

Cape Cod 208 Plan Implementation

**APRIL 2019 REPORT TO THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY**



CAPE COD
COMMISSION



**Cape Cod 208 Plan Implementation
April 2019 Report to the United States Environmental Protection Agency**



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Prepared by the Cape Cod Commission

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Introduction

Since incorporation of the 2017 Implementation Report into the updated Cape Cod Area Wide Water Quality Management Plan (208 Plan Update), Cape Cod communities have been engaged and taking action to better address nitrogen pollution in coastal waters. Working across town lines in watersheds to some of the most impacted estuaries in the region, nearly all of the towns are making progress, with each of the developed plans and projects designed to suit the needs of the community within which it is proposed.

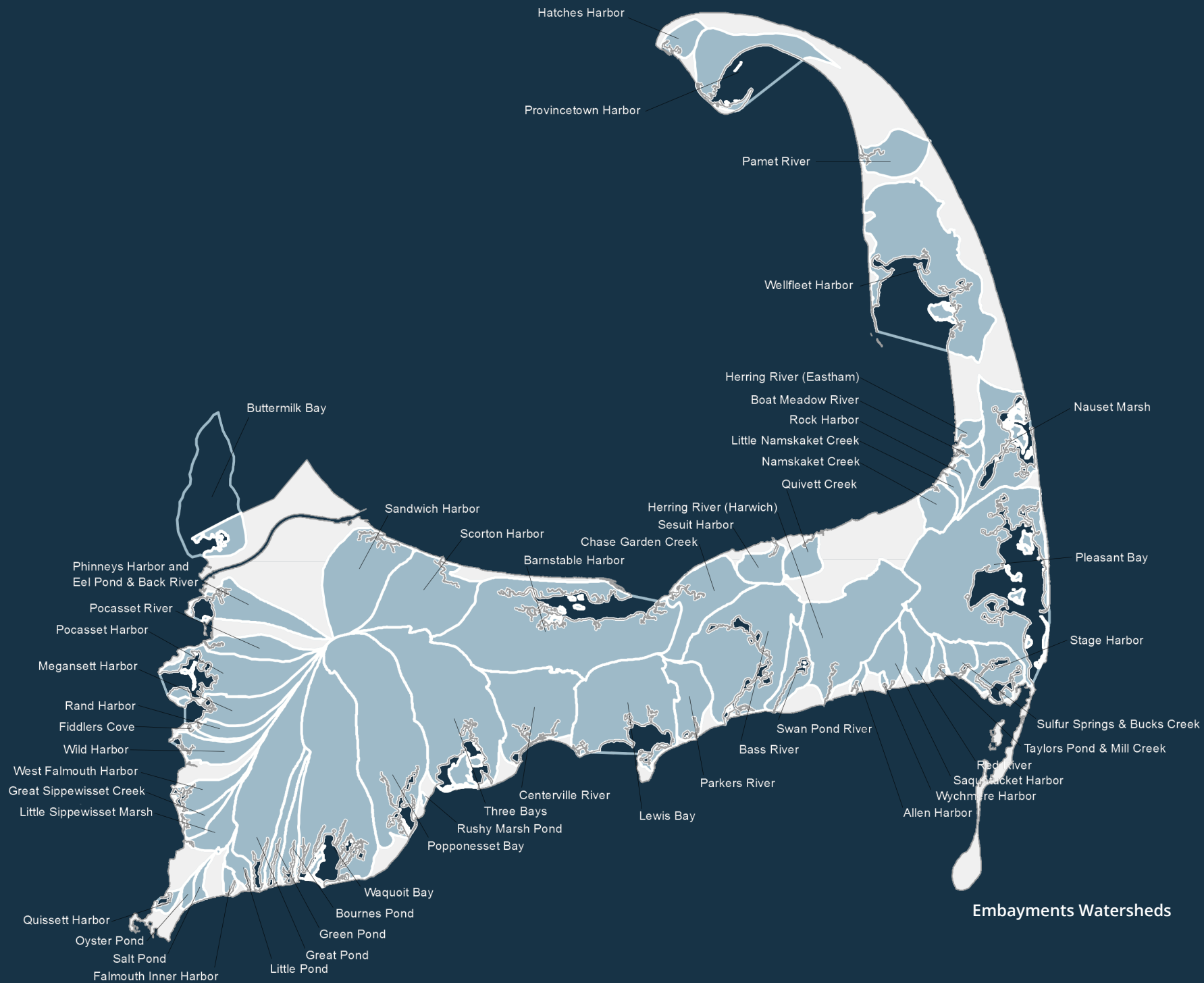
To help facilitate this progress, the Cape Cod Commission (Commission) and others have made changes to support a more flexible regulatory environment. Intermunicipal agreements have been established in some priority watersheds and the region saw a first-of-its-kind watershed permit issued to the four communities that contribute to the Pleasant Bay system. The Commission amended its regulations, adopting a more

supportive review process for nutrient management plans and projects. Through adoption of an updated Regional Policy Plan, the Commission continued to strengthen support for maintaining high quality water and other natural resources and ensuring future development is located in areas with appropriate infrastructure.

The fundamental issues of monitoring and financing remain the highest priorities moving forward. Efforts are being made to consolidate monitoring data and analyses to make them more accessible and easier to integrate into local planning processes. More Cape Cod communities are seeking State Revolving Fund (SRF) loans and legislation was enacted to establish the Cape Cod and Islands Water Protection Fund and with it a new, dedicated source of revenue. Additional work is needed to ensure infrastructure investments are cost effective and communities have access to the financial resources needed to implement plans.

This progress report serves as an update on both local and regional progress to implement 208 Plan Update recommendations since completion of the 2017 Implementation Report and seeks to provide further clarity on the path forward.

This report was requested by the US Environmental Protection Agency (US EPA) in their March 21, 2018 letter to the Massachusetts Department of Environmental Protection (MassDEP) incorporating the 2017 Implementation Report into the approved 208 Plan Update. It provides information by which US EPA may assess actions taken to implement the 208 Plan Update, consistent with the requirement of their 2015 Settlement Agreement with the Conservation Law Foundation that an assessment be completed in the fourth year following approval of the 208 Plan and designation of Waste Treatment Management Agencies (WMAs).



Embayments Watersheds

Path Defined through the Cape Cod 208 Plan

The Cape Cod 208 Plan Update, certified and approved by the Governor of the Commonwealth of Massachusetts and US EPA in 2015, provides a path forward and an opportunity to implement watershed management plans for the restoration of the coastal waters that define Cape Cod, many of which are severely impacted by excess nitrogen from on-site septic systems.

