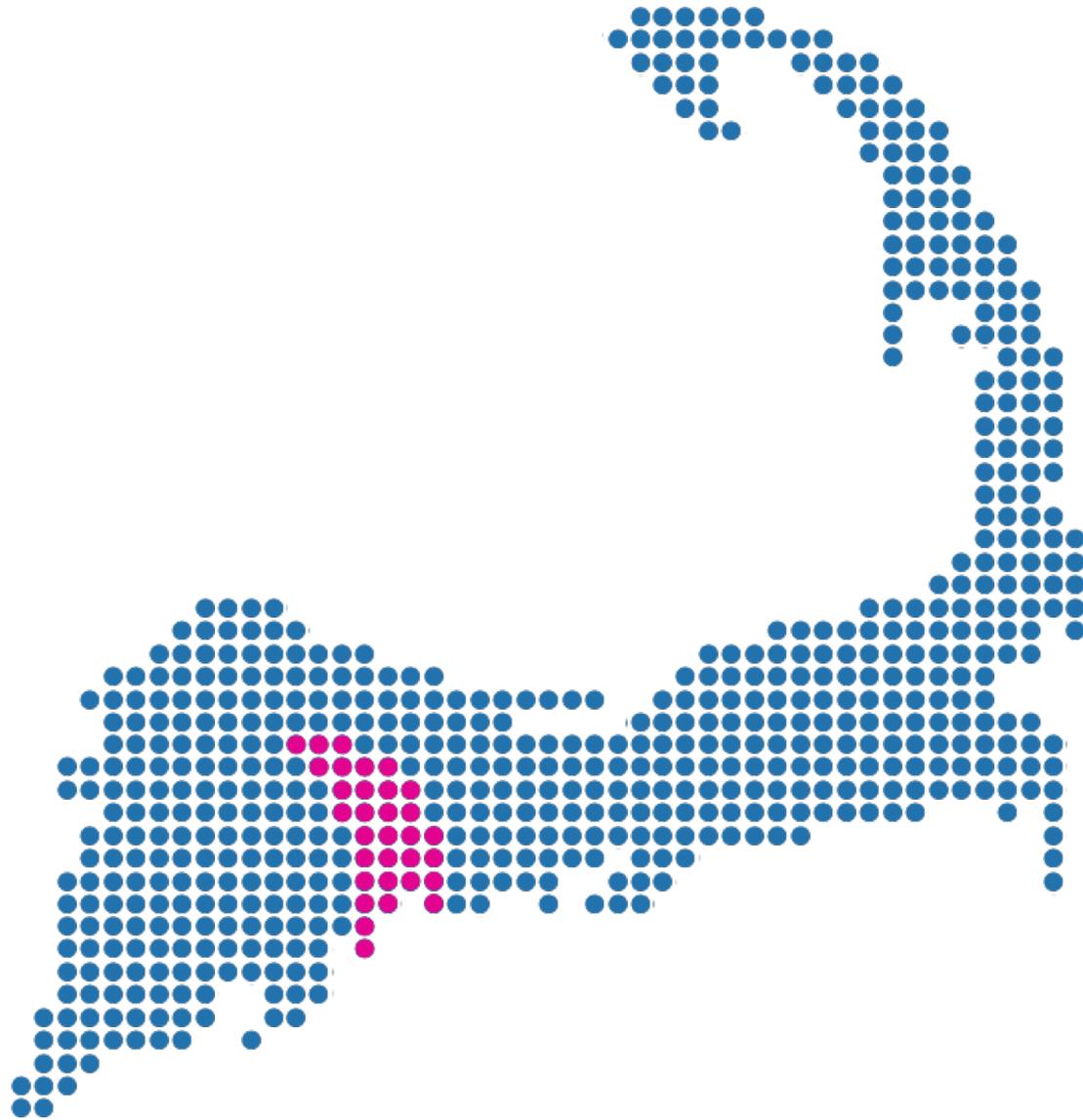




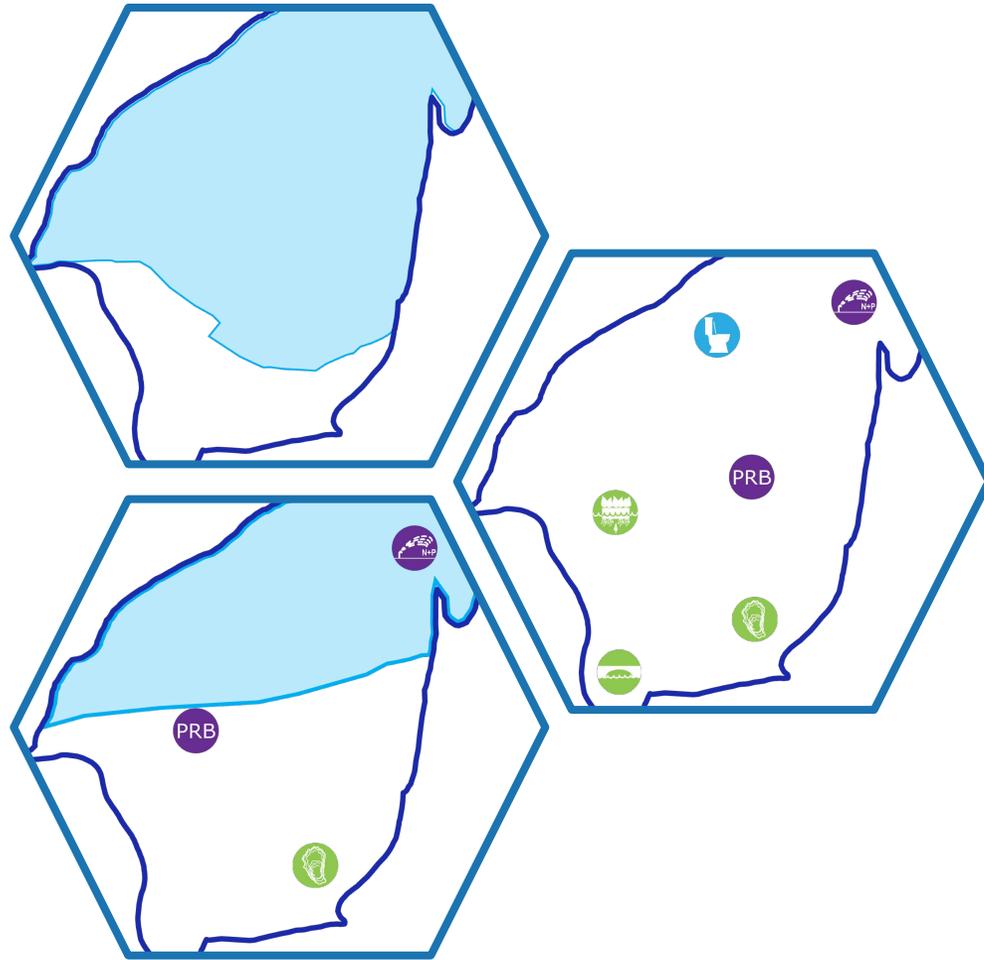
one cape
implementing solutions for clean water

Science, Information & Technology

KRISTY SENATORI, CAPE COD COMMISSION



Developing
watershed-based
scenarios that meet
water quality goals



Implementing watershed solutions

Water Quality Data Center

INFORMATION

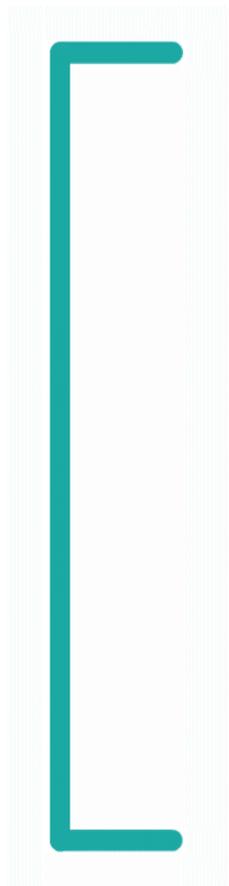
COLLECT
INVENTORY
MAINTAIN
UPDATE
ANALYZE



DATA
WAREHOUSE

REGIONALLY CONSISTENT DATASETS

- ❑ Nitrogen TMDLs
- ❑ Watershed Septic, Fertilizer and Stormwater Nitrogen Loads
- ❑ Wastewater Flows
- ❑ Natural Attenuation
- ❑ Parcels, Land Use, and Buildout
- ❑ Costs for Treatment, Collection, Transport, Disposal, and Non-Construction
- ❑ Non Traditional Treatment Technologies
- ❑ Green Infrastructure



