

BRISTOL COUNTY WATER AUTHORITY

Board of Directors Meeting

Thursday, March 25, 2021 4:30pm

Meeting by Zoom Audio-Visual Teleconference
Pursuant to Executive Order 20-05, March 16, 2020
Third Supplemental Emergency Declaration –
Public Meeting and Public Records Requests

AGENDA

1. Call to Order
2. Public Input
3. Minutes
 - i. 2/25/21 – Personnel Committee
 - ii. 2/25/21 – Finance Committee
 - iii. 2/25/21 – Board Meeting
4. Executive Director Report
5. Financial Report
6. Board Member Town Council Reports
7. Award of Administration Facility Replacement Lift Bid
8. Award of Task Order Engineering/Inspection Services for Infrastructure Improvement Projects
9. Addendum No. 1 for Metacom Water Main Design
10. Addendum No. 1 for Phase II Pawtucket Pipeline Design
11. Strategic Plan Update
12. Kickemuit Dam Removal Information on Website
13. Approval - Annual Write-Offs
14. Executive Session:
 - i. Litigation - Kickemuit Dam Removal - Letter of Objection - Pursuant to RIGL s. 42-46-5 (a)(2)
 - ii. Litigation - North Farm v. BCWA - Pursuant to RIGL s. 42-46-5 (a)(2)
 - iii. Executive Session Minutes
 - a. 2/25/21 – Finance Committee
 - b. 2/25/21 – Board Meeting
15. Next Scheduled Meeting:
 - i. Board Meeting
16. Adjournment

PUBLIC ACCESS TO MEETING – ZOOM or DIAL-INTO CONFERENCE

Join Zoom Meeting: [www.zoom.us](https://us02web.zoom.us/j/87617790021?pwd=RmFDTldScEhEM2VlbHBUNB0Wnpdz09)

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Meeting ID: 876 1779 0021

Passcode: 466109

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Individuals requiring interpreters for the hearing impaired must notify the Bristol County Water Authority, (401) 245-2033, not less than 48 hours in advance of the meeting.

Agenda Posted 3/19/21

1. Secretary of State Website
2. BCWA Main Office Bulletin Board
3. BCWA Operations Department Bulletin Board
4. BCWA Website bcwari.com

Agenda Sent Via Email 3/19/21 for Posting on Public Bulletin Boards

1. Barrington Town Hall
2. Bristol Town Hall
3. Warren Town Hall

**Meeting of the Personnel/Compensation Committee of the
BRISTOL COUNTY WATER AUTHORITY**

**Meeting by Zoom Audio-Visual Teleconference
Pursuant to Executive Order 20-05, March 16, 2020
Third Supplemental Emergency Declaration –
Public Meeting and Public Records Requests**

Thursday, February 25, 2021

Committee members in attendance: John Jannitto, Allan Klepper, Juan Mariscal
Committee members absent: None

Present by Zoom – Directors George Champlin, Georgina Macdonald, Tom Kraig

BCWA staff present – Executive Director Pamela Marchand, Executive Director
Stephen H. Coutu, Mark Champagne, Joseph Granata, Lauren DeRuisseau

1. Call to Order

The committee meeting was called to order at 3:32 pm by Committee Chairman John Jannitto

2. Non-Bargaining Unit Salary Increase

Pamela Marchand stated that a 3% to 3 1/2% salary increase would be justified. There is \$26,000 in the budget. Requesting \$20,000 to be spread out among the non-union employees for the work they did last year.

Director Jannitto made the following motion seconded by Director Macdonald

MOTION: Endorse request of \$20,000.
Motion approved unanimously by aye vote.

3. Adjournment

Director Klepper made the following motion seconded by Director Stanley

MOTION: To adjourn the meeting.
Motion passed unanimously by aye vote.

Personnel Committee Meeting adjourned at 3:50 pm.

George Champlin
Secretary

**MINUTES OF THE FINANCE COMMITTEE MEETING
OF THE BRISTOL COUNTY WATER AUTHORITY**

**Meeting by Zoom Audio-Visual Teleconference
Pursuant to Executive Order 20-05, March 16, 2020
Third Supplemental Emergency Declaration –
Public Meeting and Public Records Requests**

Thursday, February 25, 2021

The committee meeting was called to order at 4:15 pm by Committee Chairman George Champlin.

Committee members in attendance at commencement of meeting: George Champlin, Georgina Macdonald, Christopher Stanley

Also present by Zoom: Board Chairman Allan Klepper, Director Thomas Kraig

BCWA staff present: Executive Director Pamela Marchand, Executive Director Stephen H. Coutu, Mark Champagne, Joseph Granata, Susan Rabideau, Lauren DeRuisseau

1. Evaluation of Financial Advisor Proposals

Committee Chairman Champlin stated that two proposals were received: Hilltop Securities and PFM Financial Advisors. BCWA has worked with Hilltop Securities in the past and everything was very professional and satisfactory. Hilltop Securities has a pricing which is below the other proposal.

Committee Chairman Champlin made the following motion seconded by Director Macdonald

**MOTION: Recommend to the Board of Directors that we use Hilltop Securities as our financial advisor.
Motion passed unanimously by hand vote (Directors Champlin and Stanley) and a vote of aye by Director Macdonald.**

Committee chairman Champlin stated that the Finance Committee will recommend to the Board of Directors that Hilltop Securities be the financial advisor for BCWA.

2. Executive Session:

- i. Investment of Public Funds – Evaluation of General Bond Counsel Proposals pursuant to RIGL s. 42-46-5 (a)(7)**

Director Champlain made the following motion seconded by Director Macdonald

**MOTION: To move into Executive Session i. Investment of Public Funds – Evaluation of General Bond Counsel Proposals pursuant to RIGL s. 42-46-5 (a)(7)
Motion pass unanimously.**

The Board entered Executive Session at 4:18 pm.

The Board returned to open session at 4:21 pm.

Committee chairman Champlin made the following motion seconded by Director Macdonald

MOTION: To seal the executive session minutes.
Motion passed unanimously by aye vote.

Committee chairman Champlin made the following motion seconded by Director Stanley

MOTION: To adjourn the meeting.
Motion passed unanimously.

Meeting adjourned at 4:22 pm.

George Champlin
Secretary

MINUTES OF THE BOARD MEETING OF THE BRISTOL COUNTY WATER AUTHORITY

Meeting by Zoom Audio-Visual Teleconference Pursuant to Executive Order 20-05, March 16, 2020 Third Supplemental Emergency Declaration – Public Meeting and Public Records Requests

Thursday, February 25, 2021

Executive Director Pamela Marchand, Executive Director Stephen H. Coutu, Legal Counsel J. Keough and the following Directors were in attendance at the commencement of the meeting

George Champlin, William Gosselin, John Jannitto, Allan Klepper, Thomas Kraig, Robert Martin, Christopher Stanley, Juan Mariscal

Directors Absent: Juan Mariscal

BCWA staff attending: Michael Crawford, Mark Champagne, Joseph Granata, Susan Rabideau, Lauren DeRuisseau

1. Call to Order

Pursuant to proper notice, the Board Meeting of the Bristol County Water Authority was called to order by Chairman Klepper at 4:32pm by Zoom Audio-Visual Teleconference.

2. Public Input

There was no public input.

3. Minutes

- i. **1/28/21 Public Hearing**
- ii. **1/28/21 Board Meeting**

Director Macdonald made the following motion seconded by Director Gosselin

**MOTION: Approve the 1/28/2021 Public Hearing Meeting minutes.
Motion passed unanimously by hand vote and one yes vote by Director Macdonald.**

Director Juan Mariscal joined the meeting at 4:24pm.

Director Kraig made the following motion seconded by Director Macdonald

**MOTION: Approve the 1/28/2021 Board Meeting minutes.
Motion passed unanimously by hand vote and one yes vote by Director Macdonald.**

4. Executive Director Report

- Executive Director Stephen Coutu stated water purchase remains a little less than last year. Overall, this year the accumulated total remains 6% higher than the prior year total.
- Public meetings were held this month to discuss the dam removals. Matt Belisle from Pare gave a detailed presentation to the Waterview Condo Association on Feb. 18th and addressed concerns regarding potential impacts. A public meeting was held with the Warren Town Council on Feb. 24th where concerns were addressed regarding flooding impacts, fire protection, and private wells.
- Director Macdonald suggested public relations be brought in to address the dam removals and the Pawtucket connection.
- Proposals were received for Bond Counsel, Financial Advisor, and Agricultural Land Lease.
- Commenced negotiations with the union.
- Meters are being replaced as weather permits.
- Experienced two recent leaks on the 12" Metacom water main. Utilizing a new clamp system to make repairs without shutting down.
- Engineering Project Manager Susan Rabideau announced that there are no senior division projects related to drinking water at the Science Fair this year, however there are junior division projects being presented.
- Road restoration will commence on Mt. Hope Avenue in Warren.

5. Financial Report

Mark Champagne stated that a job posting for his position of Manager of Finance was listed in the local papers this week.

Gallons delivered is up almost 7.5% and billing is up 15% for the year. We closed on the new bond on January 28th at .975% for five years, \$6.6M.

6. Rate Study – NewGen Strategies

Michael Maker from NewGen Strategies presented a rate study that reflects the 3.5% rate increase.

7. Report on East Providence Town Council Workshop on the Pawtucket Pipeline

Deferred to executive session.

8. Board Member Town Council Reports

No input.

9. Award of Agricultural Land Lease RFP

Pamela Marchand stated that we received the same two proposals as last year and is recommending that the proposal be awarded to Mr. Frerich, who offered a higher annual payment in the amount of \$4,500 per year, compared to \$4,400 last year. Mr. Frerich has been haying our fields over the last 20 years and has done an excellent job.

Therefore, we are pleased to recommend that the proposal be awarded for Agricultural Land Lease to David Frerich of Frerich Farms and Greenhouses in an amount to be paid to the BCWA of \$375/month for the term of March 1, 2021 through February 28, 2022.

Director Jannitto made the following motion seconded by Director Mariscal

**MOTION: Approve the recommendation of the Executive Director.
Motion passed unanimously by hand vote and one yes vote by Director
Macdonald.**

10. Finance Committee

i. Recommendation for Award of Bond Counsel RFP

Director Macdonald made the following motion seconded by Director Jannitto

**MOTION: Sandra Mack be selected as our Bond Counsel, consistent with our
RFP.
Motion passed unanimously by hand vote and one yes vote by Director
Macdonald.**

ii. Recommendation for Award of Financial Advisor RFP

Director Champlin made the following motion seconded by Director Stanley

**MOTION: Hilltop Securities be given the work for financial advising.
Motion passed unanimously by hand vote and one aye vote by Director
Macdonald.**

11. Award of Maintenance of SCADA and Telemetry Systems Bid

Stephen Coutu stated that we received one bid from a company that has been providing service to us for the past several years. Provided a bid service fee of \$125/hour, which is less than what they charged last year.

Recommend that we award to Harbor Controls as they have provided good service to us for SCADA.

Director Martin made the following motion seconded by Director Mariscal

**MOTION: Approve the recommended contract with Harbor Controls.
Motion passed unanimously by hand vote and one aye vote by Director
Macdonald.**

**12. Award of Task Order Engineering Service for Evaluation of the
Maintenance Garage Facilities**

Stephen Coutu stated that a task order was requested from Pare to review the site across the street from the office to determine what type of building renovations would be needed.

We are recommending that Pare be given this service fee of \$17,000.

Director Martin made the following motion seconded by Director Mariscal

MOTION: Approve \$17,000 for Pare.

Motion passed unanimously by hand vote and one aye vote by Director Macdonald.

13. Task Order – Surveying Services for Water Main Project

Stephen Coutu stated that we have a small water main project in Bristol that needs surveying services.

We are recommending an award to Garofalo and Associates to do the survey work in the amount of \$5,240.

Director Martin made the following motion seconded by Director Mariscal

MOTION: Move to approve.

Motion passed unanimously by hand vote and one aye vote by Director Macdonald.

14. Kickemuit Lower Dam Study Task Order Addendum #1

Stephen Coutu stated that the task order is for Parc Engineering, who has been working on the dam removal project. An additional \$20,000 will be needed for additional work required to address comments received by the general public.

Director Martin made the following motion seconded by Director Mariscal

MOTION: Move to approve.

Motion passed unanimously by hand vote and one aye vote by Director Macdonald.

15. Kickemuit Dam Removal Information on Website

Pamela Marchand noted that Director Macdonald would like to promote more information on our website concerning the dam removal process. Director Macdonald cited lack of comprehensive, factual presentations on this issue and the Pawtucket pipeline issue.

Counsel Joseph Keough and Stephen Coutu were assigned an action item to discuss bringing in RDW group, our public relations firm, and present a plan to the Board at next month's meeting.

Director Martin made the following motion seconded by Director Stanley

MOTION: Carry as an action item for the Board.

**Motion passed 7-2 by hand vote and one aye vote by Director Macdonald.
2 nay votes (Directors Klepper, Kraig)**

16. Personnel Committee

i. Recommended Salary Increase for Non-Bargaining Unit Employees

Director Jannitto stated that the Personnel Committee met earlier today. Last fall, the Board had approved an amount of \$26,000 for this purpose. Pam Marchand and Steve Coutu determined that they can get by with \$20,000.

Director Jannitto made the following motion seconded by Chairman Klepper

MOTION: Approve \$20,000 for the salary increases for non-bargaining unit employees.

Motion passed unanimously by hand vote and one aye vote by Director Macdonald

17. Quarterly Write-Offs – For Information Only

Discussion regarding write-offs.

18. Comments on Retirement of the Executive Director

Board of Directors expressed well wishes for Pamela Marchand on her retirement.

19. Executive Session

Chairman Klepper made the following motion seconded by Director Gosselin

MOTION: To go into Executive Session. i. Collective Bargaining pursuant to RIGL 42-46-5 (a)(2) ii. Executive Session Minutes – 11/5/20 Personnel Committee Meeting, 11/12/20 Personnel Committee Meeting, 11/18/20 Board Meeting, 11/19/20 Special Board Meeting, 11/24/20 Special Board Meeting, 11/30/20 Special Board Meeting, 12/16/20 Board Meeting, 1/28/21 Board Meeting

Motion passed unanimously by hand vote and one aye vote by Director Macdonald

The Board entered Executive Session at 6:02 pm.

The Board returned to open session at 6:30 pm.

Director Martin made the following motion seconded by Director Macdonald

MOTION: To seal the executive session minutes.

Motion passed unanimously by hand vote and one aye vote by Director Macdonald

20. Next Scheduled Meeting

- i. Board Meeting 3/25/21

Director Martin made the following motion seconded by Director Gosselin

MOTION: To adjourn meeting.

Motion passed unanimously by hand vote and one aye vote by Director Macdonald

21. Adjournment

The meeting was adjourned at 6:32 pm.

George Champlin
Secretary

Executive Director's Report for March 25, 2021

This meeting will again be held in Zoom. As an Executive Session is included on the agenda, participants will be first placed into a "waiting room" then brought into the regular meeting. For the executive session, non- participants will be put into the "waiting room" and brought back into the meeting at the conclusion of executive session.

As the Finance Committee meeting also has an Executive Session, the Zoom information for the Finance Committee and Board meetings will have the same access information.

Goals, as requested to be placed on Executive Director's Report

1. Pursue construction of connection to Pawtucket Water Supply Board.

a. Phase 1

- i. Construction work is scheduled to begin on April 5th. CB Utilities will tackle this project with two crews. One starting on Pawtucket Avenue and the other on Elder Avenue. A joint press release with East Providence was issued on March 8th.

b. Phase 2

- i. Following the presentation with the East Providence City Council on February 22nd, Beta has been reviewing and updating their initial cost proposal for the design of Phase II which was several years old and the project was not well defined at that time. Beta has prepared an Addendum request for the Board's consideration. Additionally, Beta has reviewed and analyzed a route alternative that was discussed by the East Providence City Council to avoid construction adjacent to the high school. In summary, the route alternative would add approximately \$3 million in cost to the project. The technical memo prepared by Beta was forwarded to East Providence.

c. Prepare system to initiate monthly billing.

- i. Now that the new billing rates are in place, the finance team continues to work on setting up a lockbox for the monthly billing. There are numerous data details to be worked out between the bank and billing company however they are close to finalizing the process.
- ii. We have six data collectors operational, collecting data from approximately 90% of the installed meters. We are still seeking locations to install additional data collectors where blind spots exist in concentrated areas.

