WORKING DRAFT

Massachusetts Department of Environmental Protection
Drinking Water Program

HINGHAM WATER SYSTEM

Water Supply Business Plan

for

New Community and Non-Transient
Non-Community Public Water Systems

PWS NAME: Hingham Water System

CITY/TOWN: Hingham MA

PWS ID #: #4131000

Table of Contents

Figures

Attachments

Background Info

Send Correspondence To:

Name: Thomas Mayo *Title: Town Administrator*

Address: Town Hall, 210 Central Street, Hingham, MA 02043

Telephone: (781) 741-1400 e-mail: mayot@hingham-ma.gov

Water Commissioners/Selectmen/Governing Body Member:

Name: Karen Johnson *Title:* Board of Selectmen Chair
Address: Town Hall, 210 Central Street, Hingham, MA 02043
Telephone: (781) 741-1400 e-mail: johnsonk@hingham-ma.gov

Note Key Official And Consultant To See Regarding Changes, Improvements, Etc.

Name: Ryan Trahan, PE *Title:* Principal
Address: Environmental Partners Group,
1900 Crown Colony Drive, Suite 402, Quincy, Massachusetts 02169
Telephone: (62) 657-0253 e-mail: rjt@envpartners.com

1. Administration

A. PWS Organization

1. Ownership/Governing Body (check applicable category and complete names, addresses, telephone numbers, # of members)

☑ *Water Commissioner* #3 ☐ *Board of Public Works* #___
☐*Selectmen* #___ ☐ *Operator* #___
☐ *Trustees* #___ ☐ *Other responsible parties* #___
☐ Town Manager #___ ☐ Public (Town/City/District/State #___

Name	***Address***	***Phone Number***	***E - Mail***	***Term (Yrs)***
Karen Johnson, Chair	210 Central Street, Hingham	(781) 741-1400		3 Yrs (2020)
Mary Power	210 Central Street, Hingham	(781) 741-1400		3 Yrs (2021)
Joe Fisher	210 Central Street, Hingham	(781) 741-1400		3 Yrs (2022)

2. Number of Governing Body meetings for the year & Dates: Typically held once/month (12/year) on Tuesdays.

3. If an organizational chart, is available, please provide OR (put on blank page) identifying the hierarchy of decision making for the PWS. All policy decisions for the water system rules and regulations and financing are made by the Board of Selectmen, acting as the Water Commissioners

B. Operator Staffing

1. Grade of system: 3D, 4T *(please see 310CMR22.11B(4) regarding system classification. DEP will verify system classification for official recording)*

2. *Provide staffing plan of all certified operators or complete information below.* The resumes of the Suez system operators are provided in Attachment A.

To be updated with Suez' Staffing Plan.

Name/Title	*F/P**	*Duties*	*Certification/ Grade*	*Total Years Experience*	*DEP Comments*
Water Treatment	F	Primary Chief Operator	4T		7:00 am – 3:00 pm
Water Treatment	F	WTP Operator			3:00 pm – 11:00 pm
Water Treatment	F	WTP Operator			11:00 pm – 7:00 am
Water Treatment	F	WTP Operator			Swing Shift
Water Treatment	F	WTP Operator			Fill/Maintenance
Distribution System	F	Primary Distribution Operator	3D		
Distribution System	F	Working Foreman			
Distribution System	F	Service Technician			
Distribution System	F	Service Technician			
Distribution System	F	Meter Reader/ Service Technician			

F/P = Full Time / Part Time (Use blank page for additional information)

1. *Personnel Distribution Coverage: (Number of operators and grade certification)*

Weekdays: *Full-time,* 24-hour/day coverage Monday-Friday;
Shifts: *three shifts: 7:00 am – 3:00 pm, 3:00 pm-11:00 pm, 11:00 pm-7:00 am*
Weekends and Holidays: *Staff are onsite at treatment plant and supported by* automated (SCADA) coverage; staff for distribution are on-call (to be confirmed by Suez).

2. *Who is directly responsible for the following? (from Suez)*

Emergency operations _____ *phone:* _____
Communications with state regulators _____ *phone:* _____
Customer relations _____ *phone:* _____
Media relations: *Hingham Transition & Evaluation Committee* *phone:* *(781) 741-1400*

3. *Operator Training Budget (Does Suez have a budget for Operator Training?)*

C. Policy Related Activities

1. Who sets the system's operating policies?

☐ *Owner* ☑ *Board of Selectmen/Water Commissioners*
☐ *General Manager* ☐ *Operator*
☐ *Other* _____

2. Do you have or are you developing policies or Standard Operating Procedures (SOP) for the following situations:

			Description
Connections / New Hookups	☑ *YES*	☐ *NO*	Water System Regulations
Water Main Extensions	☑	☐	Water System Regulations
General Purchases	☑	☐	Massachusetts procurement laws
Purchases over $10,000	☑	☐	Massachusetts procurement laws
Metering & Unaccounted-for Water	☑	☐	Water System Regulations
Delinquent Bills	☑	☐	Water System Regulations

3. Do you have a written Capital Improvement Plan (CIP) and / or a written Infrastructure Improvement Plan?

Capital Improvement Plans have been prepared by Aquarion that have been made available to the Town as part of the water system purchase. These include Aquarion's Capital Improvement Plans for 2017-2021 (provided in Attachment B), Capital Efficiency Plans prepared for Aquarion by Tata & Howard in 2007, 2011 and 2014, and filings by Aquarion with the Department of Public Utilities (2018).

Hingham will be performing a comprehensive evaluation of the water system during the first year of their ownership of the system (e.g., FY 2021) to identify those items necessary to remain in compliance with the DEP regulations, and to develop a CIP that reflects these needs. The Town's planning will be informed by those capital plans and reports provided by Aquarion.

4. Do you have insurance?

Insurance coverage by the System Operator (Suez):

Liability: General: $1 Million; In Aggregate Minimum $2 Million
Excess Umbrella Liability: not less than $10 Million
Automobile Liability: not less than $1 Million
Environmental/Pollution: not less than $1 Million

The Town of Hingham is listed as an additional insured on these policies.

5. Do you have a contractual or as-needed arrangement with any of the following outside services?

☑ *Accountant* ☑ *Certified Operator* ☑ *Laboratory*
☑ *Attorney* ☑ *Technical Consultant* ☐ *Other* _____

2 Basic Planning, Data, and Demand

A. General Data

Total number connections: 12,715 % Metered: 100%
Equivalent Residential Units: 12,039 *Population:* Approximately 54,612

B. Water Demand

Estimated daily consumption: Maximum (mgd): 6.3 mgd *Average (mgd):* 3.510 mgd
Projected population in 20 years: 61,326 *Projected average daily demand(mgd):* 4.17 mgd

C. Municipalities/District Served by Water Supply

Municipality/District	Total Population	Population Served	Average Consumption
Hingham, Hull and Cohasset	54,612 (35,803 Hingham, 10,293 Hull, 8,516 Cohasset)	30,523 winter; 41,082 summer (from 2018 ASR)	63 rgpcd

D. Permanent Interconnections with Other Water Supplies

Water Survey Purveyor	Give location and arrangement for use. What is the maximum daily flow in mgd for this interconnection?
Cohasset Water Department	Interconnections at Whitney Crossing (pump station, Valve 4614), Forest Avenue (Valve 4592) and Jerusalem Road (Valve 2040). For service to Cohasset customers. Also to serve Hingham Campus (Linden Ponds) with up to 306,000 gpd of finished water in accordance with the Wheeling Agreement between Town of Cohasset and Hingham Campus.
Weymouth Water Department	Interconnections at High Street (Vault 4437) and Commercial Street (Valve 127-129) (for emergency use).
Norwell Water Department	Route 228 near Accord Pond (near Valve 4841) (for emergency use).