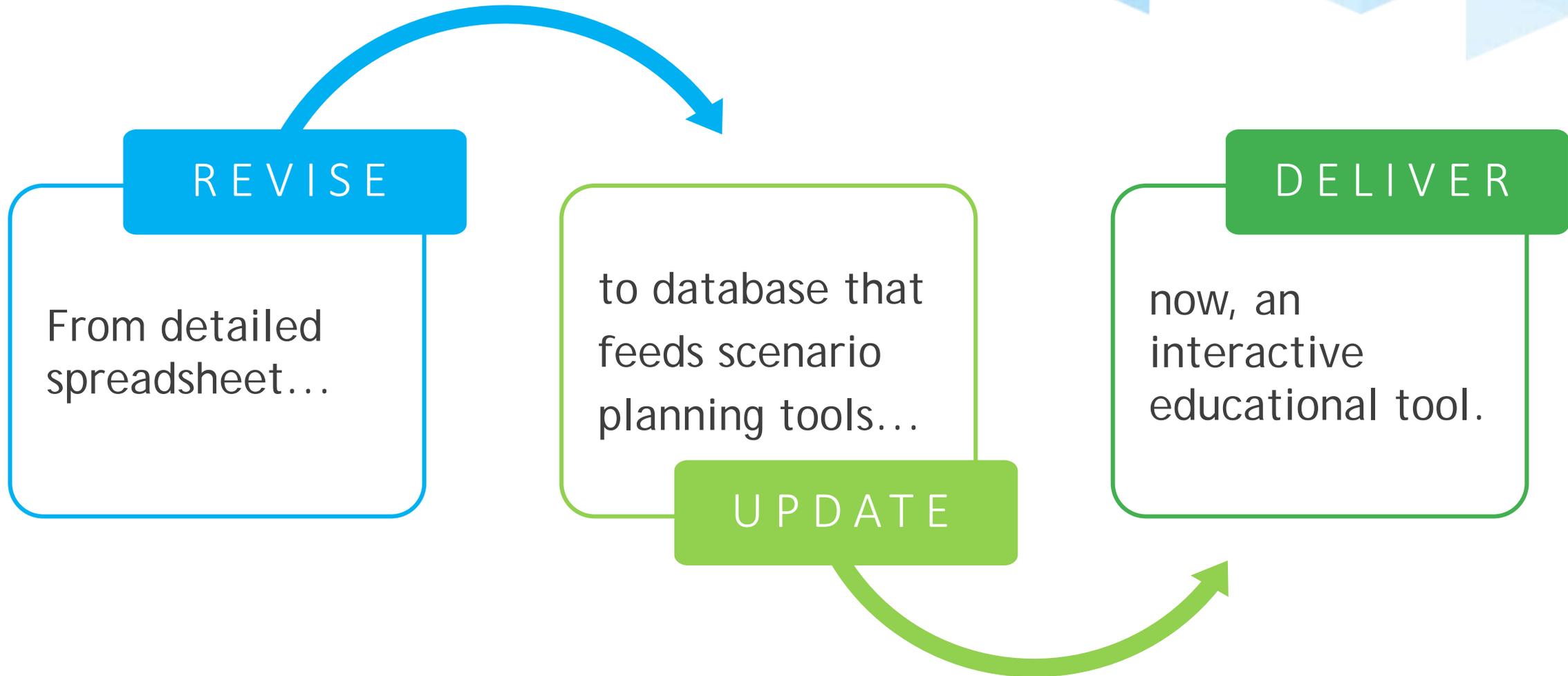
REGIONALLY CONSISTENT DATASETS

- ❑ Historic and current parcel specific data sets
- ❑ Static and dynamic spatial data
- ❑ Technologies information
- ❑ Monitoring data



DATA
WAREHOUSE

Technologies Matrix



Technologies Matrix

Instructions: Select a category to filter the technologies. Drag treatments to the Compare box to compare technologies. Click on a technology to see details.

Filter by: Scale
 Site Neighborhood Watershed Cape/Woods Clear Filters & View All

Drag treatments to compare Compare Reset

Reduction
Treatment before disposal to ground

- Hydraulic Treatment
- Toilets: Packaging
- Remediation of Existing Development
- Tile 5 Septic System (Replacement of Old Tile Closets)
- Conventional Treatment
- Toilets: Composting
- Toilets: Urine Diverting
- Compact and Open Space Development
- Innovative/Alternative (IA) Systems
- Cluster Treatment System - Single-stage
- Advanced Treatment
- Toilets: Incinerating
- Fertilizer Management
- Transfer of Development Rights
- Innovative/Alternative (IA) Enhanced Systems
- Cluster Treatment System - Two-stage
- Sewer Treatment
- Sewer Treatment - Enhanced

Remediation
Treatment in groundwater

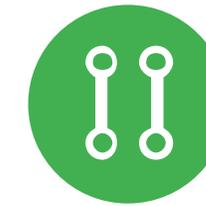
- Constructed Wetlands - Surface Flow
- Phytoremediation
- Stormwater BMP - Gravel Wetland
- Phytoremediation
- Permeable Reactive Barriers (PRBs) - Injection Well Method/Aquifer Thickness - 45 feet
- Permeable Reactive Barriers (PRBs) - Trench Method/Aquifer Thickness - 30 feet
- Permeable Reactive Barriers (PRBs) - Injection Well Method/Aquifer Thickness - 60 feet
- Ferrigation Wells - Turf
- Ferrigation Wells - Cranberry Bog
- Stormwater BMPs
- Constructed Wetlands - Groundwater Treatment
- Stormwater BMP - Vegetated Swale
- Stormwater - Constructed Wetlands
- Permeable Reactive Barriers (PRBs) - Injection Well Method/Aquifer Thickness - 30 feet

Restoration
Treatment in water body

- Aquaculture - Shellfish Cultivated in Estuary Bed
- Inlet / Culvert Widening
- Pond and Estuary Circulators
- Aquaculture - Shellfish Cultivated Above Estuary Bed
- Coastal Habitat Restoration
- Surface Water Remediation Wetlands
- Aquaculture - Mariculture
- Floating Constructed Wetlands
- Pond and Estuary Dredging



