORT

Pare Project No. 03066.40

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**SMITHFIELD WATER SUPPLY BOARD  
WATER SUPPLY SYSTEM MANAGEMENT PLAN**

**EXECUTIVE SUMMARY**

PREPARED FOR:

Town of Smithfield  
64 Farnum Pike  
Smithfield, RI 02917

PREPARED BY:

Pare Corporation  
8 Blackstone Valley Place  
Lincoln, RI 02865

**FINAL VERSION  
FEBRUARY 2017**



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## EXECUTIVE SUMMARY

This Water Supply System Management Plan (WSSMP) has been prepared as required under 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 Rhode Island Water Resources Board (RIWRB). To this end, the RIWRB has promulgated the Rules and Regulations for Water Supply System Management Planning (“Rules”), last revised in October 2002, as amended to implement the provisions of the Act.

The Smithfield Water Supply Board (SWSB), as a water purveyor supplying over 50 million gallons (MG) of water per year, is responsible for updating its WSSMP every 5 years. This document is the 2015 Update of the WSSMP for the SWSB. The WSSMP has been prepared to be consistent with the goals of the Rules as well as the strategies and goals articulated in the RIWRB’s 2012 Strategic Plan and the RIWRB’s Water Use and Efficiency Rule for Major Water Suppliers. It is also consistent with the goals of State Guide Plan Element No. 721 – RI Water 2030 and the goals stipulated in the Comprehensive Plans for the Towns of Smithfield and North Providence.

### *Introduction*

The SWSB’s primary objective is to operate a water system for the benefit of, and to meet the legitimate needs of, the customers in its service area. In accordance with that objective, the SWSB’s specific goals are to:

1. Promote the efficient use of water through:
  - conservation and efficient operation of the system in accordance with industry and State standards; and
  - effective metering and public information programs that encourage water conservation.
2. Comply with all applicable laws and regulations.
3. Protect the integrity of its existing source of supply connection to the Providence Water Supply Board (Providence Water).
4. Cooperate with the overall goals of the Town of Smithfield and the Town of North Providence as outlined in their respective Comprehensive Plans.
5. Provide for service to all locations within its service area.
6. Conform to the overall goals for water suppliers established in State Guide Plan Element No. 721 – Rhode Island Water 2030.



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## ***Background***

The Town of Smithfield, through the SWSB, owns and operates a public water distribution system in a non-exclusive territory, serving portions of the Towns of Smithfield and North Providence. The SWSB was developed from a subsequent Water Supply Commission enacted by the Town of Smithfield. This Commission was authorized and established by Chapter 1676, 1930 Public Laws of Rhode Island with the purpose of developing “an accurate and comprehensive study of the water supply of the Town of Smithfield”. Today, the Town Council acts as the Board of Water Commissioners for the SWSB.

Water system management and day-to-day operations are the responsibility of the Water Commissioner and SWSB staff. Mr. Charles Walsh is the Acting Water Commissioner, as well as Deputy Director of Public Works for the Town of Smithfield. The SWSB has two other full time employees, both identified as “Field Observers”.

The SWSB operates out of the Smithfield DPW facility at the following location:

3 Spragueville Road  
Smithfield, Rhode Island 02917  
Telephone Number: 401-233-1034

The SWSB’s mailing address is at the Smithfield Town Hall, as follows:

64 Farnum Pike  
Smithfield, RI 02917  
General Number: 401-233-1000

## ***General System Description***

The SWSB water system consists of approximately 36 miles of distribution and transmission mains supplied by one primary interconnection with Providence Water at the Longview Reservoir in North Providence. The SWSB does not have any of their own sources of supply and does not typically treat wholesale water purchased from Providence Water. Occasionally, chlorine injection is performed to boost chlorine residual.



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The SWSB's Longview Reservoir Pump Station draws water from the interconnection and boosts pressure to raise its hydraulic grade. The Limerock Booster Pump Station works in conjunction with the Longview Reservoir Booster Pump Station to boost pressure again to the system's main pressure zone. Each pump station is rated to approximately 2.0 million gallons per day (MGD) and both have three variable frequency drive pumps. A third pump station, the Davis Booster Pump Station, raises pressure to meet the hydraulic grade of an isolated section in the northwest part of the service area. This pump station has two constant speed, 150 gallon-per-minute (GPM) pumps.