Development of the 208 Plan Update followed a decades-long process to define the coastal water quality problems on a water body by water body basis (through the Massachusetts Estuaries Project, or MEP). Of the 53 Cape Cod embayments with physical characteristics that make them susceptible to nitrogen impacts, 34 require nitrogen reduction to achieve healthy ecosystem function, and 28 have established Total Maximum Daily Loads (TMDLs) for nitrogen (see **Figures 1-4** and **Table 1**). Since the 2017 Implementation Report, Nitrogen TMDLs were finalized for Fiddlers Cove,

Rands Canal, Quissett Harbor, and Wild Harbor. No additional technical reports or draft TMDLs were issued.

Consistent with the requirements of Section 208 of the Clean Water Act and with the historical approach to wastewater and water quality planning and implementation, Governor Charlie Baker and the US EPA in conjunction with certification and approval of the 208 Plan Update in 2015, designated the 15 Cape Cod Towns as Waste Treatment Management Agencies (WMAs), responsible for development and implementation of water quality management plans.

As recommended in the 208 Plan, WMAs developed watershed reports that outline potential watershed-based scenarios to meet water quality goals in each of the 53 embayments. The watershed reports take advantage of the framework established in the 208 Plan and incorporate a range of traditional and non-traditional technologies

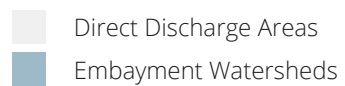
that reduce nitrogen at the source, intercept it in groundwater, and address it in the embayments. For many of the communities, the watershed reports represented many years of work to develop plans for wastewater infrastructure and nitrogen reduction. For others, the watershed reports served as a starting point for more detailed planning or conversations in critically impaired shared watersheds.

The final watershed reports were included as an appendix to the 2017 Implementation Report. The Implementation Report also identified 11 priority watersheds (**Figure 5**), a two-year schedule for development of intermunicipal agreements and more detailed watershed plans in priority watersheds, and recommendations to increase capacity at the regional level to support local plan development and implementation. The following are the priority watersheds from the 2017 Implementation Report:



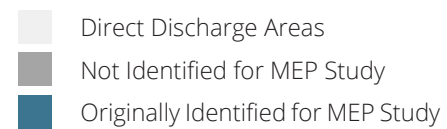
53 Embayments Watersheds

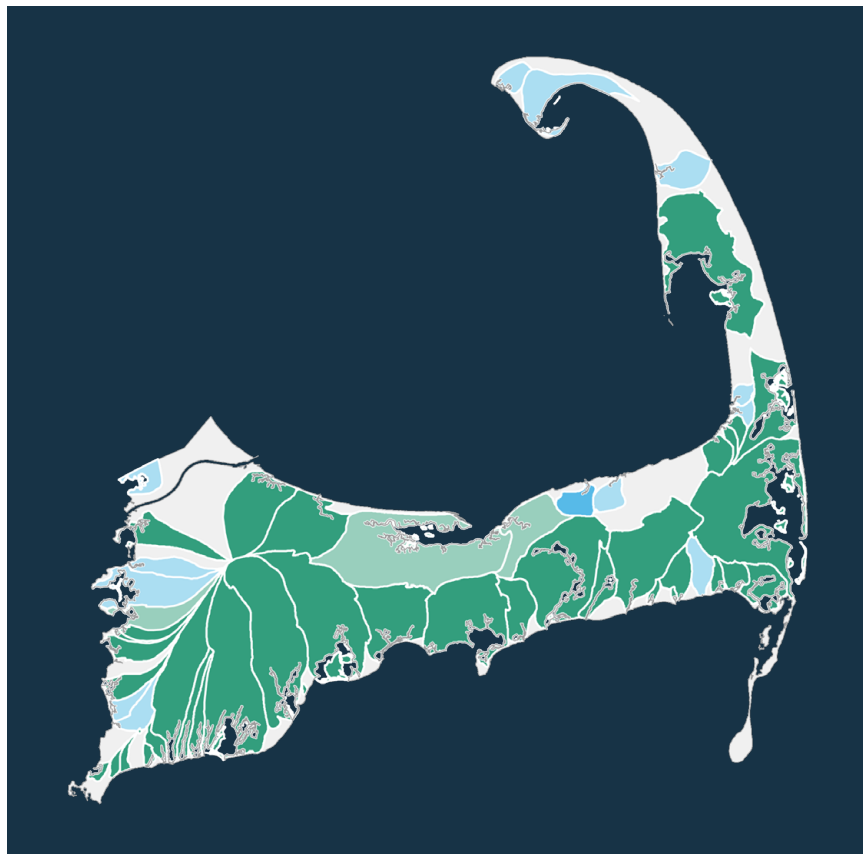
Figure 1



46 Embayments Watersheds Originally Identified by MEP for Study

Figure 2





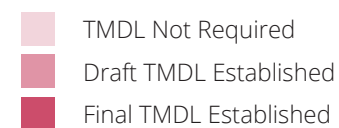
Status of MEP Technical Reports by Watershed (April 2019)

Figure 3



Status of TMDLs by Watershed (April 2019)

Figure 4



Status of MEP Technical Reports and TMDLs (as of April 2019)

WATERSHED	STATUS OF MEP REPORT	STATUS OF TMDL
Allen Harbor	Final Technical Report	Final TMDL Established
Barnstable Harbor	Draft Technical Report	
Bass River	Final Technical Report	Final TMDL Established
Boat Meadow River	Not Studied	
Bournes Pond	Final Technical Report	Final TMDL Established
Buttermilk Bay	Not Studied	
Centerville River	Final Technical Report	Final TMDL Established
Chase Garden Creek	Draft Technical Report	
Falmouth Inner Harbor	Final Technical Report	
Fiddlers Cove	Final Technical Report	Final TMDL Established
Great Pond	Final Technical Report	Final TMDL Established
Great Sippewissett Creek	Not Studied	
Green Pond	Final Technical Report	Final TMDL Established
Hatches Harbor	Not Studied	
Herring River (Eastham)	Not Studied	
Herring River (Harwich)	Final Technical Report	Final TMDL Established
Lewis Bay	Final Technical Report	Final TMDL Established
Little Namskaket Creek	Final Technical Report	TMDL Not Required
Little Pond	Final Technical Report	Final TMDL Established
Little Sippewissett Marsh	Not Studied	
Megansett Harbor	Draft Technical Report	
Namskaket Creek	Final Technical Report	TMDL Not Required
Nauset Marsh	Final Technical Report	
Oyster Pond	Final Technical Report	Final TMDL Established
Pamet River	Not Studied	
Parkers River	Final Technical Report	Final TMDL established
Phinneys Harbor	Final Technical Report	Final TMDL Established
Pleasant Bay	Final Technical Report	Final TMDL Established

Status of MEP Technical Reports and TMDLs (as of April 2019)

