Meeting Type: **Organizational Meeting**

Meeting Location: Dover City Hall, City Council Conference Room

https://zoom.us/webinar/register/WN BXLpHeUOSLKNl4bMkDhzbA Remote Location:

Thursday, April 29, 2021 Meeting Date:

Meeting Time: 1:30 p.m.

A quorum of Members is expected to be in person, but for those interested in

participating remotely please register at the above link.

1. CALL TO ORDER

- 2. EXETER'S ADMINISTRATIVE ADDENDUM FOR IMA MEMBERSHIP
- 3. ADOPTION OF OPERATING RULES
- 4. ELECTION OF EXECUTIVE BOARD
 - a. Dover, Portsmouth, and Rochester as standing members
 - b. Election of two At-Large Members
- 5. ELECTION OF OFFICERS
 - a. Chair
 - b. Vice-Chair
 - c. Clerk
- 6. APPOINTMENT OF FISCAL AGENT
 - a. Formalize by vote to appoint Rochester as Fiscal Agent for MAAM as stated in the IMA
- 7. GENERAL PERMIT WORK AND SCOPE ITEMS:
 - a. Acceptance of funds for 2021 funding of adaptive management and monitoring
 - b. Authorize disbursement of funds to support four identified projects
 - c. Permit Compliance Status July 31, 2021 deadline for EPA submittal of comprehensive plan for Adaptive Management, Part 3 of General Permit
 - d. PTAPP coordination update
- 8. COORDINATION WITH STAKEHOLDERS

Document Posted on: April 26, 2021

Meeting Type: Organizational Meeting

Meeting Location: Dover City Hall, City Council Conference Room

Remote Location: https://zoom.us/webinar/register/WN-BXLpHeUOSLKN14bMkDhzbA

Meeting Date: Thursday, April 29, 2021

Meeting Time: 1:30 p.m.

A quorum of Members is expected to be in person, but for those interested in

participating remotely please register at the above link.

9. PUBLIC COMMENT

a. Limited to 5 minutes per speaker

10. BUILD NEXT MEETING AGENDA

11. ADJOURN

Administrative Addendum to the Intermunicipal Agreement for Development of An Adaptive Water Quality Management Plan for Great Bay Estuary

WHEREAS, the Town of Exeter ("Town") operates a Wastewater Treatment Facility located at 13 Newfields Road, Exeter, New Hampshire, that discharges treated effluent to the Squamscott River, which empties into the Great Bay Estuary;

WHEREAS, the Town is subject to an existing National Pollutant Discharge Elimination System ("NPDES") Permit that contains a 3 mg/L nitrogen concentration permit limit, *NPDES Permit No. NH0100871*;

WHEREAS, the Town is subject to a United States Environmental Protection Agency ("EPA") Administrative Order on Consent ("AOC") executed in or about June 2013;

WHEREAS, in accordance with the terms of the AOC, the Town performed upgrades to its Wastewater Treatment Facility in 2019 and incurred costs of approximately \$53 million to perform such upgrades;

WHEREAS, pursuant to the AOC, the Town has already developed and begun implementing a Nitrogen Control Plan dated September 2018, which, in part, presents an implementation plan and schedule for how the Town will address non-point source and stormwater point source nitrogen loadings from the Town;

WHEREAS, the Town has consistently donated funds to the Piscataqua Region Estuaries Partnership ("PREP") in order to help fund efforts to restore the health of the Great Bay Estuary;

WHEREAS, on November 24, 2020, EPA issued the Great Bay Total Nitrogen General Permit, *NPDES Permit No. NHG58A000* ("General Permit");

WHEREAS, the Town submitted its Notice of Intent ("NOI") to opt-in to the General Permit on March 17, 2021;

WHEREAS, EPA has indicated that it will not act on Town's NOI, and that the Town will not be covered under the General Permit unless and until EPA invokes certain additional procedures required pursuant to 40 C.F.R. § 124, see General Permit, Part 4, p. 8;

WHEREAS, EPA has indicated to the Town that it will take several months to a year (and potentially longer) for EPA to complete all procedures required to remove the nitrogen discharge provisions from the Town's individual NPDES permit and obtain coverage under the General Permit (the "Interim Period");

WHEREAS, the communities and cities of Portsmouth, Dover, and Rochester (collectively the "Cities") have entered into an Intermunicipal Agreement for Development of An Adaptive Water Quality Management Plan for Great Bay Estuary ("IMA");

WHEREAS, the Town wishes to immediately engage with the Cities pursuant to the IMA, as well as any other municipality that enters the IMA, even though the Town will not be covered under the General Permit during the Interim Period;

WHEREAS, the Cities have expressed their desire to have the Town join the IMA as part of the collaborative effort during this Interim Period, as well as after EPA accepts the Town's NOI; and

WHEREAS, in addition to becoming a member of the IMA, the Town wishes to serve on the Executive Board as an At-Large Member in order to assist and help lead the activities and actions pursuant to the IMA;

NOW THEREFORE, the Town and the Cities agree to the following:

- 1. By signing the IMA and this Addendum, the Town agrees to join the IMA. The Town intends and wishes to participate in the community discussions and community planning pursuant to the IMA as both a member and an At-Large Member of the Executive Board during this Interim Period and after EPA accepts the Town's NOI.
- 2. Notwithstanding ¶ 1, during the Interim Period and until EPA accepts the Town's NOI and EPA removes the Town's existing nitrogen limits from its individual permit, the Town shall not be required to make any monetary contributions pursuant to the IMA, including, but not limited to any recommended annual contribution pursuant to the IMA.
- 3. The Town's duty to make any monetary contributions, including but not limited to Section VII, ¶ C of the IMA, will not take effect until the beginning of the calendar year following EPA's acceptance of Town's NOI and EPA's removal of any nitrogen limits from the Town's individual permit. Following the occurrence of these conditions precedent, the Town agrees to contribute funds towards the Annual Contribution for Monitoring pursuant to Section VII, ¶ C of the IMA.
- 4. Notwithstanding ¶ 2 and 3, during the Interim Period, the Town reserves the right to make voluntary contributions at its sole discretion for any purpose consistent with the IMA, including but not limited to water quality monitoring, data gathering, and analysis.
- 5. The Town reserves the right to withdraw its membership in the IMA at any time with 30 day's prior notice to the Executive Board of the IMA during the Interim Period and/or pursuant to the terms in Section IX of the IMA, if EPA has accepted the Town's NOI.

