

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

EXECUTIVE SUMMARY

PREPARED FOR:

Town of Smithfield
64 Farnum Pike
Smithfield, Rhode Island 02917

PREPARED BY:

Pare Corporation
8 Blackstone Valley Place
Lincoln, Rhode Island 02865

ORIGINAL SUBMSSION - JANUARY 2022

REVISED – JULY 2022



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 2021 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.

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. Gene Allen is the Water Commissioner, as well as Director of Public Works for the Town of Smithfield. The SWSB has two other full-time employees, both identified as “Field Observers”, plus an Assistant to the Director, who splits her time 50%/50% with SWSB and the Town of Smithfield, and the Deputy Director of Public Works who spends 23% of his time with the SWSB.

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 41 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. There is a chlorine injection located at the Limerock Pump Station to boost the chlorine residual if necessary. This was used last in 2012.



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 two of the tanks, Rocky Hill Road and Island Woods Tanks, were recently rehabilitated on the interior and exterior. Appendix E depicts photos of the recent Rocky Hill and Island Woods tank rehabilitation work.

The SWSB sells water to the Providence Water Supply Board (PWSB), which now owns the East Smithfield Water District (ESWD) system. The water is conveyed through a wholesale interconnection on Ridge Road in Smithfield. The SWSB also has an emergency interconnection with PWSB at Meadow View Drive and an emergency interconnection with the Greenville Water District (GWD) at the GWD's storage tank in the vicinity of the SWSB's Burlingame Tank.

Average Day Demand (ADD) for 2021 was estimated to be 0.76 MGD based on total water use by the retail customer base of 278.89 million gallons. The monthly residential values were based on the quarterly residential value reported divided by three. Total wholesale water purchased in 2021 was approximately 297.34 million gallons, an average of 0.82 MGD. The 297.34 million gallons represents the total wholesale water purchased from PWSB (308.10 million gallons) minus what was sold to PWSB (10.76 million gallons). The Maximum Day Demand (MDD) reported from SCADA in 2021 was 1.94 MGD using a MDD to ADD peaking factor of 2.37. When using the ADD based on system distribution meter readings, the MDD to ADD peaking factor is 2.55 (Refer to Tables 2 and 4-1 below and Worksheet No. 19). The MDD to ADD peaking factor of 2.55 was also used to estimate the anticipated future water demand in Worksheet Nos. 27 and 28.

Residential average daily per capita water use was estimated to be approximately 42.00 GPCD based on a service area population of 9,436 residents. Residential water use was approximately 52% 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 seven Major Users in 2021 and as many as 15 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 1,663 active accounts in 2021, as follows:

- Residential 1,492
- Commercial: 152
- Industrial: 13
- Government: 6
- Total: 1,663

All services are metered and the SWSB 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 established with the GWD and interconnections with the Town of Lincoln). In an effort to add capacity to meet current and future system demands, the SWSB is going to install four (4) pressure-reducing valves (PRVs) in North Providence. Adding the PRVs will limit the pressure in neighboring streets with AC pipe that currently experience excessively high pressure. This high pressure is one of the primary obstacles to upgrading and increasing the capacity of the Longview Reservoir Pump Station. A component of this project is also installing a section of new water main on Calvary Drive to create additional redundancy in the system and improve the flow to the storage tanks. The SWSB is also evaluating the feasibility of utilizing the emergency interconnection with GWD in a permanent capacity. This would provide system redundancy between the two systems and would allow for system demand to be met during an emergency condition.

The SWSB also 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.

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

- CIP No. 1 – Replacement of the pipe on Douglas Pike that crosses over I-295
- CIP No. 2 – A new 12-inch diameter pipe on Harris Road between Douglas Pike (Rte. 7) and George Washington Highway (Rte. 116)
- CIP No. 3 – A new 12-inch diameter pipe on Stillwater Road from Limerock Road to Thurber Boulevard
- CIP No. 4 – Replacement of the existing 12-inch diameter pipe on Smithfield Road with a new 16-inch diameter pipe between the Longview Reservoir Pump Station and Jefferson Street
- CIP No. 5 – A new permanent supply from the Greenville Water District (GWD) on Burlingame Road to SWSB's Log Road service area
- CIP No. 6 - Replace generators in all three system pump stations
- CIP No. 7 - Replace pumps and interior piping at the Longview Pump Station

The SWSB is currently 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) for Fiscal Year 2021 indicated that the running average TTHM concentration for the DBPR1 sample was 53.5 µg/L and 60.4 µg/L for the DBPR2 sample. These values were below the Maximum Contaminant Level (MCL) of 80 µg/L. Previously in Fiscal Year 2014 there was a TTHM running average exceedance and since then the running average TTHM concentration has remained below 80 µg/L.

In 2020 SWSB added a mixing system to both the Rocky Hill Road and Island Woods storage tanks to help reduce the formation of TTHMs in the SWSB system. Each tank mixing system is equipped with a floating mechanical aerator. Recent data indicates that as a result of adding the mixing system to the tanks there has been a 66% TTHM removal rate in the tanks.

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

	Current [2021]	5-Year Period	20-Year Period
Residential Water Use (mgd)	0.40**	0.42	0.45
Comm./Ind. Water Use (mgd)	0.36	0.49	0.81
Average Day Demand (mgd)	0.76	0.91	1.26
Total Demand (MG)	278.89	334	472
Maximum Day Demand (mgd)	1.94	2.32	3.22



MDD to ADD Peak Factor*	2.55	2.55	2.55
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* Peaking factor calculated to be 2.55 based on 2021 MDD SCADA reading.

