

Board of Sewer Commissioners

Meeting Agenda



Date

September 27, 2022

Time

7:00 PM

Location

Bourne Community Center
239 Main St., Buzzards Bay
Or virtually (see information below)

Note this meeting is being televised, streamed or recorded by Bourne TV. If anyone in the audience is recording or videotaping, they need to acknowledge such at this time.

Zoom Meeting ID: 830 2376 5902

Password: SEWER

All items within the meeting agenda are subject to deliberation and vote(s) by the Board of Sewer Commissioners.

7:00 P.M. Call Public Session to Order in Open Session

1. Moment of Silence to recognize our Troops and our public safety personnel
2. Salute to the Flag
3. Vision: Bourne is a proud community that embraces change while respecting the rich heritage of the town and its villages. It is a municipality based on strong fiscal government with a durable economy that recognizes the rights of all citizens, respects the environment, especially the coastal areas of the community and the amenities that it affords. Bourne embraces excellent education, and offers to citizens a healthy, active lifestyle.
4. Mission: Bourne will maximize opportunities for social and economic development while retaining an attractive, sustainable and secure coastline and environment for the enjoyment of residents and visitors. Through responsible and professional leadership and in partnership with others, Bourne will strive to improve the quality of life for all residents living and working in the larger community.
5. Public Comment on Non-Agenda Items: Public comments are allowed for up to a total of 12 minutes at the beginning of each meeting. Each speaker is limited to 3 minutes for comment. Based on past practice, members of the Board are not allowed to comment or respond.
6. Board of Sewer Commissioners Business
 - a. Abatement request for 21F Nautical Way in Hideaway
 - b. Wastewater Treatment Facility – status update from Building Committee
 - i. Noise complaint
 - ii. Drainage/runoff concerns
 - iii. Continuation of committee, outstanding project balance, next steps
 - c. Sewer allocation updates
 - d. FY23 budget amendments for the October 24, 2022 Town Meeting – Article 3
7. Minutes: 08/09/22; 08/30/22

RECEIVED
2022 SEP 23 AM 9:45
TOWN CLERK BOURNE

RECEIVED

2022 SEP 23 AM 9:45

TOWN CLERK BOURNE

8. Future Agenda Items
9. Town Administrator Report
TMDL request to DEP
CWMP – upcoming schedule & tasks
10. Committee Reports
11. Correspondence
12. Adjourn

**Board of Sewer Commissioners
Minutes of Tuesday, September 27, 2022
Bourne Community Center
239 Main Street, Buzzards Bay**

RECEIVED
2022 NOV 30 AM 11:23
TOWN CLERK BOURNE

TA Marlene McCollem

Board of Sewer Commissioners

Mary Jane Mastrangelo, Chair
Judith Froman, Clerk
Melissa Ferretti
Peter Meier

Others: Michael Rausch, Erica Flemming (virtual), Mike Ellis (virtual), Tim Lydon (virtual), Corey Repucci (virtual), Halim Choubah (virtual), Janine Giambarresi (virtual), Stanley Andrews, and Joe Sullivan.

Note this meeting is being televised, streamed or recorded by Bourne TV. All items within the meeting agenda are subject to deliberation and vote(s) by the Board of Sewer Commissioners. Michael Rausch acknowledged that he is recording the meeting. Jared MacDonald is excused.

This meeting is available on Zoom. Meeting ID: 830 2376 5902 Password: SEWER

7:02 PM Call Public Session to Order in Open Session

Chair Mastrangelo said they will be skipping items 3 and 4 because they already did them at the Board of Selectmen's meeting that was held prior to this meeting.

- 1. Moment of Silence to recognize our Troops and our public safety personnel.**
- 2. Salute to the Flag.**
- 3. Vision:** Bourne is a proud community that embraces change while respecting the rich heritage of the town and its villages. It is a municipality based on strong fiscal government with a durable economy that recognizes the rights of all citizens, respects the environment, especially the coastal areas of the community and the amenities that it affords. Bourne embraces excellent education, and offers to citizens a healthy, active lifestyle.
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6. Board of Sewer Commissioners Business

- a. **Abatement request for 21F Nautical Way in Hideaway**
- b. **Wastewater Treatment Facility – status update from Building Committee**
 - i. **Noise complaint**
 - ii. **Drainage runoff concerns**
 - iii. **Continuation of the committee, outstanding project balance, next steps**
- c. **Sewer allocation updates.**
- d. **FY23 budget amendments for the October 24, 2022 Town Meeting – Article 3**

6.a. Abatement request for 21F Nautical Way in Hideaway

Janine Giambarresi said that she will be moving into 21F Nautical Way once it is completed. She said that she just received the permit in May, and they just had the rough inspection and are just starting the plumbing. She said she is requesting an abatement on the sewer since they haven't used it yet. She said she did receive an abatement in the past and is hoping to get another one.

Peter Meier asked if the connection was disconnected at the street, and she said she believes so. He said that she shouldn't be getting a bill if that is the case. Town Administrator Marlene McCollem said that the house was demolished, and the connection was gone, however, since it is specified to be rebuilt, it is still an active address. Ms. McCollem said that billing should start again when the connection is made, and the Board should extend the abatement through the calendar year.

Voted: Peter Meier moved, and Judith Froman seconded to grant an extension of the abatement through the calendar year of 2022.

Vote: 4-0-0.

6.b. Wastewater Treatment Facility – status update from Building Committee

i. **Noise complaint** – Stanley Andrews, Vice Chairman, Wastewater Building Committee, said that the modifications to the exhaust fan system to the plant have been completed. He said that he spoke to the neighbor who brought the noise issue to their attention, and he stated that it has been a lot better.

ii. **Drainage runoff concerns** – Mr. Andrews said that he met last week with the Town Engineer, the Town Health Agent, and the DPW Director on site. He said they noticed some runoff coming down the hills from the plant, from the ball field, the Armory property, and down Colonial Road. Mr. Andrews said that he has been in discussions with Corey Repucci of Weston and Sampson about what can be done about the runoff.

Mr. Repucci said that they will work with the Town to come up with a solution to the drainage issues. Joe Sullivan, OPM, from CHA, said that there is runoff coming from the plant, and the downspouts on the right and left-hand sides discharge onto the ground and around the backside of the Wastewater Treatment Plant. He said that he did a walk around earlier in the day and did see the areas that Mr. Andrews

had stated. He said that he and Mr. Repucci have discussed some type of retention or infiltration within the property of the Wastewater Treatment Facility.

Peter Meier asked what was left in contingency and Mr. Sullivan said it is about \$200,000. Ms. McCollem said that the runoff from the Wastewater Treatment Facility needs to be mitigated. She said that she agrees that a designed and engineered solution is needed. She said that she is ok with the Building Committee continuing through this process or if the Building Committee wants to turn this process over to her and to Tim Lydon, she is ok with that too.

iii. Continuation of the committee, outstanding project balance, next steps –

Mr. Andrews said that the committee has been pretty much closed out except for one piece which is what the Town is going to get back from Kubota in relation to the foaming events. Mr. Andrews said that this runoff project would have to go out for bid. Judith Froman asked if this would be paid for from the contingency that is left in the budget and Mr. Andrews said that it would.

Chair Mastrangelo said that deadlines need to be in place for this runoff project. Ms. McCollem said that this would be a contract amendment to add scope with Weston & Sampson. Mr. Repucci said that they will work as quickly as they can to get the numbers.

Chair Mastrangelo recapped and said that there will be a contract amendment of scope with Weston & Sampson, Weston & Sampson is going to do the engineering, design, and drainage calculations for stormwater mitigation associated with the Wastewater Treatment Facility project, which includes the runoff and the restoration of the easement area. The building committee will meet sometime in the next week to keep this project moving and at this time they will keep the committee in place.

6.c. Sewer allocation updates.

Ms. McCollem listed the people that were invited to attend this meeting to give project updates regarding preliminary sewer allocations: Maritime Holdings, Calamar, 100 Main Street block, Bay Motor Inn, 2 Kendall Rae, and 340 Main Street.

Maritime Holdings – A representative from Maritime Holdings via Zoom said that their project is still moving forward, and all of their funding and grants are starting to come back. Chair Mastrangelo asked if they had a timeline, and she answered that she does not want to give a timeline but said that they finally have some good momentum.

Calamar – There was no representative from Calamar at the meeting.

100 Main Street Block, Vincent Michienzi - There was no representative from 100 Main Street Block at the meeting.

Bay Motor Inn – Fred Carbone, Owner of the Bay Motor Inn, said that they have their property under agreement, and they will be in front of the Planning Board in the next 2 or 3 months.

340 Main Street - Halim Choubah said he is representing the owner. He said that they are under construction, and they have all the permits from MassDOT and all building permits from the Town. He said that most of the sewer system onsite has been constructed and they anticipate being able to connect to the Town sewer in a few months. He said they hope to be open for business by late Fall of 2023.

Peter Meier asked if this is just for the gas station, and he wanted to know if the housing above part of the project will be. Mr. Choubah said that the second floor will be part of the first phase. Mr. Meier also wanted to know if there would be only one grinder pump or will the apartment upstairs be a separate billable unit. Ms. McCollem said that it depends on the connection plans.

2 Kendall Rae – Ms. McCollem said that they may have just finished with the Planning Board, and they do know that they have to re-apply based on the allocation of their new project.

