

# Upper Cape Sub Regional Group



MEETING 3

# Standing Sub Regional Meeting Topics

Scenario  
Planning

Regulatory,  
Legal,  
Institutional

Implementation

Mtg. 1

One representative  
watershed

Challenges & opportunities  
associated with permitting the  
watershed scenario

Adaptive  
management plans

Mtg. 2

All shared  
watersheds & TBL  
model

Tools to support  
intermunicipal cooperation

Monitoring

Mtg. 3

Subregional scenarios  
& TBL model

Structures for permitting

Financing &  
affordability

# Standing Sub Regional Meeting Topics

Scenario  
Planning

Regulatory,  
Legal,  
Institutional

Implementation

## Meeting 3 Goals:

- Define the process for convening towns within a watershed to **reach agreement** for a watershed approach to water quality.
- Illustrate and further develop the **adaptive management/watershed permitting approach**
- Understand the resources available to watersheds and municipalities, the impacts on homeowners, and **affordability**

# Scenario Planning

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UPPER CAPE

Site Scale

Neighborhood

Watershed

Cape-Wide

Prevention



Remediation of Existing Development



Fertilizer Management



Transfer of Development Rights



Stormwater BMPs



Compact Development



Standard Title 5 Systems



Conventional Treatment



I/A Title 5 Systems



Cluster & Satellite Treatment Systems



Advanced Treatment



I/A Enhanced Systems



Wastewater Collection Systems



Effluent Disposal Systems



Toilets: Urine Diverting



Constructed Wetlands: Surface Flow



Toilets: Composting



Constructed Wetlands: Subsurface Flow



Toilets: Packaging



Stormwater: Bioretention / Soil Media Filters



Toilets: Incinerating



Stormwater: Wetlands



Phytoirrigation



Eco-Machines & Living Machines



Phytobuffers



Fertigation Wells



Permeable Reactive Barrier



Shellfish and Salt Marsh Habitat Restoration



Aquaculture/Shellfish Farming



Inlet / Culvert Widening



Pond and Estuary Dredging



Constr. Wetlands - Groundwater, Salt Water, Floating

Reduction

Remediation

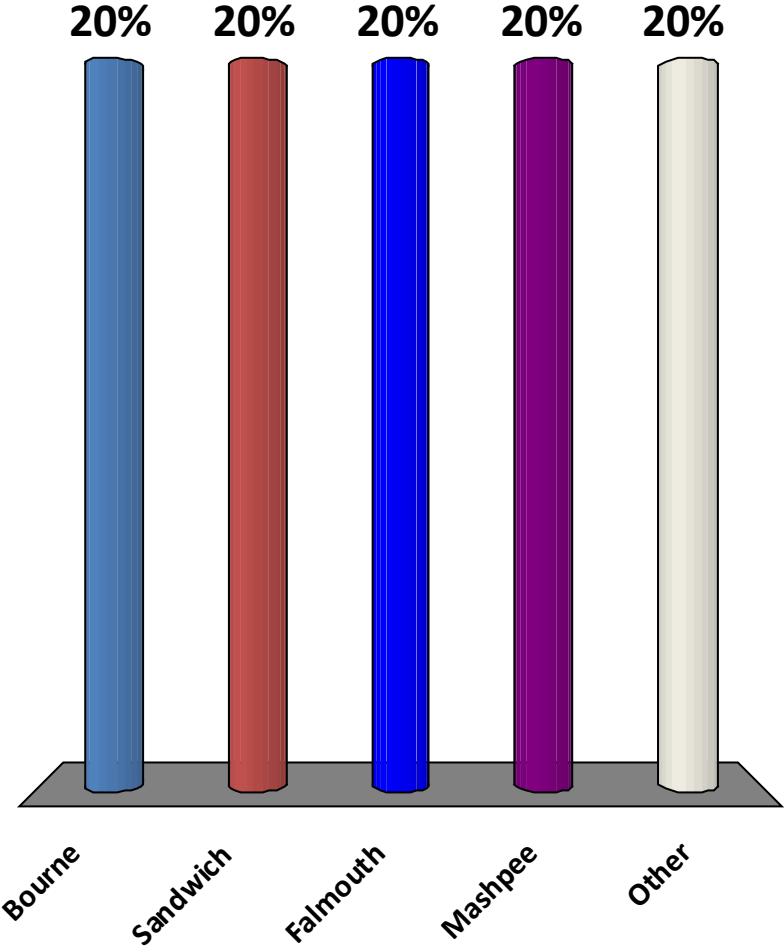
# Regulatory, Legal, and Institutional

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UPPER CAPE

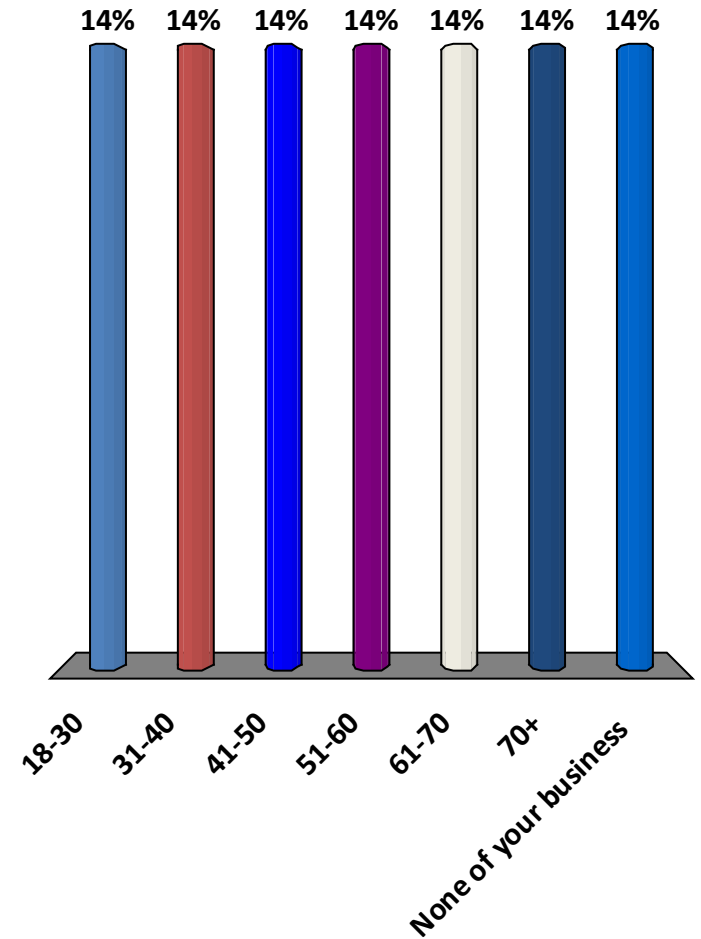
# FROM WHAT TOWN DO YOU HAIL?

- 0 Bourne
- 1 Sandwich
- 2 Falmouth
- 3 Mashpee
- 4 Other



# HOW OLD ARE YOU?

- 0 18-30
- 1 31-40
- 2 41-50
- 3 51-60
- 4 61-70
- 5 70+
- 6 None of your business





**CURRENT**

# CWMP Joint MEPA/CCC Review:

## Projects Requiring Environmental Impact Report (EIR)

APPLICANT files:

- MEPA Environmental Notification Form (ENF)
- CCC DRI application

within 20-day MEPA comment period:

CCC and MEPA hold joint public hearing



MEPA issues certificate on ENF, scope of review.

CCC sends comment letter with recommended scope for review to MEPA

APPLICANT files Draft Environmental Impact Report (DEIR).

within 30-day MEPA comment period:

CCC and MEPA hold joint public hearing



**CURRENT**

# CWMP Joint MEPA/CCC Review:

Projects Requiring Environmental Impact Report (EIR)



**MEPA** issues certificate on DEIR and issues to be addressed in FEIR.

**CCC** sends comment letter regarding DEIR adequacy to **MEPA**



**APPLICANT** files Final Environmental Impact Report (FEIR).

within 30-day MEPA comment period:



**CCC** and **MEPA** hold joint public hearing



**MEPA** issues certificate of adequacy of FEIR

**CCC** sends comment letter to MEPA and may scope DRI issues.



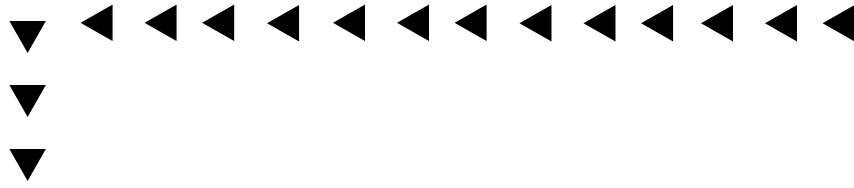
**CURRENT**

**CWMP Joint MEPA/CCC Review:  
Projects Requiring Environmental Impact Report (EIR)**



within 45 days:

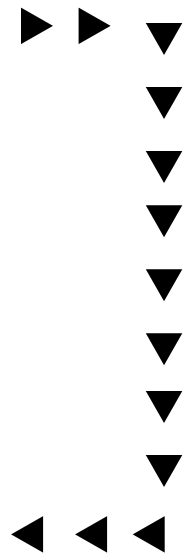
**CCC** formally begins  
DRI review process.



