

CAPE COD COMMISSION UPDATE

Cape Cod Commission Staff

ASSEMBLY OF DELEGATES
SEPTEMBER 19, 2018

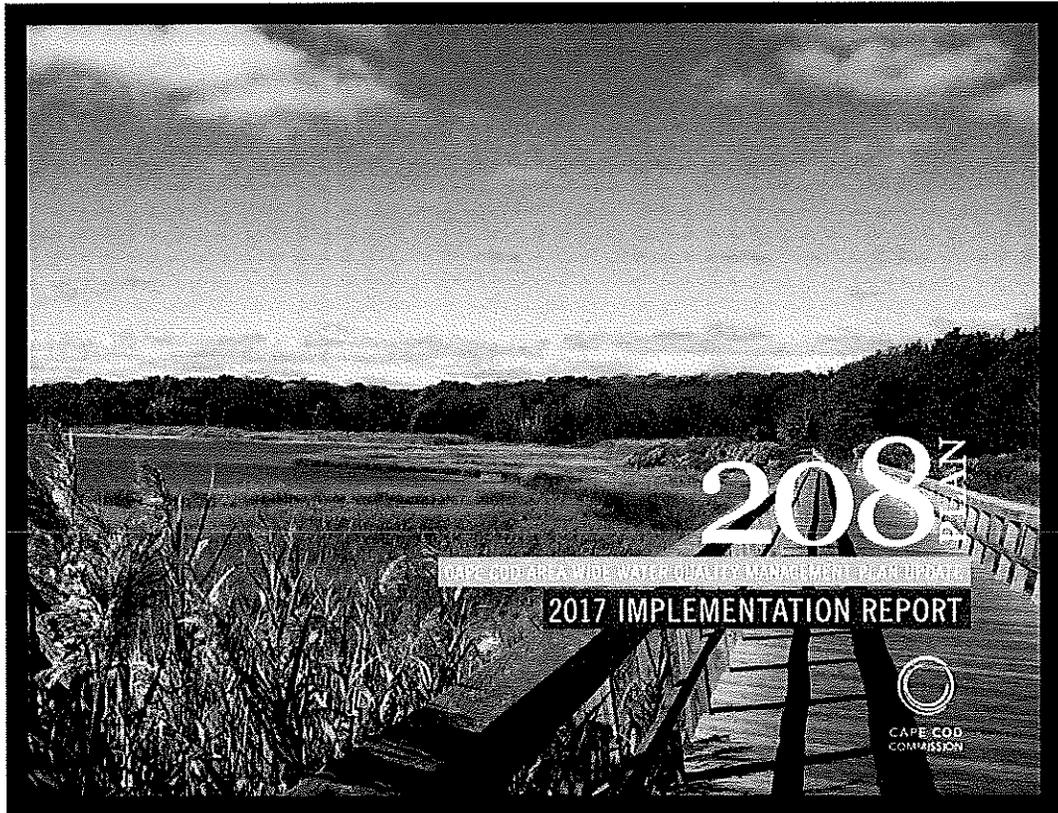
CAPE COD COMMISSION UPDATE

Section 208 Plan Implementation

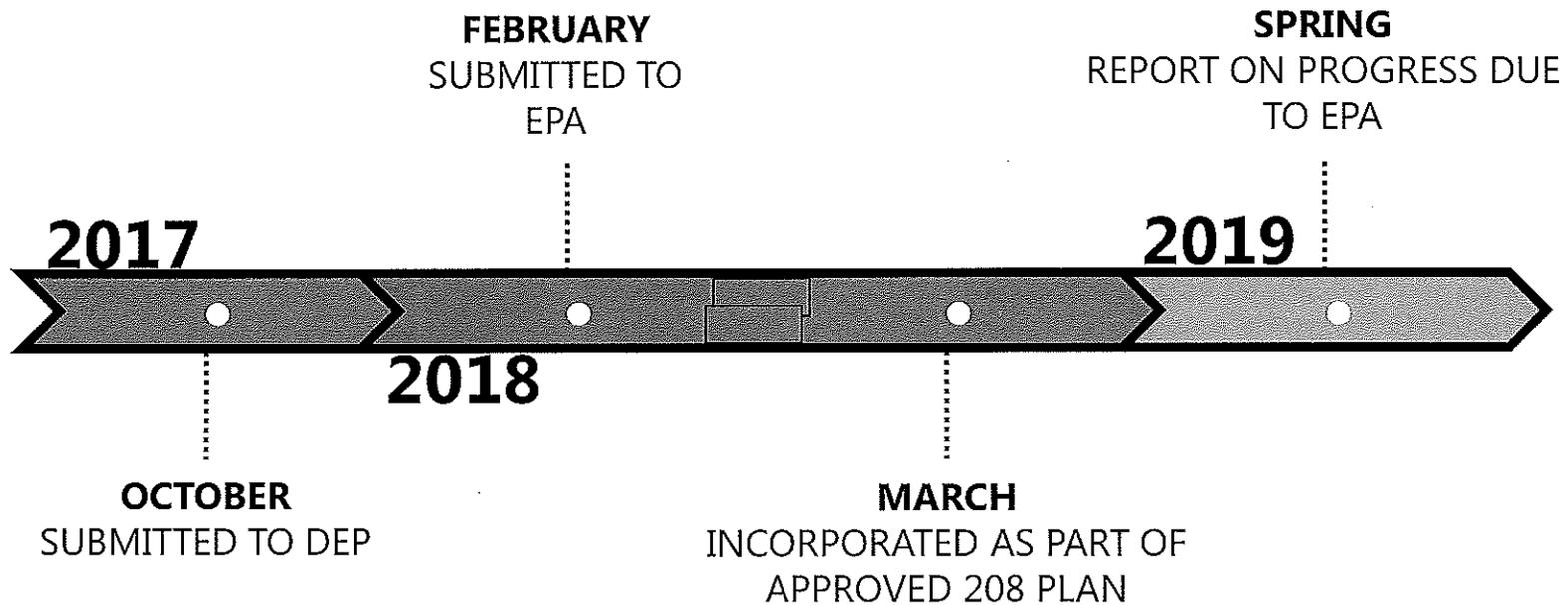
MS4/Stormwater

Regional Policy Plan

IMPLEMENTATION REPORT

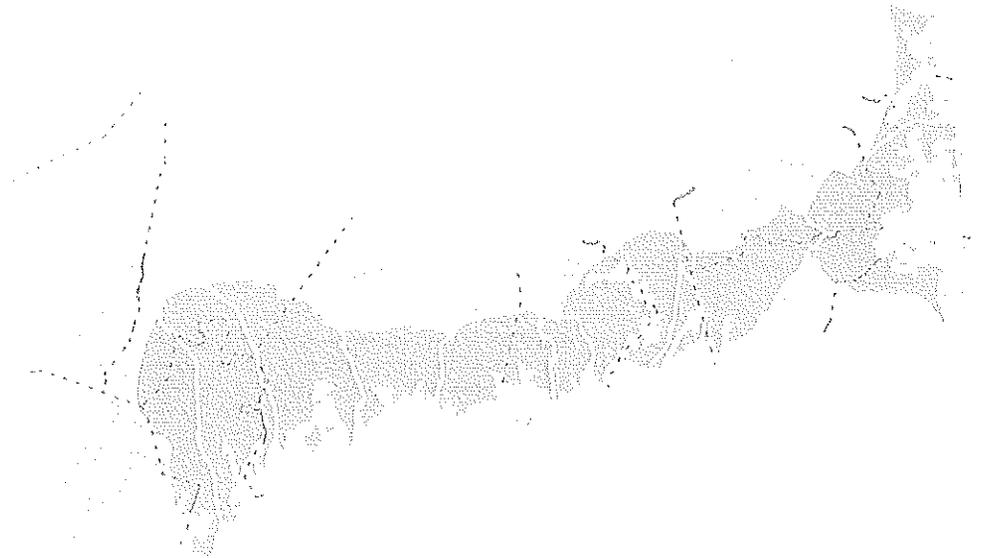


IMPLEMENTATION REPORT TIMELINE



PRIORITY WATERSHEDS

WATER
PROTECTION
SEWERAGE AND WASTE WATER
TREATMENT PLANTS



POPPONESSETT BAY

TOWNS

MASHPEE | BARNSTABLE | SANDWICH

SIZE OF WATERSHED

13,082 ACRES

7,979 PARCELS

(78% DEVELOPED RESIDENTIAL)