Peter Meier said that the last time they had the list in front of the Board, Domino's still owed the Town and he wanted to know if they have been made whole. Ms. McCollem said that have paid.

Judith Froman said that she would like to have added to their spreadsheet a section for developers who were invited and were no-shows or did not respond.

Carl Schoener of 28 Colonial Road said he is an abutter of the Waste Treatment Facility. He said that he has been at this address for 22 years and he never had any problems with water accumulation in all those years. He said that since the construction of the Police Station has been completed and the Wastewater Treatment Facility, his property has been flooded three times. He said that the water drain off is a result of the cutting of trees for the projects.

Mr. Schoener said he is appreciative of the encouraging news that he heard at tonight's meeting from Stanley Andrews, but he is concerned about there being no point of contact, and that he met people that work for the Town that had said they could not be involved. He is also appreciative of the noise abatement work that was done. He also is requesting that the next time that his property is flooded that the DPW assist in pumping out the property. Peter Meier asked if there was a way to mitigate the water accumulation with a temporary fix and Ms. McCollem said that she is hesitant to agree to it because the water must go somewhere, and this is precisely why a design needs to be done by an engineer, and quick. She cannot tell anyone to go work on the property until an engineer has a real plan.

6.d. FY23 budget amendments for October 24, 2022, Town Meeting – Article 3

Ms. McCollem said that the bottom line is that they believe they can do this as essentially net zero. She said that what they are proposing will be offset by the sewer overage increase. She said they

are pulling in the Wareham Environmental Quality capital project, which shows a payment increase of \$35,552 for FY 23, and there is a decrease in the SRF debt because they anticipated paying more this year than is required. She also said that due to the volatility in electric costs, they are recommending that the electricity line gets bumped up.

7. Minutes: 8/9/22; 8/30/22

Voted: Melissa Ferretti moved, and Judith Froman seconded to approve the minutes of August 9th, 2022.

Vote: 3-0-1. Peter Meier abstained.

Voted: Peter Meier moved, and Melissa Ferretti seconded to approve the August 30th, 2022, minutes.

Vote: 4-0-0.

8. Future Agenda Items

Chair Mastrangelo said they should be hearing from CWMP sometime and the CWMP process. Ms. Froman said that they talked about looking at the charge and the makeup of the Wastewater Advisory Committee. Chair Mastrangelo said that the committee is finishing up the first half of the needs assessment and they will wait for the breaking point to bring the topic up.

9. Town Administrator Report

Ms. McCollem said that she had a good meeting last week with Environmental Partners (EP) and that Environmental Partners is drafting phase 2 of the Alternative Analysis, which is due to the Town Staff on Monday, October 3rd. Town staff comments are due back to EP on Friday, October 7th. She said EP will have some time to work on the draft from the staff's comments and the week of October 17th the revision is due from EP, and it will be sent to the Board of Sewer Commissioners and the Wastewater Advisory Committee and will be available on the website at that time and will be discussed at the next Wastewater Advisory Committee meeting on October 26th.

Ms. McCollem said they want to set November 11th as the deadline for the Wastewater Advisory Committee to return any comments to EP. The document will be turned over again, and EP has a deadline of November 18th, to return the revised draft with the Wastewater Advisory Comments in it, then it will be distributed to everyone again and be updated on the website. She said the goal is that that draft will go to the Board of Sewer Commissioners for discussion on November 29th, and if there is anything left to be incorporated or revised, then that is the last chance to do so. She said that they are hoping that in early December Phase 2 will be done.

TMDL request to DEP – Ms. McCollem said that she did send the letter to DEP requesting the TMDLs for the nitrogen-sensitive areas that don't yet have them.

10. Committee Reports

None.

11. Correspondence

None.

12. Adjourn

Voted: Judith Froman moved, and Peter Meier seconded to adjourn.

Vote: 4-0-0.

The Board of Sewer Commissioner's Meeting ended at 8:01 PM

Respectfully Submitted,

Kim Johnson, Recording Secretary

Hello my name is Janine Giambarresi and I am requesting an abatement for the property at [21f Nautical Way, Bourne, MA 02532](#). my house was demolished on August 10 of 2020 so I have not used any Sewerage since. I believe I was granted an abatement for last year and I would much appreciate getting one for this year as well. thank you for your time if you have any questions or need any additional information please give me a call at [REDACTED] or you can email me at [REDACTED]. Thank you again for your time and consideration
sincerely Janine Giambarresi



PL-22-259

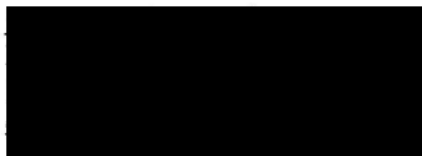
Plumbing Permit

Status: Active

Date Created: Sep 2, 2022

Applicant

Janine Giambarresi



Primary Location

749 Head of the Bay Road Unit 21F Nautical Way
Unit 21F Nautical Way
Buzzards Bay, MA 02532

Owner:

Janine Giambarresi
21F nautical Way Bourne, ma 02532

Project Info

Type of Work to be Completed

shower valve, toilet, bathroom faucet, clothes washer, kitchen faucet 3 outdoor hosebibs

Project Cost (Do not include the dollar symbol [\$].)

3,682

Occupancy Type

Residential

Type of Work

New

Work to Start

09/09/2022

Is this project in conjunction with a Building Permit?

Yes

Building Permit #

B-20-247

Estimated Cost of Work Associated with Building Permit (Do not include the dollar symbol [\$].)

85,000

Is this a Condo/Townhall/Apartment?

No

Primary Contractor

Plumber's Name

Michael Zagami

License #

18233

License Type

Journeyman Plumber

Corporation/Partnership/LLC License #

--

City

[REDACTED]

Zip Code

[REDACTED]

Preferred Phone #

[REDACTED]

License Active

I hereby certify that all of the details and information I have submitted regarding this application are true and accurate to the best of my knowledge and that all plumbing work and installations performed under the permit issued for this application will be in compliance with all pertinent provisions of the Massachusetts State Plumbing Code and Chapter 142 of the General Laws.

**Business Name**

Zagami Plumbing & Heating

License Expiration Date

05/01/2024

Type of Business

Sole Proprietor

Mailing Address

[REDACTED]

State

Mass

Email Address

[REDACTED]

Alternate Phone #

--

Fixtures**Number of Bathtubs**

0

Number of Cross Connection Devices

0

Number of Dedicated Special Waste Systems

0

Location of Dedicated Special Waste Systems

0

Number of Dedicated Gas/Oil/Sand System

0

Location of Dedicated Gas/Oil/Sand System

0

Number of Dedicated Grease System

0

Location of Bathtubs

0

Location of Cross Connection Devices

0

Location of Dedicated Grease System

0

Number of Dedicated Gray Water System	Location of Dedicated Gray Water System
0	0
Number of Dedicated Water Recycle System	
0	
Location of Dedicated Water Recycle System	
0	
Number of Drinking Fountains	Location of Drinking Fountains
0	0
Number of Dishwashers	Location of Dishwashers
1	1st floor
Number of Food Disposers	Location of Food Disposers
0	0
Number of Floor/Area Drain	Location of Floor/Area Drain
0	0
Number of Interceptor (Interior)	Location of Interceptor (Interior)
0	0
Number of Kitchen Sinks	Location of Kitchen Sinks
1	1st floor
Number of Lavatories	Location of Lavatories
1	1st floor
Number of Roof Drains	Location of Roof Drains
0	0
Number of Shower Stalls	Location of Shower Stalls
1	1st floor
Number of Service/Mop Sink	Location of Service/Mop Sink
0	0
Number of Toilets	Location of Toilets
1	1st floor
Number of Urinals	Location of Urinals
0	0
Number of Washing Machine Connections	Location of Washing Machine Connections
1	1st floor
Number of Water Heaters (All Types)	Location of Water Heaters (All Types)
1	1st floor
Number of Water Piping	Location of Water Piping
1	1st floor

Number of Other Fixtures

0

Please Specify

0

Location of Other Fixtures

0

Total Number of Fixtures

8

Is this in conjunction with a gas permit?

Yes

Liability Insurance

I have a current liability insurance or its substantial equivalent which meets the requirements of MGL Ch. 142.

No

Insurance not required



Please explain why.

--

Owner's Insurance Waiver

I am aware that the licensee does not have the insurance coverage required by Chapter 142 of the Massachusetts General Laws, and that my signature on this permit application waives this requirement.



I am the

Owner

Name

Janine Giambarresi

Phone Number

[REDACTED]

Workers' Compensation Insurance Affidavit

Are you an employer? Select from the options below.

I am a sole proprietor or partnership and have no employees working for me in any capacity.

