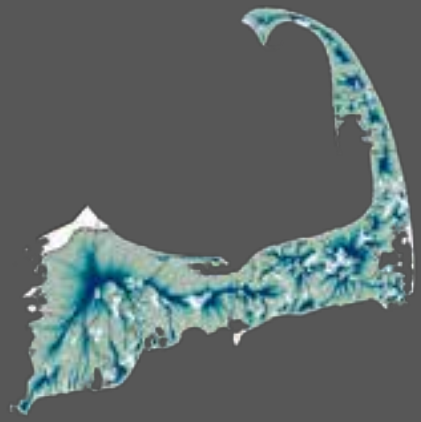
CAPE COD
COMMISSION

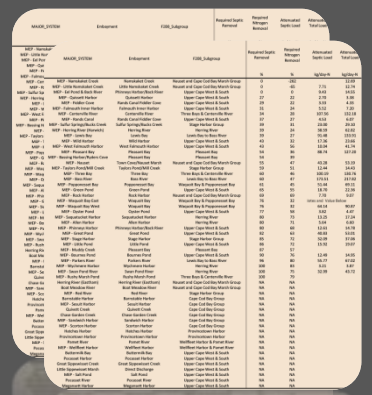
Philip ‘Jay’ Detjens, GIS Analyst II / Database Administrator

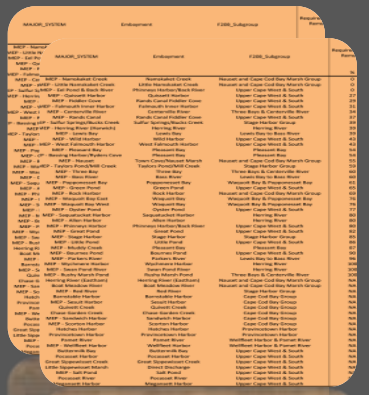
How can we
BUILD CLARITY,
ENGAGE THE PUBLIC
& SHARE INFORMATION
On the process of
wastewater planning?