3. Financial

A. Financial Information - FY 2021 From: 7/1/2020 To: 6/30/2021

If you are not a rate-collecting system, please briefly describe the system's financial organization, including the billing and bookkeeping department. _____

B. Source Of Revenue (rate-collecting systems only)

1. *Explain the water rate structure of your system?* For the first year of operation the Weir River Water System will utilize the Aquarion water rate structure currently in place. During that time Hingham will conduct a cost of service study that will inform future water rates (both amounts and rate structure). The rates are an increasing block rate structure for residential (R1), commercial (G1), public authorities (G2), industrial (G3) and non-residential (G4) customers. The rates include a base fee, rates for fire protection, miscellaneous fees, other services and surcharges. Billing is done quarterly at a minimum. Attachment C provides the rates and fees from the pending Weir River Water System Rules and Regulations.

2. *Who approves expenditures?* Tom Mayo *Title:* Town Administrator
   Who is the responsible financial officer (i.e. signs the checks, responsible for the books, etc.)
   Mr. Mayo has authority to approve expenditures up $50,000. Expenditures greater than $50,000 are approved by the Water Commissioners. Susan M. Nickerson_, Town Accountant, is responsible for the books.

3. *Will you employ enterprise accounting?* ☑ *YES* ☐ *NO*

4. *Will you have a reserve/ emergency account?* ☑ *YES* ☐ *NO*
   If yes, how much? The Enterprise Fund budget for FY 2021 has an unbudgeted revenue surplus of $2,332,206. This surplus serves as the emergency account, and which represents 22% of the FY 2021 projected revenues.
   What percentage of your total estimated expenses is this? 28%.

5. *How did you (will you) finance your last (and next) major repair or improvement?*

Prior to Hingham assuming ownership of the water system all repairs and improvements were made by Aquarion and there is no carryover of these projects costs from Aquarion to Hingham with their purchase of the water system. As owners of the system, Hingham will be allocating $250,000 per year as part of the Enterprise Fund budget for capital improvements. In addition, Hingham intends to bond a minimum of $2,700,000 each year for capital improvements. This annual investment is to be increased every three years by 5%. The Town's long-term financial proforma for the water system assumes this annual investment is made for at least the next 30 years.

	Last	*Next*	*Amount*
Bonds	_____	*$ 2,700,000/yr*	*$ 2,700,000/yr*
Personal Capital	_____	_____	*$*_____
Reserve Fund	_____	_____	*$*_____
Annual Budget (Enterprise Fund)	*N/A*	*$ 250,000/yr*	*$ 250,000/yr*

6. *If a budget is available, provide it and proceed to Table A. If not, please fill out Questions #8 through #10 below.* Attachment D provides the FY 2021 Enterprise Fund budget for the Weir River Water System.

C. Estimated Income/Revenue (rate-collecting systems only)

7. *Please list all projected income and revenue for the first year.*

A. Taxes	*$*_____
B. Flat Fee	*$*_____
C. User Fee	*$*_____
D. Other: _____	*$*_____
E. TOTAL INCOME	**$**_____

D. Estimated Operation Expenses (all systems)

8. *Please list all projected operating expenses for the first year.*

A. Personnel / Overtime	*$*_____
B. Water Quality Testing	*$*_____
C. Supplies	*$*_____
D. Operating Expenses	*$*_____
E. Contract Services	*$*_____
F. Repairs	*$*_____
G. Reserve / Emergency Fund	*$*_____
H. Debt Service (Principal & Interest)	*$*_____
I. TOTAL EXPENSES	***$***_____

9. *Total Income (Section C)* *$*_____*minus*

10. *Total Expenses (Question D.1)* *$*_____*equals* *$0*

Financial Table A – Estimated Needs (all systems)

List all projects that you may need to address in the next 10 years to remain in compliance with DEP regulations.

Capital Improvement Plans have been prepared by Aquarion, which Hingham is receiving as part of the water system purchase. These include Aquarion's Capital Improvement Plans for 2017-2021 (provided in Attachment B), Capital Efficiency Plans prepared for Aquarion by Tata & Howard in 2007, 2011 and 2014, and filings by Aquarion with the Department of Public Utilities (2018).

Hingham will be performing a comprehensive evaluation of the water system during the first year of their ownership of the system (FY 2021) to identify those items necessary to remain in compliance with the DEP regulations, and to develop a Capital Improvement Plan that reflects these needs. Aquarion's previous CIP planning efforts described above will be used to inform the Town's in their capital planning effort.

Financial Table B - Capital Debt (all systems)

Capital Improvement	Funder	Loan Amount	Annual Payment	Finish Date
System Acquisition Short-term Borrowing	Not yet determined	$114,000,000	$1,539,000	FY 2022 (One Year Borrowing
System Acquisition Long-term Borrowing	Not yet determined	$114,000,000	$5,437,663/yr (level payment)	2051 (29 year borrowing)
Capital Replenishment	Not yet determined	$2,700,000	P = $ 135,000/yr (level) I = $ 60,750 (declining)	2040 (20 year borrowing)

Financial Table C - Capital Costs (all systems)

Use this table to estimate what your capital cost will be in each year by combining all the capital costs that occur in a particular year.

Hingham is committed to an ongoing annual investment of a minimum of $2.7 Million into the water system for capital improvements and has incorporated this commitment in their financial proforma for the next 30 years. The operating assumption for this proforma is that this annual investment will begin in Fiscal Year 2021, increasing by 5% every third year, as shown in the table below (this table presents the Capital Improvement investment for the first 10 years of their ownership of the system through FY 2030).

The specific improvements to be made will be informed by the comprehensive capital study that the Town will be performing during the first year of ownership of the system.

Year	Cost
FY 2021	2,700,000
FY 2022	2,700,000
FY 2023	2,700,000
FY 2024	2,835,000
FY 2025	2,835,000
FY 2026	2,835,000

Year	Cost
FY 2027	2,977,000
FY 2028	2,977,000
FY 2029	2,977,000
FY 2030	3,126,000

4. System Description

A. General

Describe briefly but completely the water supply from each separate source to the distribution system, giving for each source the various treatment processes proposed in order of occurrence. This description should be complete but simple and clear so as to be understandable by one unfamiliar with the supply. Indicate the availability of emergency power necessary to operate all portions of the supply. (Draw flow diagram on reverse side show bypass arrangements.) Show the location of all sources of supply, treatment facilities and outline the area owned by the public water supply on a 7.5 minute, U.S.G.S. Topographic Map. In addition, list all current public water supply permits including permit number, date issued, short summary of permitted facilities and available plans.

The Hingham Water Company was incorporated in 1879. It was acquired by Aquarion in 2002. On April 22, 2019 the Town of Hingham Annual Town Meeting voted to acquire the Hingham Water Company pursuant to Chapter 139 of the Acts of 1879 (as amended). The water system is to be managed by a Water Superintendent under the direction of the Board of Water Commissioners and/or Town Administrator and is to be privately operated and maintained by Suez Water Environmental Services under a minimum 5-year operations contract with the Town.

System Overview

As of year-end 2018, the Hingham water system served 13,196 customers: 8,211 in the Town of Hingham, 4,647 in Hull, and 338 in North Cohasset.

A plan showing the water system sources, treatment plant, storage tanks and distribution system is provided in Figure 1. The sources serving the system consist of one reservoir (Accord Pond) and six groundwater sources (Downing Street, Free Street (two well fields), Prospect Street, Scotland Street, Fulling Mill Station). These are all registered sources and are located in the Weir River watershed. Withdrawals are authorized by the system's Water Management Act Registration Statement for 2008 – 2017 (WMA #41913101), a copy of which is provided in Attachment E. The Registration Statement allows withdrawals up to 1,281.15 Million Gallons per Year (MGY), which represents an average of 3.51 Million Gallons per Day (MGD). During 2018, the average daily production was approximately 3.35 million gallons.