Workers' Compensation Affidavit Signature

I do hereby certify that under the pains and penalties of perjury that the information provided above is true and correct




Attachments


pdf

ins waiver.pdf

Uploaded by Janine Giambarresi on Sep 2, 2022 at 6:13 pm

 license copy.pdf

Uploaded by Janine Giambarresi on Sep 2, 2022 at 6:13 pm





 workmans comp affidavit.pdf

Uploaded by Janine Giambarresi on Sep 2, 2022 at 6:14 pm

History

Date	Activity
Aug 31, 2022 at 11:15 am	Janine Giambarresi started a draft of Record PL-22-259
Sep 1, 2022 at 6:00 pm	Janine Giambarresi altered Record PL-22-259, changed ownerCity from "" to "Bourne"
Sep 1, 2022 at 6:00 pm	Janine Giambarresi altered Record PL-22-259, changed ownerEmail from "" to [REDACTED]
Sep 1, 2022 at 6:00 pm	Janine Giambarresi altered Record PL-22-259, changed ownerName from "" to "Janine Giambarresi"
Sep 1, 2022 at 6:00 pm	Janine Giambarresi altered Record PL-22-259, changed ownerPhoneNo from "" to [REDACTED]
Sep 1, 2022 at 6:00 pm	Janine Giambarresi altered Record PL-22-259, changed ownerPostalCode from "" to "02532"
Sep 1, 2022 at 6:00 pm	Janine Giambarresi altered Record PL-22-259, changed ownerState from "" to "ma"
Sep 1, 2022 at 6:00 pm	Janine Giambarresi altered Record PL-22-259, changed ownerStreetName from "" to "nautical Way"
Sep 1, 2022 at 6:00 pm	Janine Giambarresi altered Record PL-22-259, changed ownerStreetNo from "" to "21F"
Sep 1, 2022 at 6:00 pm	Janine Giambarresi altered Record PL-22-259, changed ownerUnit from "" to "21F"
Sep 2, 2022 at 6:14 pm	Janine Giambarresi added attachment workmans comp affidavit.pdf to Record PL-22-259
Sep 2, 2022 at 6:14 pm	Janine Giambarresi submitted Record PL-22-259
Sep 2, 2022 at 6:14 pm	approval step Inspector Review was assigned to Mike Golden on Record PL-22-259
Sep 7, 2022 at 8:36 am	Mike Golden approved approval step Inspector Review on Record PL-22-259
Sep 8, 2022 at 9:48 am	completed payment step Permit Fee on Record PL-22-259

Timeline

Label	Status	Activated	Completed	Assignee	Due Date
 Inspector Review	Complete	Sep 2, 2022 at 6:14 pm	Sep 7, 2022 at 8:36 am	Mike Golden	-
 Permit Fee	Paid	Sep 7, 2022 at 8:36 am	Sep 8, 2022 at 9:48 am	-	-
 Permit Issuance	Issued	Sep 8, 2022 at 9:48 am	Sep 8, 2022 at 9:48 am	-	-
 Inspection	Active	Sep 8, 2022 at 9:48 am	-	-	-



Town of Bourne, MA
Building Department
OFFICE OF THE PLUMBING/GAS FITTING INSPECTOR
PLUMBING PERMIT

No. **PL-22-259**

Date: **September 8, 2022**

Fee: **\$\$120.00**

Permission is granted to:
To perform the following work:

Michael Zagami of Zagami Plumbing & Heating
shower valve, toilet, bathroom faucet, clothes washer, kitchen faucet 3 outdoor hosebibs

Job Site Address: **749 Head of the Bay Road**
Owner: **Janine Giambarresi**

MBL:

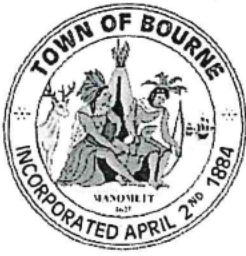
Subject to submitted application, plans, and specifications, provided that all work shall comply with the provisions of 248 CMR Massachusetts Fuel Gas & Plumbing Code and Massachusetts General Laws Chapter 142.

Notice to the plumber/gas fitter: This is your permit, it should be kept as part of your permanent records. Do not post it on the job or discard.

PERMIT EXPIRES 1 YEAR FROM DATE OF ISSUANCE

This is an e-permit. To learn more, scan this barcode or visit bournema.viewpointcloud.com/#!/records/21114





TOWN OF BOURNE

Town Administrator

24 Perry Avenue – Room 101
Buzzards Bay, MA 02532
www.townofbourne.com
508.759.0600, Ext. 1308



Timothy King, Town Administrator
Email: tking@townofbourne.com

November 1, 2021

Ms. Erica Fleming
Town Collector/Treasurer
24 Perry Avenue
Buzzards Bay, MA 02532

Dear Ms. Fleming:

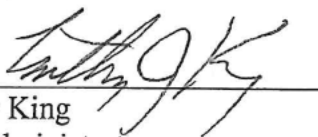
At the October 28, 2021 Board of Sewer Commissioners meeting it was voted unanimously to abate the following sewer account:

Account [REDACTED] **21F Nautical Way, Buzzards Bay**
Abate: \$591.50 FY22 first half sewer fee including any demand and interest penalties.

From July 1 – October 28, 2021 there is no record of any water usage due to there not being any structure on the property. The house was taken down and only a concrete foundation remains for the time being.

If you have any questions, please don't hesitate to contact our office.

Sincerely,



Timothy King
Town Administrator

cc: Assistant Town Collector/Treasurer
Town Accountant



TOWN OF BOURNE
ENGINEERING DEPARTMENT

TOWN HALL
24 PERRY AVE.

BUZZARDS BAY, MA 02532

PHONE: 508-759-0600 x1345 • FAX: 508-759-8026

Email: tlydon@townofbourne.com



TIMOTHY P LYDON, SIT, CFM
ENGINEERING TECHNICIAN

DATE: September 9, 2022
TO: Board of Sewer Commissioners
FROM: Tim Lydon, Engineering Technician
RE: MEMORANDUM on Buzzards Bay Wastewater Treatment Facility (WWTF) Stormwater Issues

BOSC,

The Town has recently been made aware of a major stormwater issue at an abutter to our recent WWTF project at Queen Sewell located at 28 Colonial Road. Upon investigation by several departments, review of the construction documents, and testimony from staff and abutting residents, it has been concluded that the lack of stormwater controls at the new WWTF is a major issue.

Without going into great detail of the WWTF design planning you should be aware that no accommodations were made for stormwater besides a 4" drain pipe to facilitate the rainfall volume for a 6'x6' landing below grade at the western side of the facility. The building is 4,752 square feet (sf) in roof area and the disturbance is a total of roughly 16,000 sf. Drainage from the downspouts at the front of the building flow to the engineered parking area for the police department (PD) but I have not concurred that the WWTF stormwater runoff was considered during the PD design at this time. Other downspouts and the newly grassed area do not have any stormwater improvements to the north. This may have been the cause of property degradation for one or several abutters and has caused erosion issues with the baseball field.

In order to rectify this issue, a full review of the pre-construction conditions (this catchment area included in the PD design) should be considered when going forward to ultimately design a stormwater facility that captures the required runoff per the Massachusetts Stormwater Standards as well as the Town of Bourne Zoning Bylaws, Section 3490: Stormwater Regulations. The post-construction runoff cannot exceed the pre-construction runoff conditions. This is an important aspect of the requirements therefore requiring the Town to complete a full Stormwater Management Report, design, and construction documents in order to put this project out to bid to be completed as soon as possible.

I will be in attendance at your next regularly scheduled meeting and will be available take questions and discuss your concerns.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tim Lydon".

Timothy Lydon, SIT, CFM
Bourne Engineering Department

Buzzards Bay Commercial Wastewater Summary Sheet (May 27, 2022)

[illegible]

**Board of Sewer Commissioners
Minutes of Tuesday, August 9, 2022
Bourne Community Center
239 Main Street, Buzzards Bay**

TA Marlene McCollem

Board of Sewer Commissioners

Mary Jane Mastrangelo, Chair
Jared MacDonald, Vice Chair
Judith Froman, Clerk
Melissa Ferretti

Others: Michael Rausch, Helen Gordon, Kate Roosa, Stanley Andrews, Neil Langille, Kathy Fox Alfano, Sue Barlow, Bradshaw Lupton, Bob Dwyer, Keith Barber, and Tom Barlow.

Note this meeting is being televised, streamed or recorded by Bourne TV. All items within the meeting agenda are subject to deliberation and vote(s) by the Board of Sewer Commissioners. Michael Rausch acknowledged that he is recording the meeting. Chair Mastrangelo said that Commissioner Peter Meier will be at the meeting after the vote on the rates.

6:30 PM Call Public Session to Order in Open Session

- 1. Moment of Silence to recognize our Troops and our public safety personnel.**
- 2. Salute to the Flag.**
- 3. Vision:** Bourne is a proud community that embraces change while respecting the rich heritage of the town and its villages. It is a municipality based on strong fiscal government with a durable economy that recognizes the rights of all citizens, respects the environment, especially the coastal areas of the community and the amenities that it affords. Bourne embraces excellent education, and offers to citizens a healthy, active lifestyle.
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- 6. Board of Sewer Commissioners Business**
 - a. Discuss and vote on FY23 sewer user rates.**
 - b. CWMP – Public Meeting for Phase II – Alternative Analysis**

6.a. Discuss and vote on FY23 sewer user rates.

Town Administrator Marlene McCollem asked that the Board of Sewer Commissioners only vote the first half of the fiscal year rates for the September bill commitment and then that number will be based on the budget voted at the May Town Meeting. There will be adjustments at the October Town Meeting that may or may not affect the rates.

Chair Mastrangelo asked if there will be an opportunity after October to get some feedback from Environmental Partners on rates and what they have been looking at. Ms. McCollem said the second half of the year will be committed in March, so she does not think they will be ready in October or November but before March it is possible, and then there can be a larger discussion on adjusting overage and other areas.

Neil Langille of Taylor's Point said that he is on the old sewerage system, and he objects to paying on two sewerage systems for the users that will never get on the new system. He said that he would like to see some sort of report done on gallonage.

