

Addressing the Bacteria Impairment at Fairview Beach: Watershed Plan

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February 20, 2014



Watershed Plan Overview

Goals:

- Restore and protect water quality
- Address both point and non-point sources
- Scientifically defensible plan
- Watershed Plans can be completed without a TMDL

Watershed Planning

- Outlines 6 Steps in Watershed Planning and Implementation Process



Watershed Plans

- 9 Elements
 1. Identify causes & sources of pollution
 2. Determine load reductions needed
 3. Develop management measures to achieve goals
 4. Identify technical and financial assistance to implement plan
 5. Develop information/education component
 6. Develop implementation schedule
 7. Develop interim milestones to track implementation of management measures
 8. Develop criteria to measure progress towards meeting watershed goals
 9. Develop monitoring component

Watershed Plan Development

- Watershed Plans are done locally
- Stakeholders have the opportunity to participate in the plan development
 - Public meetings
 - Working groups
 - Steering committee



Public Participation

- **Public Meetings**
 - Informational
 - Solicit public participation
 - Provide a forum for public comment
- **Steering Committee**
 - Direct the overall process
 - Considers input from Working Groups
 - May help prepare and review document
- **Working Groups**
 - Address “community” issues/concerns on specific topics



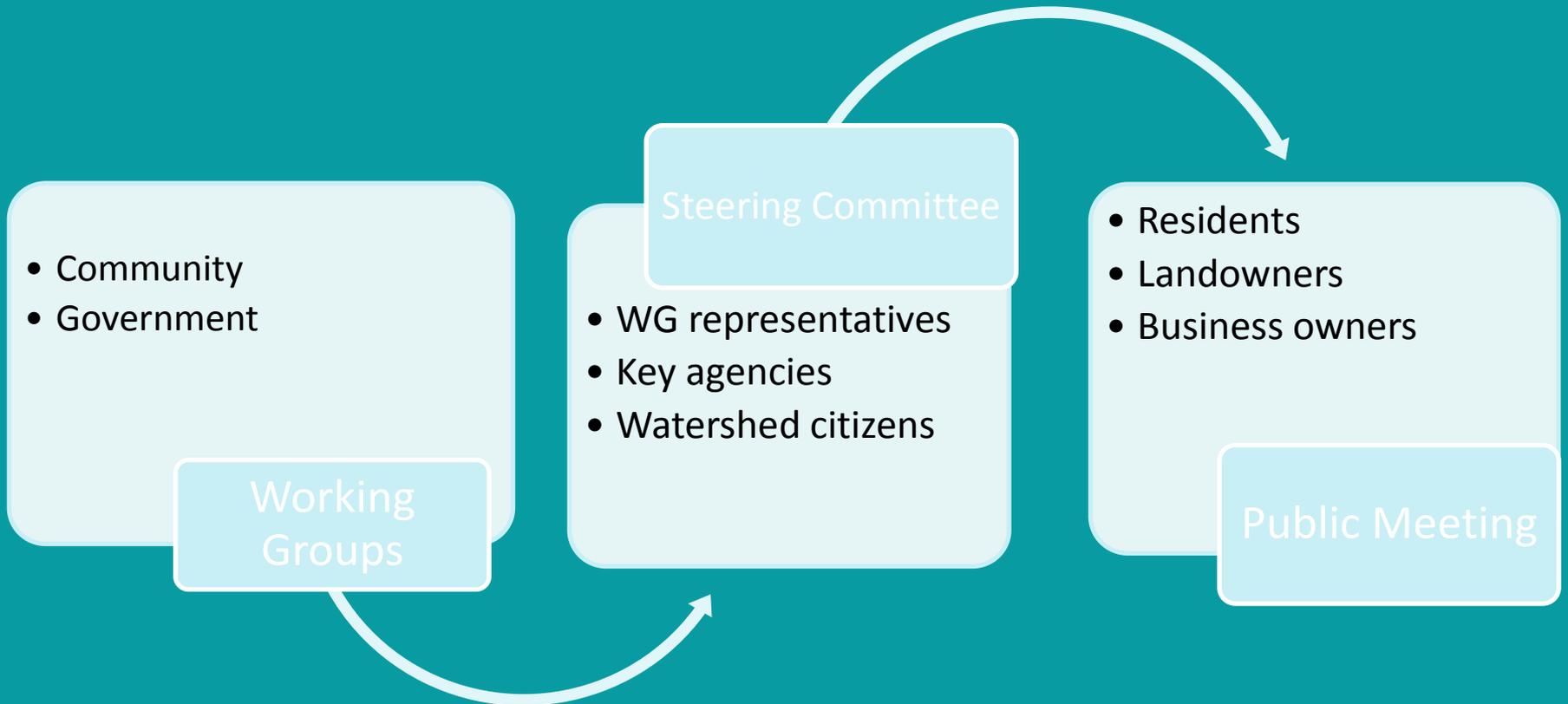
Working Group Responsibilities and Tasks

