

Central Plymouth County Water District Commission

Minutes of Tuesday, December 20, 2022, ZOOM Meeting

The meeting took place via Zoom video/teleconference due to current COVID-19 social distancing recommendations issued by Governor Charles Baker.

Quorum was reached with three Commissioners voting in affirmative, roll call vote: Commissioner Biechler – yes, Commissioner Egerton – yes, and Chair O’Leary – yes. Three in the affirmative, the meeting began at 12:01 PM.

Meeting attendees identified included Al DeGirolamo from Senator Brady’s office; Kamiya Parkin Policy and Intergovernmental Affairs Associate from Mayor Sullivan’s office; Sheila Vaughn from Kingston Board of Selectmen; Don Howard from the Hanson Water Committee; William Chenard Town Manager for Pembroke; Pine duBois from the Jones River Watershed Association; Matt Panella from the Kingston Conservation Committee; and Nathan Hedberg. Frank Basler, Plymouth County Administrator, attended and took minutes.

Newly appointed Commissioner Art Egerton introduced himself as a Pembroke resident who has lived most of his years in Pembroke with knowledge about the ponds and water ways of the area. He is a private businessman.

Commissioner Biechler moved to accept both the minutes of October 25, 2022, and November 18, 2022. Seconded by Commissioner Egerton. Roll call vote: Commissioner Biechler – yes; Commissioner Egerton – yes, and Chair O’Leary– yes. Motion passes unanimously.

Frank Basler gave an overview of the Finance Report. The November 30, 2022, bank balance was \$348,384.32 (see attached). There were no questions raised.

Commissioner Biechler made a motion to approve payment of the two TRC invoices below. Commissioner Egerton seconded the motion. Roll call vote: Commissioner Biechler – yes; Commissioner Egerton – yes, and Chair O’Leary– yes. Motion passes unanimously.

- TRC invoice 562157 dated November 21, 2022, for \$9,531.03
- TRC invoice 566571 dated December 15, 2022, for \$5,926.94

The Commissioners discussed the meeting schedule for 2023. The best thought was to continue the fourth Tuesdays of the month with a Zoom format, as long as the format stays approved by the State. The April and September meetings could be in person if possible. The Commissioners will decide as we approach the dates. Commissioner Egerton made a motion to the above and Commissioner Biechler seconded the motion. Roll call vote: Commissioner Biechler – yes; Commissioner Egerton – yes, and Chair O’Leary– yes. Motion passes unanimously.

Chair O’Leary and Commissioner Biechler gave their background information for Commissioner Egerton.

Chair O’Leary then opened a discussion on the background of the CPCWDC, Silver Lake, and the City of Brockton water sources as information for the new Commissioners. Ms. duBois added a

historical perspective dating back to the late 1800's. Ms. duBois mentioned a slide deck as background and Frank brought up a deck presented at a meeting on August 5, 2020 (attached to the minutes).

Mr. Howard stated, that from his perspective, the challenge is that Silver Lake cannot recap the full demand of Brockton's daily water consumption and should be relying on Aquaria more.

The Chair said that this conversation will continue at the next meeting.

The next regularly scheduled meeting will be a Zoom meeting on Tuesday, January 24th at noon.

Meeting adjourned at 1:25 P.M. Roll call vote: Commissioner Biechler – yes; Commissioner Egerton – yes, and Chair O'Leary– yes. Motion passes unanimously.

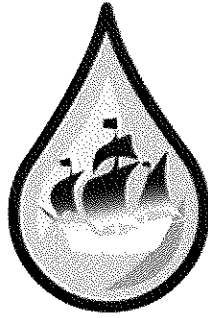
Submitted by Frank Basler

Attachments: agenda for December 20, Financial Update, TRC invoices, and slide presentation from August 5, 2020.

CENTRAL PLYMOUTH COUNTY
WATER DISTRICT COMMISSION

44 OBERY STREET, PLYMOUTH, MA 02360

WWW.CENTRALPLYMOUTHCOUNTYMA.GOV



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LBIECHLER@PLYMOUTHCOUNTYMA.GOV

ART EGERTON, PEMBROKE
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NOTICE OF MEETING

DATE & TIME: **Tuesday, December 20, 2022, 12:00 pm**

MEETING LOCATION: **Zoom video/Teleconference**

This meeting notice is being filed and posted in each city or town within the Central Plymouth County Water District, pursuant to General Law Chapter 30A, Section 20. Said notice and agenda must be filed in the offices of the city and town clerks within the District **at least 48 hours** prior to such meeting. Such filing and posting shall be the responsibility of the officer calling the meeting.

Join Zoom Meeting <https://us06web.zoom.us/j/86971985829> Meeting ID: 869 7198 5829
Dial by your location +1 646 876 9923 US or +1 646 931 3860 US Meeting ID: 869 7198 5829

AGENDA

Meeting opening

Introduction of new Commissioner – Art Egerton and his background along with bios of other Commissioners

Approval of minutes: Tuesday, October 25, 2022, and Friday, November 18, 2022

Finance report and invoice approval for TRC Invoice

Plan for 2023 meetings

Discussion of Brockton Water System – Part 1 geography and current operation by Pine duBois with Part 2 – history and CPCWDC at first 2023 meeting

Other business not anticipated by Chair

Adjourn

Posted on Tuesday, December 13, 2022, at 3:00 pm at each of the eight Clerk's offices listed below and the County web site at www.plymouthcountyma.gov

Central Plymouth County Water District Commission

Minutes of Tuesday October 25, 2022, ZOOM Meeting

The meeting took place via Zoom video/teleconference due to current COVID-19 social distancing recommendations issued by Governor Charles Baker.

Quorum was reached with two Commissioners voting in affirmative, roll call vote: Commissioner Biechler – yes and Chair O’Leary – yes. Two in the affirmative, the meeting began at 12:04 PM.

Meeting attendees identified included Al DeGirolamo from Senator Brady’s office; Sydné Marrow from Mayor Sullivan’s office; Don Howard of Hanson Water Committee; Joanne Zygmunt of the OCPC; Pine duBois of the Jones River Watershed Association; Stephanie Martin; Rosemary Connolly; Bernadette Kolb; Art Egerton; and Don. Matt Ladewig TRC, Inc as the Silver Lake Water Quality Monitoring Project consultant and Kimberly Graff of Groff Associates also attended. Frank Basler, Plymouth County Administrator, attended and took minutes.

Chair O’Leary introduced Commissioner Laura Biechler. This is Commissioner Laura Biechler’s first meeting as she was voted on to the Commission at the September 12, 2022, CPCWDC Advisory Committee Meeting. Ms. Biechler gave her background and was excited to join the Commission.

Chair O’Leary then stated the Commissioner Mark Sotir resigned due to moving out of the District. The Advisory Board was told there are three candidates to fill the position. The Advisory Board will meet on November 21 to fill the vacancy.

The Chair then introduced Joanne Zygmunt from the OCPC to update the meeting about the Economic Resilience and Sustainable Water Supply in the Old Colony Economic Development District (see attached pages). Ms. Zygmunt requested the Commissioners allocate a portion of the CPCWDC bank account to fund the grant as part of the match portion of the grant. Ms. Zygmunt was planning on these funds to make up a portion of the \$500,000 they would need to drive a project of \$1,000,000. The application must be submitted by end of January. The Chair asked the Administrator to create a financial picture of CPCWDC allocated funds to see how much may be put towards the project. The Commissioners will meet mid-November to decide on a final amount.

Matt Ladewig and Kimberly Groff then gave an update of the TRC project and some initial test results on cyanobacteria readings. Mr. Ladewig shared and spoke to three graphs (attached). The amount of cyanobacteria surpassed 12.55ng/ml in March showing higher than drinking water and recreational levels which should require an advisory. The Chair stated that testing should be expanded. These readings require additional conversations as the readings can affect both drinking water and local citizens.

Mr. Ladewig also discussed oxygen level readings of Silver Lake by showing a chart (attached). In July and August five to six meter and below showed little or no oxygen, also known as anoxic.

Finally, Mr. Ladewig showed chart 3 illustrating sediment coring levels and phosphorous measurements.

Ms. duBois stated the importance of this information in the report. She asked about the solar bees and the impact of the. There is a YouTube video on the Jones River Watershed website (at www.jonesriver.org).

Discussion will continue in the upcoming meetings.

Chair O'Leary moved to accept the minutes of July 26, 2022. Seconded by Commissioner Biechler. Roll call vote: Commissioner Biechler – yes and Chair O'Leary– yes. Motion passes unanimously.

Frank Basler gave an overview of the Finance Report. The September 30, 2022, bank balance was \$379,432.84 (see attached). There were no questions raised.

