

Findings from Running of Initial Ranging Scenarios through the Watershed and Bay WQ Models

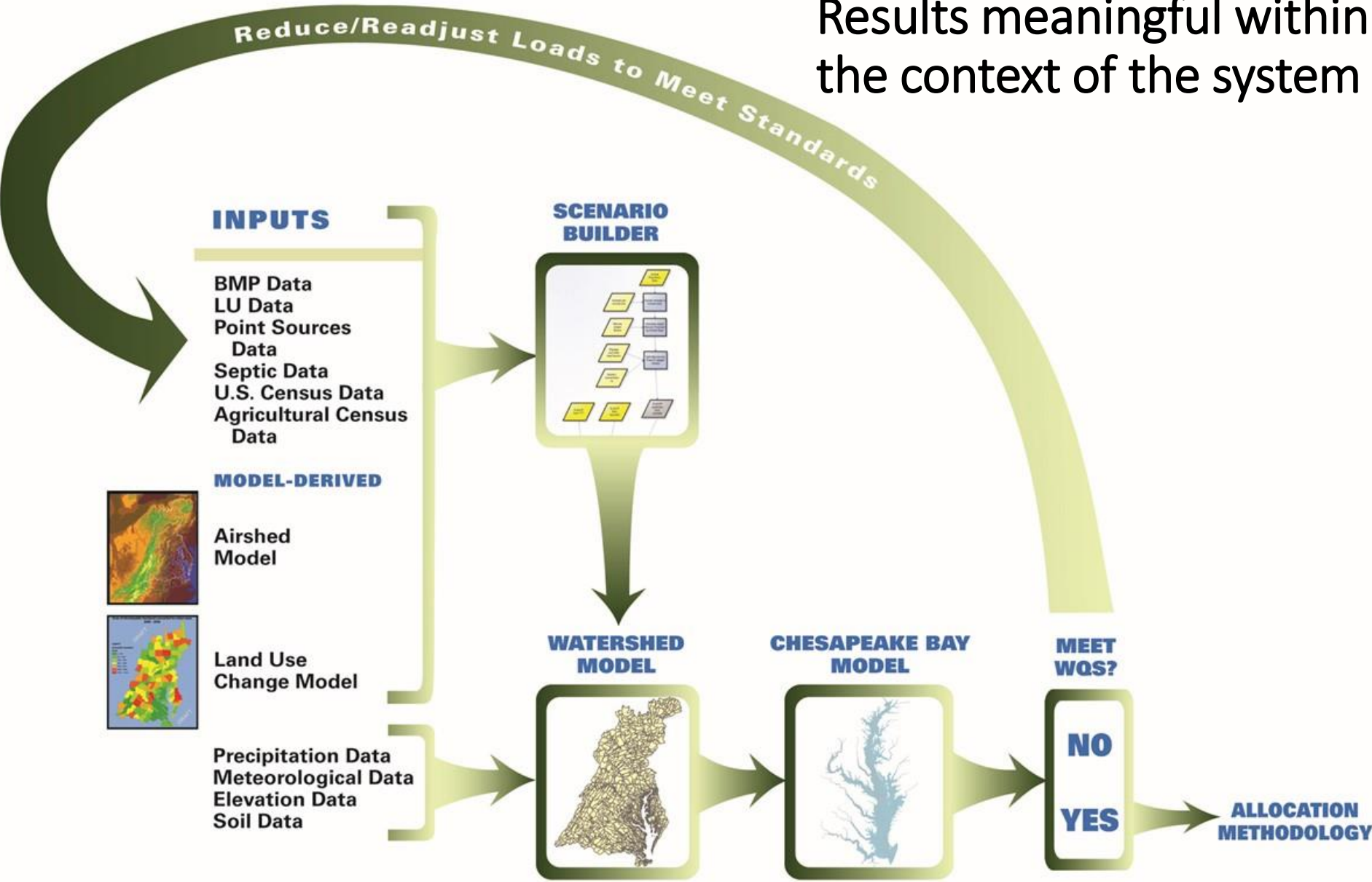
Gary Shenk

Lewis Linker

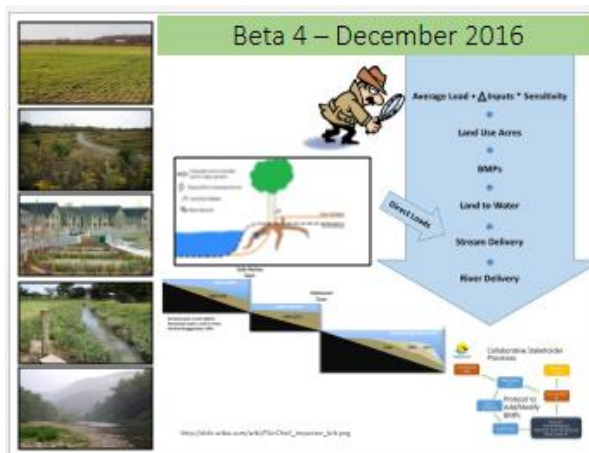
