

Addressing the Bacteria Impairment at Fairview Beach: Watershed Plan and Implementation

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Virginia Department of Environmental Quality

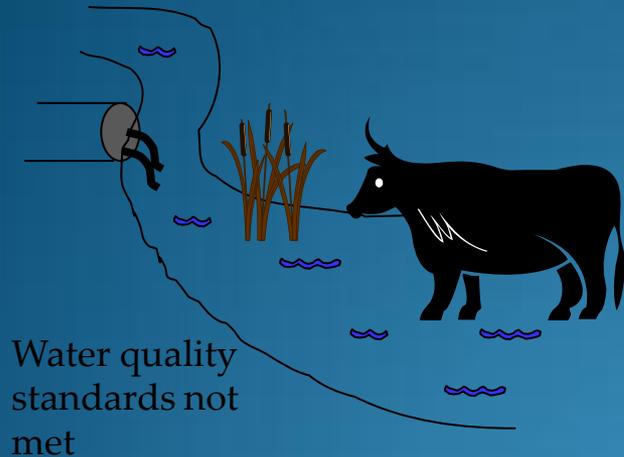
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Watershed Plan Overview

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

Watershed Plan Overview



Identify water quality problem

Develop and implement watershed plan

Conduct monitoring

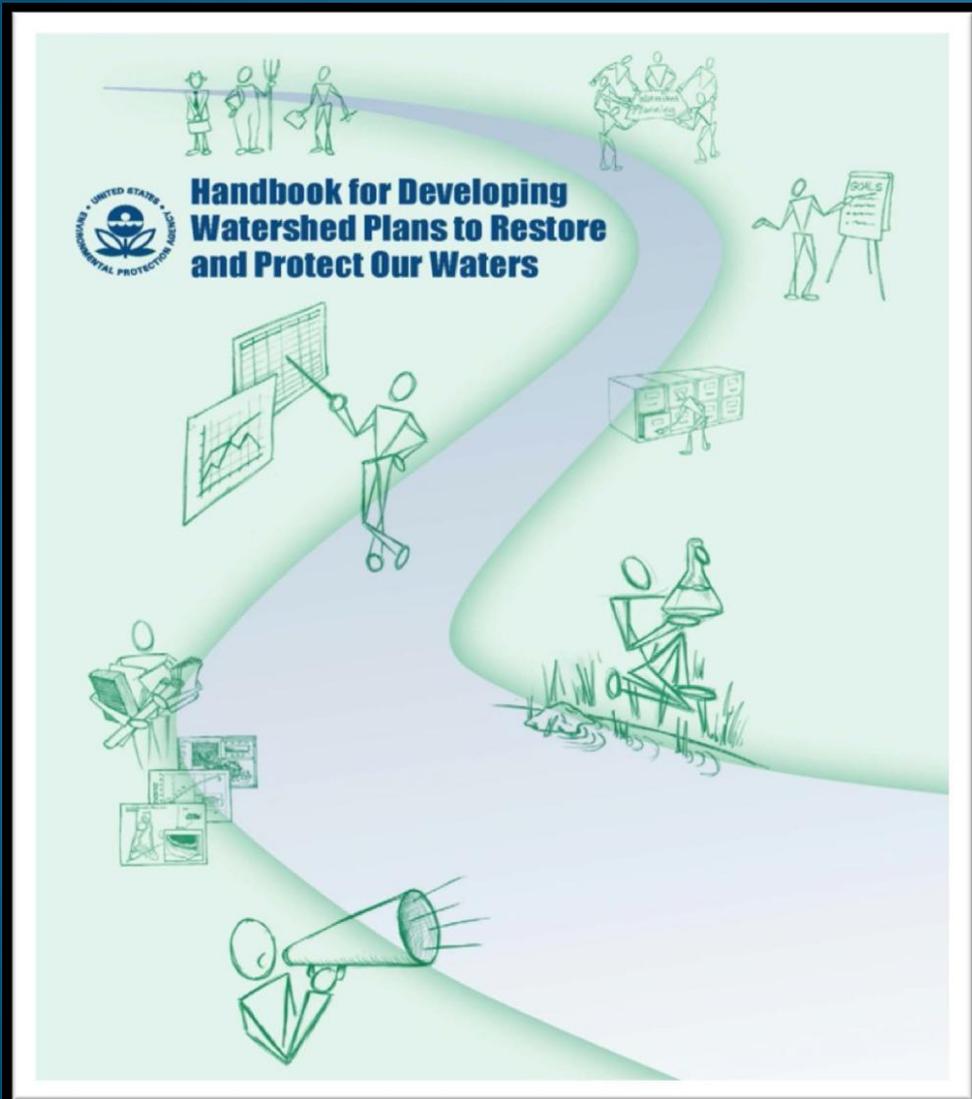
Meet water quality standards

Monitoring



Watershed Management Plan