- TRC invoice 547637 dated August 24, 2022, for \$4,637.06.
- TRC invoice 552195 dated September 19, 2022, for \$13,483.37
- TRC invoice 557447 dated October 19, 2022, for \$5,500.44
- Bond Printing 43769 dated September 23, 2022, for \$90.00
- Plymouth County services invoice dated July 29, 2022, for \$4,491.25

Commissioner O'Leary made a motion to approve the invoices as noted above. Seconded by Commissioner Biechler. Roll call vote: Commissioner Biechler – yes and Chair O'Leary– yes. Motion passes unanimously.

The Chair then asked Frank for an update on the dredge. He shared that Keene Engineering had had trouble with sourcing the usual equipment needed to build the dredge, specifically the pumps. Mr. Keene is looking at alternative sources and will give us an update as soon as possible.

The next regularly scheduled meeting will be a Zoom meeting on Tuesday, December 20th at noon.

Meeting adjourned at 1:30 P.M.

Submitted by Frank Basler

Central Plymouth County Water District Commission

Minutes of Friday November 18, 2022, ZOOM Meeting

The meeting took place via Zoom video/teleconference due to current COVID-19 social distancing recommendations issued by Governor Charles Baker.

Quorum was reached with two Commissioners voting in affirmative, roll call vote: Commissioner Biechler – yes and Chair O’Leary – yes. Two in the affirmative, the meeting began at 12:37 PM.

Meeting attendees identified included Al DeGirolamo from Senator Brady’s office; Susan Nicastro from the Brockton City Council; Sheila Vaughn from Kingston Board of Selectmen; Don Howard from the Hanson Water Committee; Joanne Zygmunt from the OCPC; Pine duBois of the Jones River Watershed Association; Charlie Selig Administrator from East Bridgewater; Patrick Hill City of Brockton DPW Director; Bob Kenney of the Pembroke Watershed Committee; and Charles Matthewson of WATD. Kimberly Graff of Groff Associates also attended. Frank Basler, Plymouth County Administrator, attended and took minutes.

The Chair introduced Joanne Zygmunt from the OCPC to update the meeting about the Economic Resilience and Sustainable Water Supply in the Old Colony Economic Development District looking at affordability, environmental issues, and sustainability. The study will cover the 17 communities in the OCPC footprint. All eight communities of the CPCWDC are included.

Ms. Zygmunt requested the Commissioners allocate a portion of the CPCWDC funds to support the grant as part of the match portion of the grant. Ms. Zygmunt is planning on these funds to make up a portion of the \$500,000 they would need to drive a project of \$1,000,000. Senator Brady’s office is working on an earmark for \$200,000 from the State Legislature for the grant.

The Commissioners stated that this grant is a critical need, and both agreed to the great benefits that this grant would create.

The Chair reviewed the Administrator’s recap of the financial picture of CPCWDC allocated funds below to see how much may be put towards the project.

The Board financials are:

- Committed to a cap of \$230,000 for the Silver Lake Sampling project to TRC and have spent \$127,715.79. Remaining balance \$102,284.21
- The dredge buildout contract total of \$66,360.02 and have paid \$35,000 to date. The Commissioners also committed about \$20,000 for a motor, extra hosing, and a boat trailer. Remaining committed balance of \$51,360.02
- Kim Groff’s commitment has been fulfilled but can continue month to month.
- The CPCWDC bank balance is now \$345,868.22 (after payment of the invoices approved at the October meeting and including the Groff October 31 invoice received but not approved by you yet) and DCR has \$50,000 in process for the CPCWDC. This totals \$395,868.22 with the stated commitments above of \$153,644.23. This leaves an uncommitted balance of \$242,223.99.

Commissioner Biechler made a motion that the CPCWDC commits \$225,000 towards the work of the OCPC grant application and support the approval of the grant. Furthermore, to authorize Administrator Frank Basler to assist Joanne Zygmunt in the grant application, where needed, and sign the grant on behalf of the CPCWDC Commissioners at submission time. Seconded by Chair O'Leary. Roll call vote: Commissioner Biechler – yes and Chair O'Leary– yes. Motion passes unanimously.

The Chair tabled the acceptance of the minutes of October 25, 2022 to next meeting.

Commissioner Biechler made a motion to approve payment of the Groff Consulting invoice dated October 31, 2022, #005, for \$2,362.50. Seconded by Chair O'Leary. Roll call vote: Commissioner Biechler – yes and Chair O'Leary– yes. Motion passes unanimously.

The next regularly scheduled meeting will be a Zoom meeting on Tuesday, December 20th at noon.

Meeting adjourned at 1:03 P.M.

Submitted by Frank Basler

11/30/2022	Interest for November	\$	73.04	\$	348,384.32	statement balance 11/30/22 \$348,384.32
11/8/2022	TRC invoices	\$	(26,620.87)			chck #1026
11/7/2022	County invoicing for FY 22	\$	(4,581.25)			chck #1027
10/31/2022	Interest for October	\$	80.56	\$	379,513.40	statement balance 10/31/22 \$379,513.40
9/30/2022	Interest for September	\$	77.95	\$	379,432.84	statement balance 9/30/22 \$379,432.84
8/31/2022	Interest for August	\$	17.38	\$	379,354.89	statement balance 8/31/22 \$379,354.89
8/19/2022	deposit for Keene Engineering for dredge	\$	(35,000.00)			
8/15/2022	TRC invoices for May, June, and July 2022	\$	(21,227.68)			
7/31/2022	Interest for July	\$	18.50	\$	435,565.19	statement balance 7/31/22 \$435,565.19
6/30/2022	Interest for June	\$	17.90	\$	435,546.69	statement balance 6/30/22 \$435,546.69
5/31/2022	interest for May	\$	18.93			
5/23/2022	Invoice for Kimberly Groff Assoc (April Inv)	\$	(3,300.00)	\$	435,509.86	
5/23/2022	Invoice for TRC environmental (April Inv)	\$	(7,145.43)			
4/30/2022	Interest for April	\$	18.53			statement balance 4/30/22 \$449,621.87
4/22/2022	Invoice for TRC environmental (March Inv)	\$	(3,666.58)			
4/12/2022	Invoice Kimberly Groff Assoc	\$	(3,975.00)			
3/31/2022	Interest for March	\$	19.49	\$	453,578.34	statement balance 3/31/22 \$453,578.34
3/11/2022	ESS Consulting invoice	\$	(16,563.64)			
2/28/2022	Interest for February	\$	18.32	\$	470,122.49	statement balance 2/28/22 \$470,122.49
2/22/2022	ESS Consulting invoice	\$	(9,851.40)			
1/31/2022	Interest for January	\$	20.38	\$	479,955.57	
1/3/2022	Peter Tuttle final payment #1016	\$	(1,038.00)			
12/31/2021	Interest for December	\$	21.23	\$	480,973.19	statement balance 12/31/21 \$480,973.19
12/29/2021	check 1015, EES Oct and Nov invoices	\$	(20,857.18)			
12/20/2021	check 1017, reimb Basler for web expenses	\$	(283.40)			
11/30/2021	Interest for November	\$	20.64	\$	502,092.54	statement balance 11/30/21 \$502,092.54
10/31/2021	Interest for October	\$	20.00	\$	502,071.90	statement balance 10/31/21 \$502,071.90
10/22/2021	State Earmark	\$	50,000.00	\$	502,051.90	administrative set aside
10/12/2021	ESS Consulting	\$	(21,783.01)	\$	452,051.90	chk# 1014
9/30/2021	Interest for September	\$	19.48	\$	473,834.91	
9/1/2021	Kimberly Groff Assoc	\$	(2,625.00)	\$	473,815.43	chk # 1012
8/31/2021	Interest for August	\$	20.39	\$	476,440.43	statement balance 8/31/21 \$476,440.43
8/25/2021	Frank Basler	\$	(130.76)	\$	476,420.04	
8/25/2021	Plymouth County	\$	(4,730.08)	\$	476,550.80	chk \$1011 for services for FY 21
7/31/2021	Interest for July	\$	20.44	\$	481,280.88	statement balance 7/31/21 \$481,280.88
6/30/2021	Interest for June	\$	19.78	\$	481,260.44	statement balance 6/30/21 \$481,260.44
5/31/2021	Interest for May	\$	20.51	\$	481,240.66	
5/4/2021	Kimberly Groff Assoc	\$	(4,950.00)	\$	481,220.15	
4/30/2021	interest for April	\$	19.98	\$	486,170.15	
3/31/2021	Interest for March	\$	20.64	\$	486,150.17	statement balance 3/31/21 \$486,150.17
2/28/2021	Interest for February	\$	18.65			
1/31/2021	Interest for January	\$	20.64	\$	486,110.88	statement balance 1/31/21 \$486,110.88
12/31/2020	Interest for December	\$	20.60	\$	486,090.24	statement balance 12/31/20 \$486,304.01
12/30/2020	brochure printing and acrylic holders	\$	(213.77)			reimb to Frank chk#
11/30/2020	Interest for November	\$	19.93	\$	486,283.41	statement balance 11/30/20 \$486,283.41
10/31/2020	Interest for October	\$	20.59			
9/30/2020	Interest for September	\$	20.02	\$	486,242.89	statement balance 9/30/20 \$486,497.89 - diff Source4 chk
9/16/2020	invoice for Source4 for brochure final payment	\$	(255.00)			pd #1007 \$255.00
	transfer for County Expenses	\$	(2,805.94)			pd #1008 \$2,805.94
8/31/2020	Interest for August	\$	22.06	\$	489,283.81	statement balance 8/31/20 \$
7/31/2020	Interest for July	\$	41.44	\$	489,261.75	statement balance 7/31/20 \$489,220.31
6/30/2020	Interest for March, April, May, and June	\$	260.56	\$	489,220.31	statement balance 6/30/20 \$489,220.31
2/29/2020	Interest for January and February	\$	240.84	\$	488,959.75	statement balance 2/29/20 \$488,959.75
1/20/2020	reimb to Basler for Weebly invoices #1006	\$	(263.45)			pd #1006 \$263.45
1/20/2020	Madeline M. Smith invoice 11/30/19 #1005	\$	(1,025.00)			pd #1005 \$1,025.00
12/31/2019	Interest December	\$	124.82	\$	490,007.36	statement balance 12/31/2019 \$490,007.36
11/30/2020	Interest November	\$	91.36	\$	489,882.54	statement balance 11/30/2019 \$489,882.54
11/1/2019	Madeline M. Smith invoice 9/30/19 #1004	\$	(1,210.39)			
11/15/2019	DCR Transfer Admin Costs	\$	50,000.00			
11/15/2019	DCR Transfer special earmark	\$	155,000.00			
10/31/2019	Interest October	\$	97.13	\$	286,001.57	
9/30/2019	Interest September	\$	94.13			
8/31/2019	Interest for August	\$	97.66	\$	285,810.31	statement balance 8/31/2019 \$287,565.31
8/27/2019	Madeline M. Smith invoice #1003	\$	(1,755.00)			
6/30/2019	Interest for July	\$	97.63			
6/30/2019	Interest for June	\$	95.57	\$	287,370.02	statement balance 6/30/19 \$287,370.02
5/31/2019	Interest for March, April, and May	\$	302.58			
5/29/2019	Peter Tuttle final payment #1002	\$	(10,860.00)			
4/30/2019	County of Plymouth - Admin FY 19 and Expenses (7/1 to 4/30)	\$	(2,186.33)			email, admin fee \$1,500 for FY 19, and misc services
3/31/2019	interest through March 31, 2019	\$	259.27			
1/22/2019	DCR for water plan	\$	170,000.00			
1/22/2019	DCR for FY 19	\$	50,000.00			
6/1/2018	DCR for FY 18	\$	50,000.00			
5/30/2018	interest through May 31, 2018	\$	138.53			
4/19/2018	Peter Tuttle #1003	\$	(7,950.00)			
3/8/2018	County of Plymouth - FY 18 Admin and Expenses	\$	(1,227.40)			email, bussiness cards, admin fee \$1,000 FY '18
3/8/2018	Corona Environment	\$	(9,900.00)			
1/30/2017	County of Plymouth - FY 17 Admin and Expenses	\$	(1,302.20)			email, bussiness cards, envelopes, admin fee \$1,000 FY '17
5/15/2016	DCR for FY 16	\$	50,000.00			