21.1% SEASONAL HOMES

DEGREE OF IMPAIRMENT

HIGH



PLEASANT BAY

TOWNS

CHATHAM | HARWICH | ORLEANS | BREWSTER

SIZE OF WATERSHED

11,760 ACRES

5,796 PARCELS

(79% DEVELOPED RESIDENTIAL)

33.5% SEASONAL HOMES

DEGREE OF IMPAIRMENT

HIGH



THREE BAYS

TOWNS

BARNSTABLE | SANDWICH

SIZE OF WATERSHED

12,458 ACRES

7,670 PARCELS

(85% DEVELOPED RESIDENTIAL)

22.3% SEASONAL HOMES

DEGREE OF IMPAIRMENT

HIGH

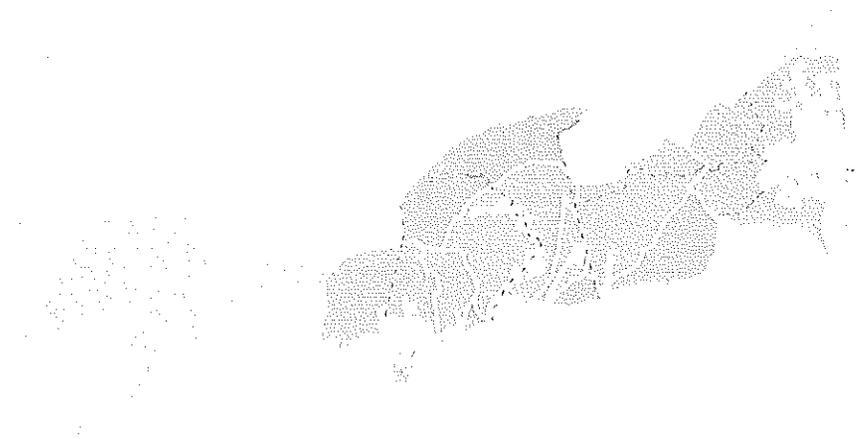


DENNIS | HARWICH | YARMOUTH

COMMUNITY PARTNERSHIP PLAN

PRIORITY WATERSHEDS

Parkers River
Bass River
Lewis Bay
Swan Pond River
Herring River (Harwich)
Pleasant Bay



ORLEANS

AMENDED CWMP

PRIORITY WATERSHEDS

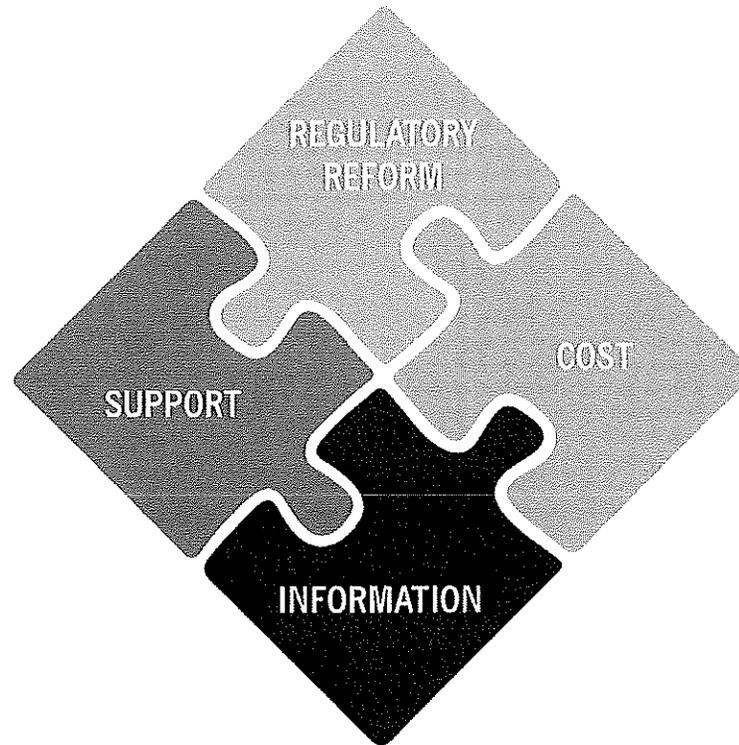
Nauset Harbor
Pleasant Bay



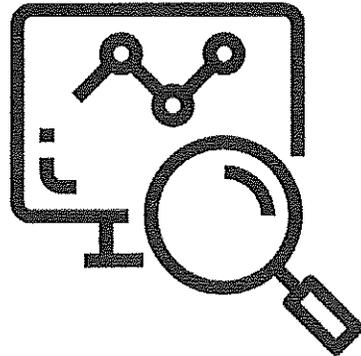
WATERSHED REPORTS



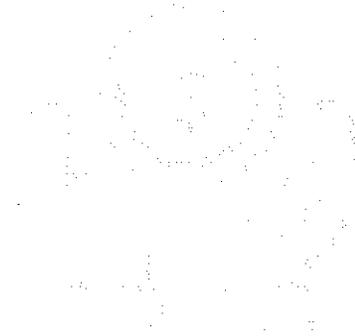
IMPLEMENTATION PROGRESS



REGIONAL PRIORITIES



MONITORING



FINANCE

RESOURCE MONITORING

COASTAL

FRESHWATER

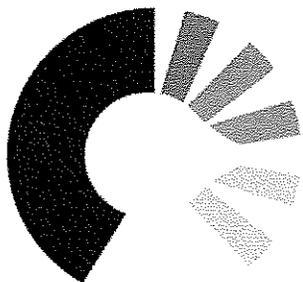
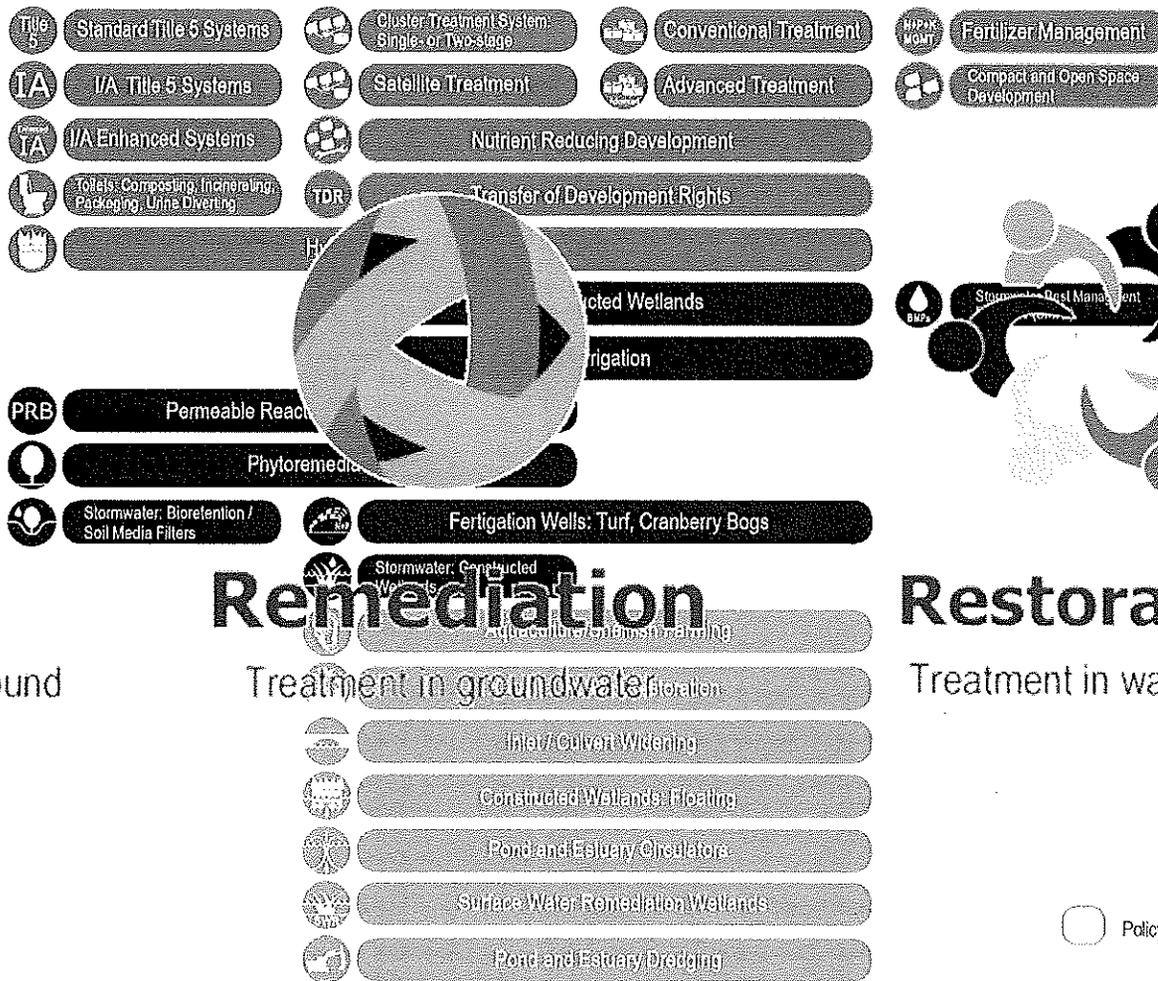
DRINKING WATER



