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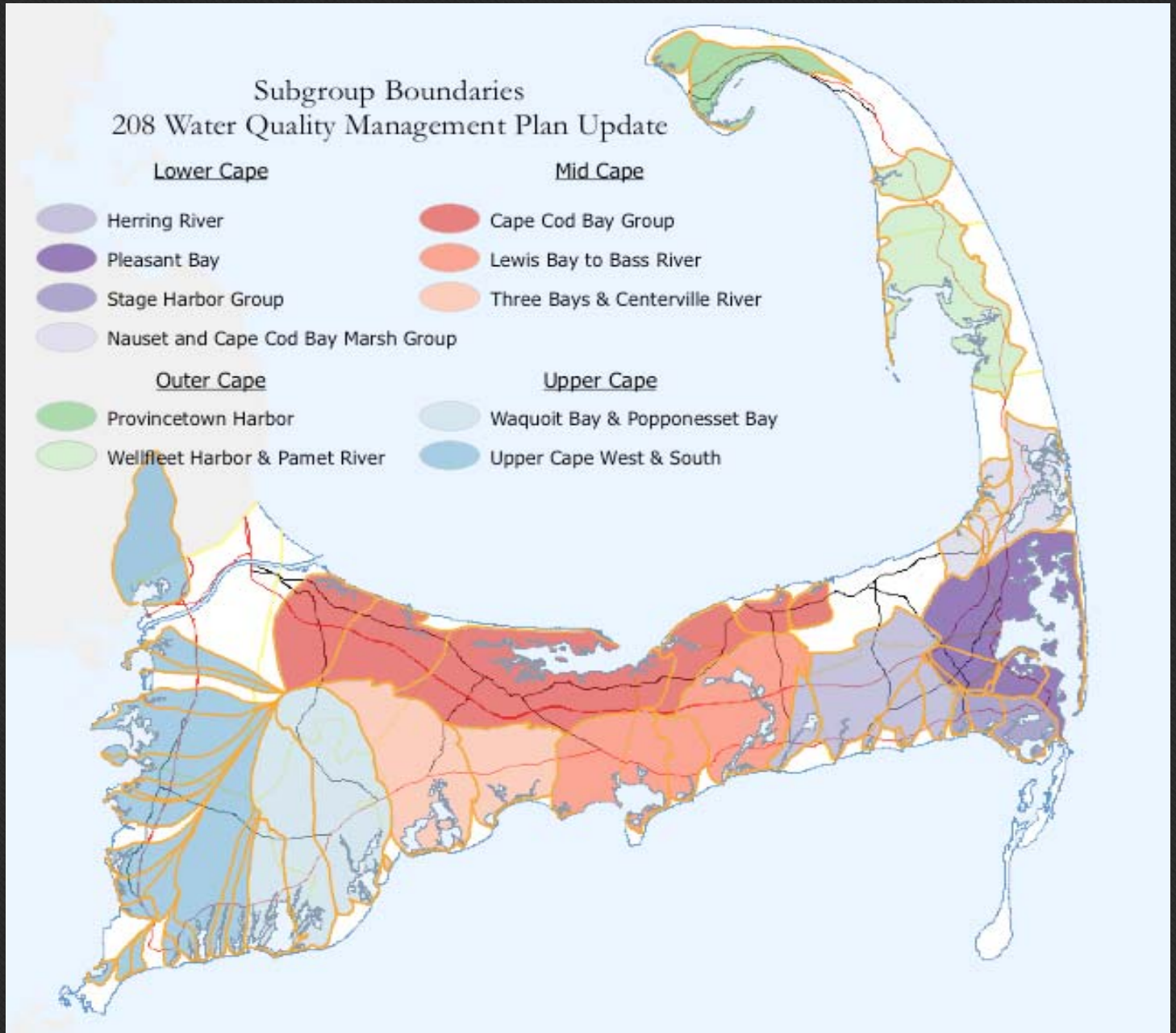
8