INVOICE

PAYMENT INSTRUCTIONS: Please pay by ACH or WIRE. Provide Invoice Numbers/Amounts to
ARremitdetail@trccompanies.com

Electronic Funds Payment Details:

Bank Name: Citizens Bank:
US ACH: 211170114
US WIRE: 011500120

Swift Code: CTZIUS33
Account Name: TRC
Account Number: 2232037090

Check Payment Mailing Address: TRC LOCKBOX • P.O. BOX 536282 • PITTSBURGH, PA 15253-5904

Central Plymouth County Water District Commission
44 Obery Street
Plymouth, MA 02360

November 21, 2022
Project No: 016120.0000.0000
Invoice No: 562157
Project Manager: Matthew Ladewig

Project 016120.0000.0000 SILVER LAKE WATER QUALITY MONITORING PROGRAM

Professional Services through November 11, 2022

Phase 000001 ADMINISTRATION AND REPORTING

TRC Personnel

	Hours	Rate	Amount	
Ladewig, Matthew	1.00	215.00	215.00	
Communication Fee			8.60	
Total	1.00		223.60	223.60
Total this Phase				\$223.60

Phase 000005 WATER COLUMN & WATER QUALITY SAMPLING

TRC Personnel

	Hours	Rate	Amount	
Bertherman, Joseph	6.50	95.00	617.50	
Ladewig, Matthew	2.00	95.00	190.00	
Martin, Stephanie	7.25	95.00	688.75	
Ochs, Addison	.25	95.00	23.75	
Treacy, James	4.00	95.00	380.00	
Communication Fee			76.00	
Total	20.00		1,976.00	1,976.00

Subcontractors

Reimb/Sub-Other Subcontractor Costs				
11/3/2022 Aquatic Analysts Inc.	Algae analyses		694.40	
Total Subcontractors	1.1 times		694.40	763.84

Field Expenses

Reimb/Non-Sub-Mileage				
10/27/2022 TREACY JAMES E	MILEAGE-FIELD SURVEY		60.00	
Reimb/Non-Sub-Postage/Shipping/Delivery				
10/19/2022 Fedex	770184322872		161.17	
10/19/2022 Fedex	770184385513		237.72	
Total Field Expenses	1.1 times		458.89	504.78

Field Equipment & Vehicles

Company Vehicle - Mileage				
10/27/2022	48.5 Miles @ 0.56		27.16	
Total Units	1.0 times		27.16	27.16

Project	016120.0000.0000	SILVER LAKE WATER QUALITY MONITORING PRO	Invoice	562157
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Total this Phase \$3,271.78

Phase 000006 UPSTREAM AND DOWNSTREAM MONITORING

TRC Personnel

	Hours	Rate	Amount	
Bertherman, Joseph	12.25	95.00	1,163.75	
Ladewig, Matthew	2.00	95.00	190.00	
Martin, Stephanie	13.00	95.00	1,235.00	
Treacy, James	8.00	95.00	760.00	
Communication Fee			133.95	
Total	35.25		3,482.70	3,482.70

Field Expenses

Reimb/Non-Sub-Mileage				
10/26/2022	TREACY JAMES E	MILEAGE-FIELD SURVEY	73.75	
	Total Field Expenses	1.1 times	73.75	81.13

Field Equipment & Vehicles

Company Vehicle - Mileage				
10/26/2022	101.0 Miles @ 0.56		56.56	
	Total Units	1.0 times	56.56	56.56
		Total this Phase		\$3,620.39

Phase 000007 GROUNDWATER ASSESSMENT

TRC Personnel

	Hours	Rate	Amount	
Bertherman, Joseph	8.25	95.00	783.75	
Treacy, James	8.00	95.00	760.00	
Communication Fee			61.75	
Total	16.25		1,605.50	1,605.50

Field Equipment & Vehicles

Company Vehicle - Mileage				
10/27/2022	48.5 Miles @ 0.56		27.16	
	Total Units	1.0 times	27.16	27.16
		Total this Phase		\$1,632.66

Phase 000008 TECHNICAL MEMORANDUM

TRC Personnel

	Hours	Rate	Amount	
Ladewig, Matthew	3.50	215.00	752.50	
Communication Fee			30.10	
Total	3.50		782.60	782.60

Total this Phase \$782.60

Total this Invoice \$9,531.03



INVOICE

PAYMENT INSTRUCTIONS: Please pay by ACH or WIRE. Provide Invoice Numbers/Amounts to
ARremitdetail@trccompanies.com

Electronic Funds Payment Details:

Bank Name: Citizens Bank:
US ACH: 211170114
US WIRE: 011500120

Swift Code: CTZIUS33
Account Name: TRC
Account Number: 2232037090

Check Payment Mailing Address: TRC LOCKBOX • P.O. BOX 536282 • PITTSBURGH, PA 15253-5904

Central Plymouth County Water District Commission
44 Obery Street
Plymouth, MA 02360

December 15, 2022
Project No: 016120.0000.0000
Invoice No: 566571
Project Manager Matthew Ladewig