MOVING AHEAD WITH NON-TRADITIONAL TECHNOLOGIES

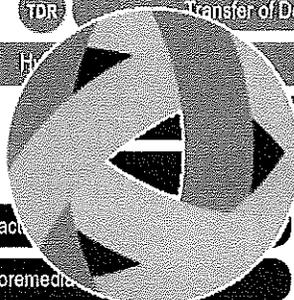
Updates To The Technology Matrix
Pilot Projects

| Site Scale | Neighborhood | Watershed | Cape-Wide



Reduction

Treatment before disposal to ground



Remediation

Treatment in groundwater



Restoration

Treatment in water body

Policy

2017 Technologies Matrix Update Committee Members

Marcel Belaval

EPA

Sara Burns

The Nature Conservancy

Anne Giblin

Marine Biological Lab

Scott Horsley

Consultant

Sia Karplus

Science Wares

Chris Neill

Woods Hole Research Center

Tom Parece

AECOM

Matthew Reardon

DEP

Joshua Reitsma

CC Cooperative Extension

Ivan Valiela

Marine Biological Lab

2018 Technologies Matrix Update Committee Members

Marcel Belaval

EPA

Sara Burns

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Eric Karplus

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Jim Begley

Consultant

Tom Parece

AECOM

Brian Dudley

DEP

Abigail Archer

CC Cooperative Extension

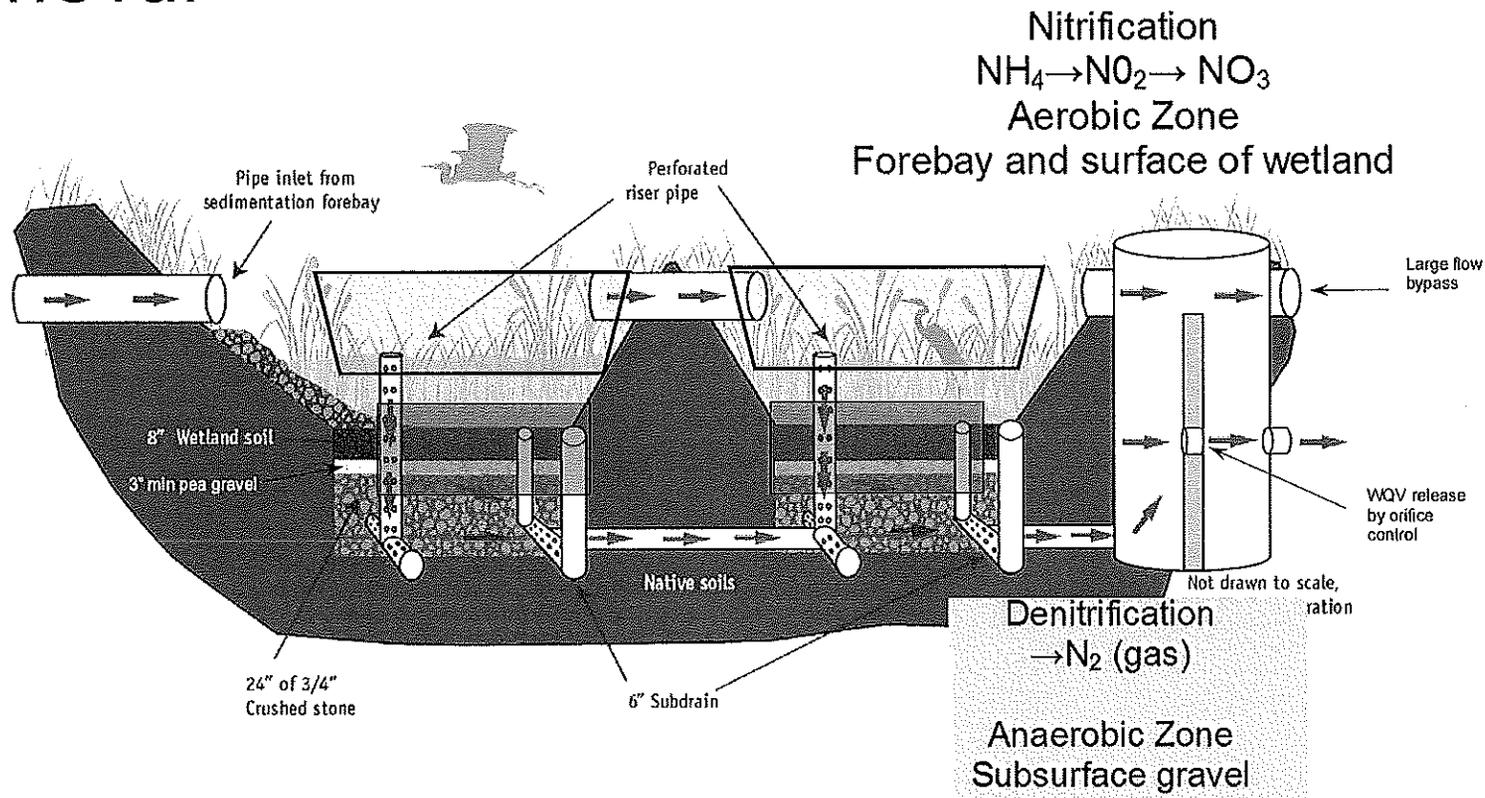
Ivan Valiela

Marine Biological Lab

Stormwater Technologies Updates

TECHNOLOGY	CHANGE
Phytobuffers	Include Two Variations: Tidal Influenced and Inner Coastal Buffers
Vegetated Swale	Eliminate Due to Low N Removal Potential
Gravel Wetland	Update with Design Considerations for Increased N Removal
Bioretention / Soil Filter Media	Include Two Variations for Filter Media Design Include Design Considerations for Increased P and N Removal
Constructed Wetlands	Generally Well Documented. No Changes