Voted: Jared MacDonald moved, and Judith Froman seconded to approve the per unit sewer user fee at \$583.50 for the first half of the fiscal year.

Vote: 3-0-1. Melissa Ferretti abstained.

Chair Mastrangelo said that there are Sewer Commissioners that do not vote on the rates because if less than 10% of the population is on the sewer system then the members of the Board who are sewer users should not be voting on the rates. Both Peter Meier and Melissa Ferretti are on the sewer system, so they do not vote on the rates.

Ms. McCollem asked for permission to use the stamp on the certificate of the vote for the vote tonight and Chair Mastrangelo gave permission.

Voted: Jared MacDonald moved, and Judith Froman seconded to recess the meeting until 7:00 PM.

Vote: 4-0-0.

7:00 PM Call Public Session Back to Order

Chair Mastrangelo called the meeting back to order.

6.b. CWMP – Public Meeting for Phase II – Alternative Analysis

Chair Mastrangelo said that Environmental Partners will be giving a slide presentation on the Alternatives Analysis of the Comprehensive Wastewater Management Plan. She said that the internet was knocked out earlier in the day, so the presentation will not be live streamed, although it will be recorded by Bourne Community TV.

Chair Mastrangelo also announced that Peter Meier is not able to attend the meeting, so he is excused and she said that Town Administrator Marlene McCollem is also excused.

Helen Gordon of Environmental Partners said she is the Project Manager of the Comprehensive Wastewater Management Plan (CWMP) with Bourne. She introduced Kate Roosa, who is the Senior Project Engineer on this project. She said that Ms. Roosa is responsible for putting together the text and the technology pieces. She also introduced Mark White, who is one of their Senior Scientists and Engineer at Environmental Partners.

Ms. Gordon said that the workshop goals are to provide a technology review for nitrogen reduction in the watersheds, review education criteria and discuss recommended technologies for each watershed. Ms. Gordon said that for the past few months they have been working with the Sewer Commissioners and the Wastewater Advisory Committee to discuss all the alternatives available to reduce nitrogen.

Ms. Gordon gave an overview of what a Comprehensive Wastewater Management Plan is and said it is a 20-year living plan in four phases. She said that the Town is currently in phase 2, alternatives. She talked about the TMDLs (Total Maximum Load of Nitrogen) for Bourne. She explained the process that the group used to come up with alternatives. She said that what they are presenting tonight are concept strategies.

Judith Froman asked if the outfall will be part of the bigger-picture comparison at some point. Ms. Gordon said that it is part of the bigger-picture comparison. She said that they will be looking at regional options as part of their study.

Kathy Fox Alfano, Chair of the Wastewater Advisory Committee wanted clarification of when Ms. Gordon talks about the Buzzards Bay outfall, does she mean the Cape Cod Canal outfall? Ms. Gordon replied that yes, that is what they are talking about. Jared MacDonald said that they must be careful when they mention outfall because it can be several outfall pipes in and around Bourne.

Sue Barlow asked for clarification on the Joint Base Cape Cod relationship here. Ms. Gordon said that recently the federal government turned over, through an agreement, the operations of their wastewater system at the base to a company called Converge, which has hired a contract operations company to run the Wastewater Treatment Plant that is there now. The goal of Converge is to provide a Wastewater Treatment Facility that the abutting communities could discharge to and be customers of. Mr. MacDonald clarified that this is not an option at this time, but it is out there as a possibility in the future.

Bradshaw Lupton said that he wants to know more about the outfall pipes at Mass Maritime. Ms. Gordon said that they are not studying Mass Maritime and their discharges. She said that they do have a Wastewater Treatment Facility and they do have a permitted outfall associated with it.

Bob Dwyer of Pocasset talked about the possibility of the plant at the base and that Sandwich and Barnstable have also talked about getting their own plant. He also talked about the loadings that Ms. Gordon presented earlier, and he said that the State needs to get moving on this.

Kate Roosa started her portion of the presentation by letting all know that the presentation will be posted on the CWMP website and that they had paper copies available for all at the meeting. Ms. Roosa explained how they decided on the criteria to arrive at the technologies that are to be recommended. She talked about Innovative/Alternative (IA) Onsite Systems, Responsible Management Entities (RMEs), Stormwater Best Management Practices (BMPs), and Collection Systems. She explained what a Wastewater Treatment is and its functions and showed some

pictures and illustrations. She also explained effluent disposal. Ms. Fox Alfano asked if these sewer systems remove PFAS and other chemicals such as phosphorus, and Ms. Roosa said that for their focus on the wastewater management plan they are looking to mitigate nitrogen first and to have others be considered as a part of an add-on process. She said there are a lot of new technologies being developed currently to mitigate PFAS.

Keith Barber of the Wastewater Advisory Committee said that once this is all in place, there will be many people needed to do the work, and he was asking if the Town should hold a summit to get all the people involved in one place to have a meeting about what is to be expected over the coming months. Mr. MacDonald said that there are contractors and companies that do this, and they have the knowledge of what is needed to install the systems. Ms. Froman agrees with Mr. Barber that a summit would be good to assess the needs and to be proactive about supply and demand. Ms. Roosa said that these summits are happening in other areas to some degree already.

Ms. Roosa concluded the instructional portion of her presentation with a few reminders: they are identifying strategies for achieving the TMDL goal for each watershed, focusing on on-site and limited sewerage approaches and the final plan will be in their next CWMP phase, and they are not considering the Buzzards Bay outfall.

Ms. Roosa continued the presentation by showing and talking about the two TMDL abatement watersheds – Megansett-Squeteague Harbor and Phinney's Harbor, and about how she arrived at the calculations. She said that they look at the general use systems for the calculation basis. She said that with her calculations on these harbors the nitrogen removal goals will be met.

Ms. Roosa then talked about Buttermilk Bay and said it is not a TMDL yet, but it is nitrogen impaired. She split it into two sewer alternatives. She said that with her calculations that the nitrogen removal goal will be met. Pocasset Harbor was the next watershed that Ms. Roosa talked about, and she said that the nitrogen removal goal will also be met with her calculations. Pocasset River also does not have a TMDL but does have a nitrogen removal goal and the goal will be met with her calculations at this watershed also.

Chair Mastrangelo said that Ms. Roosa's presentation has been very helpful, but it would help if gallons per day could be a part of the charts to get a better understanding of quantity. Ms. Roosa said that she does have the gallons per day information and can get it to her. There was some discussion about the sewer options not being too close to the coastline.

Tom Barlow asked Ms. Roosa if the current contracts for Buttermilk Bay sewer alternatives 1a and 1b, will meet the goals or does another 100,000-gallon plant need to be built. Ms. Roosa said that sewer alternatives 1a and 1b would require expansion of the Queen Sewall Wastewater Treatment Plant and it would require expansion of the Queen Sewall Wastewater discharge plant effluent beds.

There was some discussion about effluent concentration values, general use systems, provisional systems, hydraulic mapping, and pilot technologies. Ms. Fox Alfano asked that they redo these using the provisional systems. Ms. Roosa explained that provisional technologies are technologies that Mass DEP has approved for failing septic systems, and they are retrofit-specific items, that can be applied to existing Title 5 systems. She said that provisional technologies do not have

widespread nitrogen removal. IA general use technologies have approved nitrogen removal to 19 mg per liter. There was also some discussion about alternative 4a.

Ms. Gordon talked about the next steps. She said that the intent of tonight was to get public feedback, and she said she appreciates all who came to the meeting, and they will incorporate the feedback into their analysis. In the Fall they will meet with the Sewer Commission and the Wastewater Advisory Committee to pull together the draft recommendations that they will present at another public meeting. From that meeting, they will incorporate that feedback into their recommended plan, which will go for Town action sometime in the Spring or Fall of 2023. Ms. Gordon also reminded everyone about the various web pages that are available.

7. Adjourn

Voted: Jared MacDonald moved, and Judith Froman seconded to adjourn.

Vote: 5-0-0.

The Board of Sewer Commissioner's Meeting ended at 8:27 PM

Respectfully Submitted,

Kim Johnson, Recording Secretary

**Board of Sewer Commissioners
Minutes of Tuesday, August 30, 2022
Bourne Community Center
239 Main Street, Buzzards Bay**

TA Marlene McCollem

Board of Sewer Commissioners

Mary Jane Mastrangelo, Chair
Jared MacDonald, Vice Chair
Judith Froman, Clerk
Melissa Ferretti
Peter Meier

Others: Michael Rausch, and Gary Maloney.

Note this meeting is being televised, streamed or recorded by Bourne TV. All items within the meeting agenda are subject to deliberation and vote(s) by the Board of Sewer Commissioners. Michael Rausch acknowledged that he is recording the meeting.

7:00 PM Call Public Session to Order in Open Session

Chair Mastrangelo said they will be skipping items 1 through 4 because they already did them at the Board of Selectmen's meeting that was held prior to this meeting.

