EXECUTIVE SUMMARY

WATER SUPPLY SYSTEM MANAGEMENT PLAN

PREPARED FOR:

TOWN OF SOUTH KINGSTOWN
1072 Main Street, P.O. Box 192
West Warwick, Rhode Island 02893

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Prepared by:

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Executive Summary

Introduction

This Water Supply System Management Plan (WSSMP) Executive Summary for the Town of South Kingstown, Public Services Department, Water Division (SKWD) has been developed in compliance with the regulatory and guidance documents pertaining to water supply planning, of the State of Rhode Island. The *Rules and Procedures for Water Supply System Management Planning, dated October 2002,* were promulgated pursuant to the requirements and provisions of Rhode Island (RI) General Laws Title 46 Waters & Navigation Chapter 46-15.3 Public Drinking Water Supply System Protection.

This WSSMP maintains consistency with the goals and policies of the Comprehensive Plan of the Town of South Kingstown, July 1992, as amended May 2005 and 2014. Additional plans that have been incorporated into the update include the following:

- Water Resources Board (WRB) 2012 Strategic Plan
- State Guide Plan Element 721, Report 115, Rhode Island Water 2030
- Rhode Island State Land Use Policies and Plan – Land Use 2025

Common goals expressed in these plans such as water source protection and control of land development, have been reviewed as part of the development of this WSSMP and the goal of this WSSMP is to comply with the provisions of the Water Supply Planning Regulations referenced previously, by developing a comprehensive water-supply management plan for the SKWD water-supply system. The report is also intended to achieve effective and efficient conservation, development, utilization, and protection of the water-system's resources. These objectives should be achieved in ways that satisfy the present and future needs of the SKWD customer base.

This WSSMP contains a detailed description of the water system and includes the policies and procedures related to the general function, operation, and management of the water system. Significant improvements completed since the prior WSSMP update include the addition of a supplemental chlorination system at the Mautucket Road Tank for increased public health protection and construction of an additional transmission main pipe loop within the South Shore System for improved system resiliency.

Background

The Town of South Kingstown owns and operates two public water systems (PWS): the South Shore System PWS #1615623 and the Middlebridge System PWS #1000015. The South Shore system serves the southern area of Town south of US Route 1 from the Charlestown Town line to East Matunuck. This area includes Matunuck, East Matunuck, Snug Harbor, Green Hill, Ocean Ridge and a small portion of Perryville. The Middlebridge system consists of one major transmission main that extends along Middlebridge Road, south from Radial Drive, over the Middlebridge Bridge, and terminates in Narragansett. Water system management and operations are the responsibility of the Town of South Kingstown, Public Services Department, Water Division.

General System Information

The SKWD owns and operates two (2) separate water systems: the South Shore System and the Middlebridge System. Both water systems service primarily residential water customers.

The South Shore system is comprised of approximately 48 miles of water transmission and distribution mains, hydrants, meters, a booster pump station, two (2) elevated water storage tanks, system interconnection, wells, and appurtenances that serve 2,861 service accounts (e.g. residential, commercial, and governmental) as of spring 2022.

The Middlebridge system is comprised of approximately 3.6 miles of water transmission and distribution main, hydrants, meters, system interconnection, and appurtenances that serve 289 service accounts (e.g. residential) as of spring 2022.

Water Supply

Currently, water supply to the South Shore System and Middlebridge System is from interconnections with SUEZ Water Rhode Island (SUEZ), formerly United Water Rhode Island, formerly Wakefield Water Company.

The SKWD owns and operates three (3) wells located in the southern area of Town. The wells are currently exercised and maintained by the Town but not pumped into the water system due to elevated levels of iron and its associated aesthetic concerns. The RI Department of Health (Health) continues to sample the wells to maintain their active status to provide a standby source of water supply for the South Shore distribution system.

Water Storage

South Shore

The South Shore water system has two zones each controlled by the water elevation within its respective water storage tank. The overflow elevation at each of the water storage tanks is Elevation 210 feet Mean Sea Level (MSL). Water is received from the East Matunuck interconnection with SUEZ, which in turn fills the Victoria Lane storage tank. A SCADA system controls an altitude valve in the interconnection meter pit such that it is deactivated when the tank reaches overflow elevation and it is activated when the water drops to a preset level in the tank.

