

Executive Summary

INTRODUCTION

The Harrisville Fire District (District) presents the 2020 Water Supply System Management Plan Update as a comprehensive plan that addresses all of the elements in the “Rules and Procedures for Water Supply System Management Planning” and includes the “Demand Management Strategy” information that the state has added by law in 2011 as included in the “Rules and Procedures Governing the Water Use and Efficiency Act for Major Public Water Suppliers”. The District completed the Water Supply System Management Plan in 2015, and this is the 5-year update to that plan.

BACKGROUND

The Harrisville Fire District was incorporated by an Act of the General Assembly on March 14, 1906. Prior to and including this period, water had been supplied by the Pascoag Water System whose supply and distribution system date back to the early 1900’s. At that time, the water system consisted of two artesian wells and two shallow trenches that acted as infiltration galleries.

The entire system operated under private ownership until 1934, when the systems were both taken over by the Fire Districts. The Fire Districts subsequently operated together for approximately ten years, at which time the HFD installed its own 300,000-gallon elevated storage tank, and in 1947 Pascoag Utility District (PUD) developed its first large capacity gravel packed well.

In recent years, discussions of merging the two water systems, PUD and HFD have occurred at length. As of the date of this report, the two systems remain separate with PUD as a major wholesale customer for HFD. The PUD has been and will continue to be apprised of Harrisville’s efforts to maintain and develop a water supply sufficient to meet the needs of Harrisville, as well as the PUD, as ordered by the Providence County Superior Court in the matter entitled ***Russell Jette, et al. v. Pascoag Utility District, et al. v. The Rhode Island Water Resources Board, et al., C.A. No. PC01-5972***, in an Order dated on or about January 28, 2002. Details of this court order are presented in the approved 2006 Harrisville WSSMP.

While the potential consolidation of Harrisville and Pascoag is not further investigated in this report, the option remains open consistent with State Guide Plan 721, Water 2030 and the Water Resources Board’s 2012 Strategic Plan that call for suppliers and the Board to identify opportunities for regionalization.

GENERAL SYSTEM DESCRIPTION

The Harrisville Fire District serves the Village of Harrisville, part of the Villages of Glendale and Oakland with potable water to residents as well as four of the five Town of Burrillville schools, the Harrisville Library and Town Hall.



WATER SUPPLY SYSTEM MANAGEMENT PLAN UPDATE

In Fall 2001, the Pascoag and Harrisville Water Districts physically merged their water delivery infrastructure per mandated court order when MBTE contaminated the Pascoag water system. The two districts remain as separate entities, with Pascoag as a wholesale customer of Harrisville. Residents outside these service areas of these Fire Districts are served by onsite wells or small community well systems.

The District's water system is comprised of a total of 25 miles of distribution piping, servicing approximately 3000 customers, has 1355 meters, 2 storage tanks, 2 interconnections (emergency and everyday use). The District's Water Department is financed directly through the sale of water. Its office is located at 115 Central Street, Harrisville, RI 02830.

WATER SUPPLY SOURCES

The District obtains its water from six active gravel packed wells, which entail Wells 1, 2, and 3 in the Central Street wellfield and Wells 5, 6, and 7 in the Eccleston Field wellfield.

WATER TREATMENT FACILITIES

The water from all the wells is of good quality and requires minimal treatment. Disinfection and corrosion control are the only treatment process necessary. Treatment occurs at Pump Station 2 and Eccleston Field Pump Station. Pump Station 2 treats water from Wells 1, 2 and 3. Pump Station 3 conveys water from Wells 1 and 3 to Pump Station for treatment and distribution. The Eccleston Field Pump Station treats water from Well 5, 6, and 7.

STORAGE FACILITIES

The District owns and operates two water storage facilities. The first is a 500,000-gallon Hydropillar elevated tank located off Steere Farm Road, which was constructed in 1986, inspected in 2017, and repaired in 2013, with exterior painting in 2018. The second is a 500,000-gallon composite tank located off Cherry Farm Road, which was constructed in 2007 and inspected in 2017.

