Managing MS4 Risk

TMDL Alternative Plans

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Outline

- EPA's implementation of the Clean Water Act – stream prioritization
- MS4 permits and TMDLs
- What are others doing
- The How To guide

Clean Water Act

Protecting surface waters

My Clean Water Act

Resource Prioritization

- 2002: EPA directed states to clarify stream condition and outline priorities to restore by assigning categories:
  - Category 1: All designated uses are met;
  - Category 2: Some of the designated uses are met but there is insufficient data to
  - determine if remaining designated uses are met;
  - Category 3: Insufficient data to determine whether any designated uses are met;
  - Category 4: Water is impaired or threatened but a TMDL is not needed;
  - Category 5: Water is impaired or threatened and a TMDL is needed.

Within Category 5, identify near term and far term TMDL timeline

Assessment categories (priorities)

- Category 1
  - All designated uses are met
- Category 2
  - Some of the designated uses are met but there is insufficient data
- Category 3
  - Insufficient data
- Category 4
  - Impaired or threatened; TMDL not needed
- Category 5
  - Impaired or threatened, TMDL needed

EPA guidance to states

- Integrated report guidance: focus the location and timing of the development of TMDLs, and **alternative restoration** and protection plans, in relation to other planning and implementation activities that may already exist in the priority watersheds or waters.
- EPA has acknowledged in their Integrated Reporting and Listing memorandum "that alternative pollution control requirements may obviate the need for a TMDL."

What are TMDL alternative plans?

4B Demonstration Plan

Point and non-point sources (depending on POC)

Address the following 6 elements:

- Identification of segment and statement of problem causing the impairment.
- Description of pollution controls and how they will achieve water quality standards. Detail must be included to document how the controls are generally applicable to the impairment in question and can reasonably be expected to reduce pollutant loadings and ultimately attain WQSs when fully implemented. Generally, sufficient documentation will:
  - describe the rationale for why these control mechanisms will achieve WQSs within a reasonable period of time,
  - list the suite of controls proposed for implementation and a range of the controls' effectiveness (e.g., cover crops will reduce current sediment loadings by 50-60%),
  - estimate the number of acres that will be treated by the general class of controls to achieve the target load (e.g., approximately 60 acres will receive cover crops, approximately 30 acres will be subject to no-till practice, and 25 acres will be planted with riparian buffers),
  - document that the water quality should be achieved as soon as practicable once full implementation occurs, or for controls required as part of an iterative or adaptive management program, provide reasonable assurance that phased implementation will continue until WQSs are achieved, and
  - document the basis by which implementation of these measures is required (e.g., permits, self executing regulations, contracts, and agreements).
- An estimate or projection of the time when WQS will be met;
- Schedule for implementing pollution controls;
- Monitoring plan to track effectiveness of pollution controls; and
- Commitment to revise pollution controls, as necessary.

What are TMDL alternative plans?

4B Demonstration Plan

- ✓ Must be approved by state and EPA
- ✓ Moved from category 5 to category 4 (no longer on 303(d) list)
  - ✓ Any permit requirement relative to impaired streams no longer apply
  - ✓ Two steps away from TMDL (should WQS not be attained within a reasonable amount of time, the stream would have to be listed as impaired and then prioritized for TMDL)

What are TMDL alternative plans?

5R or 5 Restoration/ Restoration Plan

Same requirements as 4B except:

- Only has to be approved by State
- Stays in category 5 (one step away from a TMDL) but is assigned a lower TMDL priority

Florida

Most plans led by FDEP or Water Management Districts, most for nutrients

4B plans called "reasonable assurance plans"

Pinellas County – Lake Seminole RAP (2007)