2. Create realistic upper management succession plan.

- i. Mark Champagnes' position has been advertised and we anticipate commencing interviews in the coming month. Mark has formally set his retirement date at June 30, 2021. He also would be available as a consultant after that date (as needed) to assist his replacement with issues such as budget, long term rate and debt service analysis, new bonding, audit, annual report, and any other issue necessary.

3. Plan for demolition of the water treatment plant.

- a. Pare is working on specifications for the demolition of the plant and associated structures in accordance with the future use of the property. An environmental assessment is being conducted in conjunction with future use of the site to ensure that demolition and restoration activities are performed in accordance with applicable regulations.

Water Purchased

The annual accumulated usage for the 12 months of FY21 ended 6.3% higher than the prior year and 2% above the average of the last 5 years. It was the first year in five years that saw an increase in consumption. The increase is attributed to more people being home during the pandemic and the drier than normal summer months.

The Providence monthly charges and usage is attached, as are the graphs for the annual comparison of the monthly cumulative purchased water.

Kickemuit Dam Removals

A project fact sheet was developed by Pam and Wenley Ferguson of Save the Bay, and this information along with the recent public presentations are on the website.

Pare Engineering is finalizing the permit applications and once the permits are submitted to the RIDEM and the CRMC, there will be additional opportunities for public comment. The timeframe for submission to these agencies is this May.

A letter of objection to this project was received on February 25, 2021.

Meter Replacement Program

During the month of February, 30 new meters were installed, and 16,190 of the 17,285 (94%) have been replaced. With warmer weather, we anticipate that the number of replacements will improve.

Update of Strategic Plan

The Strategic Plan has been updated for the coming year and is listed as an agenda item for discussion.

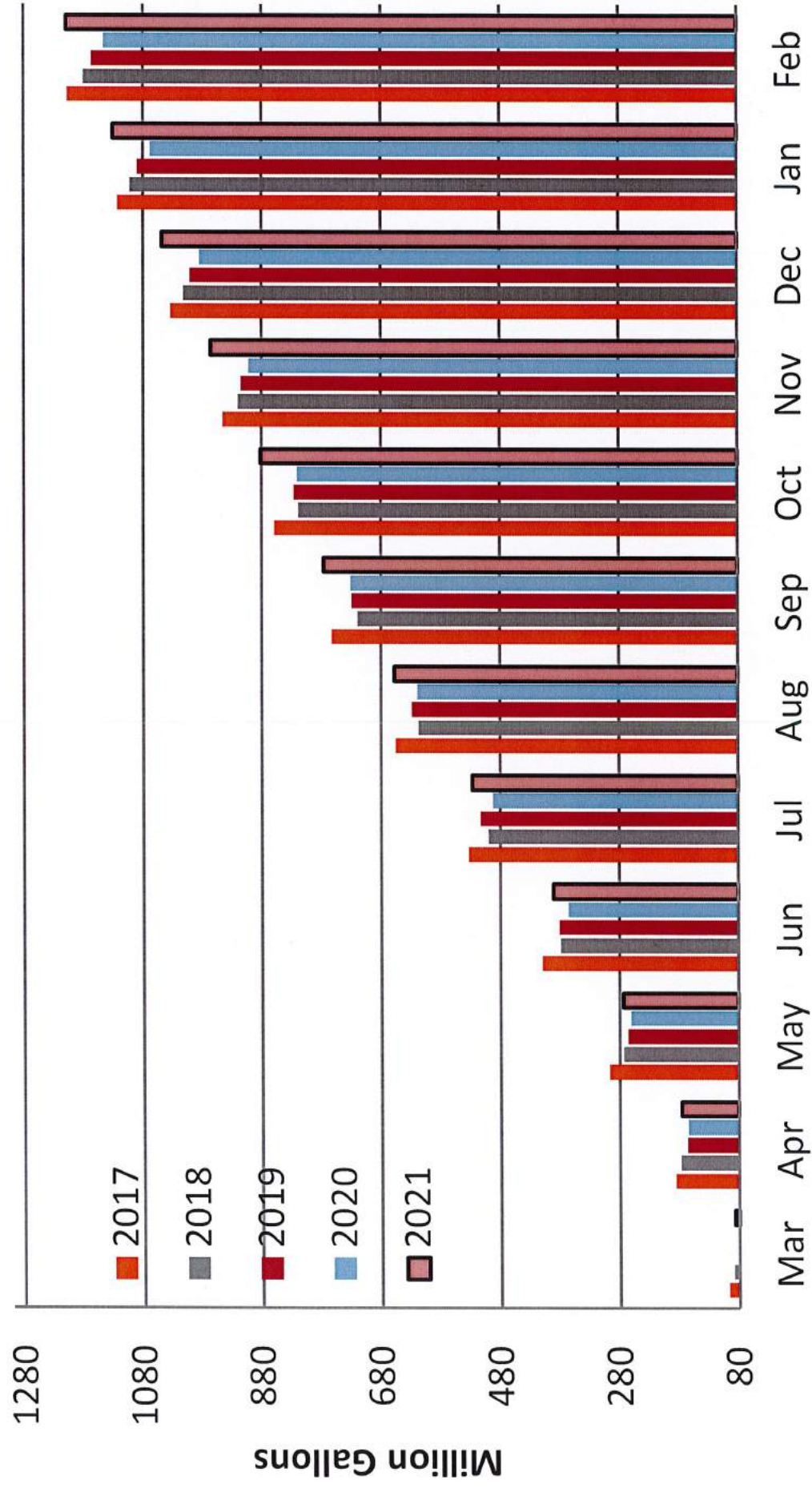
Operations Report by Mike Crawford – see attached.

Engineering Report by Sue Rabideau – see attached.

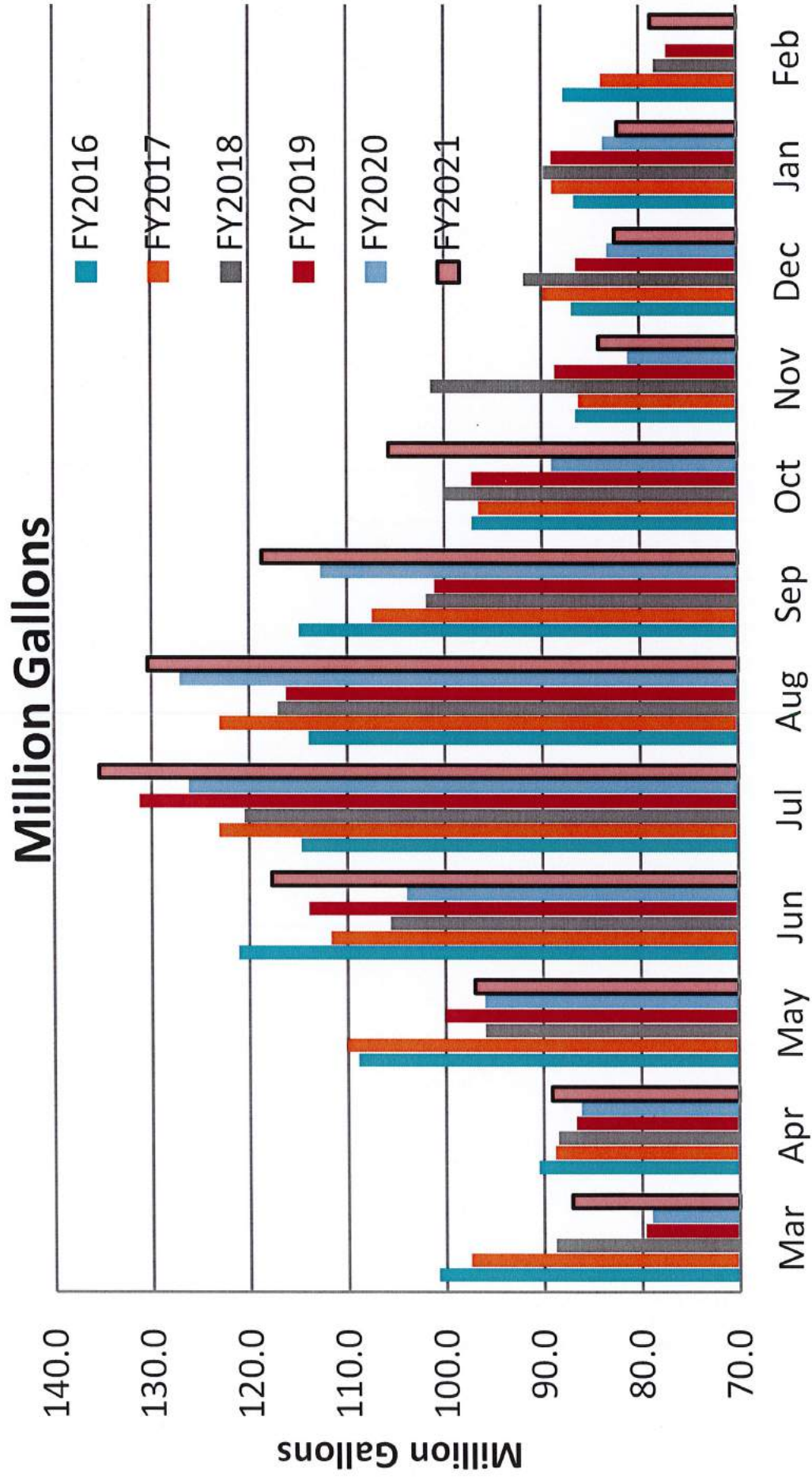
MIS Report by Randy Manchester – see attached.

Providence Water - Monthly Charge							BCWA		
	Read	# Days	Billed Amount	\$/Day	Billed MG	MG/day	PWmetr for Month Month	Max Day	Ave Day
FY2019									
March	27 Mar	29	\$ 140,404.36	\$ 4,841.53	77.7	2.68	79.5	2.77	2.57
April	25 Apr	29	\$ 149,748.40	\$ 5,163.74	82.9	2.86	86.6	3.63	2.89
May	29 May	34	\$ 196,726.83	\$ 5,786.08	108.9	3.20	100.0	3.82	3.23
June	26 Jun	28	\$ 196,427.05	\$ 7,015.25	108.8	3.89	113.9	4.27	3.80
July	26 Jul	30	\$ 232,663.63	\$ 7,755.45	128.8	4.29	131.2	4.68	4.23
August	28 Aug	33	\$ 231,141.21	\$ 7,004.28	128.0	3.88	116.2	4.63	3.75
September	28 Sept	30	\$ 192,547.84	\$ 6,418.26	106.6	3.55	101.0	4.29	3.37
October	26 Oct	29	\$ 185,730.34	\$ 6,404.49	102.8	3.54	97.2	3.60	3.14
November	27 Nov	32	\$ 160,484.83	\$ 5,015.15	88.86	2.78	88.6	3.68	2.95
December	26 Dec	29	\$ 151,272.63	\$ 5,216.30	83.76	2.89	86.4	3.13	2.79
January	29 Jan	34	\$ 178,896.59	\$ 5,261.66	99.06	2.91	88.9	3.13	2.87
February	25 Feb	27	\$ 138,457.54	\$ 5,128.06	76.67	2.84	77.1	3.073	2.75
Total FY2019			\$ 2,154,501.25		1192.9	3.27			
From Previous Year					-1.6%				
FY2020									
March	25 Mar	28	\$ 133,691.61	\$ 4,774.70	74.03	2.64	78.92	2.79	2.63
April	26 Apr	32	\$ 166,000.30	\$ 5,187.51	91.92	2.87	86.10	3.14	2.78
May PW	29 May	33	\$ 79,120.91		43.80		36.98	3.09	
May EP	21 May	20	\$ 94,310.00		52.23		52.23	3.80	2.61
June	25 Jun	27	\$ 169,315.97	\$ 6,270.96	93.75	3.47	103.86	3.97	3.46
July	26 July	31	\$ 227,811.02	\$ 8,437.45	126.14	4.07	126.25	4.52	4.07
August	28 Aug	33	\$ 252,836.21	\$ 7,661.70	140.00	4.24	127.1	4.41	4.10
September PW	17 Sep	19	\$ 147,483.72	\$ 7,762.30	81.67	4.30	NA	4.49	4.30
EP	30 Sep	13	\$ 83,948.24	\$ 6,457.56	46.49	3.58	NA	4.25	3.58
October PW	28 Oct				0.34				
October EP	30 Oct	31	\$ 160,683.49	\$ 5,183.34	88.98	2.87	NA	3.29	2.87
November PW	22 Nov	25	\$ 35,517.82	\$ 1,420.71	19.67	NA	NA		
November EP	31 Nov	31	\$ 70,811.69	\$ 2,284.25	39.21	NA	NA		
December	23 Dec	31	\$ 151,368.34	\$ 4,882.85	83.82	2.70	83.2	2.90	2.68
January	27 Jan	35	\$ 173,550.95	\$ 4,958.60	96.10	2.75	83.6	2.87	2.70
February	25 Feb	29	\$ 143,066.35	\$ 4,933.32	79.22	2.73	78.0	2.711	2.69
Total FY2020			\$ 2,089,516.62		1157.35	3.16			
From Previous Year					-3.0%				
FY2021									
March	30 Mar	34	\$ 172,796.06	\$ 5,082.24	95.68	2.81	87.1	3.17	2.81
April	24 Apr	25	\$ 138,760.94	\$ 5,550.44	76.83	3.07	89.1	3.90	2.97
May PW	26 May	32	\$ 176,283.37	\$ 5,508.86	97.61	3.05	97.0	3.78	3.13
June	26 June	31	\$ 214,342.17	\$ 6,914.26	118.69	3.83	117.7	4.85	3.92
July	28 July	32	\$ 257,504.61	\$ 8,047.02	142.59	4.46	135.4	5.17	4.37
August	25 Aug	28	\$ 223,935.00	\$ 7,997.68	124.00	4.43	130.4	4.81	4.21
September	25 Sept	31	\$ 259,425.83	\$ 8,368.58	124.43	4.01	118.7	4.30	3.96
October	28 Oct	33	\$ 255,368.38	\$ 7,738.44	121.36	3.68	105.7	4.13	3.41
November	24 Nov	27	\$ 163,378.28	\$ 6,051.05	77.64	2.88	84.2	2.97	2.81
December	23 Dec	29	\$ 165,636.05	\$ 5,711.59	78.72	2.71	82.5	2.79	2.66
January	27 Jan	35	\$ 197,352.21	\$ 5,638.63	93.79	2.68	82.2	2.82	2.65
February	24 Feb	28	\$ 165,789.66	\$ 5,921.06	78.79	2.81	77.5	2.90	2.77
Total FY2021			\$ 2,390,572.56		1230.13	3.37			
					6.3%				

Purchased Water, Cumulative per FY



Monthly PW Purchased Water



Date: March 16, 2021

To: Steve Coutu, P.E.

From: Michael Crawford, P.E.

RE: Operations Report

COVID-19

The Bristol County Water Authority (BCWA) Operations Department continues to operate under pandemic conditions with staff maintaining separate reporting locations. This strategy has been in place since the early stages of the pandemic and will hopefully soon transition as vaccines become more widely available.

Facilities/Water Quality

Recently, Operators installed additional pressure monitoring equipment that expands the pressure monitoring capabilities of the BCWA. Once fully deployed this system will be setup to notify of pressure anomalies in the system and help with overall system operation.

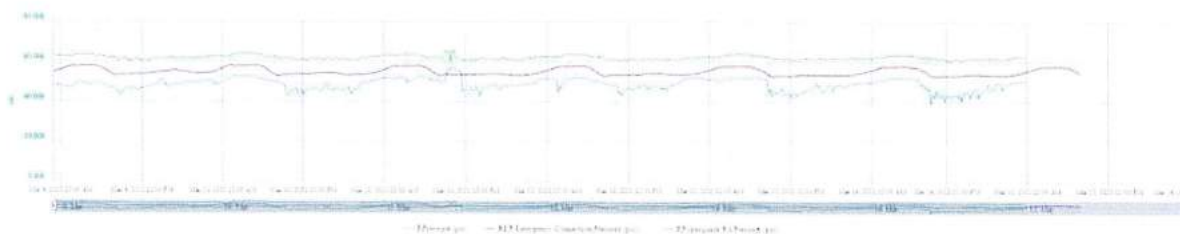


Figure 1. Pressure Monitoring Data

Water quality sampling continues in the system with total coliform sampling rule and surface water treatment rule, and disinfection by product rule sampling being performed over the past month.