STAKEHOLDER
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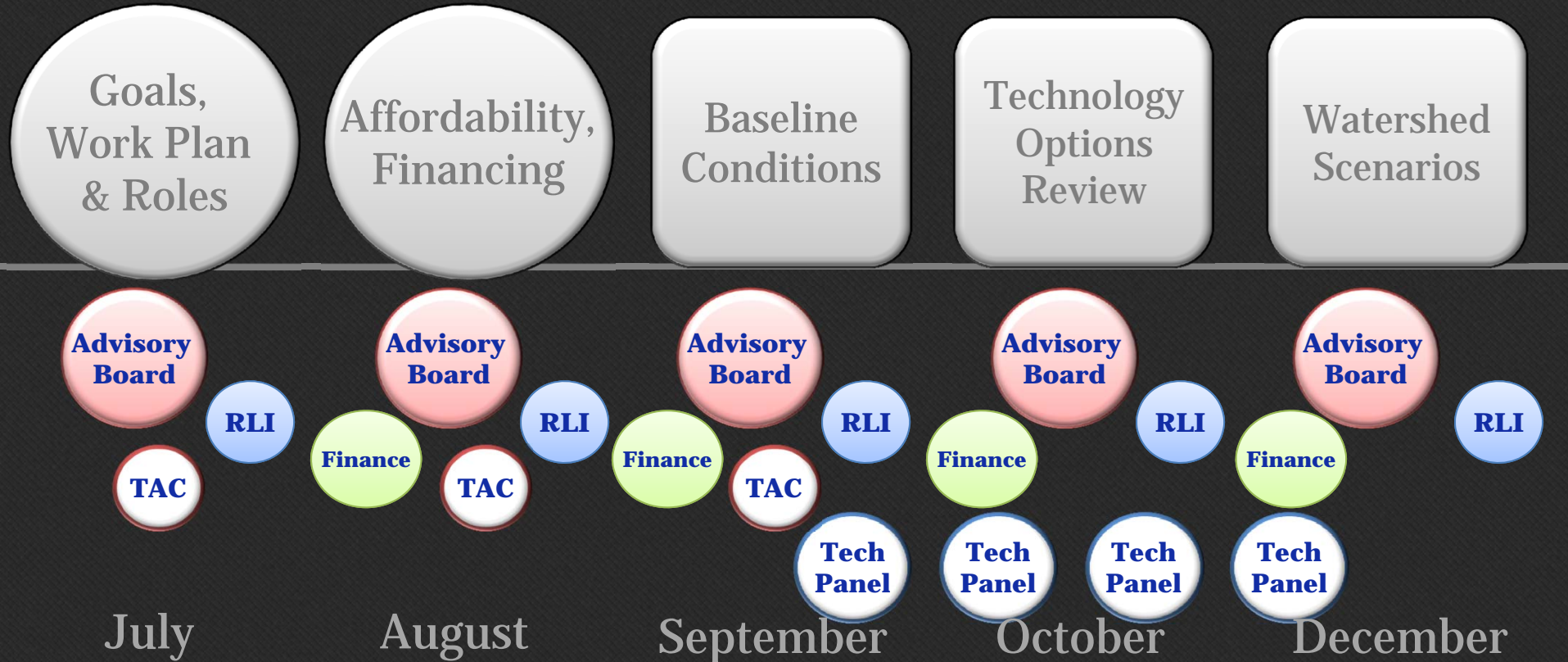
170 Stakeholders

