MIDS Work Group Meeting
February 18, 2010

Credits

Goals Today

- Define the term “credit”
- Distribute summary of BMP “credit” ranges
- Discuss possible range of complexity in quantifying credits and provide a suggested direction

What does “credit” mean?

- Legislation calls for mimicking natural stormwater runoff volumes
- BMPs need to be installed to achieve performance goal
- Different BMPs (sizes, types, etc.) reduce different amounts of volume
- “Credit” = Quantity of volume reduction provided by BMP

Handout – Table 7 of Draft Memo

	Volume Reduction		TP EMC reduction				TSS EMC reduction			
BMP	Virginia[a]	BMP database[b] (IQR (median))	Virginia[a]	New Hampshire[c]	Pennsylvania[d]	Minnesota Stormwater Manual and other sources	Virginia[a]	New Hampshire[c]	Pennsylvania[d]	Minnesota Stormwater Manual and other sources
Bioretention basin/Rainwater garden without drain tile	80%			65%	85%	100%[e]	90%	90%	85%	85%[e]
Biofiltration basin/Rainwater garden with drain tile	40%	45 -74% (57%)	25-50%			50%[e]	60%	73%		
Infiltration trenches	90%		25%	60%	85%	100%[e]		90%	85%	100%[e]
Infiltration shelves			25%							
Pervious pavement without drain tile	75%		25%	65%		80%[e]	75%	90%		
Pervious pavement with drain tile	45%			45%	85%				85%	
Grass Channel	10 - 20%		15%	25%	50%		69-87%	65%	50%	
Dry Swale without drain tile	60%	35 - 65% (42%)	20 - 40%	25%	50%	0%[e]	69-87%	65%	50%	
Dry Swale with drain tile	40%									
Wet Swale	0%	--	20 - 40%	25%	50%	0%[e]	69-87%			
Filter strips	25 - 50%	18 - 54% (34%)	0%	45%	20%			73%	30%	
Sand filters	0%		60 - 65%	65%		0-50%[e]	80-92%	85%		70-85%[e]
Enhanced sedimentation operations										
Pretreatment										
Enhanced sand filters	0%					85-90%[f]				
Optimized stormwater flow network										
Harvested and re-use			0%			100%[e]	0%			100%[e]
Green roofs	45 - 60%		0%		85%	100%[e]	0%		85%	90%[e]
Underground storage/detention			0%				0%			
Density increases with set aside lands										
Urban forestry			15%		85%				85%	
Soil protection and amendments	50%		0%		0%				30%	
Linear projects										
Parking lot design										
Impervious surface disconnection										
Operations and maintenance									85%	

Balance Between Simple and Complex

- Simple: Runoff reduction credits might not be exact, but they're reasonable.
- Implication: Real BMP could provide more or less volume reduction than credit.
- Example of Simple Credit & Calculator: VA or CRWD/RWMWD

Balance Between Simple and Complex

- Complex: Runoff reduction credits must be exact.
- Rationale: No more land and money is used than necessary for BMPs (developer) and each development provides necessary reduction (regulator).
- Example of Complex Credit and Calculator: Existing models (HydroCAD, P8, XP-SWMM, etc.)

Balance Between Simple and Complex

- Simplest = Water quality goals are met by volume control goal. Calculator quantifies and tracks only volume.

- Most Complex = All pollutant reductions must be quantified and tracked in Calculator in addition to volume reductions.

Suggestion: Keep it Simple

- Primary audience is developer and regulator of new projects
  - Sophisticated developer and regulator will benefit by having quick and easy screening tool to help size and check sizes BMPs (but will likely continue to use other tools, e.g., HydroCAD, etc.)
  - Less-sophisticated regulator can adopt Calculator as primary tool

Suggestion: Keep it Simple

- Use Capitol Region/Ramsey-Washington Metro WD spreadsheet as base and add calculations for more BMPs
  - Improve upon credit calculations, if necessary
  - Continue to allow flexibility for design variations
  - Focus on volume, but if desired, add TP and TSS removals (possibly necessary for poor soil sites)