EXPLORE
treatment options



COMPARE
technology performance



FILTER
by scale

Monitoring



WATER QUALITY



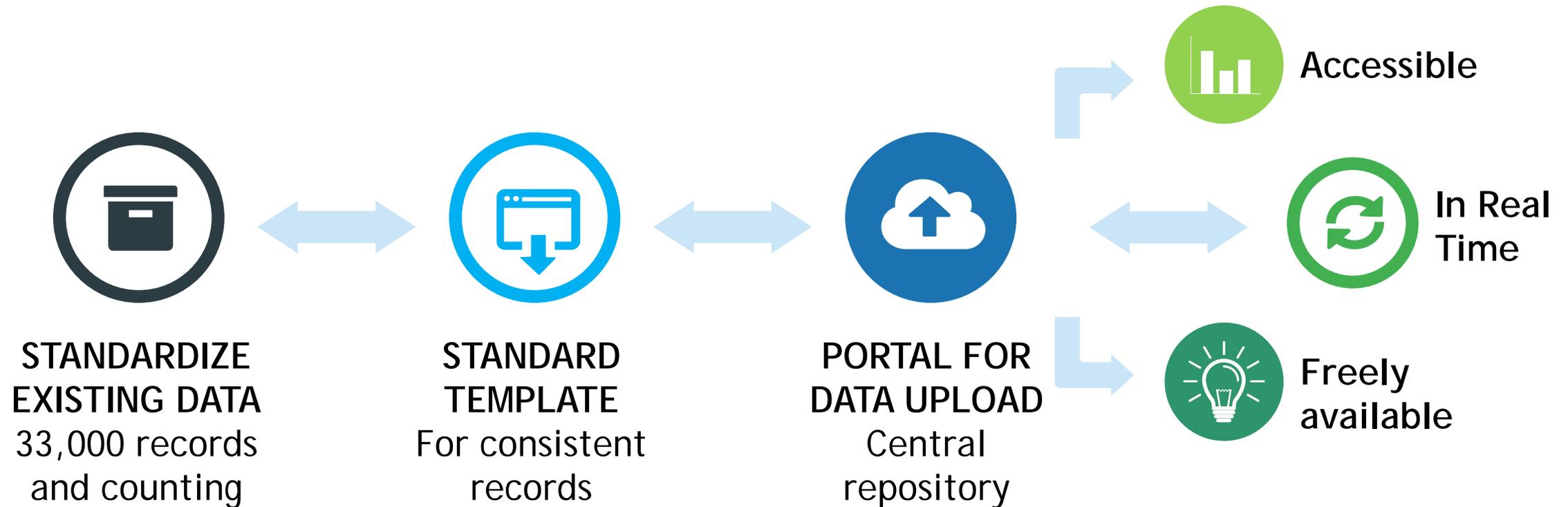
TECHNOLOGY
PERFORMANCE

Monitoring

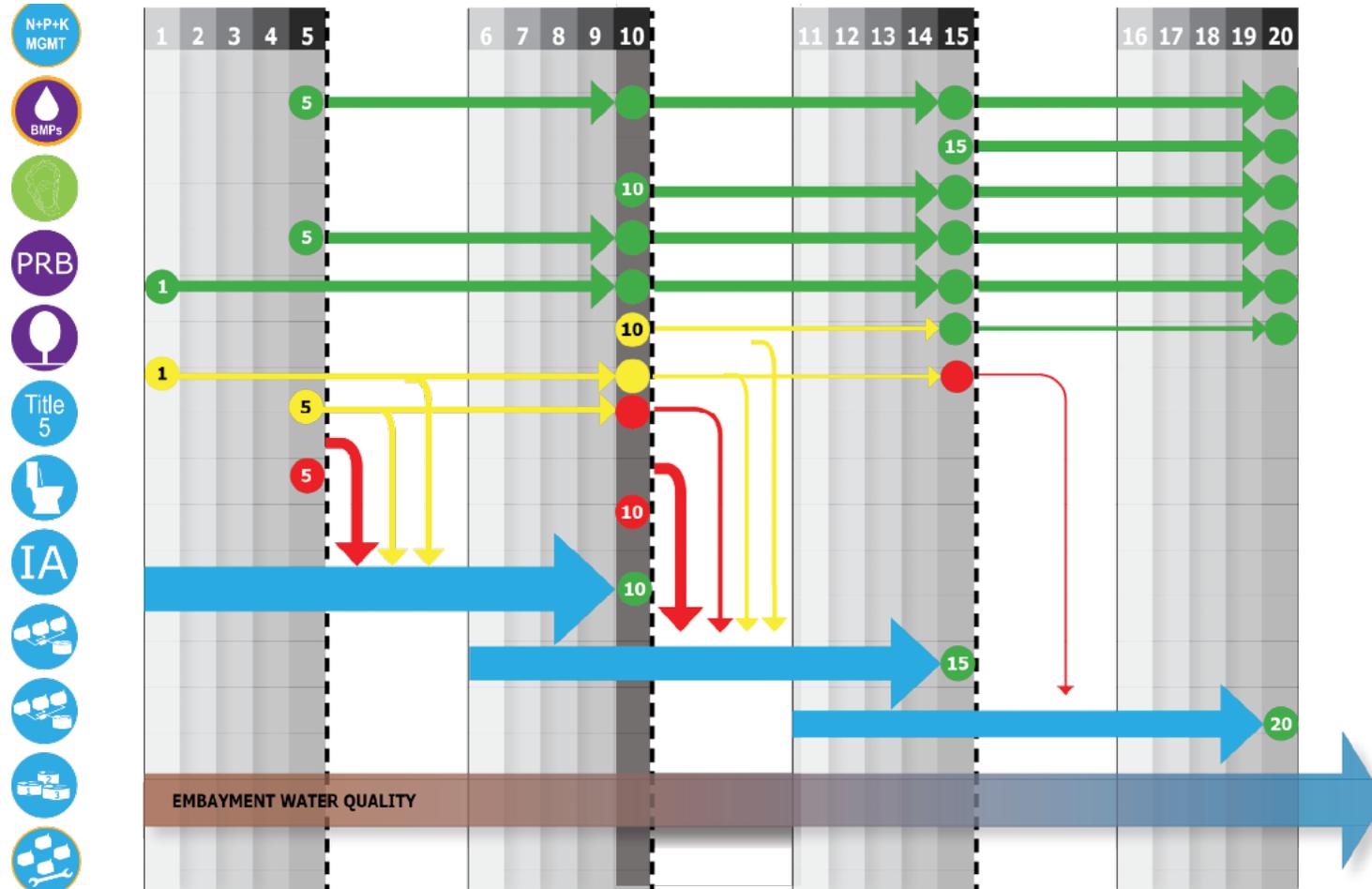


Monitoring Data Portal

Online access to a central data warehouse



Adaptive Management Plan



Adaptive management provides flexibility in planning and drives the need for up-to-date monitoring data