[Signature Page to Follow]

Dated this	day of	, 2021.
		TOWN OF EXETER
		By: Russell Dean, Town Manager
Dated this	day of	, 2021.
		CITY OF ROCHESTER
		By:Blaine Cox, City Manager
Dated this	day of	, 2021.
		CITY OF DOVER
		By: J. Michael Joyal, Jr., City Manager
Dated this	day of	, 2021.
		CITY OF PORTSMOUTH
		By: Karen S. Conard, City Manager
Dated this	day of	, 2021.

TOWN OF NEWINGTON

		By:
		Denis Mercier, Wastewater Treatment Plan
		Manager
Dated this	_ day of	<u>,</u> 2021.
		TOWN OF MILTON
		By: Julius Peel, Interim Town Administrator
Dated this	day of	, 2021.

MUNICIPAL ALLIANCE FOR ADAPTIVE MANAGEMENT OPERATING RULES

Article I. Name

The Members of the Inter-municipal Agreement (IMA) shall be collectively named the Municipal Alliance for Adaptive Management (MAAM).

Article II. Purpose and Authority

- A. The purpose of MAAM is to collectively work under the IMA to improve water quality in the Great Bay estuary and to take such other and further collaborative action to fulfill or assist Members' compliance with the General Permit.
- B. There shall be an Executive Board as defined by, and with the authority provided for in, Section V of the IMA.
- C. These rules are intended to simply provide for procedures to be followed in conducting IMA member meetings, as well as IMA Executive Board meetings.

Article III. Membership

- A. **Membership.** Any municipality or town in the Great Bay estuary watershed, whether located in New Hampshire or Maine, is eligible to be a Member of the IMA. To become a member, eligible municipalities or towns shall execute Attachment 2 to the IMA, identifying the acting authority, and provide Attachment 2 to the Executive Board.
- B. **Executive Board.** The Executive Board shall be composed of three Standing Members consisting of the city managers (or designee) of the City of Rochester, the City of Dover, and the City of Portsmouth. The Members may select up to two additional At-Large Members of the Executive Board from other community members. The term of the At-Large Members shall run with the term of the IMA and At-Large members shall serve through expiration of the term of the IMA. Members and their representatives' terms shall expire in the event either such representative resigns from serving as a representative of his or her Member community, or in the event his or her Member community withdraws from the IMA. If the IMA is renewed by the Members for an additional term, the Members will elect/re-elect At-Large Executive Board members at the meeting in which an extension of the term of this Agreement is made. At-Large Executive Board Members must be Permittees.

Article IV. Officers

- A. **Officers.** The Members shall elect a Chair, Vice Chair and Clerk at the Organizational meeting and then annually thereafter. Beginning with its first meeting and then annually thereafter, the Executive Board shall elect a Chair, Vice Chair and a Clerk from the members of the Executive Board. The officers of the Membership may be identical with the Officers of the Executive Board. There are no term limits for the officer positions. However, an officer may resign from serving as an officer at any time, and shall cease to be an officer upon his or her Member community's withdrawal from the IMA.
- B. **Duties of the Chair.** The Chair shall preside at all Executive Board and Annual Members meetings and set the agenda. The Chair, or Executive Board designee, shall also be an ex-officio member of all subcommittees.
- C. Vice Chair. The Vice Chair shall execute all powers of the Chair in the absence of the Chair.
- D. **Clerk.** The Clerk shall be responsible for ensuring meetings are properly noticed and recorded under RSA 91-A, and general compliance with RSA 91-A requirements.

Article V. Procedures

Draft 4.29.2021

- A. **Meetings.** The Chair of the Members shall call a meeting of the Members at least annually and use best efforts to hold at least one additional meeting annually. The time and place for each meeting shall be designated by the Members Chair. The Executive Board Chair shall call a meeting of the Board at least twice annually at a time and place designated by the Executive Board Chair. Either Chair may call for such additional meetings as may be conducive to the purposes of the IMA. The meetings of the Membership and Executive Board shall be conducted in public session unless otherwise permitted by state law. All meetings shall be posted to comply with state law. State law requires all meetings to be posted in two (2) places with a minimum of twenty-four (24) hours notice.
- B. **Quorum.** One third of the membership constitute a quorum for the Annual Meeting of the Members. If there are three or four Executive Board Members, a quorum is two (2) Members. If there are five or more Executive Board members, a quorum is three Members. All votes will pass by simple majority.
- C. Virtual or Electronic Attendance. Attendance for purposes of quorum and voting may be by telephone or video conference in compliance with RSA chapter 91-A. Public access to the virtual meetings may be made available and distributed to the public in conjunction with the required meeting notices stated in Subsection A. All participants (Members, public, virtual and in-person) must have the capabilities to hear each other. All votes conducted with virtual Member participation must be roll call.
- D. **Parliamentary Authority.** The parliamentary authority for the board is *Robert's Rules of Order Revised*, 11th ed, except as provided by these rules or local, state or federal law.
- E. Minutes. Minutes shall be kept for all meetings. The minutes shall include the names of the members in attendance, all actions, motions and resolutions coming before the public body including the votes of the members, and a summary of all discussions. Draft minutes shall be provided to the respective City or Town Clerks within five (5) business days of each meeting for posting in draft form, in accordance with RSA 91-A. Draft minutes shall be clearly marked "DRAFT". Draft minutes with or without revisions shall be approved by the board at the next meeting of the board, or as soon as possible. Final approved minutes shall be provided to the respective City or Town Clerks for posting.
- F. **Recording of Meetings**. Virtual/ electronic video meeting may be used to provide video recording at meetings. If video is not available or utilized, meetings may be recorded using audio equipment. Video and audio recordings are not required. However, all recordings made shall be provided to the respective City or Town Clerks within five (5) business days of the meeting.
- G. **E-mail communication.** Members may use e-mail communications to facilitate communications regarding the scheduling of meetings and the dissemination of agendas and information. Members shall refrain from using e-mail to discuss issues with other Members where the e-mail discussion directly or indirectly involves a quorum of the board. In addition, Members shall refrain from conducting the official business of the board outside the view of the public and the press unless permitted by state law.
- H. **Nonpublic meetings.** The board may conduct nonpublic meetings pursuant to the laws of the State of New Hampshire.
- I. **Amendment of Rules**. These rules may be repealed or amended by a vote of the Executive Board.