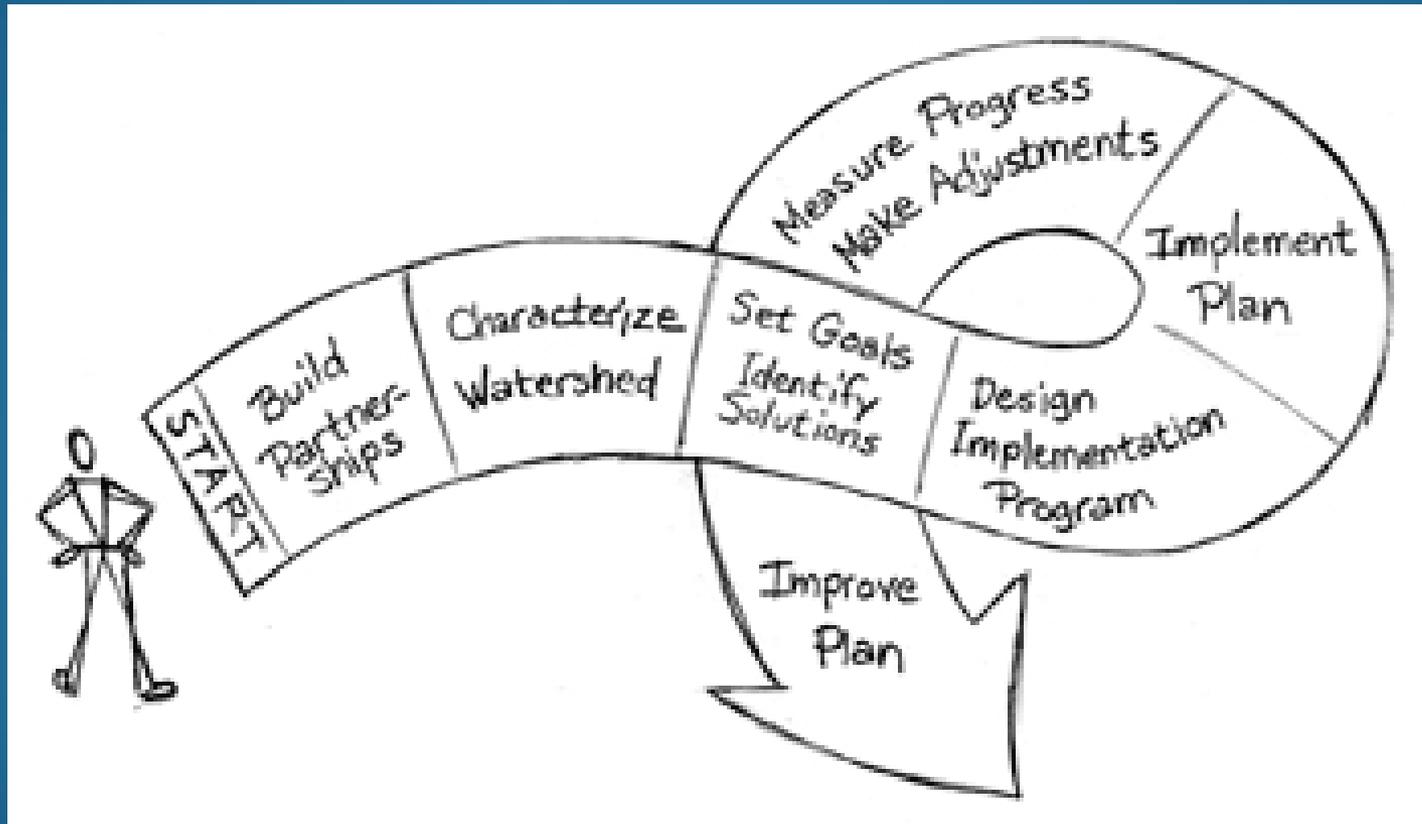
Watershed Plan Overview



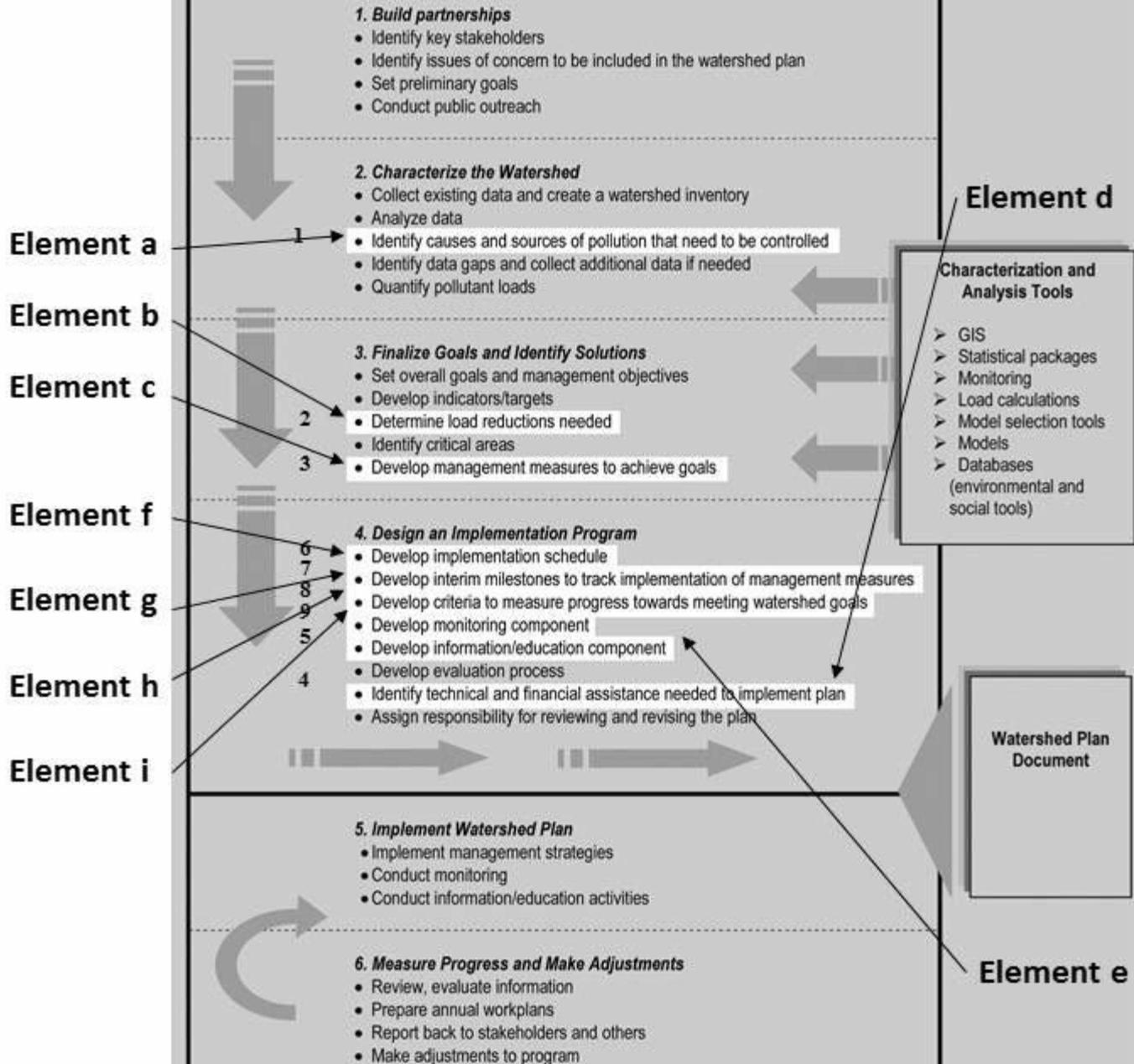
- EPA released a manual in 2008
- Outlines 6 steps
- 9 important elements
- References, checklists, worksheets and planning guides

Watershed Planning

- Outlines 6 Steps in Watershed Planning and Implementation Process



Six Steps in Watershed Planning and Implementation Process



Watershed Plan

- 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



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

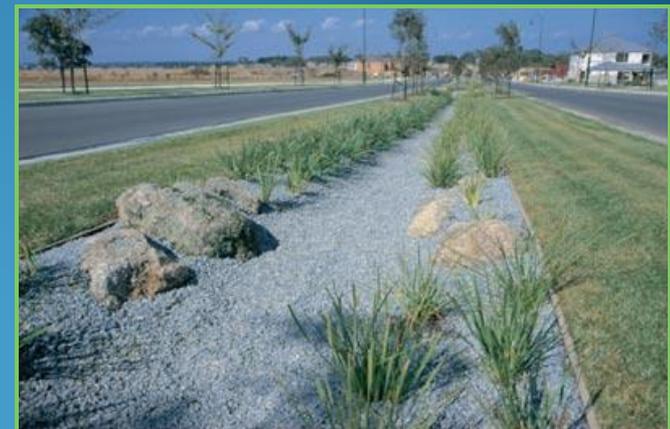
Composters and Stormwater BMPs



Pet Waste
Composters



Rain Garden



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: smoke, camera, etc.



Evaluate Progress

■ Implementation Progress ■ Bacteria Load



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 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
- Identify funding opportunities and partnerships



Next Steps

- Meeting and Discussion
- Share Monitoring Summary and Analysis document for review and comment
- Assist with developing a watershed plan
 - Success with continual support from local stakeholders

For more information, contact:

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