**CCC** issues DRI  
Staff report

Within 90 days:

**CCC** holds public hearing



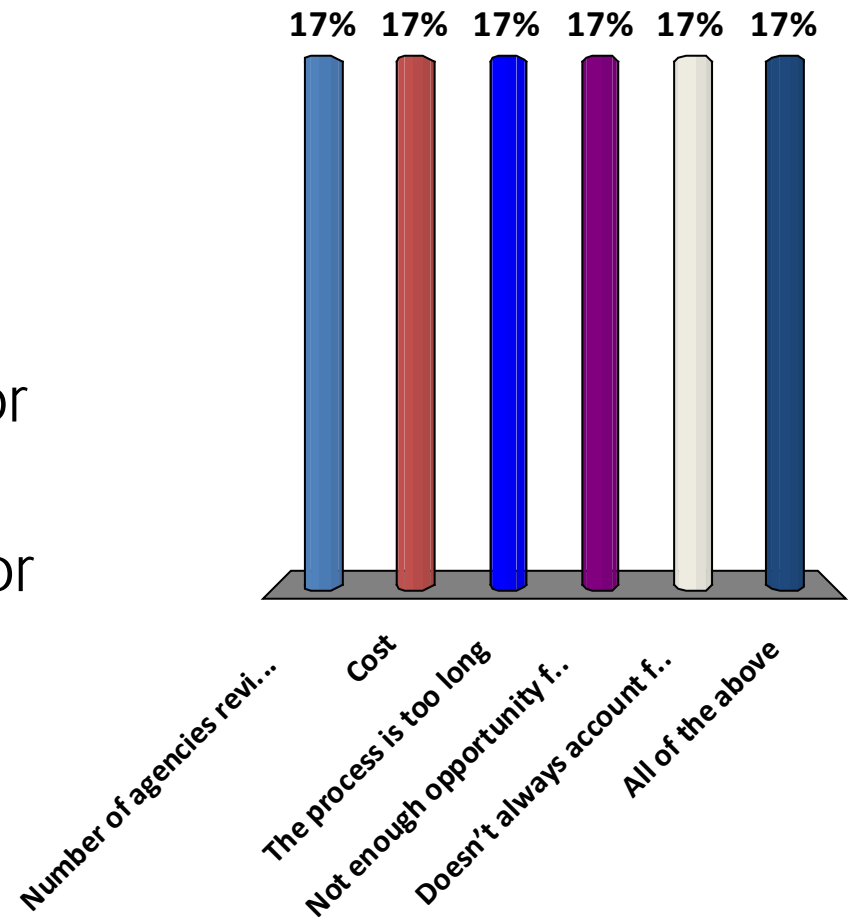
Within 60 days:

**CCC** issues DRI  
decision



# WHAT IS THE MOST DIFFICULT PART OF THE EXISTING PROCESS?

- 0 Number of agencies reviewing the plan
- 1 Cost
- 2 The process is too long
- 3 Not enough opportunity for public comment
- 4 Doesn't always account for remediating nitrogen in shared watersheds
- 5 All of the above



# PROPOSED SPECIAL REVIEW PROCEDURE

## FOR ALL "PROJECTS" UNDER THE 208 PLAN

1. **Consultation with CCC**  
-> Review 208 requirements and provide decision support tools

2. **WATERSHED ASSOCIATIONS ARE FORMED**  
-> Designated by the Secretary as Citizens Advisory Committee

### Watershed Association/ Citizens Advisory Committee

10 members appointed by the Secretary:

1. Elected
2. Appointed
3. WQAC
4. JBCC or National Seashore
5. CCC
6. Business
7. Real Estate
8. Environmental
9. Alternative Technology
10. Proponent



# PROPOSED SPECIAL REVIEW PROCEDURE

## FOR ALL "PROJECTS" UNDER THE 208 PLAN

1. **Consultation with CCC**  
-> Review 208 requirements and provide decision support tools
2. **WATERSHED ASSOCIATIONS ARE FORMED**  
-> Designated by the Secretary as Citizens Advisory Committee
3. **WATERSHED MANAGEMENT PLAN DEVELOPED**  
(N, Phos, CECs, etc.)  
-> TWMP, CWMP, Nutrient Remediation Projects  
-> Submitted to MEPA/CCC under SRP
4. **PUBLIC HEARING PROCESS**
5. **FINAL REVIEW DOCUMENT** (one document – compliance with MEPA and 208 – considered the MEPA FEIR and CCC DRI)
6. **SECRETARY ISSUES CERTIFICATE OF FEIR ADEQUACY & CCC ISSUES DRI APPROVAL**



# REQUIREMENTS OF CLEAN WATER ACT / EPA

## 208 plan requirement:

- State must designate one or more waste management agency (WMA)

## WMA must be able to:

- Carry out plan
- Manage waste treatment
- Design & construct new, existing works
- Accept/utilize grants
- Raise revenues
- Incur indebtedness
- Assure each town pays its costs

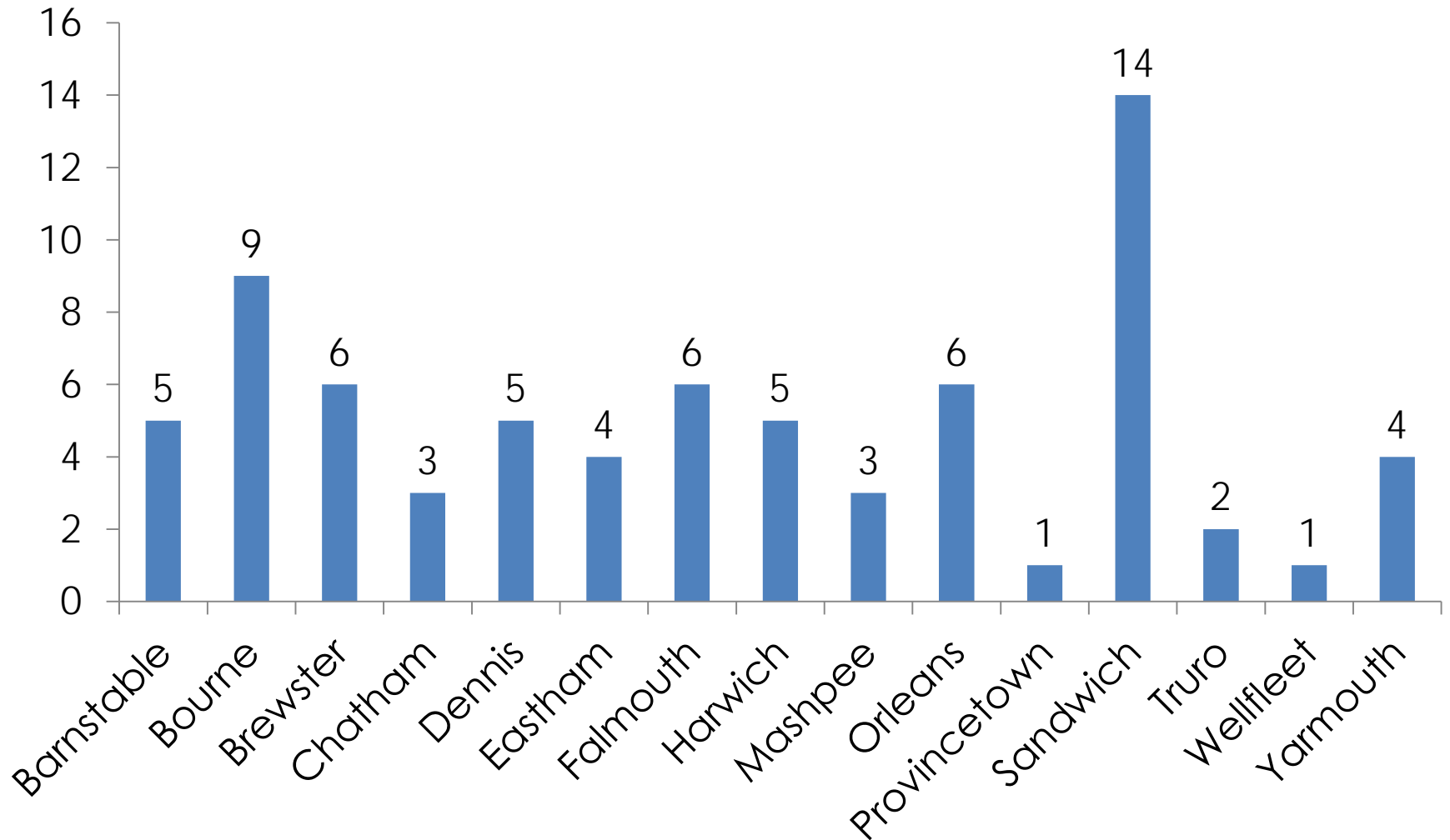


# WHAT EXISTING ENTITIES OR ORGANIZATIONS COULD ACT AS A WMA?

- The 15 Towns
- Bourne Recreation Authority
- Bourne Water District
- Buzzards Bay Water District
- North Sagamore Water District
- Barnstable Fire District
- Centerville-Osterville-Marstons Mills Water District
- Cotuit Fire District
- Hyannis Fire District
- West Barnstable Fire District
- Mashpee Water District
- Dennis Water District
- Sandwich Water District
- Tri-Town Septage Treatment, Orleans Brewster Eastham Ground Water Protection District



# HOW MANY AGREEMENTS MIGHT BE NECESSARY?



Intermunicipal Agreements

Federal/Municipal public-public partnerships

Independent Water and Sewer Districts

Water Pollution Abatement Districts

Independent Authority

Regional Health District

How could each model be applied to Waquoit Bay?