Article VI Stakeholder Participation

- A. The Conservation Law Foundation has committed to creating a Stakeholder Committee.
- B. At each Meeting of the Members or Executive Board, the Agenda will provide for an opportunity for a representative of the Stakeholder Committee to attend and speak. Notice shall be provided to the Stakeholder Committee by sending a copy of any meeting notice to the Conservation Law Foundation, Waterkeeper or such other person(s) as the Stakeholder Committee may identity.

Draft 4.29.2021 2



Technical Memorandum

Prepared for: Municipal Alliance for Adaptive Management

Subject: Comments and Recommendations on Great Bay Estuary Monitoring Proposals

Date: April 23, 2021

To: Ms. Sherry Burnett Young, Rath, Young and Pignatelli, P.C.

From: Stacy Villanueva, Senior Scientist

Dan Hammond, Principal Scientist

Clifton Bell, Managing Scientist

Section 1: Introduction

The Municipal Alliance for Adaptive Management (Municipal Alliance) is committed to engaging in the actions necessary to assist in the management and restoration of the Great Bay Estuary. This commitment is realized through the Municipal Alliance's participation in the optional Adaptive Management Framework set up in the recently promulgated National Pollutant Discharge Elimination System (NPDES) Great Bay Total Nitrogen General Permit for Wastewater Treatment Facilities in New Hampshire ("General Permit", NHG58A000). As a component of the Adaptive Management approach, the Municipal Alliance is engaging with the other communities subject to the General Permit, the Piscataqua Region Estuaries Partnership (PREP) and the New Hampshire Department of Environmental Services (DES), and other stakeholders on the management and environmental monitoring objectives currently ongoing for the Great Bay Estuary (GBE). The goal of this engagement is to bolster ongoing monitoring, modeling, and data analysis activities through participation and additional funding to ensure comprehensive understanding of the stressors affecting GBE, their interactions, and to inform proper estuary management approaches.

The initial tasks in developing this Adaptive Management approach were to review documents provided by PREP and DES related to ongoing and planned monitoring activities for GBE; and determine how the Municipal Alliance can best participate to provide the greatest benefit. This technical memorandum (memo) presents comments and questions on the current monitoring proposals and also presents recommendations to the Alliance for the next steps for the Adaptive Management approach. The following documents were reviewed for the initial task:

- General Permit (November 2020)
- Environmental Protection Agency (EPA) Response to Comments on the Draft General Permit
- Integrated Research and Monitoring Plan for PREP (RAMP), Draft (May 2020)
- Piscataqua Region Monitoring Collaborative (PRMC) Research/Monitoring Prospectus, Draft (November 2020)
- PRMC Prospectus Details, version 1 (February 2021)
- Science Activities for 2021 (Budget and Timeline, January 2021) and 2021 Field Season Cost and Activity Update (February 2021)
- Nutrient Budget Model Pre-Proposal (McDowell Proposal)
- Great Bay Estuary Tidal Tributary Monitoring Program (GBETTMP): Quality Assurance Project Plan (QAPP)
 2019–2023
- Great Bay Estuary Water Quality Monitoring Program: Quality Assurance Project Plan (QAPP) 2019–2023
- Great Bay Estuary Submerged Aquatic Vegetation (SAV) Monitoring Program for 2019–2023 Quality Assurance Project Plan (QAPP)
- SeagrassNet Monitoring Program 2019–2023: Quality Assurance Project Plan (QAPP)
- Beyond Nitrogen Memo (J. Coon)

The following sections detail comments, questions, and recommendations regarding the Municipal Alliance's involvement in ongoing monitoring activities and associated funding being conducted by PREP and their partners. This is intended to help frame the Adaptive Management framework as part of the General Permit.



Section 2: Observations on Stressor-Eelgrass Linkages

Leading up to the promulgation of the Great Bay General Permit, nitrogen has been the stressor of focus for management of GBE including restoration of eelgrass. The member of the Municipal Alliance have long asserted management and restoration of GBE should include a broader focus, incorporating assessment of all types of potential stressors to eelgrass and other natural resources in GBE. To that end, the Municipal Alliance is interested in understanding if ongoing GBE monitoring activities are set up to allow for a broader understanding of potential stressors affecting GBE. This section summarizes which stressors are and are not being addressed in the PREP monitoring activities scheduled for 2021 and provides insight on how the Municipal Alliance can engage to ensure a broader perspective can be included to bolster GBE management.

The draft RAMP acknowledges the importance of a variety of non-nutrient stressors to eelgrass abundance and health and has developed a list of "monitoring questions" to guide data collection for investigating eelgrass stressors. Because the RAMP is still in development, it is unclear at this time when and how PREP will address many of the eelgrass monitoring questions. The draft Prospectus, which is based on the RAMP, was developed to identify the most "critical activities" and "most relevant" water quality parameters for understanding eelgrass in GBE. The draft Prospectus identified 15 priority science activities (summarized in Table 1 of the draft Prospectus): 13 studies (science activity (SA) #1-#10 and #13-#15), engagement of external advisors (SA #11), and data analysis (SA #12). However, only ten studies (SAs #1-#10) are being considered for 2021 unless additional funding can be secured for the remaining science activities (see Section 4 for further information about 2021 funding gaps and priorities).

PRMC's priority 2021 studies in GBE (as outlined in the draft prospectus) include a variety of water quality and biological programs designed to gather information on chemical, physical, and biological components of GBE. The proposed methods (QAPPs, proposals, etc.) for each of these studies were reviewed, if available, to determine which eelgrass stressors and/or response variables would be measured or modeled for each study. Table 1 is a matrix of the studies included in the draft Prospectus and which GBE stressors will be measured or modeled as part of the study.