There are three storage tanks in the system, as follows:

- 1.0 MG Rocky Hill Road Tank;
- 4.0 MG Island Woods Tank; and
- 300,000 Gallon Burlingame Tank.

All three tanks are of steel construction and require rehabilitation of the interior and exterior coatings. This work, along with the addition of tank mixing systems, is anticipated to be performed in upcoming years.

The SWSB sells water to the East Smithfield Water District (ESWD) system through a wholesale interconnection on Ridge Road in Smithfield. The SWSB also has an emergency interconnection with the ESWD at Meadow View Drive and recently constructed a new emergency interconnection with the Greenville Water District (GWD) at the GWD's new storage tank in the vicinity of the SWSB's Burlingame Tank (*it is noted that Providence Water has taken over the ESWD system, effective January 2017*).

Average Day Demand (ADD) for 2014 was estimated to be 0.89 MGD based on total water use by the retail customer base of 323.22 million gallons. Total wholesale water purchased in 2014 was approximately 364 million gallons, an average of 1.0 MGD. The Maximum Day Demand (MDD) was estimated to be 1.7 MGD using a MDD to ADD peaking factor of 1.9.

Residential average daily per capita water use was estimated to be approximately 41.7 GPCD based on a service area population of 9,260 residents. Residential water use was approximately 44% of the total water use, while the remainder is grouped together and categorized as commercial/industrial. Major Users, customers that use at least 3 million gallons of water annually, represent a large proportion of commercial/industrial water use. There were 12 Major Users in 2014 and as many as 15



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customers have qualified as Major Users in the past. Bryant University is the most significant of these major users, and the SWSB will coordinate with them to identify ways they may be able to institute water conservation measures.

There were approximately 1,457 active accounts in 2014, as follows:

- Residential 1,297
- Commercial: 142
- Industrial: 13
- Government: 5
- Total: 1,457

All services are metered and the SWSB recently upgraded to system-wide radio-read metering. Major Users are metered and billed monthly while the remaining customer base is metered and billed quarterly.

Anticipated future demands exceed the capacity of the SWSB's interconnection with Providence Water under maximum demand conditions. While the system has sufficient storage capacity to meet these demands, it may result in depletion of storage for fire-fighting or other emergencies. This has led the SWSB to explore interconnections with other water systems (e.g. emergency interconnection recently established with the GWD and interconnections with the Town of Lincoln are under consideration). The SWSB will also coordinate with Providence Water regarding an increase in the 1.97 mgd of water they are allowed to purchase at the Longview interconnection. It is the SWSB's understanding that Providence Water is generally supportive of this. This would require piping improvements in the SWSB system and installation of larger pumps at the Longview Booster Pump Station, and possibly also at the Limerock Booster Pump Station, as their maximum pumping rate is set at 1.97 mgd.

The SWSB also recently updated their 20-year Capital Improvement Plan (CIP), which identifies large scale capital projects that would increase supply in the system. This would be done through a combination of developing new interconnections but also by making piping improvements at critical locations to more efficiently move water throughout the existing system.



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The six major capital projects identified in the CIP are as follows:

- CIP No. 1 – New 1 MG storage tank and interconnection with Lincoln Water Commission at George Washington Highway.
- CIP No. 2 – Installation of 4,800 linear feet of new water in Douglas Pike
- CIP No. 3 – Installation of 6,900 linear feet of new 12-inch DI water main in Ridge Road and Limerock Road
- CIP No. 4 – Installation of 7,700 linear feet of new 12-inch DI water main on Ridge Road and Stillwater Road
- CIP No. 5 – Installation of 4,885 linear feet of 16-inch DI water main on George Washington Highway and Farnum Pike
- CIP No. 6 – Installation of 8,500 linear feet of 12-inch DI water main in Harris Road

The SWSB may pursue other opportunities for increasing supply in the system, and is exploring possible other interconnections with the Lincoln Water Commission, such as one at Twin River Road. The SWSB has met with Lincoln Water and while Lincoln Water is amenable to interconnections between the two systems, the available supply in either system needs to be evaluated further.

### ***Water Quality Protection Component***

The SWSB collects the charges associated with the water quality protection program and issues them to Providence Water and the Rhode Island Water Resources Board, as required, in accordance with the Public Drinking Water Protection Program (RIGL 46-15.3). This program distributes funds which are used for land acquisitions and to purchase development rights within the supply watershed areas to help protect water quality.