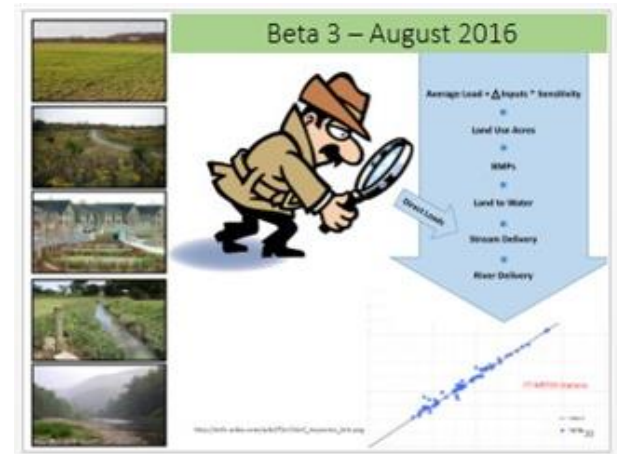
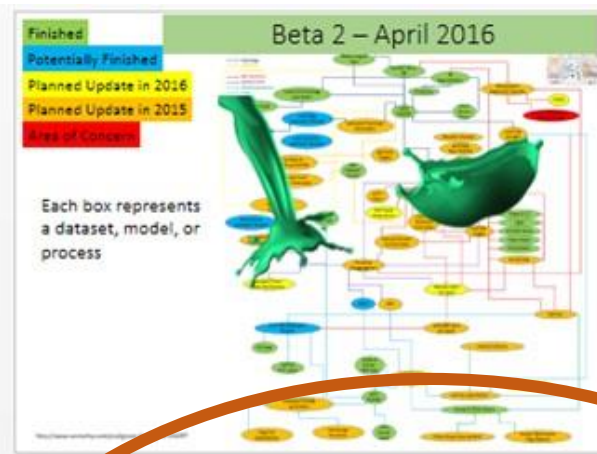
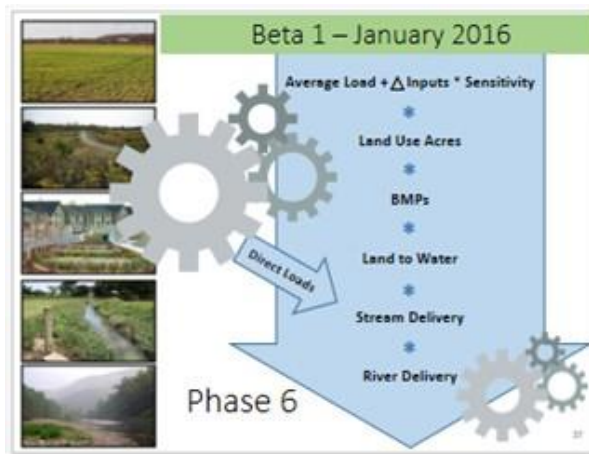
Gopal Bhatt, Jessica Rigelman, Ping Wang, Richard
Tian, Jeff Sweeney