# INTERMUNICIPAL AGREEMENTS

## What is it?

Written agreement between municipalities to perform services or activities

## Authority:

M.G.L. c. 40 § 4A

## What it does:

Allows towns to contract with each other/other government units (RPA, water/sewer com)

## Types:

1. Formal contract
2. Joint service agreement
3. Service exchange arrangements

## Key Considerations:

- Modified authority enables Board of Selectmen rather than Town Mtg.
- Max. 25 years
- Establishes maximum financial liability of parties
- Components:
  - Purpose, term of agreement
  - Method of financing
  - Responsibilities
  - Costs of services
  - Indemnification
  - Insurance
  - Alternative dispute resolution
  - Personnel property

# FEDERAL/MUNICIPAL PUBLIC-PUBLIC PARTNERSHIPS

## What is it?

Shared service agreement

## Authority:

Section 331 National Defense Authorization Act - United States Code 10, c. 137 §1226

## What it does:

Authorizes DoD Secretary to enter into intergovernmental support agreements with state/local governments

## Examples:

Towns may seek to utilize capacity from wastewater facility on Joint Base Cape Cod

## Key considerations:

- Must serve best interest of the state/local government and military
- Provides mutual benefits not achieved on own
- Benefit may be monetary or in-kind
- May be entered into on sole source basis
- May be for a term not to exceed 5 years
- Towns enter into partnership agreement with JBCC

# INDEPENDENT WATER AND SEWER DISTRICTS

## What is it?

Independent public instrumentality for establishing shared water/sewer systems

## Authority:

M.G.L. c. 40N§§ 1-25

## What it does:

One or more municipalities may join to form a regional water and sewer district

## Requirement:

Town meeting vote required to establish/operate

## Key considerations:

- Special unpaid district planning board for two or more towns forms to study advisability, construction and operating costs, methods of financing, issues report
- May submit proposed agreement for town meeting vote which shows:
  - Number, composition method of selection of members of board
  - Municipalities to be within district
  - Method of apportioning expenses
  - Terms by which town is admitted or separated from district
  - Detailed procedure for preparation/adoption of budget

# WATER POLLUTION ABATEMENT DISTRICTS

## What is it?

District designated by Mass DEP for one or more towns (or designated parts) established for the "prompt and efficient abatement of water pollution"

## Authority:

Massachusetts Clean Waters Act (M.G.L. c. 21, §§28-30, 32, 35, 36).

## What it does:

Creates district responsible for abatement plan

## Types:

1. Town voted district
2. DEP voted district

## Key considerations:

- Adopt bylaws/regulations
- Acquire, dispose of and encumber real/personal property
- Construct, operate and maintain water pollution abatement facilities
- Apportion assessments on the member municipalities
- Issue bonds and notes, raise revenues to carry out the purposes of the district
- Member municipalities may then impose assessments on residents, corporations and other users in the district
- If town fails to pay its share, state may pay it for them out of other funds appropriated to that town

# INDEPENDENT PUBLIC AUTHORITY

## What is it?

Could create separate legislative entity

## Authority:

Mass. Legislature

## What it could do:

Create construct that provides for funding mechanisms outside town meeting

## What it could potentially do:

- Plan, build, finance, own and operate certain wastewater collection treatment, disposal and septage management assets and programs
- Research, develop, own and operate non-traditional wastewater treatment assets and programs
- Provide services for residential WW systems
- Plan and protect drinking water resources on Cape Cod through protection plans and policies
- Develop and enforce policies and procedures governing customer metering, billing and collection systems



# REGIONAL HEALTH DISTRICT

## What is it?

Regional Board of Health

## Authority:

M.G.L. c. 111 §27B

## What it does:

Has all the powers and duties of boards of health/health department of a town  
Includes wastewater regulatory powers of Board of Health

## Who may belong:

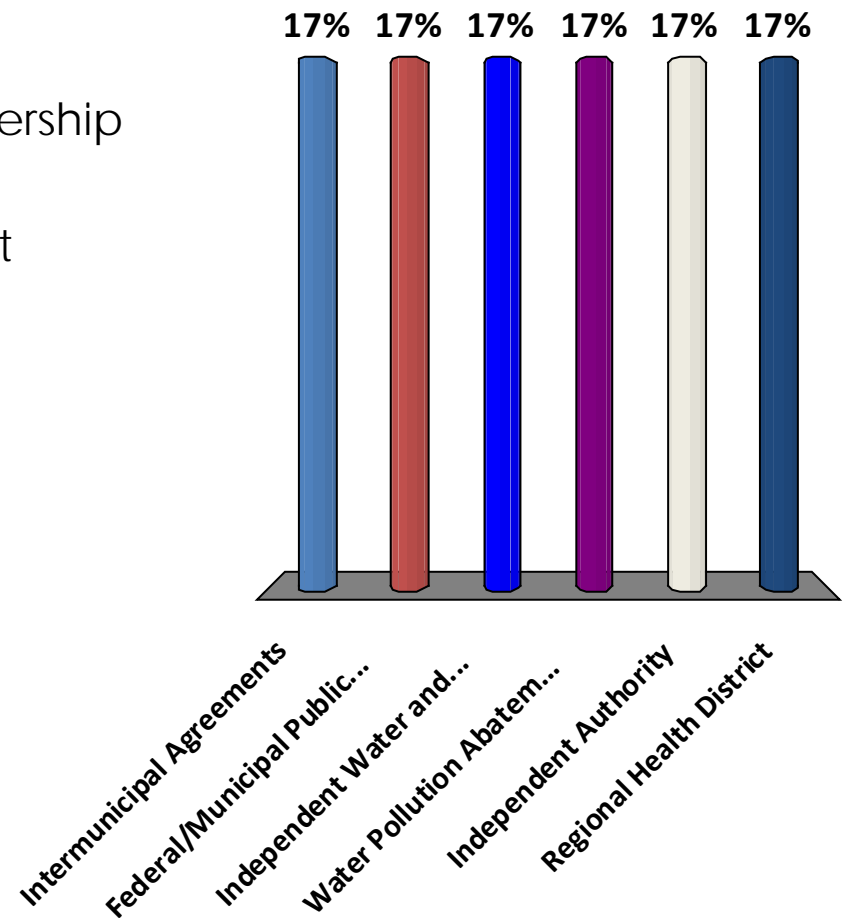
One or more towns

## Key considerations:

- Can form by votes of two or more boards of health and their respective town meeting to delegate some/all of its legal authority to regional board
- Estimate budget each December, assessor then includes this amount in the tax levies each Board may order treasurer to pay town's share of cost/expense of the district
- Reimbursement from Commonwealth for "initial capital outlays"
- Subj. to appropriation – Requires matching funds from town
- HB 3822 – proposes removal of town meeting requirement

# WHAT AGREEMENT MODEL DO YOU BELIEVE WOULD BE MOST APPLICABLE IN WAQUOIT BAY?

- 0 Intermunicipal Agreements
- 1 Federal/Municipal Public-Public Partnership
- 2 Independent Water and Sewer District
- 3 Water Pollution Abatement District
- 4 Independent Authority
- 5 Regional Health District



# ALLOCATING NITROGEN



# MEP REPORT

## What factors are considered in the MEP Report for nitrogen allocation?

MEP models the way water flows through the watershed and through all the sub watersheds, accounting for attenuation en route to the embayment.