Water quality in the SWSB system has generally been good and compliant with State Standards. However, a chlorine injection system was installed at the Limerock Pump Station in 2011 to raise chlorine residual in the system due to previous exceedances of total coliforms. This system has only been used on occasion and is intended for seasonal use. Its use has not been required since 2012.

Sampling and analysis performed by the SWSB for total trihalomethanes (TTHMs) indicated that the running average TTHM concentration following the 1<sup>st</sup> Quarter of 2014 was 83.05 mg/L. A violation for TTHMs is triggered when the running average from the previous three quarters of sampling



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exceeds the Maximum Contaminant Level (MCL) of 80 mg/L. The running average increased to 85.5 mg/L following testing done in the 2<sup>nd</sup> Quarter of 2014, but testing performed for the 3<sup>rd</sup> Quarter of 2014 resulted in lower concentrations of TTHMs that decreased the running average concentration to below 80 mg/L. The running average TTHM concentration has remained below 80 mg/L since.

The concentrations of TTHMs in the samples collected in the SWSB distribution system were found to be very similar to concentrations in the wholesale water entering the system from the Longview Reservoir. There appears to be relatively little TTHM formation within the SWSB system itself. As such, the SWSB has coordinated with Providence Water and met with them in June 2014 to discuss strategies for lowering TTHM concentrations in the wholesale water sold to the SWSB. Providence Water indicated that they are evaluating water age and mixing at all of their storage facilities in an effort to reduce formation of TTHMs, with the Longview Reservoir being their highest priority. The SWSB is performing a similar evaluation at their three storage facilities and is considering the addition of mixing systems at their storage tanks in the near future.

### *Anticipated Future Demands*

Anticipated future demands were developed based upon several factors, including:

- historic trends for water use;
- anticipated population changes;
- effects of conservation efforts;
- building code changes and efficiency of water using facilities and equipment (both system and user facilities and equipment);
- service area zoning and municipal policies; and
- known or anticipated major water user considerations.

Table 2 presents anticipated water use in the 5-year and 20-year planning periods with consideration to the factors identified above.



**Table 2: Anticipated Future Water Demand**

	<b>Current [2014]</b>	<b>5-Year Period</b>	<b>20-Year Period</b>
<b>Residential Water Use (mgd)</b>	0.39	0.41	0.46
<b>Comm./Ind. Water Use (mgd)</b>	0.50	0.765	1.257
<b>Average Day Demand (mgd)</b>	0.89	1.175	1.717
<b>Total Demand (MG)</b>	323.22	429	627
<b>Maximum Day Demand (mgd)</b>	1.7	2.35	3.43
<b>MDD to ADD Peak Factor*</b>	1.9	2.0	2.0

\* Peaking factor assumed to be 2.0 based on historic water use estimates. AWWA Manual M32 suggests that typical MDD to ADD peaking factors range from 1.2 to 2.5.

Table 2 presents anticipated average and maximum daily water use in the 5-year and 20-year planning periods. Commercial water use projections are consistent with estimates made in a 2007 Buildout Analysis performed by the Town as well as planned expansion and development of the Town's Planned Corporate District. Residential projections are based on an assumption of an average of 60 new residents in the SWSB service area each year, each using 65 gallons per day on average which is equivalent to the State's residential per capita water use goal. Actual residential per capita water use is currently less than this, so this may be a conservative approach for projecting future water use. Population growth is based on the assumption that 48 new housing units are constructed in the Town of Smithfield each year and that approximately half of these would be built in the SWSB service area with an average occupancy of 2.5 people per unit. These assumptions have been made based on recent discussions with the Smithfield Town Planner. The MDD has been estimated to be 1.7 mgd in recent years and it has been projected for future years using a MDD to ADD multiplier of 2.0.

Table 3 provides annual water use by retail customers, wholesale water sales to the ESWD, an estimate of non-account water and the total wholesale purchase from Providence Water for the 2014. Projections for the 5-year and 20-year planning periods have also been provided. Estimates for non-account water have been made assuming it is 8% of total wholesale water purchases for the 5-year and 20-year planning periods, consistent with current estimates.