System of Interconnected Models

Results meaningful within the context of the system



'Midpoint' model



Start to get answers to 2 questions

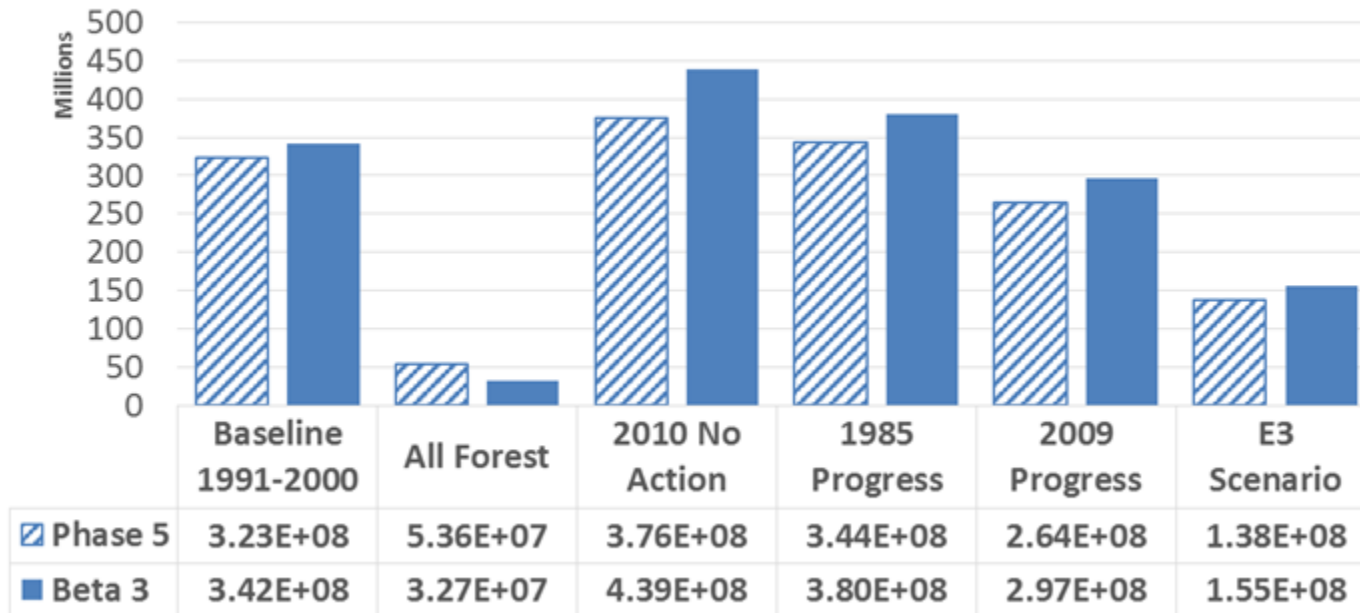
- How is the watershed model different from the P5.3.2 Model?
- How is the estuarine model different from the TMDL Model?



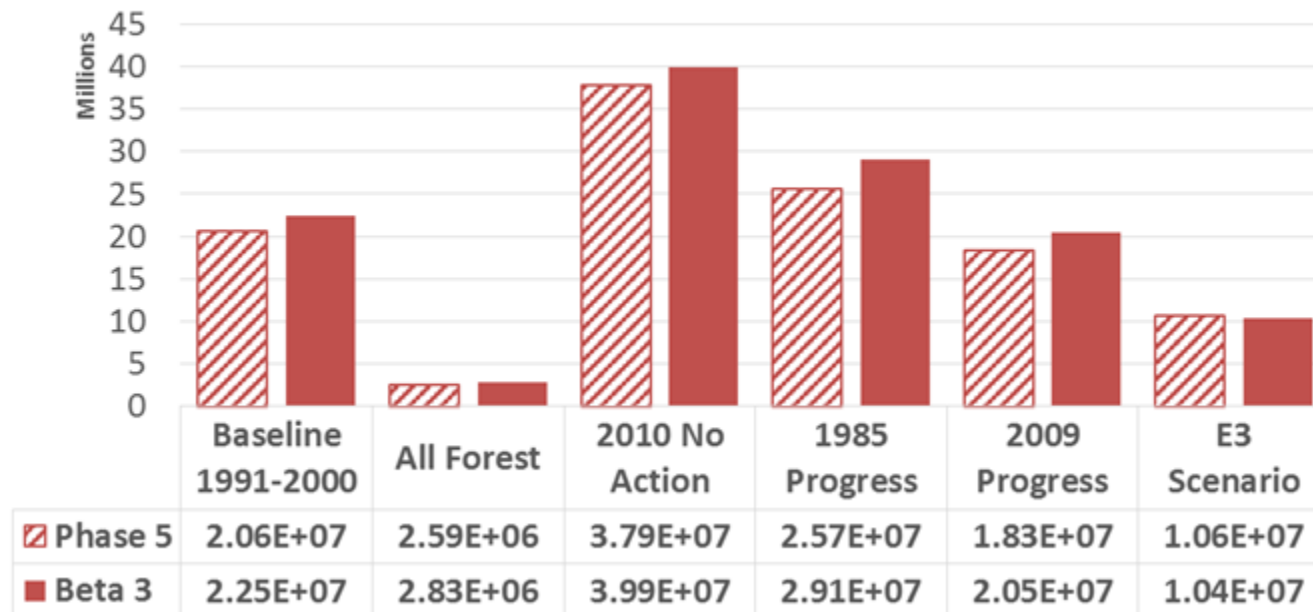
Scenarios

- **No Action** – all BMPs are removed. Waste water is set to secondary treatment.
- **1985** – 1985 levels of Land use, management actions, and point sources
- **2009** – 2009 levels of Land use, management actions, and point sources
- **E3** – Everything, Everywhere, Everyone scenario.
 - The specific rules for this scenario are currently being finalized by the CBP so some of the definitions for this scenario were determined by CBPO staff as a temporary measure. The current results are ***highly uncertain***
- **All forest** – Completely forested watershed