Tampa Bay Estuary – consortium of stakeholders

Examples in EPA Region 4

Georgia

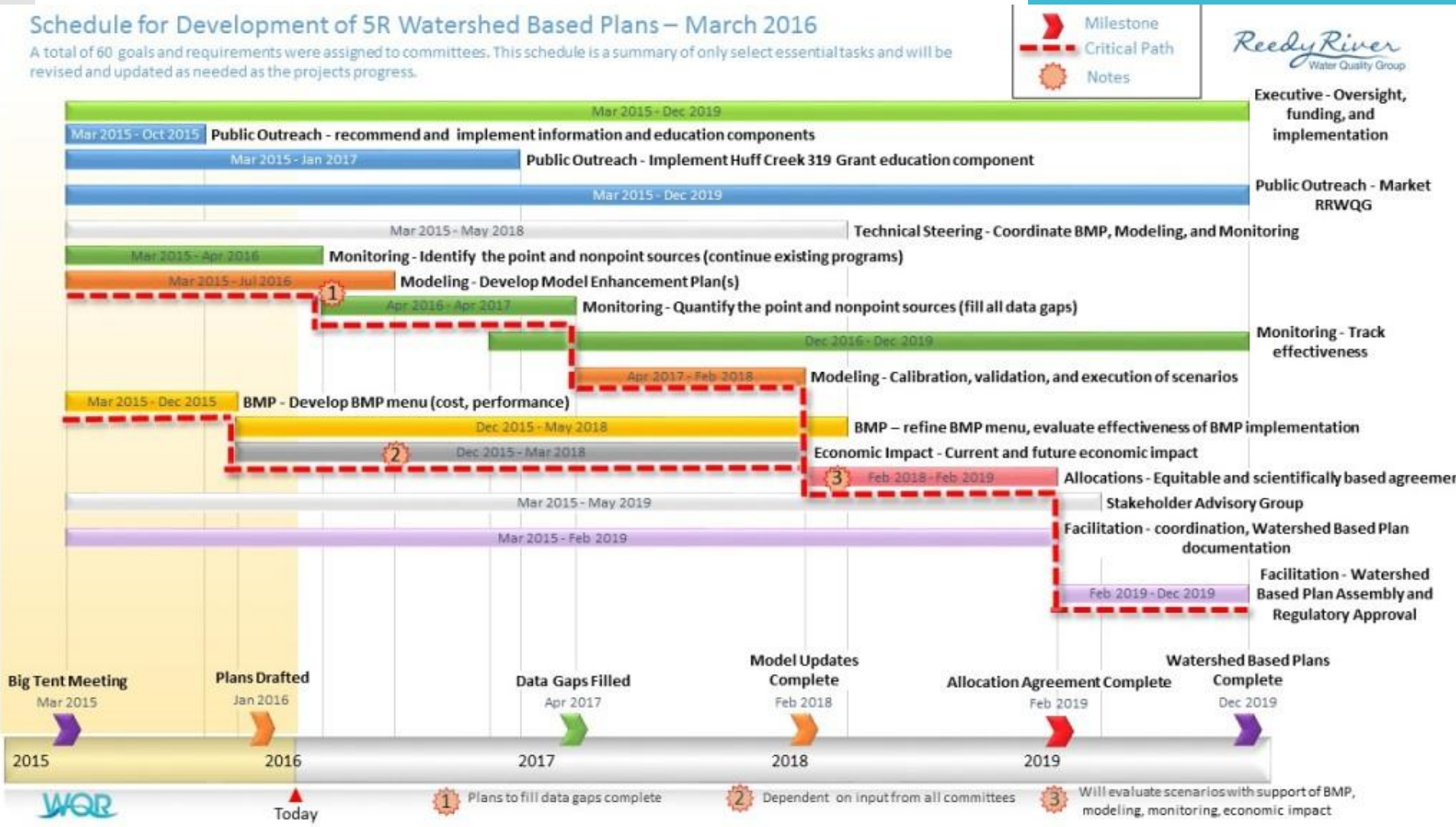
GaEPD prefers 5r plans, as 4b plans are not described in their 2015 priority framework

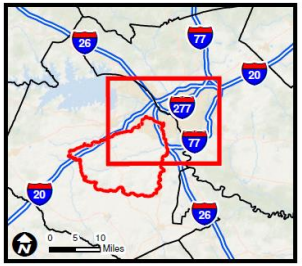
Savannah Harbor 5R – DO, developed by GaEPD; WQS changed

Examples in EPA Region 4

Schedule for Development of 5R Watershed Based Plans – March 2016

A total of 60 goals and requirements were assigned to committees. This schedule is a summary of only select essential tasks and will be revised and updated as needed as the projects progress.