# WHAT FACTORS SHOULD BE CONSIDERED WHEN ALLOCATING NITROGEN?

WATER USAGE

A METHODOLOGY THAT EVALUATES ATTENUATION

YEAR ROUND POPULATION

SEASONAL POPULATION

GROWTH MANAGEMENT PLANS

# TO WHAT EXTENT SHOULD **WATER USAGE** BE CONSIDERED AS A COMPONENT OF A NITROGEN ALLOCATION FORMULA?

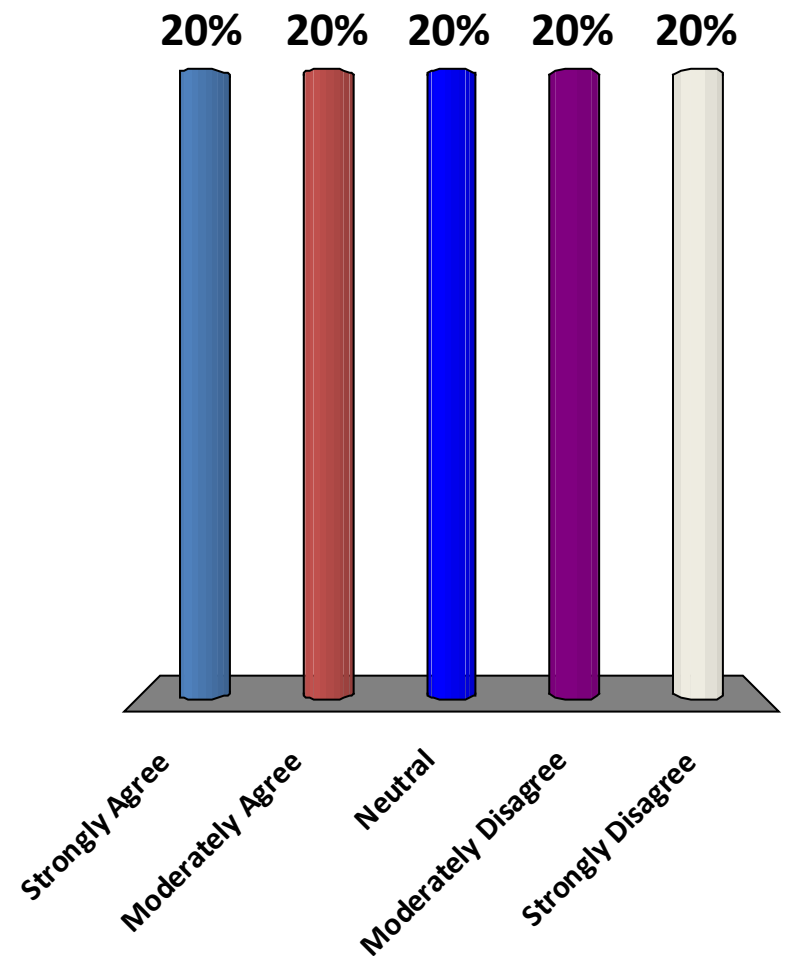
0 Quite a lot

1 A lot

2 Some

3 A little

4 Not at all



# TO WHAT EXTENT SHOULD **A METHODOLOGY THAT EVALUATES ATTENUATION** BE CONSIDERED AS A COMPONENT OF A NITROGEN ALLOCATION FORMULA?