Project 016120.0000.0000 SILVER LAKE WATER QUALITY MONITORING PROGRAM

Professional Services through December 9, 2022

Phase 000005 WATER COLUMN & WATER QUALITY SAMPLING

TRC Personnel

	Hours	Rate	Amount	
Ladewig, Matthew	3.50	95.00	332.50	
Martin, Stephanie	5.00	95.00	475.00	
Mottola, Sophia	.50	95.00	47.50	
Ochs, Addison	3.75	95.00	356.25	
Communication Fee			48.45	
Total	12.75		1,259.70	1,259.70

Subcontractors

Reimb/Sub-Lab Costs

11/16/2022	Phoenix Environmental Laboratories Inc	Silber Lake	86.68	
11/16/2022	Phoenix Environmental Laboratories Inc	Silver Lake	86.68	
11/16/2022	Phoenix Environmental Laboratories Inc	silver lake	173.35	
11/16/2022	Phoenix Environmental Laboratories Inc	Silver Lake	76.04	
11/16/2022	Phoenix Environmental Laboratories Inc	Silver lake	76.04	
11/16/2022	Phoenix Environmental Laboratories Inc	Silver Lake	380.20	
11/16/2022	Phoenix Environmental Laboratories Inc	Silver Lake	295.12	
11/16/2022	Phoenix Environmental Laboratories Inc	Silver Lake	244.50	
11/16/2022	Phoenix Environmental Laboratories Inc	Silver Lake	76.04	
11/16/2022	Phoenix Environmental Laboratories Inc	Silver Lake	86.68	
11/16/2022	Phoenix Environmental Laboratories Inc	silver	20.74	
11/30/2022	Greenwater Laboratories	Lab-Water Analysis	200.00	
	Total Subcontractors	1.1 times	1,802.07	1,982.28

Project	016120.0000.0000	SILVER LAKE WATER QUALITY MONITORING PRO	Invoice	566571
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Field Expenses

Reimb/Non-Sub-Postage/Shipping/Delivery

11/30/2022 Fedex 770567037864

105.60

Total Field Expenses

1.1 times

105.60

116.16

Total this Phase

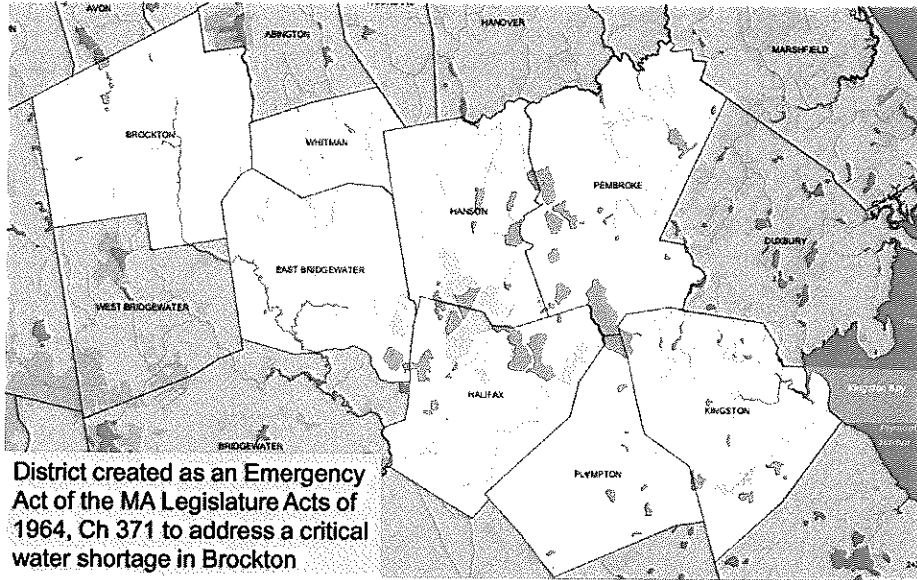
\$3,358.14

Phase 000006 UPSTREAM AND DOWNSTREAM MONITORING

TRC Personnel

	Hours	Rate	Amount	
Ladewig, Matthew	3.50	95.00	332.50	
Martin, Stephanie	15.50	95.00	1,472.50	
Proko, Morgan	7.00	95.00	665.00	
Communication Fee			98.80	
Total	26.00		2,568.80	2,568.80
		Total this Phase		\$2,568.80
		Total this Invoice		\$5,926.94

Central Plymouth County Water District Commission
Public Meeting August 5, 2020



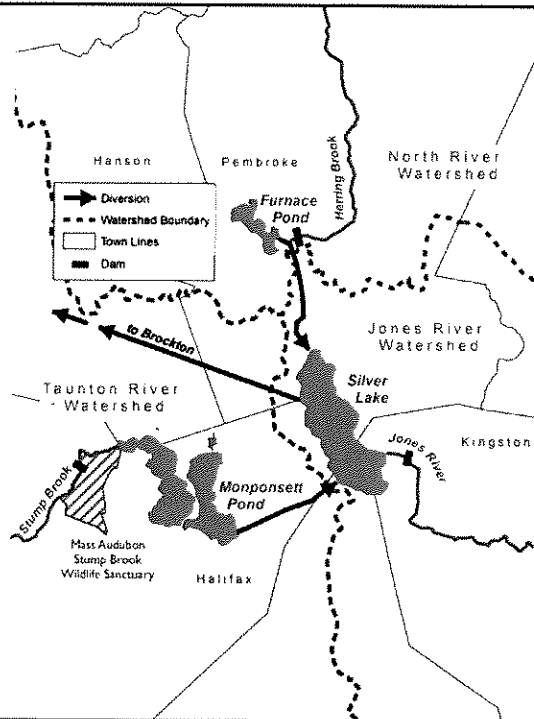
District created as an Emergency Act of the MA Legislature Acts of 1964, Ch 371 to address a critical water shortage in Brockton

centralplymouthcountywater.org

1

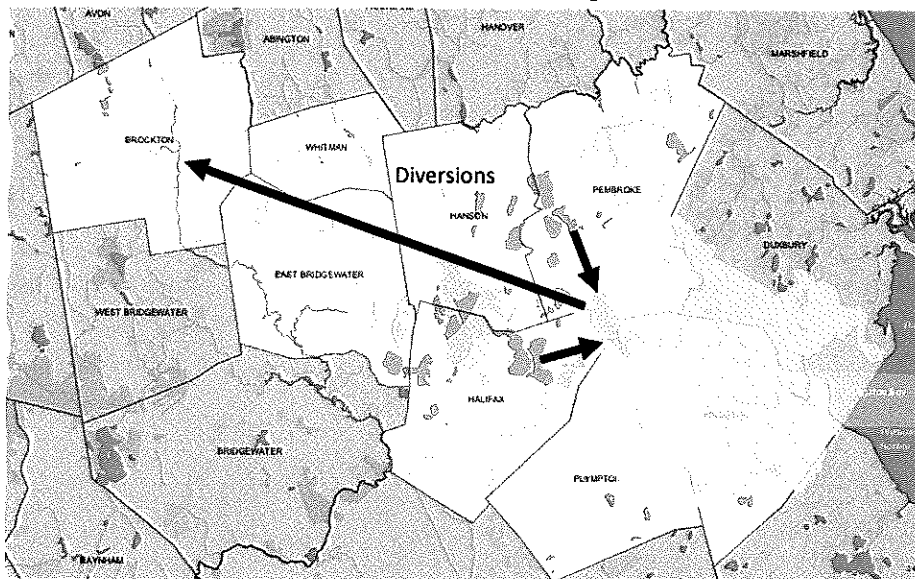
The 1964 Act established rules regulating diversions into Silver Lake to increase available supply.

Brockton manages the diversions. Over time, the water quality in Monponsett and Furnace ponds has deteriorated due to complex issues, and these diversions into Silver Lake have reduced its water quality.



2

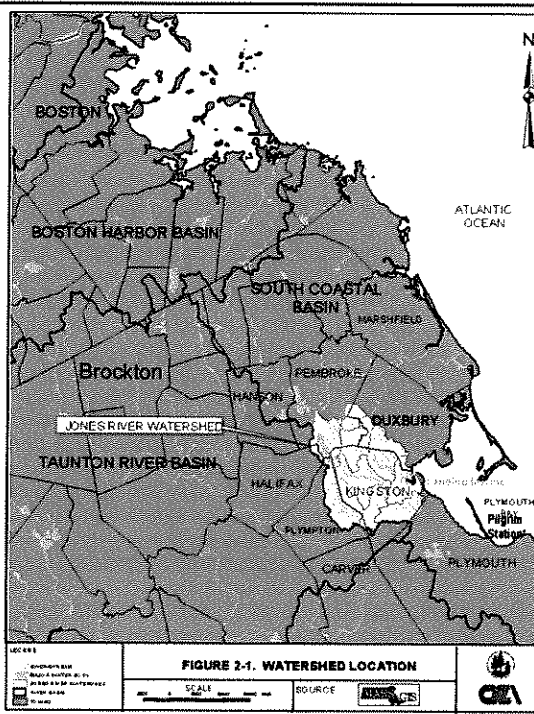
Diversions cross natural watershed boundaries, leading to lack of flow in three separate river systems, affecting water quality and fish populations, which are now in significant decline at sea.