The water from all of these sources is pumped to a water treatment plant located at 900 Main Street in south Hingham, with the exception of the Downing Street well that pumps directly into the water system. Storage is provided by two tanks: the Turkey Hill tank and the Accord Tank. The system also includes a pressure booster station in Hull (at Beacon Road/Nantasket Ave), a booster station in Hingham (Baker Hill at Squirrel

Avenue) and approximately 192 miles of water mains. The distribution system is divided into two zones: the Main Service Zone serving north Hingham, Hull, and Cohasset; and the High Service Zone serving south Hingham.

Water Supplies (Well Fields and Reservoir)

All of the supplies serving the water system were in operation prior to 1985 and are therefore Registered Sources. The location of the six wellfields and the Accord Pond reservoir serving the water system is shown on Figure 1.

The Scotland Street Well was constructed in 1956 and is a 45-foot deep, gravel packed well located off Scotland Street with an approved pumping rate of 1.55 MGD. The Scotland Street Replacement Well #1A was built in 2008 and is a 58-foot deep, gravel-packed well with a DEP approved pumping rate of 1.55 MGD.

The Downing Street Well was built in 1965 and is a 66-foot deep, gravel packed well located off Downing Street with a DEP approved pumping rate of 0.41 MGD. The Downing Street Well Station is the only supply in the water system that pumps directly into the distribrution system, and is treated at the source with sodium hypochlorite, sodium fluoride, and a blended phosphate injection for disinfection and pH adjustment.

The Prospect Street Well was built in 1971 and is a 58-foot deep, gravel packed well located off Elaine Road with an approved pumping rate of 0.39 MGD.

There are two Free Street wellfields: a) Free Street Well #2, 2A and 4, and b) Free Street Well #3 and 5.

Free Street Wells 2, 2A and 4. These are all gravel packed wells. Well 2 was constructed in 1952 to a depth of approximately 73 feet. Well 2A is a replacement well installed in 2007 to a depth of approximately 79.5 feet. Well 4 was constructed in 1983 to a depth of approximately 86 feet. In November 2008, the DEP approved a status change of Wells 2 and 4. Well 2 was changed from an active source to an emergency source, and Well 4 was changed to an active source with a total maximum daily withdrawal of 0.81 MGD. The total combined volume to be withdrawn from Wells 2 and 4 cannot exceed 1.80 MGD.

Free Street Wells 3 and 5. These are also gravel packed wells. Well 3 was constructed in 1967 to a depth of 88.5 feet. Well 5 was constructed as a satellite well to supplement lost capacity of Well 3, and it pumps to Well 3 and subsequently to the water treatment facility. The MassDEP approved pumping rate for these wells is 351 gpm or 0.51 mgd.

The Fulling Mill Station is located at 93 South Street. It originally consisted of seven infiltration basins that fed a shallow 1,000 foot long horizontal well that was constructed in 1903 to a depth of approximately 21.5 feet. Two gravel-packed replacement wells were installed in 2008. Replacement Well #1 is a 48-foot deep well with a DEP-approved pumping rate of 0.62 MGD. Replacement Well #2 is a 42-foot deep well with a DEP-approved pumping rate of 0.38 MGD.

The Accord Pond reservoir is located off of Whiting Street. This is a 100-acre pond with a total storage capacity of approximately 523 million gallons and a drainage basin area of 1.01 square miles. The intake pipe is a gravity line to the treatment plant. Accord Pond has an estimated sustainable yield of 3.0 mgd for 80 days as reported in system's WMA Registration Application. The estimated safe yield of the pond is approximately 0.69 mgd.

Treatment

The treatment plant is a 7.7 mgd facility that has been in operation since 1996. It treats water from all of its supply sources except the Downing Street Well. Raw water is treated by rapid mix, Superpulsator clarifiers, deep-bed granular activated carbon filters and post-filtration disinfection, pH adjustment and fluoridation. The facility also includes a holding tank for treated water to improve water pressure in the system during high demand periods. Rated at level 4T, the plant utilizes Aveva Wonderware Supervisory Control and Data Acquisition (SCADA) software to support their operations. Sludge generated by the treatment process is dewatered by two centrifuges.

Storage Tanks

The location of the Accord Pond and Turkey Hill storage tanks is shown on Figure 1. The Accord Pond storage tank, installed in 1967, is located off Route 228 at the intersection of Whiting Street on Town-owned property. The tank is an elevated, welded steel-type with a 0.75 Million Gallon capacity. The elevated bowl has a diameter of 58 feet and the overall height of the storage tank is approximately 112 feet. It has an overflow elevation of 282 feet and is connected to the system through a 16-inch water main.

The Turkey Hill storage tank, installed in 1996, is located off of Turkey Hill Lane on Town-owned property. The tank is a ground level storage, welded steel-type standpipe with a 2 Million Gallon capacity. The standpipe has a diameter of 70 feet and an overall height of 70 feet. It has an overflow elevation of 240 feet and is connected to the system through a 20-inch water main.

Distribution System

The water distribution system, rated at level 3D, includes two booster stations, two pump stations, and approximately 192 miles of water mains. The average age of water mains is 64.4 years. The distribution system is divided into two zones: the Main Service Zone serving north Hingham, Hull, and Cohasset; and, the High Service Zone serving south Hingham.

The water system has emergency interconnections with Cohasset and Weymouth. Since 2004 a 20-year Wheeling Agreement has been in place between Aquarion (as the then operators of the water system), the Town of Cohasset, and Hingham Campus LLC, aka Linden Ponds, an age-restricted housing development in south Hingham. With the exception of the named parties (Aquarion becomes the Town of Hingham), this Wheeling Agreement will remain unchanged under the Town's ownership of the water system. Under the terms of the Wheeling Agreement, Cohasset delivers up to 306,000 gallons per day of purchased water to the distribution system through an interconnection on Route 3A near the Hingham-Cohasset border.

Unaccounted for Water (UAW) has been a persistent issue within the system for several years and the Town anticipates spending at least $2.7 million annually on capital improvements to the system, with the goal of reducing UAW to 10% or less to meet the conditions of their Water Management Act Registration Statement. Over the last several years UAW has been reduced from 23% in 2013 to 12% in 2018, as reported in the DEP Annual Statistical Reports for those years.

Permits

The following permits have been received for the Hingham water system:

- Water Management Act Registration Statement (#41919101), July 3, 2008
- List others here.

Figure 1. Plan of Water System

B. Source Information – Pumping Stations

Pumping Facility		Regular	Emergency
A	LOCATION: NANTASKET AVENUE/BEACON ROAD, HULL (BEACON ROAD BOOSTER STATION)	1	0
	FUNCTION: PROVIDES DOMESTIC PRESSURE WHEN THERE ARE HIGH DEMANDS IN HULL.		
B	LOCATION: SQUIRREL HILL LANE, HINGHAM (BAKER HILL BOOSTER STATION)	5	1
	Function: INCREASES PRESSURE FOR THE BAKER HILL DEVELOPMENT		
C	LOCATION: ACCORD POND, HINGHAM (ACCORD POND PUMPING STATION)	3	0
	Function: PUMP FOR THE RESERVOIR		
D	LOCATION: SOUTH PLEASANT STREET, HINGHAM (FULLING MILL PUMP STATION)	2	0
	FUNCTION: PUMP FROM WELL FIELD SUPPLY TO THE TREATMENT PLANT		