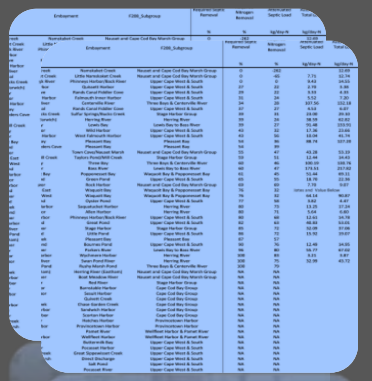


WATERSHEDMVP

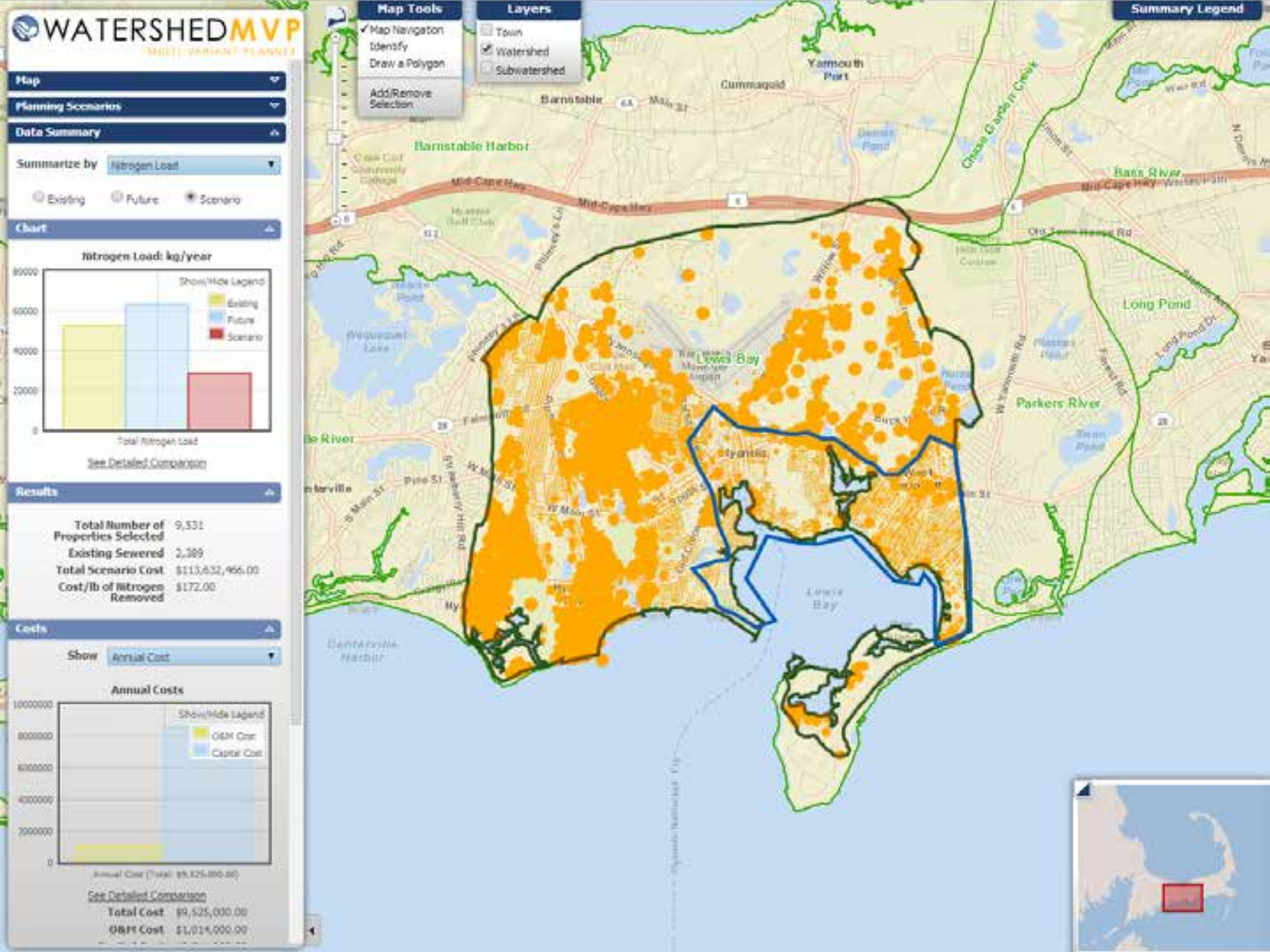
MULTI-VARIANT PLANNER







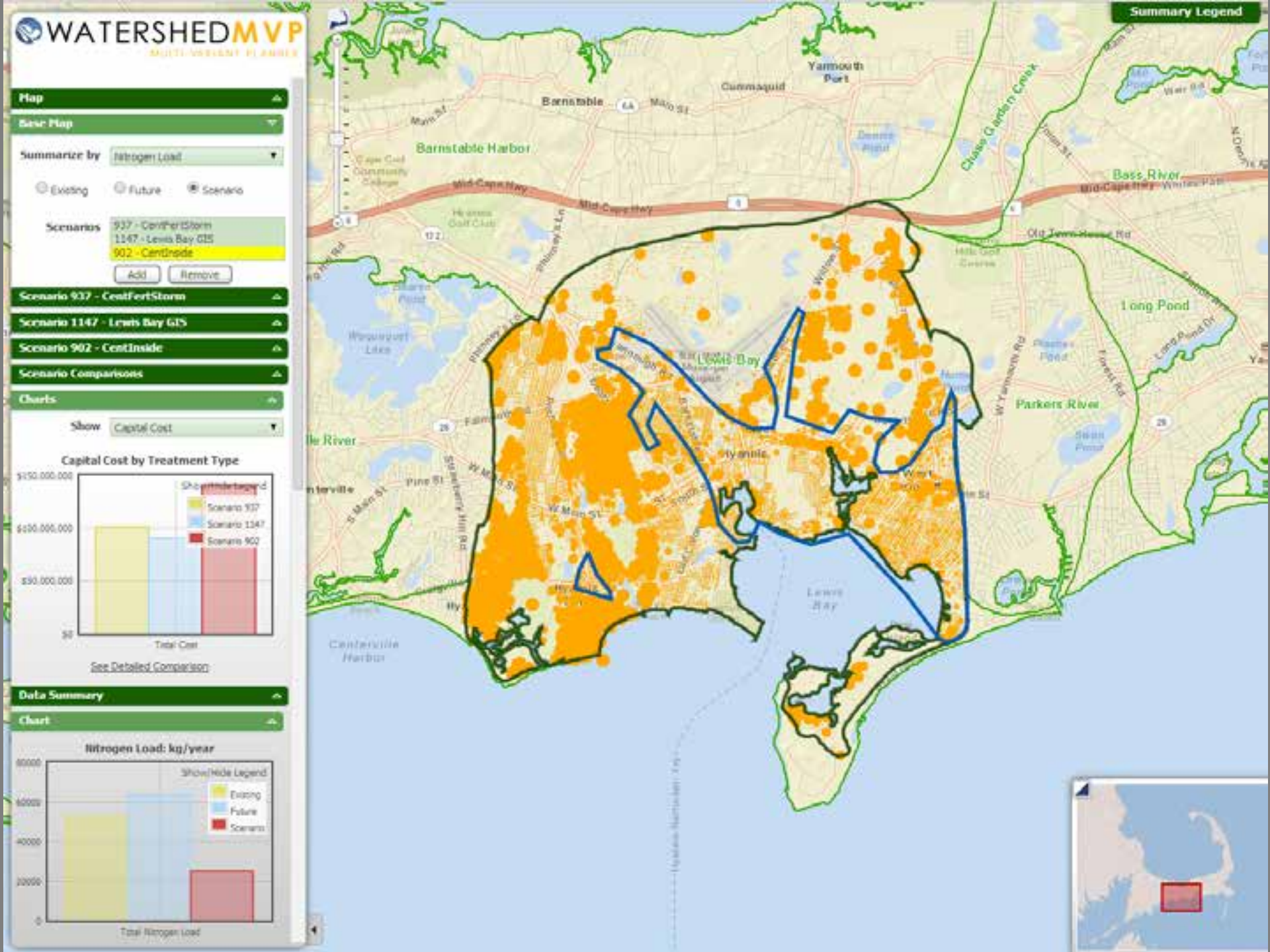
collect baseline data

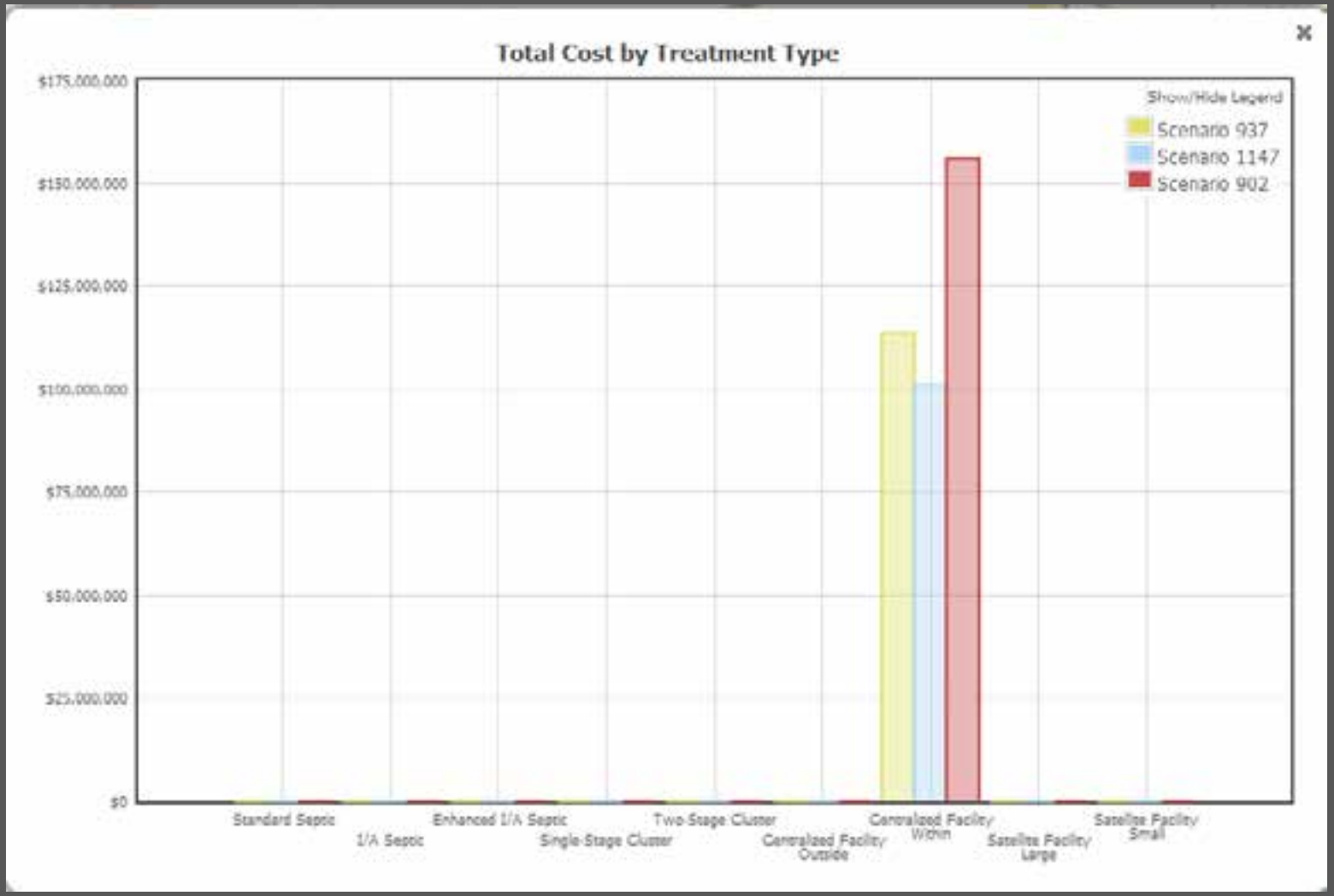

WATERSHEDMVP
MULTI-VARIANT PLANNER
Map
Planning Scenarios
Data Summary
Summarize by
Nitrogen Load
Existing
Future
Scenario
Chart
Nitrogen Load: kg/year
Show/Hide Legend
Existing
Future
Scenario
Total Nitrogen Load
See Detailed Comparison
Results
Total Number of Properties Selected 9,531
Existing Sewered 2,389
Total Scenario Cost $113,632,466.00
Cost/lb of Nitrogen Removed $172.00
Costs
Show
Annual Cost
Annual Costs
Show/Hide Legend
O&M Cost
Capital Cost
See Detailed Comparison
Total Cost $9,525,000.00
O&M Cost $1,014,000.00
Map Tools
Map Navigation
Identify
Draw a Polygon
Add/Remove Selection
Layers
Town
Watershed
Subwatershed
Summary Legend
Barnstable
Yarmouth Port
Cummaquid
Barnstable Harbor
Mid-Cape Hwy
Bass River
Long Pond
Lewis Bay
Parkers River
Hyannis
Centerville Harbor