- Inform Resource Team about perceived pollutant sources
- Enlighten Resource Team about on-going/needed pollution control activities
- Review possible implementation strategies from an interest-based perspective
- Discuss alternative funding sources/partnerships
- Identify outreach methods for engaging peers in implementing pollution control measures
- Identify constraints to implementing pollution control measures

Steering Committee

- Responsibility: Guide the WP development process
 - Assess input from working groups
 - Address community concerns/suggestions as funneled through the WGs
 - How can process be improved?
- Membership:
 - DCR, DEQ, NRCS, VDH, local governments, SWCD, Working group representatives
- Meet during WP development process

Public Participation



Roles Citizens Can Play During Implementation Plan Development



- Provide additional detail on watershed
- Review/suggest implementation strategies
- Identify potential implementation impediments
- Identify local funding sources/partnerships
- Assist with implementation projects

What is included in the Watershed Plan?

- Review of Fairview Beach studies
- Source Assessment/Implementation Actions & their estimated fecal coliform reduction benefits
- Cost & Benefits
- Measurable Goals and Milestones
- Stakeholder's Roles
- Potential Funding Sources
- Public Participation
- Monitoring

Watershed, or Clean-Up Plan Strategy

To focus on human controlled actions:

- Removing straight pipes
- Repairing / replacing failing septic systems
- Correcting sewer infrastructure problems
- Managing pet waste



I need a little help here!



Straight Pipe



Failed Septic System

Potential Control Measures

Composters and Stormwater BMPs



Pet Waste
Composters



Rain Garden



Pervious Pavers



Infiltration Trenches

Potential Control Measures

On-site Sewage Disposal Systems



Septic System Pump-out



Septic System Replacement



Septic System Repair



Alternative On-site Sewage Disposal System

Potential Control Measures

Residential

Control Measure	Delivery Pathway to Stream	
	Direct	Runoff
<u>On-site Sewage Disposal Systems</u>		
Septic Tank Pump-outs		√
Hook-up to Sanitary Sewer	√	√
Septic System Repair		√
New Conventional Septic System	√	√
New Alternative On-site Sewage Disposal System	√	√
<u>Pet Waste Management</u>		
Pet Waste Education Program, Bag Stations		√
Pet Waste Enzyme Digesting Composters		√
<u>Stormwater Runoff Best Management Practices</u>		
Vegetated Buffers on residential land		√
Rain Gardens		√
Infiltration Trenches		√