The priority studies will collect data related to a broader list of potential stressors than just nitrogen (see Table 1). A wide array of stressors will be measured or modeled overall; however, each of the priority studies mainly focuses on either stressor variables or response variables rather than attempting to collect corresponding stressor and response data together in the same study. Therefore, overall program management, data analysis, and interpretation will be important for making sure linkages between stressors and eelgrass responses are properly evaluated (see Section 5). Descriptions of monitoring programs and objectives provided for this review focused on data collection, but not data analysis or interpretation. This apparent gap was discussed with PREP during our initial conference call on February 19, 2021. PREP acknowledged the discussions over methods and analysis were still ongoing and welcomed the Municipal Alliance's involvement in those discussions.

The stressors included in the priority studies include those typically linked to environmental degradation of eelgrass/seagrass and other estuarine biological communities, but there are some additional stressors that may not be investigated by the priority studies (see Table 1, rows without shading or with only question marks). Information about the role of these additional stressors will be important for a comprehensive understanding of eelgrass dynamics and management options in GBE:

- Epiphytes on eelgrass
- Grazers (both positive and negative effects on eelgrass)
- Invasive species (e.g. the nonindigenous green crab)
- Decline of filter-feeders



Long-term or large-scale climatic changes

Some stressors will be measured or modeled as part of the priority studies, but with a limited spatial or temporal scope. For the most part, this initial document review focused on identifying which stressors will be included in the priority studies rather than evaluating how well the studies will address the potential role of the stressors (due to limited information about study methods at this time). Nevertheless, it is clear that these stressors will need deeper-dive assessments in future studies before meaningful linkages to eelgrass stress and eelgrass recovery targets can be made:

- Light: Collection of light data should be expanded to a larger spatial range and be collected more frequently with light impacting water quality parameters.
- Habitat limitation: A more detailed assessment of the physical and chemical properties of GBE's benthic
 environment including bathymetry, hydrodynamics, and sediment quality, sources, and depositional
 patterns should be conducted.
- Eelgrass reproduction and dispersal: Additional information about the reproductive capacity, seed bank, and seed dispersal ability of GBE eelgrass is needed. More intensive data collection or a dedicated study of eelgrass reproduction should be considered.
- Habitat connectivity: The role of saltmarsh, natural shorelines, and hard clam beds (and loss of these habitats) on eelgrass ecosystems should be expanded beyond the initial study of hardening shorelines.

The priority studies identified in the draft Prospectus will not thoroughly cover every eelgrass stressor in the conceptual model presented in the draft RAMP. While intention to include studies of additional stressors (beyond nitrogen) in future monitoring years is clear in the RAMP and draft prospectus, there is currently very little information about how these stressors will be studied or prioritized. Thus, there are currently some data gaps with respect to eelgrass stressors and PRMC should identify a pathway to address those data gaps well in advance of the next monitoring season. The Municipal Alliance should continue involvement with PRMC to provide input on when and how some potential stressors will be studied in GBE and how to amend currently proposed or ongoing monitoring programs to include direct measurements for these potential stressors, where applicable.

The largest gap affecting the discussion of stressors may not be in the actual data collection, but in data analysis and identifying interactions between the chemical, physical, and biological factors that lead to quantifiable understanding of which stressors play a greater role in affecting eelgrass communities. Studies designed with the ultimate data use in mind as well as coordination across studies to ensure compatibility in scale (temporal and spatial) and methodology will be important for future analysis. As planning and funding decisions continue, there will be opportunities to revise and adapt current and future studies based on available data and recommendations made by the Municipal Alliance. Continued engagement with PREP and PRMC on upcoming meetings/discussions (formal and informal) to develop methods and data analysis and interpretation techniques that will be employed for these programs will benefit the Municipal Alliance.

			Table 1. S	ummary of	Eelgrass S	tressors ar	nd Respons	e Variables	s Investigat	ted in Prop	osed 2021	Studies.			
Sci	ence A	Activity (SA) Number*	1	2	3	4	5	6	7	8	9	10	13	14	15
		dy Short Description*	Tier 1 Seagrass	Tier 2 Seagrass	Tier 3 Seagrass	Light Arrays	Estuary WQ	Phyto- plankton ID	Tidal Tributary WQ	Nitrogen Loads	Nutrient Budget, Part 1	Nutrient Budget, Part 2	Phospho- rus Loads	Sediment Loading	Shoreline Harden- ing
		CDOM (fDOM)										?			
		TSS													
	ΞĘ	Turbidity													
	nal	pН													
	ç	Salinity (or SC)													
	Water Quality	Temperature													
	×	Nitrogen													
		Phosphorus													
		Other WQ parameters													
		Light													
		Sediment quality			?										
90	[a]	Sediment quantity													
SS	ent	Carbon (DOC)													
Eelgrass Stressors	E	Silica													
SS	잂	Residence time													
as	i.i.	Coastal runoff													
<u> </u>	Ē	Groundwater inputs													
B	Physical/Environmental	Other hydrodynamics													
	hys	Bathymetry													
	Ь	Habitat limitation													
		Habitat mosaics													
		Climactic shifts													
		Phytoplankton													\vdash
	al	Epiphyte load		?											——
	gic	Macroalgal competition													
	Biological	Grazing (+)													
	Bic	Grazing (-)		?											
		Invasive species													
		Wasting disease		?											
	æ	Areal coverage Distribution													——
es	rinė	Depth distribution											-		
g	naı														
Response Variables	Eelgrass (<i>Zostera marina</i>)	Density/% cover Biomass (ABG, BGB)													\vdash
\ S	ste	Morphology													
esi	Zo	Growth rate													
00	ss (Tissue condition													
dsa	ŗas	Reproduction													
~~	ele	Seed bank		2											
	Ш	Seed dispersal		· · · ·											
		Seeu uispeisal	l	l	l	l	l	l	l	l	l	l	1		

Variable will be monitored and/or modeled as part of the study

? = unclear if will be part of plan, further information needed



^{*} Corresponds to numbering and description in the draft Prospectus and subsequent related documents

Section 3: Comments and Questions On 2021 Studies

PRMC identified ten studies from the draft Prospectus (SAs #1-#10) that are the highest priority for implementation in 2021 to address science questions related to water quality and eelgrass from the RAMP (dependent on funding availability, see Section 4). The studies focus on data collection for water quality, eelgrass, physical parameters (e.g. light arrays), sediment transport, and nutrient modeling. Review of the RAMP and Prospectus, along with the available QAPPs for the proposed studies led to specific comments and questions regarding the monitoring planned for 2021. Addressing these with PREP and PRMC will help the Municipal Alliance to better understand the studies and the overall approach to addressing eelgrass stressors and how to better engage in the process for effective management outcomes.