WATERSHEDMVP
DASHBOARD

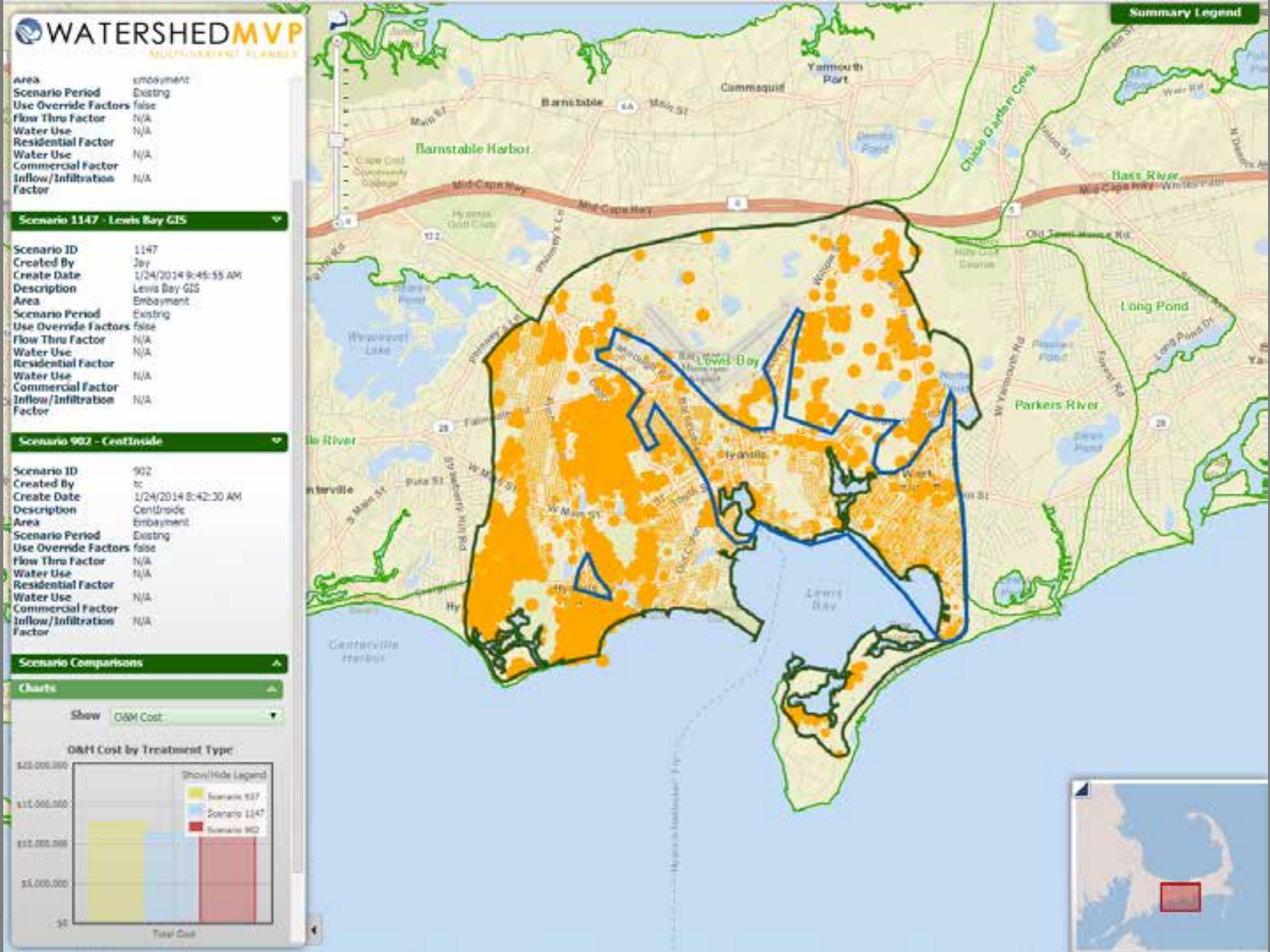
WATERSHEDMVP
MULTI-VARIANT PLANNER

create scenarios
compare scenarios


WATERSHEDMVP
Map
Base Map
Summarize by
Nitrogen Load
Existing
Future
Scenario
Scenarios
937 - CentFertStorm
1147 - Lewis Bay GIS
902 - CentInside
Add
Remove
Scenario 937 - CentFertStorm
Scenario 1147 - Lewis Bay GIS
Scenario 902 - CentInside
Scenario Comparisons
Charts
Show
Capital Cost
Capital Cost by Treatment Type
Scenario 937
Scenario 1147
Scenario 902
Total Cost
See Detailed Comparison
Data Summary
Chart
Nitrogen Load: kg/year
Existing
Future
Scenario
Total Nitrogen Load
Summary Legend
Barnstable
Barnstable Harbor
Yarmouth Port
Cummaquid
Mid-Cape Hwy
Bass River
Long Pond
Lewis Bay
Parkers River
Hyannis
Centerville Harbor