WATERSHED SUBGROUPS



Subregional

Watershed Working Groups



RLI Regulatory, Legal & Institutional Work Group

TAC Technical Advisory Committee of Cape Cod Water Protection Collaborative

70 MEETINGS

11

PUBLIC MEETINGS

27

COMMITTEE MEETINGS

32

WATERSHED MEETINGS

Prevention

Site Scale

Neighborhood

Watershed

Cape-Wide

Title 5

Standard Title 5 Systems



Conventional Treatment

IA

I/A Title 5 Systems



Cluster & Satellite Treatment Systems



Advanced Treatment

Enhanced IA

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

Reduction

Remediation



Inlet / Culvert Widening



Pond and Estuary Dredging



Constr. Wetlands - Groundwater, Salt Water, Floating



Remediation of Existing Development



Fertilizer Management



Transfer of Development Rights



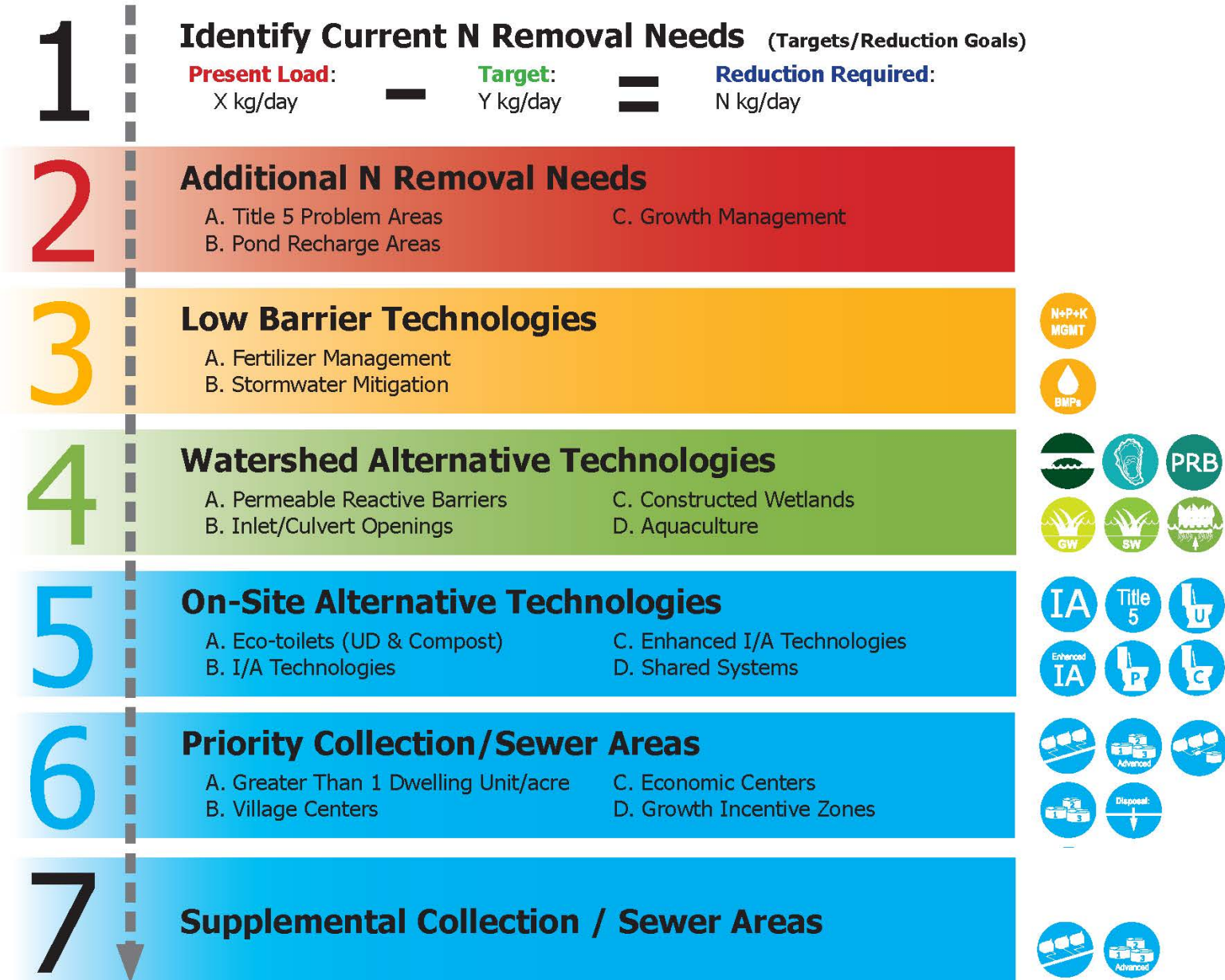
Stormwater BMPs



Compact Development

Problem Solving Approach

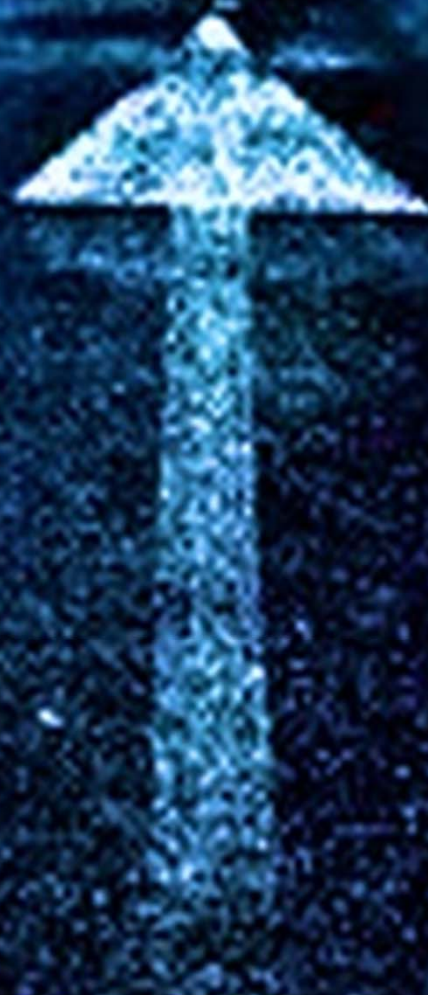
■ Wastewater
 ■ Existing Water Bodies
 ■ Regulatory