Gravel Wetlands Design Optimization for N Removal

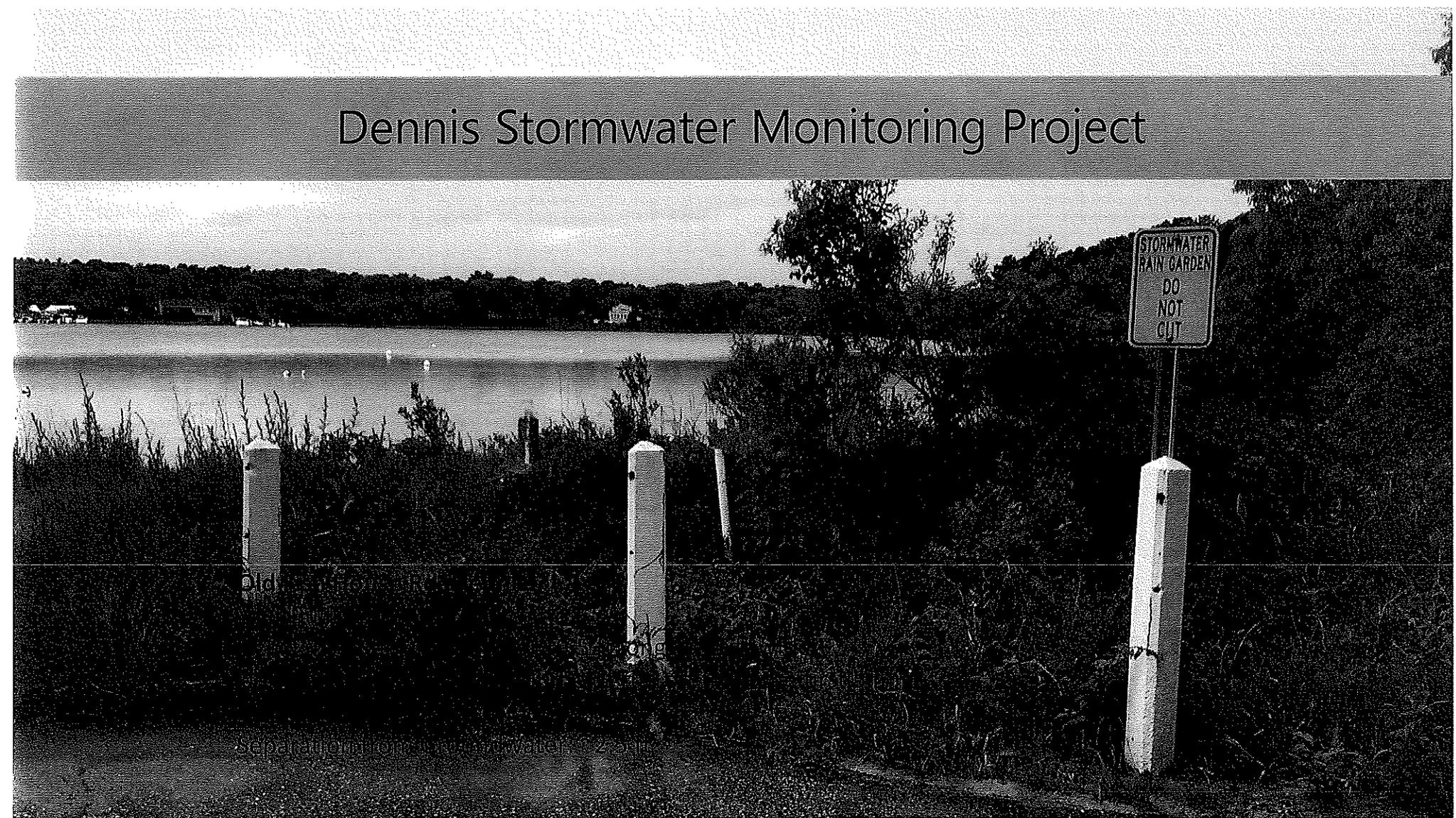


Dennis Stormwater Monitoring Project

STORMWATER
RAIN GARDEN
DO
NOT
CUT

Old Mill Pond

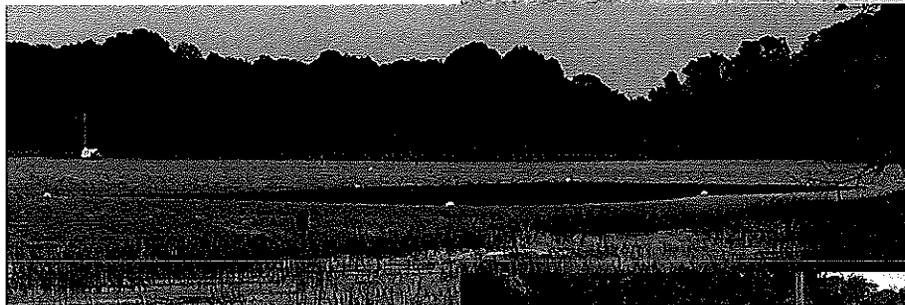
Separation from stormwater 12 ft



Lonnies' Pond Oyster Demonstration Project

Views of the 2017 Fields

EARLY MAY

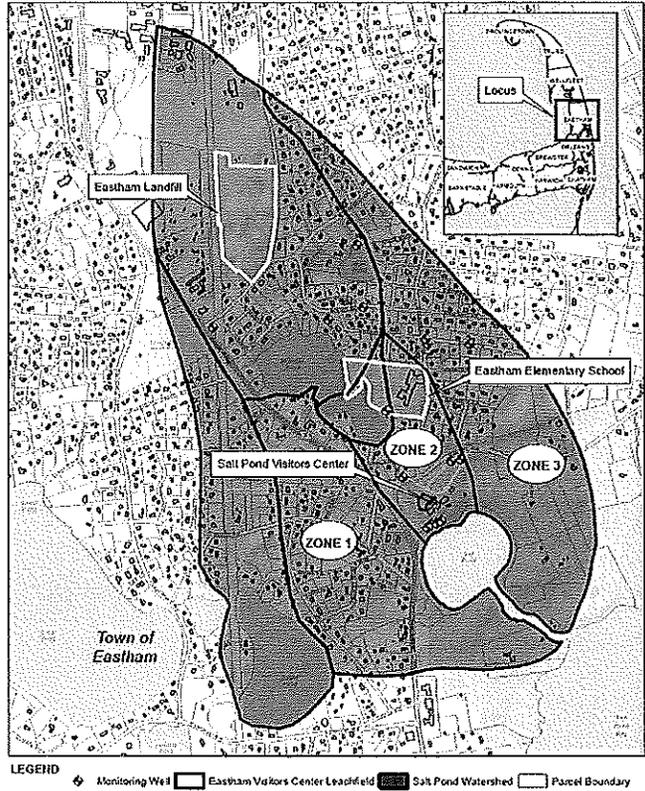
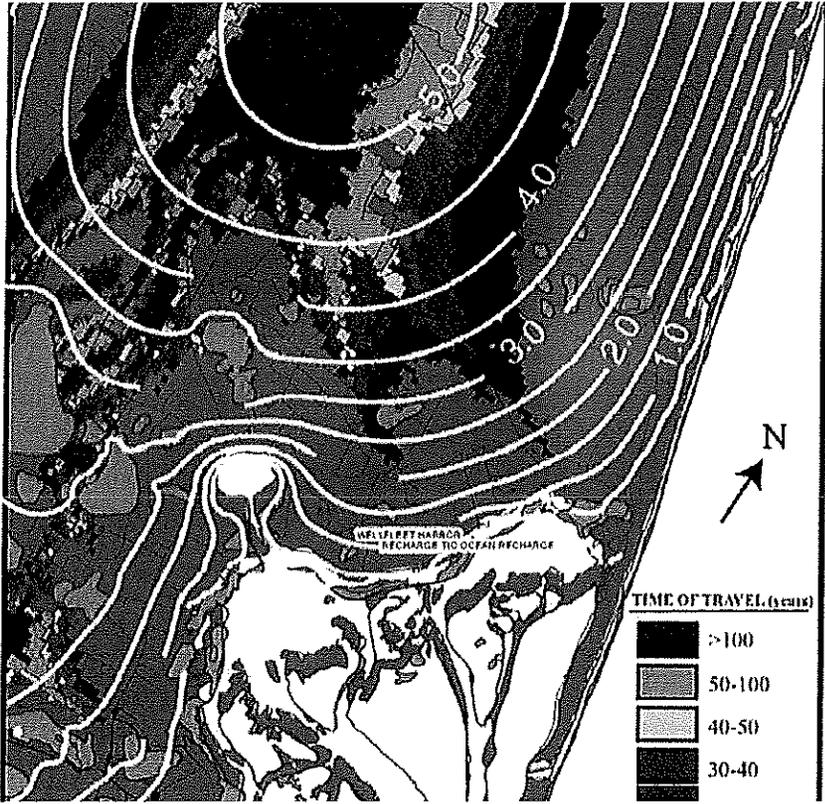