compare scenarios


WATERSHEDMVP
Area Embayment
Scenario Period Existing
Use Override Factors false
Flow Thru Factor N/A
Water Use Residential Factor N/A
Water Use Commercial Factor N/A
Inflow/Infiltration Factor N/A
Scenario 1147 - Lewis Bay GIS
Scenario ID 1147
Created By Jay
Create Date 1/24/2014 9:45:55 AM
Description Lewis Bay GIS
Area Embayment
Scenario Period Existing
Use Override Factors false
Flow Thru Factor N/A
Water Use Residential Factor N/A
Water Use Commercial Factor N/A
Inflow/Infiltration Factor N/A
Scenario 902 - CentInside
Scenario ID 902
Created By tc
Create Date 1/24/2014 8:42:30 AM
Description CentInside
Area Embayment
Scenario Period Existing
Use Override Factors false
Flow Thru Factor N/A
Water Use Residential Factor N/A
Water Use Commercial Factor N/A
Inflow/Infiltration Factor N/A
Scenario Comparisons
Charts
Show O&M Cost
O&M Cost by Treatment Type
Show/Hide Legend
Scenario 937
Scenario 1147
Scenario 902
Total Cost
Summary Legend
Barnstable Harbor
Lewis Bay
Hyannis
Cummaquid
Yarmouth Port
Centerville Harbor
Parkers River
Long Pond
Bass River
Mid Cape Hwy