DISTRIBUTION FACILITIES

The Harrisville Fire District's system is comprised of 25.2 miles of pipe (distribution and transmission), ranging in size from 1-1/4 to 16 inches in diameter. Pipe material within the distribution system is cast iron, ductile iron (lined and unlined), copper, and PVC. The majority of the pipes were installed between 1936 and 1999, and the majority of the pipes in the system are 6-inches in diameter. The District maintains a total of 189 hydrants.

The District installed a Supervisory Control and Data Acquisitions (SCADA) system in 2000 to improve the operation of the water system. The SCADA system allows the staff of the Water Department to monitor the tanks and pump stations, delivers data and alarms in real time, and allows the staff to make improvements to improve efficiency.



WATER SUPPLY SYSTEM MANAGEMENT PLAN UPDATE

INTERCONNECTIONS

The District is connected with the PUD system through one active interconnection and one emergency interconnection. The active interconnection is located on Pascoag Main Street and is for the sole purpose of supplying the PUD with wholesale water. The emergency interconnection is located on Union Avenue and is for the purpose of supplying the PUD in the event of an emergency. This interconnection is normally closed and requires both the HFD and PUD to open valves to operate.

PLANNED EXTENSIONS

The Harrisville Fire District, by charter, is not bound to any one area in Burrillville and can serve the entire Town. There are no extensions planned at this point in time to the system, or to the service area.

POPULATIONS SERVED AND PROJECTIONS

The HFD does not serve the entire population of the Town of Burrillville. While some residents have their own water supply wells, a portion of the town is served by the PUD. However, with the MTBE leak that adversely affected PUD wells, the HFD now provides most of the Town's public water. An analysis of the population served data is shown in the table below.

Village Zip Code	Village Name	Village Population	HFD Service Population
02826	Glendale	501	0
02830	Harrisville	5,935	2,345
02839	Mapleville	2,062	185
02858	Oakland	728	278
02859	Pascoag	7,227	16
TOTAL		16,453	2,824
PERCENT OF TOTAL		100%	17.2%

Source: Data.Census.gov

MAJOR USERS

A Major User is defined by the State of Rhode Island as “any public or private organization or entity using more than 3 million gallons of water per year”. The District maintains a list of the major users, with water usage in millions of gallons per year. This data is used in conjunction with the Major Users Technical Assistance Program along with its high volume Meter Evaluation Program to develop individual information for each user complete with general suggestions and recommendations for reduction of water use.

METERING

The entire water system is 100% metered. The District has installed remote read meters in order assure actual read on meters. The District initiated and continues a comprehensive program to improve meters and meter reading systems as well as to assure that each meter was the appropriate size for the application.



WATER SUPPLY SYSTEM MANAGEMENT PLAN UPDATE

LEGAL AGREEMENTS

The Harrisville Fire District currently has a court order mandating that they supply water to the Pascoag Utility District. This is the only legal agreement in place at this time, and the agreement does not specify the amount of water to be provided.

NON-ACCOUNT WATER

Non-Account water is defined as the difference between the metered supply and the metered use for a specific period of time including an allowance for firefighting. Non-Account water can be from many sources, including the following:

1. Leaks in the distribution system.
2. Hydrant flushing, sampling, and other maintenance use.
3. Unmetered water used for public parks and buildings.
4. Other unmetered water used for public uses (street sweeping, construction, etc).
5. Malfunctioning or old meters that do not accurately measure flow.
6. Unread or misread meters.

The percentage of Non-Account water has varied from a low of 2% in 2011 to a high of 13% in 2019. The 2020 Fiscal Reporting shows 12.9% Non-Account Water.

In an effort to reduce the amount of Non-Account water the District has leak detection surveys performed, typically every three years. This work is performed by Atlantic States Rural Water and Wastewater Association at no cost to the HFD. A leak detection survey is in the process of being scheduled with Atlantic States for completion in 2020.