Transmission and Distribution

This winter has been active with leaks. BCWA operators have been out in the system repairing mains, fire services, and renewing domestic services. Operators took advantage of a recent break in the weather to patch many of the break sites. In addition, to managing the continued inflow of repair work, time was spent collecting GIS coordinates of new or rehabilitated assets from the previous year's cleaning and lining project.



Figure 2. Pipe Repair Restoration

Projects

- The lead soil contractor has demobilized for the winter and anticipates returning to the site to address the restoration phase of the project as it relates to work associated with BCWA properties. Discussions continue between RIDEM, BCWA and the abutter as it relates to the work identified on the abutter's parcel.
- Pare is coordinating with their subconsultants to perform the site assessment necessary to develop the site restoration plans in advance of plant demolition. Initial site visits are planned for next week.
- The PVC sliplining project continues with easement filings almost complete, the work to complete the CP system will commence this Spring to finalize the project.
- The administration lift replacement bid process is complete, a low bidder was identified and recommended for award. Upon approval, this project will transition to the construction phase with the contractor.
- The design of the Hope St. PS continues and is approaching final design. Recently BCWA, Harbor Controls (BCWA's SCADA service provider), and Pare met to coordinate the process control to ensure the new pump station will integrate with the rest of the system.
- The transmission redundancy project will begin this Spring. A preconstruction meeting was held with the Contractor, City of East Providence, BETA and BCWA. Follow up coordination meetings are being scheduled with parties along the alignment.
- Pare has recently completed the water supply system management plan and is submitting to the State for comments. After a review/comment period the document will be finalized and work on the required emergency response plan will take place.

BCWA Engineering Report – for March 25, 2021

Prepared by: Susan Rabideau, PE, Engineering Project Manager

❖ 2020 Water Main Renewals

Project Budget Breakdown	Approved Budget	change orders*	Spent	Remaining in Budget
Contractor	\$ 1,677,333	\$ 600,000	\$ 1,770,000	\$ 507,333
Police (thru Oct)	\$ 130,000	\$ 50,000	\$ 200,000	- \$ 20,000
Inspection	\$ 70,000	\$ 49,000**	\$ 117,000	\$ 2,000
Contingency	\$ 222,667	(\$-49,000)	\$ 4,000	\$ 169,667
total	\$ 2,100,000	\$650,000	\$ 2,091,000	\$ 659,000

* Change Order to install new 2" main in Rock, Shaws and Ryan Streets \$ 275,000

Change Order to Clean and Line Mt Hope Ave \$ 375,000

** Approved change order for inspection, to be paid from contingency

The cleaning and lining work by Walsh is complete, except for Mt Hope Avenue, which will be completed this spring. There will be final paving and site restoration on Hope Street. Attached is the flier that was mailed to Mt Hope Avenue residents this week.

❖ Distribution System (Water Main) Improvements 2021

Metacom Ave, Robin to Gooding and Tupelo to Fatima. Includes a pressure reducing valve on Michael Dr.	12" ductile iron water mains to expand the high service zone. 2" polyethylene mains in Maytum and Sousa Streets.	90% Plans submitted to RIDOT. Anticipated award at April Board meeting. Estimated budget \$2,270,000
Smith Street, with connection to Wilcox Lane	Improve flow and water quality. Allow high service zone expansion.	In-house design and bidding. Anticipated bidding spring 2021.
Starboard Lane and Hope Lane, Barrington	Replace old cast iron mains with polyethylene mains	Estimated Budget \$350,000

❖ Science Fair Winners

No Senior Division awards (there were no senior projects on drinking water topics).

Junior division: 1st place, \$100 Brianna Deschenes, St Luke's School Barrington (Brianna's sister won the first place award for the past two years!)

2nd Place, \$75 Carolina el Khoury , St Luke's School, Barrington

Attached: Gantt Chart of ongoing BCWA projects



WATER SYSTEM IMPROVEMENT PROJECT CLEANING AND LINING OF WATER MAINS



Before and After the lining process

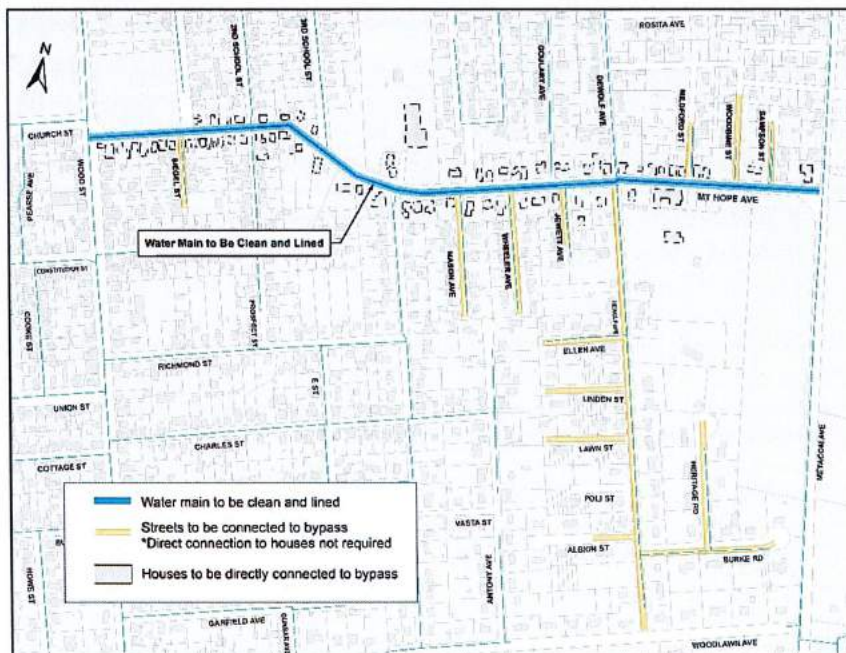
The BCWA will rehabilitate the water pipes on **Mt Hope Avenue**, Bristol, during the spring of 2021. The existing pipes are almost 100 years old and have become tuberculated on the inside. The work involves “cleaning and cement-mortar lining” the interior of the old cast iron water pipes and will improve water quality and flow. You can view a video of this process on our website at <https://bcwari.com/bcwa-projects/>.

BCWA hired W. Walsh Company to perform the work. The estimated project budget is \$375,000, which includes improvements to the water system, police and other related costs.

HOW WILL THIS WORK AFFECT YOU?

In order to perform these upgrades, the existing water pipes must be taken out of service for several weeks. While the water pipe is shut down, water supply will be provided to affected customers through temporary above-ground water bypass pipes. These pipes will be connected directly to the homes on Mt Hope Ave (shown in bold on the map). The Contractor may need to contact you to set up an

appointment to obtain access to your basement. This is necessary to provide the proper connection hoses to your home so your water service will be uninterrupted. They may need access again at a later date and will contact you prior to that time. There are several streets where the water main will be connected to the bypass system (but direct connections to each home will not be required). These streets are shown in grey on the map.



(over)

PLEASE WATCH YOUR STEP!

Temporary water service piping at driveway entrances will be covered with an asphalt or a rubber temporary ramp. At street crossings, the pipes will be buried below ground. There will also be smaller hoses connecting the bypass pipe to your home.



The water in the bypass pipes is safe to drink. It is tested and meets the same RI Dept. of Health water quality standards as the water from underground pipes.

PROJECT SUMMARY

- The water mains in Mt Hope Avenue will be cleaned and lined this spring. The Contractor, W. Walsh Co., will begin laying the bypass piping in March.
- If a planned temporary water service shut-off is necessary, affected residents will be notified in advance using door hangers. Service interruptions will be minimized to the extent possible.
- Trees, plants and lawns will be protected to the extent possible. If removed or damaged, they will be replaced.
- Please use extra caution when walking, driving, biking or running in the construction project area and over any temporary piping structures
- BCWA will require the Contractor to maintain the area safe throughout the project and all areas will be restored to original conditions.
- All areas excavated will be restored and patched with temporary pavement as soon as possible. There may be steel plates in the roadway while the work is ongoing.
- Normal work hours: 7:00am – 3:00pm, Monday through Friday.
- Police Officers and flagging operations will be used daily for each construction phase to maintain traffic in the construction work zone.



TEMPORARY INCONVENIENCE, PERMANENT IMPROVEMENTS

Clear, high quality drinking water and adequate fire protection is our ultimate objective. We realize that there are going to be some inconveniences during the project such as noise, water shutdowns, traffic detours and temporary pavement. We will strive to minimize the inconveniences to our customers. Please keep in mind that these temporary nuisances allow us to make permanent improvements to our system. Should you have any questions or concerns about a worker wanting access to your basement, please don't hesitate to call our office at 401-245-2022 between 8:30 AM and 4:00 PM, Monday - Friday.

Thank you for your patience and cooperation, **BRISTOL COUNTY WATER AUTHORITY**

Project and task	4th Qtr 2020	1st Qtr 2021	2nd Qtr 2021	3rd Qtr 2021	4th Qtr 2021	1st Qtr 2022	2nd Qtr 2022	3rd Qtr 2022	4th Qtr 2022	1st Qtr 2023	2nd Qtr 2023	3rd Qtr 2023	4th Qtr 2023	1st Qtr 2024	2nd Qtr 2024	3rd Qtr 2024	4th Qtr 2024
Pawtucket Pipeline - Phase 1 (BCWA to EP tanks, 9,000')																	
Design, easements, permits (complete)																	
Bidding (complete)																	
Construction	submittals																
Pawtucket Pipeline - Phase 2 (EP tanks to Pawtucket, 27,000')																	
Investigate/choose pipe alignment																	
Survey																	
soil borings																	
Design (30%)																	
Design (100%)																	
Water Quality (blending) study																	
Bidding																	
Construction																	
Water Quality Assurance																	
Install pressure and water quality collectors																	
Backflow Prevention Program																	
Unidirectional Flushing program																	
Integrate hydraulic model, SCADA, GIS, Asset Mngt																	
High Pressure Zone Expansion																	
Hope Street Pump Station																	
Purchase corner lot, demolish home (complete)																	
Environmental Study, permits, site work (complete)																	
Design of Pump Station	75% complete																
Construction																	
Water main installation, pressure reducing valves, low service tie-ins, etc.																	
Miscellaneous system connections																	
Metacom Ave, Robin to Gooding, Tupelo to Fatima (3500')	design and bid																
Metacom Ave, Fatima to Overhill (2000')																	
Metacom Ave, Franklin to Tower (1800')																	
Bay View, Metacom to Manchester (2600')																	
Hope St, Tupelo to Gibson (2700')																	
Divest of Non-Operable Assets																	
Child Street Treatment Plant																	
Upper and Lower Kickemuit Dams																	
Nayatt Treatment Plant																	
MA water sources																	

Bristol County Water Authority Information Technology Report

March 17th, 2021

Randall S. Manchester, IT Specialist

Most of the previous month entailed adding new functionality to the base systems (modifications, recent reports, server patches, bug fixes, improvements, etc.) and the IT department's day-to-day running.

Upgraded Phone System (update)

As of 03/17/2021, we have still not selected a VOIP telephone provider. The hang-up seems to be some pushback from Cox Communications on whether we can purchase the system off the state bid (State MPA). Once we have clarity on this issue, we can move forward and select a vendor.

Additional Spam and Ransomware Protection for Email (Update)

Just a quick update here. The spam emails getting sent to our users' email boxes have reduced dramatically. This new tool has turned out to be a great addition to our spam and ransomware arsenal. It's only one small part of a multi-layered solution, but every bit helps.

SCADA (Supervisory control and data acquisition) Upgrade (update)

As reported last month, we are in the process of upgrading our SCADA hardware and software. I have completed the new SCADA server provisioning, and our Scada Vendor (Harbor Controls) has started to install the latest software on the server. I'm still anticipating completion sometime this month, but that's up to Harbor controls as this is a non-emergency and low priority job for them.

Website Statistics

Unique visitors – The last four complete months and MTD. Very static traffic.

November:	2,547
December:	1,988
January:	2,499
February:	2,441
March:	1,423 (MTD)



MEMO

Date: March 15, 2021

To: BCWA Board of Directors

From: Stephen Coutu, P.E.

Re: Lift Replacement
Recommended Contract Award to Coletta Contracting Inc.

BCWA received six bids for the construction of the Lift Replacement Project for the administration building on March 9, 2021. The bids ranged from a low of \$179,700 to \$306,000. Attached to this memo is the bid sheet and evaluation prepared by the engineer for this project, Tom Simbro of Wright-Pierce. Upon review and based on the evaluation, it is recommended that a contract award be made to the lowest, responsive bidder, Coletta Contracting, for their price of \$179,700.

Attachments:

- Bid Evaluation and Recommendation of Award from Tom Simbro, Wright-Pierce, March 12, 2021
- Bid Tabulation, March 11, 2021

March 12, 2021
W-P Project No. 20307A

Stephen Coutu, PE, Executive Director and Chief Engineer
Bristol County Water Authority
450 Child Street
Warren, RI, 02885

Subject: 450 Child Street Lift Replacement
Bid Evaluation and Recommendation of Award

Dear Mr. Coutu,

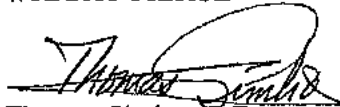
Bids for the construction of the 450 Child Street Lift Replacement Project were opened on Tuesday, March 9, 2021. Bids were received from six general contractors. A bid tabulation is included in Attachment A. The apparent low bidder is Coletta Contracting Co., Inc. of Seekonk, Massachusetts, with a bid of \$179,700 (see Attachment B). The second and third lowest bids were approximately 7% to 22% higher than the low bid, respectively.

We have contacted several Coletta references on similar elevator projects. The references were satisfied with Coletta Contracting's performance and expressed an interest in working with Coletta in the future (see Attachment C). Coletta is a fully insured and registered contracting company in the state of Rhode Island and holds DCAMM certification in the state of Massachusetts (see Attachments D and E).

We have also contacted Coletta Contracting's banking institution, Bank RI regarding their financial stability. Bank RI reports that Coletta Contracting has been a customer since 2013, and that Coletta has reliably met the terms of all financial agreements, and that their deposit accounts are maintained satisfactorily and are appropriate to banking standards. Bank RI has never taken action against Coletta Contracting, and they have no reservation about Coletta Contracting's financial standing regarding the performance of this project.

Based on our evaluation above, we recommend the 450 Child Street Lift Replacement project be awarded to Coletta Contracting Co., Inc. as the lowest, responsive bidder.

Sincerely,
WRIGHT-PIERCE



Thomas Simbro, P.E.
Senior Project Manager, Associate
tom.simbro@wright-pierce.com

Attachments

- A – Bid Tab
- B – Bid Package
- C – Reference Check
- D – DCAMM Certification
- E – RIDOS Summary

Bristol County Water Authority
 450 Child St Lift Replacement
 BID TAB



20307A
 3/11/2021

Engineer's Estimate = \$300,000

Tom Simbro / Taylor Gray

Engineer's Estimate = \$300,000				BIDDER'S NAME											
Tom Simbro / Taylor Gray				Coletta Contracting		ADS		EW Burman		Maron Construction		JJ Cardosi Inc		Hart Engineering	
				UNIT AMT	BID	UNIT AMT	BID	UNIT AMT	BID	UNIT AMT	BID	UNIT AMT	BID	UNIT AMT	BID
BID QUANTITIES															
	Item	Qty.	UNIT												
BASE BID															
1	Lift Elevator Replacement, Complete-In-Place	1	LS	\$179,700.00	\$179,700.00	\$192,500.00	\$192,500.00	\$219,000.00	\$219,000.00	\$244,000.00	\$244,000.00	\$261,900.00	\$261,900.00	\$306,000.00	\$306,000.00
TOTAL BASE BID AMOUNT ITEMS					\$179,700.00		\$192,500.00		\$219,000.00		\$244,000.00		\$261,900.00		\$306,000.00



MEMO

Date: March 15, 2021

To: BCWA Board of Directors

From: Stephen Coutu, P.E.

Re: Task Order for Engineering Inspection Services for 2021 Construction Projects

Attached is Pare's proposal to assist the BCWA on construction inspection services for the 2021 construction projects. We are anticipating a very busy construction season with the following projects: Mt Hope Avenue Cleaning and Lining, Metacom Avenue water main improvements, Hope Street Pump Station project, and other smaller water main improvement projects designed in-house. We have utilized the services of the Pare inspector, Ted Bailey for the last several years. He has had considerable construction experience and has worked with the contractors to provide a high-quality project while minimizing change orders.

The rates are the same as last year for this type of work. Pare has estimated 1,696 hours for this effort and BCWA will be billed only on hours worked.

