Bay TMDL, WIP Updates
Modelling Issues

Presentation to
Water Resources Technical Committee
Jan. 12, 2012

Metropolitan Washington
Council of Governments

Today's Focus

- State Phase II WIP status
- Maryland local submissions
- Modelling issues

State Phase II WIP Status

- States submitted draft Phase II WIPs to EPA by Dec. 15
  - Awaiting EPA review and comment

Maryland

- Many quantitative details, including a BMP "input deck"
- Although not officially submitted to EPA, have collected draft WIPs from counties

Virginia

- Less clear on degree of quantification, expectations for local governments
- Local submissions due Feb. 1

Maryland Local Submissions

- Big variations in level of detail, components included (e.g. Municipal Phase II submissions, funding, milestones)
- Some plans list BMPs and quantify reduction strategies; some just provide narrative details
- Some plans use MAST; some don't
- Not clear that anyone (other than Montgomery) has a plan that adds up to targeted reductions

The WIP Dilemma

Either

- Plan that meets TMDL targets that is not realistically do-able (affordable)

Or

- Plan that is doable, but doesn't met the target allocations

- In the middle example – Prince George's

The WIP Dilemma – cont.

- What is the target number anyway - ?
- Maryland statewide for MS4 Phase Is (based on 5.3.2)
  - 23% reduction for TN; 38% reduction for TP from 2009 Progress*
- Virginia statewide for urban lands ?
  - WIP I #s (based on 5.3.0) 6-9 % for TN, 7.25 -16 % for TP and 8.75 -20 % for TSS from 2009 Progress

* Maryland has not issued sediment targets, assuming that actions that achieve P target also will achieve sediment target

Modelling Issues

- Some further MAST analysis
  - More load/acre calculations based on no action scenario and edge of stream loads
- Future directions - ?

Comparison of Urban Loading Rates

(in pounds/acre)		Frederick	Montgomery	Prince George's	State
TN	Impervious	26.1	22.6	9.6	14.2
	Pervious	17.6	13.0	5.0	9.4
	All Urban	19.4	15.4	6.3	10.7
TP	Impervious	2.5	2.1	1.3	1.5
	Pervious	0.6	0.4	0.3	1.0
	All Urban	1.0	0.8	0.6	0.6
TSS	Impervious	1,224.4	1,364.0	394.3	928.2
	Pervious	193.8	206.5	68.3	141.8
	All Urban	417.4	493.0	165.0	344.0

Calculated from MAST 2009 Progress/No BMP scenario and edge-of-stream loads to normalize for delivery factors and BMP coverage; excludes construction and extractive urban land uses

Comparison of Urban Loading Rates

(in pounds/acre)		Alexandria	Arlington	Fairfax	Loudoun	Prince William
TN	Impervious	7.9	12.2	17.8	20.3	12.4
	Pervious	4.6	10.4	9.2	13.0	8.2
	All Urban	6.2	11.1	11.9	15.9	9.6
TP	Impervious	1.2	1.5	1.6	1.9	1.2
	Pervious	0.1	0.6	0.3	0.5	0.4
	All Urban	0.6	1.0	0.8	1.1	0.7
TSS	Impervious	1,705.3	1,195.4	973.8	826.0	1025.3
	Pervious	186.5	182.2	146.2	120.9	163.3
	All Urban	939.8	593.1	460.4	555.2	540.1

Calculated from CAST 2009 Progress/No BMP scenario and edge-of-stream loads to normalize for delivery factors and BMP coverage; excludes construction and extractive urban land uses

Urban loads/ acre - nitrogen

Jurisdiction		Phase I	Phase II	Federal	State High-way	State	Industrial	Non-regulated	Mean	Standard deviation
Montgomery	Pervious	14.5	16.3	13.9	14.7	14.1	-	14.8	14.7	6%
	Impervious	23.9	26.8	20.6	24.3	23.1	22.1	25.8	23.8	9%
Frederick	Pervious	20.6	20.6	-	21	21	-	21.2	20.9	1%
	Impervious	29.2	29.4	28.8	29.5	29.6	-	29.6	29.4	1%
Prince George's	Pervious	5.2	6.1	7.1	5.4	5.4	4.9	4.8	5.6	14%
	Impervious	9.7	11.1	10.3	9.9	10.1	9.1	8.9	9.9	8%

Urban loads/acre - phosphorus

Jurisdiction		Phase I	Phase II	Federal	State High-way	State	Industrial	Non-regulated	Mean	Standard deviation
Montgomery	Pervious	0.46	0.52	0.36	0.47	0.45	n/a	0.48	0.40	12%
	Impervious	2.32	2.61	1.96	2.38	2.25	2.15	2.57	2.32	10%
Frederick	Pervious	0.79	0.79	n/a	0.81	0.81	0.77	0.81	0.80	2%
	Impervious	2.93	2.95	2.87	2.98	2.99	n/a	3.00	2.95	2%
Prince George's	Pervious	0.30	0.32	0.39	0.31	0.31	0.30	0.29	0.32	10%
	Impervious	1.44	1.50	1.41	1.45	1.46	1.40	1.38	1.43	3%

Future Watershed Model Work at COG

- Agriculture*
- Urban*
- Sediment*
- Allocation*
- Geography*

Pending
WRTC input

- Interest in fall modeling workshop - ?

* See detail under “Potential Modeling Tasks - for discussion.pdf”

Expert Panels – Local Representation

EXPERT BMP REVIEW PANEL Stormwater Retrofits		
Jason Papacosma	Arlington, VA	jpapacosma@arlingtonva.us
EXPERT BMP REVIEW PANEL Stream Restoration		
Matt Myers	Fairfax County	Matthew.Meyers@fairfaxcounty.gov
EXPERT BMP REVIEW PANEL New Stormwater Performance Standards		
Fred Rose	Fairfax County	Fred.Rose@fairfaxcounty.gov
EXPERT BMP REVIEW PANEL Urban Fertilizer Management		
Karl Berger	MWCOG	kberger@mwcog.org
Marc Aveni	Prince William County DPW	maveni@pwcgov.org

Potential legislation

VA

- Revision to Nutrient Credit Exchange Program – coming from legislative study commission
  - Allow trades between and among wastewater, stormwater, ag and septic sectors
- Initiative to provide additional funding for WQIF

MD

- Proposal to increase flush tax (Bay Restoration Fund) to cover shortfall and provide funds for stormwater