**Table 3: Anticipated Future Wholesale & Non-Account Water**

	<b>Current [2014]</b>	<b>5-Year Period</b>	<b>20-Year Period</b>
<b>Total Water Use – Retail Base (MG)</b>	323.22	429	627
<b>Wholesale Water Sales to ESWD (MG)</b>	11.26	12	12
<b>Non Account Water (MG)</b>	29.65	35.3	51.1
<b>Total Wholesale Water Purchases (MG)</b>	364.13	476.3	690.1
<b>Average Daily Wholesale Water Purchases (MG)</b>	1.0	1.3	1.9

*Available Water*

The SWSB and Providence Water reached an agreement in 1993 that allows the SWSB to purchase up to 1.965 MGD, identified as a “projection of a maximum demand...in the year 2004”. This agreement was reached at the time the SWSB was undergoing the EPA system expansion and performing the system upgrades associated with the Davis Waste Site. Although this was based on a projection for 2004, the estimated MDD has historically been below 1.965 mgd and there is no expiration date identified in the agreement. The SWSB continues to follow this agreement for wholesale water purchases from Providence Water.

Existing infrastructure at the interconnection (i.e. pumps at Longview Reservoir Booster Pump Station and transmission piping) is designed for a maximum of 1.965 mgd. However, future maximum day demands are expected to exceed this current limit. Upgrades would be necessary to increase the maximum supply available from this interconnection, in addition to consent from Providence Water. It is the SWSB’s understanding that Providence Water would be amenable to selling more water to the SWSB under this scenario. Also, system modifications such as some of those identified in the CIP may increase the capacity of existing infrastructure by reducing friction losses in the system.

The SWSB does not have access to suitable water supply sources of its own. However, development of alternative sources of supply from other suppliers is possible, such as the Lincoln Water Commission. The SWSB is considering the potential of establishing new emergency interconnections with the Lincoln Water Commission (LWC), which has interconnections with the municipal water systems in Woonsocket, Cumberland, and Pawtucket in addition to their primary connection to



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Providence Water. Supply augmentation studies are intended to investigate and recommend alternative water supply sources due to anticipated shortfalls in the quality or quantity of existing supplies. The SWSB has not conducted supply augmentation studies and does not believe they are required at this time.

### ***Demand Management***

The *Rules and Procedures Governing the Water Use and Efficiency Act for Major Public Water Suppliers*, adopted May 16, 2011, established efficient water use targets for major public water suppliers, which includes the SWSB. One of these targets is that residential average per capita water use be no higher than 65 gallons per capita per day (gpcd). The average annual per capita water use for Fiscal Year 2014 was approximately 41.7 gpcd and the SWSB has consistently met this target. While many multi-family housing units are not included in this rate because they are metered and billed as commercial customers, the SWSB has a high level of confidence that per capita residential water use still meets the State's goal even with multi-family housing included. Incorporating the multi-family housing units that also qualify as "Major Users", residential water use estimated in 2014 would result in approximately 50 gpcd, still well below 65 gpcd.

The SWSB has implemented programs to improve the efficiency of indoor and outdoor water use by its customers, generally in parallel with programs conducted by Providence Water. One such strategy employed by the SWSB has been to offer complimentary retrofit kits to their residential customers. The SWSB has often used mailings and information on their website to educate its customers about efficient water use in the past. Continuing to provide notifications in the annual water bill and on the Town's website, as well as placing informational door hangers at customer's homes, conducting public workshops, and soliciting public notices, are all possible methods the SWSB may use to continue educating its customers about efficient water use.

The SWSB's Demand Management Strategy, prepared in 2012, provided an estimated average leakage rate for 2009-2011 of approximately 6%. Leakage ranged from 3% to 8% during this time period, meeting the State's 10% goal for leakage. Leakage in the system continues to meet the State's goal. Non-account water, the majority of which is considered to be leakage, was estimated to be approximately 8.1% in 2014. The SWSB has historically estimated water used by the local fire departments for hydrant flushing and fire-fighting to be approximately 12% of total non-account water, but has found this to be an overestimate. The SWSB recently began coordinating with the Smithfield Fire Department for more accurate estimates of water use for fire-fighting.