Fertilizer DCPC

The Next Six Months





STAKEHOLDERS:

Generating Ideas

Reflecting on Ongoing Work

Shaping Recommendations

Building Collaborations

FOCUSED ON:

Shared Watersheds and Shared Planning

Monitoring and Adaptive Management

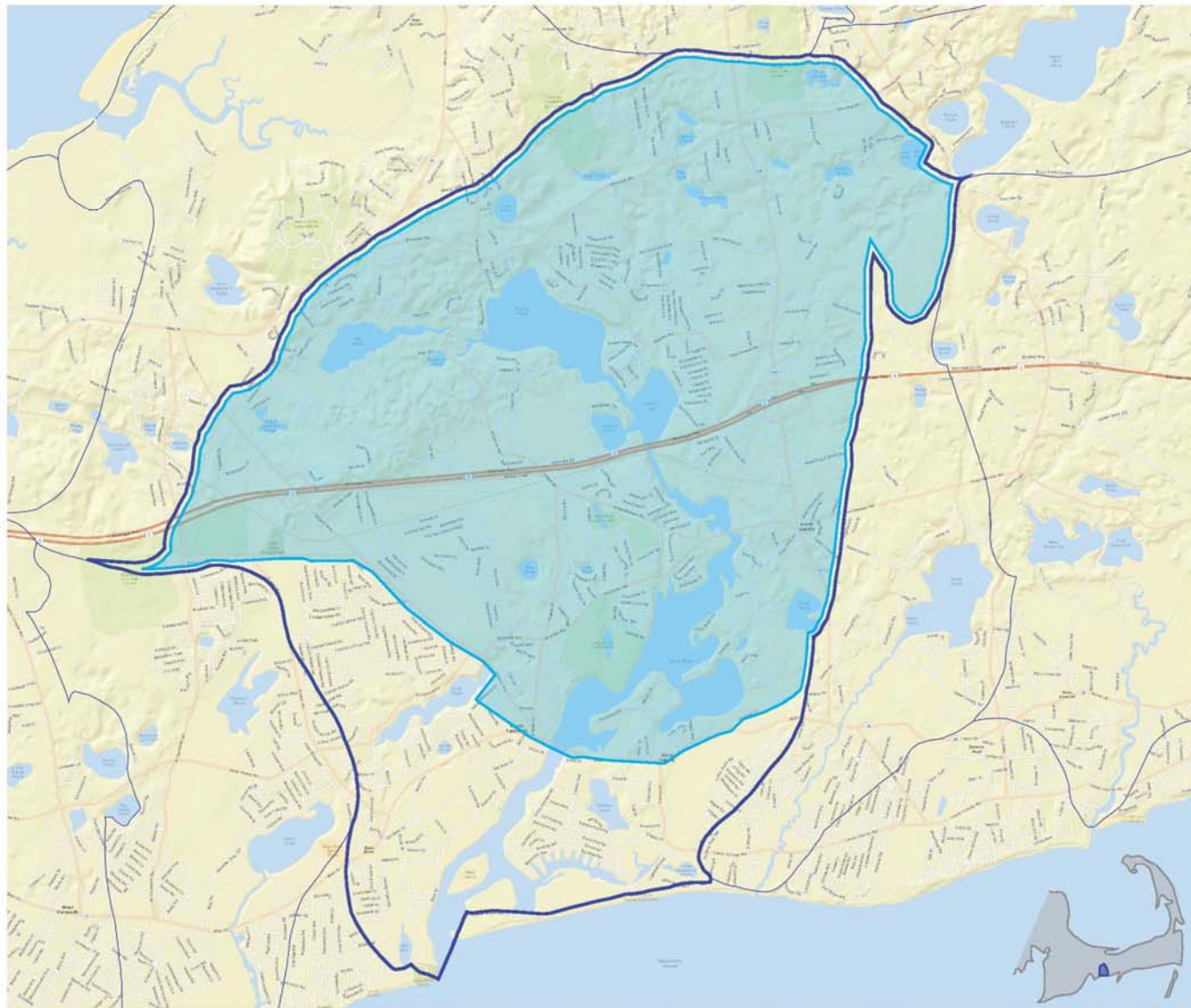
Financing and Affordability

1

Sample Cape Cod Subwatershed

TOWN OF YARMOUTH MASSACHUSETTS

MAP 1: TOTAL COLLECTION AREA NECESSARY TO MEET:
Current Nitrogen Removal Needs



NITROGEN CALCULATOR

1	Current N Removal Needs (TMDL)	+37,400 KG/YR	+100%
2	Additional N Removal Needs		
	Failed Title 5 Systems		
	Anticipated Growth Areas		
3	Low Barrier Technologies		