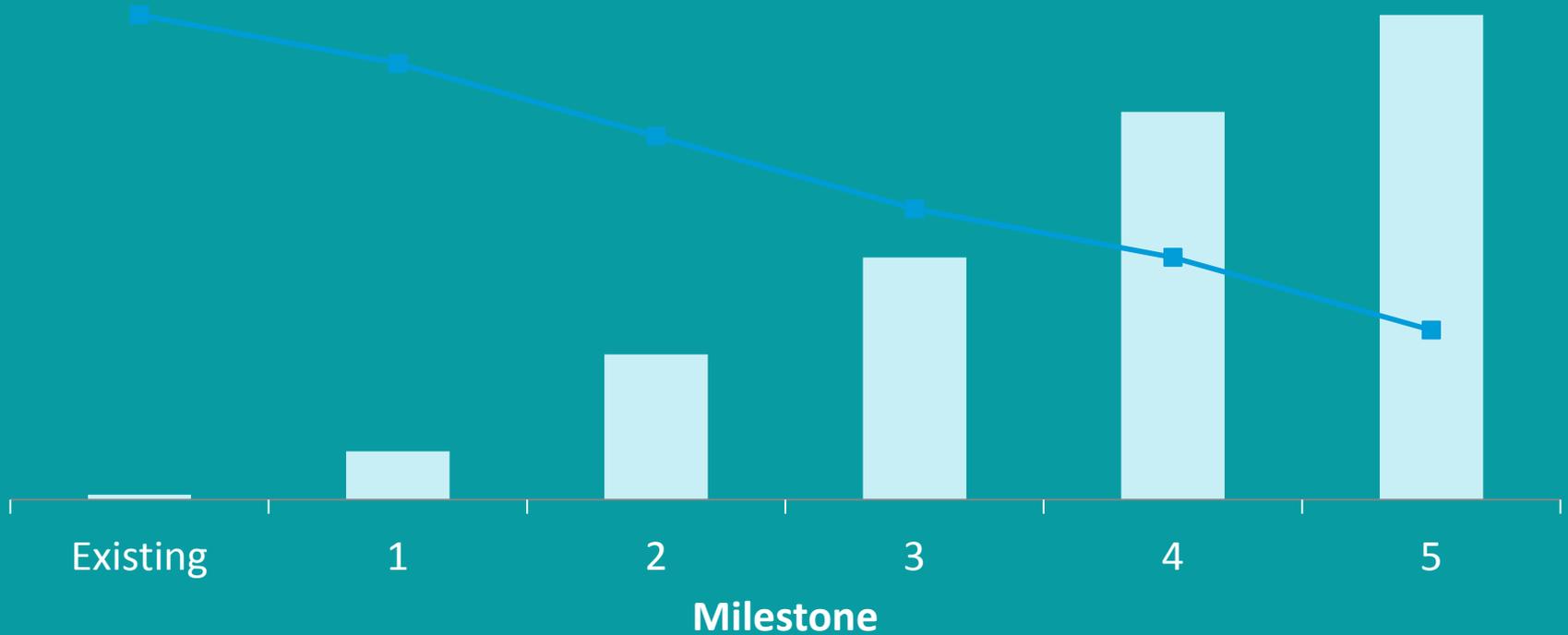
Control Measure Quantification

- Spatial analysis (e.g., GIS)
- SWCD, VDH, & DEQ records
- Fairview Beach studies
- Input from Working Groups and Steering Committee on local conditions
- Testing sewer infrastructure: smoke, camera, etc.



Evaluate Progress

■ Implementation Progress ■ Bacteria Load



Implementation Costs

- Control Measure Cost
 - Number of units multiplied by unit cost
- Technical Assistance (TA) Cost
 - Full time equivalents multiplied by unit cost
- Total Cost = Control Measure Cost + TA Cost

Potential Funding Sources

Potential funding sources for best management practices identified in Implementation Plans:

- Water Quality Improvement Fund
- State Revolving Loan Funds
- EPA 319 funds
- State Tax Credits
- Community Development Block Grant
- National Fish & Wildlife Foundation
- US Army Corps of Engineers
- Chesapeake Bay Restoration Fund
- Non-profits, such as friends groups



Implementation Cost Example

- Estimates from Goldmine Creek TMDL
 - 37 Failing Septic Systems & 10 Straight Pipes

Control Measure / Technical Assistance	Estimated Units Needed (#)	Average Unit Cost (\$)	Cost (\$)
Septic Tank Pump-outs	20	260	5,200
Hook-up to Sanitary Sewer	5	5,000	25,000
Septic System Repair	19	3,200	60,800
New Conventional Septic System	19	6,500	123,500
New Alternative On-site Sewage Disposal System	4	15,000	60,000
Technical Assistance	full -time position	65,000	65,000
Cost to Fix Failing Septic Systems and Replace Straight Pipes			339,500

What can you do in the meantime?

- Assist with the development of the clean-up plan
- Continue BMP implementation
- Initiate outreach activities
- Continue stream monitoring
- Form watershed steering committee in Fairview Beach
- Identify funding opportunities and partnerships



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