It is recommended that the attached Task Order be approved in an amount up to \$180,540.

EXHIBIT A

BRISTOL COUNTY WATER AUTHORITY

ENGINEERING SERVICES TASK ORDER AGREEMENT

Task Order Number:

Consultant Name: Pare Corporation

Task Order Name: Construction Observation Services – 2021 Infrastructure Improvements

Task Order Amount: \$ 180,540.00

Estimated Completion Date: October 15, 2021

BCWA Contact: Susan H. Rabideau, P.E.

I. Compensation:

Total compensation to the Consultant for Task Order Work shall be as presented in the Scope of Work (*Attachment 1 to this Task Order*), Task Order Budget (*Attachment 2 to this Task Order*), Task Order Schedule (*Attachment 3 to this Task Order*) and Task Order Project Management Plan (*Attachment 4 to this Task Order*) and shall not exceed the Task Order Budget without prior written approval by Bristol County Water Authority. The aforementioned Attachments shall be incorporated by this reference in this Task Order Agreement.

Hourly Rate Task Orders: The Consultant will be paid an hourly rate that includes labor, overhead and profit. In addition, the Consultant may be paid out-of-pocket costs if described in Attachment 2, which must be approved in advance by the BCWA. Attachment 2 must identify the particular persons or classes of persons who will perform Work under this Task Order and the hourly rate for each. The hourly rate for these individuals shall be as set forth in the Agreement.

Consultant shall not bill for persons or classes of persons not listed in Attachment 2, or at hourly rates different than specified in the Agreement. It is understood that rates will not be annually adjusted as described in the RFP. These hourly rates compensate Consultant for all payroll and employee benefit costs, plus all other expenses including overhead and profit. Unless specified separately in Attachment 2, charges for clerical, administrative, accounting, legal and computer personnel are included in overhead and may not be billed at an hourly rate.

The hours billed by Consultant shall not exceed hours actually worked on the Work, as shown in Consultant's timekeeping records. Consultant's invoices shall include a description of the work performed and the hours worked by each person for the billing period. Invoices must meet the requirements set forth in the Agreement.

Lump Sum Task Orders: In response to a requested Task Order, the Consultant, at the option of the BCWA, may submit a Lump Sum Not to Exceed Cost Proposal.

If reimbursable expenses are listed in Attachment 2, Consultant shall bill for such expenses at actual costs without markup. Consultant shall provide a copy of the underlying invoice, voucher or other document supporting the expense with each Task Order Invoice.

Payment of Task Orders: Upon completion of the work, Consultant will be paid a lump sum not to exceed the amount set forth in Attachment 2 for work, costs and expenses. If warranted by the project schedule and agreed upon in advance by the BCWA, the Consultant may submit milestone invoices per project milestones set forth in Attachments 2 and 3, or monthly invoices.

Content of Attachments:

A minimum of the following information shall be provided for each attachment to this Task Order:

Attachment 1: Scope of Work

- Responsibilities of the Consultant
- Responsibilities and expectations of the BCWA
- Detail on Task Order deliverables by phase
- Details on each phase of the Work, including assumptions
- A list of items or tasks not included in the Work

Attachment 2: Budget

- Budget items detailed into work phases consistent with Attachment 1 Budgets for project workshops
- Hourly charges consistent with the Price Proposal (Exhibit **B** to the Agreement, which is incorporated herein by this reference.)
- Price details on all anticipated Task Order charges, including Other Direct Costs Complete pricing for all deliverables

Attachment 3: Schedule

- Schedule items detailed into work phases consistent with Attachment 1
- Clear identification of milestones
- Clear identification of deliverable completion and submittal dates

Attachment 4: Project Management Plan

- Identification of Project Manager and Project Team
- Signature of Authorized Representative that Project Manager and Team will not be reassigned off the Work without prior written authorization by the BCWA

ATTACHMENT 1: SCOPE OF WORK

It is our understanding that BCWA is requesting construction observation services for the 2021 construction season. Work this season is expected to include cleaning and lining, paving, the construction of the new Hope Street pump station, the installation of a new pressure-reducing valve, Metacom water main installation, and other small water main projects designed by BCWA staff. This construction season is expected to start by the end of March 2021 with the installation of bypass piping and continue for approximately 30 weeks. Provided below is Pare's anticipated scope of services to assist BCWA with this project.

Task 1 – Construction Project Management/Observation

Pare will perform the various required construction-related engineering tasks, including:

Construction Observation

- Observe contractor during construction activities to verify conformance to the Contract Documents (observed discrepancies will be brought to the attention of the BCWA immediately).
- When work is not being performed in accordance with the Contract Documents, the Resident Project Representative shall contact BCWA immediately for resolution and stop work only at BCWA's direction.
- Maintain daily field reports, logs and photographs, to be submitted to BCWA weekly. Reports shall note the field activities, materials installed, depth of water main, utilities encountered, personnel and equipment onsite, etc.
- Measure quantities for payment.
- Provide hand sketched diagrams, and measurements for service tie-cards for each house service modified on forms provided by the BCWA. Tie-cards for service renewals shall be submitted within 2 weeks of installation.
- Assist BCWA personnel when obtaining GPS locations of all new appurtenances.
- Provide record drawings of the completed project and tie card sketches of valves and other appurtenances. As-builts should be submitted within two weeks of the installation of work.

The intent of the construction observation is to have one full-time Resident Project Representative (RPR) on site during construction activity. BCWA anticipates that the RPR may be asked to inspect more than one project simultaneously or that the individual projects may have more than one work site, in any of the three Towns in Bristol County. In the event the construction activities exceed the ability of the RPR to effectively fulfill the role, Pare may request additional oversight be added in the form of an additional resident. Should workload require, BCWA may also request an additional resident observer. Approval of this request will be at the discretion of BCWA.

Construction Project Management

- Attend periodic construction progress meetings.
- Provide project updates for the BCWA to post on their website.
- Review contractor payment requests.
- Assist with the preparation of change orders.
- Monitor project schedule.
- Provide punch-lists at project completion and assist with project close-out.



Task 2 – Project Management

Throughout this project, Pare will manage the invoices and scheduling for the construction observation effort. Pare will provide coordination and support for BCWA to ensure that the goals of this project are addressed.



ATTACHMENT 2: BUDGET

BCWA shall pay Pare Corporation an amount based on actual accrued time for services rendered by principals and employees assigned to the Project in accordance with the Schedule of Fees attached to the Proposal for General Engineering Services dated September 17, 2019. Pare Corporation's estimated fee to complete the Scope of Services outlined herein is approximately **One Hundred Eighty Thousand Five Hundred Forty Dollars (\$180,540.00)**. A breakdown of our fee estimate is provided below.

Task	Man-hours	Fee
<u>Pare Services</u>		
Task 1 – Full-time Resident Project Representative (\$105/hr)	1,350 hours*	\$ 141,750.00
Part-time Resident Project Representative (\$95/hr)	338 hours	\$ 32,110.00
Task 2 – Project Management	8 hours	\$ 1,480.00
Sub- Total	1,696 hours	\$ 175,340.00
<u>Reimbursable Expenses</u>		
Mileage (\$0.575/mile)		\$ 5,200.00
Total		\$ 180,540.00

This represents our best judgment at this time as to the effort required to achieve the stated objectives. It should be recognized that should the Scope of Work or corresponding level of effort upon which this proposal is based change, an increase or decrease in charges may result. You will be notified of any change regarding an increase in charges and we will not exceed the recommended budget without your approval, nor will be required to work beyond the approved budget.

As described in Attachment 1: Scope of Work, the intent of the construction observation is to have one full time Resident Project Representative (RPR) on site during construction activity. Pare has also budgeted for a second resident engineer to be on-site as workload requires. Pare has budgeted 25% of the full-time resident hours for the second resident.

*Task 1 hours assume 9 hours per day, five days per week. Nine hours per day includes one hour per day for administrative work on as-builts and reports.



ATTACHMENT 3: SCHEDULE

The anticipated time period for performance of the Scope of Services described in Attachment 1 – Scope of Work is estimated to be approximately 30 weeks. An estimated timeframe for each task is provided below.

Task	Anticipated Timeframe
1. Construction Project Management/Observation	<i>Project Duration</i>
2. Project Management	<i>Project Duration</i>



ATTACHMENT 4: PROJECT MANAGEMENT PLAN

The Project Team to provide professional engineering services for this Task will be comprised of selected individuals from Pare's Environmental Division, all of which are based in our Lincoln, RI office. Each member of the Project Team has extensive experience in the water industry, including previous experience working for the Bristol County Water Authority (BCWA).

Mr. Timothy P. Thies, P.E., Senior Vice President, will serve as Principal-in-Charge. In this capacity, he will be responsible for personnel oversight and quality control. Mr. Thies is a licensed Professional Engineer with over 20 years of experience in water system planning, operations, and engineering throughout New England. Mr. Thies has overseen all of Pare's past projects for the BCWA.

Mr. Albert DiBiasio, will serve as Project Manager. Mr. DiBiasio is Pare's Senior Resident Construction Manager and coordinates all the activities of Pare's team of 9 construction observers. Mr. DiBiasio has almost 30 years in the field of utility construction and assisted BCWA during the 2020 construction season with contract administration, coordination of field staff, and completion of field reports and service cards after the construction season.

Mr. Theodore Bailey, will serve on this project as the full-time Senior Resident Project Representative. Mr. Bailey has extensive experience in construction observation for water main projects. For the past 4 years, he has provided observation services for multiple BCWA projects including water main replacement projects, water main cleaning and lining, and pump station upgrades.

As Senior Vice President in Pare's Environmental Division, I hereby certify that the above identified staff is available to perform the work required of this project. Pare will notify the BCWA of any changes required in personnel, and the above staff will not be reassigned or removed from this project without prior written consent from the BCWA.



Timothy P. Thies, P.E.
Senior Vice President
Pare Corporation

March 12, 2021
Date





MEMO

Date: March 15, 2021

To: BCWA Board of Directors

From: Stephen Coutu, P.E.

Re: Pare Task Order Addendum #1- Metacom Avenue Water Main Project

An addendum to the design work for the Metacom Avenue Water Main Project is attached with this memo for your review and approval. Initially a pressure reducing valve (PRV) was not anticipated for this project as the plan was to install a new water main to connect Michael Drive to Sherman Avenue in Bristol. However an easement across private property was needed for this and could not be obtained. As such, to maintain adequate fire flow to the lower Michael Drive neighborhood, a PRV is required.

It is recommended that Addendum #1 in the amount of \$12,250 for additional engineering services to include the design for a pressure reducing valve for this project be approved.



February 12, 2021

Ms. Pamela M. Marchand, P.E.
Executive Director/Chief Engineer
Bristol County Water Authority
450 Child Street
Warren, Rhode Island 02885

Re: **Metacom Avenue Water Main Upgrades – Contract Addendum**
Bristol County Water Authority
Bristol, Rhode Island
Pare Project No.: 08146.36

Dear Ms. Marchand:

Pare Corporation (Pare) is pleased to have the opportunity to submit this Contract Addendum to the Bristol County Water Authority (BCWA) to provide additional design phase services for the Metacom Avenue Water Main Upgrades project in Bristol, RI. Outlined herein is a description of our Scope of Services and the method and basis of compensation for our services. The services provided under this Proposal shall be conducted in accordance with the terms, conditions, and billing rates established under the Contract Agreement awarded on October 7, 2019.

SCOPE OF SERVICES

It is our understanding that BCWA is requesting the services of a consulting engineering firm to perform design phase services for installation of a pressure-reducing valve (PRV) associated with the abovementioned project. The PRV is proposed to be located on Michael Drive east of Betsy Drive in Bristol, RI. A detailed description of the scope of work is provided below.

Task 1 – PRV Design Phase Services

The proposed PRV is anticipated to be included in a new precast concrete vault with access hatch and integrated with the BCWA's existing supervisory control and data acquisition (SCADA) system. The vault is proposed to include an 8-inch PRV, isolation valves, and necessary appurtenances, electrical wiring and lighting, a sump pump connected to an exterior drywell or adjacent catch basin, passive ventilation (vent pipe), a heat trace system, and instrumentation and controls. The electrical service will be provided from the nearest utility pole with an exterior control panel situated adjacent to the vault. Due to the expedited schedule for completion of design and construction of the water main upgrades, electrical and instrumentation design will be excluded from this Contract Addendum. Design phase engineering services associated with these exempt items can be performed by Pare and Pare's designated electrical engineering subconsultant under a separate contract at a later date. The follow items are anticipated to be performed as part of this Contract Addendum.

- Base Mapping – Prepare a base map utilizing readily-available information including utility record drawings; valve, hydrant, and service tap cards; and GIS and aerial photography.
- Field Survey Review – Conduct a site visit to review and supplement existing survey information with





GPS survey and field measurements, if necessary. The supplemental field survey will include collecting GPS points to locate additional pertinent information for the water main project.

- Contract Documents – Update the Metacom Avenue Water Main Upgrades contract documents to incorporate the PRV design and specifications (excluding electrical and instrumentation) to be reviewed and discussed with BCWA personnel prior to preparation of final contract documents suitable for bidding.

Outside Services

At this time, Pare anticipates that no Outside Services will be required as part of this project. However, should outside services be required, Pare shall provide those services as Additional Services, as described below.

SERVICES PROVIDED BY THE CLIENT

The BCWA will provide Pare with existing utility record drawings and valve, hydrant, and service tap cards for infrastructure proximate to the proposed PRV project.

PERIOD OF SERVICE

The time period for performance of construction phase services shall be approximately 30 days from receipt of a written authorization to proceed. Additional services may materially add to the time required to complete the work of the Project. Pare Corporation will be entitled to an equitable adjustment in the Period of Service as a result of services added.

BASIS OF COMPENSATION AND METHOD OF PAYMENT

BCWA shall pay Pare Corporation an amount based on actual accrued time in accordance with the Schedule of Fees attached to the October 7, 2019 Contract Agreement for services rendered by principals and employees assigned to the Project. Pare Corporation's estimated fee to complete the Scope of Services for **Task 1** as outlined herein is approximately **Twelve Thousand Two Hundred Fifty Dollars and Zero Cents (\$12,250.00)**.

This represents our best judgment at this time as to the effort required to achieve the stated objectives. It should be recognized that should the Scope of Services or corresponding level of effort upon which this Proposal is based change, an increase or decrease in charges may result. You will be notified of any change regarding an increase in charges, and we will not exceed the recommended budget without your approval nor will we be required to work beyond the approved budget.

Pare Corporation reserves the right to renegotiate or adjust the fee accordingly if its Proposal for Service is not accepted within a sixty (60) day period.

ADDITIONAL SERVICES

Services required by BCWA which are not part of the Scope of Services as described herein shall be considered Additional Services. Additional Services shall be furnished by Pare, or obtained from others by Pare, if requested in writing by BCWA. The BCWA shall pay Pare for Additional Services in accordance with rates and charges agreed to in writing prior to authorization by BCWA.



Ms. Pamela M. Marchand, P.E.

(3)

February 12, 2021

Thank you for the opportunity to submit this Contract Addendum. If you have any questions, please contact us at your convenience.

Sincerely,

Timothy P. Thies, P.E.
Senior Vice President

TPT/SPD

cc: Shane P. Driscoll, P.E., Pare Corporation
Peter G. Georgetti, P.E., Pare Corporation

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MANHOUR/FEE SCHEDULE

08146.36 BCWA - Metacom Ave CA

PROJECT SCOPE ELEMENTS		MANHOUR SUMMARY										ENGINEERING FEE	EXPENSE COST	SUB (no mark-up)	TOTAL FEE
		P	ME	SPE	PE	EII	EI	CL	DR	TOTAL					
	Billing Rate	204.00	188.70	163.20	144.84	127.50	107.10	71.40	96.90						
Task 1: PRV Design															
	a Base mapping	1	1	1		4	16			23	\$ 2,779.50	\$ -	\$ -	\$ 2,779.50	
	b Field survey	1	1	1		2	10			15	\$ 1,881.90	\$ 27.44	\$ -	\$ 1,909.34	
	c Contract documents	1	2	6		16	24	1		50	\$ 6,242.40	\$ -	\$ -	\$ 6,242.40	
	d Project admin/coord	1	2	4				1		8	\$ 1,305.60	\$ -	\$ -	\$ 1,305.60	
	Total Task 1	4	6	12		22	50	2		96	\$ 12,209.40	\$ 27.44	\$ -	\$ 12,236.84	
Total		4	6	12		22	50	2		96	\$ 12,209.40	\$ 27.44	\$ -	\$ 12,236.84	

MEMO

Date: March 15, 2021

To: BCWA Board of Directors

From: Stephen Coutu, P.E.