DEMAND MANAGEMENT

The HFD holds as a basic principle that water is a limited resource that is crucial to society. It is the goal of the HFD to promote efficient use of water through effective demand management of the water system. The District has instituted several programs to reduce demand and promote water conservation including a Residential Retrofit Program and Public Education Program.

Residential Retrofit Program Kits are still available and being distributed periodically to new homeowners. District personnel currently participate in the Rhode Island Water Works Association education program. The District reviews available educational information for use in the Austin T. Leavy elementary school.

SUPPLY MANAGEMENT

The Harrisville Fire District continues to work with the PUD, the Town and state agencies to develop an effective overlay district to protect the Upper Branch Groundwater Aquifer.



WATER SUPPLY SYSTEM MANAGEMENT PLAN UPDATE

AVAILABLE WATER

The available water is the maximum pumping capacity of all six wells pumping in conjunction. The maximum pumping capacity is 1.152 million gallons per day.

SAFE YIELD

A safe yield analysis on the Upper Branch Groundwater Aquifer, which feeds the District wells was performed in 1991. The US Geological Survey report is entitled “Ground-Water Resources of Rhode Island” by Elaine C. Todd Trench.

ANTICIPATED FUTURE DEMANDS

The objective of this plan is to predict future water demand and compare this demand to projected water supply to assess the need for adequacy of management strategies. The project available water versus demand is shown in the chart below.

Year	Available Water (MGD)	Total ADD (MGD)	Surplus Water MDD-ADD (MGD)
2020	1.152	0.578	0.574
2025	1.152	0.589	0.563
2030	1.152	0.600	0.552
2040	1.152	0.622	0.53

RATE STRUCTURE

The Harrisville Fire District is a quasi-municipal public utility providing water and fire protection. All operations of the District are financed from water revenues in the form of user fees. All residential, commercial, industrial and government water users are subject to the same fees and rates. User fees and charges levied by the District are established by the Harrisville Fire District Operating Committee. Currently meters are billed on a quarterly basis.

FINANCIAL MANAGEMENT

The District hired B&E Consulting, LLC to provide a proforma rate study (Study). The Study is ongoing, and rate changes (increases and/or structure changes) are anticipated.

EMERGENCY MANAGEMENT

An emergency management plan is submitted with this WSSMP, in addition to a Risk and Resiliency Assessment. The Risk and Resiliency Assessment are required by the USEPA.

The District is a member of Rhode Island Water/Wastewater Agency Response Network (RI W.A.R.N.) which is a network that allows water and wastewater systems in Rhode Island to receive rapid mutual aid and assistance from other systems in RI to restore facilities damaged by natural or man-made incidents.



WATER SUPPLY SOURCE PROTECTION

As noted in the Source Water Protection Plan (2008), there are underground storage tanks that are a potential source of pollution along with high-intensity land uses, and roads near the wells. The management plan for contending with these issues has already been enacted to an extent – the Town of Burrillville has an “Aquifer Zone” to limit the type of development and uses within the Wellhead Protection Area. The SWPP makes recommendations for the public, the landowners, and the commercial and industrial businesses to follow. There is nothing further that the District does to protect the wellheads at this time, but in the past, they bought land around the wells when possible, and bought water rights from property owners living near the wells.

GENERAL POLICIES

The Harrisville Fire District takes pride in the high quality of the water delivered to tis customers. The District is constantly striving to operate the system to benefit the citizens and businesses of Burrillville while maintaining efficiency such that the rates and charges are appropriate to operate, maintain and protect the integrity of the water system.

The Harrisville Fire District has adopted nineteen Water Supply Management Objectives (goals). These goals are consistent with state goals and policies, and reflect the basic principles established by State Guide Plan Element 721, Water Supply Policies for Rhode Island, adopted by the State Planning Council on May 12, 1988. They are also consistent with the needs for water supply planning outlined in State Guide Plan Element 722, Water Supply Plan for Rhode Island, of December 1991.