- 1. Moment of Silence to recognize our Troops and our public safety personnel.**
- 2. Salute to the Flag.**
- 3. Vision:** Bourne is a proud community that embraces change while respecting the rich heritage of the town and its villages. It is a municipality based on strong fiscal government with a durable economy that recognizes the rights of all citizens, respects the environment, especially the coastal areas of the community and the amenities that it affords. Bourne embraces excellent education, and offers to citizens a healthy, active lifestyle.
- 4. Mission:** Bourne will maximize opportunities for social and economic development while retaining an attractive, sustainable, and secure coastline and environment for the enjoyment of residents and visitors. Through responsible and professional leadership and in partnership with others, Bourne will strive to improve the quality of life for all residents living and working in the larger community.
- 5. Public Comment on Non-Agenda Items** – Public Comments are allowed for up to a total of 12 minutes at the beginning of each meeting. Each speaker is limited to 3 minutes for comment. Based on past practice, members of the Board are not allowed to comment or respond.
- 6. Board of Sewer Commissioners Business**

- a. **3rd Reading – Draft *Sewer Rules & Regulations*.**
- b. **Request from Pocasset Water Quality Coalition for TMDL's for Pocasset Harbor, Red Brook Harbor, Hen Cove, and Pocasset River.**
- c. **Vote to put a placeholder article on the October 24, 2022, Town Meeting Warrant for possible budget adjustments.**

6.a. 3rd Reading – Draft *Sewer Rules & Regulations*.

Town Administrator Marlene McCollem said that she sent out the final version of the Sewer Rules and Regulations. She thanked Maria in the Town Administrator's office for all her work as a second set of eyes on the document. Ms. McCollem said she did get some comments regarding section D-7, Grease Traps, whereas the Board of Health would not inspect these in the sewer service area.

Chair Mastrangelo said she had a few comments about the Rules and Regulations, with the first one being that the sewer abatement process gets deleted completely and if they should have something in the Rules and regulations stating that it gets done administratively. After a brief conversation, it was decided to leave it out for now. She said the second item she had was the definition of projected available capacity, and she thinks it should be removed. Ms. McCollem agreed and said that it could just lead to more confusion.

There was some discussion about the preliminary review by the Town Planner's office, and what the Town Planner will do going forward. There was also a discussion about how it will get documented.

Voted: Peter Meier moved, and Jared MacDonald seconded to approve the interim Sewer Rules and Regulations presented on August 30th, 2022, with the following amendments: 1.) include the red-lined amendments in section D-7, 2.) remove the definition of Projected Available Capacity, 3.) remove the preliminary allocation extension fee from attachment C.

Vote: 5-0-0.

Ms. McCollem said that the Rules and Regulations will get filed with the Town Clerk and will be posted on the website. She wanted to know if she could use the Board of Selectmen's stamp on the adoption and import, and Chair Mastrangelo approved this request.

6.b. Request from Pocasset Water Quality Coalition for TMDL's for Pocasset Harbor, Red Brook Harbor, Hen Cove, and Pocasset River.

Ms. McCollem said that this request was sent to the Board of Selectmen and was included in the correspondence, and she wanted both boards to decide which Board should listen to the request. The Board of Sewer Commissioners decided to have a conversation at this meeting about the request. The Pocasset Harbor and Pocasset River watersheds encompass this whole request. Chair Mastrangelo said that there is some information from some earlier studies. She said these TMDLs would help with the Comprehensive Wastewater Management Plan (CWMP). Ms. McCollem said that the speed at which the TMDLs can be done may take some time and the request must go to DEP. Ms. Froman said that the TMDL for Buttermilk Bay should be requested at the same time.

Voted: Jared MacDonald moved, and Judith Froman seconded to direct the Town Administrator to draft a letter requesting DEP to work on TMDLs for Pocasset Harbor, Pocasset River, and the Buttermilk watersheds.

Gary Maloney wanted to know what the plan will be once they get the information. Chair Mastrangelo said that the CWMP establishes the priority for how they will address water quality issues. She said that one of her concerns is that they address a water quality issue that is of less concern than a water quality issue that is of higher concern, and the way to not do that is to know where the higher concerns are located, to make good decisions on where to spend the money and on what areas to fix first. There was a conversation about amending the CWMP as more information comes forward.

Vote: 5-0-0.

There was some discussion about the “dos and don’ts” of what can be flushed, and how to get the word out to the sewer users.

6.c. Vote to put a placeholder article on October 24th, 2022, Town Meeting Warrant for possible budget adjustments.

Ms. McCollem said that she would like the ability to come before the Sewer Commissioners prior to the Fall Town Meeting for budget adjustments for FY23. She also said that she wanted to make the Sewer Commissioners aware that in FY24 there will be a lot of debt coming online.

Voted: Judith Froman moved, and Jared MacDonald seconded to vote to put a placeholder article on the October 24th, 2022, Town Meeting Warrant for the Fiscal Year 2023 possible budget adjustments.

Vote: 5-0-0.

7. Minutes: 9/28/21; 10/28/21; 1/25/22; 5/31/22; 6/21/22; 7/19/22

Voted: Peter Meier moved, and Jared MacDonald seconded to approve the minutes of 9/28/21 as presented.

Vote: 4-0-1. Melissa Ferretti abstained.

Voted: Judith Froman moved, and Jared MacDonald seconded to approve the October 28th, 2021, minutes of the Board of Sewer Commissioners meeting.

Vote: 4-0-1. Melissa Ferretti abstained.

Voted: Judith Froman moved, and Peter Meier seconded to approve the January 25th, 2022, Board of Sewer Commissioners meeting minutes.

Vote: 4-0-1. Melissa Ferretti abstained.

Voted: Judith Froman moved, and Jared MacDonald seconded to approve the May 31st, 2022, Board of Sewer Commissioners minutes.

Vote: 5-0-0.

Voted: Judith Froman moved, and Peter Meier seconded to approve the minutes of June 21st, 2022.

Vote: 5-0-0.

Voted: Peter Meier moved, and Melissa Ferretti seconded to approve the minutes of July 19th, 2022, Board of Sewer Commissioners.

Vote: 4-0-1. Jared MacDonald abstained.

8. Future Agenda Items

Ms. Froman suggested that the Wastewater Advisory Committee membership and Chair Mastrangelo said that it will be on the agenda for a future meeting, although it will not be on the agenda for the September meeting, due to it being a heavy meeting already. Chair Mastrangelo said that updates on allocation and on the CWMP will be on the agenda for the September meeting.

9. Town Administrator Report

Ms. McCollem said that she has the Wastewater Advisory Committee membership tentatively penciled in for September 27th, along with budget adjustments for FY23 and the six-month project updates.

10. Committee Reports

None.

11. Correspondence

None.

12. Adjourn

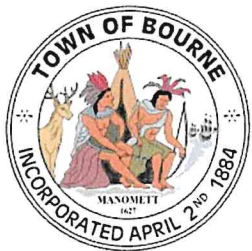
Voted: Peter Meier moved, and Jared MacDonald seconded to adjourn.

Vote: 5-0-0.

The Board of Sewer Commissioner's Meeting ended at 7:51 PM

Respectfully Submitted,

Kim Johnson, Recording Secretary



TOWN OF BOURNE

Town Administrator

24 Perry Avenue 2nd Room 101
Buzzards Bay, MA 02532
www.townofbourne.com
508.759.0600, Ext. 1308



Marlene McCollem, Town Administrator
Email: mmccollem@townofbourne.com

VIA EMAIL

September 23, 2022

Mr. Lealdon Langley
Director of the Division of Watershed Management
Massachusetts Department of Environmental Protection

Re: TMDL Establishment for Bourne Estuaries

Dear Mr. Langley:

On behalf of the Bourne Board of Sewer Commissioners I am respectfully requesting that TMDLs be established for all nitrogen sensitive watersheds, including the Pocasset Harbor, Pocasset River and Buttermilk Bay systems. Full TMDL designation will greatly assist the Town in its ongoing CWMP and watershed planning efforts. It is imperative that the Town use its limited resources in the most efficient way to guide infrastructure investment to those watersheds that are most impaired.

Furthermore, in light of the Department's potential changes to Title V of the Sanitary Code, and the proposed requirement that property owners will be responsible for upgrading private on-site systems to I/A technology, we want to ensure that the requirements are applied as fairly and equitably as possible. Without having TMDLs in place for all of Bourne's nitrogen sensitive areas, application of the new regulations will be uneven.

Please don't hesitate to contact me with questions and I look forward to hearing from you.