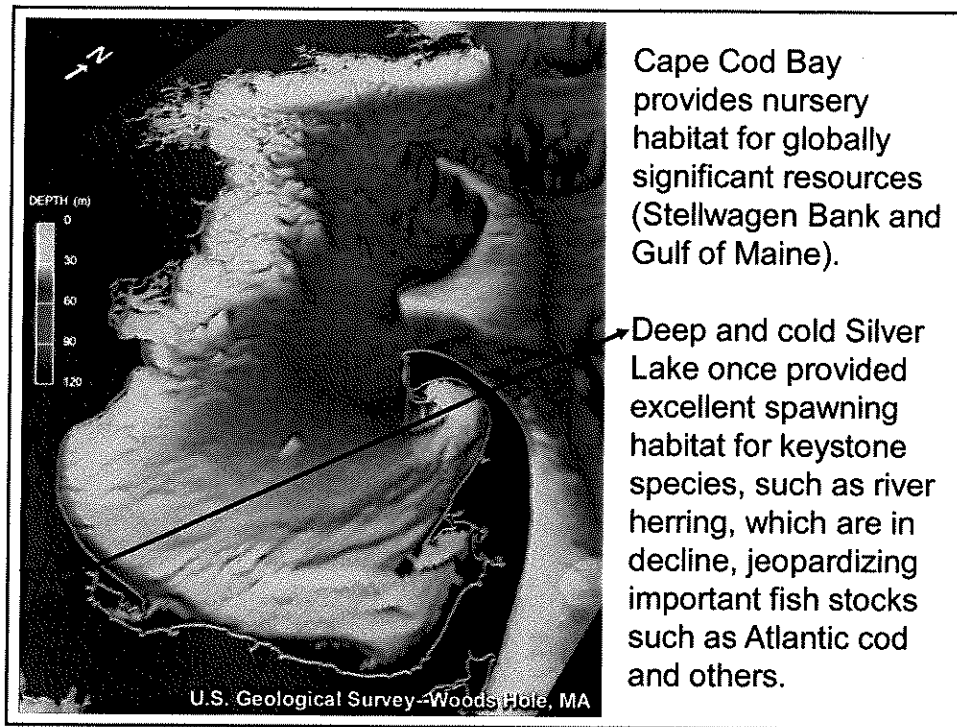
3

Silver Lake watershed is about 17% of the drainage area above the Jones River estuary.

The Jones is the largest river (about 7.5 miles long) contributing to Cape Cod Bay. It provides nursery and essential habitat, supporting Gulf of Maine fisheries.



4



5

River Herring is a Keystone Species toward the beginning of the food chain that most animals and people rely on

Trophic Importance of Herring

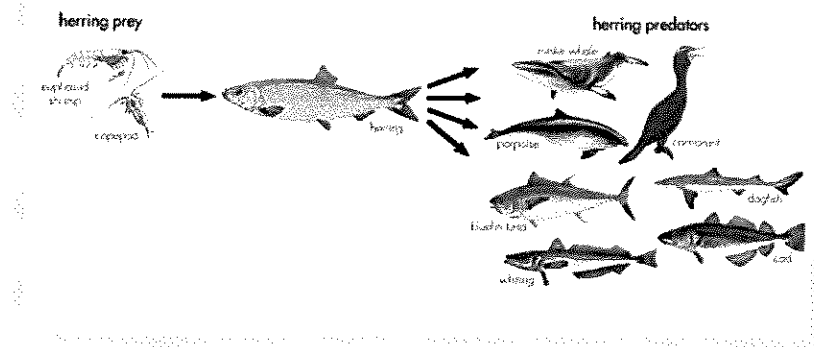
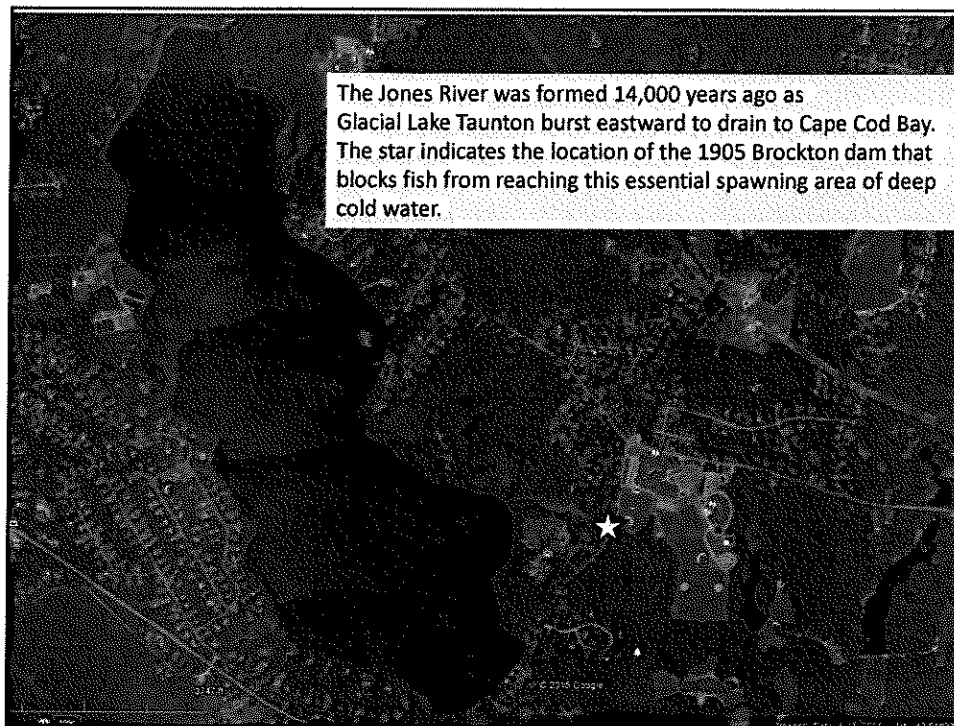


Image: Northwest Atlantic Marine Alliance

6



7

GZA Jones River Watershed Study for DEM, 2003 Silver Lake flow contribution to Jones River

Under Natural Conditions, even in the worst droughts,
Silver Lake would connect to Cape Cod Bay

Month	Natural Conditions		Developed Conditions		Future Conditions	
	Avg. Monthly Outflow	DRY Monthly Outflow	Avg. Monthly Outflow	DRY Monthly Outflow	Avg. Monthly Outflow	DRY Monthly Outflow
	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
OCTOBER	4.8	3.8	0.0	0.0	0.0	0.0
NOVEMBER	11.8	10.5	0.0	0.0	0.0	0.0
DECEMBER	8.7	7.5	0.0	0.0	0.0	0.0
JANUARY	17.0	15.7	0.0	0.0	0.0	0.0
FEBRUARY	26.3	25.0	0.0	0.0	0.0	0.0
MARCH	38.1	37.0	0.8	0.0	1.8	0.0
APRIL	23.1	21.9	7.7	0.0	8.3	0.0
MAY	20.9	19.9	4.4	0.0	4.5	0.0
JUNE	16.6	15.8	0.1	0.0	0.1	0.0
JULY	8.5	8.0	0.0	0.0	0.0	0.0
AUGUST	6.8	5.7	0.0	0.0	0.0	0.0
SEPTEMBER	6.4	5.4	0.0	0.0	0.0	0.0