Potential Congaree-Three Rivers Area TMDL

Lexington County, South Carolina

Legend

- Approved TMDL Monitoring Station (SCDHEC)
- 303d Impaired Monitoring Station (SCDHEC)
- Congaree Riverkeeper Monitoring Site
- WTP Wastewater Treatment Plant
- USGS Streams
- Approved TMDL Boundary
- Rocky Branch Watershed
- USGS HUC-12 Boundary
- Congaree Creek Heritage Preserve
- Cayce
- Irmo
- Lexington
- Pine Ridge
- South Congaree
- West Columbia
- City of Columbia
- Lexington County Urbanized
- Richland County Urbanized
- County Boundary

Lexington County South Carolina 1804 In God We Trust

Nearby Wastewater Treatment Plants

Map ID	NPDES	NAME	Type	County
7	SC0038865	EAST RICH CO PSD/GILLS CREEK	Municipal	Richland
8	SC0020940	COLUMBIA/METRO PLANT	Municipal	Richland
11	SC0032743	BUSH RIVER UTILITIES	Domestic	Lexington
12	SC0035564	CWS/I-20 REGIONAL	Domestic	Lexington
13	SC0029475	WOODLAND HILLS WEST SD	Domestic	Lexington
14	SC0029483	ALPINE UTILITIES/STOOP CREEK	Domestic	Lexington
21	SCG641017	CAYCE, CITY OF WTP	Municipal	Lexington
23	SCG645047	CITY OF CAYCE WTP	Municipal	Lexington
24	SCG641018	CITY OF CAYCE RAW WATER RSVOIR	Municipal	Lexington
25	SCG641005	WEST COLUMBIA/CITY OF/WTP	Municipal	Lexington
26	SCG643006	COLUMBIA CANAL WTP	Municipal	Richland
37	SC0024147	CAYCE WWTF	Municipal	Lexington

Rawls Creek TMDL
Lorick Branch TMDL
Kinley Creek TMDL
Lower Saluda TMDL
Twelvemile Creek TMDL
Congaree Creek TMDL
Lower Broad River
Gills Creek
CRK01
CRK02
CRK03
CRK05
CRK06
CRK07
CRK08
CRK09
S-298
B-080
CSB-001L
CSB-001R
C-005
C-008
C-070
Koon Branch
Yost Creek
Rawls Creek
Kinley Creek
Lorick Branch
Stoop Creek
Senn Branch
Broad River
Saluda River
Fourteenmile Creek
Twelvemile Creek
Rocky Branch
Pen Branch
Wildcat Creek
Sixmile Creek
Licks Fork Branch
Red Bank Creek
Pole Branch
Savana Branch
Conge Creek
First Creek
Dry Creek
Toms Branch
Reeder Point Branch
Congaree River
Mill C
WTP
0 2 4 Miles
Imagery Source: USDA NAIP 2015
P:\Environmental\2012 + Projects\0008 - Lexington County SWMP\GIS\TMDLs\ThreeRivers_WQ_Map.mxd

Examples in EPA Region 4

North Carolina

McDowell Creek, Catawba Riverbasin – Mecklenburg County; Comprehensive watershed restoration plan (2008)