WATERSHED	STATUS OF MEP REPORT	STATUS OF TMDL
Pocasset Harbor	Not Studied	
Pocasset River	Not Studied	
Popponesset Bay	Final Technical Report	Final TMDL Established
Provincetown Harbor	Not Studied	
Quissett Harbor	Final Technical Report	Final TMDL Established
Quivett Creek	Not Studied	
Rands Canal	Final Technical Report	Final TMDL Established
Red River	Not Studied	
Rock Harbor	Final Technical Report	
Rushy Marsh Pond	Final Technical Report	Final TMDL Established
Salt Pond	Final Technical Report	TMDL Not Required
Sandwich Harbor	Final Technical Report	TMDL Not Required
Saquatucket Harbor	Final Technical Report	Final TMDL Established
Scorton Harbor	Final Technical Report	TMDL Not Required
Sesuit Harbor	Data Collection Phase	
Stage Harbor	Final Technical Report	Final TMDL Established
Sulfur Springs/Bucks Creek	Final Technical Report	Final TMDL Established
Swan Pond River	Final Technical Report	Final TMDL Established
Taylors Pond/Mill Creek	Final Technical Report	Final TMDL Established
Three Bays	Final Technical Report	Final TMDL Established
Waquoit Bay	Final Technical Report	Final TMDL established for the Quashnet River, Hamblin Pond, Little River, Jehu Pond and Great River
Wellfleet Harbor	Final Technical Report	
West Falmouth Harbor	Final Technical Report	Final TMDL Established
Wild Harbor	Final Technical Report	Final TMDL Established
Wychmere Harbor	Final Technical Report	Final TMDL Established

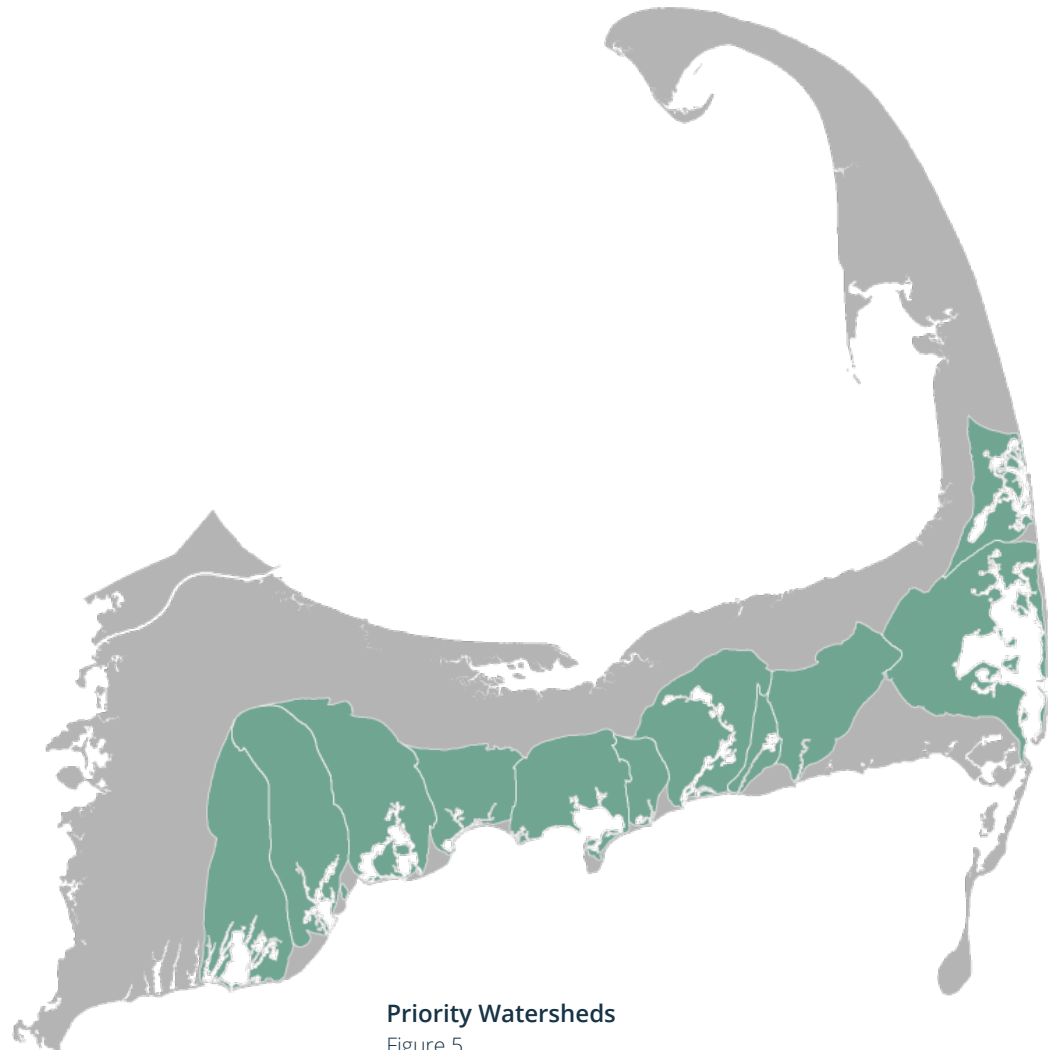
Status of MEP Technical Reports and TMDLs (April 2019)

Table 1

PRIORITY WATERSHEDS

- Popponesset Bay
- Parkers River
- Three Bays
- Bass River
- Lewis Bay
- Centerville River
- Swan Pond River
- Pleasant Bay
- Nauset Marsh
- Waquoit Bay
- Herring River

The ongoing local and regional efforts follow.



Priority Watersheds
Figure 5

Local Progress

PRIORITY WATERSHEDS

The 2017 Implementation Report specifically recommended that, within one year of adoption of the Implementation Report by the Massachusetts Department of Environmental Protection (MassDEP) and US EPA, communities contributing to priority watersheds develop agreed upon nitrogen allocations and adopt an intermunicipal agreement that, at a minimum, establishes nitrogen load responsibility (**S2017.1**).

Within two years of adoption of the Implementation Report, it was recommended that contributing communities in priority watersheds outline a plan and schedule for hybrid watershed scenario development and develop hybrid watershed scenarios consistent with the 208 Plan Update (**S2017.2**).

Of the 11 priority watersheds, three are located within a single town (Centerville River, Parkers River and Swan Pond River) and, therefore, do not require intermunicipal agreements. The remaining eight watersheds

are shared. Since submission of the Implementation Report, two intermunicipal agreements have been executed relative to priority watersheds and other collaborative efforts are underway.