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Total wholesale water purchased from Providence Water was approximately 364 million gallons for Fiscal Year 2014. This averages 1.0 MGD for the year. The ADD for this time period, based on distribution meter readings, is approximately 0.89 MGD over the entire year while it is approximately 1.0 MGD during the summer months. Demand is somewhat higher in the summer months as it is in most systems, yet the increase in water use in the summer compared to other times of the year is not as severe as in other systems. This is likely due to the fact that the system has a relatively high commercial water demand and that the system's largest user, Bryant University, has limited enrollment and activity during the summer months

### ***System Management***

The major goals of system management include the following:

- Maintaining non-account water use to below 15% of total system demand, in accordance with State Guide Plan Element 721;
- Reducing leakage to below 10% of system demand;
- Establishing a preventive maintenance program; and
- Maintaining compliance with the applicable requirements of the *Rules and Procedures Governing the Water Use and Efficiency Act for Major Public Water Suppliers*.

All delivered water, excluding leakage and approved non-billed uses (e.g. hydrant flushing, fire-fighting) is metered and billed. Leakage has routinely been calculated below 10% of total water use, in accordance with the *Rules and Procedures Governing the Water Use and Efficiency Act for Major Public Water Suppliers*. Non-account water has consistently been below 15%, in accordance with State Guide Plan Element 721.

The SWSB meters 100% of the users in the system and this will continue to be their policy. The SWSB recently completed the retrofit and conversion of distribution meters to remote read type meters in accordance with State requirements. Major User meters are read and billed monthly while other meters are read quarterly, complying with RIGL §46-15.3-22.

The SWSB performed a leak detection survey in early 2014, hiring Atlantic States Rural Water and Wastewater Association to perform an acoustic survey of the entire system. The survey was performed after the SWSB noticed an increase in unaccounted water use, and leaks were



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subsequently repaired. Leakage in the system remains relatively low. The SWSB will continue to monitor leakage and recently purchased its own leak detection device to monitor for leakage between formal leak surveys. The SWSB will perform subsequent leak detection surveys should leakage increase to rates close to or above the State's 10% goal.

The SWSB maintains an active Preventative Maintenance (PM) Plan. Major infrastructure components in the SWSB system that require ongoing preventative maintenance include the three storage tanks and three pump stations. Pumps and emergency power equipment are inspected and exercised weekly, and the SWSB hires a contractor to perform tank inspections approximately every five years. Additionally, SWSB staff performs routine system maintenance activities on other system components, such as exercising valves and flushing hydrants annually. The SWSB also maintains records of water main breaks in the system, detailing the size of the break, its location, the pipe size and material, and the repair method used.

### ***Emergency Management***

An updated Emergency Response Plan was prepared as part of this WSSMP, which generally establishes the following:

- Responsibilities and authority within the SWSB for responding to most probable emergencies;
- Most probable causes for emergencies and their potential impacts to the system;
- System components that are vulnerable to damage or incapacitation based on the most likely causes for emergency; and
- Specific tasks for carrying out functional and constructive solutions based on a review of the potential emergencies and the associated system risks.

### ***Drought Management***

Drought is one specific type of emergency that is treated separately, as it can impact the system over an extended period of time. Drought management procedures followed by the SWSB, as outlined in the updated WSSMP, are meant to be consistent with State Guide Plan Element 721 - RI Water 2030 and the requirements of Section 8.09 of the October 2002 *Rules and Procedures for Water Supply System Management Planning*.



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The five phases of drought consistent with the Drought Watch/Warning System of the National Weather Service, are:

- Normal;
- Advisory;
- Watch;
- Warning; and
- Emergency.

Drought conditions are evaluated on a regional basis across the state and are assigned based on conditions represented by major hydrologic indices, including precipitation, groundwater levels, stream flow, and the Palmer Drought Index. The Rhode Island Water Resources Board and Drought Steering Committee evaluate the major hydrologic indices and adjust drought levels both state-wide and on a regional basis, accordingly.

The SWSB relies solely on Providence Water for water supply and is therefore dependent on Providence Water for drought management at the source. The SWSB works in conjunction with Providence Water on preventive measures and maintenance to aid in drought management.

The ability of the SWSB to withstand a drought is largely dependent upon the water supply demands of Providence Water. The direct effects of drought on the SWSB system potentially include:

- Reduction of available wholesale water from Providence Water;
- Reduction of Providence Water's surface water levels which can adversely impact water quality in addition to water quantity;
- Reduction in amount of water that can be sold to the ESWD; and
- Reduction of operating income due to reduced delivery of water.