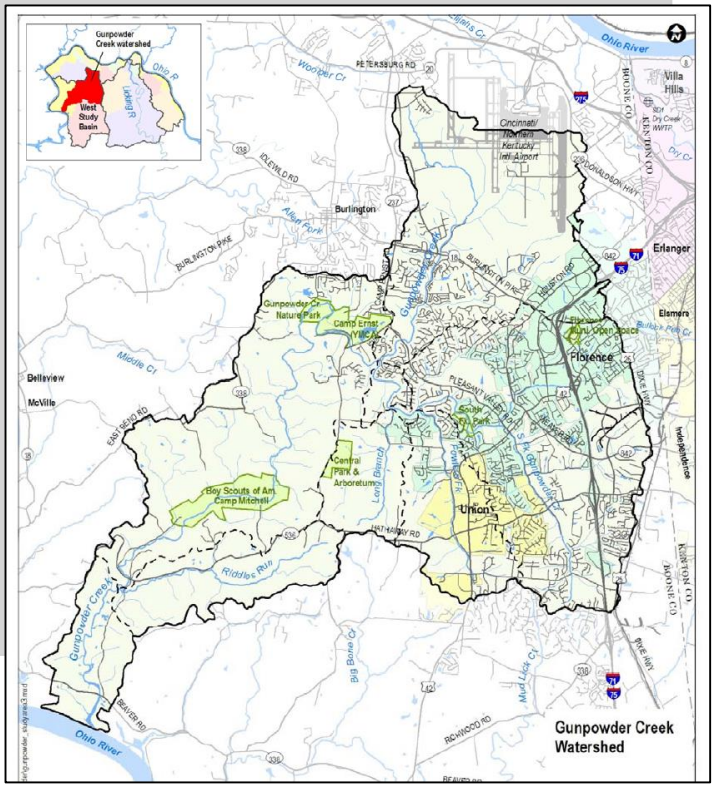
Falls Lake, Neuse Riverbasin – NCDEQ; nutrients (2012)

Little Alamance Creek, Cape Fear Riverbasin – Burlington, Graham, NCDOT; biological integrity (2015)

Examples in EPA Region 4

Kentucky

Gunpowder Creek – bacteria; 9 element watershed plan completed and moving towards 4b



Why do it?

- TMDLs are permanent.
- Permits such as the MS4 permit and point source discharge permits include requirements to comply with TMDL. Other non-permitted entities and contributors have no regulatory driver that requires they comply.
- Often, TMDLs include unrealistic load reductions based upon a very limited water quality dataset.
- 4b/5r plans do not have WLA or numeric limit. The goal is to make progress toward achieving WQSs.

TMDL costs

- Salem Creek Watershed, Winston-Salem, NC: TMDL for bacteria; 94% reduction required; $15M wetland retrofit (designed) = 2% reduction

Chesapeake Bay TMDL Action Plan
City of Alexandria

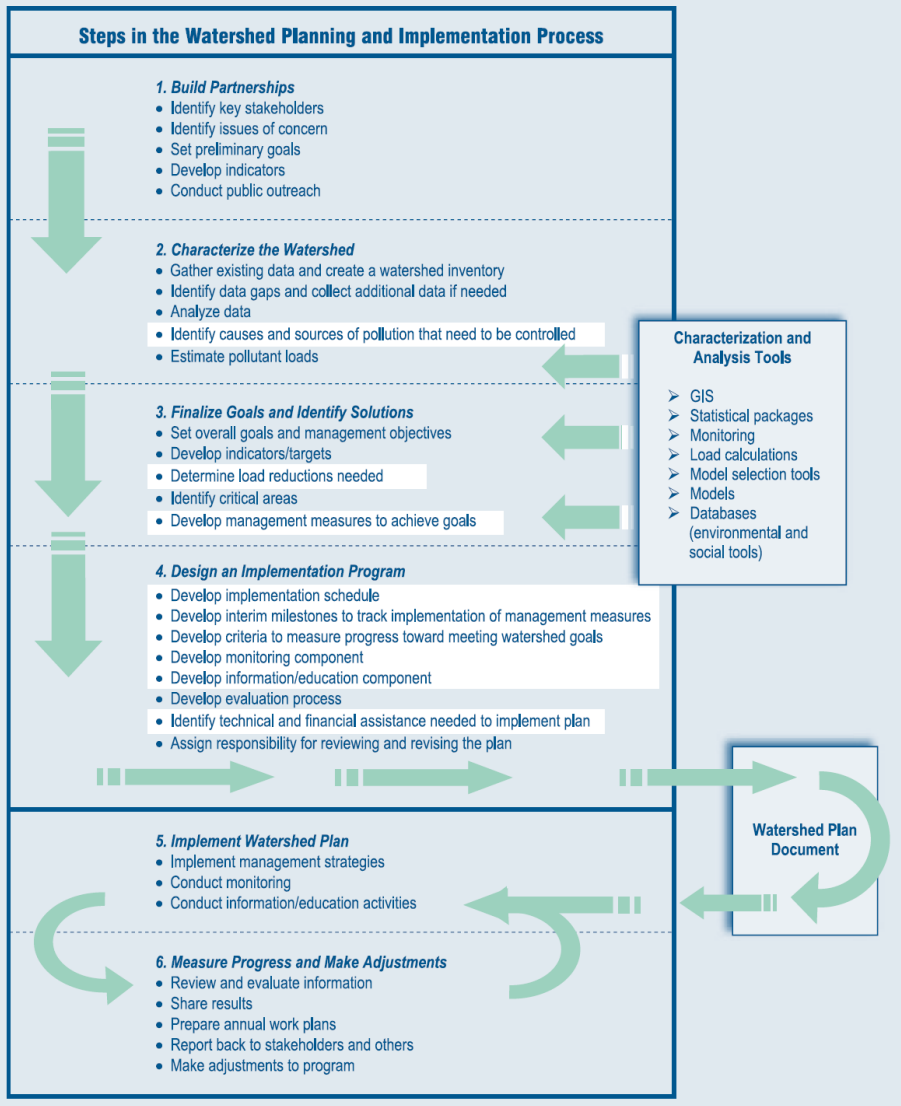
Table 15 – Estimated Percent Reduction and Costs per Potential Strategy[1]