The towns of Barnstable, Mashpee, and Sandwich executed the Popponesset Bay intermunicipal agreement in November 2017. The towns of Mashpee and Sandwich have final and approved town-wide management plans that include proposed projects and infrastructure to address the watershed. Mashpee finalized their Comprehensive Watershed Nitrogen Management Plan (CWNMP) in 2015 and Sandwich finalized their Comprehensive Water Resources Management Plan (CWRMP) in December 2017. Barnstable's Comprehensive Wastewater Management Plan (CWMP) is anticipated in Summer 2019. It is expected that the CWMP will address Barnstable's portion of the Popponesset Bay watershed, in addition to Three Bays, Lewis Bay, and Centerville River watersheds. The town is

engaged with the Barnstable Clean Water Coalition (BCWC) around the Three Bays watershed. BCWC is pursuing a number of non-traditional pilot projects in this area, which was identified as a watershed that would be addressed in a medium to long term sewer phase of CWMP implementation.

The towns of Mashpee and Sandwich have begun discussions with the Town of Falmouth around the Waquoit Bay watershed. The towns anticipate using the Popponesset Bay agreement as a model for a Waquoit Bay intermunicipal agreement.

The towns of Bourne, Mashpee, Sandwich, Falmouth, and Barnstable are also engaged in discussions with military leadership at Joint Base Cape Cod (JBCC) around use of the JBCC wastewater treatment facility and disposal areas.

In May 2018, the towns of Brewster, Chatham, Harwich, and Orleans executed the Pleasant Bay intermunicipal agreement.

The intermunicipal agreement was developed in conjunction with a targeted watershed management plan, both of which were intended to serve as the basis for a watershed permit application. Coordinated through the Pleasant Bay Alliance, the four communities agreed to individual nitrogen allocations and committed to applying for a watershed permit through MassDEP. In June 2018, the Commission issued a determination finding the Pleasant Bay Watershed Permit Plan consistent with the 208 Plan Update. The four communities were issued a watershed permit in July 2018 and have been working to coordinate implementation. For the towns of Chatham and Harwich, part of implementation includes shared infrastructure – the town of Chatham is providing capacity at their wastewater treatment facility to the town of Harwich to serve an area in East Harwich. Town Meeting in each community supported this effort and authorized funding when articles were placed on the warrants in 2017 and 2018.

The towns of Dennis, Harwich, and Yarmouth have been working, through the subcommittee of town administrators, selectmen, and staff created in March

2017, to establish the DHY Community Partnership and implement a regional wastewater treatment system to serve all three communities. The approach is modeled after the Mansfield, Foxborough, Norton agreement and requires special legislation, along with Town Meeting support, to establish. Legislation to establish the Community Partnership, originally filed but not acted upon in 2018, was refiled in early 2019. When the Community Partnership is formed, the three towns propose to work together to implement the previously developed DHY Community Partnership Plan, which is estimated to save over \$100 million in capital costs and \$6.5 million in annual operations and maintenance costs, compared to the individual town plans. The Plan addresses the portions of five priority watersheds (Parkers River, Bass River, Swan Pond, Herring River, and Pleasant Bay) within the three participating towns.

The above describes some of the major ongoing efforts in priority watersheds. Additional details on progress in each community and the region as a whole are included in subsequent sections.

COMPLIANCE REPORTS

The Commission tracks implementation of the 208 Plan Update and has committed to developing compliance reports to document progress by each WMA. Compliance report criteria (**I2017.3**) were identified at the OneCape Summit in August 2018 and discussed with the Cape Cod Water Protection Collaborative in January 2019 and MassDEP and US EPA in February 2019. The criteria established for tracking progress by each WMA include:

PLANS AND PERMITS

- Plans Developed – Categorized as Draft, Final
- 208 Consistency Determinations Issued
- Permits Obtained

IMPLEMENTATION

- Project Status – Categorized as Feasibility, Design, Implementation
 - Pilot Projects
 - Traditional Infrastructure
 - Non-Traditional Infrastructure

- Regulatory actions – Applicable Zoning Changes, Adoption of Regulations, Fertilizer Bylaw

FUNDING

- Grants – Categorized as Those Applied For, Those Received
- Town Meeting Actions
- Member Community - Cape Cod and Islands Water Protection Fund

TEAM

- Local Water Quality Committee
- Staff
- Consultants
- Others

DATA AND INFORMATION/ REGIONAL DATA SHARING

- Parcel Data
- Assessing Data
- Water Use Data
- Water Quality Monitoring – Embayments, Ponds
- Performance Monitoring

MS4 COMPLIANCE

- Applicability of 2016 Massachusetts MS4 Permit
- Applicability of additional nitrogen-related requirements for impaired waters
- Compliance with MS4 permit requirements

A draft compliance report for each WMA is included in Appendix A. The draft compliance reports will be shared with each community in May 2019 with a request for review. The Commission will accept feedback and edits on the draft compliance reports through June 2019, following which the Commission will make necessary amendments, with the intent of issuing final reports in July 2019. During the same review period, the Commission will request that WMAs provide updates to their watershed reports.

Regional Progress

Both the 208 Plan Update and the 2017 Implementation Report grouped recommendations into four categories:

- Information (I)
- Regulatory Reform (R)
- Support (S)
- Cost (C)

These four categories encompass the efforts necessary to support local implementation of the 208 Plan Update and achievement of water quality goals. Since 2017 progress has been made by WMAs, the Cape Cod Commission, Barnstable County, state agencies, and US EPA in implementing each category of recommendations from both the 208 Plan Update and Implementation Report.

INFORMATION

Information provided the basis for determining the severity of the nitrogen-related issues in each embayment over the last couple of decades and for working

with stakeholders to complete the 208 Plan Update in 2015. Access to information remains an important issue, as communities identify and implement responsible watershed plans that impact residents, businesses, and visitors. The collection of data, the development of decision-support tools that make data easier to use, and the analysis of water quality and wastewater technologies and policies remain central to the Cape Cod Commission's role in supporting 208 Plan implementation. Since 2017, the Commission has focused on information related to embayment water quality monitoring and maintaining the Technologies Matrix. As communities move from planning to implementation, baseline water quality and trends in water quality improvement and/or degradation will provide the basis for evaluating investments in infrastructure. As those investments are made, performance monitoring will allow communities to understand their effectiveness. Both water quality monitoring and technology performance information can and should be accessible and shared

amongst Cape Cod communities and others so that the region can collectively make more effective and efficient decisions moving forward.

WATER QUALITY MONITORING

The 208 Plan Update and Implementation Report call for a regional water quality monitoring database and program to ensure the public is afforded the highest level of transparency regarding the information used as a basis for water quality policy and associated capital planning (**WQ Data Center I4.10; I2017.6**).

To ensure consistent data collection at sentinel monitoring stations in each coastal embayment subject to the 208 Plan Update, the State provided \$250,000 annually in 2016, 2017, and 2018. This funding was matched in equal amounts by Barnstable County to expand water quality monitoring data collected by the Center for Coastal Studies and to support a regional water quality monitoring program.