**Monthly residential values based on the quarterly residential value reported divided by three.

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 in 2021 was reported from the SWSB SCADA system to be 1.94 mgd (June 9, 2021) and it has been projected for future years using a MDD to ADD multiplier of 2.55.

Table 3 provides annual water use by retail customers, wholesale water sales to the PWSB, an estimate of non-account water and the total wholesale purchase from Providence Water for the 2021. 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 2.5% 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

	Current [2021]	5-Year Period	20-Year Period
Total Water Use – Retail Base (MG)	278.99	334	472
Wholesale Water Sales to PWSB (MG)	10.76	11.48	11.48
Non-Account Water (MG)	7.51	8.98	12.85
Total Wholesale Water Purchases (MG)	297.26	354.5	496.3
Average Daily Wholesale Water Purchases (MG)	0.82	0.97	1.4

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 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 conducted supply augmentation studies. The SWSB has conducted supply augmentation and peak hour shaving studies.

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 2021 was approximately 42.00 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 2021 would result in approximately 44 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 2.5% in 2021. The SWSB has historically estimated water used by the local fire departments for hydrant flushing and firefighting 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 firefighting.

Total wholesale water purchased from Providence Water was approximately 297.34 million gallons for Fiscal Year 2021. This averages 0.82 MGD for the year. The ADD for this time period, based on distribution meter readings, is approximately 0.76 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;



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- 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 completed the retrofit and conversion of distribution meters in 2012 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 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, most recently a survey was conducted prior to the tank rehabilitation project in 2019.

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*.

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 PWSB; 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

Drought Phase	Phase Identification	SWSB Initial Response	SWSB Response Actions
Normal	RIWRB Drought Steering Committee (DSC)	Coordinate/ Consult with Providence Water	1. Maintain Operations



Advisory	RIWRB DSC	Coordinate/ Consult with Providence Water	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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

Plan Element or Project	Responsible Party	Estimated Timeframe	Estimated Cost	Possible Funding Source
<i>Water System Operational Procedures</i>				
Institute full accounting of non-billed water (Fire Dept., DPW use)	SWSB Staff	2022	N/A	N/A



Revise SWSB Rules and Regulations	SWSB Staff & Board of Directors	Completed 2019	N/A	N/A
Approach Providence Water regarding increase in allowable wholesale water purchases	SWSB Director	If Required	N/A	N/A
Coordinate with Bryant University for possible water conservation efforts	SWSB Director	2024	N/A	N/A
<i>Water System Planning</i>				
Perform Rate Study	SWSB Staff & Engineering Consultant	2022	\$20,000	General Operating Budget
<i>Infrastructure Rehabilitation</i>				
Install passive mixing systems at two storage tanks	Outside Contractor	Completed	\$300,000	General Operating Budget
Rehabilitate exterior/interior tank coatings and perform miscellaneous structural repairs on two tanks	Outside Contractor	Completed	\$3,000,000	Drinking Water SRF or Other Loan
Create system loop at Farnum Pike and George Washington Highway	Outside Contractor	2022-2025	\$2,000,000	Drinking Water SRF or Other Loan

<i>2021 Capital Improvement Plan Projects</i>			
Project	Estimated Timeframe	Estimated Cost	Possible Funding Source
<u>CIP No. 1</u> – Replacement of the pipe on Douglas Pike that crosses over I-295	2022-2040	Being Evaluated	Drinking Water SRF or Other Loan
<u>CIP No. 2</u> – A new 12-inch diameter pipe on Harris Road between Douglas Pike (Rte. 7) and George Washington Highway (Rte. 116)	2022-2040	\$3,560,000	Drinking Water SRF or Other Loan



<u>CIP No. 3</u> – A new 12-inch diameter pipe on Stillwater Road from Limerock Road to Thurber Boulevard	2022-2040	Being Evaluated	Drinking Water SRF or Other Loan
<u>CIP No. 4</u> – Replacement of the existing 12-inch diameter pipe on Smithfield Road with a new 16-inch diameter pipe between the Longview Reservoir Pump Station and Jefferson Street	2022-2040	\$3,100,000	Drinking Water SRF or Other Loan
<u>CIP No. 5</u> – A new permanent supply from the Greenville Water District (GWD) on Burlingame Road to SWSB’s Log Road service area	2022-2040	Being Evaluated	Drinking Water SRF or Other Loan
<u>CIP No. 6</u> – Replace generators in all three system pump stations	2025-2030	\$150,000	Drinking Water SRF or Other Loan
<u>CIP No. 7</u> – Replace pumps and interior piping at the Longview Pump Station	2030-2035	\$100,000	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 update 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 2019 - 2021. The SWSB Fiscal Year runs from July 1 through June 30.

Table 6: SWSB Total Revenue & Expenses (2019-2021)

	2021*	2020	2019
Total Revenues	\$2,094,047	\$1,695,361	\$1,631,188
Total Expenses	\$1,562,251	\$1,348,593	\$1,298,931
Total Income (Loss)	\$531,796	\$346,768	\$332,257

* The figures presented in Fiscal Year 2021, are DRAFT results, as the audit is not completed yet.

The SWSB uses an inclining block rate schedule based on water usage. Current water rates went into effect in 2020 and represent a 34% increase from previous rates. The rate increase was in response to an increase



in the wholesale rate charged by Providence Water, operating cost and establishing future funding for CIP.

The current rates are as follows:

Tier I (0 – 100,000 gallons annually): \$4.88/1,000 gallons

Tier II (100,000 – 1,000,000 gallons annually): \$5.78/1,000 gallons

Tier III (Over 1,000,000 gallons annually): \$6.66/1,000 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 Washington Highway (Route 116). Future development expectations have been used to project future water demands.