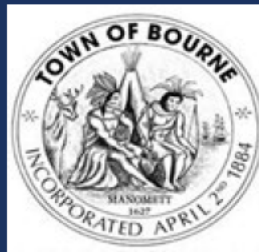
Sincerely,

Marlene McCollem
Town Administrator

CC: Richard Carey, Director of the Watershed Planning Program
Matthew Reardon, TMDL Section Chief, WPP

SCIENCE STUDIES TO SUPPORT DEVELOPING A TMDL IN RED BROOK HARBOR

RACHEL JAKUBA, PHD, BUZZARDS BAY COALITION VICE PRESIDENT FOR BAY SCIENCE, SEPTEMBER 2022



TMDL PROCESS

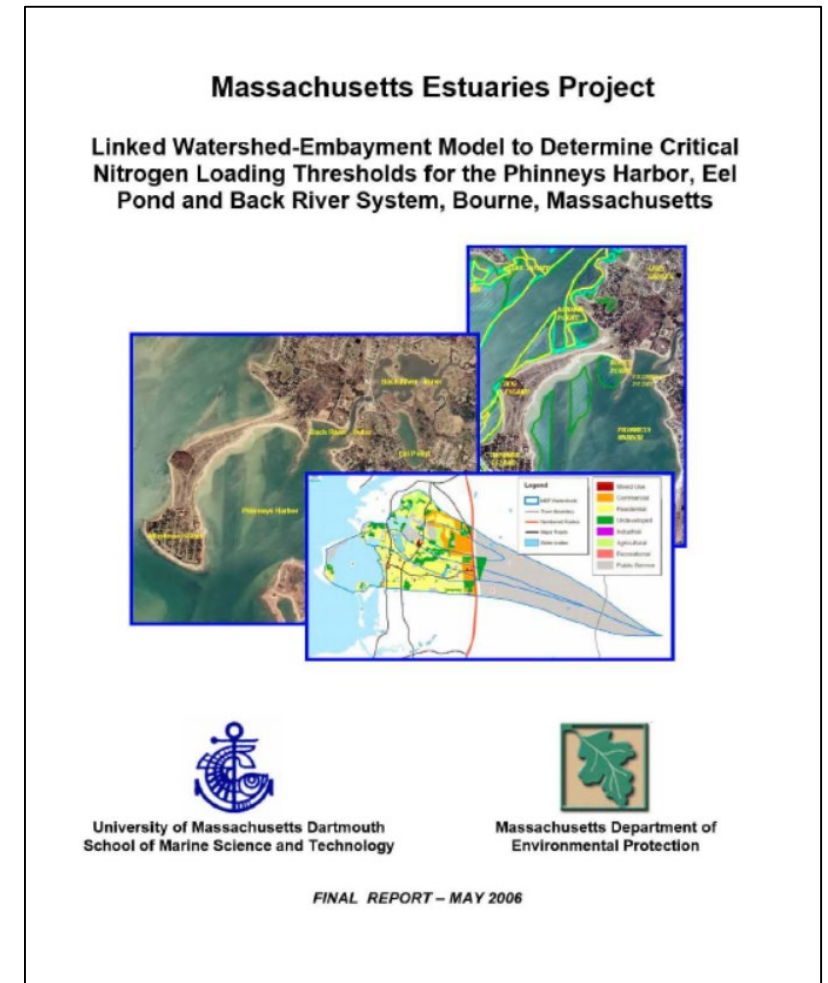
- MA develops water quality standards that describe the desired water quality characteristics of different types of water bodies
- Every ~2 years MA releases a 303d impaired waters list that indicates which water bodies are not meeting designated water quality standards
- If a water body is impaired, a Total Maximum Daily Load (TMDL) must be developed *Nitrogen TMDLs developed on site-specific basis*
- Once TMDL in place, pollutions reductions/limitations enforceable

MA WATER QUALITY STANDARDS

- Class SA Waters are designated as excellent habitat for fish, other aquatic life and wildlife ... and for primary and secondary contact recreation...These waters shall have excellent aesthetic value.
- Quantitative standards
 - Dissolved oxygen shall not be less than 6.0 mg/L
 - Temperature shall not exceed 29.4 °C (85 °F)
 - pH shall be in the range of 6.5 – 8.5
- Qualitative standards
 - Excellent aesthetic values

DEVELOPING NITROGEN TMDLS IN BUZZARDS BAY

- Site specific analysis of impairment and needed nitrogen reductions
- Scientific reports developed for many estuaries through the Massachusetts Estuaries Project (a partnership between MassDEP and UMass Dartmouth) between 2005 – 2015
- MassDEP converted MEP reports into TMDLs
- For water bodies where MEP report not completed, MassDEP does not have a time table to complete them.



PARTS OF A NUTRIENT THRESHOLD STUDY

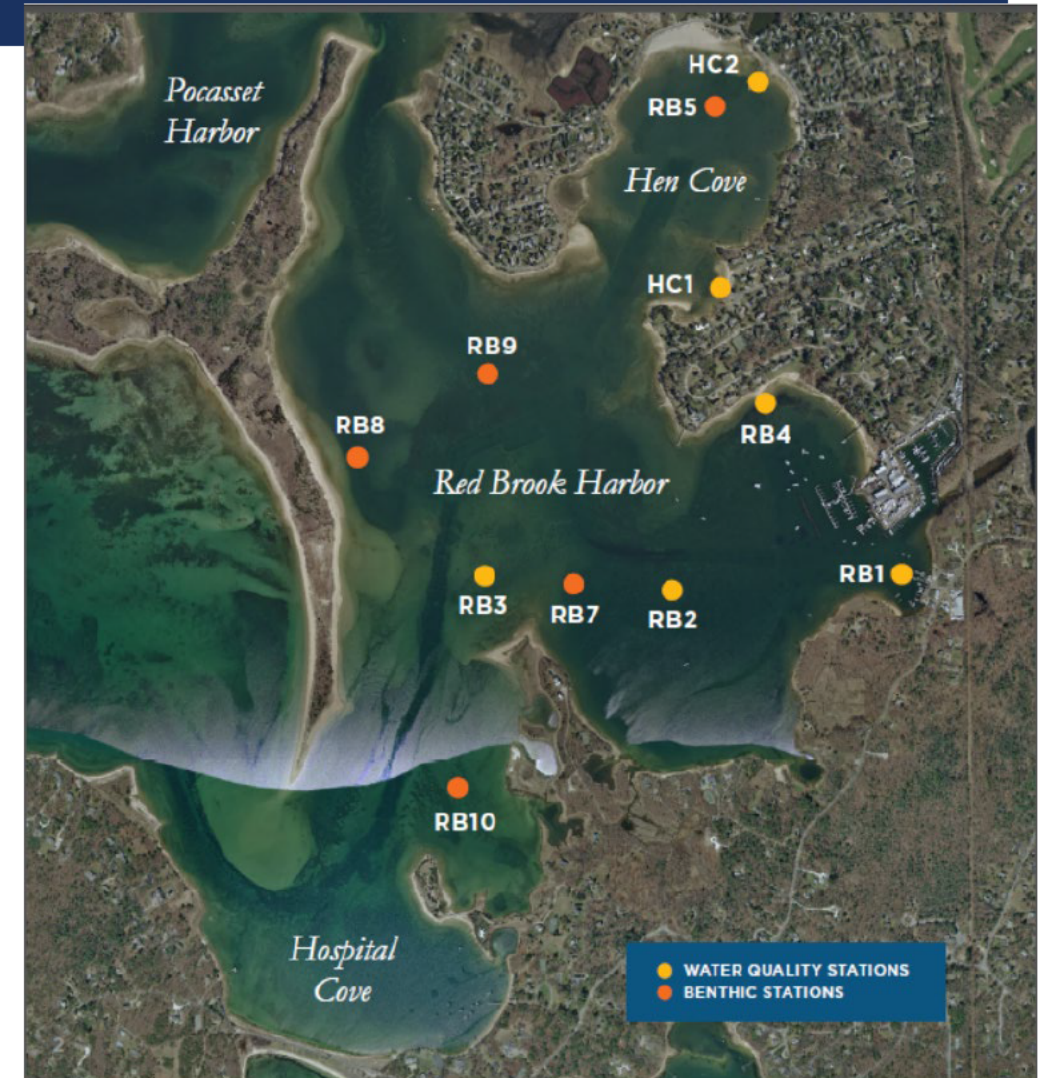
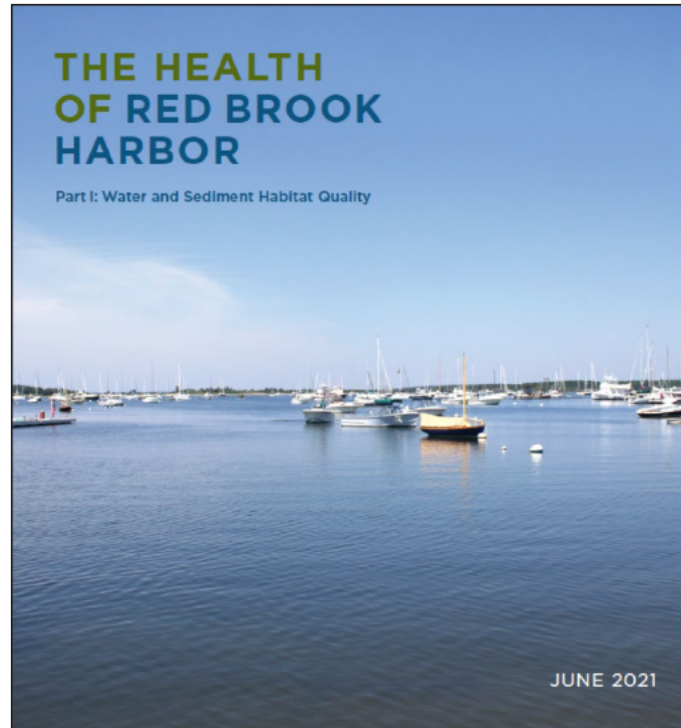
- Assessment of ecological condition
 - Benthic habitat condition (infauna and dissolved oxygen)
 - Eelgrass presence/loss
- Assessment of nitrogen load from all sources under existing conditions and at 'build-out'
 - Land-use mapping (impervious surfaces, septic systems, golf courses, cranberry bogs, etc.)
 - Inclusion of attenuation by ponds/lakes
 - Evaluation of nitrogen cycling in estuary sediments
- Assessment of how much nitrogen can be received while water quality goals are being met
 - Hydrodynamic model of how estuary is flushed by Buzzards Bay