	Fertilizer Management		
	Stormwater BMPs		
4	Watershed Alternative Technologies		
	Const. Wetlands - GW		
	Const. Wetlands - SW		
	Phytobuffer		
	Perm. Rest. Barrier		
	Fertigation Walls		
	Shellfish Aquaculture		
	Inlet Widening		
5	On-Site Alternative Technologies		
	VA Title 5 Systems		
	Alt. Toilet Systems		
6	Collection/Sewer	-37,400 KG/YR	-100%
	Remaining Nitrogen to Meet Goal	0 KG/YR	0%

Indicator Bar

100%
Collection

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02.04.14



Draft Watershed Concept Maps

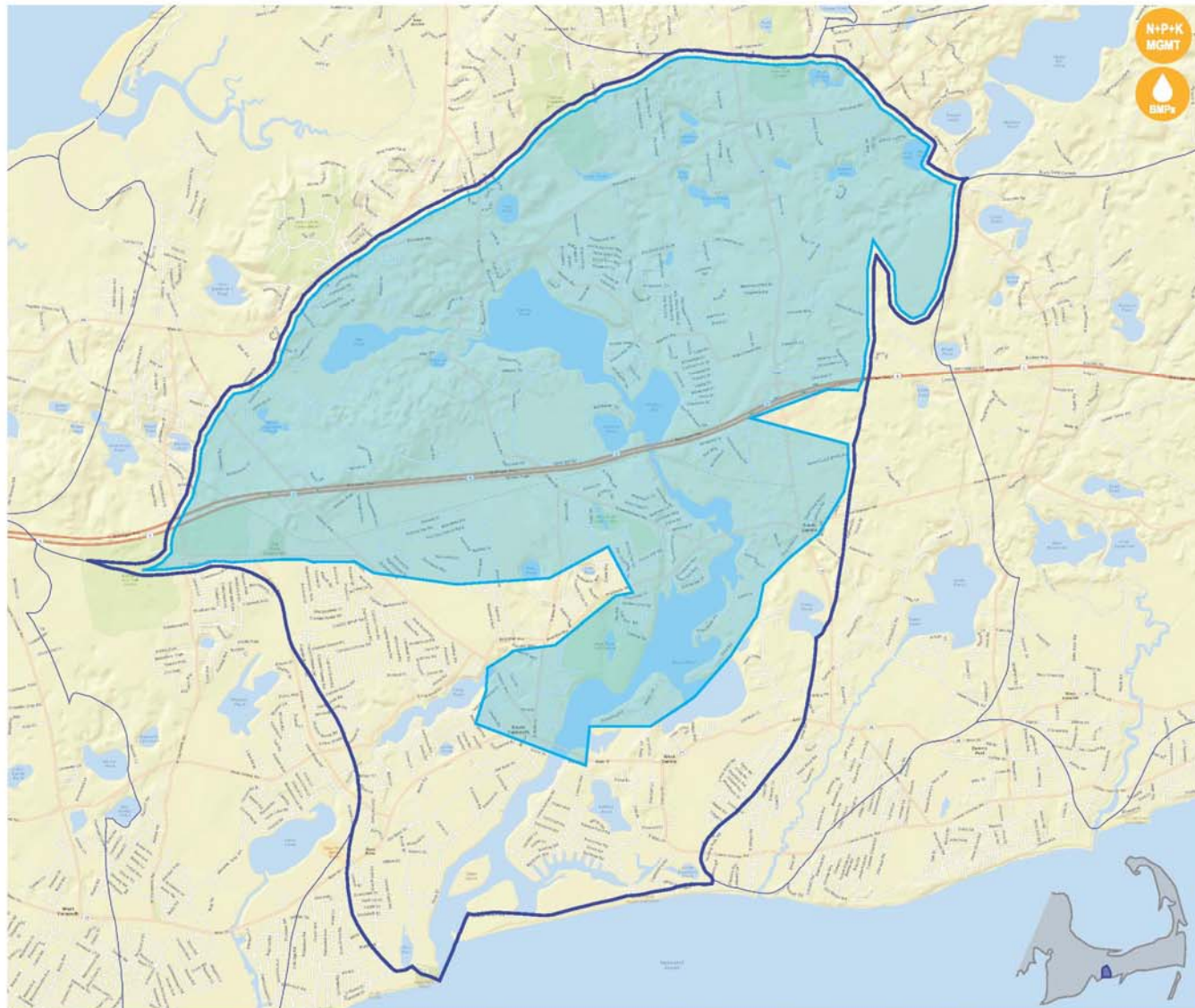
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3