In addition to supporting ongoing efforts to collect data, the regional water quality monitoring program provides the infrastructure and partnerships needed to compile and maintain data from the many agencies and organizations collecting it region-wide. Consistent with the Implementation Report, which called for a process for obtaining data, regularly updating the database, and a program for analyzing and presenting data in a useful format, the Commission, along with several partners, applied for and was awarded a 2018 Southeast New England Program Watershed Grant. Working with the Center for Coastal Studies, the Waquoit Bay National Estuarine Research Reserve, the Association to Preserve Cape Cod, and the Woods Hole Oceanographic Institution, the Commission is working to upgrade and expand the regional water quality database to include both the most up to date estuarine data and freshwater data, improve capacity to manage and analyze data, generate trend analyses, as needed, and make information more accessible to communities for use in decision-making. To support this effort, the Commission acquired water resources data management software (WISKI, offered

by KISTERS) and is engaging stakeholders, including MassDEP, US EPA, the Cape Cod Water Protection Collaborative, the project team identified above, and others in a collaborative end user group process to identify data and information needs, develop appropriate analyses, and enhance access through the web interface.

The process established through the 2018 Watershed Grant will utilize data from all available sources, including but not limited to data collected by Cape Cod communities, the School for Marine Science and Technology at the University of Massachusetts, the Buzzards Bay Coalition, the Center for Coastal Studies, and the Waquoit Bay National Estuarine Research Reserve.

TECHNOLOGY PERFORMANCE MONITORING

Equally important to local decision-making is performance monitoring. The 2017 Implementation Report included guidance for piloting, monitoring and evaluating the following non-traditional technologies: innovative/alternative septic systems, eco-toilets, permeable reactive barriers, shellfish aquaculture, shellfish

bed restoration, floating constructed wetlands, inlet modification and inlet modification specifically for coastal habitat restoration (**Monitoring Protocols I4.8**). The technologies included in this guidance are consistent with the most promising types of non-traditional approaches feasible for Cape Cod communities. These monitoring protocols and guidance have served as a basis for local project monitoring plans (the Pleasant Bay Watershed Permit Plan, for example).

The Implementation Report recommended reconvening the Monitoring Committee (**Monitoring Committee I4.9**) and adopting protocols for other non-traditional technologies (**I2017.5**); however, the demand for protocols beyond those already developed is not yet apparent. Amendments to the existing guidance document should be considered in the future, as time and resources allow.

TECHNOLOGIES MATRIX

It is critical to gather performance monitoring data and make it publicly accessible, so as to inform efforts of other Cape Cod communities. Through the annual OneCape

Summit, the Commission seeks to make the latest information more widely available (**Annual Technologies Symposium I4.2**). Presentations and information at the Summit include new research on nutrient management technologies and approaches and local experiences piloting non-traditional technologies. The information presented coincides with the regular updates to the Technologies Matrix.

In July 2018, the Commission hosted the annual Summit, OneCape: Building Resiliency, at the Wequasset Resort in Harwich, MA. See www.onecape.capecodcommission.org for more information on the Summit.

The Technologies Matrix committee was convened at the 2018 Summit to discuss updates relevant to permeable reactive barriers and aquaculture, which were the focus of its annual update. In April 2019, the Commission convened the Technologies Matrix committee to review and discuss potential 2019 updates, which are anticipated to focus on stormwater management. Future updates to the Technologies Matrix will be conducted as needed and as new information becomes available. Staff

will continue to obtain information from ongoing implementation of local projects on an annual basis. When sufficient new information is available to warrant convening the Technologies Matrix committee a formal update will be completed.

The Technologies Matrix viewer (<http://www.cch2o.org/Matrix/>) has been updated to reflect the latest version of the Matrix. The infrastructure that supports the viewer has also been upgraded to increase database information storage capacity, allow for information download, and create a more detailed viewer.

DATA AND DECISION-SUPPORT TOOLS

The decision-support tools created by the Commission to make data and information more accessible and aid local planning rely on the monitoring data and research described above, in addition to other underlying regional data layers that require regular maintenance and updates. The 2017 Implementation Report recommended the Commission pursue an update to the parcel and water use data used in WatershedMVP (www.watershedmvp.org) and

other decision support tools (**I2017.19**), update WatershedMVP and other decision support tools based on newly acquired data (**I2017.20**), and revisit functionality available in these tools regularly to ensure they remain effective for planning purposes (**I2017.21**).

In late 2017 the Commission requested and received updated water use data from the 17 water purveyors across the region. In addition, new parcel and assessor data was obtained from MassGIS. Along with these fundamental data updates, Commission staff is leveraging regional planimetrics data, which was created in 2016 from a 2014 aerial flyover, to develop more accurate lawn, impervious surface, structure, and canopy layers. As a result, WatershedMVP can provide more accurate wastewater, fertilizer, stormwater, and atmospheric nitrogen loads on a parcel-specific basis.

Consistent with the five year intervals for data updates proposed in the 208 Plan Update, the Commission will work with Cape Cod communities to complete another regional flyover in the next 12-18 months. Coordination on this effort has already begun between the Commission and the 15 towns.

To provide more accurate wastewater nitrogen loads, the Commission has requested information on innovative/alternative septic system installations region-wide from the Barnstable County Department of Health and Environment. Once obtained, WatershedMVP will provide more accurate nitrogen loading information from those parcels utilizing innovative/alternative systems.

Efforts are ongoing to increase the resiliency of WatershedMVP and other applications. Efforts in the near term will focus on transitioning the applications to the cloud, upgrading the application architecture to accommodate development, user acceptance and testing, and production sites. This will allow for better debugging capabilities and easier upgrades in the future. As communities have moved forward with planning, consultants and other users have been working with WatershedMVP and providing feedback on functionality. Staff will consider this feedback and make updates, as necessary, over the coming months.

SUPPORT

Direct support of local water quality planning efforts, including the provision of expertise and technical assistance, access to decision-support tools, and development of guidance on issues, was a key recommendation in the 208 Plan Update and remained a priority in the 2017 Implementation Report.

Since 2017, the Commission has provided the following support to communities, either through Watershed Team technical assistance (**Watershed Teams S5.3**) or by directing discretionary funds, such as District Local Technical Assistance (DLTA), to 208-related work.

The following provides a summary of the assistance provided since the 2017 Implementation Report.

BARNSTABLE

Commission staff engaged with the Barnstable Board of Health, Department of Public Works, and Planning Department staff to provide assistance in quantifying the potential impacts of amending or lifting the Board of Health Interim Saltwater Protection

Overlay District, which is currently in place in the watersheds to south-facing embayments. Amendments to the regulation have been proposed to the Board of Health and are under consideration.

BOURNE

Commission staff assisted the Town of Bourne in applying for a \$2.3 million Economic Development Administration grant to construct a new wastewater treatment plant in Buzzards Bay, which was awarded in February 2019. While the primary purpose for the treatment facility is not nitrogen reduction, the facility will alleviate the impact of nitrogen in some off-Cape estuaries and provide much needed infrastructure in an area of critical need to support the local and regional economy.