PARTS OF A NUTRIENT THRESHOLD STUDY

- Assessment of ecological condition
 - Benthic habitat condition – completed 604b benthic grant
 - Water quality monitoring – ongoing through Baywatchers Monitoring Program
 - Eelgrass presence/loss – ongoing through MassDEP Eelgrass Mapping Project
- Assessment of nitrogen load from all sources under existing conditions and at ‘build-out’
 - Land-use mapping (impervious surfaces, septic systems, golf courses, cranberry bogs, etc.) – current 604b modelling grant
 - Inclusion of attenuation by ponds/lakes – current 604b modelling grant
 - Evaluation of nitrogen cycling in estuary sediments – proposed 604b benthic flux grant
- Assessment of how much nitrogen can be received while water quality goals are being met
 - Hydrodynamic model of how estuary is flushed by Buzzards Bay – current 604b modelling grant

COMPLETED 604B BENTHIC GRANT

- Partnership with Bourne, Coalition, and Mass Maritime Academy
- Reduced number of species and individuals showed the need to reduce nitrogen

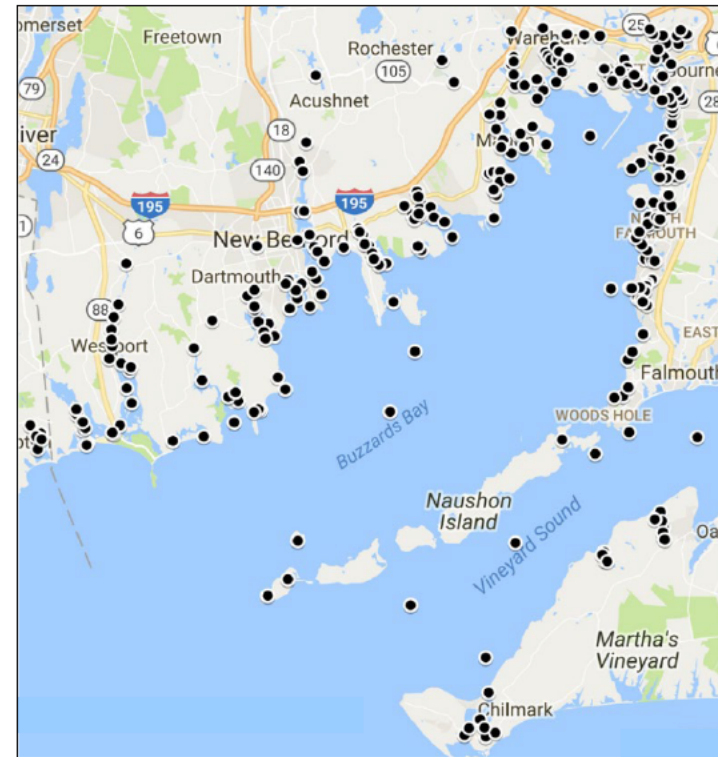


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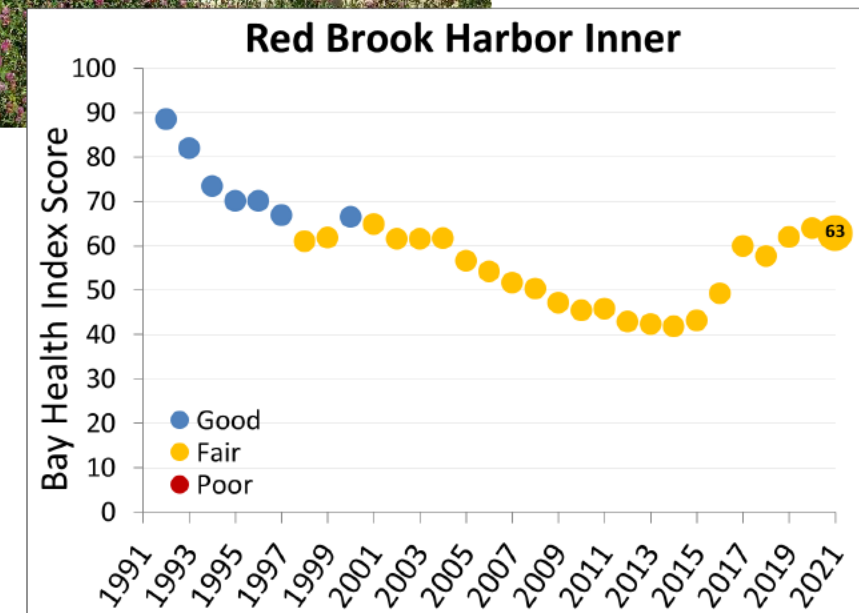
ONGOING THROUGH BAYWATCHERS MONITORING PROGRAM

- Program initiated in 1992 to:
 - Evaluate water quality & ecological health
 - Educate citizens
- >250 stations by ~140 citizen scientists
- Dissolved oxygen, temp, salinity & water clarity every ~5 days (late May to Sep)
- Nutrient and chlorophyll 4 times (Jul & Aug), analyzed by Marine Biological Lab
- Methods approved by Environmental Protection Agency (EPA) & MA Dept of Environmental Protection (MassDEP)



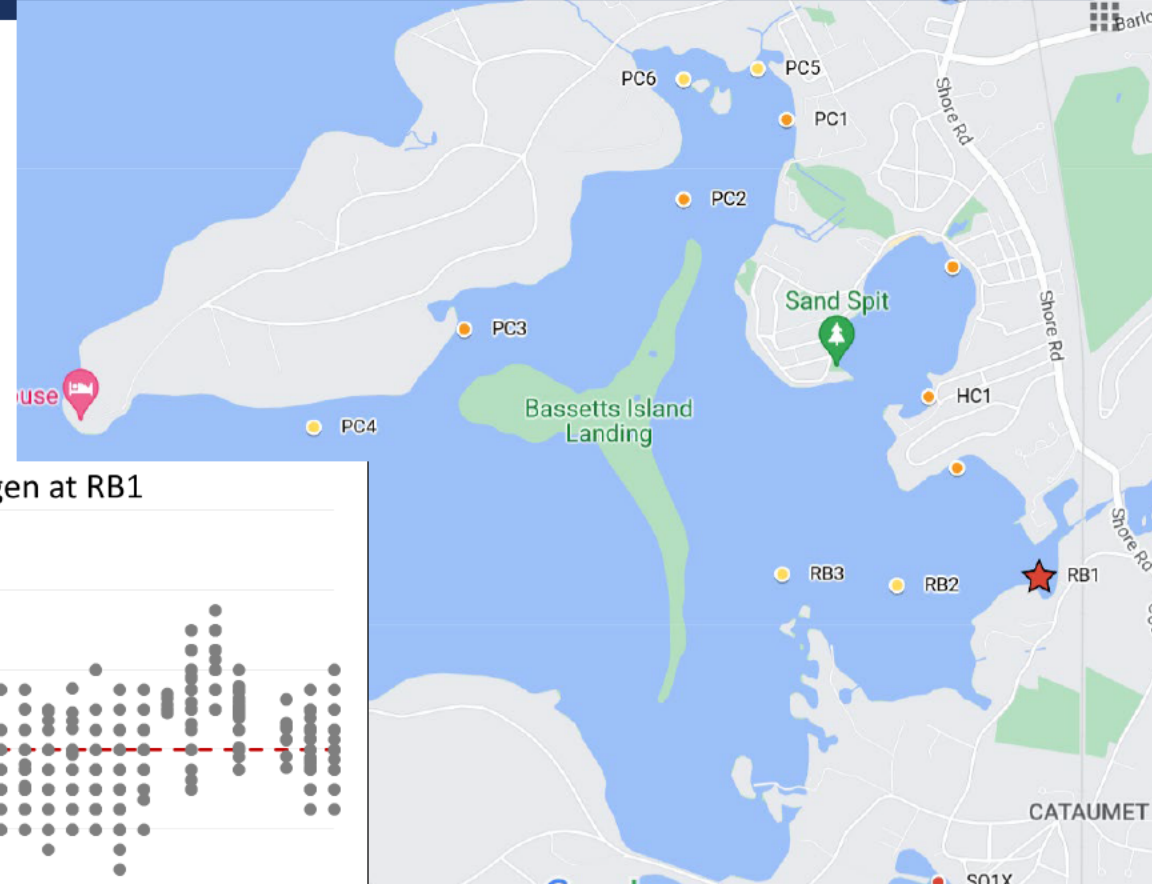
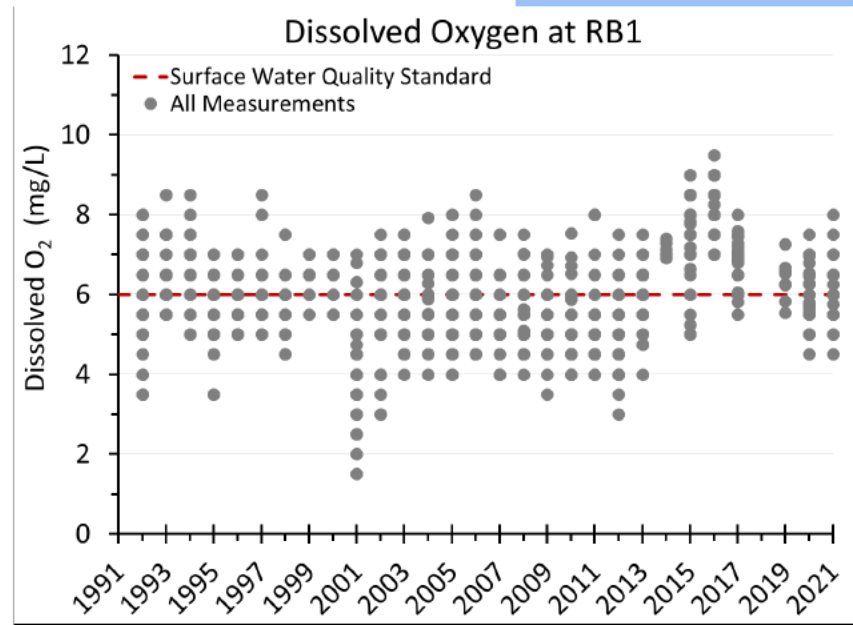
HOW DO WE USE OUR DATA?