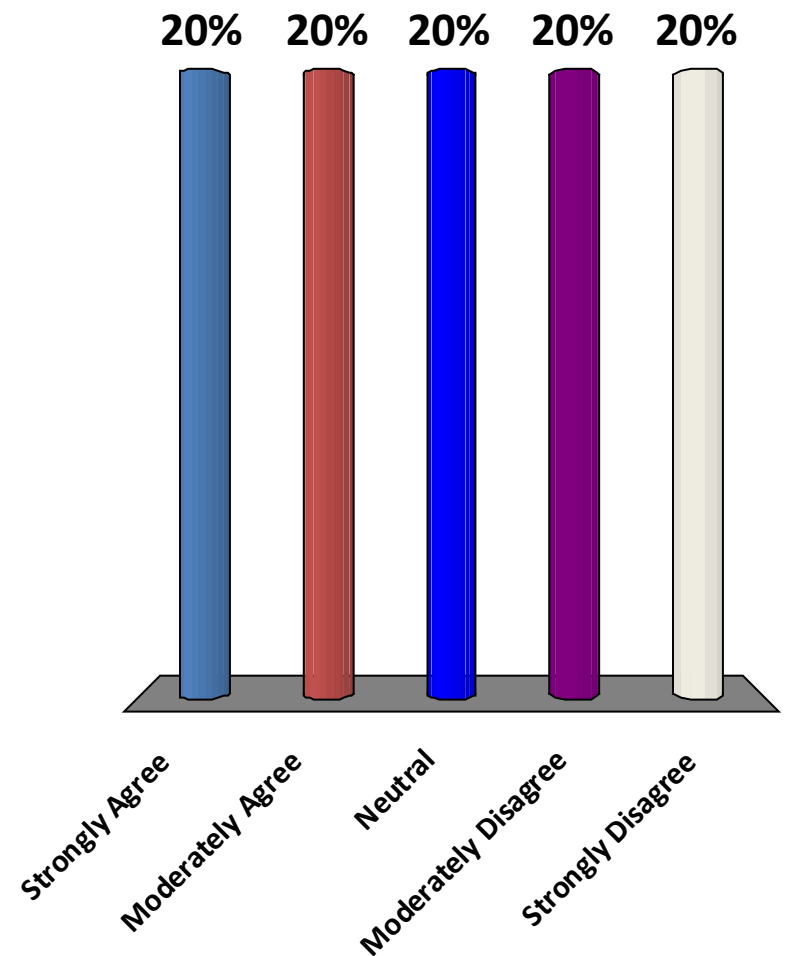
0 Quite a lot

1 A lot

2 Some

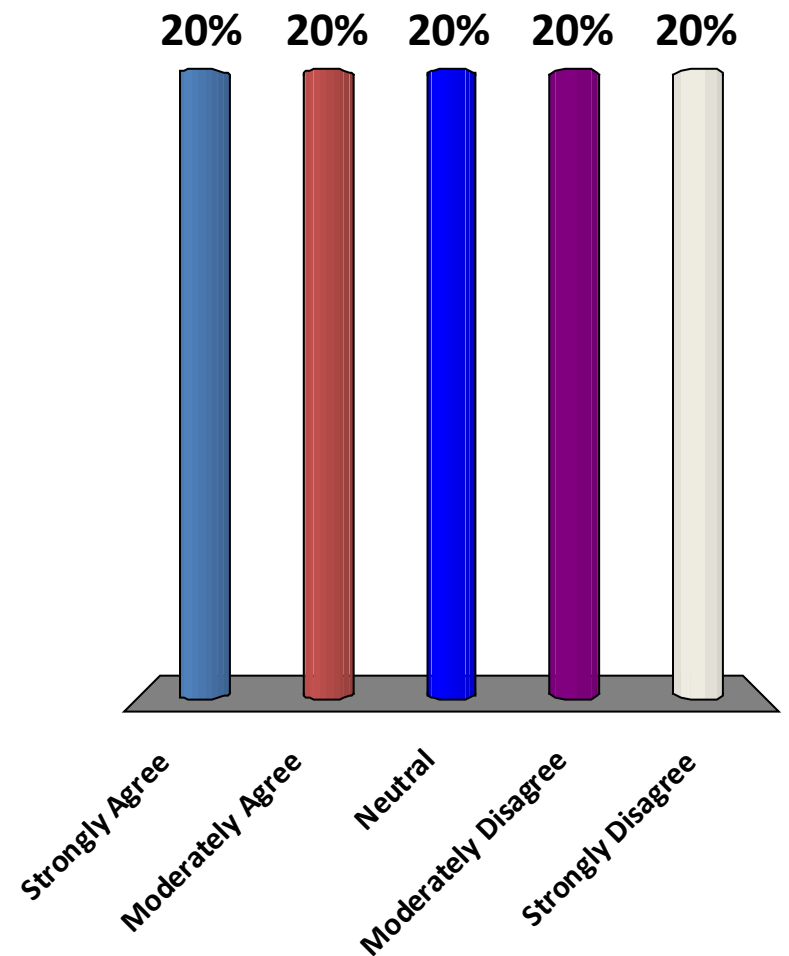
3 A little

4 Not at all



# TO WHAT EXTENT SHOULD YEAR ROUND POPULATION BE CONSIDERED AS A COMPONENT OF A NITROGEN ALLOCATION FORMULA?

- 0 Quite a lot
- 1 A lot
- 2 Some
- 3 A little
- 4 Not at all





# TO WHAT EXTENT SHOULD **SEASONALITY** BE CONSIDERED AS A COMPONENT OF A NITROGEN ALLOCATION FORMULA?

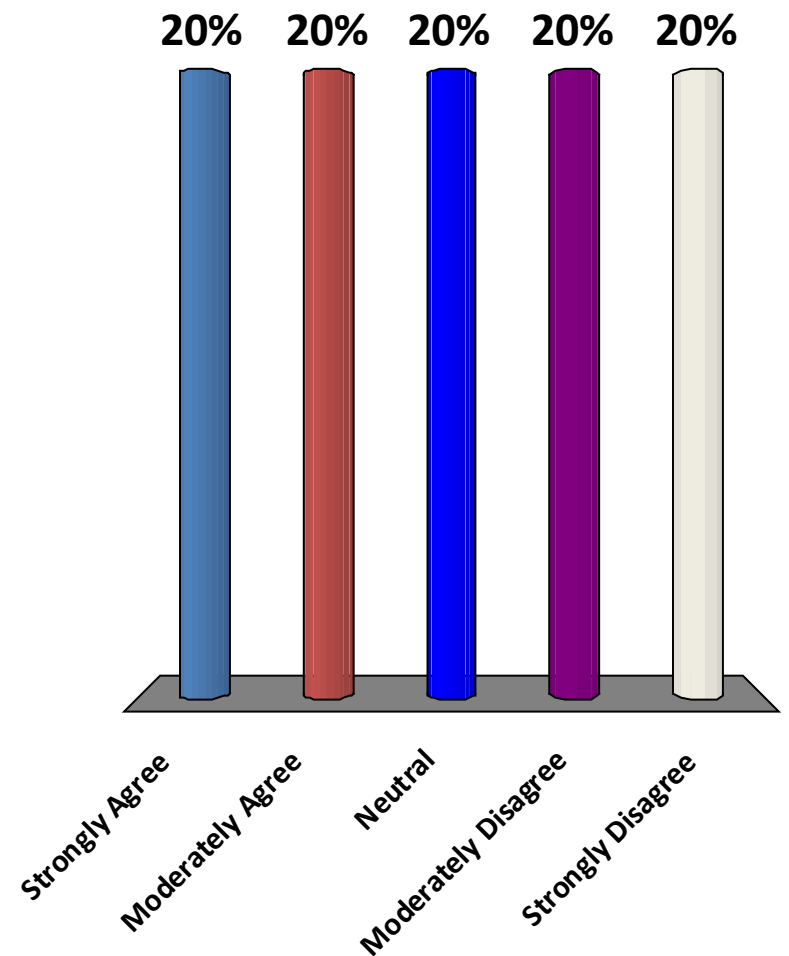
0 Quite a lot

1 A lot

2 Some

3 A little

4 Not at all



# TO WHAT EXTENT SHOULD **GROWTH MANAGEMENT PLANS** BE CONSIDERED AS A COMPONENT OF A NITROGEN ALLOCATION FORMULA?

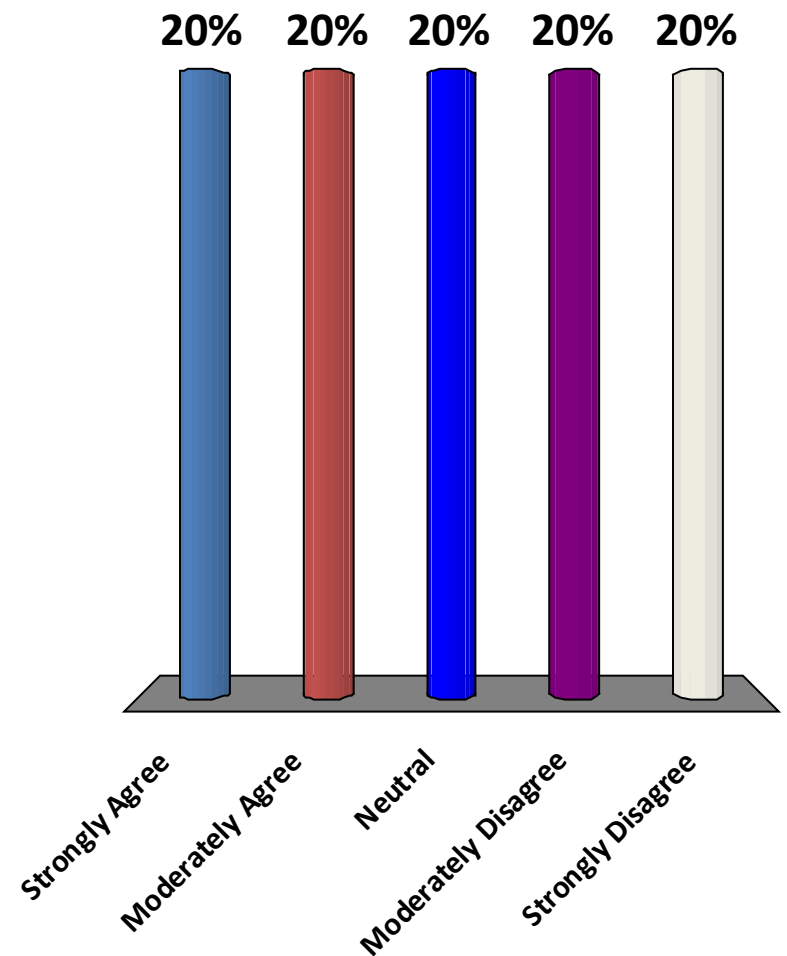
0 Quite a lot

1 A lot

2 Some

3 A little

4 Not at all



# Implementation

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FINANCE &  
AFFORDABILITY

# FINANCE MODEL COMPONENTS

Affordability Module

Revenue Module

Finance Module

# AFFORDABILITY MODULE

## PURPOSE:

- Establish existing wastewater liability by watershed and by town and the resulting household burden to achieve TMDLs

## This module can...

- Identify traditional EPA affordability criteria
- Establish town financial capability to finance wastewater costs
- Identify wastewater payments by other communities as a benchmark