But what about

GREEN SOLUTIONS

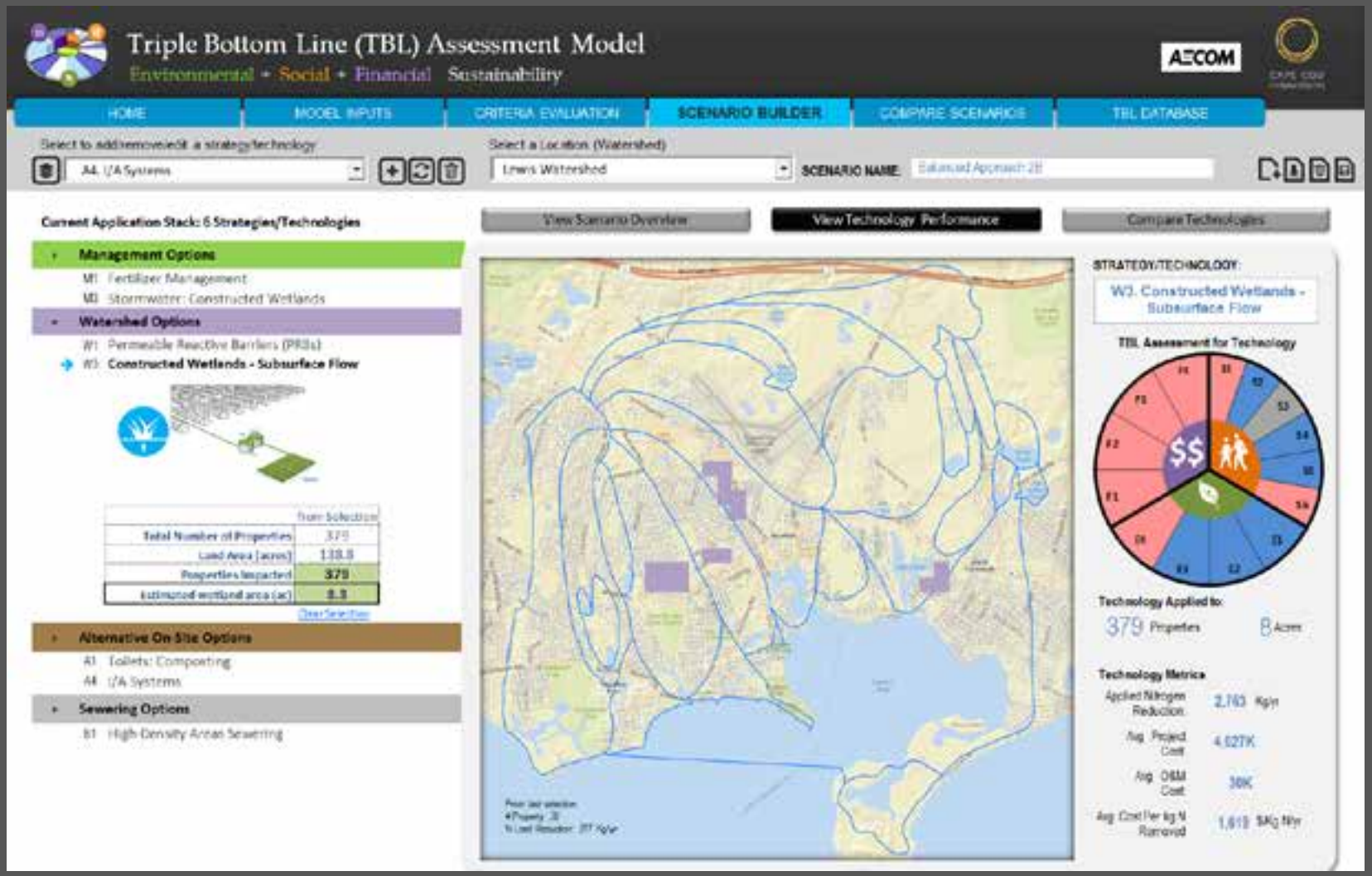
or the effect on our

COMMUNITIES?

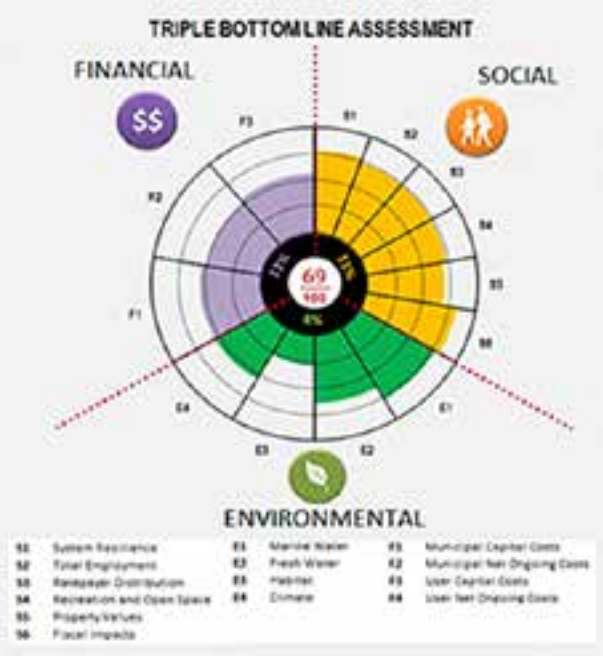
How to account for a more

HOLISTIC SOLUTION?

find sustainable solutions



find sustainable solutions



System Resilience
Total Employment
Ratepayer Distribution
Recreation and Open Space
Property Values
Fiscal Impacts

Marine Water Quality
Fresh Water Quality
Habitat
Climate

Municipal Capital Costs
Municipal Net Ongoing Costs
User Capital Costs
User Net Ongoing Costs

Triple Bottom Line (TBL) Assessment Model

Environmental + Social + Financial Sustainability

AECOM

HOME | MODEL INPUTS | CRITERIA EVALUATION | SCENARIO BUILDER | COMPARE SCENARIOS | TBL DATABASE

Alternative Definition | Alternative Results | Alternative Scoring Rules

Criterion Scores

Strategy/Technology Distribution

	Scenario 1	Scenario 2	Scenario 3
	Minimum Cost	Cost Effective	Maximum Performance
			
			
COST & PERFORMANCE			
Nitrogen Reduction %	30%	52%	61%
Remaining Nitrogen Load (Kg N)	8,400	5,760	4,680
Life Cycle Costs ($K)	$5,922	$7,350	$9,800
Municipal O&M Cost ($K)	$325	$425	$410
Municipal Project Cost ($K)	$1,329	$1,600	$1,800
Property Owner O&M Cost ($K)	$98	$128	$183
Property Owner Project Cost ($K)	$397	$480	$540
COMMUNITY BENEFITS			
Quality Habitat (acres)	0.5	1.8	2.4
New Open Space Added (acres)	1.5	4.6	5.0
GHG Reduced (MT CO2e/yr)	2.1	3.1	3.3
Avg. Increase in Property Value ($/pty)	$200	$1,300	$2,000
New Employment Added (jobs)	152	188	252
Additional Cost per Household ($/HH/yr)	$20	$26	$37

find sustainable solutions


AppGeo


CAPE COD
COMMISSION


AECOM