Science, Information & Technology Advisory Board



**Cape Cod
Stakeholders**



**Technical
Experts**



Policy Experts

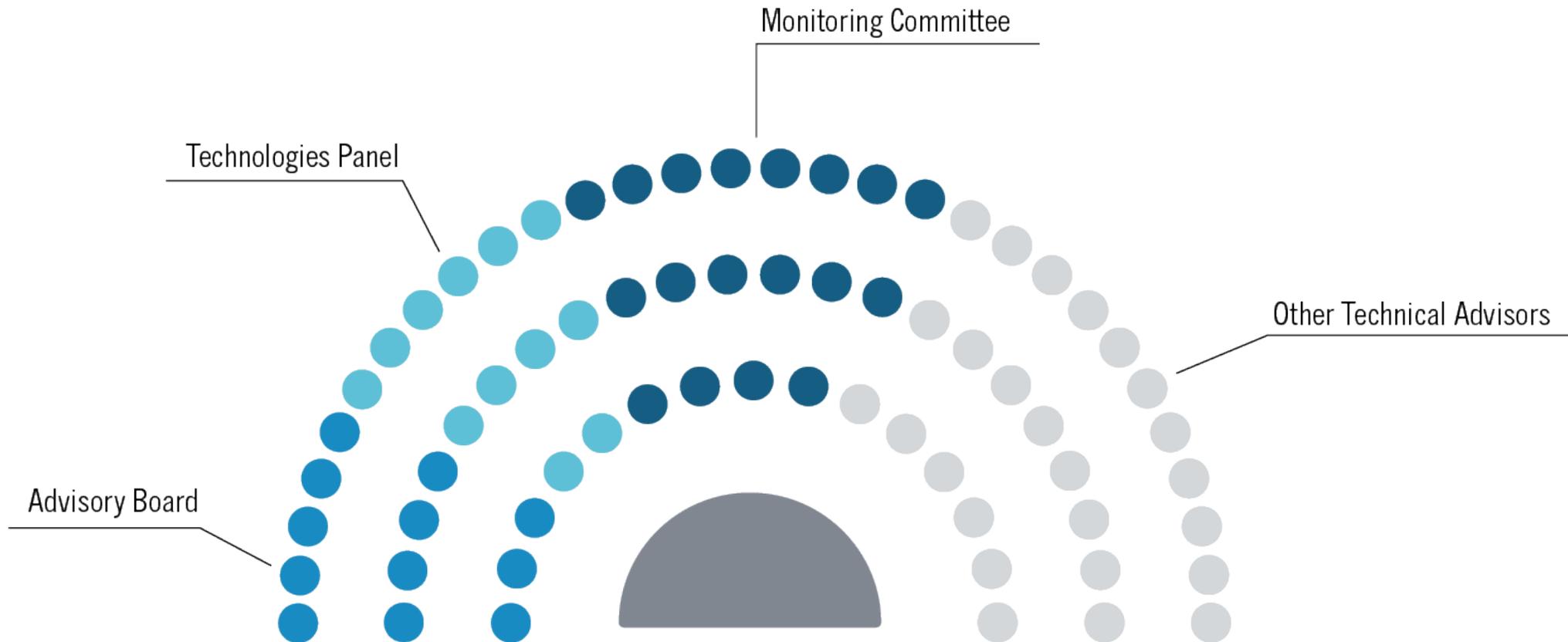


**Communications
Professionals**



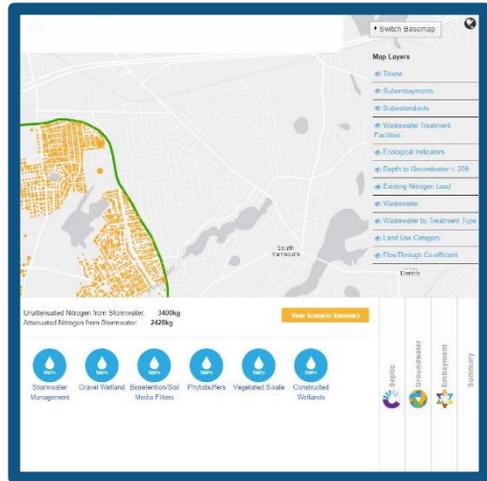
**Design
Professionals**

Advisory Board and Technical Committees

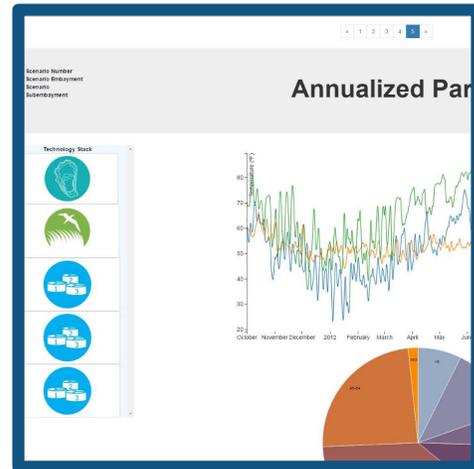


MAKING COMPLEX DATASETS
EASILY UNDERSTOOD

Decision Support Tools



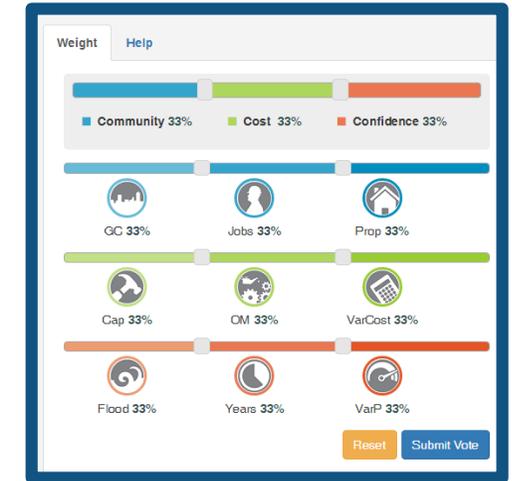
wMVP 3.0



FIM



3D Visuals