# HOW MUCH WOULD YOU BE WILLING TO PAY PER YEAR TO IMPROVE WATER QUALITY?

0 \$100 to \$500

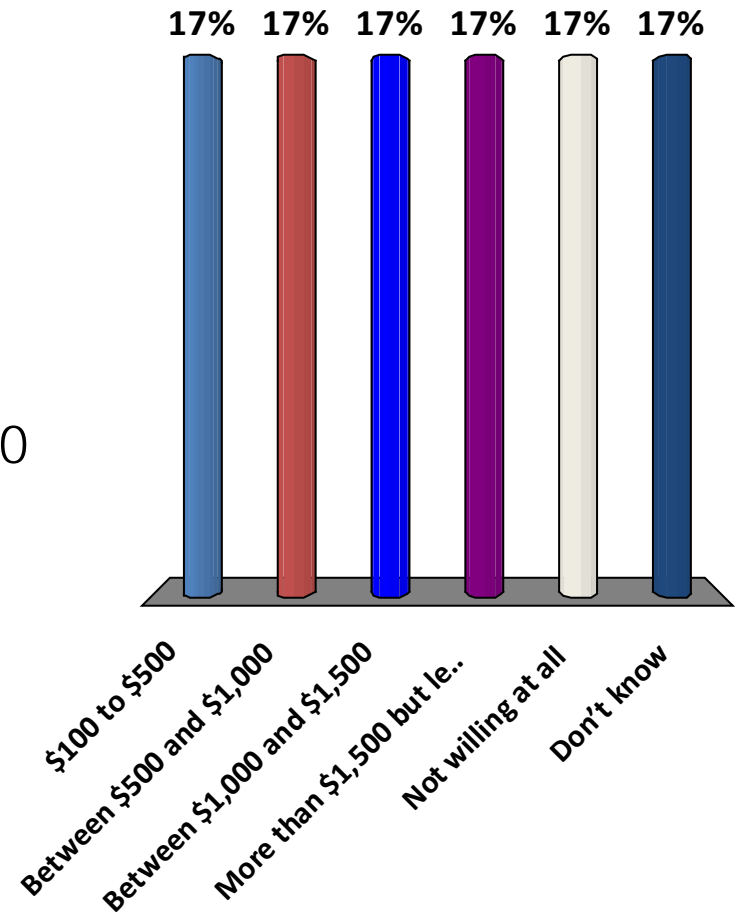
1 Between \$500 and \$1,000

2 Between \$1,000 and \$1,500

3 More than \$1,500 but less than \$2,000

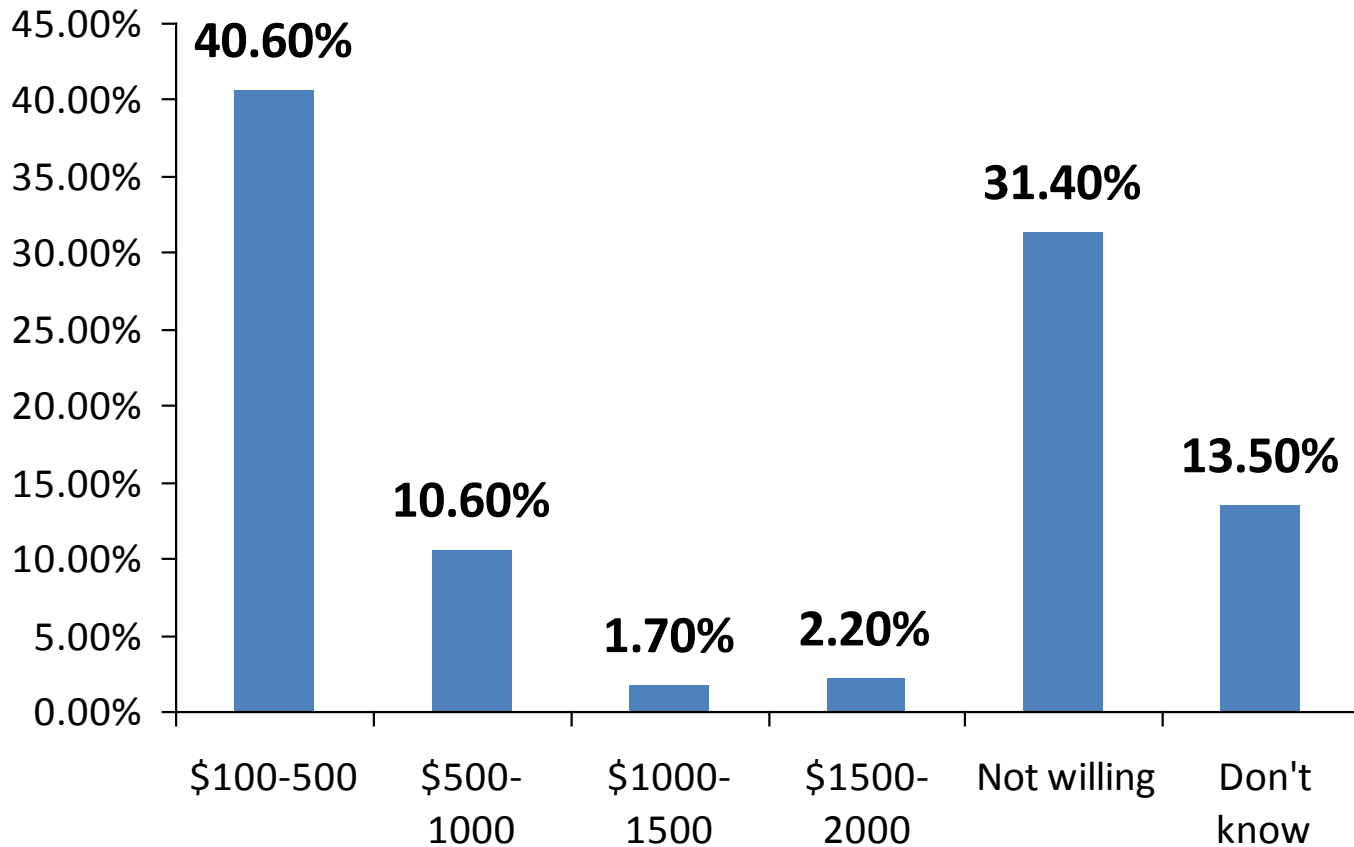
4 Not willing at all

5 Don't know



# CAPE WIDE SURVEY RESULTS

## How Much Would You Be Willing To Pay Per Year To Improve Water Quality?

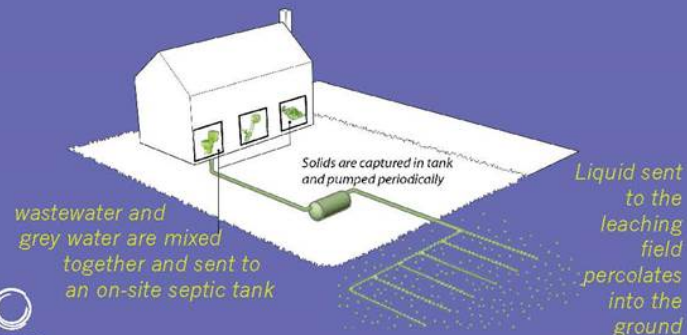


# AFFORDABILITY BASELINE

## SEPTIC SYSTEMS

A septic system for collecting waste typically consists of a septic tank, and a leaching field, connected by pipes. Solid waste is collected in a buried tank and pumped out, and disposed of, at regular intervals. The remaining liquid percolates into the ground through the leaching trench or field.

Bacteria in the septic system changes the composition of the waste as it travels through the system.



**AVERAGE YEARLY COST**  
for the construction  
And maintenance  
of a septic system  
(based on a 20 year lifespan)

**\$750**



# REVENUE MODULE

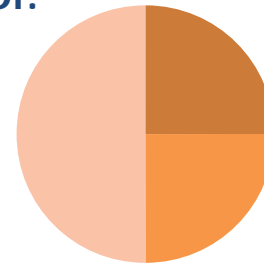
## PURPOSE:

- Provide macro level revenue sources to finance Cape wide wastewater solutions.

## This module can...

- Provide revenue sources to finance watershed, a combination of watersheds, and town wastewater solutions.

## The initial macro-level revenue plan consists of:



■ Federal Construction Grant Funding

■ State Financing (Multiple Revenue Sources)

■ Local Financing, with 0-2% SRF Financing



# POSSIBLE REVENUE SOURCES



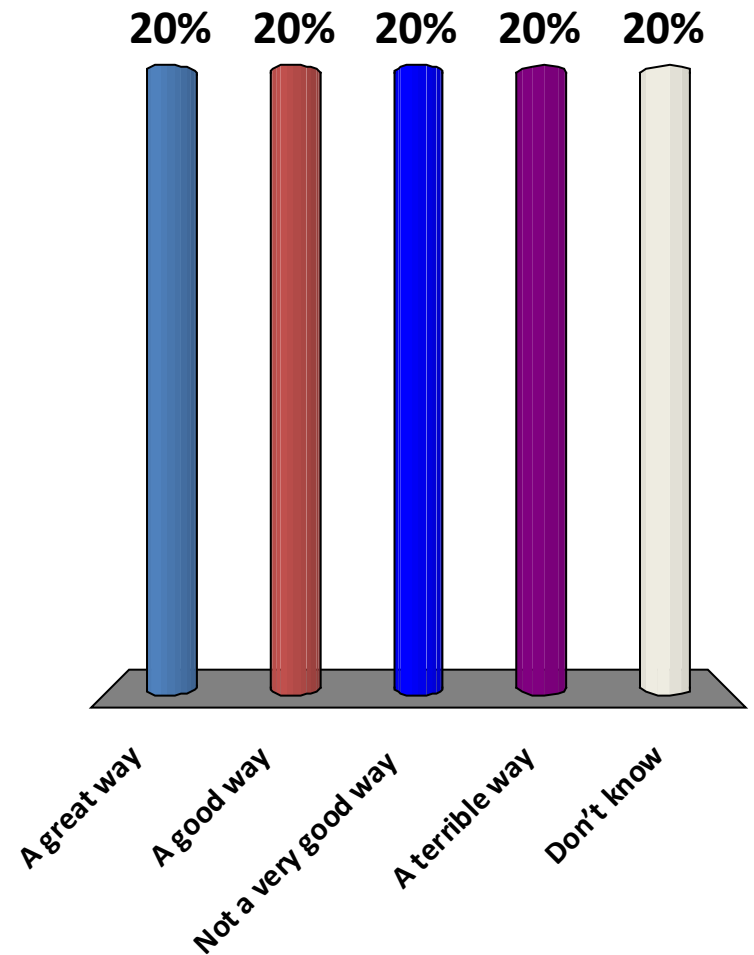
# SOURCES POLLED FROM CAPE WIDE SURVEY



# MOTOR FUEL TAX: 5 CENTS/GALLON

A state-wide five cent increase would generate approximately \$138.5 million in revenue annually

- 0 A great way
- 1 A good way
- 2 Not a very good way
- 3 A terrible way
- 4 Don't know



# CAPE WIDE SURVEY RESULTS

## MOTOR FUEL TAX: 5 CENTS/GALLON



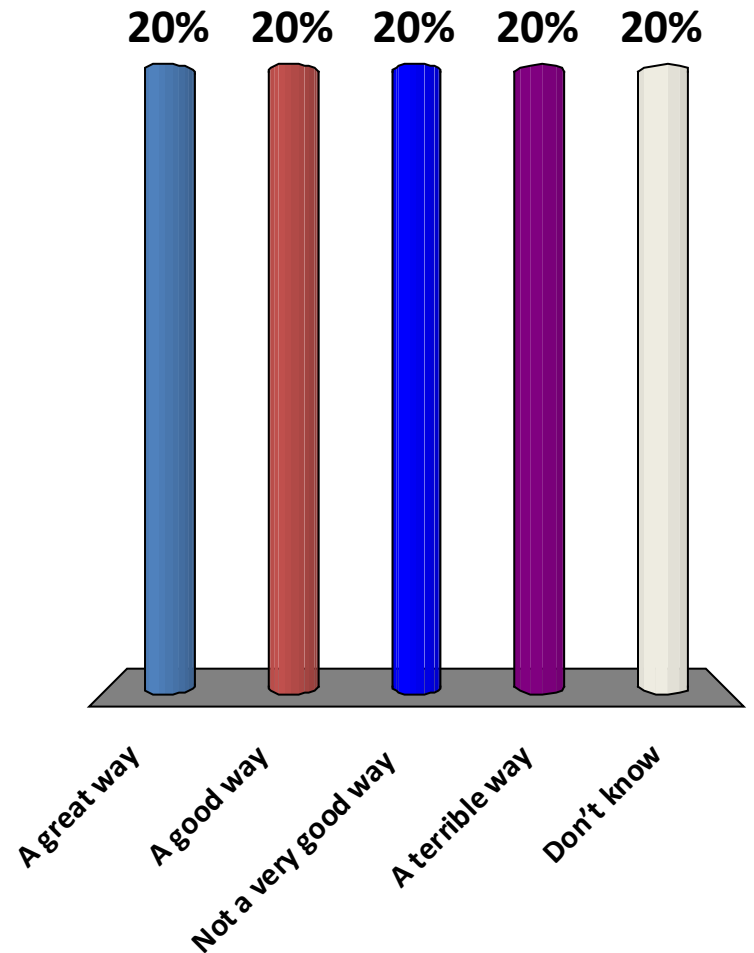
**13.7%**

of people thought this was a good or great way to fund wastewater projects.