Re: Beta Amendment #1- Phase II Pawtucket Pipeline Design

An amendment to the design work for the Phase II Pawtucket Pipeline Project is attached with this memo for your review and approval.

Beta initially submitted a proposal for this work back in September 2017 in the amount for \$1,352,529.80. Their fee at that time was based on a pre-determined route as identified within the RFP.

On November 15, 2017 the Board approved a contract award to Beta in the amount of \$2 million for design services for both Phase I and II, as well as construction services for Phase I.

Subsequently, their initial fee proposal for the Phase II design effort was reduced per an approved task order dated November 21, 2017 for \$1,054,089.00. The fee reduction was due predominantly with a change in scope which included the removal of costs associated with trenchless technology design at (3) locations (though the amended proposal included a disclaimer for additional costs should such technology be required).

At this time, Beta is requesting this addendum due to the following:

- The initial proposal was based on a pre-determined route. Beta has since analyzed and recommended a new route for this project
- The new route requires trenchless technology design at (3) locations
- The project and level of effort is now better defined
- Beta's rates and subconsultant costs have increased since the September 2017 proposal.

Upon review of the information presented, it is recommended that Amendment #1 in the amount of \$1,556,983.50 for the engineering and design services associated with the Phase II Pawtucket Pipeline project be approved. Upon approval, Beta's total contract with the BCWA for Phase I and II would be as follows:

Phase I design and construction services (previously awarded): \$1,186,674.74

Phase II design services (as proposed per the Amendment): \$1,556,983.50

Total Contract Amount: \$2,743,658.24



March 12, 2021

Mr. Stephen Coutu, P.E.
Executive Director and Chief Engineer
Bristol County Water Authority
450 Child Street
Warren, RI 02885

Contract Amendment No.: 1
Engineering Services for the Design and Construction of the BCWA Pawtucket Pipeline
Addendum to Task Order

The Bristol County Water Authority is requesting that BETA Group, Inc. alter the scope of the Contract for Engineering Services associated with the Design and Construction of the BCWA Pawtucket Pipeline, dated November 21, 2017 in the amount of \$1,054,089.00.

The Contract value was based on the level of effort anticipated to be required to cover the tasks detailed in the Scope of Work within the Request for Proposals (RFP). The Scope of Work included the following design related tasks for the installation of approximately 27,000 linear feet of 24-inch or 30-inch water main from Kent Heights in East Providence to a connection with the Pawtucket Water Supply Board in the City of Pawtucket:

- Task 1: Initial Start Activity and Route Determination
 - (1) meeting with BCWA
- Task 2: 30% Design
 - Pipeline Corridor Route Review/Evaluation
 - Geotechnical Services
 - Site Survey
 - Confirmation of Subsurface Conditions
 - (1) meeting with BCWA
- Task 3: 60% Design
- Task 4: Project Estimates at 30%, 60%, 90% and 100%
- Task 5: Public Information Program including attendance at (2) meetings
 - Preparation of applications, exhibits and drawings
 - Public informational meetings
 - Public outreach
- Task 6: Permitting Assistance
 - RIDOT Permit including attendance at (1) meeting
 - City of East Providence including attendance at (1) meeting and (1) response to comments provided by East Providence
 - Pawtucket Water Supply Board (PaWSB) including attendance at (1) meeting
 - RI Dept. of Health including attendance at (1) meeting and (1) response to comments provided by the Dept. Health
- Task 7: Project Design Development Stage (30% to 90% Design)
 - Preparation of Contract Documents
 - 90% Design Documents and (1) meeting with BCWA
 - Finalize construction documents

- Task 8: Bidding Services and Support
 - Attend Pre-Bid Meeting – as deemed necessary
 - Response to questions from bidders – as deemed necessary

Please note that the Contract was signed with the main following the recommended route provided within the support documents of the RFP. Please also note that the agreement also included a contingency of \$160,000 for the design of up to (3) trenchless technology installations. Since the signing of the Contract, BETA has completed a thorough evaluation of numerous alternatives and made a recommendation to proceed with the engineering design along the revised pipeline alignment. In addition to the revised alignment, many project specific details have changed which will require additional time and effort on behalf of BETA and our subconsultants. The successful completion of this project requires that several tasks not covered within the original Scope of Services be completed by BETA and our subs. These costs and associated tasks are detailed below.

COMPENSATION

Additional Costs:

Rate Structure

The Contract was signed in 2017, with rates reflective of the work being completed within 300 days of contract execution, as stipulated within the RFP. This Contract will now be designed in 2021 and 2022, well outside of this timeframe. In 2020, the board approved BETA's adjusted rates which have changed since the signing of this agreement. Attached to this Amendment are the original agreement fee proposal (Spreadsheet 1) and the original fee proposal with the revised 2021 and 2022 rates (Spreadsheet 2). BETA used a blended rate (average of '21 and '22) for Spreadsheet 2 for simplicity. The increase in direct labor costs for the tasks outlined in the original agreement are detailed below:

• Direct Labor Costs (Original Agreement)	\$456,920.00
• Expenses (Original Agreement)	\$22,000.00
• Subcontractors	\$575,169.00
• Original Agreement Total	\$1,054,089.00
• Direct Labor Costs (Revised with 2021/22 blended rates)	\$565,591.48

Total Change in Contract Price due to Rate Changes -Original Agreement to 2021 \$108,671.80

*This is the increased cost due to rate changes from the signing of the agreement until 2021 and is reflective only of those tasks covered in the original agreement.

Since signing the Agreement and identifying a project team and staffing assignments occurred roughly four years ago, many of the project team members have been promoted at BETA and can now assume larger roles in this project than originally intended. In addition, more of the senior level project team members can now assume more of a supervisory role. By adjusting the rate structures of the designated team members to be more reflective of their role and redistributing the hours away from more of the senior roles, we were able to save the BCWA approximately \$34,700, while keeping the total project hours relatively the same. Attached to this Amendment is the adjusted fee proposal (Spreadsheet 3) showing these changes. The most notable change is that Bob Drake will move from a Project Manager to more of a Principal supervisory role and Paul Smith will move from Lead Design Engineer to a Project Manager/Lead Design Engineer role. The change (savings) in direct labor costs for these rate changes and redistribution of hours are detailed below:

• Direct Labor Costs (Rebalanced Rates and Roles)	\$456,920.00
• Expenses (Original Agreement)	\$22,000.00
• Subcontractors	\$575,169.00
• Original Agreement Total	\$1,054,089.00



- Direct Labor Costs (Rebalanced Rates and Roles) \$530,848.00

Total Change in Contract Price with a rebalancing of Rates and Roles -Original Agreement through 2021-2022 \$73,928.00

Rebalancing the roles and rates of the proposed project team saves the BCWA \$34,743.48 when compared to just adjusted the rates per the annual price adjusted previously agreed upon.

*This is the increased cost due to rate changes from the signing of the agreement until 2021 and is reflective only of those tasks covered in the original agreement.

Subconsultants

Project Survey (Green Seal Environmental)

BETA's RFP indicated that our surveyor's intention was to complete the majority of the planimetric and topographic mapping using low aerial photography using drones. This is still our surveyor's intention as it provides for the fast and most cost-effective way to complete a survey of this size. Our surveyors revised cost to complete the survey is detailed below:

- Surveying Cost (Green Seal Environmental) \$130,000
- Original Cost \$119,000

*The survey price is subject to a notice-to-proceed being issued prior to April 1st, 2021. If NTP is issued after April 1st, the fee is subject to change as the effectiveness of the drone survey decreases as leaves bloom, which therefore increases the manpower required to complete a ground survey. The survey cost includes survey plans for up to (5) easement locations.

Blending/Treatment Station and Mixing Evaluation (GHD)

BETA's RFP indicated that GHD will serve as our subconsultant to complete the design of the water treatment and blending stations. Additionally, GHD will complete a desktop analysis of the blended water from Providence Water Supply Board and Pawtucket Water. The desktop analysis will be used to determine the treatment and blending scheme required to result in a water that is chemically consistent with the current supply from Providence Water.

GHD's revised cost to complete this work is detailed below:

- Blending/Treatment Station Design and Mixing Evaluation \$275,000
- Original Cost: \$210,000

Geotechnical

Within the RFP, BETA proposed to use McMillen Jacobs as our subconsultant to provide geotechnical services including completing 100 soil borings, classifying soil, and delineating the presence of ledge and groundwater. In addition, McMillen Jacobs was also to assist BETA in preparation of trenchless installation, earthwork and dewatering specifications. McMillen Jacobs was to provide a design memo including subsurface data review and technical recommendations regarding the (3) trenchless crossings.

BETA recently requested a resubmission of McMillen Jacobs' price and solicited a proposal from another geotechnical consultant. BETA received the following prices from the two geotechnical subconsultants:

- GEI: \$120,000

The costs provided by both subconsultants include geotechnical support services for the proposed trenchless crossing of I-195, (2) railroad crossing and foundations for the bridge crossing.

The remainder of the borings will be completed by Technical Drilling Services (TDS) and staffed by a BETA Engineer or geologist. The cost for drilling is detailed below:

- Drilling (TDS): \$88,000



Wetland Flagging/Delineation (Wetland Strategies)

Within the RFP BETA carried Wetland Strategies to complete wetland flagging of the (1) potential wetland encroachment within the proposed alignment. The revised alignment has encroachments within wetlands and wetland buffer zones in (5) locations. The costs to complete wetland work including wetland reporting required within submissions to DEM are detailed below:

- Wetlands Flagging and Reporting: \$10,000
- Original Cost: \$5,000

BSI

BETA carried BSI within our RFP to complete non-destructive air-vacuum excavation to determine horizontal and vertical confirmation of existing utilities during the design process as needed. Their price remains unchanged.

- Vacuum Excavation (BSI) \$36,050

Cathodic Protection

The project summary provided within the RFP indicated a preference of fusible plastic pipe including plastic and/or HDPE be considered for installation. The pipeline material for Phase 1 was changed to Class 54 D.I.C.L. main, with Phase 2 likely being the same material for most of the alignment. The proposed trenchless crossings at I-195 and the railroad will require a casing pipe to support the water pipe. BETA has included CorrTech as a subconsultant to provide cathodic protection design of the casing pipe at the three (3) proposed trenchless installations to be incorporated in the final design documents. The subcontractor's cost to complete the cathodic protection design is detailed below:

- Cathodic Protection Design (Corrtech) \$17,000

Expenses

BETA has carried an allowance to submit for laboratory analysis (1) soil sample from each soil boring for characterization of chemicals of concern. The samples are used to delineate on the plans areas with known contamination so surplus soil from these areas can be stockpiled separately and disposed of in accordance with applicable regulations. The costs for laboratory work are \$1,200 per sample. Based on the length of the project with borings being completed approximately every 300-feet, BETA anticipates submitting up to 100 samples for laboratory analysis.

- Laboratory Analytical Allowance \$120,000

Scope of Work Changes – Additional Required Tasks

The final alignment of the proposed water main requires additional engineering design and coordination tasks that were not covered within the original Scope of Work. These tasks are detailed below.

Task 2.5: Structural Design

The revised alignment includes the crossing of the Ten Mile River on Pawtucket Avenue. Currently, BETA proposes to cross the Ten Mile River with a dedicated pipe bridge on the situated east of the existing bridge. The costs to complete the structural design are detailed below:

- Subcontractor Costs (Geotech): carried in Geotech Fee \$ -----
- BETA Costs: \$47,455
- Total Cost for this task: \$47,455

Task 6.4: Wetlands and DEM Permitting

The revised alignment includes work within wetland resources or within wetland buffer zones in five locations including:

- Between Warren Avenue and I-195
- Between I-195 and Watermain Avenue
- Pawtucket Avenue between Route 44 and Centre Street
- Pawtucket Avenue crossing of the Ten Mile River



- New Road at Pine Grove Street

These encroachments will require the preparation of a wetlands application to the Rhode Island Department of Environmental Management (DEM) as well as a submission for coverage of the project under the Rhode Island Pollutant Discharge Elimination System (RIPDES) General Permit for Stormwater Discharge Associated with Construction Activity. This work includes up to (1) meeting with DEM to review the project, preparation and submission of plans, restoration plans, details, preparing the permit application and associated documentation including the stormwater report. The same permitting was required under the Phase 1 project and BETA's costs to complete were \$27,369 as detailed in Amendment No.3 to that Contract. BETA proposes to complete a project submission encompassing the areas in question, as detailed above. The costs to complete the wetlands work are detailed below:

- Subcontractor Costs (Wetland Strategies): \$10,000
- BETA Costs: \$24,892
- Total Cost: \$34,892

*Note that BETA assumes that the stormwater report and the submission to DEM will not trigger any stormwater treatment requirements, and that BETA's cost does not reflect the inclusion of stormwater treatment requirements within our fee for this task.

Task 6.5: Railroad Permitting

The revised alignment includes the at-grade crossing of the existing Providence and Worcester Railroad tracks on Ferris Avenue and Pawtucket Avenue. The crossing of the railroad will require coordination, permitting and approval of the construction methods with the railroad owners. This work includes up to (3) meetings with the BETA's geotechnical subconsultant and the railroad. The cost to complete the railroad permitting, project approval and incorporation of railroad requirements within the contract documents are detailed below:

- Subcontractor Costs (Geotech): carried in Geotech fee
- BETA Costs: \$17,528

Task 6.6: Easements

The revised alignment includes the likely procurement of approximately five easements within the limits of work including:

- Easement with DOT for the crossing of I-195
- Easement with private property owner north of I-195
- Easement with East Providence and/or DOT for the crossing of the Ten Mile River
- Easement with the railroad for the crossing on Ferris Avenue
- Easement with the railroad for the crossing on Pawtucket Avenue

BETA will create figures for plan development by our surveyor, develop easement descriptions, attend up to (1) meeting with each property owner, and work with BCWA's legal counsel to facilitate the procuring of these easements as needed. BETA completed similar work under the Phase 1 project to facilitate procurement of the required easements. BETA's fee to support these efforts were approximately \$5,000 per easement location. The costs to complete this work are detailed below:

- Subcontractor Costs (Green Seal): carried in Survey fee \$ ———
- BETA Costs: \$24,940

Task 7.4: Miscellaneous Project Meetings

The project scope included BETA's participation in (9) total meeting throughout the design process including the following:

- (1) Kickoff meeting with BCWA
- (1) meeting with BCWA at the 30% design submittal stage
- (1) meeting with BCWA at the 90% design submittal stage
- (2) Public informational meetings



- (1) meeting with DOT during the permitting process
- (1) meeting with East Providence during the permitting process
- (1) meeting with Pawtucket Water Supply Board to establish the connection location
- (1) meeting with the Rhode Island Department of Health (DOH) for project approval

To date, BETA has attended a project kickoff meeting with the BCWA, prepared and presented at (1) meeting with Bristol County Board of Directors, attended (1) workshop with the City of East Providence, presented at (1) workshop with the East Providence City Council, and attended (2) meetings with the DOH. The successful coordination and completion of the Phase 1 project included BETA's preparation and involvement in over twenty (20) meetings. BETA proposed to create a task to attend up to (15) additional miscellaneous meetings as required for the advancement of the project. The costs detailed below include any required preparation including creation of figures, agenda's, meeting attendance and creating meeting minutes. The costs to complete this work are detailed below:

- BETA Costs: \$44,640

Task 8.3: Bid Review and Recommendation

Bidding services were included within the original scope of services and include BETA's attendance at a pre-bid meeting and to respond to bidder questions, as deemed necessary by the BCWA. Based on BETA's experience with bidding (3) recent projects for the BCWA, BETA has carried the additional costs to complete the level of participation in the bidding process, that was not covered within the RFP, but that BCWA has requested of BETA. These tasks include preparation of the pre-bid meeting agenda, running the pre-bid conference, preparing addenda, review bids, completing bidder reference checks and preparing a recommendation to award letter to the BCWA. The additional costs to complete the bidding process are detailed below:

- BETA Costs: \$7,728

Spreadsheet No.3 (Attached) shows a breakdown of this Amendment including the Scope of Work changes and revised subconsultant costs.

The amended scope and fees are based on an agreed level of effort and lump sum price of \$1,556,983.50. If circumstances cause the fee to increase, an amendment will be offered for approval beforehand.