Sample Cape Cod Subwatershed

TOWN OF YARMOUTH MASSACHUSETTS

MAP 3: TOTAL COLLECTION AREA NECESSARY TO MEET:
Current Nitrogen Removal Needs
 + **Additional Future Nitrogen Removal Needs**
 - **Low Barrier Technologies**



NITROGEN CALCULATOR

1	Current N Removal Needs (TMDL)	+37,400 KG/YR	+93.5%
2	Additional N Removal Needs	+2,600 KG/YR	+6.5%
	Failed Tile 5 Systems	+600 KG/YR	+1.5%
	Anticipated Growth Areas	+2000 KG/YR	+5%
3	Low Barrier Technologies	-10,000 KG/YR	-25%
	Fertilizer Management	-5,000 KG/YR	-12.5%
	Stormwater BMPs	-5,000 KG/YR	-12.5%
4	Watershed Alternative Technologies		
	Const. Wetlands - GW		
	Const. Wetlands - SW		
	Phytobuffer		
	PRB Perm. React. Barrier		
	Fertigation Wells		
	Shellfish Aquaculture		
	Inlet Widening		
5	On-Site Alternative Technologies		
	I/A Tile 5 Systems		
	All Toilet Systems		
6	Collection/Sewer	-30,000 KG/YR	-75%
	Remaining Nitrogen to Meet Goal	0 KG/YR	0%