Pumping Facility	Type	Date Installed	Standby/ Emergency Power	Capacity (GPM)	SUCTION			DISCHARGE			MOTOR		
					Size (in)	Combined or Separate	Head (ft)	Size (in)	Combined or Separate	Head (ft)	HP	Source of Power	Auto/Manual
A #1	Hor Cent	June 1999	N	700	6	Separate		4	Separate		20	460VAC/3 Phase	
B #1	Hor Cent	May 2006	Y	450	8	Combined		8			50	480VAC/3 Phase	Auto
C #1	Hor Cent	February 2016	Y	1,400	8	Combined	40	5			40	460VAC/3 Phase	Auto
D #1	Hor Cent	March 2015	Y	1,000	5	Combined		5	Combined		50	460VAC/3 Phase	

C. Treatment

Chemical Feed

1. *Do chemical feed facilities provide adjustable feed ranges that are easily set for operation at all required dosages?* ✓ Yes ☐ No
2. *Who will maintain and/or operate chemical feed?* Name and Grade. _To be completed by Suez.
3. *Is 110% containment provided for all chemical tanks?* ☑ Yes ☐ No
4. *Is the chemical feed equipment in a separate room?* ☑ Yes ☐ No
5. *Is it properly ventilated?* ☑ Yes ☐ No
6. *Are the feed lines color coded?* ☑ Yes ☐ No
7. *Can chemical storage be measured?* ☑ Yes ☐ No
8. *Is there adequate chemical containment?* ☑ Yes ☐ No
9. *Is there an eye wash and/or shower?* ☑ Yes ☐ No
10. *If phosphates are used is a chorine residual maintained in the feed?* ☐ Yes ☐ No ☑ Not Applicable
11. *If fluoride is used is an upflow saturator used*? N/A ☐ Yes ☐ No ☑ Not Applicable

CHEMICAL FEED EQUIPMENT

Plant Name: _Hingham/Hull District WTF

Source: Free St Wells #5, #2A, #2, #3, #4; Scotland St Well #1, #1A; Fulling Mill Well #1, #2, Collection Basins; Accord Pond; Accord Brook; Prospect Well.

Chemical(s)	Point of Application of Unit	Chemical Feed Unit			Feed					Operation				Scales	
		Reg	Emer	anti-Siphon Valve	Solution	Dry	Range mg/l	Average used lbs/day	Supply (Days)	Auto-matic	Manual	X-Conn	Pacing	Yes	No
Potassium Permanganate	Prior to Oxidation Basins	X	X	X	X		0.1 – 5.0	86.0	30	X			X		X
Aluminum Sulfate	Rapid Mix	X	X	X	X		5.0 – 100	1,467.8	15	X			X		X
Calcium Hydroxide (Lime)	Prior to Oxidation Basins	X	X	X	X		1.0 – 35.0	358.7	60	X			X		X
	Rapid Mix	X	X	X	X		1.0 – 35.0	358.7	60	X			X		X
	Sludge Cake Pumps	X	X	X		X	As Needed			X			X		X
Polymer	Rapid Mix Effluent Weir	X	X	X	X		0.05 – 0.5	11.01	60	X			X		X
	Filter Influent	X	X	X			0.05 – 0.5	7.34	60	X			X		X
	Prior to Centrifuge	X	X	X			2.0 – 50.0	-	60	X					X
	Spent Washwater	X	X	X			As Needed			X					X
Sodium Hypochlorite	Prior to Oxidation Basins/Filters	X	X	X	X		0.3 – 5.0	83.4	30	X					X
	Primary Disinfection	X	X	X			0.3 – 5.0	91.7	30	X					X
	Final Disinfection	X	X	X			0.3 – 5.0	91.7	30	X					X
	Recycle Water	X	X	X			1.0 – 5.0	6.7	30	X					X
Sodium Carbonate	Prior to Static Mixer	X	X	X	X		1.0 – 25.0	184.0	30		X				X
Zinc	Prior to Static	X	X	X	X		0.36 – 3.6	55.0	30				X		X

Orthophosphate	Mixer														
Hydrofluosilicic Acid	Prior to Static Mixer	X	X	X	X		1.0	33.4	180		X		X		X

Plant Name: Downing Street GP Well WTP

Source: Downing Street GP Well

Chemical(s)	Point of Application of Unit	Chemical Feed Unit			Feed					Operation				Scales	
		Reg.	Emer.	anti-Siphon Valve	Solution	Dry	Range mg/l	Average used lbs/day	Supply (Days)	Auto-matic	Manual	X-Conn	Pacing	Yes	No
Blended Phosphate and Sodium Hypochlorite	Pump Discharge	X	X	X	X		As Needed			X					X
Sodium Fluoride	Pump Discharge	X	X	X	X		As Needed			X					X

D. Treated Water Storage

Storage Unit	Type of Storage				Location of Storage			Frequency of Inspections	Date Last Cleaned	Material of Construction	Capacity (m-gal)
	Under-ground	Ground Level	Elevated	Hydro-pneumatic Tank	Plant/ Pump house	Distribution System	Condition of Tank				
Accord Pond Tank			X			X	Good sanitary and structural condition; Interior and exterior coating is poor (2015 Assessment)	Monthly storage tank inspections; Annual rooftop inspections	Unknown	Steel	0.75
Turkey Hill Tank		X				X	Good sanitary and structural condition; Interior and exterior coating is poor (2015 Assessment)		Unknown	Steel	2.00
Hingham/Hull District WTF Clearwell		X			X		Exterior looks good (2015 Assessment)		Unknown	Concrete	0.43

Storage Unit	Protection and Safety						Site Protection			
	Proper Over-Flow Structure	Covered/ Locked	Vented/ Screened	Sample Tap	High Level Control/ Alarm	Low Level Control/ Alarm	Flood	Runoff	Fenced	Tank Overflow Elevation
Accord Pond Tank	X	X	X	X	X	X	X	X	X	282 ft
Turkey Hill Tank	X	X	X	X	X	X	X	X	X	240 ft
Hingham/Hull District WTF Clearwell	X	X	X	X	X	X	X	X	X	119 ft

1. Can each storage unit be bypassed for repair and cleaning without interrupting service? ☑ Yes ☐ No

2. *Is there sufficient storage for fire protection?* ☑ Yes ☐ No

E. Distribution System

1. Maps and Records

A. Attach a distribution system map, showing valve and hydrant locations in addition to water main location and diameters.

B. Are there dead end areas in the distribution system? ☑ Yes ☐ No

If yes how many? See plan of water distribution system (Figure 1).
Are terminal hydrants available on dead ends?

C. Show the proposed coliform bacteria sampling locations on the Distribution Map. See Attachment F. Coliform Sampling Plan.

D. Describe the proposed flushing program.
The System Operator is required to conduct a system-wide flushing program annually. A plan of action is to be reviewed and approved by the Water Superintendent. *The program should address the dead end areas.*

Attachment G. Distribution System Flushing Plan *Attach from Aquarion if available.*

E. Include the locations, type and size of master meters on the distribution system map.
See Figure 1.

Distribution System Data

PIPE USED IN WATER SUPPLY

Portion of Transmission line and Distribution System	Source	Type of Pipe	Miles of Pipe	Pipe Diameter (inches)	Date Line Installed
27.6%		Ductile	53.38	4”,6”,8”,12”,14”, 16”,20”,24”	1960-2018
1.4%		Lock Joint	2.66	16”, 20”	1950-1969
28.4%		Cast Iron	54.97	3”,4”,6”,8”,10”, 12”,14”,16”,20”	1890-1969
25.1%		Cast Iron Cement Lined	48.51	2 ¼”, 4”, 6”, 8”, 12”, 16”, 20”	1960-1989
14.0%		Transite	27.08	6”, 8”, 12”	1940-1969
1.0%		HDPE	1.22	6”, 8”, 12”	NA
2.4%		Galvanized Steel	4.68	¾”, 1”, 1¼”, 1½”, 2”, 3”, 4”, 8”	1890-1979
0.3%		Plastic	0.66	1”, 2”, 3”, 4”	1970-2018
0.0004%		Copper	0.07	¾”, 1”	NA

PRESSURE

Location	Pressure in Distribution System (psig)	Minimum (must be >20 psig)	Maximum (psig)
Hingham/Hull District WTF	82	45	95
Accord Pond to WTF	10	5	10
Fulling Mill Wells #1 and #2 to WTF	40	35	45
Fulling Mill Cistern to WTF	40	35	45
Scotland Street Wells #1 and #1A to WTF	8	5	10
Downing Street Well	82	80	95
Prospect Street to WTF	10	5	10
Free Street Wells #2, #2A, #3, #4 and #5 to WTF	55	50	60

5. Operations and Maintenance

A. General

How will maintenance be scheduled?
The system operator will conduct routine maintenance on the water supplies, treatment tank and storage tank in accordance with the Standard Operating Procedures and Operations and Maintenance documents provided in Attachment H. The operator will also perform routine maintenance on the distribution system (exercise gates and valves, etc.)