The following comments/questions were generated from review of the documents related to the proposed 2021 monitoring activities. They have been grouped by monitoring program area, but share a central theme of better aligning and integrating monitoring activities to develop cause and effect relationships between monitoring components, leading to better management decisions.

Water Quality Monitoring (draft Prospectus SA #5 and SA #7)

The head-of-tide (i.e. tidal tributary) and estuarine monitoring programs are ongoing and generate long-term data sets that are critical for determination of cause-and-effect relationships between stressor and response variables. Continuity of data collection within each of these programs should be maintained. While each of these programs generate important data for management of GBE, the two programs appear to be separate and lack coordination that could potentially benefit identification of interactions and effects of riverine inputs to GBE.

- a. Head-of-tide monitoring is conducted over a six month period, while estuarine monitoring is conducted over a ten month period. We recommend aligning the frequency and timing of monitoring between the two studies if possible.
- b. Parameter lists between the two water quality monitoring programs are not aligned. Head-of-Tide monitoring parameters should include light measurements, CDOM, turbidity, and chlorophyll-a to allow for comparisons to estuarine measurements.
- c. Both water quality programs should include low tide and high tide sampling events each month at all sampling locations.
- d. Effort should be made to sample Head-of-tide and estuarine locations on the same day(s) or within the same week to allow for spatial and temporal correlations.
- e. Funding priorities list the estuarine water quality data collection and mention adding stations in the tidal Cocheco and Bellamy Rivers for 2021. Does adding these stations include continuous recorders as well as grab samples?
- f. Is available funding the major obstacle to aligning these programs, if so, what additional funding would be necessary to make the adjustments to these programs?

Light Arrays (draft Prospectus SA #4)

The draft Prospectus indicates that this study will consist of installation of fixed light arrays at three to four locations to identify trends in light measurements and attenuation over time.

a. How will data from the light arrays be integrated with water quality monitoring data to identify causative links and quantify which stressors are having the greatest effect on light attenuation in GBE?



b. Has PREP considered an intensive (perhaps weekly) light and water quality monitoring program for a single year to develop correlations between parameters and causative links affecting light in GBE? Such correlations may take several years if water quality monitoring is only conducted monthly for 10 months a year. An intensive monitoring program would speed up data collection and analysis, and ultimately lead to more timely understanding of impacts to light in GBE and associated management actions.

Seagrass (draft Prospectus SA #2 and SA #3)

Three seagrass studies will be conducted in 2021. Two studies (Tier 2 and Tier 3) will include field surveys and collection of seagrass samples.

- a. The QAPP for the Tier 2 Seagrass Study is still in development and was not available to review as part of this initial task. As a result, it is unclear at this time what data will be collected and how the data collected will tie into other seagrass and water quality monitoring efforts. We recommend the Municipal Alliance continue involvement with PRMC to provide input on the methodology for this study as the QAPP is being developed.
- b. The QAPP for the Tier 3 (SeagrassNet) study mentions that sediment samples will be collected and stored for future analysis, which is "not covered under the scope of this project". When and how will these samples be analyzed?
- c. Can the Tier 3 workplan be expanded to include measurements and characterization of epiphyte loads on eelgrass? Epiphyte data collected from the same locations every year could provide valuable information about eelgrass stressors.

Phytoplankton Identification (draft Prospectus SA #6)

This study will look for shifts in the composition of the phytoplankton community that are not reflected in chlorophyll-a measurements. As it is currently planned, it appears this study will not include collection of any data that will facilitate assessment of linkages between the causes of phytoplankton community shifts and the effects of phytoplankton community shifts on eelgrass.

- a. The basis of this study is that important changes to phytoplankton ecology can occur in response to changes in water column nutrients, sediment loading, or warming waters but the study does not include collection of water quality data alongside the phytoplankton samples. It is noted in the draft Prospectus that samples could be added to the program at an additional cost. What is the cost for this activity?
- b. It is unclear if or how phytoplankton community shifts might ultimately impact eelgrass. If this study can be expanded to include measurement of factors that directly relate to eelgrass (presumably light availability), the study would be much more useful for the overall goals of identifying and managing eelgrass stressors.

Section 4: Funding Priorities for 2021

The 2021 monitoring season is rapidly approaching and PREP has secured much of the needed funding to conduct the PRMC science activity priorities for this year, but some funding gaps remain, including for studies that were identified as highest priority for 2021. PREP provided information on its priorities and existing funding gaps as part of our document review. Following review of ongoing monitoring programs and funding gaps for 2021, this memo presents recommendations to the Municipal Alliance on which programs would benefit from additional funding for this year. Prioritization was based on the following criteria:



- Immediate benefit to the development of the Adaptive Management framework
- Continuity of data collection
- Bolstering existing monitoring activities to generate a more comprehensive data set
- · Data that benefit future data analysis/modeling activities

The Piscataqua Region Monitoring Collaborative (PRMC) coordinates monitoring and research activities for the GBE and identified funding gaps for its highest priority science activities planned for 2021. Brown and Caldwell reviewed and prioritized PRMC's 2021 funding needs based on the criteria listed above. Filling these funding gaps maintains the continuity of and expands data collection efforts to improve knowledge of stressors to GBE. Understanding limited funded availability, studies 1 – 4 in the table below are the highest priorities for funding in 2021.