The Original Contract Price: \$1,054,089.00

Net Change By Previous Change Order: \$ 0.00

The Contract Sum Will Be Increased

By This Change Order In The Amount Of: \$502,894.50

The New Contract Sum Including This Change Order Will Be \$1,556,983.5

BETA GROUP, INC.

BRISTOL COUNTY WATER AUTHORITY

Robert A. Drake, P.E.

Stephen Coutu, P.E.

Vice President

Executive Director and Chief Engineer





MEMO

Date: March 17, 2021

To: BCWA Board of Directors

From: Stephen Coutu, P. E.

Re: FY 2022 Strategic Plan and FY 2022 Strategic Implementation Plan Updates

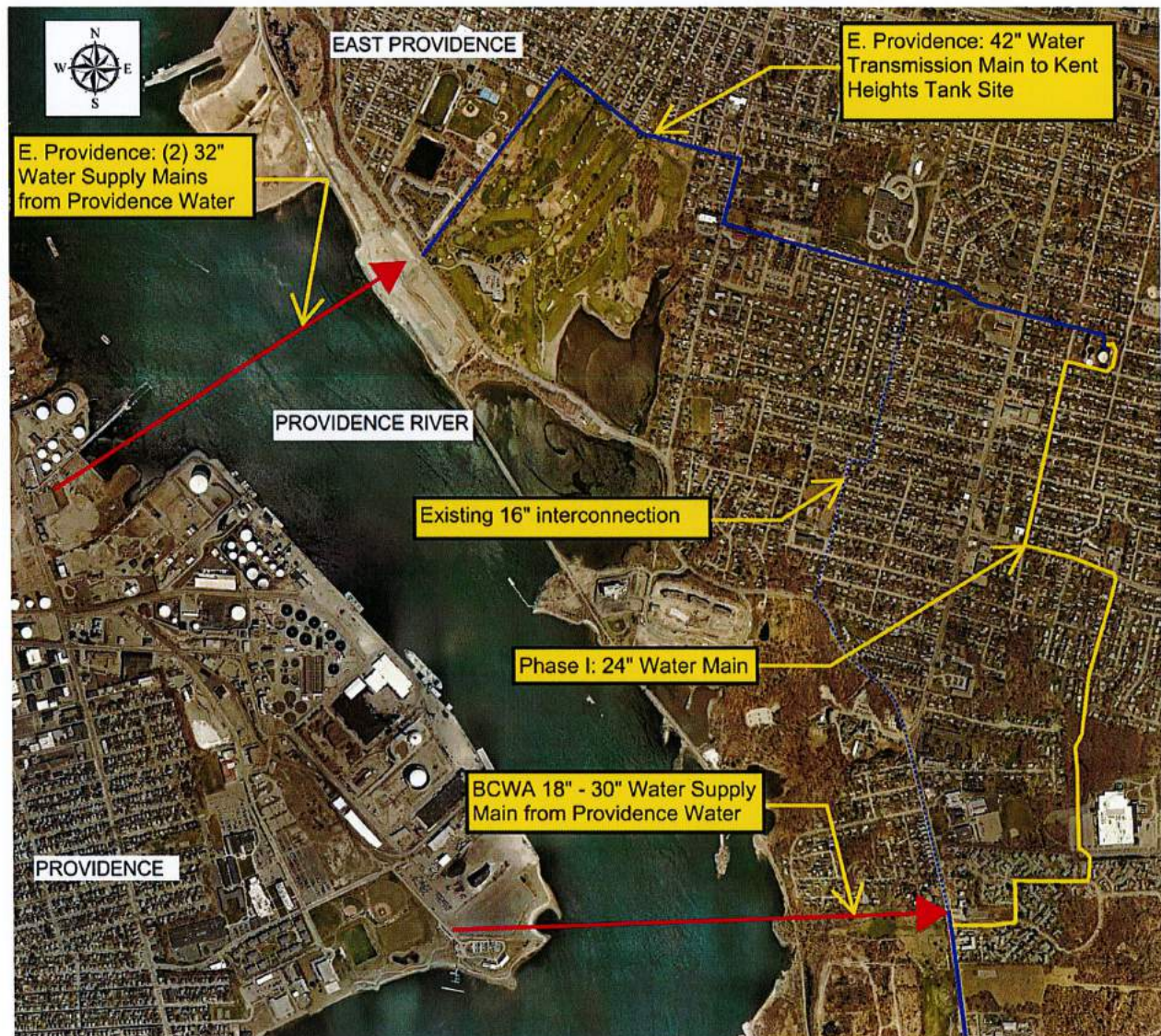
Attached are updates to the Strategic Plan and Strategic Implementation Plan for FY 2022 for the Board's review.

Upon approval the updated Strategic Plan will be posted on the website for public information. The Implementation Plan will be utilized by the Board and staff as it details the actions required to meet the goals of the Strategic Plan and it provides direction for the organization for this year and future years.

Bristol County Water Authority

FY 2022 Strategic Plan

March 1, 2021



Map of new water main construction route starting in the area of the Emergency Pump Station on Pawtucket Ave. and ending at the Kent Heights Tank Facilities on Greenwich Avenue. Construction to begin in April and take place throughout 2021

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Executive Summary

This document summarizes the BCWA's strategic plan as of March 1, 2021. The 2022 Plan is a modification of the 2021 Plan. It continues the four major strategic initiatives:

- to maintain a secure source of quality water,
- improve customer relations,
- improve managerial systems,
- and assure financial stability.

The implementation of the Plan commenced in 2013 and has served as a working document to sustain BCWA's mission, vision, and values. Our work continues to renovate the aging infrastructure, develop an alternative source of supply, and upgrade obsolete information management systems, all of which contribute to a more efficient and reliable operation of the water system.

COVID-19 Message

The requirements to avoid the spread of the virus have had a significant impact on all of our lives. However, the BCWA has continued to operate the water system to the high standards we have set. Water quality and supply have continued to be a priority and we foresee no factors to disrupt that commitment.

Distancing and increased hygiene practices were put in place early. Scheduling changes, reporting to four different facilities, and working from home as needed has allowed the operation and maintenance and customer service to continue indefinitely. Should one team become ill, others can provide backup.

Additionally, we have stocked up on chemicals and supplies to see us through.

Hopefully, we will be back to normal soon, but BCWA staff are prepared to do whatever it takes to maintain the high-quality water supply to our customers.

Water - A Vital Resource

At BCWA our mission is to harness this vital resource and provide the highest quality of water to our Bristol, Barrington, and Warren customers.

We believe by doing so, we improve the quality of life for our residents as well as play a key role in the public health of the areas we serve.

Our Strategic Plan, updated annually, comprehensively addresses the work of BCWA from management, operation, maintenance, and reinvestment in the infrastructure of the BCWA water system.

Water Supply

In April, 2019, the BCWA experienced a leak on the East Bay Pipeline that transports 100% of our water supply from the Providence Water Supply Board. The leak, fully repaired in November 2019, demonstrates our vulnerability to a single supply of water from the Scituate Reservoir.

BCWA has recently completed the design of a 24" pipeline to connect to the East Providence supply (also Providence Water), providing sufficient water to meet our customer demand year-round. It is scheduled to begin this Spring and completed this year.

This project is Phase 1 of a plan to connect to the Pawtucket Water Supply Board, which owns separate reservoirs in northern RI. BCWA is seeking to obtain an alternate supply to avoid possible loss or restrictions on our supply, as in the case of a leak in our pipeline or in the Providence Water system.

The East Bay pipeline leak resulted in the City of East Providence losing their emergency supply from the BCWA. It has motivated a joint effort with the City to obtain an alternate supply from the Pawtucket Water Supply Board.

At the Core of BCWA

Mission

To provide the highest quality water to all our customers.

Vision

BCWA will be a model regional water utility, recognized for its customer focus, water quality, system reliability and efficiency.

Values

- Quality product and exceptional customer service
- Effective and efficient asset management
- Environmental sensitivity
- Employee development
- Integrity and transparency

Strides in CY 2020

BCWA continues to make significant investments to modernize our water supply system, repair and improve our infrastructure and maximize operational and maintenance efficiencies.

The challenges we face include: a steady decline in water consumption, increases in operations and maintenance costs, and the hefty financial burden of capital improvements to our aging pipeline distribution system, pump stations and storage facilities. We also need an alternative to our current single water supply so that we can have the option of getting water from the Scituate Reservoir and/or the separate Pawtucket Water supplies.

We were recognized for our efforts in 2017 by the New England Water Works Association as the Utility of the Year for Medium Systems.

We have been able to slow price increases to our customers through our cost-saving efforts. BCWA's participation in energy efficiency programs, the hiring of in-house expertise, and the coordination of projects with other public works departments on local and state levels are just some of the examples of how BCWA is working to ensure cost effective water system operations.

The Board of Directors approved a 3.5% rate increase to begin March 1, 2021, to continue to invest in system improvements, fund reserves for current and future construction projects, as well as unplanned emergencies such as the \$4 million cost to repair the leak on the East Bay Pipeline.

Examples of CY 2020 system improvements include:

- ❖ **Replaced old cast iron main and tied in dead ends to improve water quality and flow:**
 - Bristol: 1,250 feet (Rock, Shaws and Ryan)
 - Warren: 100 feet (Handy Street)
- ❖ **Rehabilitated (clean and cement line) old cast iron water mains to improve water quality and flow:**
 - Barrington: 1,700 feet (Bay Road)
 - Bristol: 3,500 (Hope St.)
 - Warren: 12,350 (Market, Main, and the multiple downtown streets)
- ❖ **Design of the Pawtucket Pipeline as an alternate water supply**
 - Phase 1 design of a 24" 1.3 mile pipeline from the BCWA East Bay pipeline to the East Providence tank is complete, with construction to begin in April 2021. This project will provide an adequate alternate supply from Providence Water with a connection to the East Providence water supply line.
 - Phase 2 design, from the East Providence tank to the Pawtucket city line (5 miles of 30" transmission main) has commenced. Construction is planned for 2023, and will likely be a 3 year project. The pipeline will provide BCWA with enough water to fully meet the system's needs from the Pawtucket's water supply.
 - East Providence has shown interest however has not yet fully committed to the project.

❖ **Installation of new customer meter system**

- Installation of the new system is 95% complete. The system includes improved data collection for operations efficiency, customer leak detection, and is designed to permit monthly meter reading and billing.

❖ **Design of the Hope St Pump Station**

- The design of the Hope St. Pump Station is complete. Construction is anticipated to commence in Spring/Summer 2021.
- The new station will provide fire supply and improved system pressure to the high service area in Bristol.

❖ **Design of Metacom Avenue High Service Area Pipeline Improvements**

- This pipeline improvement project is being implemented in conjunction with the Hope Street Pump Station to improve system pressures within the high service area of Bristol.
- Design is complete and construction is anticipated in Spring/Summer 2021

❖ **Replacement of Galvanized Services**

- The BCWA had inventoried about 120 galvanized services from the main to the building owner's connection near the property line. The services may or may not have a lead connection to the main. The BCWA began replacement of these services, with 14 completed in 2020, and 15 scheduled for 2021.

❖ **Applications for assistance for design and construction costs to remove Upper and Lower Kickemuit Dams**

- The dams no longer serve a purpose – their removal will eliminate maintenance costs and open the waterway to fish migration and return it to a salt-water estuary, an effort supported by Save The Bay, the State, and the Town of Warren.
- The removal of the dams in combination with the replacement of the Schoolhouse Rd bridge and culverts by the RIDOT will help alleviate flooding of Schoolhouse Rd and provide an emergency route exit from East Warren.
- Applications for funding for design assistance was submitted to the RI CRMC. \$75,000 was awarded for the Upper Dam in 2019 and \$75,000 was awarded for the Lower Dam in 2020. Additionally, an application for construction assistance through the State's Climate Resiliency Fund resulted in an additional \$1.2 million in grant funds.

BCWA will continue to leverage technological advancements, train staff, and use all available resources in all efforts to ensure quality water from an efficient and reliable system.

Projects underway for FY 2021-2022:

❖ Construction of Phase 1 of the Pawtucket Pipeline-

- Construction of Phase 1 - the 24" pipeline from the BCWA Providence connection on Pawtucket Ave to the East Providence storage tank site to begin April 2021.
- Design Phase 2 from the tank site to the Pawtucket city line 2021-2022.
- Phase 2 construction is scheduled to begin 2023.

❖ Water Main Renovations

Water main replacement projects to improve reliability, water quality and flow

- Replacement of aging infrastructure in Hope Lane and Starboard Lane in Barrington
- Extension of water mains in Smith Street in Bristol to support the High Service Expansion
- Cleaning and lining on Mt. Hope Ave, Bristol

❖ Water Meter Replacements

- The meter program will be completed in 2021, including the installation of a remote date collection system to provide information for customer inquiries, perform leak detection and speed up billing.

❖ Construction of Hope St. Pump Station

- Design to be completed in 2021, with construction to begin this year.

❖ Removal of the Upper and Lower Kickemuit Dams

- Design and permitting of the dam removals 2021-2022, for construction 2022-2023. Legislative changes to the BCWA Act will be necessary.
- RIDOT design of the replacement of the Schoolhouse bridge and culverts to be completed in 2021, construction anticipated to commence this year.

❖ Nayatt Rd. Pump Station - Climate Change Improvements

Submit grant applications for:

- Building a retaining wall and/or berm to protect the station from sea level rise.
- Raising the power transformer above flood stage.

❖ Demolition of the Child St. Water Treatment Plant

- Perform environmental assessment to identify hazardous materials to be remediated.
- Assess future use of space to ensure demolition and restoration is performed in accordance with applicable regulations.

Looking Ahead – CY 2022 and Beyond

Currently, the Scituate Reservoir provides all BCWA water via the East Bay Pipeline which runs under the Providence River.

The 1908 BCWA water treatment plant, not used since 2011, was decommissioned in 2019 which makes the construction of the Pawtucket Pipeline crucial to providing a second alternate secure water supply.

The Pawtucket Pipeline alternative is a much less costly alternative than building a new water treatment plant. The shallow reservoirs that fed the old plant do not provide enough water to meet the system's needs, and the water is of poor quality. The BCWA does not have the ability to draw water from them without approval from the Massachusetts Department of Environmental Protection.

The leak on the East Bay Pipeline has demonstrated the importance of obtaining an alternate supply ASAP. Given this, the BCWA is moving forward with the design and installation of the 24" pipeline to the East Providence tank with construction to begin in April 2021 and to be completed this year.

Modernizing a Water System Started in the 1800's

The BCWA serves 17,018 customers, with an average residential water usage of 43 gal/capita/day. Water quality is high, although water pressure is marginal in some parts of the system. Water cost is moderate (about 1 cent per gallon), with rate increases necessary to sustain the infrastructure replacement program.

In the last decade, there had been many years of under-investment in the utility infrastructure. System upgrades which began in 2014 are improving the effectiveness, efficiency, and the quality of the water we deliver to our customers.

Our work in 2021 will continue critical improvements to modernize the utility and our service. Challenges faced by BCWA in these efforts continue to be our dependence on a single source of water, declining demand over the past 10 years, and aging infrastructure that needs significant investment to repair and replace it.