MID SEPTEMBER

EARLY OCTOBER



Eastham Permeable Reactive Barrier Analysis



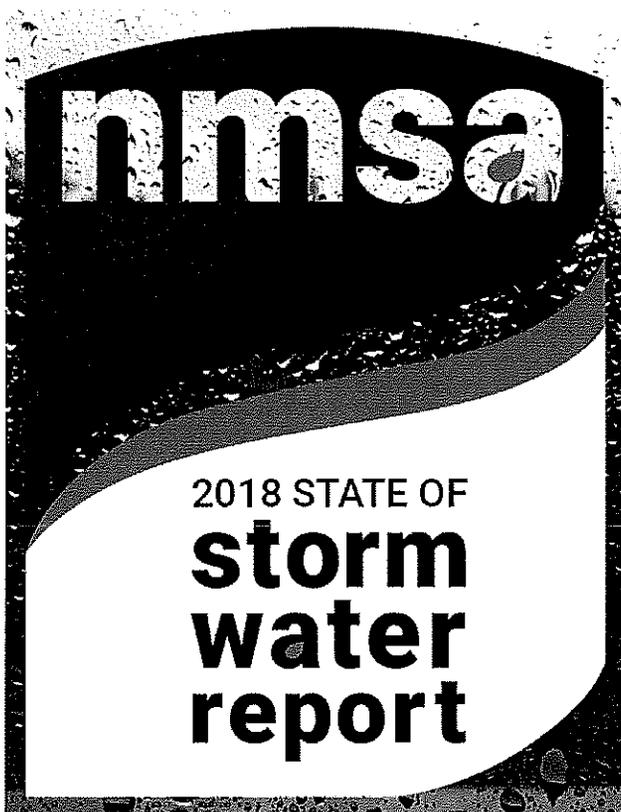
CAPE COD COMMISSION UPDATE

Section 208 Plan Implementation

MS4/Stormwater

Regional Policy Plan

Where are we talking about stormwater?

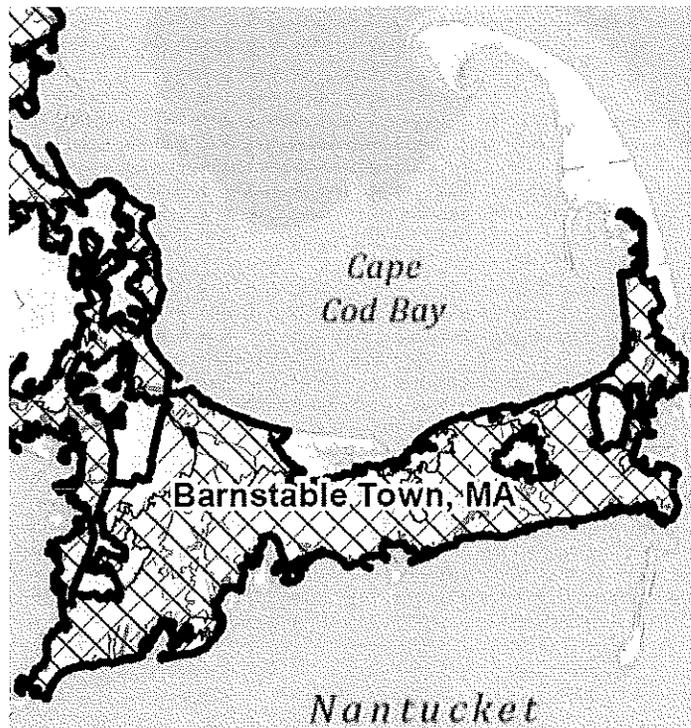


MS4 Sector Needs

In the Massachusetts' MS4 sector, the greatest needs are funding, building awareness among the general public and elected officials, regional collaboration, and technical support for MS4s on such topics as mapping, outfall inspections, and IDDE sampling.

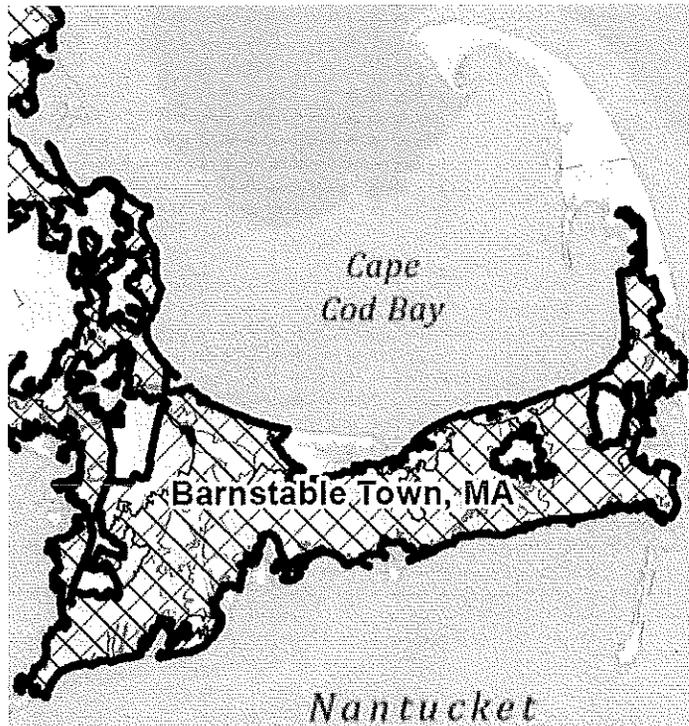
National Municipal Stormwater Alliance (2018)