Table 5-2. Estimated Silver Lake Outflows

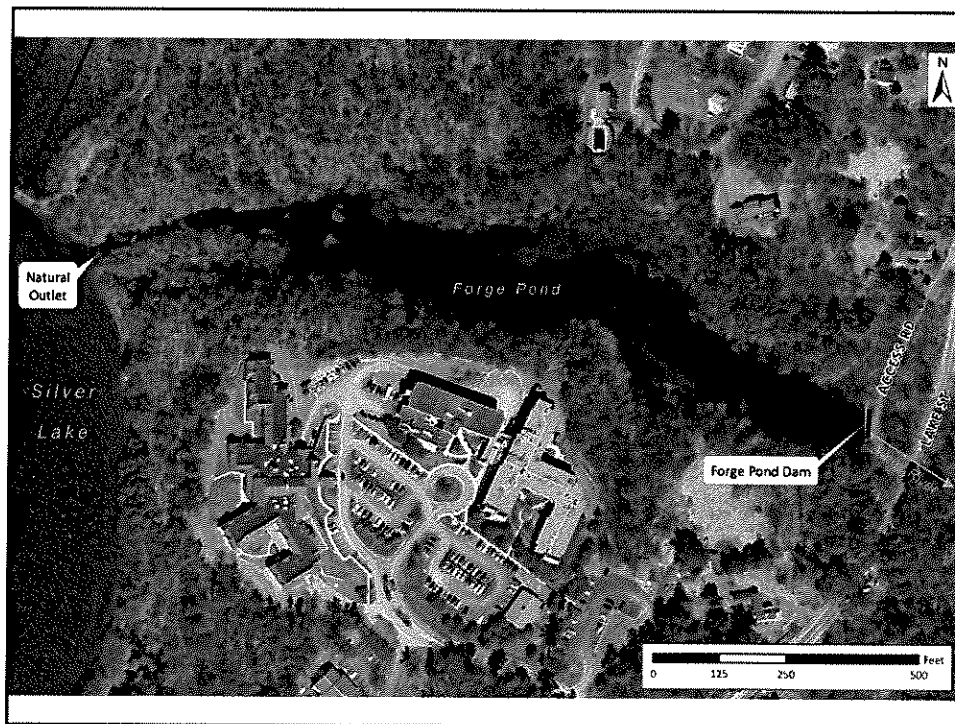
8

**Silver Lake naturally discharges to the Jones River.
"Forge Pond" is the name of the dammed river.**

- The 1905 Brockton dam on the Jones River raised the level of the lake by a foot to provide the city with a needed water supply.
- By the 1920's, the Brockton water commission considered its nearly 3 million gallons per day withdrawal from the lake unsustainable.
- Today, 3 times that is taken (~8-12 million gallons per day), enabled by seasonal diversions into the lake, not because of the 38-inch dam.

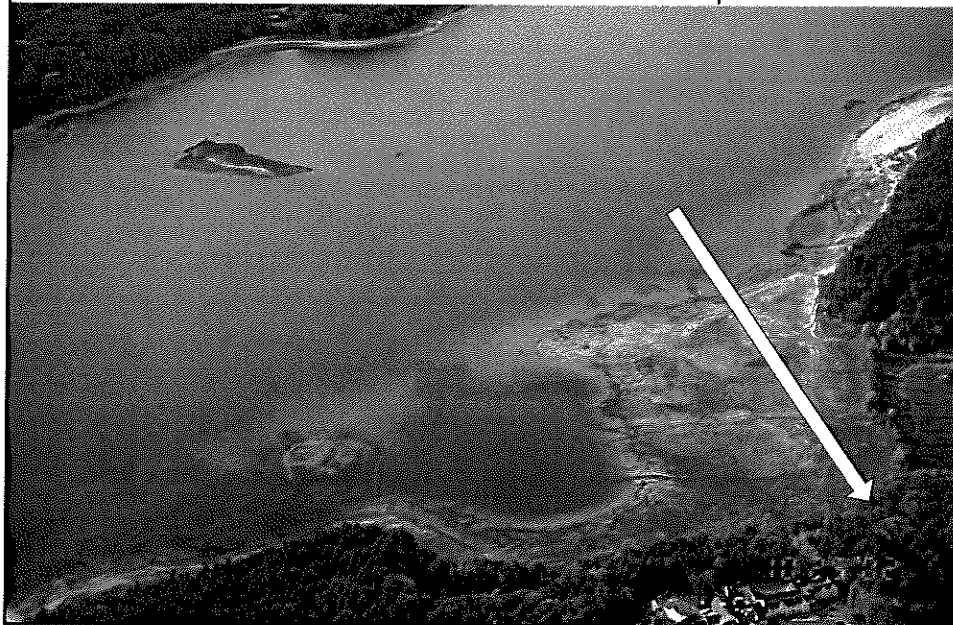


9



10

Silver Lake in Oct. 2002. Arrow shows outlet to Jones River. In recent times, there have been repeated stretches of zero flow to the river for years in a row. 2016-2017 was as bad or worse than shown in this picture.



11

Jones River at the dam – choked. Typical end-of-summer view.



12

Brockton Dam off Lake St.
in Kingston

About 1800 feet from outlet
at Silver Lake



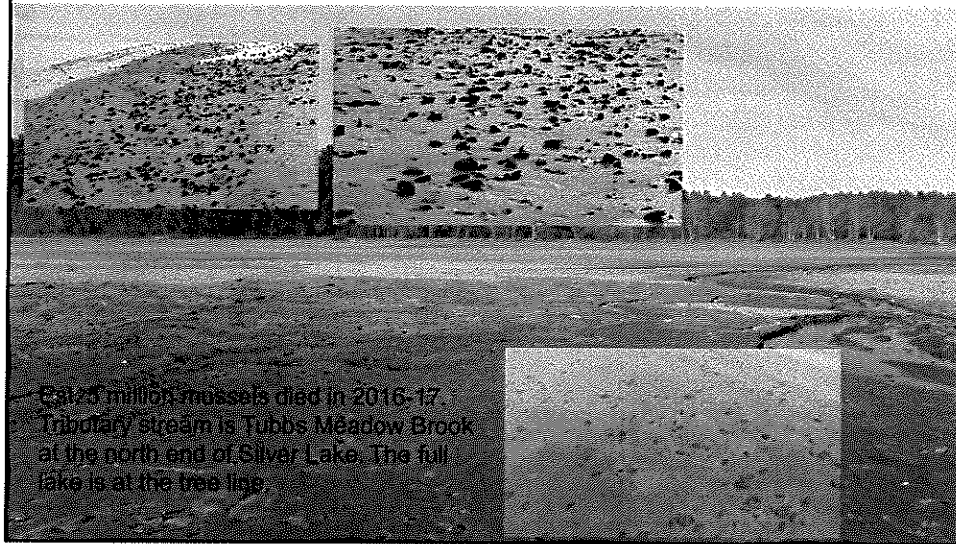
13

Dry Jones Riverbed downstream of the
Brockton dam when there is no flow over spillway

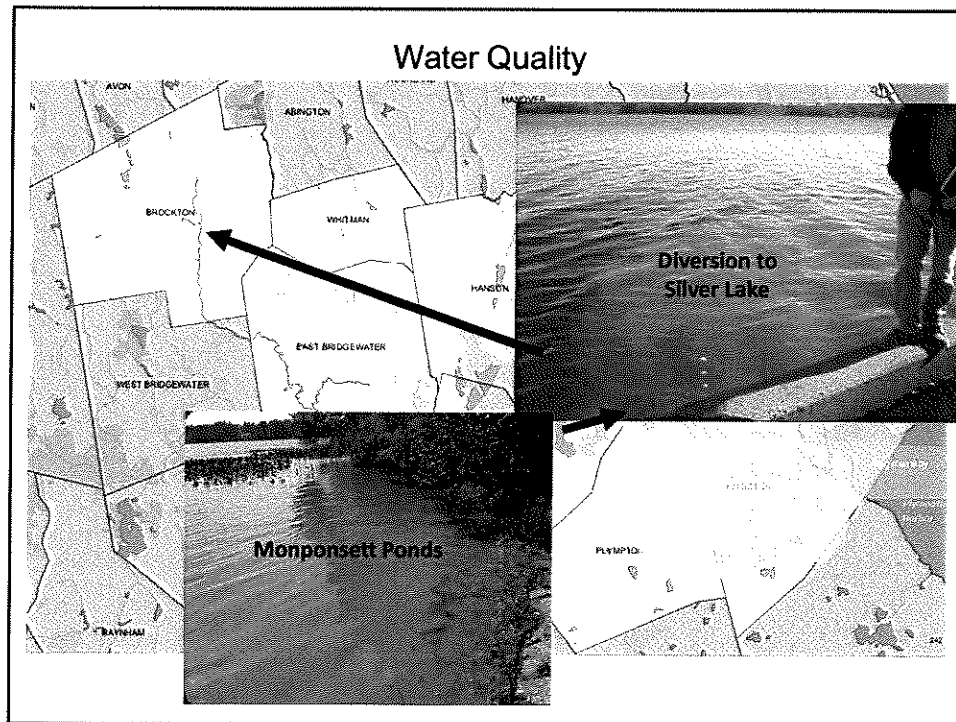


14

Problems: deteriorating water quality and chronic freshwater mussel die-off from rapid drawdown, further reducing quality.
Silver Lake is an important primary habitat for mussels.