The SWSB has identified four water quantity tiers in its Emergency Response Plan. Water use reductions correspond with Tier 2 - 4 water quantity conditions based on the severity of the drought or emergency, as follows:

1. **Tier 1** – 0.9 MGD – Water quantity consistent with normal operating conditions of the water system in regard to the ability to provide potable water for the average day use.



2. **Tier 2** – 0.45 MGD
3. **Tier 3** – 0.13 MGD
4. **Tier 4** – 0.015 MGD

Table 4 shows response actions to be taken by the SWSB corresponding to various stages of drought.

**Table 4: Drought Response Actions**

<b>Drought Phase</b>	<b>Phase Identification</b>	<b>SWSB Initial Response</b>	<b>SWSB Response Actions</b>
Normal	RIWRB Drought Steering Committee (DSC)	Coordinate/ Consult with Providence Water	1. Maintain Operations
Advisory	RIWRB DSC	Coordinate/ Consult with Providence Water	1. Coordinate w/ Mutual Aid Agreement Contacts and State Agencies per Emergency Management Plan (EMP) 2. Respond per Tier 1 Water Quantity Condition in accordance with EMP, as applicable
Watch	RIWRB DSC	Coordinate/ Consult with Providence Water	1. Coordinate with Mutual Aid Agreement Contacts and State Agencies per EMP 2. Respond per Tier 2 Water Quantity Condition in accordance with EMP, as applicable
Warning	RIWRB DSC	Coordinate/ Consult with Providence Water	1. Coordinate with Mutual Aid Agreement Contacts and State Agencies per EMP 2. Respond per Tier 3 Water Quantity Condition in accordance with EMP, as applicable
Emergency	RIWRB DSC	Coordinate/ Consult with Providence Water	1. Coordinate with Mutual Aid Agreement Contacts and State Agencies per EMP 2. Respond per Tier 4 Water Quantity Condition in accordance with EMP, as applicable

***Implementation and Financial Management***

A detailed schedule outlining the individuals responsible, timing, and capital costs associated with recommendations of this WSSMP has been developed and is presented in Table 5. This program has been compiled from the modifications and upgrades identified in the WSSMP. Also, the SWSB completed an update to their 20-year Capital Improvement Plan (CIP), and the recommendations of



that plan have been incorporated into this WSSMP. The SWSB also intends on completing a comprehensive rate study now that the update of their 20-year CIP is complete. The SWSB will look to establish water rates that are fair and economical yet adequate for loan repayment associated with these projects.

**Table 5: Implementation Schedule**

<b>Plan Element or Project</b>	<b>Responsible Party</b>	<b>Estimated Timeframe</b>	<b>Estimated Cost</b>	<b>Possible Funding Source</b>
<i><b>Water System Operational Procedures</b></i>				
<b>Institute full-accounting of non-billed water (Fire Dept., DPW use)</b>	SWSB Staff	2015	N/A	N/A
<b>Revise SWSB Rules and Regulations</b>	SWSB Staff & Board of Directors	2016	N/A	N/A
<b>Approach Providence Water regarding increase in allowable wholesale water purchases</b>	SWSB Director	2016	N/A	N/A
<b>Coordinate with Bryant College for possible water conservation efforts</b>	SWSB Director	2017	N/A	N/A
<i><b>Water System Planning</b></i>				
<b>Perform Rate Study</b>	SWSB Staff & Engineering Consultant	2017	\$20,000	General Operating Budget
<i><b>Infrastructure Rehabilitation</b></i>				
<b>Install passive mixing systems at each storage tank</b>	Outside Contractor	2015-2017	\$300,000	General Operating Budget
<b>Rehabilitate exterior/interior tank coatings and perform miscellaneous structural repairs</b>	Outside Contractor	2016-2018	\$3,000,000	Drinking Water SRF or Other Loan
<b>Create system loop at Farnum Pike and George Washington Highway</b>	Outside Contractor	2018-2020	\$2,000,000	Drinking Water SRF or Other Loan