2016 Massachusetts Small General MS4 Permit



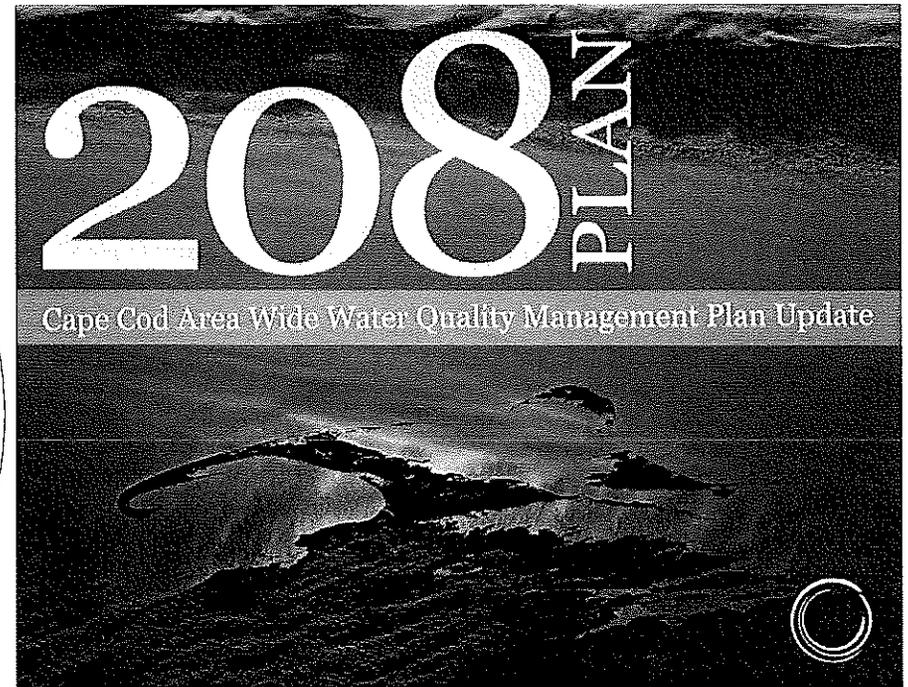
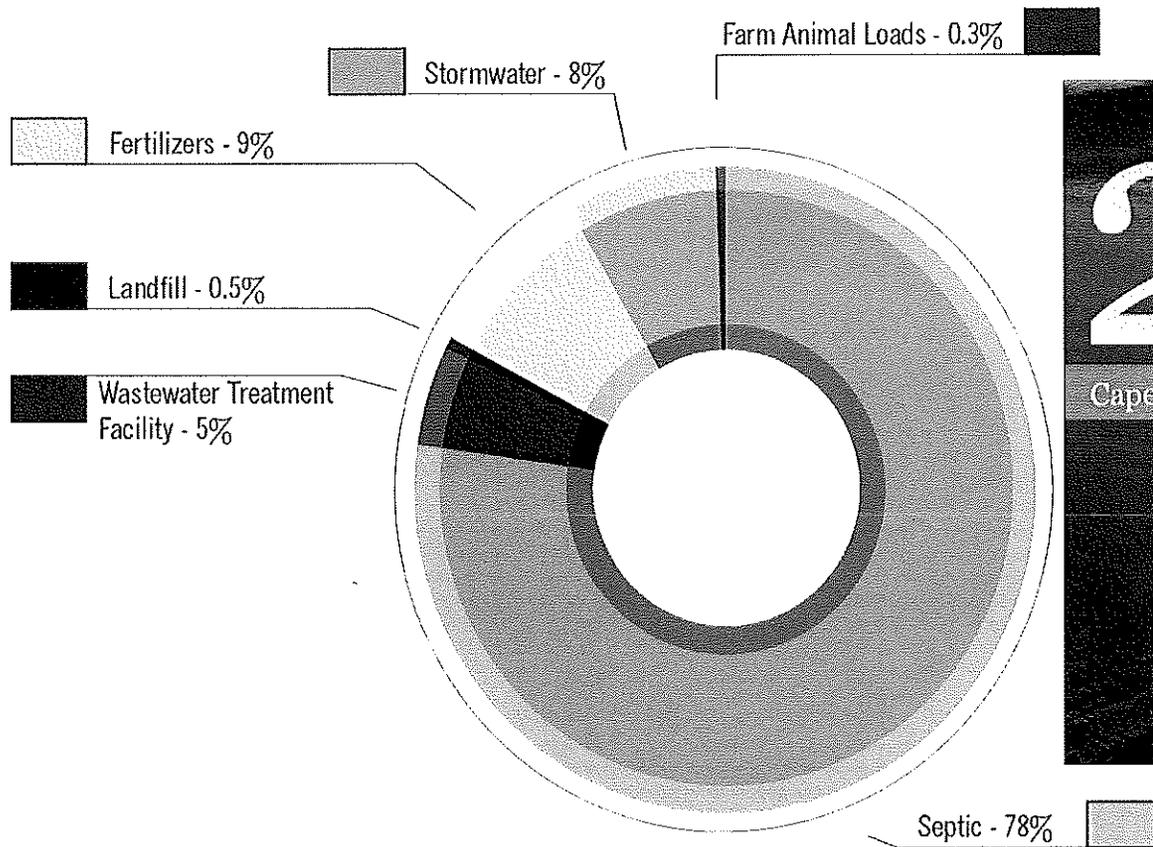
- Outreach & Public Education
 - Residential
 - Businesses
 - Developers
 - Industrial
- Public Involvement & Participation
- Illicit Discharge Detection and Elimination
- Construction Site Runoff
- Post-construction Stormwater Management
- Good Housekeeping / Pollution Prevention

2016 Massachusetts Small General MS4 Permit



- **12 Cape towns** subject to MS4
- **Permit compliance requires dedicated municipal funding** for planning, design and construction activities and permit administration
- Permit administration requires **dedicated municipal staff and actions by multiple boards and bodies** within a town

Where are we talking about stormwater?



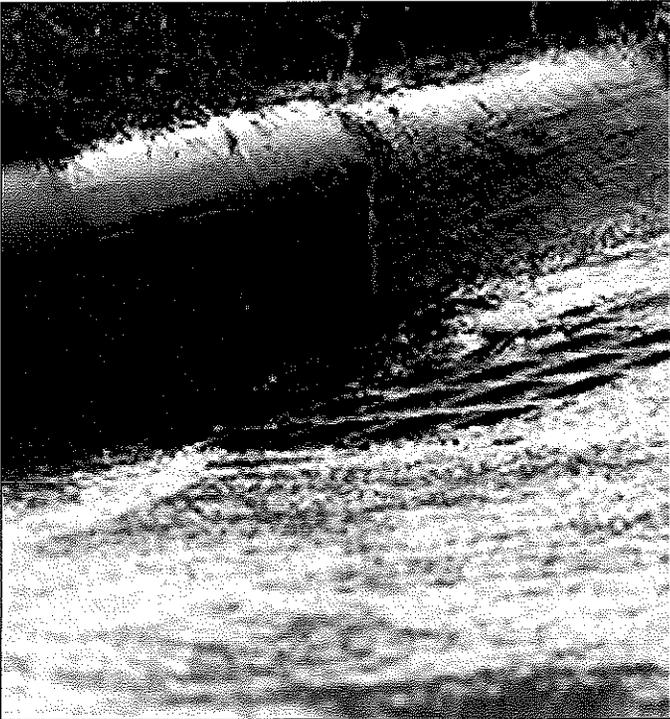
Local Coordination



Cape Cod Stormwater Managers Group

- Subcommittee of the Barnstable County Coastal Management Committee
- Co-Chairs are Dr. Robert Duncanson, Chatham Director of Natural Resources and Stephen McKenna, Regional Coordinator, Mass Office of Coastal Zone Management.
- Staffed by the Cape Cod Mass Bays Program coordinator, Jo Ann Muramoto, Cape Cod Commission Staff, Americorps Cape Cod

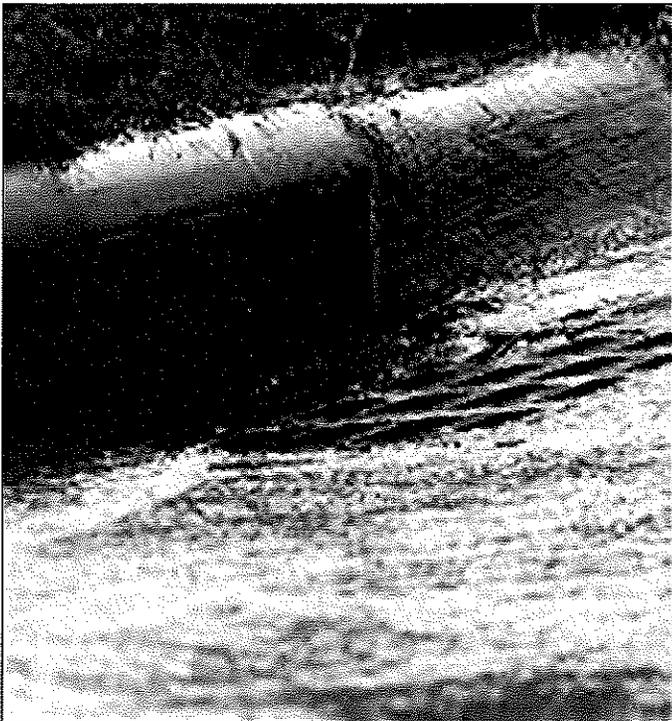
Regional Assistance Available to MS4 Communities



Technical assistance is available through:

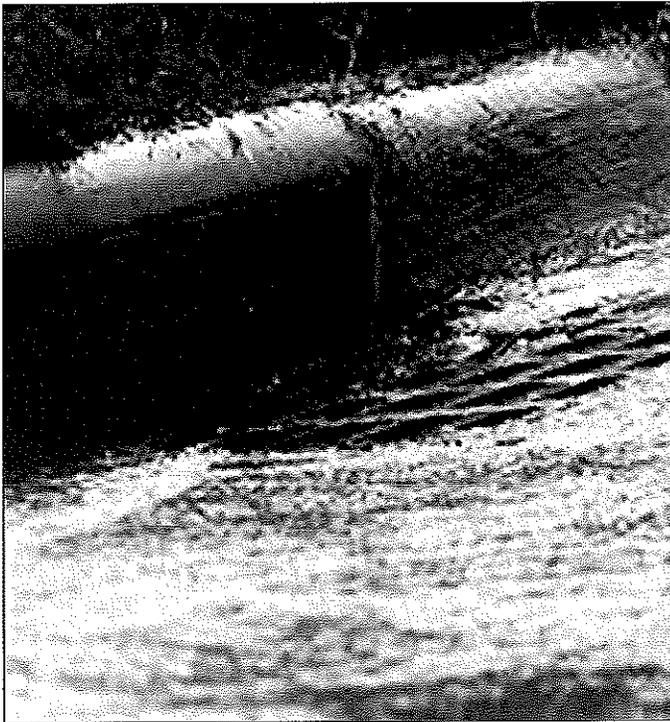
- Cape Cod Commission
- Barnstable County Health and Environment Department
- Cape Cod Cooperative Extension Service
- Barnstable County staff also **coordinate** with the state-wide stormwater coalition, and off-Cape regional stormwater coalitions