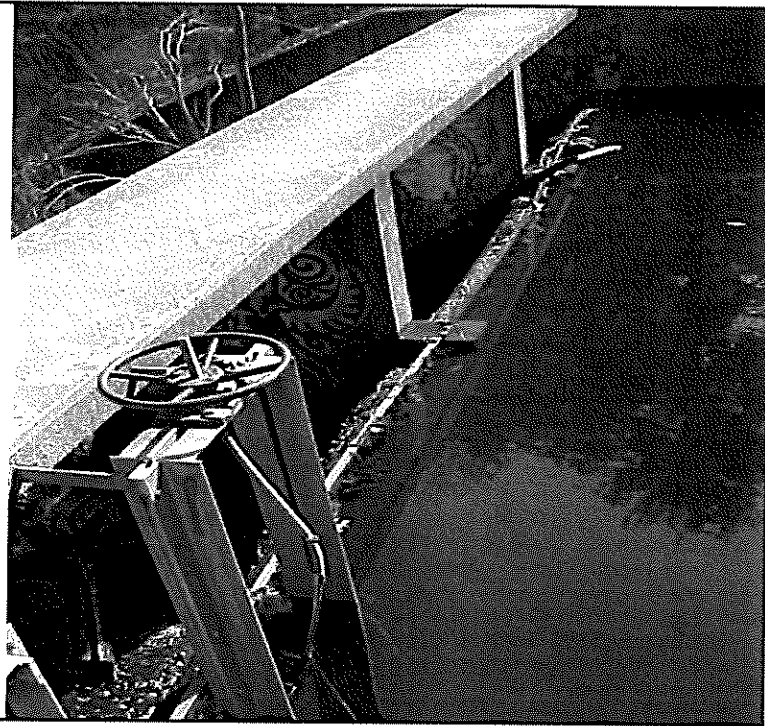


15



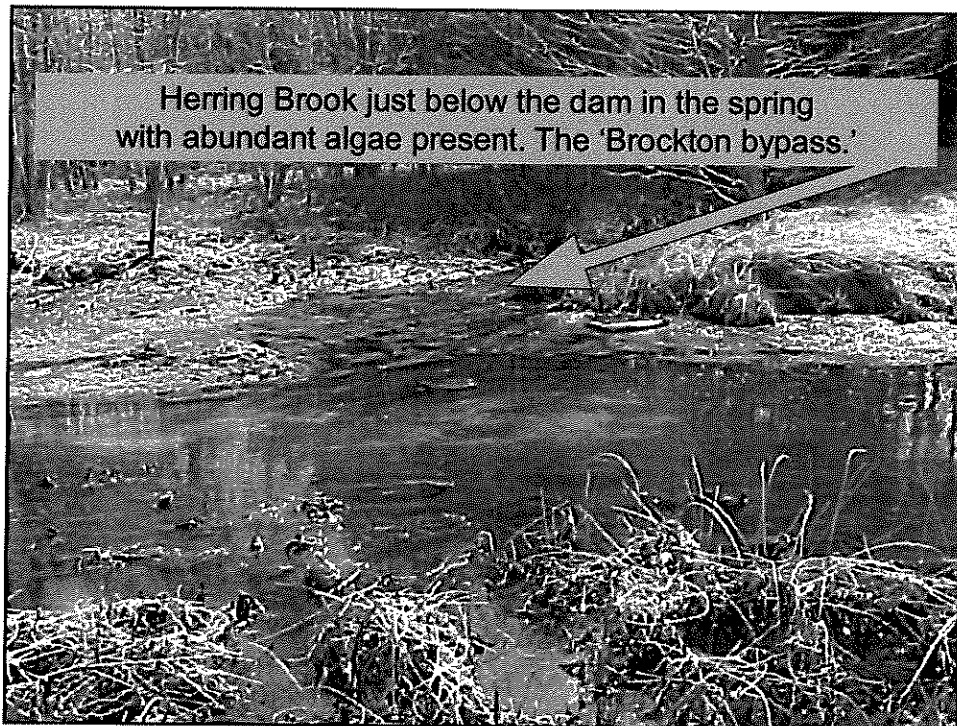
16

Furnace
Pond dam
at head of
Herring
Brook in
Pembroke



17

Herring Brook just below the dam in the spring
with abundant algae present. The 'Brockton bypass.'



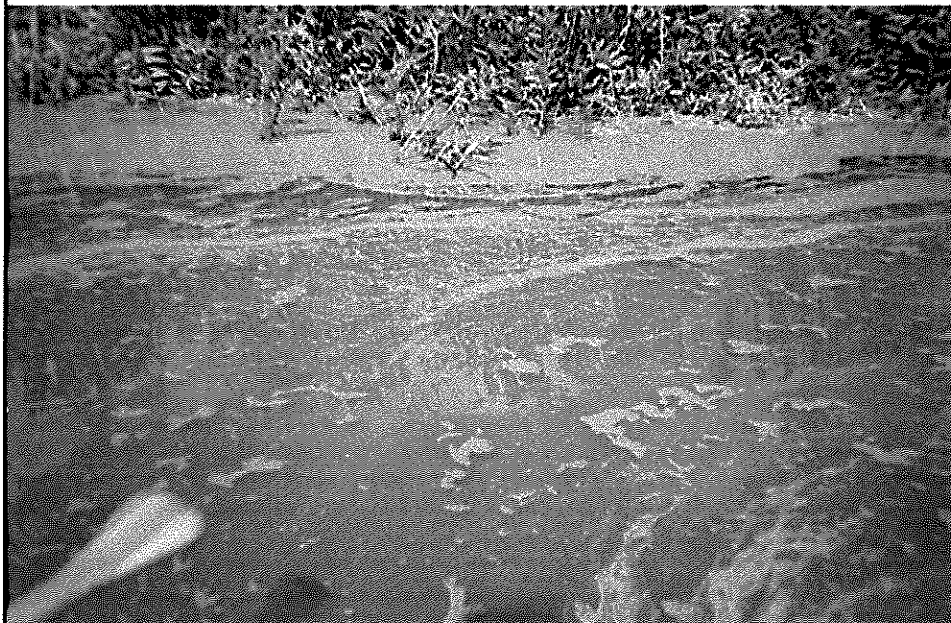
18

Stump Brook in Halifax, outlet of Monponsett Pond



19

Typical water quality in Stump Brook



20

Stump Brook Dam
in Halifax. Outlet of
Monponsett Pond
from West Lake.
At Burrage Pond
Conservation Area.

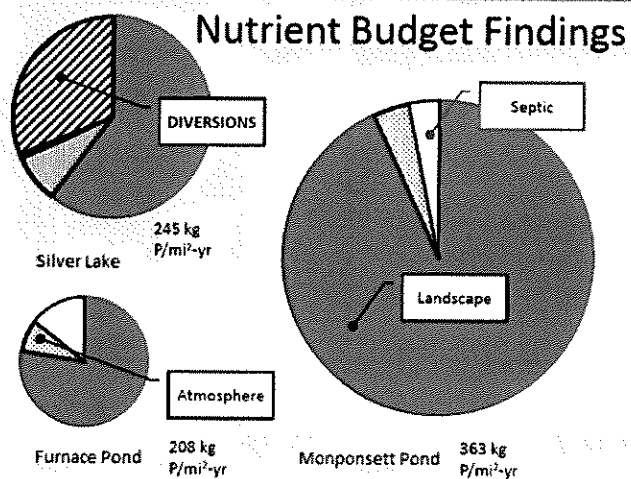


21

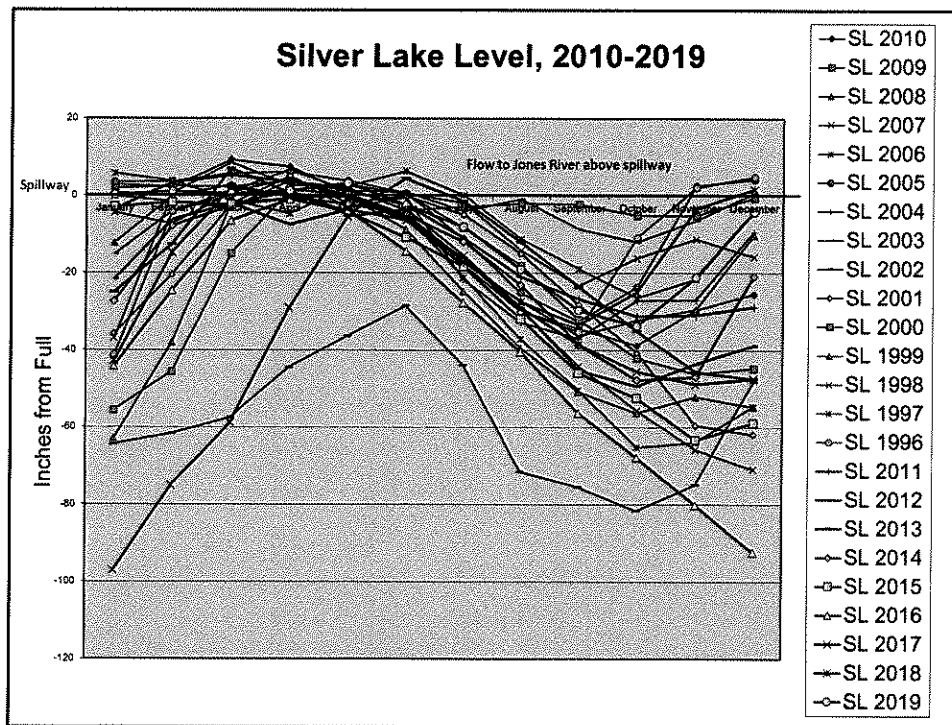
Water Budget Summary (Princeton Hydro, LLC 2013)