Middlebridge

The Middlebridge system has water storage as provided through SUEZ's hydraulic gradient and water storage facilities.

Booster Pumping

South Shore

An in-line booster pump station is located on Card's Pond Road which boosts service to the south-central and southwestern regions of SKWD. The booster pump station works on radio

telemetry with the Mautucket Road storage tank and boosts water from the system to replenish this tank. The hydraulic grade of the South Shore system is maintained by the water level in the water storage facilities (i.e., 210 feet MSL).

Middlebridge

There is no booster station for the Middlebridge system, which relies on SUEZ's hydraulic gradient to maintain adequate water pressure.

Water Distribution

South Shore

The transmission and distribution system water mains range in size from 6 to 14 inches, with installation dates from the 1960s to the present. New and replacement mains consist predominantly of cement-lined ductile iron (DI) pipe. The majority of the transmission and distribution system at present is comprised of asbestos-cement water mains.

Middlebridge

The Middlebridge water system was constructed in the mid-1970s and comprised of asbestos-cement pipe.

Water Meters

The water supply and distribution system are 100% metered. The Middlebridge master meters are located at the two (2) wholesale interconnections to SUEZ (Middlebridge Road and Torry Road). The South Shore master meter is located near the intersection of Post Road and Kettle Pond Drive. There is also a meter pit at the Narragansett / South Kingstown Town line interconnection. These meter 100% of the water purchased via wholesale interconnections. The master meter located downstream of the South Shore wells meters 100% of the SKWD water production whenever the well field is in use. Finally, every service connection within the water distribution system is metered at the point of sale, thus providing 100% distribution system metering. The master meter for SUEZ for the South Shore area is located off of Route 1 near the intersection with Kettle Pond Drive.

Recent System Improvements

The SKWD maintains an ongoing Capital Improvements Program (CIP) in order to provide its customers with a safe and reliable supply of potable water. The following list identifies the major system improvements that have taken place in the years since the prior WSSMP update.

- Construction of the Matunuck Beach Revetment Wall to protect the major water transmission main in the South Shore.

Water Demand Projection

Anticipated future demands were estimated based on anticipated population growth, historic water use trends, ongoing water conservation efforts and future intended use for the service

area. **Table 1** presents the estimated future water demands for the South Shore and Middlebridge Systems.

Table 1. Estimated Future Water Demands

Year	South Shore System			Middlebridge System		
	Annual (MG)	Average Day (GD)	Maximum Day (GD)	Annual (MG)	Average Day (GD)	Maximum Day (GD)
2023	123.26	337,774	861,324	13.258	36,046	91,919
2028	125.317	373,335	875,505	13.387	36,679	93,531
2033	126.945	347,794	886,875	13.522	37,048	94,472
2038	128.608	352,353	858,500	13.657	37,417	95,413
2043	130.233	356,912	910,126	13.791	37,785	96,354

MG = Million Gallons
MGD = Million Gallons per Day
GD = Gallons per Day

Water Availability

The Rhode Island Water Resources Board (RIWRB) developed a Strategic Plan (2012) regarding its responsibility to regulate the proper development, protection, conservation and use of the water resources of the State. The Plan includes state-wide initiatives for meeting water needs given the available resources. The SKWD acknowledges the goals and initiatives outlined in this plan. An overall objective of the SKWD to ensure the availability of an adequate supply of potable water to meet the existing and future needs of its customers.

Water supply from SUEZ to the South Shore and Middlebridge systems is from groundwater. SUEZ developed their own WSSMP and in that plan state that demands are considered to be sustainable by the local ground-water resources.

The SKWD also maintains backup supply wells within the South Shore system. Groundwater underlying these sources is part of a sub-basin of the South Coastal Drainage Basin system.

Currently the South Shore System and Middlebridge System receive supply from SUEZ. The wholesale water purchase agreement for the South Shore System dated September 7, 2005 states that up to a maximum flow of 1.3 MGD would be provided. This is comfortably above the anticipated future maximum day demand of 0.910 MGD. The agreement established in 1975 for water supply to the Middlebridge System states that up to a maximum of 0.3 MGD would be provided. This value is well above the projected maximum day demand of 0.096 MGD.