Reduction Strategies	N (lbs)	100% Goal[2]	P (lbs)	100% Goal	TSS (lbs/yr)	100% Goal	Est. Cost[3]
2006-2009 BMPs	1104.02	14.53	160.00	15.48	75,073.26	8.69	$0
Post-2009 BMPs	317.33	4.18	45.89	4.44	39,629.17	4.59	$0
Regional Facilities – Lake Cook	1,586.97	20.88	163.25	15.79	131,334.00	15.20	$2.7M[4]
Regional Facilities – Pond 19	159.21	2.09	15.68	1.52	11,262.74	1.35	$0
Retrofits on City Property	2.21	0.03	15.28	1.48	1,039.16	0.12	$1.0M[5]
Urban Stream Restoration – Four Mile Run	194.8	2.56	40	3.87	14,914.00	1.73	$1.8M[6]
Total	**3,364.54**	**44.26**	**280.10**	**42.57**	**273,612.33**	**31.67**	**$5.5M**

1. Assumes all grandfathered projects to be offset this permit cycle.
2. 100% goal is based on L2 scoping.
3. The City did not incur direct costs for BMPs implemented by developers.
4. Includes $1.2M SLAF grant.
5. Includes SLAG grant funding.
6. Includes grant funding. Individual project costs may be less.

How to prepare a 4b/5r

Start with a watershed based plan



Involve stakeholders

- Non-point and point sources; environmental organizations; state regulator
- Acknowledge that some stakeholders have more impact than others (MS_4 permits, NPDES point source dischargers)
- Different levels of participation (monitoring, WQ analysis, shared resources, technology based, etc.)
- May be different levels of stakeholders

Considerations

- Can "double dip" with activities, taking credit for activities under multiple initiatives (MS_4 permit activities, waste water system management activities, etc.)
- Include adaptive management strategies:
  - Identify low hanging fruit initially (i.e., focus MS_4 permit required activities in watershed, develop homeowner incentive programs, etc.)
  - Assess WQ
    - Positive impact noted? Continue implementing low hanging fruit activities
    - No or negative impact? Move to next phase activities
  - Based upon WQ impact, adjustment activities as needed

Critical elements

- 1.5-2 years to develop (could be longer)
- Start with known information – can collect new information as a part of the 4b/5r plan implementation

The question isn't why do it, it is why *NOT* do it?

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Delay TMDL

Get better data

Manage your risk

Drive your end result

Reduce your risk