Technical Assistance Available to MS4 Communities



- **Cape Cod Commission**
 - permit compliance
 - consultant procurement and management
 - coordinating other county functions to support the towns (i.e. joint procurement)
- **BCHED**
 - sampling protocols
 - county lab services
 - sample pick up
- **BC Cooperative Extension**
 - disseminating public outreach messages

Funding Assistance Available to MS4 Communities



Funding to assist the region is enhanced by MassDEP, the State District Local Technical Assistance (DLTA) program, and Barnstable County

MassDEP 604b Water Quality Grant

- Administered by Cape Cod Commission
- Totals \$103,972 in value of assistance to towns
- Awarded in September of 2017 and will end in March of 2019

Barnstable County Funding

- Regional aerial mapping and planimetrics

Where else could we be talking about stormwater?

COMMUNITY SOLUTIONS FOR STORMWATER MANAGEMENT

A Guide for Voluntary Long-Term Planning



EPA United States
Environmental Protection
Agency

Office of Water
October 2016

www.epa.gov/owdes/stormwater-planning

DRAFT

STEP 1 - ASSESS WHERE YOU ARE NOW

ELEMENT 1

Identify the goals of the long-term stormwater planning effort, incorporating existing community objectives, such as the following:

- Stormwater runoff volume reduction, increasing infiltration, groundwater recharge and rainwater harvesting.
- Water quality.
- Capital improvements (including transportation, complete streets and public schools).
- Flooding reduction.
- Resiliency.
- Economic development to attract resources to the community.
- Social amenities for health or wellbeing of the community (including parks, urban gardens, green space, public art space, bike lanes and other transportation).
- Open space preservation.
- Natural channel, watershed, shoreline and/or natural floodplain functions protection.

DRAFT

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Section 208 Plan Implementation

MS4/Stormwater

Regional Policy Plan

2014
SUBREGIONAL
HEARINGS

2014
HOMEOWNER
SURVEY

2015
STAKEHOLDER
MEETINGS

2017
SECOND
HOMEOWNER
SURVEY

2018
RPP SUBCOMMITTEE
MEETINGS

2018
PUBLIC
PROCESS



ADDRESS HOUSING NEEDS



PROMOTE REGIONAL
CAPITAL AND
INFRASTRUCTURE
PLANNING



EASE LOCAL
COMPREHENSIVE
PLANNING

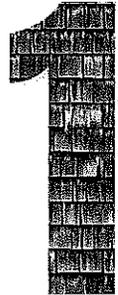


PROTECT NATURAL
RESOURCES



PRESERVE
CHARACTER

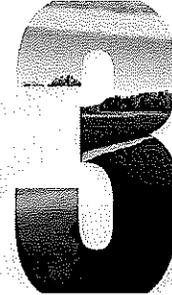
2018 REGIONAL POLICY PLAN



**Cape Cod
Commission
Responsibilities**



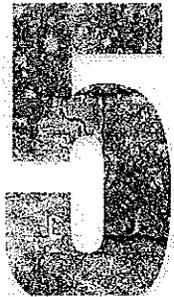
**Evolution of
the Regional
Policy Plan**



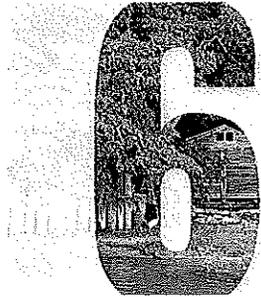
**A Regional
Vision for
Cape Cod**



**Cape Cod
Systems**



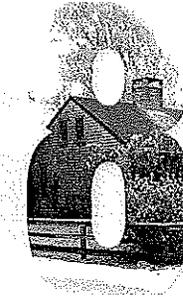
**Key Challenges
Facing the
Region**



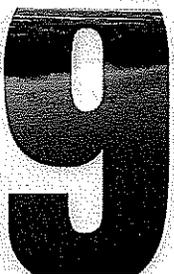
**Goals and
Objectives**



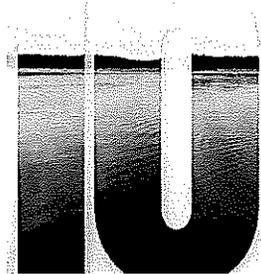
**Coordinated
Regional and
Local Planning**