1. Spare Parts Inventory

   What are the spare parts inventory? *To be received from Aquarion*

   _____

   Is it adequate to prevent long delays in equipment repairs? ☑ Yes ☐ No

2. Pump Maintenance

Is a maintenance schedule available for pump?	☑ Yes	☐ No	
valves?	☑ Yes	☐ No	
chemical feed pump?	☑ Yes	☐ No	
turbine pumps?	☐ Yes	☐ No	Not Applicable
high and low lift pumps?	☑ Yes	☐ No	

   Have pump maintenance records been prepared (forms only)? ☑ Yes ☐ No

3. Operation and Maintenance Manual

   Is an O & M Manual available and accessible to staff? ☑ Yes ☐ No
   (Provided in Attachment D)

   Does manual conform to DWS policy? ☑ Yes ☐ No

   Does manual provide guidance for operational decisions? ☑ Yes ☐ No

4. Instrumentation/Process Automation

   Are there alarms or instrumentation for process automation? (Such as chlorine, turbidity, etc.) List. ☑ Yes ☐ No

   Do you have agreements in place for outside support/contractors for service/updating of instrumentation? ☑ Yes ☐ No

5. Safety and Protective Equipment

   Are there adequate safety and personnel protective equipment provided? ☑ Yes ☐ No

B. Distribution Protection - Cross Connection Program

1. Complete the attached cross connection control program plan. See Attachment I

2. Will *a third party be used to survey or test as part of your programs?* ☐ Yes ☐ No
If yes, Name & contact person. To be confirmed by Suez

3. Have all industrial, commercial, and institutional facilities been surveyed by the PWS?

☑ Yes ☐ No

If no, what is the estimated completion date for surveying all facilities?

_____

4. Are backflow prevention devices installed at all PWS OWNED locations?

☑ Yes ☐ No ☐ Not applicable

C. Water Quality Monitoring

1. Pumping Test Water Quality Results

Attach the water quality results from the prolonged pumping test.
See Attachment J.

List any water quality parameters, which were found to be above the MCL (Maximum Contaminant Level). _____

_____

_____

Will the water receive treatment? ☒ Yes ☐ No

List the proposed water treatment processes. Oxidation basins, rapid mixers, Superpulsator clarifiers, and deep bed granular activated carbon filters. Post-filtration disinfection, pH adjustment, and fluoridation.

_____

2. Lead and Copper Rule Compliance. See Attachment K - Lead and Copper Sampling Plan

3. Coliform Bacteria Sampling Locations Plan. See Attachment F - Coliform Sampling Plan

4. Water Quality Monitoring Waiver Program

If the water quality monitoring conducted during the pumping test did not detect any Synthetic Organic compounds (SOC's), the system may qualify for a waiver from further testing for SOC's. If you choose to do so, please complete the attached waiver application for SOC monitoring only. The other possible waivers require additional rounds of sampling with no detects before the system is eligible to apply.

Not Applicable.

D. Emergency Plans

1. *Complete the attached Emergency Response Plan Phone and Contact List.*

   See Attachment L - Emergency Response Plan.

E. Water Quantity/Conservation

1. *Does this system have adequate plans for meeting its water quantity for the next twenty years?* ☒ Yes ☐ No

2. *Will the system need a Water Management Act (WMA) withdrawal permit?*

   ☐ Yes ☒ No

Describe threshold: (It is important to note that systems need a Water Management Act withdrawal permit if their cumulative system withdrawal volumes exceed 100,000 gpd on average for any period of three consecutive months, from a total withdrawal of not less than nine (9) million gallons, or an average daily volume of 100,000 gallons for periods which exceed three consecutive months, calculated by dividing the total withdrawal by the period of operation).

3. *If a WMA withdrawal permit is required, attach a completed water conservation plan.*

   See Attachment M - Water Conservation Plan.

ATTACHMENT A
RESUMES OF WATER SYSTEM OPERATORS

ATTACHMENT B

CAPITAL IMPROVEMENTS PLAN
(By Aquarion, for 2017 – 2021)

Item 1.C.3. Aquarion Capital Improvements Plan: 2017 – 2021. To be updated by Hingham during first year of system ownership and operation by Hingham.

Aquarion Water Company of Massachusetts, Inc.- Five-Year Capital Budget

	2017	2018	2019	2020	2021	5-Year Total
Mains	$1,347,705	$1,351,645	$1,952,397	$1,590,000	$990,000	$7,231,747
Dams	$10,000	$15,000				$25,000
Transmission & Distribution	$1,067,059	$380,000	$275,000	$335,000	$1,260,000	$3,517,059
IT	$20,000	$5,000	$5,000	$5,000	$5,000	$40,000
Meters	$240,000	$240,000	$230,000	$230,000	$230,000	$1,170,000
Source of Supply	$95,000	$250,000	$195,000	$370,000	$920,000	$1,830,000
Treatment	$755,000	$620,000	$325,000	$215,000	$215,000	$2,130,000
Pumping	$206,000	$255,000	$110,000	$85,000	$85,000	$741,000
General Plant	$128,000	$33,000	$33,000	$33,000	$33,000	$260,000
Total Capex	$3,868,764	$3,149,645	$3,125,397	$3,063,000	$3,738,000	$16,944,806