BREWSTER, CHATHAM, HARWICH, ORLEANS (PLEASANT BAY)

Commission staff attend monthly meetings of the Pleasant Bay Alliance Watershed Working Group; participated in development of the targeted watershed management plan,

intermunicipal agreement, and watershed permit application; and provided guidance on 208 consistency review.

BREWSTER

The Commission directed 2018 DLTA funding to support municipal implementation of an onsite septic system treatment program for the Pleasant Bay watershed, including an analysis of the number of properties that would need to upgrade their systems to meet nitrogen reduction requirements, development of a general bylaw for the regulation of sewage disposal systems to protect water quality in Pleasant Bay, and development of an issues summary for use in public outreach. It is anticipated the bylaw will be brought forward at fall 2019 Town Meeting. Appendix B includes the general bylaw, issues summary, and implementation memo.

EASTHAM

Commission staff engaged with the Town of Eastham to provide assistance in developing a communications plan for water quality planning and implementation and to facilitate

conversations with their neighboring community of Orleans around the Nauset Harbor priority watershed.

SANDWICH

Commission staff completed a preliminary 208 consistency review on the draft Sandwich Comprehensive Water Resources Management Plan at the request of town staff and met with staff and their consultant to discuss draft findings and provide guidance to inform the final plan. Through 2017 DLTA funding, Commission staff worked with the Town of Sandwich staff to develop the “Recommended Communications Plan for the Sandwich Comprehensive Water Resources Management Plan,” a communications and outreach approach for the town to utilize as they worked to establish an innovative funding mechanism for CWRMP implementation, which they were successful in doing in 2018. Appendix C includes the Recommended Communications Plan for the Sandwich Comprehensive Water Resources Management Plan.

YARMOUTH

The Commission directed 2018 DLTA funding to the Town of Yarmouth to develop a communications plan framework to involve and engage the community in water quality management and planning. The framework translates the structure of the 208 Plan outreach process and lessons learned into a municipal context and provides methods and options for improving engagement and communication. The final deliverable is a framework that can be utilized by other communities and tailored to individual needs. Appendix D includes the communications plan framework.

WELLFLEET

Commission staff worked with town staff and their consultant to compile engineering and planning work completed to date for Wellfleet Harbor; convened a meeting with town staff, MassDEP, and the Commission to discuss needs and next steps to complete a targeted watershed management plan and apply for a watershed permit. The Commission anticipates continuing coordination with the town and others in Wellfleet Harbor and

has provided a scope of work for additional technical assistance, for consideration by the town as they move forward.

REGION-WIDE STORMWATER MANAGEMENT

In 2018, the Commission also directed DLTA funds to assist all 15 Cape Cod towns with stormwater-related work and the requirements of the new Massachusetts Small Municipal Separate Storm Sewer System (MS4) permit. In addition to Commission staff support of the Cape Cod Stormwater Managers Group, DLTA funds were used to contract with Horsley Witten Group for engineering services to benefit municipal stormwater programs throughout the region. Commission staff coordinated the Stormwater Managers Group on a near monthly basis, developed and maintain a Cape Cod stormwater website (<https://capecodstormwater.wordpress.com/>) and other educational materials (available on website), provided technical assistance to towns, including but not limited to assistance in completing their Notice of Intent forms, developed tools and resources, such as town specific cost estimators, and coordinated with state and federal agencies.

Through the contract with Horsley Witten Group, the Stormwater Managers Group was able to provide region-specific input on upcoming revisions to the Massachusetts Stormwater Handbook, obtain drainage plans and roadway layouts for the Massachusetts Department of Transportation (MassDOT) roadways within Cape Cod towns to increase municipal understanding of potential system cross-connections, and develop plans for stormwater management practices with enhanced nutrient removal to promote water quality improvements to meet TMDLs.

Bourne

In addition, the Cape Cod Commission through the AmeriCorps Cape Cod Individual Placement program provided a service member in FY18 to support the town of Bourne on stormwater management efforts. The AmeriCorps member conducted field mapping of town owned stormwater infrastructure and helped develop a procedure for screening and prioritizing outfall investigations to incorporate into the Town's Illicit Discharge Detection and Elimination Program under the 2016 MS4 permit. Project progress was reported to area stormwater professionals at the Cape

Cod Municipal Stormwater Managers Group meetings and can serve as a template for other communities developing similar plans to meet permit requirements.

The Commission will continue to support communities as they develop and implement water quality improvement plans and projects, through direct technical assistance and by providing funding, as available.

REGULATORY REFORM

The process to update the 208 Plan clearly identified that the state and regional regulatory framework for wastewater and water quality plans and projects was inadequate to address the challenges of diffuse, non-point sources of pollution. The 208 Plan Update and 2017 Implementation Report made specific recommendations for process improvements necessary to make it easier for communities to respond to the problem. Significant progress has been made at both the regional and state level since 2017.

REGIONAL REGULATORY REVIEW

The 2017 Implementation Report recommended that the Cape Cod Commission amend its regulations to allow for 208 consistency review in place of Development of Regional Impact (DRI) review for municipal water quality plans and projects. Consistent with the 208 Plan Update, which called for the Commission to ensure municipal water quality management plans, and material changes to existing plans, are consistent with the 208 Plan (**208 Plan Update Consistency Review R3.7**), this approach streamlines the permitting process.

In February 2018, the Commission proposed amendments to Chapter A of the Cape Cod Commission Regulations: Enabling Regulations Governing Review of Developments of Regional Impact. In April 2018, the amendments were approved by both the Barnstable County Assembly of Delegates and Board of Regional Commissioners.

The revised enabling regulations exempt towns from DRI review for water quality plans

and projects that have nutrient remediation as a primary purpose. The amendment applies equally to plans and projects previously reviewed and approved by the Commission as DRIs, and modifications to such plans or projects will not require further DRI review.

DRI review is replaced with a Commission staff-level review and approval through a determination by the Commission's Executive Director that local plans and projects are consistent with the 208 Plan.

This new review and approval process allows the Commission to be more supportive and collaborative with towns in their development of solutions to water quality problems. This process also provides a better platform to work with multiple towns on common water quality solutions in shared watersheds and promotes public engagement at earlier stages of planning and plan development which should increase community support for these plans and projects.

Following approval of the amendments, the Commission issued guidance on

208 consistency review criteria and how to request and obtain a consistency determination (**208 Consistency Review Guidance R3.8**). These guidance documents are available in Appendix E.

A 208 consistency determination includes a data sharing protocol that requires submission of embayment water quality monitoring data and technology performance data, if available, on an annual basis, in addition to other data (**I2017.7**). The data sharing protocol follows (see **Table 2**).