# EARMARK A PORTION OF EXPECTED GAMING PROCEEDS

If 25% of the revenue was targeted as a new environmental grant fund it could annually generate over \$115 million.

- 0 A great way
- 1 A good way
- 2 Not a very good way
- 3 A terrible way
- 4 Don't know



# CAPE WIDE SURVEY RESULTS

## EARMARK A PORTION OF EXPECTED GAMING PROCEEDS



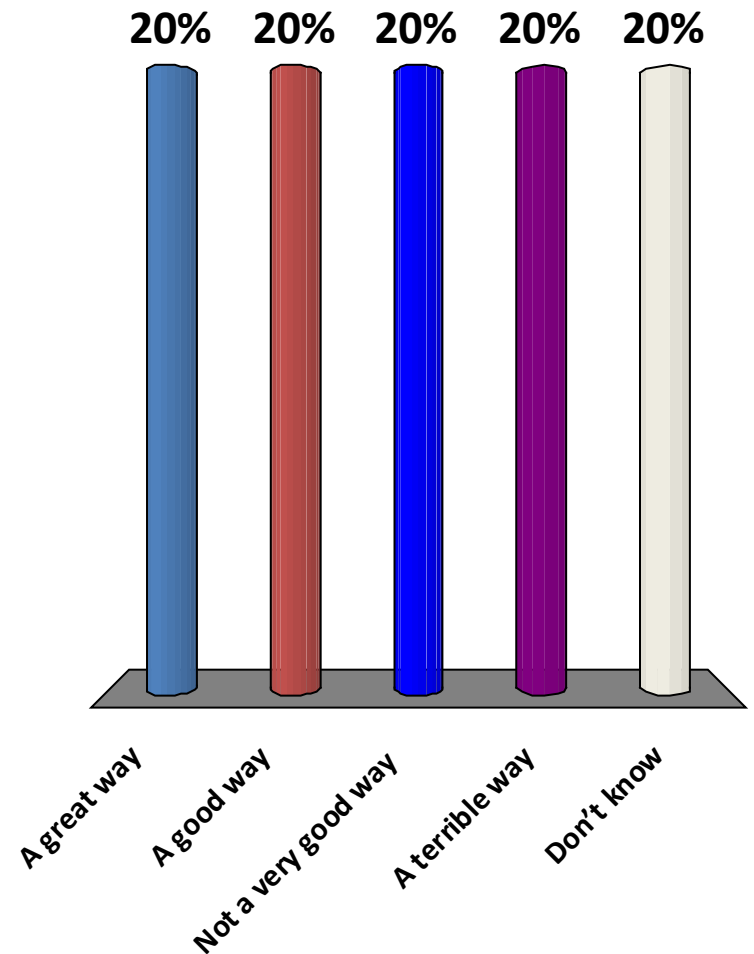
# 71.1%

of people thought this was a  
good or great way to fund  
wastewater projects.

# EARMARK A PORTION OF AN INTERNET SALES TAX

Extending the sales tax would produce approximately \$335 million in new revenue to the Commonwealth.

- 0 A great way
- 1 A good way
- 2 Not a very good way
- 3 A terrible way
- 4 Don't know





# CAPE WIDE SURVEY RESULTS

## EARMARK A PORTION OF AN INTERNET SALES TAX



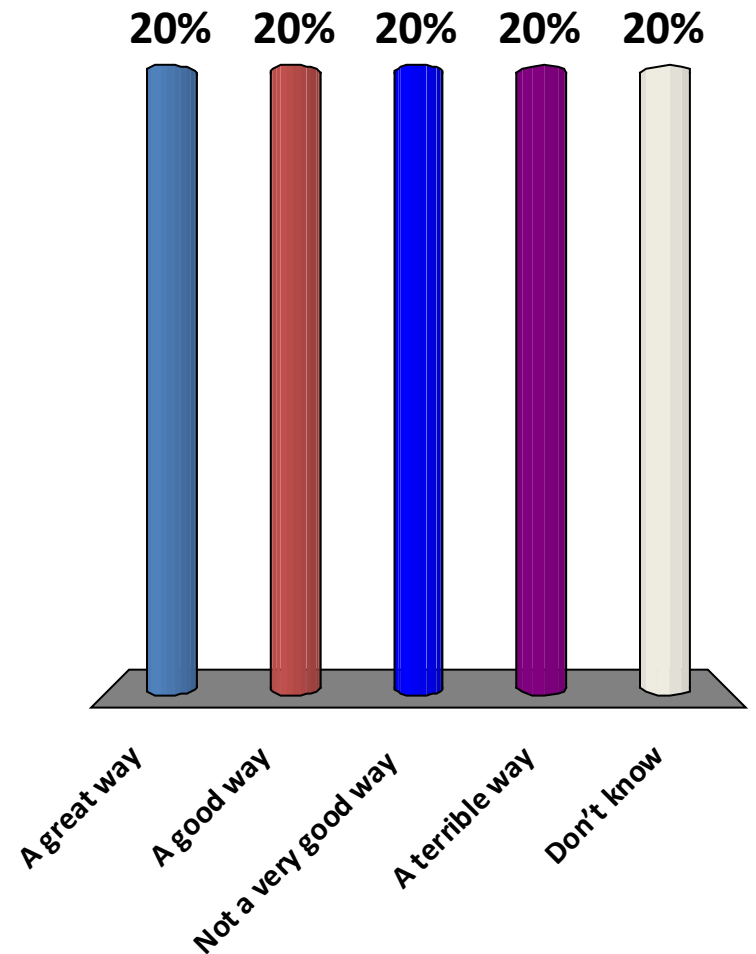
# 32.2%

of people thought this was a good or great way to fund wastewater projects.

# REDEDICATING LOCAL OPTION MEAL AND ROOM OCCUPANCY TAX

Excise taxes would result in annually collecting approximately \$18.8 million.

- 0 A great way
- 1 A good way
- 2 Not a very good way
- 3 A terrible way
- 4 Don't know



# CAPE WIDE SURVEY RESULTS

## REDEDICATING LOCAL OPTION MEAL AND ROOM OCCUPANCY TAX



**42%**

of people thought this was a good or great way to fund wastewater projects.

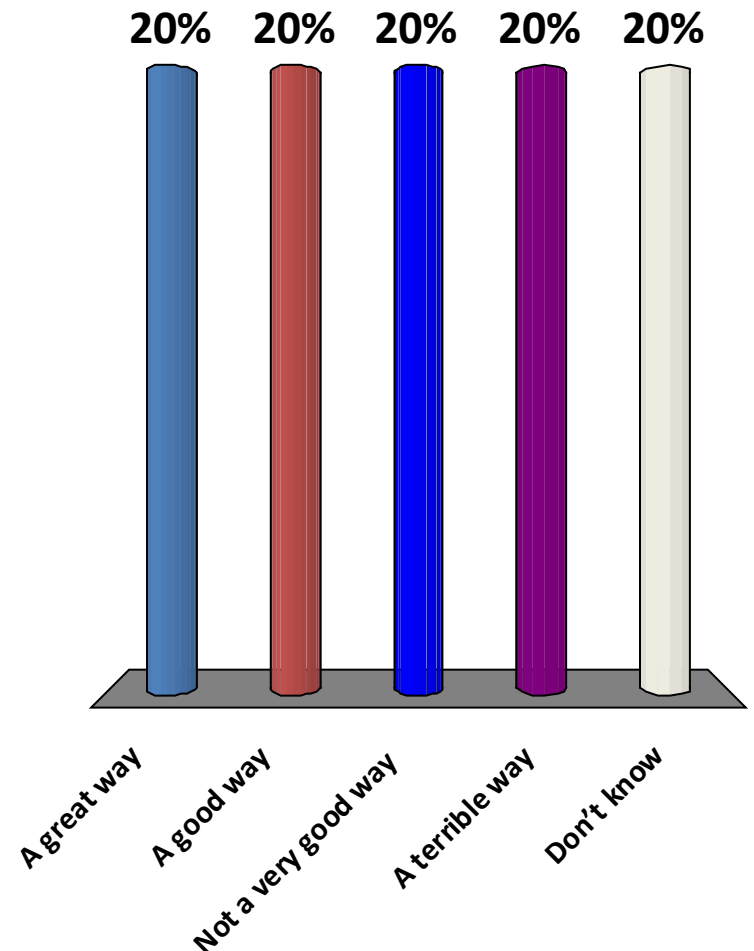
# ADDITIONAL POSSIBLE REVENUE SOURCES



# SEPTIC SYSTEM INSTALLATION TAX (\$200), PUMP-OUT TAX (\$20)

There are about 686,000 septic systems in MA (approximately 120,000 of which are on Cape Cod). Statewide annual revenue total would be approximately \$3.9 million.