Priority Order	Study Name	Total Funding Gap	Running Total	Funds Needed By	Study Description
1	Light Array De- ployment and Monitoring	\$6,500	\$6,500	April	Full deployment of new light monitoring equipment necessary to develop linkages between stressors and eelgrass communities. Partially funded.
2	Estuarine Water Quality Monitor- ing	\$123,845	\$130,345	April	Continuation of the ongoing estuarine water quality monitoring for a variety of stressors. Additional funding will be used to expand spatial coverage and increase frequency of data collection. Partially funded.
3	External Advi- sors	\$14,000	\$144,345	June	Engagement of subject matter experts (e.g., Jud Kenworthy, Brad Peterson, Brian Howes) to provide important perspectives on Piscataqua Region is- sues and help guide future study development. Currently unfunded.
4	Tier 1 Eelgrass Monitoring	\$10,000	\$154,345	June	Additional funds for higher resolution imagery during aerial eelgrass monitoring. Partially funded.
5	Sediment Source and Transport	\$40,000	\$194,345	July	Collection of sediment cores, bathymetry data, and hydrodynamic modeling to address some potential eelgrass stressors not well covered by the other studies. Currently unfunded.
6	Shoreline Hard- ening	\$12,000	\$206,345	July	Document and track shoreline hardening, which has important implications for several potential stressors to eelgrass such as hydrodynamics, sediment transport, and water quality. Currently unfunded.
7	Point Source and Non-Point Source Loading Analysis	\$24,000	\$230,345	June	Compile existing data to assess total nitrogen loads to GBE. Currently unfunded.
8	Nutrient Budget, Part 2	\$15,000	\$245,345	June	Hydrodynamic modeling and data collection effort focusing on nitrogen pro- cessing in GBE. Partially funded.
	Total	\$245,345			

A guarantee of funding for monitoring in 2021 demonstrates the permittees' commitment to engagement in the Adaptive Management Framework and restoration and protection of GBE. This immediate commitment also serves as a bridge to achieving the ultimate goal of addressing future funding needs in a long-term, comprehensive, forward-looking program that prioritizes data collection, analysis, and management activities where the greatest impact can be made toward effective management of GBE.



Section 5: Recommendations for Longer-Term Planning

PREP has been implementing water quality and biological monitoring programs as well as modeling efforts in GBE for years. The effort to date is pivotal to establishing the necessary relationships between stressor and response variables that will ultimately help to develop effective management strategies for GBE and restoration of eelgrass communities. With the implementation of the Adaptive Management Framework in the General Permit and engagement from the Municipal Alliance, there is an opportunity to develop a more robust, comprehensive, and forward-thinking monitoring and analysis program to benefit GBE. A comprehensive monitoring program, focusing on achieving the established goals of the *Great Bay National Estuarine Research Reserve 2020–2025 Management Plan* ("Management Plan", draft version, NOAA 2020) with planning for future years of monitoring, analysis, and management actions would coordinate ongoing efforts and focus monitoring programs and funding opportunities on the singular goal of restoring and protecting GBE.

5.1 Multi-Year Monitoring Plan

During the initial meeting with PREP to discuss the Municipal Alliance's engagement (February 19, 2021, via teleconference), much discussion centered on the current state of monitoring goals and objectives. The Municipal Alliance raised questions over the monitoring objectives listed in the RAMP and Prospectus documents that appeared to focus on identifying trends in individual parameters within GBE, but did not discuss interactions between parameters to an extent that would allow for identification of cause and effect relationships. PREP acknowledged this and stated that efforts were ongoing to develop a comprehensive program document that would address these issues as well as the current process for updating the Management Plan. PREP welcomed and encouraged the involvement of the Municipal Alliance in these efforts.

In addition to the development of a comprehensive monitoring program that encompasses all ongoing monitoring programs in GBE, discussion between the Municipal Alliance and PREP also focused on longer-term planning (3–5 years ahead). All parties agreed there is a need to develop a long-term monitoring plan to coincide with future management goals and allow for stakeholders to prepare funding plans more than one year in advance. This not only benefits the Municipal Alliance in securing funding, but also benefits PREP in planning and coordinating future monitoring and analysis programs.

The Municipal Alliance has a large role to play in this effort, beyond contributing funds to PREP's ongoing programs. The Municipal Alliance's involvement provides perspective from the regulated entities into baywide goals and management actions from those who will ultimately implement them. This is necessary to build consensus for current and future actions to benefit the GBE. The Municipal Alliance can assist in the direction and focus of monitoring and analysis programs, as well as set management priorities and timing to achieve program goals. Also, this creates an opportunity for public participation in the management of the natural resource.

5.2 Data Analysis and Modeling Framework

In conjunction with the development of a multi-year monitoring plan, it would be recommended that the partners develop a comprehensive data analysis and modeling framework. The goal of the document would be to anticipate how the partnership will use the data being collected to assess linkages between stressors and responses. Some linkages might be evaluated using empirical data analyses and others through the use of calibrated, deterministic models. To the extent that models will be employed, the framework could identify the basis for model selection and data needs for calibration. Defining the analysis and modeling approach



early in the process is important for ensuring that all major stressor-response linkages can be addressed and that the necessary data are collected.

In summary, recommendations for engagement in the development of a comprehensive monitoring program and long-term planning are:

- 1. Participate in upcoming meetings or a dedicated workshop regarding the development of a comprehensive monitoring program document. PREP stated the Municipal Alliance and/or their representatives would be invited to attend and participate in upcoming meetings on the topic.
- 2. Work with PREP to suggest additional GBE endpoints and goals during development of the final version of the updated 2020–2025 Management Plan. PREP stated the opportunity exists to refine and add goals to the Management Plan.
- 3. Develop specific suggestions for coordinating monitoring and analysis efforts to align with specified Management Plan goals.
- 4. Generate a long-term planning document for the next 3-5 years detailing monitoring, data analysis, and modeling needs, levels of funding, and tentative responsibilities for implementation. Coordination among the Municipal Alliance and with PREP will be necessary to develop a working document that can be refined over time to reflect funding commitments and changing needs for GBE management.



Meeting Type: Organizational Meeting

Meeting Location: Dover City Hall, City Council Conference Room

Remote Location: https://zoom.us/webinar/register/WN BXLpHeUOSLKNl4bMkDhzbA

Meeting Date: Thursday, April 29, 2021

Meeting Time: 1:30 p.m.