To date, the Commission has issued consistency determinations for the Pleasant Bay Watershed Permit Plan and the Sandwich Comprehensive Water Resources Management Plan. The Commission also issued consistency determinations for projects in Barnstable, Bourne, Chatham, and Orleans on the 2019 Intended Use Plan for Clean Water State Revolving Loan Funds. Appendix F includes the consistency determinations issued to date.

Data/Information	Timeframe
Technology Performance Data <i>Traditional and non-traditional technology performance data from pilot and/or full-scale projects.</i>	Annually <i>Provided as part of annual report, unless otherwise agreed upon</i>
Groundwater Discharge Permits <i>Issued by MassDEP</i>	Upon Issuance <i>Provided upon receipt by the Town</i>
Watershed Permits <i>Issued by MassDEP</i>	Upon Issuance <i>Provided upon receipt by the Town</i>
Building Permit Data <i>Providing the location and square footage for new structures and new bedrooms added</i>	Annually <i>Provided as part of annual report, unless otherwise agreed upon</i>
Assessors Data <i>Extracted town-wide assessors data.</i>	Annually <i>Provided as part of annual report, unless otherwise agreed upon</i>
Water Use Data <i>Parcel specific water use data from water purveyor(s)</i>	Annually <i>Provided as part of annual report, unless otherwise agreed upon</i>
Water Quality Monitoring Data <i>Results of marine (embayments) and fresh (ponds, lakes) water quality monitoring</i>	Annually <i>Provided as part of annual report, unless otherwise agreed upon. The first submission should include all historical monitoring data not previously provided to the Commission</i>
Habitat, Pond, and Watershed Assessments, Technology Evaluations, and other Reports/Information <i>Draft and final reports, such as Massachusetts Estuaries Project Technical Reports, pond assessments, pilot project evaluations, and/or other reports providing information related to water quality status, habitat health, technology performance and other water quality initiatives.</i>	As Completed <i>Provided as released and available</i>

Data Sharing Protocol

Table 2

WATERSHED PERMITTING

The watershed permit program is a new MassDEP initiative that was offered to Cape Cod towns as a pilot program in 2017, upon issuance of draft guidance which was included as an appendix to the 2017 Implementation Report. MassDEP specified that the collective responsibility of localities for nutrient loading in a watershed may be included in a watershed permit, which will provide WMAs an opportunity to demonstrate appropriate measures to address water quality degradation, in lieu of potential enforcement action, such as the designation of water pollution abatement districts or nitrogen sensitive areas. It provides a mechanism to approve non-traditional methods of wastewater management and/or impact mitigation that may not otherwise be approved by MassDEP.

Upon submission of the 2017 Implementation Report, MassDEP identified that they were seeking willing partner communities for this effort and the Pleasant Bay communities of Brewster, Chatham, Harwich, and Orleans expressed interest in serving as pilot towns. In July 2018, following months of working sessions facilitated by the

Pleasant Bay Alliance and with participation from all four communities, US EPA, MassDEP, and the Commission, a watershed permit application was submitted to MassDEP. MassDEP issued the Pleasant Bay Watershed Permit in August 2018.

COST

This issue of cost remains one of the primary barriers to implementation of water quality plans and projects. A principle of the 208 Plan Update is that the burden of cost should not fall solely on the backs of year-round residents, but should be distributed among all those benefiting from this iconic region. State, Federal, and regional initiatives that save towns money continue to be necessary to move the region forward. At the same time, with the passage of the short-term rental legislation (see below, State Support) in December 2018, towns are in a position to consider dedicating the local option tax revenue to wastewater and water quality improvement efforts. While significant progress has been made in implementing 208 Plan recommendations in this category, work remains to be done.

FEDERAL SUPPORT

The Commission remains active with the Southeast New England Program (SNEP), participating on the Steering Committee, as well as Policy, Monitoring, and Ecosystem Services Subcommittees. Since 2017, SNEP funds and technical assistance have been provided to evaluate potential sites for permeable reactive barriers on Cape Cod, implement the Pleasant Bay watershed permit, expand the regional water quality monitoring program, and develop a State of the Waters: Cape Cod report, among others. The Commission will continue to encourage the expansion of the Program and its associated resources (**SNECWRP C7.4**).

STATE SUPPORT

The 2014 Environmental Bond Bill made \$4 million available for monitoring programs, some of which has provided support for a region-wide monitoring program for Cape Cod. In fiscal years 2016, 2017, and 2018, the Commonwealth provided \$250,000 annually to expand data collection and fund the necessary database and web infrastructure to improve accessibility (**Monitoring and**

Pilot Projects C6.2). This funding was matched, in equal amount, by Barnstable County.

The 208 Plan recommended that local targeted watershed management plans consistent with the Section 208 Plan Update qualify for existing and potential revenue sources (**Access to Funds C5.4**). In 2016, State Revolving Fund (SRF) Loan Regulations (310 CMR 44.00) were changed to require that all nutrient removal projects deemed consistent with any regional water resources management plan, including but not limited to a 208 Plan, be eligible for SRF loans and other forms of financial assistance at the financial equivalent of a loan made at a 0% interest rate. Efforts to increase access to potential revenue sources are ongoing and must continue.

The greatest success relative to cost and financing to date was the December 2018 passage of the short-term rental tax legislation, which created the Cape Cod and Islands Water Protection Fund (CCIWPF) with its own dedicated revenue source. Creation

of the CCIWPF was a priority for the entire Cape Cod and Islands Legislative Delegation **(Cape Cod Capital Trust Fund C6.5)**.

Through this legislation, a 2.75% excise tax on traditional lodging and short-term rentals within member communities is dedicated to wastewater efforts on Cape Cod and the Islands. The CCIWPF is a dedicated fund within the state's Clean Water Trust and is set up to solely benefit Cape and Islands communities. Administered by the Clean Water Trust, the fund will be overseen by a Management Board comprised of representation from every member town in the region. Currently, all 15 Cape Cod towns are members. Membership requires a 208 Plan, or MassDEP-approved equivalent. As of April 2019 all Cape Cod communities have appointed their representative. The Cape Cod Commission, in coordination with the

Martha's Vineyard Commission, is charged with providing administrative and technical support to the Management Board.

In addition to the 2.75% dedicated to the CCIWPF, the legislation provides for a local option of up to 6% and a community impact fee of up to 3%, also assessed locally, on professionally managed properties. Consistent with the 2017 Implementation Report recommendation, communities have an opportunity to earmark this new revenue source for wastewater and water quality projects and should consider doing so **(C2017.12)**.

In addition, pursuant to the Massachusetts Water Infrastructure Bill and 208 Plan recommendations, MassDEP should exercise its discretion in providing principal forgiveness up to 25% for Cape Cod communities with a watershed permit

(Principal Forgiveness C6.1) and consider expanding this opportunity to communities with a 208 consistency determination. Even if done solely through the CCIWPF, the impact on Cape Cod communities could be significant.