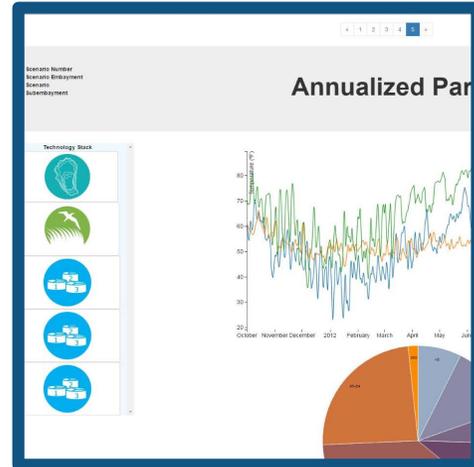


SAM

Decision Support Tools



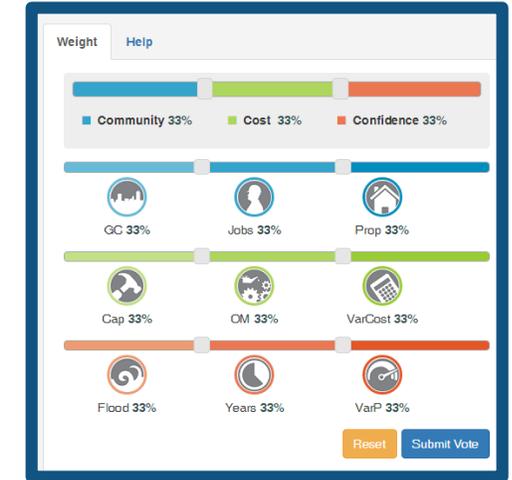
wMVP 3.0



FIM



3D Visuals



SAM

Decision Support Tools

Switch Basemap

WATERSHED MVP
MULTI-VARIANT PLANNER

Subbayments for Parkers River

- Lewis Pond (42%)
- Lower Parkers River (50%)
- Levine Pond (5220%)
- Upper Parkers River (28%)

Unattenuated Nitrogen from Stormwater: **3400kg**

Attenuated Nitrogen from Stormwater: **2428kg**

[View Scenario Summary](#)