1. CALL TO ORDER

The Meeting was called to Order at 1:32PM

Present:

Members:

Town/City	Representative	Remote/ In person
Dover	Gretchen Young (GY) Environmental Projects Manager	In Person
Portsmouth	Suzanne Woodland (SW) Deputy City Attorney	In Person
Rochester	Katie Ambrose (AK) Deputy City Manager	In Person
Milton	Chris Jacobs (CJ) Town Administrator	Remote – Milton Town Hall, Milton, NH
Newington	Denis Messier (DM) Plant Operator	In Person

Non-Members:

Jennifer Perez, Dover, Deputy City Attorney
John Storer (JS), Dover, Director of Community Services
Terrence O'Rourke, Rochester, City Attorney
Jennifer Perry (JP), Exeter, Director of Public Works
Melissa Pally (MP), CLF – participating remotely
Kalle Masto (KM), PREP – participating remotely
Jamie Houle (JH), DES – participating remotely
Sally Soule (SS), DES – participating remotely
Ted Diers (TD), DES – participating remotely

Additional members of the public participated remotely.

Motion: SW moved to elect GY as chair pro-tem, seconded by KA. Unanimously approved.

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Meeting Time: 1:30 p.m.

Roll Call Vote:

Town/City	Representative	Vote
Dover	Gretchen Young (GY)	Yes
Portsmouth	Suzanne Woodland (SW)	Yes
Rochester	Katie Ambrose (AK)	Yes
Milton	Chris Jacobs (CJ)	Yes
Newington	Denis Messier (DM)	Yes

2. EXETER'S ADMINISTRATIVE ADDENDUM FOR IMA MEMBERSHIP

Introduced: SW spoke to the background of the Addendum and its drafting, particularly in relation to Exeter's Administrative Order on Consent (AOC) and maximizing participation in the Intermunicipal Agreement (IMA).

Jennifer Perry spoke on behalf of Exeter, expressing its desire to participate.

Motion: SW moved to accept Exeter's Administrative Addendum for IMA Membership. Seconded by DM. Unanimously approved. Jennifer Perry is acting as current Exeter Representative.

Roll Call Vote:

Town/City	Representative	Vote
Dover	Gretchen Young (GY)	Yes
Portsmouth	Suzanne Woodland (SW)	Yes
Rochester	Katie Ambrose (AK)	Yes
Milton	Chris Jacobs (CJ)	Yes
Newington	Denis Messier (DM)	Yes

Meeting Type: Organizational Meeting

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Meeting Date: Thursday, April 29, 2021

Meeting Time: 1:30 p.m.

3. ADOPTION OF OPERATING RULES

Introduced: SW discussed the background on drafting the rules and highlighted key points including notice to and participation by the Stakeholder Committee.

Motion: SW moved to adopt the draft operating rules. Seconded by KA. Unanimously approved.

Roll Call Vote:

Town/City	Representative	Vote
Dover	Gretchen Young (GY)	Yes
Portsmouth	Suzanne Woodland (SW)	Yes
Rochester	Katie Ambrose (AK)	Yes
Milton	Chris Jacobs (CJ)	Yes
Newington	Denis Messier (DM)	Yes
Exeter	Jennifer Perry (JP)	Yes

4. ELECTION OF EXECUTIVE BOARD

a. Dover, Portsmouth, and Rochester as standing members

SW provided background on the role of the Executive Board. Discussion of Milton's interest in serving on the Executive Board in the future.

b. Election of two At-Large Members

Nominations: JP(Exeter); DM(Newington)

Motion: SW moved to elect Exeter and Newington to the Executive Board. Seconded by KA. Unanimously approved.

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Meeting Date: Thursday, April 29, 2021

Meeting Time: 1:30 p.m.

Roll Call Vote:

Town/City	Representative	Vote
Dover	Gretchen Young (GY)	Yes
Portsmouth	Suzanne Woodland (SW)	Yes
Rochester	Katie Ambrose (AK)	Yes
Milton	Chris Jacobs (CJ)	Yes
Newington	Denis Messier (DM)	Yes
Exeter	Jennifer Perry (JP)	Yes

5. ELECTION OF OFFICERS

a. Chair → Nominee: GY (Nominated by KA, SW second)

b. Vice-Chair → Nominee: KA (Nominated by GY, SW second)

c. Clerk → Nominee: SW (Nominated by JP, DM second)

Motion: SW moved to elect the slate of nominees described above. Seconded by DM. Unanimously approved.

Roll Call Vote:

Representative	Vote
Gretchen Young (GY)	Yes
Suzanne Woodland (SW)	Yes
Katie Ambrose (AK)	Yes
Chris Jacobs (CJ)	Yes
, ,	Yes
· · ·	Yes
	Gretchen Young (GY) Suzanne Woodland (SW)

Meeting Type: Organizational Meeting

Meeting Location: Dover City Hall, City Council Conference Room

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Meeting Date: Thursday, April 29, 2021

Meeting Time: 1:30 p.m.

6. APPOINTMENT OF FISCAL AGENT

a. Formalize by vote to appoint Rochester as Fiscal Agent for MAAM as stated in the IMA

KA spoke on Rochester's willingness and preparedness for this appointment.

Motion: SW moved to appoint the City of Rochester as Fiscal Agent for the Municipal Alliance of Adaptive Management. Seconded by DM. Unanimously approved.

Roll Call Vote:

Town/City	Representative	Vote
	1	
Dover	Gretchen Young (GY)	Yes
Portsmouth	Suzanne Woodland (SW)	Yes
Rochester	Katie Ambrose (AK)	Yes
Milton	Chris Jacobs (CJ)	Yes
Newington	Denis Messier (DM)	Yes
Exeter	Jennifer Perry (JP)	Yes

7. GENERAL PERMIT WORK AND SCOPE ITEMS:

a. Acceptance of funds for 2021 funding of adaptive management and monitoring

Introduced: GY – IMA does not contemplate 2021 funding for ambient water quality monitoring but as a result of conversations with PREP and other stakeholders and the recommendations of Brown and Caldwell there were identified needs for 2021 growing season for sampling and monitoring. Dover, Portsmouth, and Rochester agreed that if each could contribute \$75000 for the 2021 season important work could be accomplished. Portsmouth already had funds appropriated for the 2021 season and could commit \$75,000. Dover had recently committed \$75,000. As of the meeting, Rochester had pending before its City Council approval of \$75,000. The total amount to be accepted by MAAM is \$225,000.