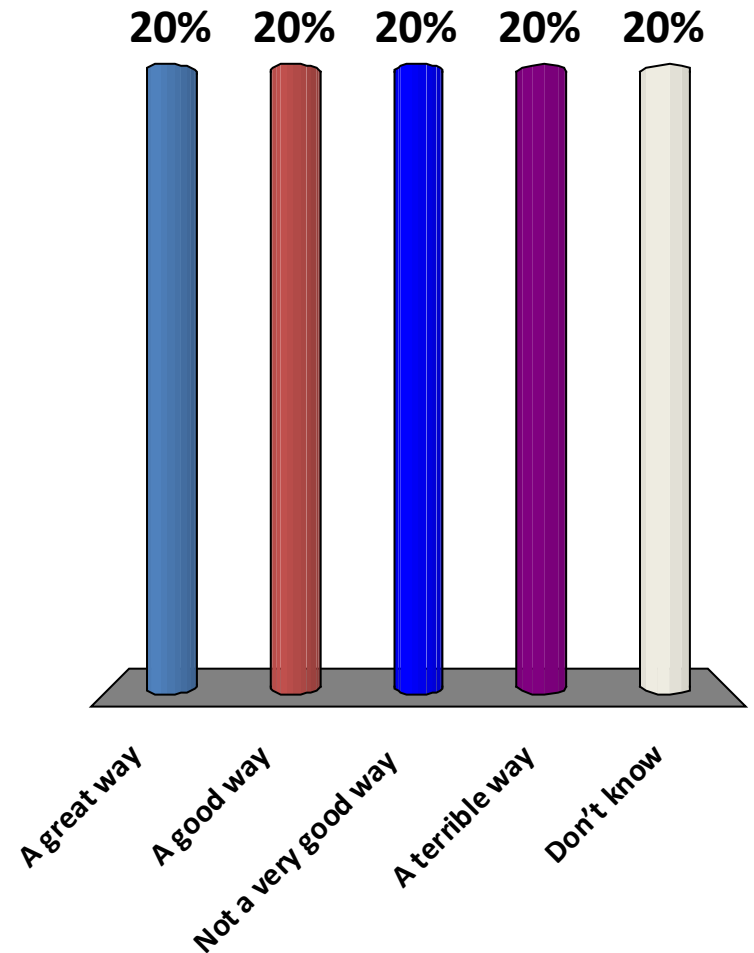
- 0 A great way
- 1 A good way
- 2 Not a very good way
- 3 A terrible way
- 4 Don't know



# EMBARKATION EXCISE TAX: FERRY TAX

1,499,853 yearly Cape Cod ferry passengers. For each additional \$0.50 excise tax added to each ticket, approximately \$749,927 in revenue would be generated.

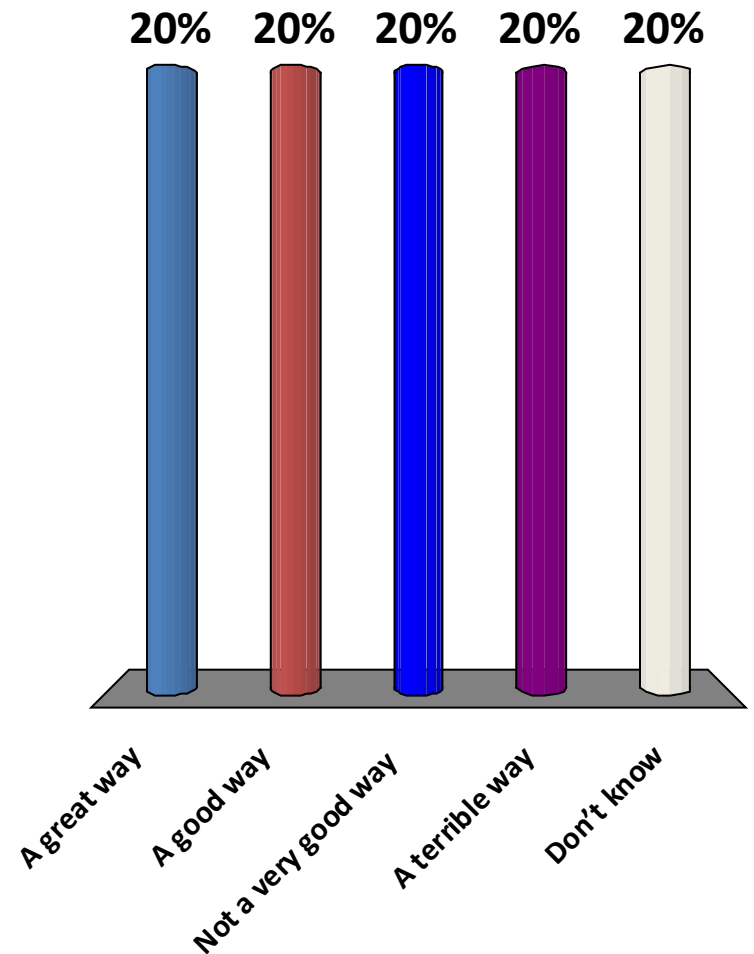
- 0 A great way
- 1 A good way
- 2 Not a very good way
- 3 A terrible way
- 4 Don't know



# EMBARKATION EXCISE TAX: FLIGHT TAX

184,804 yearly flight passengers. If a \$1.50 excise tax were added to each ticket purchased, a total revenue of \$277,206 would be annually generated.

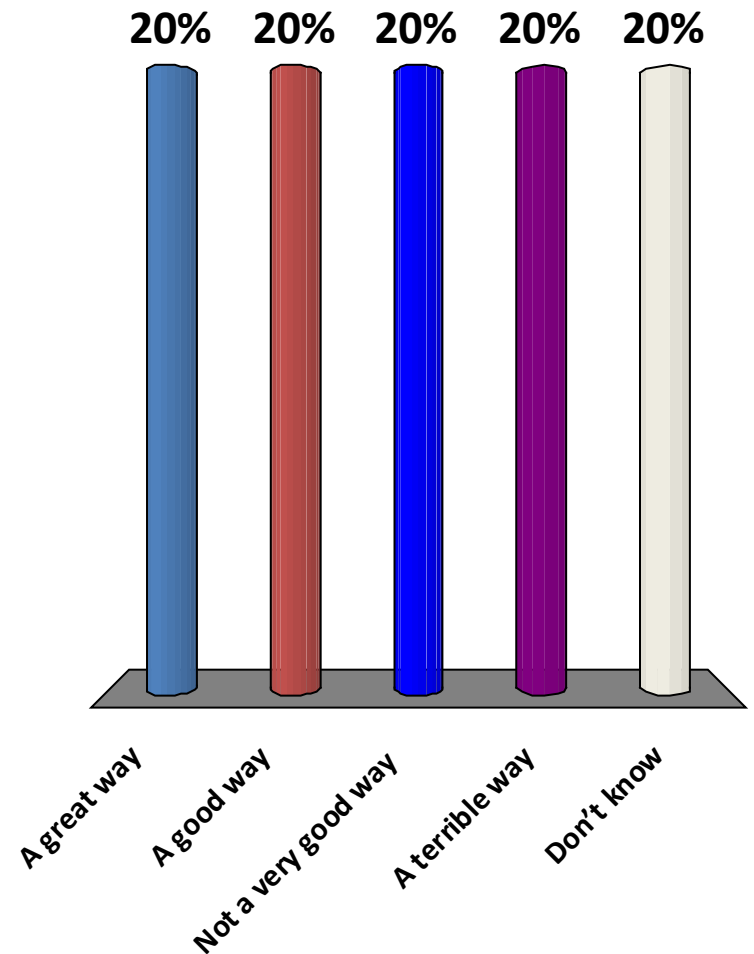
- 0 A great way
- 1 A good way
- 2 Not a very good way
- 3 A terrible way
- 4 Don't know



# MA EXCISE TAX: MILLAGE ON WATER CONSUMPTION OF 1-3 MILLS/GALLON

A 1 mill charge would result in annual revenue of \$81.9 million based upon annual household water usage of 65 gallons per person per day.

- 0 A great way
- 1 A good way
- 2 Not a very good way
- 3 A terrible way
- 4 Don't know





# POSSIBLE REVENUE SOURCES

## What's already happening?

- Environmental Bond Bill
- Southeast New England Coastal Watershed Restoration Program:  
Funding available for FY14
- Water Infrastructure Bill :  
Principal Forgiveness



# FINANCE MODULE

## PURPOSE:

- Identify costs to a town, watershed, or region by engineer solution.

## This module can...

- Compile a financial plan that can be adapted to meet EPA affordability criteria
- Account for existing and new costs:
  - Wastewater
  - Capital Replacement



All materials and resources for the Upper Cape Sub Regional Group will be available on the Cape Cod Commission website:



<http://watersheds.capecodcommission.org/index.php/watersheds/upper-cape>