System Profile

- 233 miles of pipe
- 17,018 total customers; 15,828 residential
- 43 gal/capita/day average water usage
- 1007 million gal/year
- 33 BCWA employees

Challenges

- Single source water supply
- Aging infrastructure
- Declining water usage
- Cost of short and long-term supply and infrastructure upgrades
- Limited state and federal funding
- Increasing water costs
- Divestment of the non-operable MA reservoirs and infrastructure to eliminate the financial burden to BCWA
- Increased need for security

Pro-Active Solutions

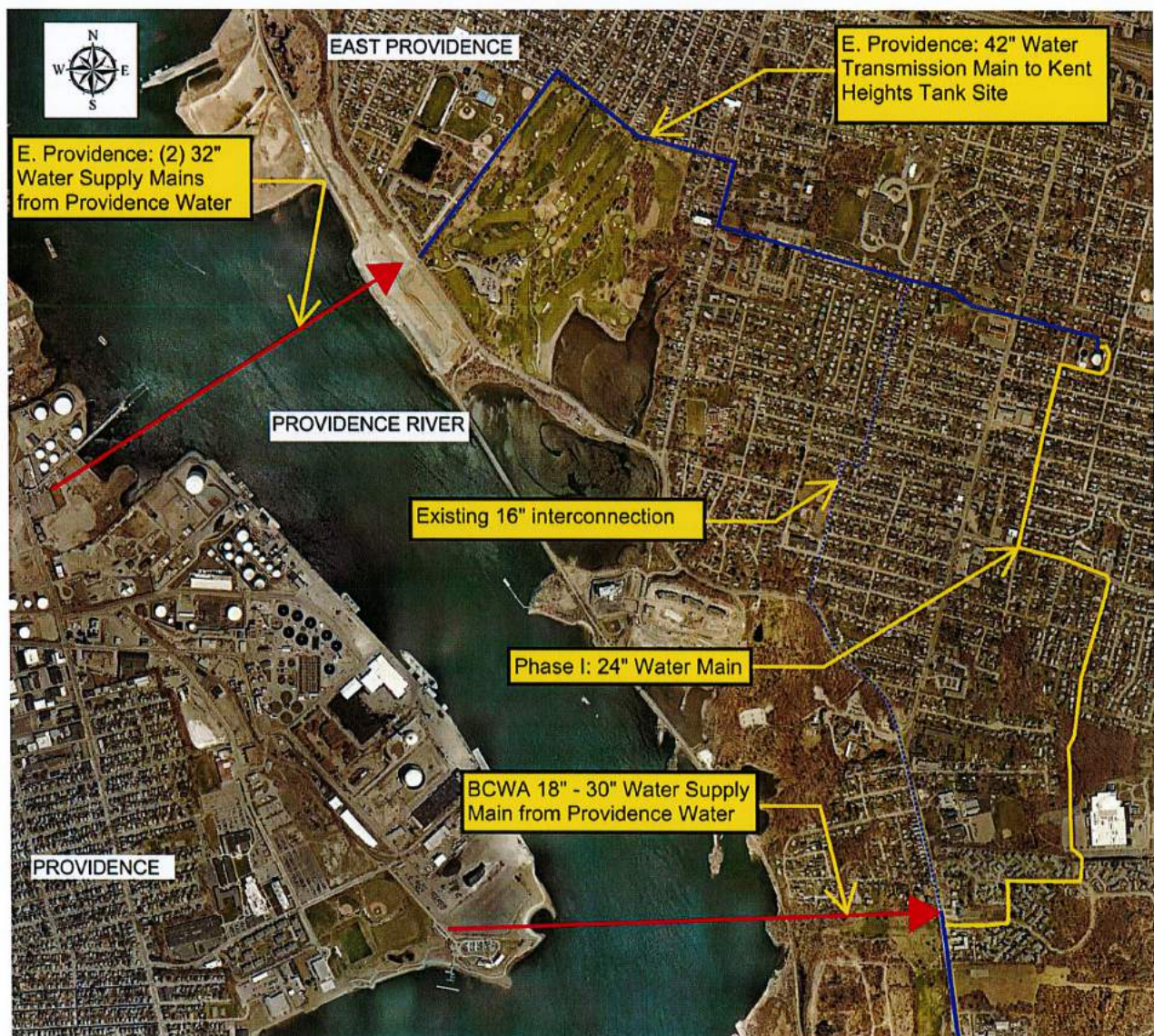
- Establishment of second water supply
- Securing of new bonding and capital funding for utility modernization
- Optimization of infrastructure performance and resilience with use of technology
- Prudent financial management
- Utilization of in-house expertise to reduce costs
- Enhanced employee development program

In conjunction with planning for and securing an alternative water supply, BCWA will continue to address its aging infrastructure including renovation of

- utility distribution pipes, valves, hydrants
- pumping and control systems
- renovation of water storage tanks
- expansion of the Bristol high pressure service area
- demolition of the Child Street water treatment plant in Warren
- divest the responsibility for shallow and poor water quality reservoirs which requires changes to the Bristol County Water Act. These reservoirs no longer serve a purpose of water supply, forcing BCWA to pay to maintain them, and placing an undue cost burden on BCWA customers.
- continued implementation of high-tech operations and customer service computer interface systems.

Bristol County Water Authority

FY2022 Strategic Implementation Plan March 1, 2021



Map of new water main construction route starting in the area of the Emergency Pump Station on Pawtucket Ave. and ending at the Kent Heights Tank Facilities on Greenwich Avenue. Construction to begin in April and take place throughout 2021.

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5. Develop a Motivated, Capable Workforce	9

FY 2022 Strategic Implementation Plan

This fiscal year 2022 (beginning March 1, 2021) Strategic Implementation Plan outlines the actions, metrics, and key events to advance BCWA services to our communities.

BCWA's major Strategic Initiatives:

- 1. Maintain a secure supply of quality water**
– construct a connection to the Pawtucket Water Supply Board to provide an alternate to the Providence Scituate supply
- 2. Optimize infrastructure performance and resilience**
- 3. Assure financial stability**
- 4. Provide timely and responsive customer service**
- 5. Develop a sustainable workforce**

Initiatives:

1. Maintain Secure Supply of High Quality Water

Providence Water is BWCA's single source of water supply. A secondary water supply remains a critical objective for BCWA. The Scituate Reservoir is Providence Water's sole supply with one treatment plant to serve 60% of the state. Any problems with the Providence system, or our pipeline under the bay, leaves us vulnerable to severe restrictions or loss of supply, as demonstrated by our leak on the East Bay Pipeline in May 2019. Depending on a 16" water main connection with East Providence places the distribution system at risk for loss of pressure and fire flow capability.

The Child St. Water Treatment Plant, not used since 2011, was decommissioned in 2019. We are investigating the removal of the Shad Factory and Swansea Dams in Massachusetts. The design engineering is underway to remove both the Upper and Lower Kickemuit Dams.

Maintaining our existing water supply is of equal priority. Without proper maintenance and treatment, water can quickly degrade. Stagnated water can lead to bacterial growth or require increased disinfection. Water can lessen in quality and taste, and, in some cases of unlined cast iron pipes, can become discolored. Utilization of industry-standard treatment techniques and enhanced water flow help to ensure water quality. Eliminating "dead ends" in the system, adding mixing to water storage tanks, and an annual flushing program helps protect water quality.

A. Pursue Interconnection with Pawtucket Water Supply Board

Metric: Reliable and alternate sources of continuous, high quality water supply that complies with all regulations

Key Events	Completion Date Calendar Year
1. Construct Phase 1 – 24" transmission main from BCWA East Bay Pipeline to East Providence Cross-Bay pipeline at EP storage tank (1.3 miles) Construction to begin April 2021.	2021
2. Construct Phase 2 – 30" transmission main from EP to Pawtucket 3. (5 miles). Design to begin 2021, construction anticipated 2023.	2025
a. Obtain partnership with East Providence, define responsibilities	2021

B. Maintain/Improve Water Quality Assurance

Metric: Meet or exceed water quality standards; maintain disinfection throughout system

Key Events	Completion Date Calendar Year
1. Install 2 contaminate monitoring systems in pump stations	2020-2021
2. Install pressure monitoring devices in distribution system	2020-2021
3. Re-establish backflow prevention program to meet new regulations	2020-2021

4. Replacement program for lead gooseneck connections of the main to galvanized service lines	2018-2022
5. Develop unidirectional flushing program to increase efficiency and reduce water loss	2021-2022
6. Tie-in dead end water mains to improve flow, cement line older cast iron pipes to prevent iron contamination and the reduction of chlorine.	On-going

2. Optimize Infrastructure Performance and Resilience

BCWA has made significant improvements to its operation systems and tools. Optimization and utilization of full-system capabilities will continue to enhance our investment, ensure effectiveness of the system, and improve efficiency for all staff members. We also continually assess infrastructure performance and system assets to prioritize capital and operational improvements. Evaluation of industry best practices, trends, and technologies will be a guiding resource in our investments.

A. Develop and integrate asset management program, work order program, hydraulic analysis, and SCADA (Supervisory Control and Data Acquisition) instrumentation system

Metric: Immediate access to electronic system information, coordination of work processes

Key Events	Completion Date Calendar Year
1. Work with computerized work order system to coordinate GIS mapping/ Asset Management programs to acquire and continuously update infrastructure information, plan maintenance	2021-2022
2. Improve capability of the hydraulic model (provides pressure and flow information under various configurations) and SCADA (Supervisory Control and Data Acquisition) for operational monitoring and analysis	2021-2022

B. Prioritize asset replacement, update 5,10, 20 year Capital Plans

Metric: Provides guidance for water system improvements, ability to plan bonding, budgets

Key Events

1. Input asset, condition, and risk data to GIS data base/work order asset management programs	2020-21
2. Update 5, 10, 20 year capital programs	Annually
3. Expand high pressure district in Bristol and Warren	
a. Design and install new pump station at Hope St tank	2021
b. Design and install new 12" water main on Metacom: Robin to Stop & Shop	2021
c. Design and install new 12" main on Hope St.	2022
d. Tie-in mains on low service, begun 2018	2018-23
e. Design and install new 12" water main on Metacom north to Warren and south of Bay-View	2024

4. Inspection and assessment of 30" pipeline from Pawtucket Ave to Nayatt Rd pump station	complete
5. Evaluate replacement of Fountain tank (Barrington) with an elevated spheroid to reduce residency time, reduce maintenance expense, increase pressure	2021-22
6. Replace/renovate distribution mains per Capital Plan to reduce risk, improve water quality and pressure	Annually
a. Clean and Line 3500 LF of 6-inch main (Mt. Hope Ave, Bristol)	2021

C. Divest/Dispose of Non-Operable Infrastructure Assets

Metric: Reduce maintenance costs and liability

Key Events	Completion Date Calendar Year
1. Begin demolition of Child St water treatment plant	
a. Environmental engineering analysis required for demolition	2021
b. Develop plan for removal of contents and demolition	2022-24
c. Demolition	
2. Reduce liability of MA source water infrastructure	
a. Submit legislation to remove BCWA responsibility for MA supplies and infrastructure under Bristol County Water Act (may impact state responsibility)	2020-2022
b. Cancel operation contract with Anawan Club for Anawan dam	2020-2022
c. Investigate removal of Shad Factory and Swansea Dams, Shad Factory pump station	2020-2022
- State of MA DER has engaged an engineer to perform a site evaluation for the removal of the Shad Factory dam	Spring 2020
- Pursue transferring the Swansea dam to the Town of Swansea, MA	2021
d. Remove Upper and Lower Kickemuit dam	
i. Work with Town and RIDOT to replace Schoolhouse Rd. bridge and culverts	In Progress
DOT to begin engineering 2020	
ii. Continue to work with Save-the-Bay, Town and RIDEM grant applications to NFWF and RICRMC	In Progress
Grant received from CRMC for Upper Dam engineering	2019
Grant received from CRMC for Lower Dam engineering	2020
Grant received from RIDEM for construction grants for upper and lower dams	2020
iii. Engineering for design and permitting	2020-21
iv. Remove dams	2022

D. Continue to update emergency procedures for continuous system operation

Metric: Minimize system outages	
Key Events	Completion Date Calendar Year
1. Complete required plans: a. RI Water System Supply Management Plan b. EPA Resiliency Assessment and Emergency Response Plan	2020-21
2. Utilize asset management, hydraulic model to determine high risk issues in the water system and determine emergency response, measures to alleviate risk	Annually
3. Update programs to track system outages, numbers of customers affected, hours of duration, staff response. Analyze for improvements	2020-21
4. Provide timely updates on website for emergencies, important events	On-going

3. Assure Financial Stability

Financial security is a critical need for all plans and operations of BCWA. Careful review and analysis of operations and capital needs remain a continual priority of our financial staff and leadership. Continued improvement of system efficiencies to keep costs down, and public accountability and transparency are also key focus areas.

A. Obtain funding necessary to support operations and capital needs

Metric: Provide a five year financial plan for operations and capital programs; amount of funding available for reserves; approved rates to support stability; sufficient revenue to cover expenses	
Key Events	Completion Date Calendar Year
1. Analyze annual budgets, review projected expenses with all departments, prepare budget, incorporate goals of the strategic plan for reserves, capital projects, operations management	Oct (annually)
2. Present to the Finance Committee and Board for January meeting	Nov (annually)
3. Review capital improvements needed annually to prioritize and live within revenue projections	Oct (annually)

B. Improve system efficiencies

Metric: Measure time , materials, and costs to perform work; data readily available for analysis	
Key Events	Completion Date Calendar Year
1. Analyze financial data collection to provide information for operations, capital projects, budgets	On-going
2. Review all department budgets monthly with each manager	On-going

3. Install new meter data collection system to track water use for operations management, leak detection	2021
4. Order and evaluate a comprehensive Rate Study by a professional rate consultant to include an assessment of monthly billing.	Completed

*** **Critical issue for all plans: Financial Ability**

4. Provide Timely and Responsive Customer Service

BCWA strives to provide exceptional customer service. This includes education, access to utility information, bill pay and account management services, and positive interactions between BCWA staff/resources and our customers. Streamlining of internal processes, analysis of feedback, and direct-to-customer communications will be foundational vehicles for ensuring timely and responsive customer service.

A. Conduct public education program

Metric: Positive customer comments, requests for information, support for rate increases	
Key Events	Completion Date Calendar Year
1. Educate customers by newsletters (and bill stuffer) on BCWA capital improvements, water quality testing, customer service improvements, system operations	On-going
2. Provide news releases, mailers, information to Towns	On-going
3. Post relevant information to web site, monitor weekly (designate staff responsibilities)	On-going
4. Monitor and analyze customer complaints, provide recommendations for improvements	On-going

B. Provide additional customer services

Metric: Customers utilize more convenient payment methods, ability to easily retrieve data	
Key Events	Completion Date Calendar Year
1. Review and improve payment portal as alternate payment options become available	On going
2. Improve meter technology to provide monthly billing for timely information	2021
a. Replace all customer meters with new technology Read meters monthly	2020-2021
b. Install fixed-network data collection	2020-2021
c. Provide customer interface for meter data	2021
d. Bill meters monthly (if approved)	2021

5. Develop a Motivated, Capable Workforce

The BCWA utility is as effective as the staff which runs it. We have worked over recent years to hire employees with the industry skill sets to serve the utility to reduce dependence on outside vendors and consultants. This has not only significantly reduced costs, it has enabled us to leverage in-house expertise with in-depth knowledge of the BCWA system. We have a committed staff with growing skill levels and a proactive approach to our work. One area that will be an on-going focus is the cross-training of all employees for customer service needs. This will help enhance the customer experience even with a limited staff.

A. Evaluate and improve workforce training programs

Metric: Flexible workforce that is trained and capable of responding to all situations

Key Events	Completion Date Calendar Year
1. Review needs of each department, continue to provide cross-training	
a. Operations: cross-training in meters, pump station/SCADA management/sampling	On-going
b. Safety committee and safety program for all employees	On-going
c. Provide for backhoe and CDL training to improve efficiency of operations	On-going
2. Complete training room, provide for in-house programs	2021-2022

B. Develop and maintain an employee communications program

Metric: All employees able to access information

Key Events	Completion Date Calendar Year
1. Improve in-house intranet, Q&A for employees, forums	2020-2021
a. Increase available documents; forums and Q&A	On-going
2. Annual employee presentation on status of BCWA	On-going

C. Develop a succession plan

Metric: Preserve continuity of department functions, minimize impact of employee transitions in critical positions

Key Events	Completion Date Calendar Year
1. Identify critical positions	2020
a. Document work activities	2020
b. Update position descriptions	2020
2. Provide for adequate time for training new or existing staff replacements	2020-21



MEMO

Date: March 17, 2021

To: BCWA Board of Directors

From: Stephen Coutu, P. E.

Re: Kickemuit Dam Removal Information on Website

The attached Kickemuit Dam Removal Project Fact Sheet was prepared by Pam Marchand and Wenley Ferguson of Save the Bay and added to the website.

Also, I have engaged our PR consultant, RDW Group, to assist us with this project. They are in the process of developing a Q&A specific to the dam removal project. Additionally, I requested that they review the BCWA website with respect to content, ease of use, etc. I recently received a list of recommendations and suggestions from them which I will be reviewing with staff.

Bristol County Water Authority's Proposed Plan to Restore the Kickemuit River through the Removal of the Two Kickemuit Reservoir Dams

The two dams on the upper Kickemuit River were constructed to create a public water supply for Bristol County Water Authority (BCWA), the regional water supplier for the communities of Warren, Bristol and Barrington, Rhode Island. The Lower Kickemuit Dam was constructed in 1883 to create the reservoir, and the Upper Kickemuit Dam in 1961 to prevent saltwater intrusion in the upper section of the reservoir. Dams were also constructed in the late 1880's to provide additional supply from the Shad Factory Pond and the Swansea Reservoir in Massachusetts.