REGIONAL INITIATIVES

The progress on funding options is encouraging, but the region needs to develop a capital infrastructure approach that lowers the cost for communities. The 2018 Cape Cod Regional Policy Plan recommends the Commission develop a regional capital infrastructure plan to identify potential efficiencies and provide a process for coordinating wastewater infrastructure plans with other infrastructure and capital facility needs, reducing overall costs for municipalities, and expediting 208 Plan implementation. The Commission is actively seeking funds to complete this work.

Partnerships

Cooperation between local, regional, state and federal agencies, among other partners, remains important to improving the flow of information and the consistent feedback loops necessary to create informed and successful implementation plans.

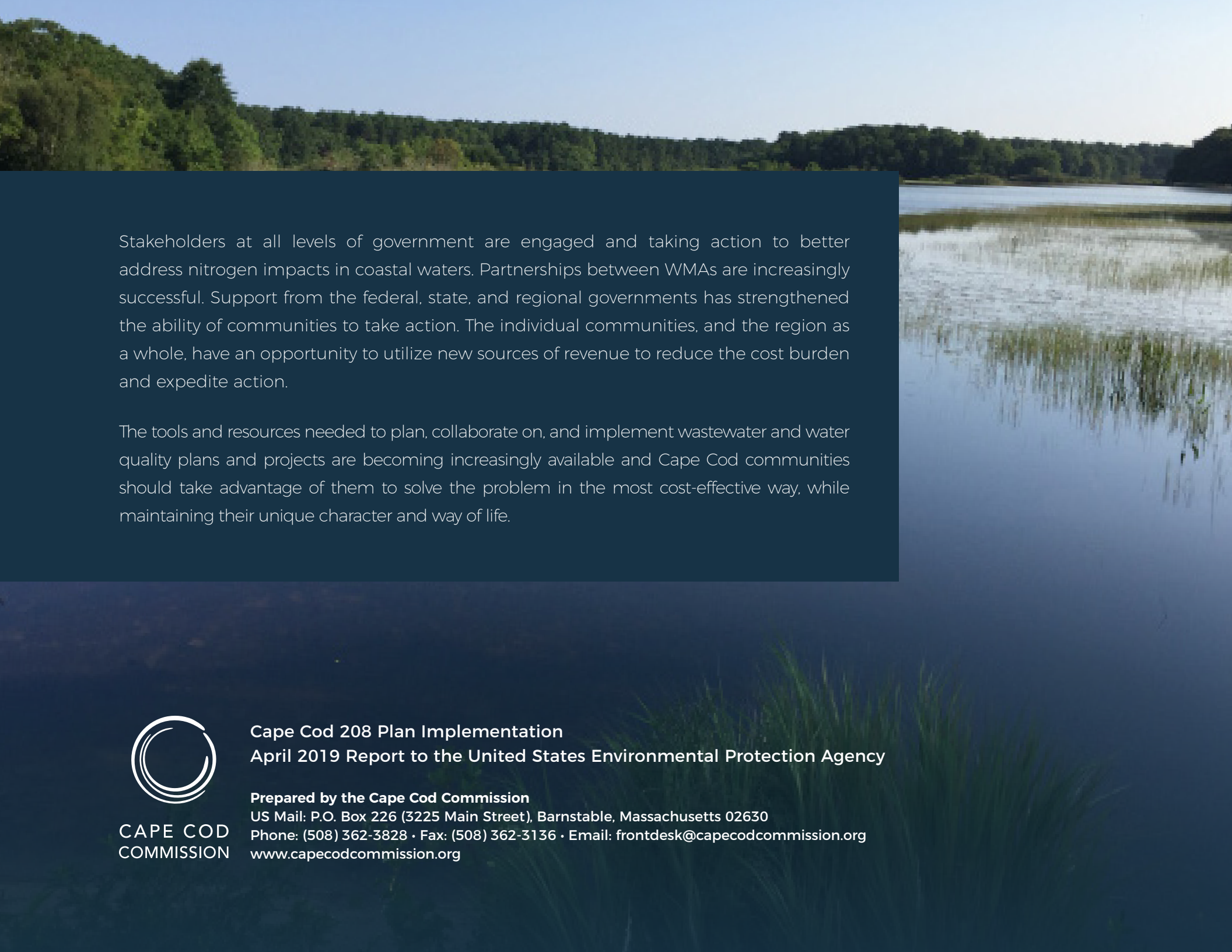
The 208 Plan Update suggests continued cooperation and coordination with both the MassDOT and JBCC, as key partners in alleviating the impacts of nitrogen on coastal waters.

Regarding Joint Base Cape Cod, the 208 Plan recommended ongoing discussions with JBCC and MassDevelopment regarding wastewater allocation policies for the base (**JBCC S7.1**). In 2018, MassDevelopment determined they were no longer interested in taking ownership of the facility. The four upper Cape towns continue conversations with military leadership and have maintained

interest in utilizing the JBCC treatment facility. The Town of Barnstable has also recently engaged in conversations to utilize the JBCC treatment facility. The discussion of wastewater allocation is dependent, in part, on the ultimate ownership of the JBCC wastewater treatment facility. Conversations between the five communities and military leadership should continue. Commission staff continue to participate in quarterly meetings of the Military Civilian Community Council and other meetings regarding the facility, as requested and appropriate. Upon the transfer of ownership of the treatment facility, Commission staff can, as appropriate, discuss with the owner a reasonable allocation policy that ensures local wastewater needs can be met (**S2017.16**).

Relative to MassDOT, the 208 Plan Update suggests continued cooperation and

coordination with MassDOT in part to develop methodologies to assess stormwater contributions from state roadways, identify opportunities to improve tidal flushing in coastal areas and use rights-of-way for water quality improvement projects (**MassDOT I7.3**). It is anticipated that US EPA Region 1 will release a draft MassDOT Municipal Separate Storm Sewer (MS4) permit for public review and comment. As recommended by US EPA staff in May 2016, the Commission will provide input on assessment methodologies during the public comment process. The Commission suggests US EPA prioritize issuance of this permit, with special consideration for discharges in nitrogen sensitive.



Stakeholders at all levels of government are engaged and taking action to better address nitrogen impacts in coastal waters. Partnerships between WMAs are increasingly successful. Support from the federal, state, and regional governments has strengthened the ability of communities to take action. The individual communities, and the region as a whole, have an opportunity to utilize new sources of revenue to reduce the cost burden and expedite action.

The tools and resources needed to plan, collaborate on, and implement wastewater and water quality plans and projects are becoming increasingly available and Cape Cod communities should take advantage of them to solve the problem in the most cost-effective way, while maintaining their unique character and way of life.



CAPE COD
COMMISSION

Cape Cod 208 Plan Implementation
April 2019 Report to the United States Environmental Protection Agency

Prepared by the Cape Cod Commission

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