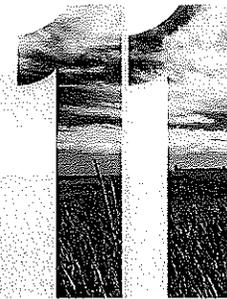
**Cape Cod
Placetypes**



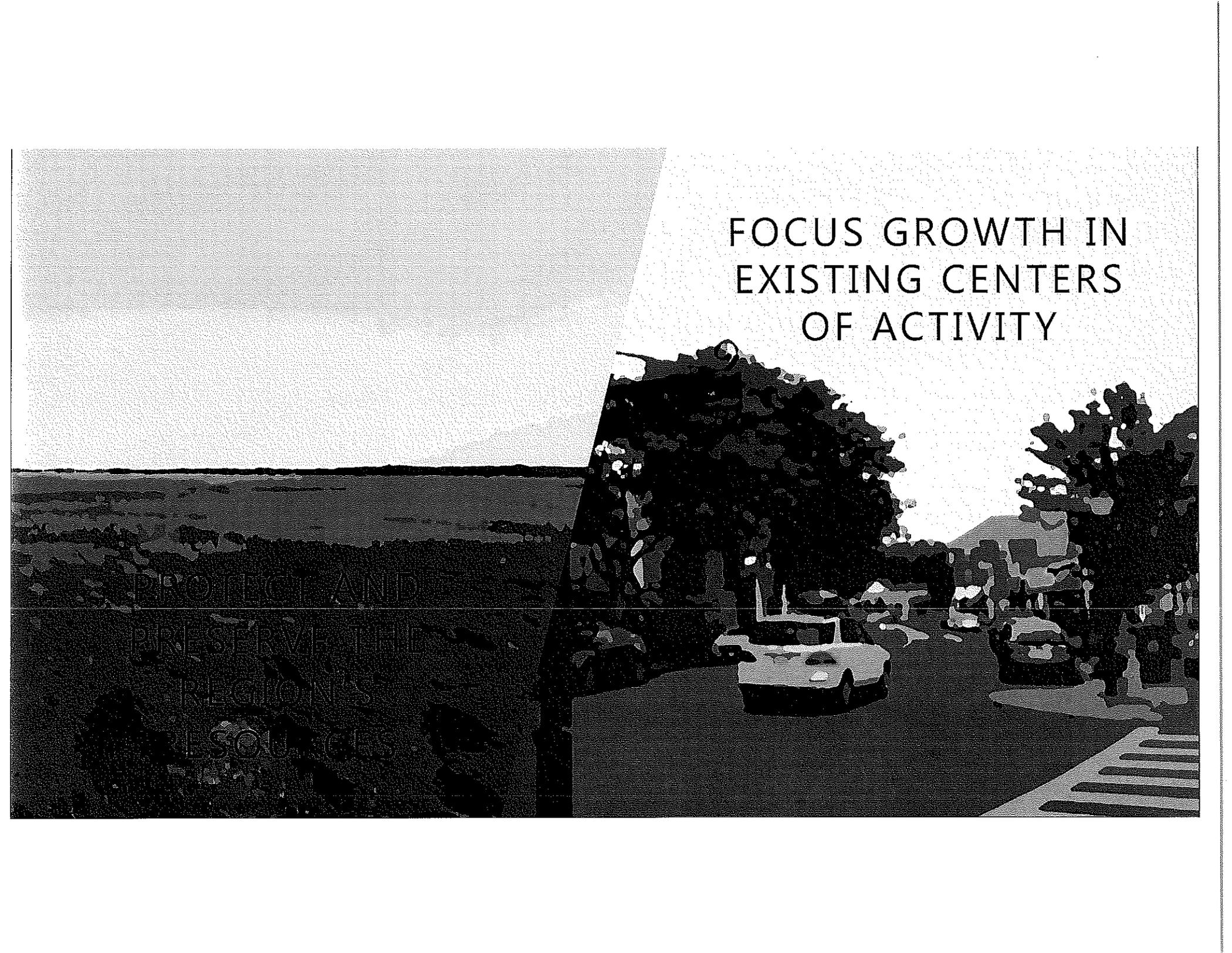
**Regional
Regulatory
Review**



**Regional
Performance
Measures**



**Recommended
Actions**



FOCUS GROWTH IN EXISTING CENTERS OF ACTIVITY

PROTECT AND
PRESERVE THE
REGION'S
RESOURCES



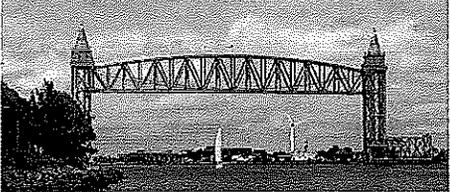
Cape Cod Systems

The Growth Policy recognizes the importance of each system and the need to balance their impacts and functions to sustain the Cape over the long term. These natural, built, and community systems are described on the following pages.

Natural Systems



Built Systems

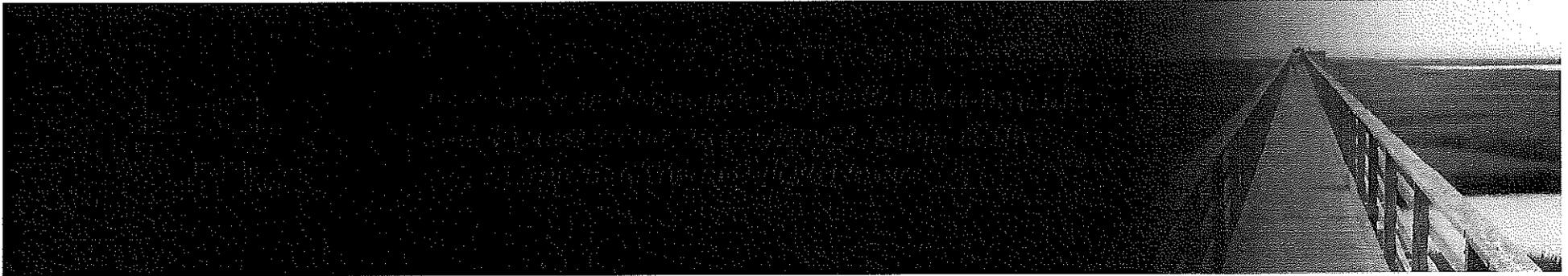
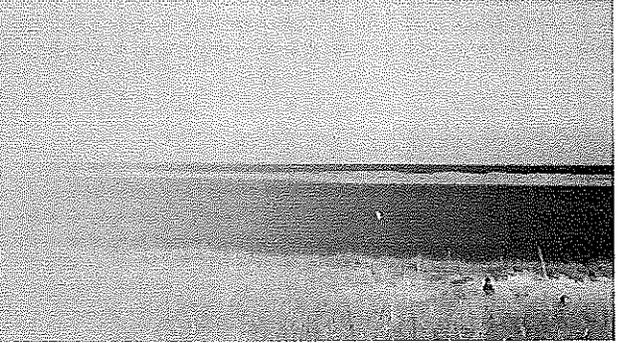


Community Systems

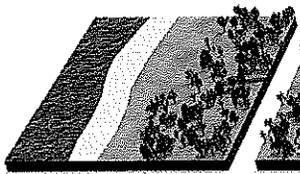


NATURAL SYSTEMS

To protect and restore the quality and function of the region's natural resources that provide the clean water and healthy ecosystems upon which life depends.



CAPE COD PLACETYPES



NATURAL
AREAS



RURAL
DEVELOPMENT
AREAS



SUBURBAN
DEVELOPMENT
AREAS



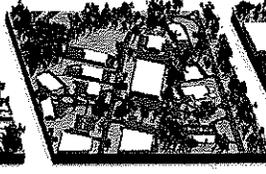
HISTORIC
CHARACTER
AREAS



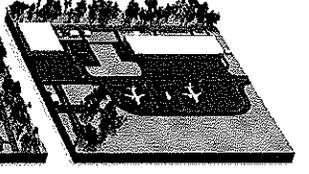
MARITIME
AREAS



COMMUNITY
ACTIVITY
CENTERS



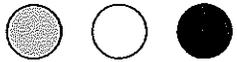
INDUSTRIAL
ACTIVITY
CENTERS



MILITARY AND
TRANSPORTATION
AREAS

PERFORMANCE MEASURES

PROTECTED
HABITAT



DRINKING
WATER



SIDEWALK
NETWORK



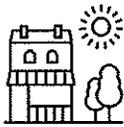
COASTAL
WATER



HISTORIC
RESOURCES



ACTIVITY
CENTERS



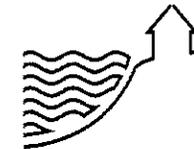
HIGH WAGE
JOBS



HOUSING
DIVERSITY



FLOODPLAIN
DEVELOPMENT



RECOMMENDED ACTIONS

REGIONAL HOUSING
STRATEGY

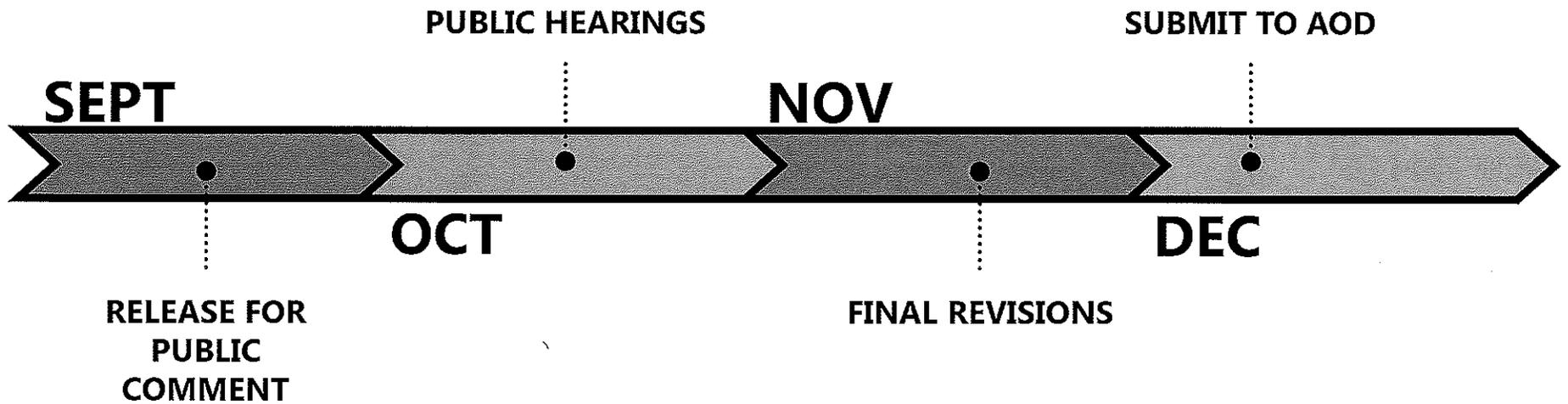
REGIONAL CAPITAL
PLANNING

STREAMLINED LOCAL
COMPREHENSIVE
PLANNING

CLIMATE RESILIENCY
PLANNING

THRESHOLD RELIEF
EVALUATION

DRAFT RPP TIMELINE



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ASSEMBLY OF DELEGATES
SEPTEMBER 19, 2018