- Monponsett and Furnace Pond diversions equate to ~75% of the finished water delivered to Brockton

- Water delivered to Brockton from Silver Lake is equivalent to every drop that enters the Lake's natural watershed



22



23

Temporary fish ladder installed by DMF in 2019 pursuant to MOU with Brockton to obtain fish passage at dam. First river herring in over a century recorded swimming into the lake.

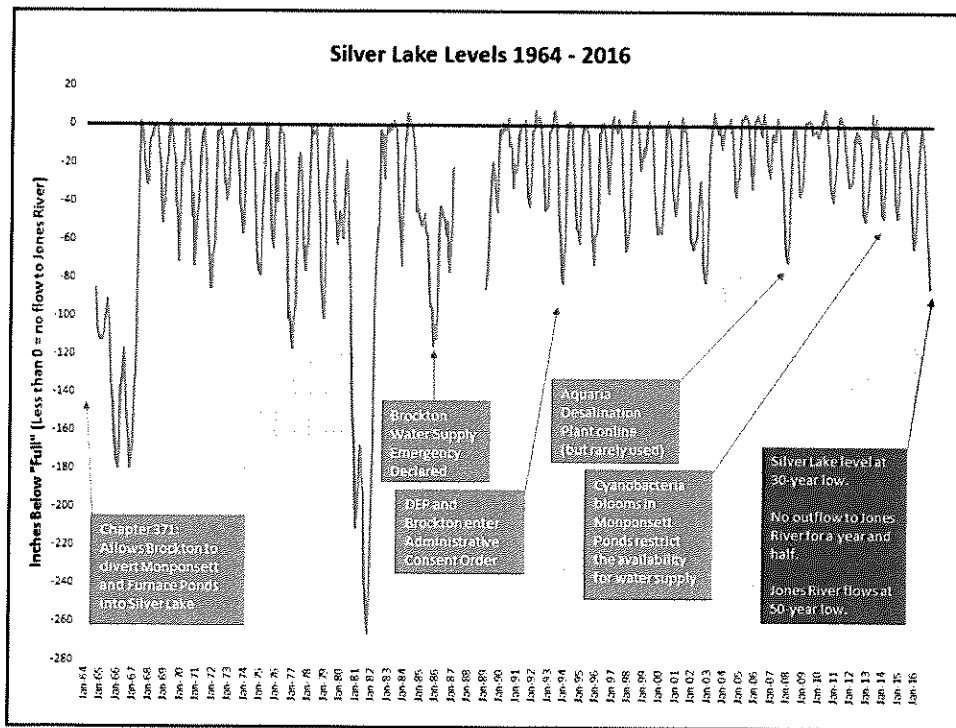


24

River Herring (and eels) at base of Brockton dam in 2019.
In 2020, volunteers counted 40 fish swimming up ladder into lake. Data suggests this could have been 1,000+.
1,500 American eels made it; they could be there 25 years.



25



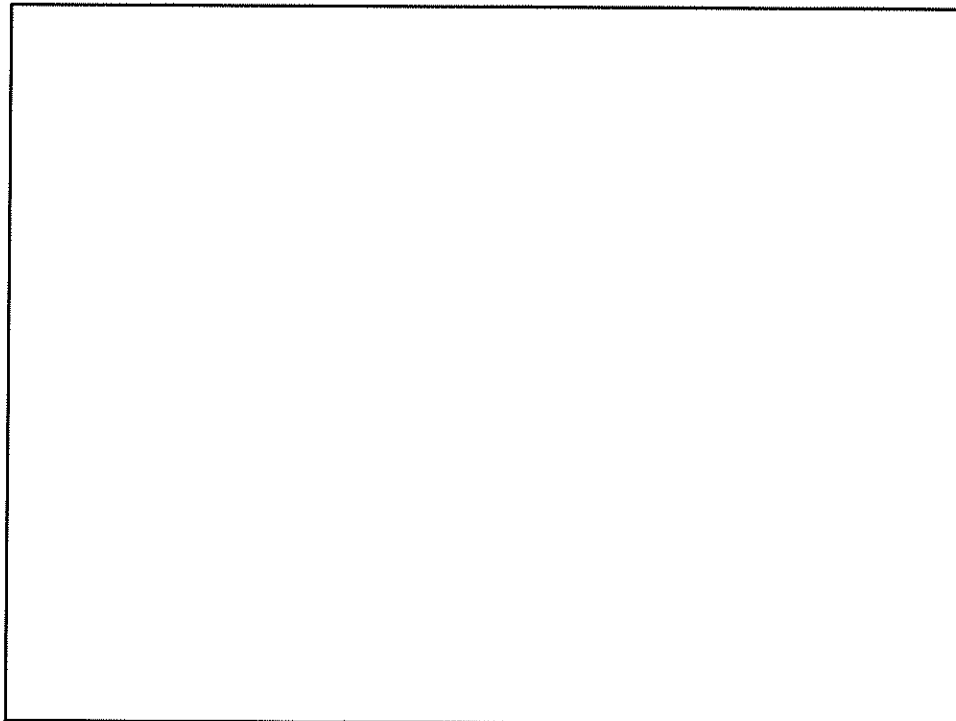
26

Problems we'd like to solve collaboratively:

- Increasing flow to the Jones River, Herring Brook and Stump Brook for fish passage
- Preventing deteriorating water quality at Silver Lake
- Improving water quality at Monponsett Pond
- Establishing innovative, science-based, good management practices for Monponsett and Furnace Ponds and Silver Lake
- Finding/developing additional water supplies for Brockton

A sustainable, plentiful supply of healthy freshwater is what we all want.

27



28

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29

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Addressing these problems will help ensure

- Secure, resilient supplies of healthy freshwater for residents of Brockton and the region
- Thriving fisheries and local economies
- Healthy, functioning ecosystems

In one of the most complex water systems in the state, we have an opportunity to implement solutions that will serve as examples for sustainable water management across our region and the Commonwealth.

Let's lead together.

30

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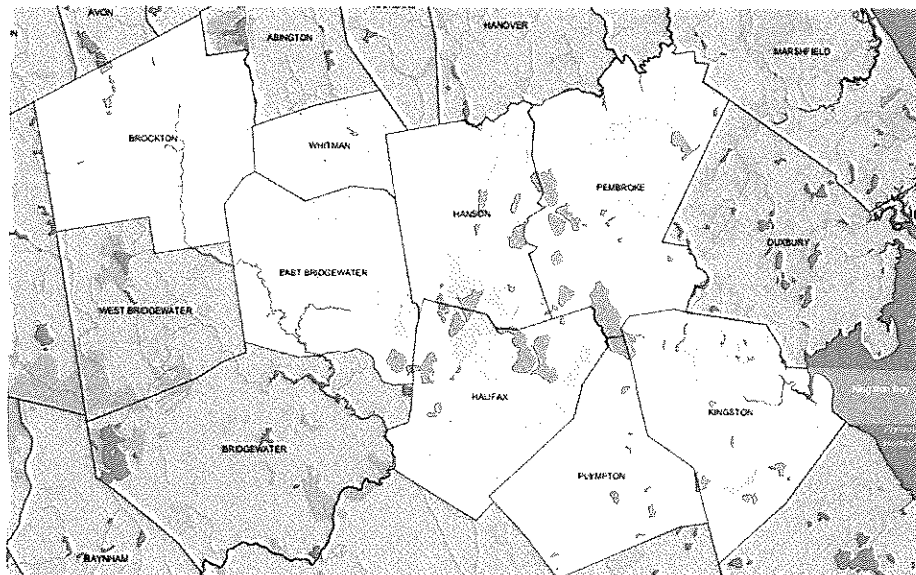
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31

We need regional, collaborative solutions



cent to centralplymouthcountywater.org text

32