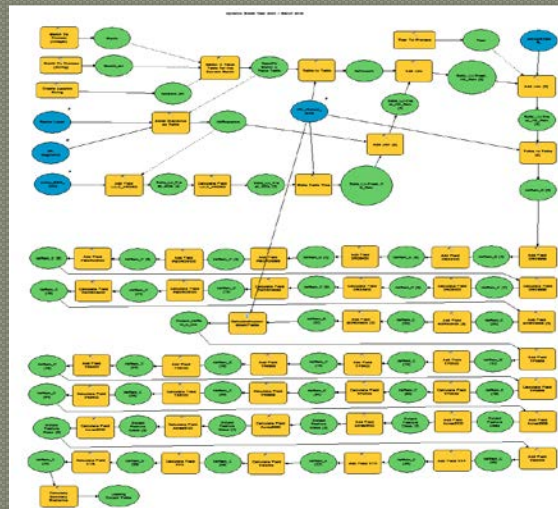


Spatial Watershed Iterative Loading Model (SWIL) First Review Stage



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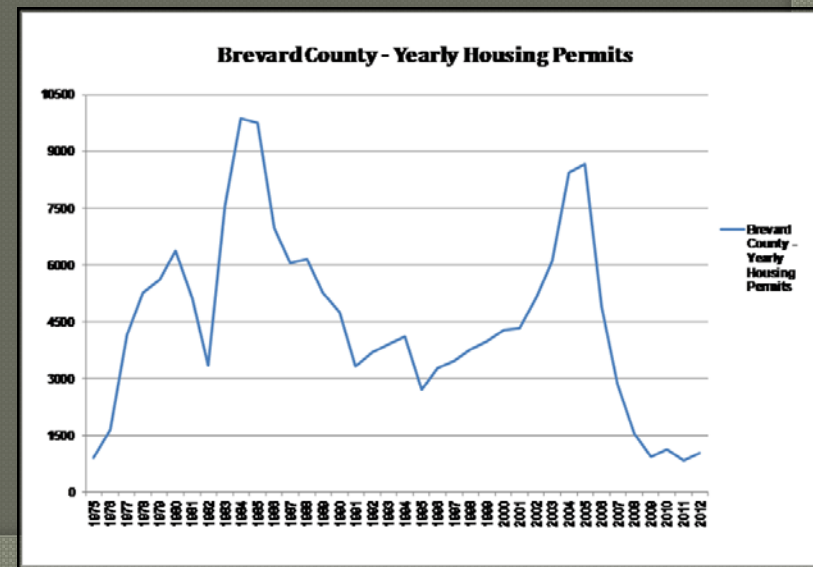
Status Update

- FDEP started SWIL model review on January 2014
- Initial Review of model coding and input variables complete April 2014
- 4 Sets of comments and/or questions received and addressed by AEI and ERD
- Current Stage: Model and calibration review



Initial Review Outcome

- Input Layers of the SWIL vs. PLSM:
 - Land Use
 - Soils
 - C values
- Key Differences in Land Use: our reliance on PA's data and natural communities (increased accuracy for the years of fast development)
- Key Differences in Soils: 2010 NRCS Layer did not include Hydrogroup for Urban Soils and had to be Interpolated
- C values for Water are 1 (not zero), even for treatment areas



Modifications: EMC Table

- EMCs for Medium Residential: Percent imperviousness in model vs. ERD report differed by 10%
- Model will be corrected from 40% to 30%

Consolidated Land Use	ConsolidatedCode	%Imperv	%DCIA	NC_TN	NC_TP
Agriculture	1	5	0	2.61	0.485
Citrus	2	0	0	2.07	0.152
Commercial	3	80	60	1.64	0.214
Dry Prairie	4	0	0	1.95	0.107
High Density Residential	5	50	30	2.10	0.497
Hydric Hammock	6	0	0	1.07	0.026
Industrial	7	30	10	1.19	0.213
Institutional	8	20	10	1.51	0.178
Low Density Residential	9	15	0	1.51	0.178
Medium Density Residential	10	40	20	1.87	0.301

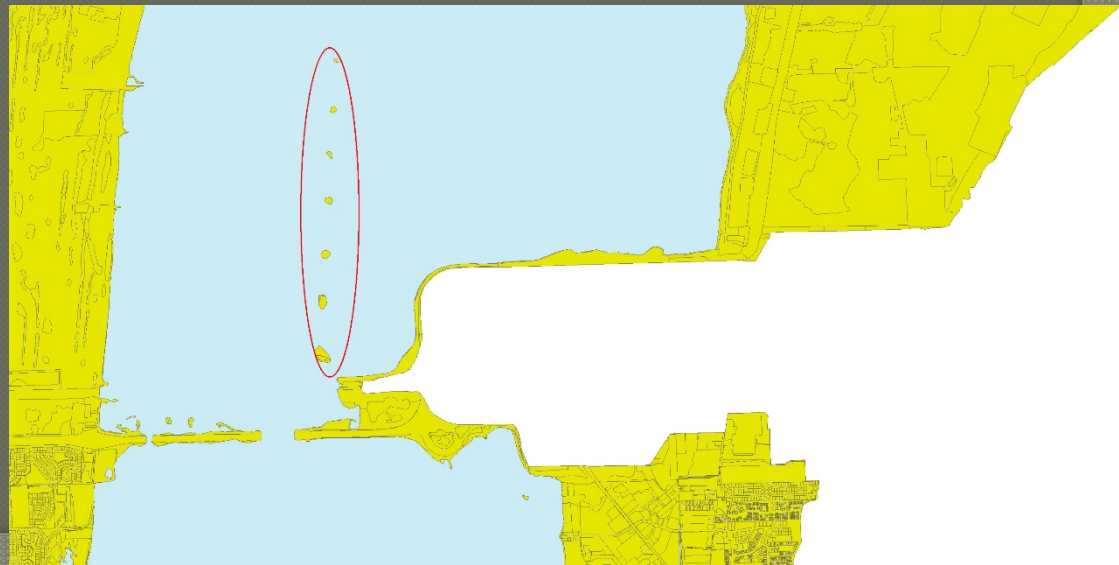
Modifications: BMP Efficiencies

- Overestimation of BMP Efficiencies: the volume reduction and TN/TP reductions were applied in different modules and not independently.
- Mass Loading Removal already accounted for Runoff Volume Reduction, so overestimation of TN and TP removals occurred
- Model revision will correct this overestimation

BMP Type	Assumed Annual Mass/Volume Removal (% of total)		
	Runoff Volume	Total N Mass	Total P Mass
Dry Retention (Dry Ponds)	75	75	75
Wet Detention (Wet Ponds)	20	36	62

Modifications: Spoil Islands

- Land Use Code:5474 (122 polygons only)
- Currently aggregated with 5400, Bays and Estuaries, which results in zero loads
- Need to develop a separate Consolidated Land Use code for spoil islands to obtain non-zero loads
- Loads for Soil islands should not be aggregated with other upland areas, since these would not be allocated to stakeholders



Additional Improvements

- Minor Coding Corrections (on comments, not actual the run itself)
- Additional error checking code can be incorporated
- Tool will be recoded to run independent of location of installation
- Speed can be improved with new Python environment
- Allocation toolset will be a simplified toolset without iterative components