**Table 5: Implementation Schedule (cont.)**

<i>2016 Capital Improvement Plan Projects</i>			
<b>Project</b>	<b>Estimated Timeframe</b>	<b>Estimated Cost</b>	<b>Possible Funding Source</b>
<u>CIP No. 1</u> – New 1 MG Storage Tank & Interconnection with Lincoln Water Commission at George Washington Highway	2017-2022	\$5.1 Million	Drinking Water SRF or Other Loan
<u>CIP No. 2</u> – Installation of 4,800 linear feet of new water main in Douglas Pike	2022-2027	\$1.9 Million	Drinking Water SRF or Other Loan
<u>CIP No. 3</u> – Installation of 6,900 linear feet of new 12-inch DI water main in Ridge Road and Limerock Road	2022-2027	\$2.3 Million	Drinking Water SRF or Other Loan
<u>CIP No. 4</u> – Installation of 7,700 linear feet of new 12-inch DI water main on Ridge Road and Stillwater Road	2027-2037	\$2.6 Million	Drinking Water SRF or Other Loan
<u>CIP No. 5</u> – Installation of 4,885 linear feet of 16-inch DI water main on George Washington Highway and Farnum Pike	2027-2037	\$2.1 Million	Drinking Water SRF or Other Loan
<u>CIP No. 6</u> – Installation of 8,500 linear feet of 12-inch DI water main in Harris Road	2027-2037	\$2.9 Million	Drinking Water SRF or Other Loan

The SWSB operates in a financially self-supporting manner and establishes water rates to fund operation and maintenance of the system. The SWSB intends on completing a comprehensive rate study now that update of their 20-year CIP is complete. The SWSB will look to establish water rates that are fair and economical yet adequate for loan repayment associated with these projects.

Table 6 summarizes the revenue and expenses for the SWSB for Fiscal Years 2011 - 2013. The SWSB Fiscal Year runs from July 1 through June 30.





**Table 6: SWSB Total Revenue & Expenses (2011-2013)**

	<b>2013</b>	<b>2012</b>	<b>2011</b>
<b>Total Revenues</b>	\$1,450,424	\$1,378,510	\$1,399,134
<b>Total Expenses</b>	\$1,357,436	\$1,338,080	\$1,335,432
<b>Total Income (Loss)</b>	\$92,988	\$40,430	\$63,702

The SWSB uses an inclining block rate schedule based on water usage. Current water rates went into effect in 2010 and represent a 9.9% increase from previous rates. The rate increase was in response to an increase in the wholesale rate charged by Providence Water.

The current rates are as follows:

**Tier I (0 – 100,000 gallons annually):** \$3.20/1,000 gallons

**Tier II (100,000 – 1,000,000 gallons annually):** \$3.80/1,000 gallons

**Tier III (Over 1,000,000 gallons annually):** \$4.40/1,000 gallons

Effectively, households that practice water conservation can fall into Tier I and pay the lowest rates, while households that use excessive amounts of water will likely be in Tier II. Many large commercial users will fall into Tier III but there is incentive for water conservation among many of the small and medium commercial customers to maintain water use within Tier II. The existing rate structure generally meets the State’s intent for the establishment of water rates that promote water conservation.

Major users are metered and billed monthly, while the rest of the customer base is now metered and billed quarterly.

***Coordination***

The WSSMP was prepared with consideration to the Comprehensive Plans of the Towns of Smithfield and North Providence. While little future development is anticipated in the part of the SWSB system in North Providence, the Town of Smithfield anticipates increases in residential and commercial development in several parts of the town. This includes areas served by the SWSB, including the Town’s Planned Corporate District along Douglas Pike (Route 7) and George



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Washington Highway (Route 116). Future development expectations have been used to project future water demands.

The SWSB and ESWD had reached a formal, signed agreement to consolidate both water systems into one new water district, entitled the “Smithfield Consolidated Water District”. The SWSB serves a slightly greater population and has approximately 30% higher annual water sales than the ESWD. Currently both systems are supplied entirely through wholesale purchases from Providence Water and they serve customers in both Smithfield and North Providence. Their service territories are immediately adjacent to each other and are already interconnected at Ridge Road. A closed interconnection at Meadow View Drive could also be opened to connect the two service areas. Consolidating the two districts would hope to achieve operational cost savings through shared resources, such as equipment and personnel.

Formation of this district would require an Act of Legislation to be passed by the Rhode Island General Assembly. Legislation was first introduced in the Rhode Island General Assembly in May 2013 and then again in 2014, but in both cases the bill was held for further study. Consolidation of two districts is still under consideration and may be pursued again in the future.