DESCRIPTION	CATEGORY	SYSTEM	2017	2018	2019	2020	2021	Total
Tower Road, Hingham	Main	Hingham/Hull	$375,705					$375,705
Beach Ave, Hull	Main	Hingham/Hull		$20,000	$950,000			$970,000
Bleachers, Hull	Main	Hingham/Hull	$20,000	$876,645				$896,645
Annual Water Main Replacement (Hing)	Main	Hingham/Hull			$0	$550,000	$550,000	$1,100,000
Capitalized Main Breaks/Paving	Main	Hingham/Hull	$40,000	$40,000	$40,000	$40,000	$40,000	$200,000
Philips Dr. & Woodland St	Main	Millbury		$12,000	$502,332			$514,332
Annual Water Main Replacement (Mil)	Main	Millbury				$400,000	$400,000	$800,000
Main Street - Phase 3, Oxford	Main	Oxford			$460,065	$450,000		$910,065
Leicester Street - Bridge Replacement	Main	Oxford				$150,000		$150,000
Rawson Avenue, Oxford	Main	Oxford	$12,000	$403,000				$415,000
Charlton Street	Main	Oxford	$900,000					$900,000
			$1,347,705	$1,351,645	$1,952,397	$1,590,000	$990,000	$7,231,747
Howe Pond Dam	Dam	Millbury	$10,000	$15,000				$25,000
			$10,000	$15,000				$25,000
Services Recurring (new & replacement)	T&D	MA	$155,000	$150,000	$150,000	$150,000	$150,000	$755,000
Hydrants Replacement	T&D	MA	$40,000	$40,000	$40,000	$40,000	$40,000	$200,000
T&D Recurring	T&D	MA	$70,000	$70,000	$70,000	$70,000	$70,000	$350,000
New Tank (Hull)	T&D	Hingham/Hull				$50,000	$1,000,000	$1,050,000
New Pressure Zone (Hull)	T&D	Hingham/Hull			$15,000	$225,000		$240,000
Accord Tank (Hingham) Rehab.	T&D	Hingham/Hull	$125,000					$125,000
Turkey Hill Tank Rehab	T&D	Hingham/Hull		$100,000				$100,000
Burbank Avenue Tank Rehabilitation	T&D	Millbury	$677,059					$677,059
Distribution Analysis	T&D	Oxford		$50,000				$50,000
			$1,067,059	$380,000	$275,000	$535,000	$1,260,000	$3,517,059
SCADA Workstations (Millbury)	IT	Millbury	$15,000					$15,000
IT Misc	IT	MA	$5,000	$5,000	$5,000	$5,000	$5,000	$25,000
			$20,000	$5,000	$5,000	$5,000	$5,000	$40,000
Meters (new and replacement)	Meters	MA	$240,000	$240,000	$230,000	$230,000	$230,000	$1,170,000
			$240,000	$240,000	$230,000	$230,000	$230,000	$1,170,000
New Source Development	SOS	Hingham/Hull	$25,000	$50,000	$100,000	$225,000	$650,000	$1,050,000
Demand Management	SOS	Hingham/Hull	$20,000	$20,000	$20,000	$20,000	$20,000	$100,000
New Source Development	SOS	Millbury	$50,000	$180,000	$75,000	$125,000	$250,000	$680,000
			$95,000	$250,000	$195,000	$370,000	$920,000	$1,830,000
Treatment Recurring (Hing WTP)	Treatment	Hingham/Hull	$175,000	$175,000	$175,000	$175,000	$175,000	$875,000
Filter Valve Replacements (HHWTP)	Treatment	Hingham/Hull	$15,000	$10,000	$10,000			$35,000
Accord Intake Screen Replacement	Treatment	Hingham/Hull		$275,000				$275,000
High Service - VFD	Treatment	Hingham/Hull	$50,000					$50,000
Main Service - VFD	Treatment	Hingham/Hull	$75,000	$75,000				$150,000
Hingham Centrifuge Conveyor	Treatment	Hingham/Hull	$250,000					$250,000
SCADA Phase 4 (Automate HHWTP)	Treatment	Hingham/Hull	$40,000					$40,000
Capital Improvement Plan (HHWTP)	Treatment	MA	$15,000					$15,000
Security Improvements	Treatment	MA		$20,000				$20,000
SCADA Equipt Replace & Program	Treatment	MA	$10,000	$10,000	$10,000	$10,000	$10,000	$50,000
Treatment Recurring	Treatment	Millbury	$15,000	$15,000	$15,000	$15,000	$15,000	$75,000
Instrumentation Impr (Millbury Ave WTP)	Treatment	Millbury	$25,000	$25,000	$25,000			$75,000
SCADA Upgrade (Millbury)	Treatment	Millbury	$50,000					$50,000
Treatment Recurring	Treatment	Oxford	$15,000	$15,000	$15,000	$15,000	$15,000	$75,000
Nelson Street Well Improvements	Treatment	Oxford			$75,000			$75,000
SCADA Phase 1 (Oxford)	Treatment	Oxford	$20,000					$20,000
			$755,000	$620,000	$325,000	$215,000	$215,000	$2,130,000
New Pump - Free St Well #2	Pumping	Hingham/Hull	$0	$60,000				$60,000
Fulling Mill Cistern - Vertical Turbine	Pumping	Hingham/Hull	$125,000					$125,000
Pumping Recurring	Pumping	MA	$75,000	$85,000	$85,000	$85,000	$85,000	$415,000
New Generator (Oak Pond Well)	Pumping	Millbury		$70,000				$70,000
New Flow Meter (#2 N. Main St)	Pumping	Oxford	$6,000					$6,000
Pump Replacement (#3 Nelson Well)	Pumping	Oxford			$25,000			$25,000
New Roof (#3 Nelson Well)	Pumping	Oxford		$40,000				$40,000
			$206,000	$255,000	$110,000	$85,000	$85,000	$741,000
General Plant Recurring	A&G	MA	$25,000	$25,000	$25,000	$25,000	$25,000	$125,000
Vehicle Replacements	A&G	MA	$95,000					$95,000
Tools	A&G	MA	$8,000	$8,000	$8,000	$8,000	$8,000	$40,000
			$128,000	$33,000	$33,000	$33,000	$33,000	$260,000
TOTAL:			$3,868,764	$3,149,645	$3,125,397	$3,063,000	$3,738,000	$16,944,806

ATTACHMENT C

RATES AND FEES FOR WEIR RIVER WATER SYSTEM

FROM RULES AND REGULATIONS (PENDING)

Item 3.B.1. Rate Sheet for Water Usage and Fees (from the pending Rules and Regulations for the Wier River Water System.

WATER CHARGE

A water charge will be made for all water used as registered by the meter, as set forth below:

Rate Per Hundred Cubic Feet (CCF)

RATE R1 - Applies to all metered residential usage by customers classified as such on the Town's records.

First 12 CCF per Quarter/ 4 CCF per Month	$3.613
Over 12 CCF per Quarter/ 4 CCF per Month	$4.588

RATE G1 - Applies to all metered commercial usage by customers classified as such on the Town's records, which do not qualify for Rate G4.

First 12 CCF per Quarter/ 4 CCF per Month	$2.668
Over 12 CCF per Quarter/ 4 CCF per Month	$3.230

RATE G2 - Applies to all metered public authority usage by customers classified as such on the Town's records, which do not qualify for Rate G4.

First 12 CCF per Quarter / 4 CCF per Month	$2.653
Over 12 CCF per Quarter/ 4 CCF per Month	$2.959

RATE G3 - Applies to all metered industrial usage by customers classified as such on the Town's records, which do not qualify for Rate G4.

All Usage	$2.953

RATE G4 - Applies to the total monthly usage by qualifying non-residential customers, classified as such on the Town's records, as per the following criteria:
Monthly billed amounts no less than 10,000,000 gallons and no more than 40,000,000 gallons. Past 12 months total billed amount no less than 120,000,000 gallons.

All Usage	$2.009

SERVICE CHARGE

In addition, all metered general water service customers shall pay a service charge on the size of each meter installed. Customers with multiple meters shall be charged for each meter at the indicated rate.

Size of Meter	Per Month	Per Quarter
5/8"	$ 16.08	$ 48.24
3/4"	$ 24.05	$ 72.15
1"	$ 40.12	$ 120.36
1 1/2"	$ 80.32	$ 240.96
2"	$ 128.55	$ 385.65
3"	$ 241.10	$ 723.30
4"	$ 401.88	$ 1,205.64
6"	$ 803.82	$ 2,411.46
8"	$ 1,286.16	$ 3,858.48

RATES FOR PRIVATE FIRE PROTECTION

AVAILABILITY

This rate is available to customers located on the mains of the water system within the Towns of Hingham, Hull and Cohasset for Private Fire Protection, subject to the Rules and Regulations of the Town.