Indicator Bar



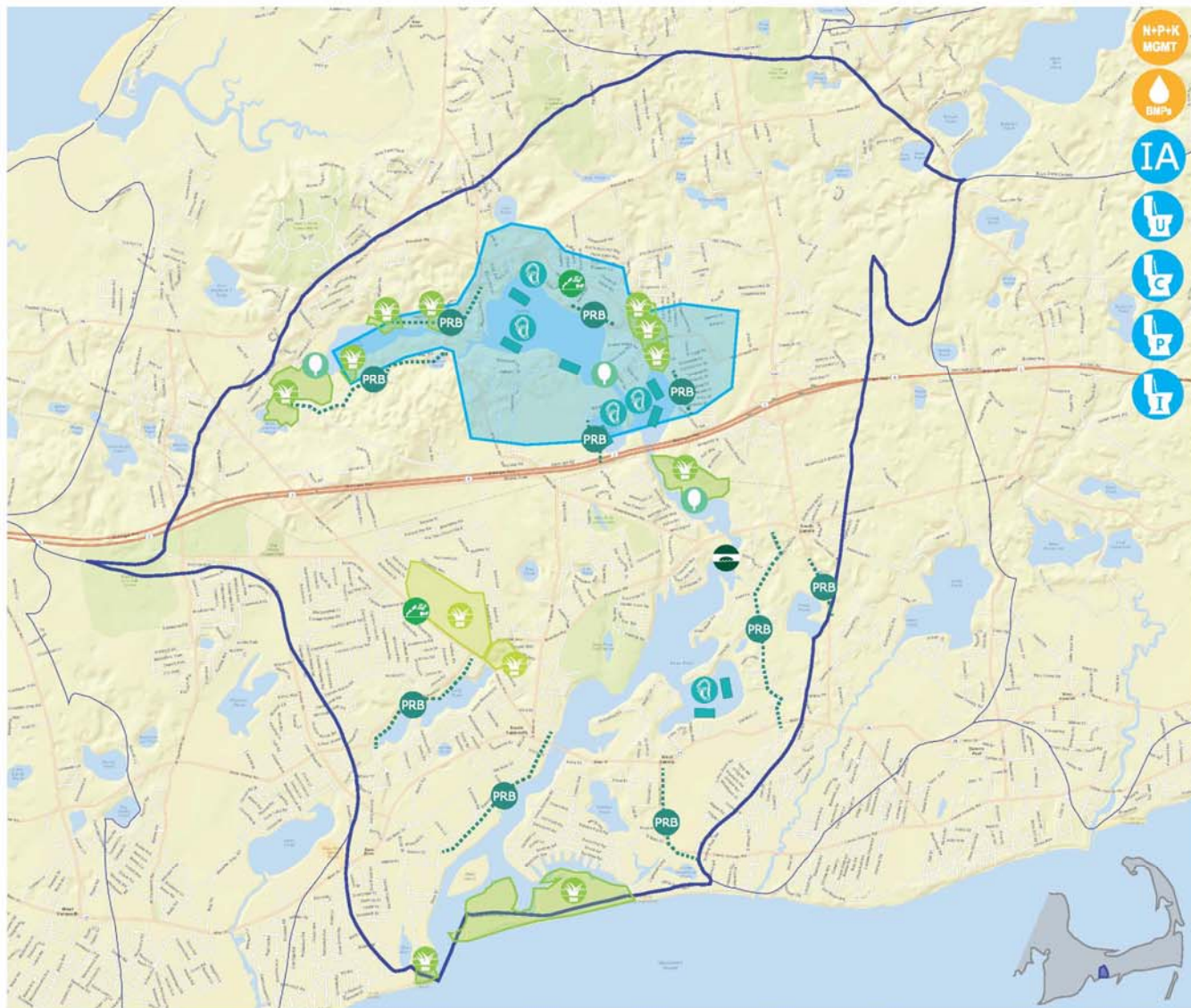
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Sample Cape Cod Subwatershed

TOWN OF YARMOUTH MASSACHUSETTS

MAP 5: TOTAL COLLECTION AREA NECESSARY TO MEET:
Current Nitrogen Removal Needs
 + **Additional Future Nitrogen Removal Needs**
 - Low Barrier Technologies
 - Watershed Alternative Technologies
 - On-Site Alternative Technologies



NITROGEN CALCULATOR

1	Current N Removal Needs (TMDL)	+37,400 KG/YR	+93.5%
2	Additional N Removal Needs	+2,600 KG/YR	+6.5%
	Failed Title 5 Systems	+600 KG/YR	+1.5%
	Anticipated Growth Areas	+2000 KG/YR	+5%
3	Low Barrier Technologies	-10,000 KG/YR	-25%
	Fertilizer Management	-5,000 KG/YR	-12.5%
	Stormwater BMPs	-5,000 KG/YR	-12.5%
4	Watershed Alternative Technologies	-22,100 KG/YR	-55.25%
	Const. Wetlands - GW	-3,000 KG/YR	-7.5%
	Const. Wetlands - SW	-4,000 KG/YR	-10%
	Phytobuffer	-100 KG/YR	-0.25%
	Fertigation Wells	-600 KG/YR	-1.5%
	Shellfish Aquaculture	-10,000 KG/YR	-25%
	Perm. React. Barrier	-3,900 KG/YR	-9.75%
	Inlet Widening	-500 KG/YR	-1.25%
5	On-Site Alternative Technologies	-2,800 KG/YR	-7%
	IA Title 5 Systems	-0 KG/YR	-0%
	All Toilet Systems	-2,800 KG/YR	-7%
6	Collection/Sewer	-5,100 KG/YR	-12.75%
	Remaining Nitrogen to Meet Goal	0 KG/YR	0%



Indicator Bar

0%	100%	100%	0%
Collection	Low Barrier	Watershed Alternative	On-Site

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