- To ground advocacy efforts in sound science
- Give students and researchers WQ data
- Educate the community on Bay health
- Provide regulators with critical info on WQ:
 - Wastewater treatment plant discharge permits
 - Listing waters on State 303d impaired waters list
 - MA Estuaries Project reports
 - Track water quality progress



WATER QUALITY MONITORING IN RED BROOK HARBOR

- Coalition began monitoring Red Brook and Pocasset Harbors in 1992.
- Coalition submitted water quality data to MassDEP between 2006 and 2014 that resulted in Pocasset Harbor and Red Brook Harbor (including Hen Cove) being added to the Impaired Waters List.

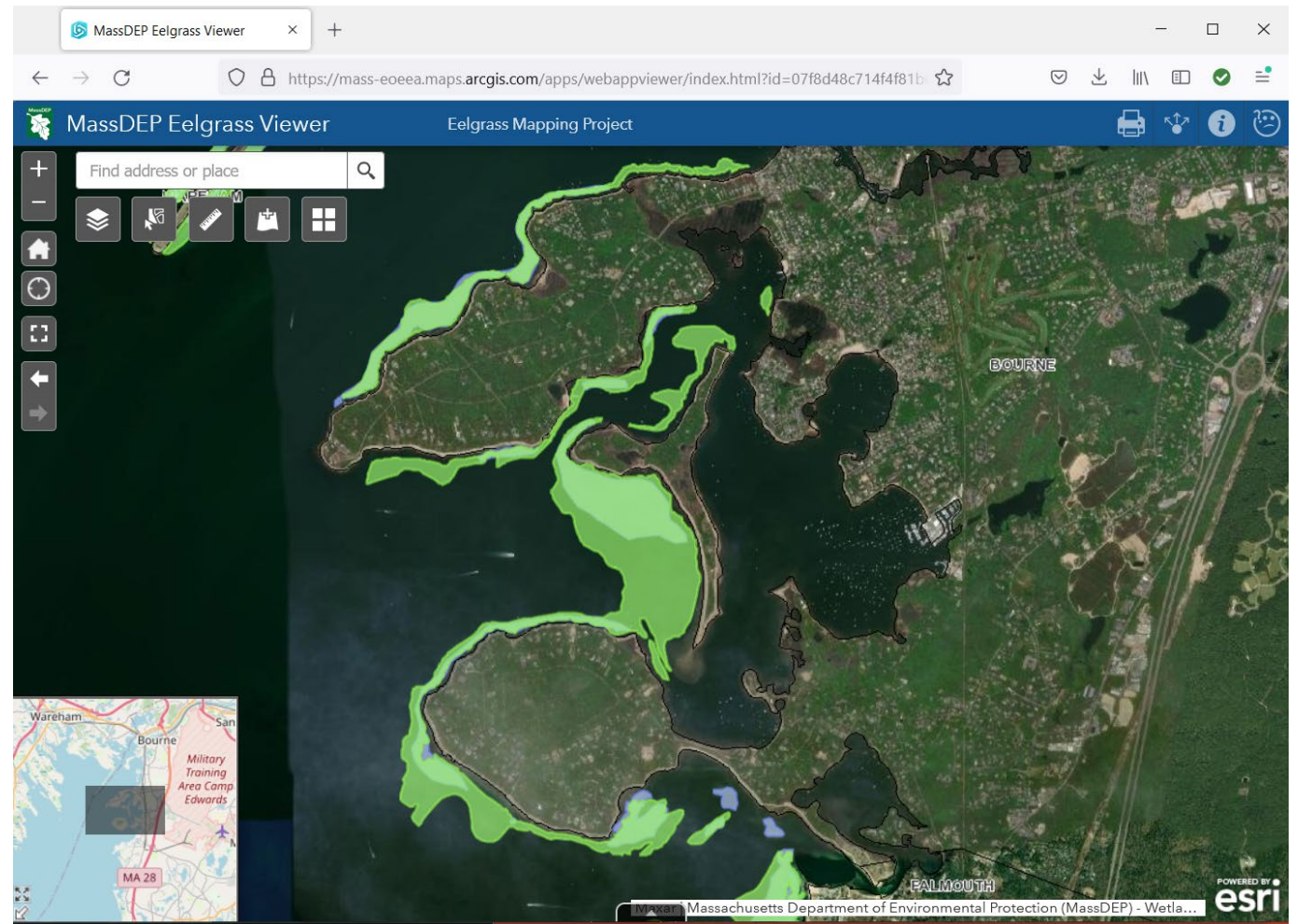


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ONGOING THROUGH MASSDEP EELGRASS MAPPING PROJECT

- MassDEP Eelgrass Mapping Project has eelgrass data available for Red Brook Harbor and Pocasset Harbor from 1995 through 2017 and are working on an updated 2021 layer.

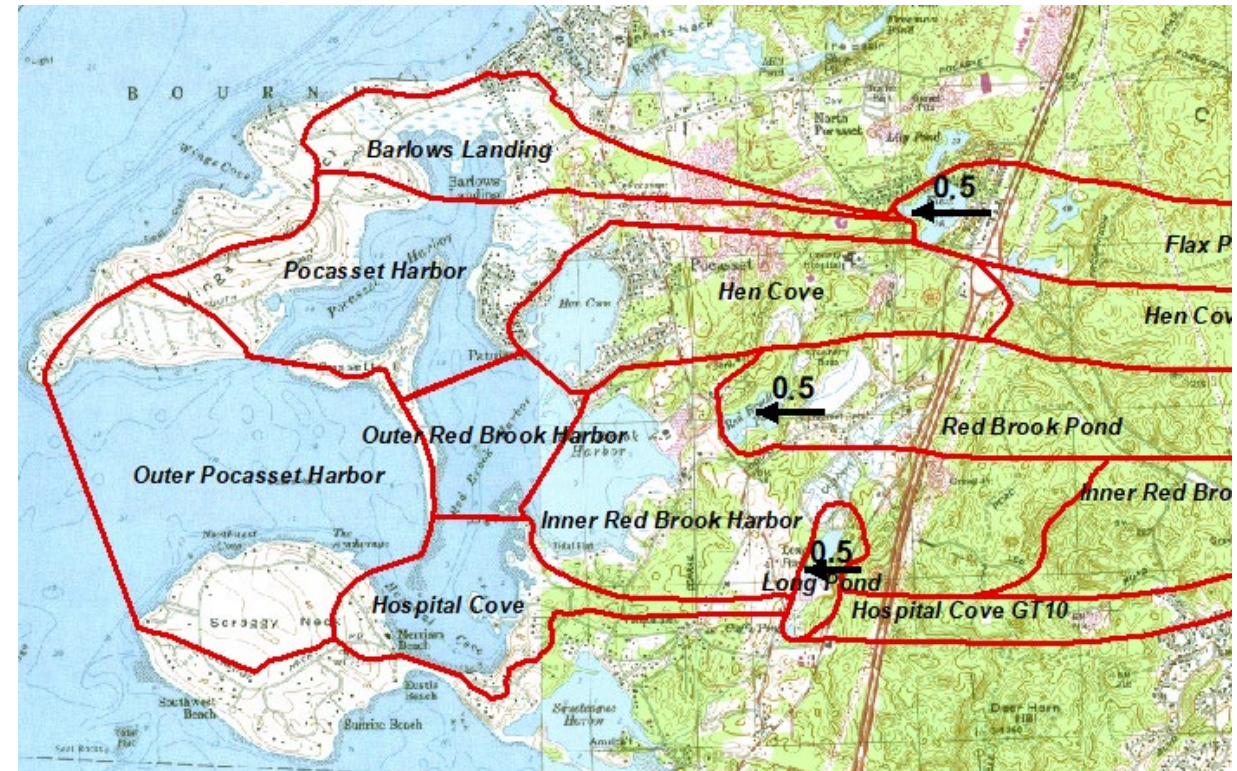


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 - Hydrodynamic model of how estuary is flushed by Buzzards Bay – current 604b modelling grant

CURRENT 604B MODELLING GRANT

- Land-use mapping (impervious surfaces, septic systems, golf courses, cranberry bogs, etc.)
 - Being performed by Joe Costa of the Buzzards Bay National Estuary Program
- Inclusion of attenuation by ponds/lakes
 - Using 50% attenuation rate for ponds/lakes based on previous MEP reports
- Hydrodynamic model of how estuary is flushed by Buzzards Bay
 - Being performed by Jim Churchill of the Woods Hole Oceanographic Institution



PARTS OF A NUTRIENT THRESHOLD STUDY

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PROPOSED 604B BENTHIC FLUX GRANT

- Grant application submitted by Town of Bourne in partnership with Coalition and the Marine Biological Laboratory
- Results should be known in late 2022