	Per Year
For each service connection 1”	$ 122.17
For each service connection 1.25”	$ 137.54
For each service connection 1.5”	$ 154.84
For each service connection 2”	$ 206.69
For each service connection 2.5”	$ 272.00
For each service connection 3”	$ 352.67
For each service connection 4” or smaller	$ 552.44
For each service connection 6”	$ 1,105.64
For each service connection 8”	$ 1,873.97
For each service connection 10”	$ 2,949.64
For each service connection 12”	$ 4,178.96
For each privately owned fire hydrant serving Cohasset, Hingham, and Hull	$ 913.37
For each privately owned fire hydrant outside Cohasset, Hingham, and Hull	$ 1,150.13

RATE FOR PUBLIC FIRE PROTECTION

For each Town owned public fire hydrant $ 193.51

In addition, annual charges as follows:

Town of Hingham	$ 395,054.00
Town of Hull	$ 227,331.00
Town of Cohasset	$ 18,712.00

MISCELLANEOUS CHARGES

Drought Conditions

Termination and Restoration Fee – Business Hours* $ 65.00 Termination

and Restoration Fee – After Hours $ 92.00

*Normal business hours are Monday through Friday, 8 am to 4 pm.

System Development Charge (“SDC”)

Meter Size**	Capacity GPM	Ratio to 5/8” Meter	Fee
5/8”	20	1.00	$640
3/4"	30	1.50	$960
1”	50	2.50	$1,600
1 ½”	100	5.00	$3,200
2”	160	8.00	$5,120
3”	320	16.00	$10,240
4”	500	25.00	$16,000

**SDC is determined on a case by case basis for meter sizes greater than 4”.

OTHER SERVICES

AVAILABILITY

This rate is available to all classes of customers located on the mains of the water system. Subject to the Rules and Regulations of the Town Water System.

Frozen Meters	Actual Cost of Meter	
Meter Test Fees 1" and less	$	50.00
Larger than 1"	$	75.00
Return Check Fee	$	20.00
Seasonal Meter Set & Turn On Fee	$	65.00
Seasonal Meter Removal Fee & Turn Off Fee	$	65.00
Turn On Fee – Business Hours	$	65.00
After Hours Callout	$	392.00
Water Conservation Fines	$	XXX.XX
Abatement Fee	$	XXX.XX
Non-Payment Reconnect – Business hours	$	65.00
Non-Payment Reconnect – After Hours	$	392.00
Theft of Service	$	1,000.00
(or triple the amount of damages, whichever is greater)		
Cross Connection – One Device Testing	$	75.00
Each Additional Device	$	35.00

TERMS OF PAYMENT

The Town Water System may render bills on either a quarterly or monthly basis. The above rates are payable within thirty (30) days of the date on the bill.

SURCHARGES

The following surcharges are applicable to all metered customers located on the mains of the Town's water system in Hingham, Hull and Cohasset.

SURCHARGE

	Service Charge	
Size of Meter	Per Month	Per Quarter
5/8"	$10.32	$30.96
3/4"	$15.70	$47.10
1"	$25.20	$75.60
1 1/2"	$49.20	$147.60
2"	$78.00	$234.00
3"	$145.00	$435.00
4"	$240.30	$720.90
6"	$479.60	$1,438.80
8"	$766.90	$2,300.70

Consumption Charge per 100 cubic feet for Water Treatment Facility Lease:	$0.9524
Consumption Charge per 100 cubic feet for Water Treatment Operation and Maintenance	$1.0639

ATTACHMENT D

FY 2021 ENTERPRISE FUND BUDGET

FY21 Weir River Water System Budget

	2019 Town Meeting	FY21	FY21 vs. 2019 Town Meeting
Revenue	$13,047,168	$10,597,979	-$2,449,189
Salaries	$240,120	$246,725	-$6,605
Operating Expenses	$4,420,000	$5,638,990	-$1,218,990
PILOT	$830,503	$840,959	-$10,456
Debt Service	$2,688,662	$1,539,000	$1,149,662
Subtotal Expenses	$8,179,285	$8,265,673	-$86,388
Revenue/Budgeted Surplus	$4,867,883	$2,332,306	-$2,535,577
Grand Total	$13,047,168	$10,597,979	-$2,449,189

Assumptions:

- No change in water rates (BOS voted to maintain rates on 2/27)
- Consumption based on data provided by Aquarion (10/18 - 9/19)
- Town assumes operational responsibility 7/1/20
- Quarterly billing
- Revenue estimate lower than 2019 due to timing of billing and collections
    - Quarterly Billing on last day of month - for services through the end of that month
    - Collection rate: 80% within 30 days, 10% within 60 days, 10% within 90 days

FY21 Weir River Water System Detailed Budget

		2019 Town Meeting	FY21	FY21 B/(W) 2019 Town Meeting
	Revenue	**$13,047,168**	**$10,597,979**	**-$2,449,189**
	Salaries			
	Water Superintendent	$200,100	$136,705	
	Administrative support	$40,020	$40,020	
	GIS	$0	$20,000	
	Seasonal construction inspector(s) FY21	$0	$50,000	
*	**Subtotal Salaries**	**$240,120**	**$246,725**	**-$6,605**
	Operating Expenses			
	Operator contract including billing	$3,780,000	$4,741,066	-$961,066
	Operator transition costs	$165,000	$334,906	-$169,906
	Benefits (30% per Town Accountant)	$0	$53,018	-$53,018
	Cash capital and emergency repairs	$0	$250,000	-$250,000
	Property Insurance	$0	$75,000	-$75,000
	Engineering fees, Cost of Service study, Capital study	$0	$150,000	-$150,000
	Misc - DEP fee, outreach, office equipment, professional development, supplies	$325,000	$35,000	$290,000
	Subtotal Additional Muni Costs	$4,270,000	$5,638,990	-$1,368,990
	Other Transaction costs	$150,000	$0	$150,000
*	**Subtotal Operating Expenses**	**$4,420,000**	**$5,638,990**	**-$1,218,990**
	Property Taxes to Town of Hingham	$692,273	$699,273	
	Property Taxes to Cohasset and Hull	$138,230	$141,686	
*	**Payment in Lieu of Taxes**	**$830,503**	**$840,959**	**-$10,456**
	Debt Service			
	Water system acquisition	$2,688,662	$1,539,000	$1,149,662
	Capital improvements	$0	$0	$0
*	**Subtotal Debt Service**	**$2,688,662**	**$1,539,000**	**$1,149,662**
*	**Subtotal Expenses**	**$8,179,285**	**$8,265,673**	**-$86,388**
*	**Revenue/Budgeted Surplus**	**$4,867,883**	**$2,332,306**	**-$2,535,577**
*	**Grand Total**	**$13,047,168**	**$10,597,979**	**-$2,449,189**

ATTACHMENT E

Water Management Act Registration Statement

ATTACHMENT F

Coliform Sampling Plan

MASSACHUSETTS DEP – DRINKING WATER PROGRAM
Coliform Sampling Locations

PWS ID# _____ PWS Name: _____ Town: _____
Community PWS _____ Non-Community PWS _____ Non-Transient Non-Community PWS _____
Groundwater ____ Surface Water ____ Both Ground and Surface Water ____
Population: Winter ____ Summer ____
Explain:_____
Number of samples required by 310 CMR 22.05, Table 1: _____
Number of excess sites identified: _____
Are you requesting to sample each location more than once? Yes ____ No ____

Sample Number	Sampling Point - Name and/or address	Sampling Frequency (# of times/month)
001		
1a.		
1b.		
002		
2a		
2b		
003		
3a		
3b		
004		
4a		
4b		
005		
5a		
5b		
006		
6a		
6b		
007		
7a		
7b		
008		
8a		
8b		
009		
9a		
9b		

Public Water Supplier Signature: _____ Date: _____

Please submit this form to your Regional DEP Office.
Use additional sheets if necessary.