The shallow Kickemuit Reservoir was never a good source for potable water, as water quality was poor and quantity was very limited. The water treatment plant, built in 1908, struggled to meet federal water quality regulations, until it was designated for emergency backup only in 2011 and decommissioned in 2019.

The Upper and Lower Kickemuit River Dams became the backup water supply in 1998 once the BCWA secured a primary source of water from the Scituate Reservoir through the East Bay Pipeline. In 2012, BCWA began studies to secure an alternative backup water supply. Continuing water quality deterioration by water pollution and saltwater intrusion from sea level rise has designated the Kickemuit River supply as unusable for potable water.

The Rhode Island Department of Health (RIDOH) in their 2013 *SafeWater RI* report characterized the BCWA's system as critically vulnerable to three hazards related to climate change: sea level rise, coastal flooding and hurricanes. The Lower Kickemuit River Reservoir impoundment is vulnerable today to tidal inundation during moon tides and storm events and will experience more tidal flooding with predicted sea level rise.

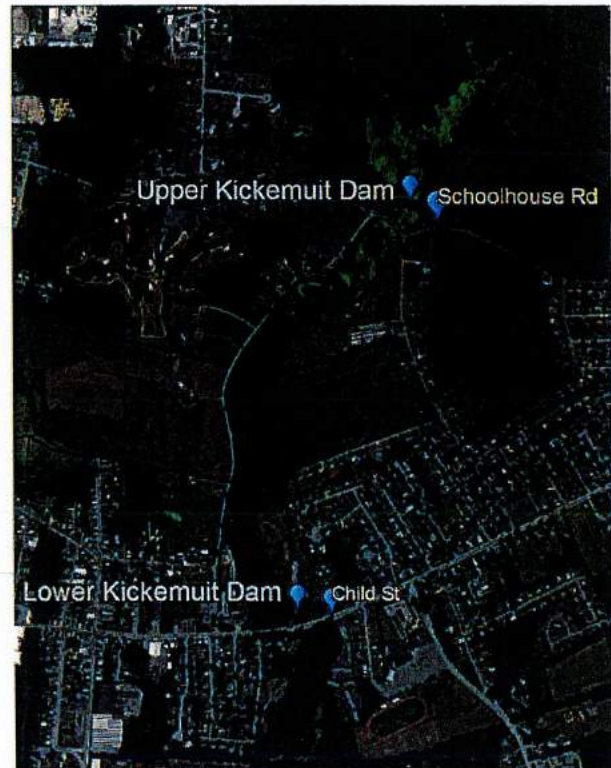


Figure 1: Upper and Lower Kickemuit River dams and impoundments



Figure 2: Tidal flooding of lower impoundment (in foreground) during a king tide

Since 2012, BCWA has taken action on the RIDOH's recommended strategies to prevent losses to drinking water utilities by evaluating their at-risk infrastructure and developing and implementing a plan to abandon the former backup water supply and secure a new backup supply from an independent source. The BCWA studies determined that the best and most economical alternate supply could be provided by Pawtucket Water, with a 30" pipeline to be run through the City of East Providence terminating at the BCWA Providence connection in East Providence. As East Providence participated in the 2012 study, and their connection to Providence Water is at risk, they are considering joining in the project.

The first phase of installing the alternate supply will begin construction in 2021, connecting the BCWA Providence Water connection with the East Providence source from Providence Water. The second phase of securing a new alternate supply is currently in the design phase and includes running a 30-inch main from the East Providence connection to the Pawtucket border to connect to Pawtucket's water supply.

Since the Upper and Lower Kickemuit River Dams are no longer needed for the water supply, BCWA is working with its partners including the Town of Warren, Save The Bay, National Oceanic and Atmospheric Administration's (NOAA) Restoration Center and the State of RI's Chief Resilience Officer to remove both the Upper and Lower Kickemuit River Dams.

Removal of both dams will increase the ecological health of the Kickemuit River by restoring the tidal estuary, increasing both salt marsh and freshwater wetland habitat, improving habitat for fish and wildlife, and restoring the connectivity of this tributary with the estuary. The removal of these obstructions to tidal flow, coupled with anticipated sea level rise will restore salt marsh habitat in the lower impoundment and will create area for salt marsh migration.

Removing the dams will reduce stagnant conditions and increase tidal flushing, significantly improving both water quality and habitat for a wide variety of fish and wildlife. Combined, these benefits will provide sustainable and lasting ecological benefits and will restore natural ecosystem function to the Kickemuit River. The dam removals, along with upgrading of the culverts under Schoolhouse Road, will enhance fish passage for river herring and eels and create new habitat for estuarine forage fish such as mummichog, striped killifish, and menhaden. The increase in habitat for forage fish will benefit recreationally important species such as striped bass and blue fish. Other species like blue crab will also benefit from the restoration and have been observed in the lower impoundment due to its brackish conditions.



Figure 3: Algae bloom in lower impoundment

The dam removals will also provide community resiliency benefits by increasing flood storage capacity of the wetlands and reducing flooding of Schoolhouse Road during precipitation events. As part of this project, BCWA and its partners have secured a commitment from the Rhode Island Department of Transportation (RIDOT) to elevate Schoolhouse Road and resize its culverts. This low-lying road just downstream of the upper impoundment will no longer flood during large precipitation events and will provide an important alternative evacuation route for the eastern part of Warren.

The dam removals will enhance public access to the Kickemuit River for kayaking, fishing and recreation. Presently the area is restricted to public access since it was a designated watershed for BCWA's backup drinking water supply. Once an alternate supply is secured, the area is intended to be opened for low impact public recreation such as walking, fishing and kayaking.

Project Background:

The Upper Kickemuit River Dam (Warren Reservoir Upper Dam - State I.D. 480) is an earthen embankment; 965 feet in length and 14 feet in height. The Upper Kickemuit River Dam, built in 1961 to prevent saltwater intrusion, is approximately 0.8 miles upstream of the Lower Kickemuit River Dam and the tidal estuary. A large wetland exists adjacent to the Upper Kickemuit Reservoir and is predicted to convert to salt marsh or intertidal habitat with sea level rise. The Lower Kickemuit River Dam (Warren Reservoir Lower Dam - State I.D. 479), built in 1883 for water supply purposes, is 130 feet long. The dam prevents tides from flowing into the impoundment under most tide conditions except during moon tides and storm events.



Figure 4: Upper Kickemuit River dam

When the impoundments were a water supply, RIDEM with funding from NOAA, and other federal and state partners collaborated to enhance fish passage by constructing a fish ladder at the Lower Kickemuit River Dam in 2007. RIDEM's Division of Fish and Wildlife has stocked the lower impoundment with herring since 2010 and have observed herring below the fish ladder but not in the impoundment. The biologists conducted an electrofishing survey of the impoundment in 2012 and did not document juvenile herring in the Lower Kickemuit impoundment. The herring population has not returned as projected since the installation of the fish ladder due in part to brackish water conditions and poor water quality in the lower impoundment. Additionally, blocked culverts under Schoolhouse Road and check valves on the outlets of the Upper Kickemuit River Dam prevent migratory fish from accessing the upper impoundment and three miles of upstream spawning habitat.

Water Quality: Monitoring conducted of the two impoundments and upper estuary in the summer of 2020 by BCWA and Save The Bay - through URI's Watershed Watch program - documented that the lower impoundment has already converted to a brackish system since moon tides flow into the lower impoundment over the

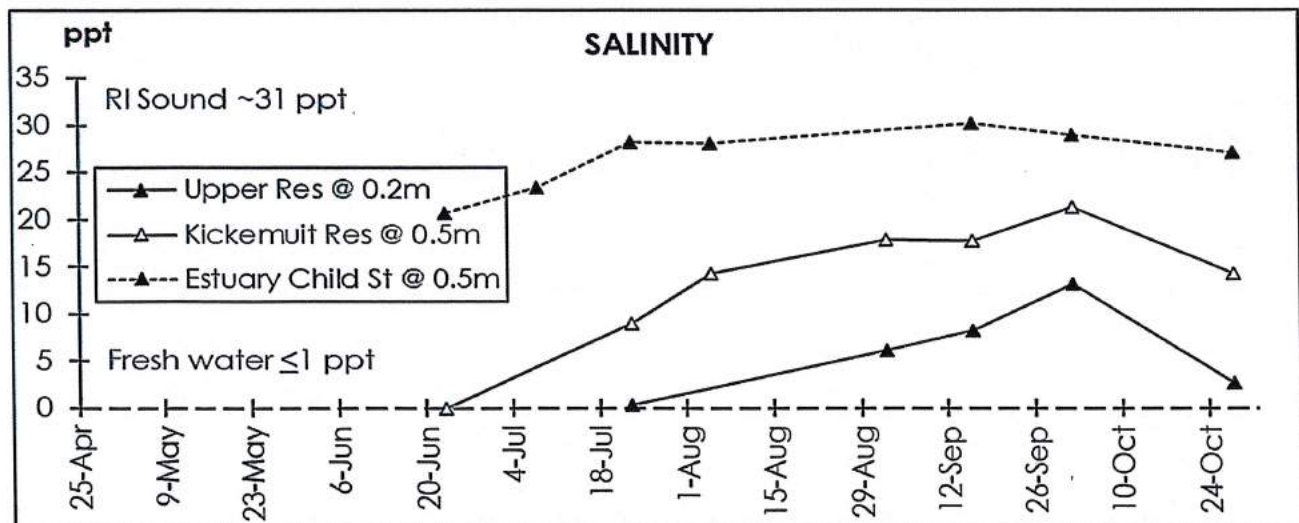


Figure 5: Salinity data of upper and lower impoundments and upper estuary at Child St. from 2020

spillway. The monitoring data also documented high nutrient and bacteria levels in both impoundments and downstream of the lower dam at Child Street. Nutrient pollution is evident from the extensive algae blooms during the summer and early fall. Algae blooms result in low oxygen conditions that create degraded habitat

conditions for fish and aquatic life. The brackish waters and low oxygen levels have hampered the return of spawning river herring, despite the construction of the fish ladder at the lower Kickemuit dam.

Project Planning: In 2014, the Upper Kickemuit River Dam safety report identified the dam as needing to address deficiencies highlighted by a statewide dam assessment, including the removal of vegetation to protect embankment stability. Based upon the fact that the dam no longer served its intended purpose, in 2015 BCWA decided to hire Pare engineering to assess dam removal. Pare was aware that the RIDEM was assessing new dam regulations, and it may cost BCWA \$500,000-\$600,000 to bring the dam up to the new standards.

As part of the assessment, Pare Corporation conducted hydrologic modeling to assess future flooding scenarios with the removal of the Upper Kickemuit River Dam. The modeled conditions indicated that the dam breach resulted in decreased depth and extent of flooding during precipitation events in residential neighborhoods in Rhode Island and Massachusetts, including Schoolhouse Road east of the dam.

However, the section of Schoolhouse Road directly downstream of the dam was identified as being more vulnerable to flooding if the Upper Kickemuit River Dam was removed. Based upon this assessment, the State's Chief Resilience Officer coordinated meetings with RIDOT staff and project partners to discuss changing the Transportation Improvement Plan and reprioritizing Schoolhouse Road from a repaving project to a road raising project. In 2019, RIDOT committed to elevating Schoolhouse Road and upgrading its culverts to prevent flooding of the roadway once the dam is removed. RIDOT hired an engineer to design and permit the Schoolhouse Road upgrades and culvert resizing, and construction is targeted for 2021 or 2022.



Figure 6: Schoolhouse Rd flooding during rain event (March 2018)

The modeling also predicted that downstream flooding of Serpentine Road, a town road, along the Lower Kickemuit River impoundment will increase if the Lower Kickemuit River Dam remained in place. Based upon this analysis, in the fall of 2019, BCWA and its partners decided to coordinate the removal of both the Upper and Lower Kickemuit River Dams simultaneously to reduce flooding during precipitation events while restoring estuarine habitat and enhancing migratory fish passage while restoring the water quality of the River.

The assessment of the Lower Kickemuit River Dam removal has included sediment analysis, a bathymetric and topographic survey, stream profile modeling and wetlands delineation, coastal surge modeling and identification and assessment of private wells adjacent to the lower impoundment. The storm surge analysis determined that the Lower Kickemuit River Dam provides no coastal flood mitigation benefits under existing and future scenarios. The dam removal will result in a slight flood increase when coastal surge is combined with a precipitation event under a worst-case scenario. BCWA also conducted an assessment of the effects of the dam removal on private drinking water wells adjacent to the lower impoundment. The sediment assessment found exceedances of copper in some of the samples due to past treatment of the drinking water supply. Pare Engineering has developed a sediment management plan that includes removal of the contaminated sediment.

The engineering and design of the dam removal projects is being coordinated with the sizing of the culverts under Schoolhouse Road. To date, Pare has developed 60% plans for the removal of the Upper and Lower Kickemuit River Dams. The design and engineering of the dam removals has been funded in part by two grants of \$75,000 each from CRMC's Coastal and Estuarine Habitat Restoration Trust Fund. Additionally \$1.2 million in funds for the dam removals was secured from the State's Climate Resilience Fund in 2020. Save The Bay has been collaborating with BCWA on writing the grants for state and federal funds for design and construction.

Partner and public engagement: BCWA formed the Committee to Study the Removal of the Kickemuit Dams in 2016 including the Town of Warren, the Kickemuit River Council, the Town of Swansea, Save The Bay, and the State of Rhode Island's Chief Resilience Officer. The Chief Resilience Officer has highlighted this project as a model resiliency project that requires interagency coordination between RIDOT, RIDEM, RI Department of Health, BCWA and the local municipality, the Town of Warren.

BCWA has held a number of meetings with the committee of stakeholders since 2016. BCWA has provided updates to the Warren Town Council on the dam removal planning and assessment in January 2021 and in May of 2020. BCWA has held two public meetings including the abutters to review the dam removal plans in November of 2019 and December of 2020.

Permitting: The Upper Kickemuit River dam removal project will require a RIDEM Freshwater Wetlands permit, RIDEM Water Quality Certification, an Army Corps 404 permit. The Lower Kickemuit River dam removal project will require a Coastal Resources Management Council Assent, a RIDEM Water Quality Certification and an Army Corps 404 permit. BCWA and Pare Engineering have had a pre permitting meeting with DEM and CRMC to discuss the permitting of both dam removals.

Project Construction and Phasing:

The Upper Kickemuit Dam will be breached after Schoolhouse Road is elevated and the culverts replaced. The removal will occur in an incremental fashion, allowing sediment contained behind the dam to mobilize in stages. Sediment will collect in the basin downstream of the dam created by Schoolhouse Road. Flow will be controlled at the Schoolhouse Road culverts. As the basin above Schoolhouse Road fills, sediment will be mechanically removed from the site – this process will be repeated until most of the sediment has been removed. It is anticipated that some sediment will flow into the lower reservoir, where it will be managed in conjunction with the existing sediment as part of the Lower Kickemuit River Dam removal. At the Lower Kickemuit River dam, sediment with elevated levels of copper will be removed. As the dam is removed, sediment will collect in the basin created by the Child Street bridge and will be mechanically removed from the site.

Once the dams are removed, the exposed areas of the riverbed will be restored with plant growth native to the former estuary. Soil samples taken in the reservoir revealed plant roots that can reestablish in the brackish water. The river basin will fill at high tide and reduce to a tidal creek at low tide, creating an ever changing but much healthier environment.

Bristol County Water Authority
Annual Write-Offs Report and Motion to Approve
For The Period 3/1/2020 to 2/28/2021

Date	Gross Write-offs	Recoveries	Net Write-offs	Quarterly Billed Revenues	Net Write Offs to Revenues
4/30/2020	\$11,002.80	\$ 5,402.34	\$ 5,600.46	\$ 3,112,653	0.18%
7/31/2020	5,746.49	5,533.86	\$ 212.63	3,925,941	0.01%
10/31/2020	8,025.92	5,324.45	\$ 2,701.47	4,950,487	0.05%
1/31/2021	<u>21,089.86</u>	<u>3,605.26</u>	<u>\$ 17,484.60</u>	<u>3,984,017</u>	<u>0.44%</u>
Total	<u>\$45,865.07</u>	<u>\$ 19,865.91</u>	<u>\$ 25,999.16</u>	<u>\$ 15,973,098</u>	<u>0.16%</u>

Motion:

To acknowledge Annual Gross Write-Offs in the amount of \$45,865.07 less Recoveries of \$19,865.91 as presented.