Should the Town decide to implement iron removal treatment for the Factory Pond Wells, the treated water would also have the capacity to provide for the maximum day demand of the South Shore System since the wells can provide 1.15 MGD.

Demand Management and Water Conservation

Demand management and water conservation is a primary goal of the SKWD. The State of Rhode Island Water Use and Efficiency Act includes targets for public water suppliers to improve water efficiency and demand management. These targets include (1) a residential average annual water use of 65 gallons per capita per day (GPCD), (2) efficient outdoor water use, (3) efficient indoor water use, (4) full accounting of non-billed water, (5) leakage of no more than 10% of the withdrawals and/or purchased water measured as an annual average, and (6) accurate metering and billing to account for all water supplied.

The SKWD meters 100% of supply and consumption by customers. Wholesale interconnection supply meters are owned by SUEZ and tested/ calibrated annually on an as needed basis. Customer water meters for the South Shore and Middlebridge were replaced over a three-year period (2019 – 2022) with meters capable of data logging and remote reporting. Representative samplings of customer meters are tested for accuracy as they are replaced or questions on usage arise.

The residential per capita demands of both the South Shore and Middlebridge Systems are approximately 52 GPCD respectively, well below the State's goal of 65 GPCD. Water saving conservation retrofit kits are available to water customers.

The unaccounted for water for the two systems fluctuates above and below the State's goal of 10% allowable leakage. The SKWD continues to work toward lowering the unaccounted for water to meet this goal. Leak detection and repair are conducted on an ongoing basis.

The Town has implemented a rate structure to encourage water conservation. The Town's Water Division adopted a conservation "tier-type" rate structure in 2014 and now issues water bills on a quarterly basis.

Water Quality Protection

The SKWD collects charges associated with the water quality protection program and issues them to 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 that are used for land acquisitions and to purchase development rights within the supply watershed areas to help protect water quality.

The Town has ongoing strategies for protection of the Factory Pond Wells. The Town owns and controls a sufficient land area around each well to help minimize the potential for water contamination. The Town has a Wellhead Protection Program which has identified a well protection area around their well fields. The Rhode Island Department of Health's Drinking Water Assessment Results report indicates that the Town's wells have a Low Susceptibility to Contamination based on land use features and existing water quality.

SUEZ also owns and controls a sufficient land area around each of their wells to help minimize the potential for water contamination. SUEZ has a Wellhead Protection Program which has identified a well protection area around their well fields. The Rhode Island Department of

Health's Drinking Water Assessment Results report indicates that the SUEZ wells have a Low Susceptibility to Contamination based on land use features and existing water quality.

Water quality within the South Shore and Middlebridge systems has been in compliance with required standards with the exception of periodic total coliform detections within the westerly

end of the South Shore system. In response to this, a chlorination system was installed at the Mautucket Tank to provide supplemental chlorination.

Emergency Management

An updated Emergency Response Plan (ERP) was prepared as part of the WSSMP. The ERP establishes the responsibilities and authority within the SKWD for responding to most probable emergencies and outlines specific tasks for carrying out functional and constructive solutions based on a review of the potential emergencies and risks. The procedures outlined are consistent with the goals of the State Emergency Water Supply System Management Plan. It is also intended that this document provide guidance to ensure that the primary aspects of recovery from an emergency are addressed in an organized manner to aid in an efficient response and in maintaining drinking water quality and quantity.

Coordination

The SKWD maintains close working relationships with SUEZ and the Town of Narragansett in regards to the interconnections and the potential need for additional emergency supply, specifically in times of drought or seasonal, summertime high demand periods. The SKWD also coordinates with the Town of South Kingstown Fire Department on water use and reporting. This WSSMP was developed in conjunction with the Town of South Kingstown Comprehensive Community Plan and is consistent with the aspects of that plan.

Financial Management and Capital Planning

The SKWD continues to focus its efforts on supplying safe and reliable drinking water to its customers. The SKWD has a pro-active capital improvement plan that is updated on an annual basis. The current capital improvement plan includes water storage tank cleaning and maintenance, water supply management planning and maintenance, leak detection, water main replacement and general equipment maintenance. The SKWD currently operates as an Enterprise Fund on annual revenues and does not have any existing debt. A significant future capital project would be implementation of a water filtration facility at the Factory Pond Wells and a project of this magnitude would require special bonds and/or funding through State programs.