For DEP/DWP use:

Action:_____

DWP Name: _____ Signature: _____ Date: _____

ATTACHMENT G

Distribution System Flushing Plan

ATTACHMENT H

Standard Operating Procedures

ATTACHMENT I

Cross-Connection Control Plan

ATTACHMENT J

Water Quality Results (2018 and 2019 Summary)

ATTACHMENT K

Lead and Copper Sampling Plan

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

LCR –A

DRINKING WATER PROGRAM

LEAD AND COPPER SAMPLING PLAN

PWS ID #: 4131000 PWS Name: Hingham Water System City/Town: Hingham
Telephone #: (781) 741-1400 Population: 35,803 winter # Samples required: 60 ☒ Standard Plan ☐ Reduced Plan

#	Sample Category (Tier)	SAMPLE			How will the sample be collected? Check one (√)			
		PRIMARY [1] Site Address	Location Check one (√)		PWS	Homeowner/ Resident	Lab	Other
			K[2]	B[3]				
1	1	20 Clifton Avenue, Hull	TBD			X		
2	1	1 Button Cove Rd, Hingham	TBD			X		
3	1	1 Mountford Rd, Hull	TBD			X		
4	1	80 Pleasant St, Hingham	TBD			X		
5	1	63 Free St, Hingham	TBD			X		
6	1	15 Myers Farm Rd, Hingham	TBD			X		
7	1	8 Myers Farm Rd, Hingham	TBD			X		
8	1	1 Saw Mill Pond Rd, Hingham	TBD			X		
9	1	515 Main St, Hingham	TBD			X		
10	1	3 Fulling Mill Lane, Hingham	TBD			X		
11	1	23 Halvorsen Ave, Hull	TBD			X		
12	1	14 Camelot Dr, Hingham	TBD			X		
13	1	183 Prospect St, Hingham	TBD			X		
14	1	22 Andrew Ave, Hull	TBD			X		
15	1	77 Summer St, Hingham	TBD			X		
16	1	5 Winfield Rd, Hingham	TBD			X		
17	1	12 New Towne Dr., Hingham	TBD			X		
18	1	5 Harborview Drive, Hingham	TBD			X		
19	1	155 Prospect St, Hingham	TBD			X		
20	1	18 Saw Mill Pond Rd, Hingham	TBD			X		
21	1	31 Myers Farm Rd, Hingham	TBD			X		
22	1	10 Myers Farm Rd, Hingham	TBD			X		
23	1	79 Summer St, Hingham	TBD			X		
24	1	12 Deerfield Rd, Hingham	TBD			X		
25	1	4 Huckleberry Hill Lane, Hingham	TBD			X		
26	1	40 George Washington Blvd, Hingham	TBD			X		
27	1	19 Fulling Mill Lane, Hingham	TBD			X		
28	1	15 Saw Mill Pond Rd, Hingham	TBD			X		
29	1	28 Floret Circle, Hingham	TBD			X		
30	1	40 Floret Circle, Hingham	TBD			X		
31	1	22 Floret Circle, Hingham	TBD			X		
32	1	62 Thistle Patch Way, Hingham	TBD			X		
33	1	44 Floret Circle, Hingham	TBD			X		
34	1	81 Summer St, Hingham	TBD			X		
35	1	80 Thistle Patch Way, Hingham	TBD			X		
36	1	60 Thistle Patch Way, Hingham	TBD			X		
37	1	110 Thistle Patch Way, Hingham	TBD			X		
38	1	72 Thistle Patch Way, Hingham	TBD			X		
39	1	1 Clifton Ave, Hull	TBD			X		
40	1	16 Milford St Unit 1, Hull	TBD			X		
41	1	16 Milford St Unit 5, Hull	TBD			X		

42	1	16 Milford St Unit 8, Hull	TBD			X		
43	1	12 Floret Circle, Hingham	TBD			X		
44	1	153 Whiting Street, Hingham	TBD			X		

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION **LCR -A**
DRINKING WATER PROGRAM

LEAD AND COPPER SAMPLING PLAN

*Please type or print clearly using black ink and **attach a sample location site plan***
PWS ID #: 4131000 PWS Name: Hingham Water System City/Town: Hingham
Telephone #: (781) 741-1400 Population: 35,803 winter # Samples required: 60 ☒ Standard Plan ☐ Reduced Plan

#	Sample Category (Tier)	SAMPLE			How will the sample be collected? Check one (√)			
		PRIMARY [1] Site Addresses (continued)	Location Check one (√)		PWS	Homeowner/ Resident	Lab	Other
			K[2]	B[3]				
45	1	6 Mallard Run, Hingham	TBD			X		
46	1	103 High Street, Hingham	TBD			X		
47	1	14 Liberty Pole Road, Hingham	TBD			X		
48	1	9 Liberty Pole Road, Hingham	TBD			X		
49	1	18 Park View Drive, Hingham	TBD			X		
50	1	28 Wanders Drive, Hingham	TBD			X		
51	1	18 Fulling Mill Lane, Hingham	TBD			X		
52	1	2 Button Cove Rd, Hingham	TBD			X		
53	1	7 Saw Mill Pond Road, Hingham	TBD			X		
54	1	151 Whiting Street, Hingham	TBD			X		
55	1	26 Myers Farm Rd, Hingham	TBD			X		
56	1	93 Tower Road, Hingham	TBD			X		
57	1	10 Cliff Rd, Hingham	TBD			X		
58	1	5 Pheasant Run, Hingham	TBD			X		
59	1	1 Elm Street, Hull	TBD			X		
60	1	19 Liberty Road, Hingham	TBD			X		
61	1	12 Boulder Glen Road, Hingham	TBD			X		
		ALTERNATIVE [1]* Site Addresses						
1	1	90 Thistle Patch Way, Hingham	TBD			X		
2	1	72 Thistle Patch Way, Hingham	TBD			X		
3	1	5 Harbor View Drive, Hingham	TBD			X		
4	1	265 High Street, Hingham	TBD			X		
5	1	17 Halvorsen Ave, Hull	TBD			X		
6	1	7 Saw Mill Pond Road, Hingham	TBD			X		
7	1	63 New Bridge Street, Hingham	TBD			X		
8	1	151 Whiting Street, Hingham	TBD			X		
9	1	1 Clifton Ave, Hull	TBD			X		
10	1	93 Tower Road, Hingham	TBD			X		
11	1	21 Saw Mill Pond Road, Hingham	TBD			X		
12	1	5B Fulling Mill Lane, Hingham	TBD			X		
13	1	36 Vautrinot Ave, Hull	TBD			X		
14	1	6 Mallard Run, Hingham	TBD			X		
15	1	14 Bradley Park Drive, Hingham	TBD			X		
		SCHOOLS[4]						

1	N/A	See LCR-B						

If any of the above sites are not Tier 1 sites in accordance with Massachusetts Drinking Water Regulations 310 CMR 22.06B my signature below indicates that Tier 1 sites were not available and that I have provided MassDEP with a "materials survey" and have complied with 310 CMR 22.06B(7). I certify under penalty of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best of my knowledge and belief.

Signature of authorized public water system party: _____Date: ____/___/____
Name of authorized party *(PRINT):* __Karen Johnson__ *Title:* __Board of Selectmen Chair
Telephone #: __781-741-1400__ Mobile/cell #:_____ Fax #:_____ Email Address:_____

[1]During any monitoring period no MassDEP approved sample site shall be sampled more than once without prior written approval from MassDEP."

[2] *Kitchen;* [3]*Bathroom;* [4]*The attached list of schools and daycare centers will be used to provide four samples per monitoring period until all facilities are sampled or as otherwise determined by MassDEP.*

* Alternative Sites *(These sites are not included in the samples required and must be approved by MassDEP prior to use in any sample round.)*

For MassDEP use: Approved Deficient/Disapproved
Comments: _____
MassDEP staff Name: _____ Date: _____

ATTACHMENT L

Emergency Response Plan

ATTACHMENT M

Water Conservation Plan