Confidence 33%

Prop 33%

VarCost 33%

VarIP 33%

Reset Submit Vote

Scenario Progress

45%

Overview

Fertilizer

Stormwater

Stormwater Management

Gravel Wetland

Bioretention/Soil Media Filters

Phytobuffers

Vegetated Swale

Constructed Wetlands

Septic

Groundwater

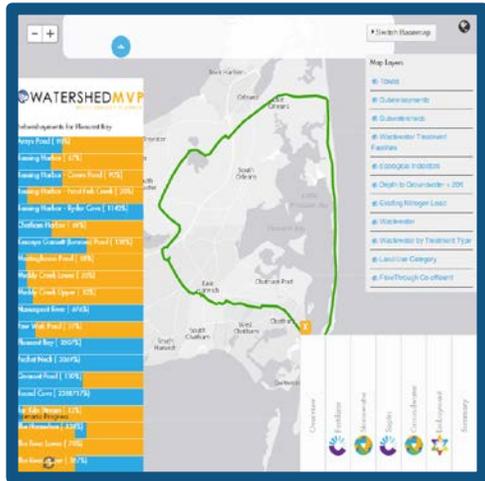
Embayment

Summary

wMVP

AM

Decision Support Tools



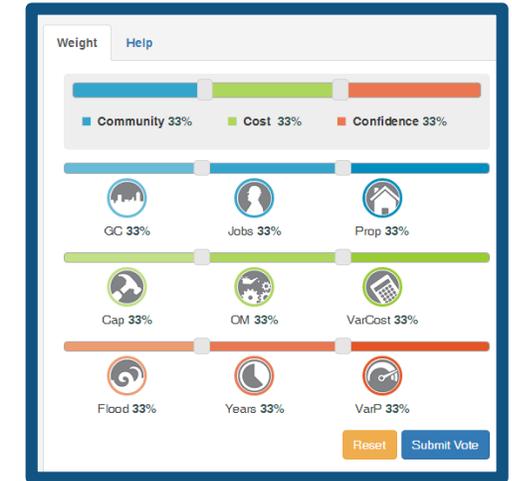
wMVP 3.0



FIM

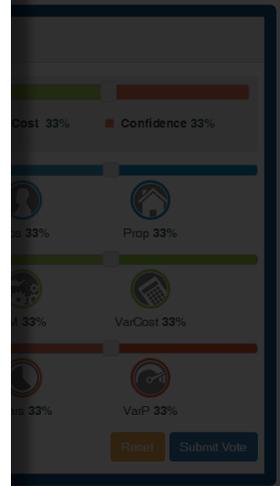
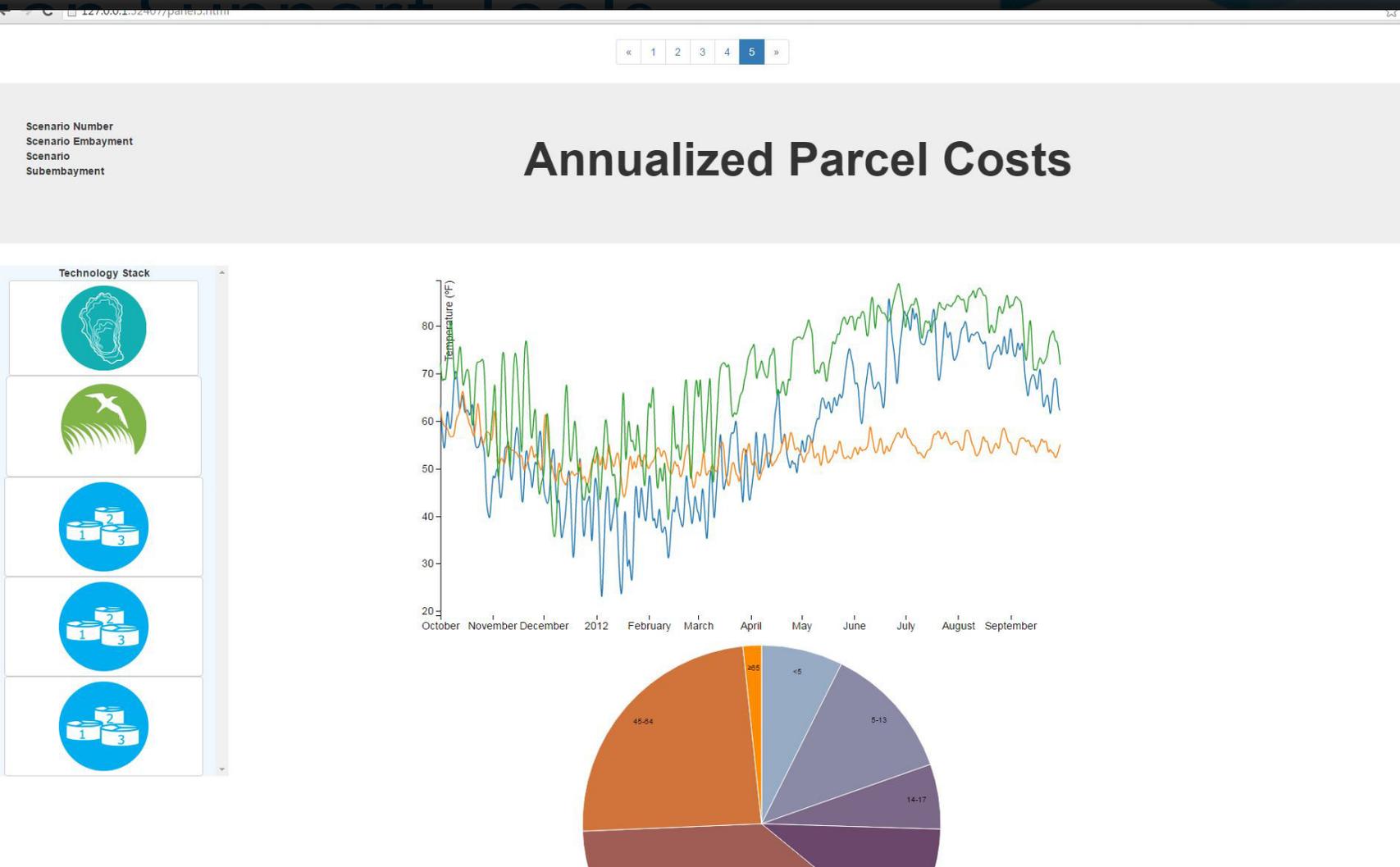