Motion to accept: SW moved to accept funds as described by GY for the adaptive management sampling and monitoring effort. Seconded by DM.

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Meeting Date: Thursday, April 29, 2021

Meeting Time: 1:30 p.m.

DM – asked about Newington's portion.

SW – explained the \$75,000 contribution was outside the IMA budget but if Newington is prepared to commit funds Attachment 4 to the IMA suggests a contribution of \$1,075.39 would be appropriate.

DM – Indicated Newington's ability and willingness to contribute.

Motion: SW moved to amend the original motion to include acceptance of funds from Newington pending an invoice from the Fiscal Agent, and acceptance of any other funds from any other community that may want to contribute. Seconded by DM.

Final Motion: The Fiscal Agent is authorized to accept funds from Dover, Portsmouth, and Rochester in the amount of \$75,000 each (pending Rochester City Council Approval) totaling \$225,000, to accept funds from Newington pending an invoice for \$1,075.39, and to accept further funds from communities that wish to contribute, for the Adaptive Management and Monitoring Effort.

Unanimously approved.

Roll Call Vote:

Town/City	Representative	Vote
Dover	Gretchen Young (GY)	Yes
Dordon d	C W 11 1 (CW)	V
Portsmouth	Suzanne Woodland (SW)	Yes
Rochester	Katie Ambrose (AK)	Yes
Milton	Chris Jacobs (CJ)	Yes
Newington	Denis Messier (DM)	Yes
Exeter	Jennifer Perry (JP)	Yes

b. Authorize disbursement of funds to support four identified projects

Introduced: SW provided background on the engagement of Brown and Caldwell by Dover, Portsmouth, and Rochester. Specifically, Brown and Caldwell identified the need to get certain projects started this fiscal year (referenced page 7 of the provided Brown and Caldwell memorandum). Introduced Kalle Masto of PREP to discuss.

MINUTES

Meeting Type: **Organizational Meeting**

Meeting Location: Dover City Hall, City Council Conference Room

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Thursday, April 29, 2021 Meeting Date:

Meeting Time: 1:30 p.m.

KM – spoke to the Memorandum and the project list, specifically project work 1-4 on the list. Described the benefit of getting sampling and monitoring work underway in 2021. Described positive working relationships with Brown and Caldwell and looking forward to the continued collaborative effort.

GY – discussed the General Permit requirements and how the monitoring and sampling work in items 1-4 and the collaborative work help meet Part 3 of the permit requirements.

Motion: SW moved to authorize the disbursement of funds to support the four identified projects (1-4) on page 7 of the Brown and Caldwell memorandum. Seconded by KA. Unanimously approved.

Roll Call Vote:

Town/City	Representative	Vote
Dover	Gretchen Young (GY)	Yes
Portsmouth	Suzanne Woodland (SW)	Yes
Rochester	Katie Ambrose (AK)	Yes
Milton	Chris Jacobs (CJ)	Yes
Newington	Denis Messier (DM)	Yes
Exeter	Jennifer Perry (JP)	Yes

c. Permit Compliance Status – July 31, 2021 deadline for EPA submittal of comprehensive plan for Adaptive Management, Part 3 of General Permit

GY – discussed the Adaptive Management plan and the working group consisting of the surrounding communities. The funding portion will be working towards outlining source reduction of total nitrogen. Deadline for submission is July 31 and the working group is on track for a draft by early June.

d. PTAPP coordination update

GY – Introduced Jamie Houle (JH) and Sally Soule (SS) from NH DES.

Motion: SW moved to bring forward JH and SS as participants to speak to the topic. Seconded by KA. Unanimously approved.

MINUTES

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Meeting Date: Thursday, April 29, 2021

Meeting Time: 1:30 p.m.

Roll Call Vote:

Town/City	Representative	Vote
Dover	Gretchen Young (GY)	Yes
Portsmouth	Suzanne Woodland (SW)	Yes
Rochester	Katie Ambrose (AK)	Yes
Milton	Chris Jacobs (CJ)	Yes
Newington	Denis Messier (DM)	Yes
Exeter	Jennifer Perry (JP)	Yes

JH – discussed working with SS on items B and C in the General Permit Part 3 for PTAPP tracking, monitoring coordination, and permit compliance.

8. COORDINATION WITH STAKEHOLDERS

SW – opened with a background on the Stakeholder Committee and Agreement with CLF, introduced Melissa Paly (MP).

MP – Welcomed the collaboration and the transparency. Will be working to establish a Stakeholder Committee with a diversity of partners and viewpoints.

9. PUBLIC COMMENT

a. Limited to 5 minutes per speaker

John Storer – Dover Director of Community Services – presented two items for future consideration by Members: (1) funding eelgrass seeding effort; (2) septic retrofits pilot study.

MP – responded to John Storer with an update on eelgrass restoration – pilot restoration project is underway with new innovative ways to address eelgrass growth.

Ted Diers – expressed a commitment to coordination and collaboration and will include this work progress in his report to the Governor.

10. BUILD NEXT MEETING AGENDA

GY – Suggested a meeting for early June.

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Meeting Date: Thursday, April 29, 2021

Meeting Time: 1:30 p.m.

KM – explained the PRMC was meeting in early June and perhaps municipalities should meet after that meeting.

Next meeting set for June 24, 2021 at 11AM with a remote option to be available.

GY – stated the plan was to have the proposed Adaptive Management plan ready for review by the Members in early June.

11. ADJOURN

Motion: DM moved to adjourn. Seconded by SW. Unanimously approved.

Roll Call Vote:

Ron Can vote.			
Town/City	Representative	Vote	
Dover	Gretchen Young (GY)	Yes	
Portsmouth	Suzanne Woodland (SW)	Yes	
Rochester	Katie Ambrose (AK)	Yes	
Milton	Chris Jacobs (CJ)	Yes	
Newington	Denis Messier (DM)	Yes	
Exeter	Jennifer Perry (JP)	Yes	

Meeting adjourned at 2:43PM

Prepared by: Jennifer Perez, Dover Deputy City Attorney and Suzanne Woodland, Portsmouth Deputy City Attorney

Adopted at Meeting of June 24, 2021