3D Visuals



SAM

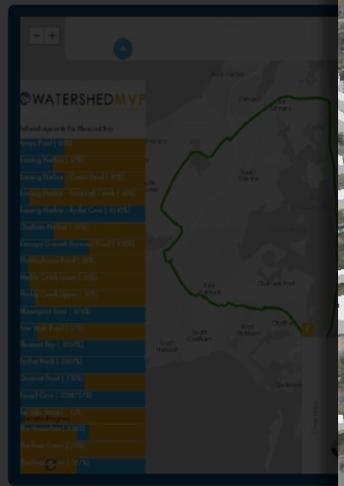
Decision Support Tools



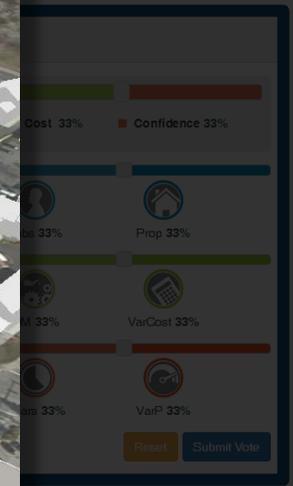
wMVP 3

AM

Decision Support Tools



wMVP 3

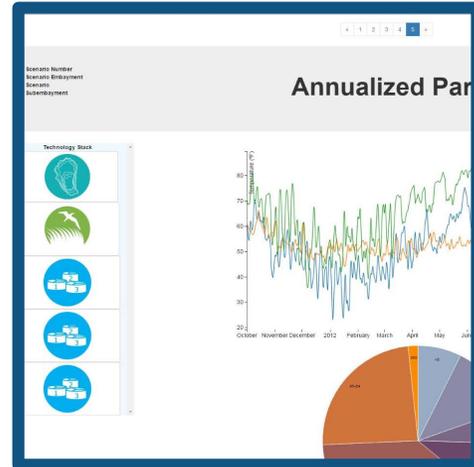


AM

Decision Support Tools



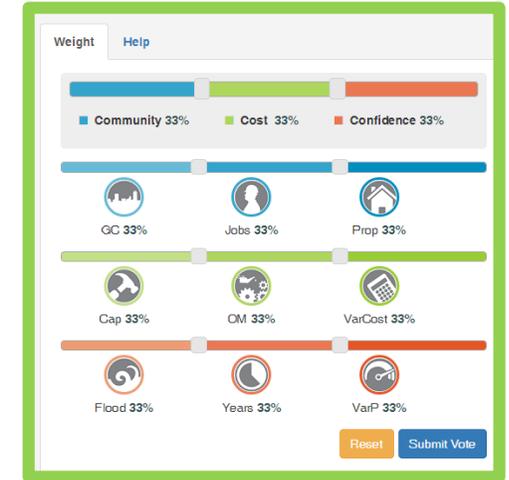
wMVP 3.0



FIM



3D Visuals



SAM

Decision Support Tools

SAM Scenario Assessment Model

564

51

Weight [Help](#)

Community 33% Cost 33% Confidence 33%

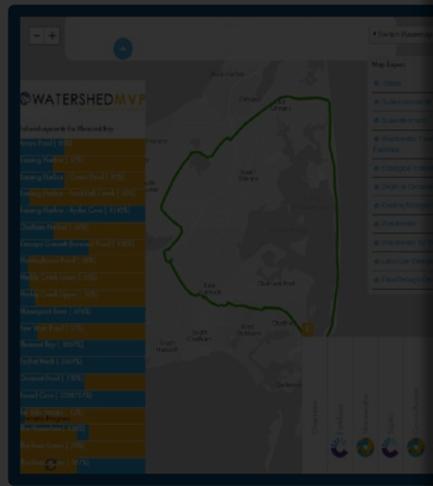
GC 33% Jobs 33% Prop 33%

Cap 33% OM 33% VarCost 33%

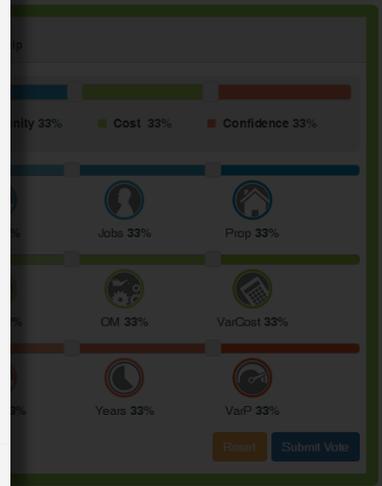
Flood 33% Years 33% VarP 33%

[Reset](#) [Submit Vote](#)

Cape Cod Commission 3225 Main Street (Route 6A) Barnstable, Massachusetts 02630 (508) 362-3828
Developed by Trivedi Advanced Technologies LLC www.trivediat.com



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implementing solutions for clean water



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