Total Nitrogen Delivery to the Bay



Total Phosphorus Delivery to the Bay



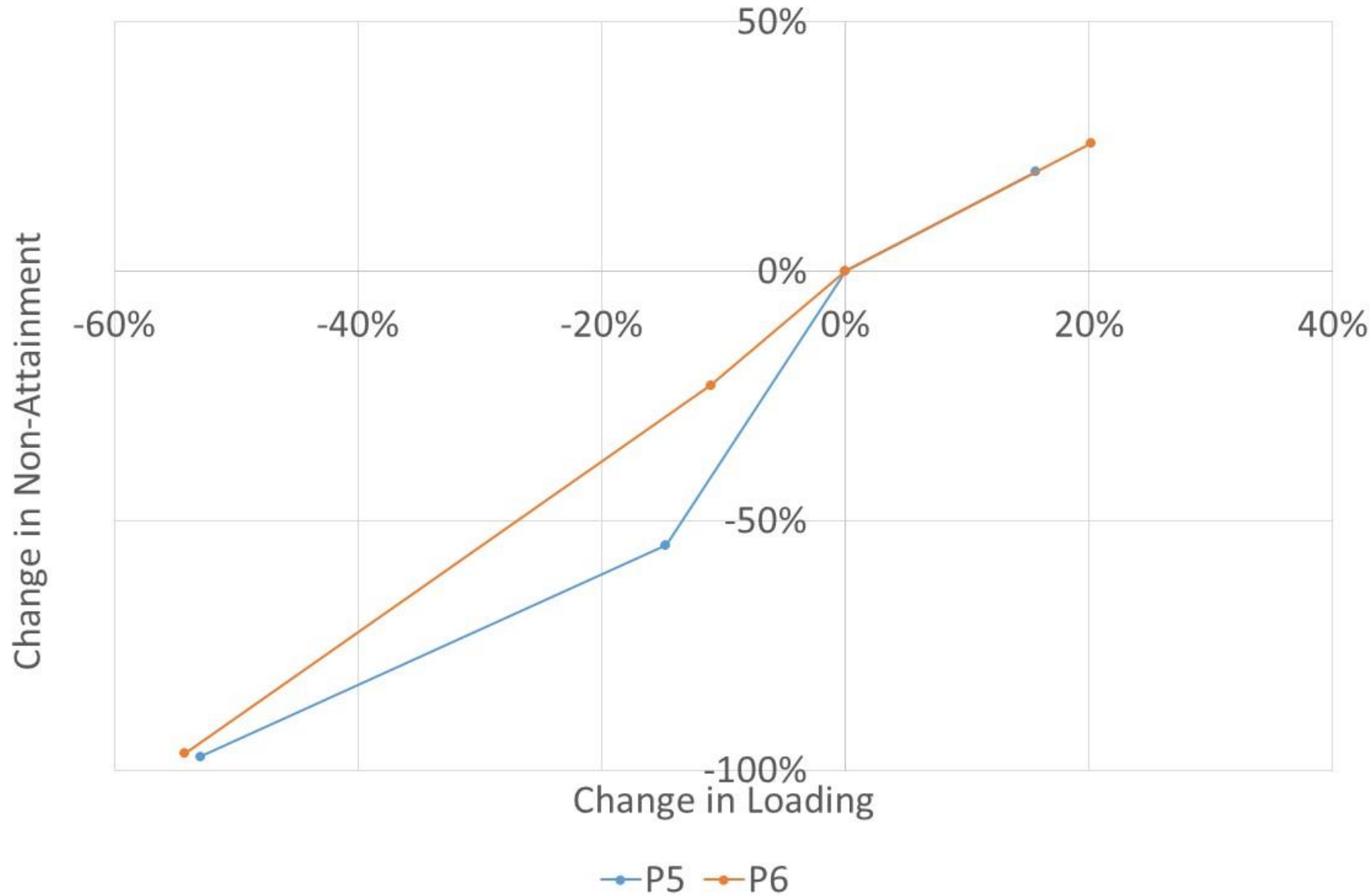
Stoplight Plot Results

Nutrient	loading	Calibration	1985_progress	2009_progress
Start	End	1993_1995	1993_1995	1993_1995
Cbseg	State	DO_I_DC	DO_I_DC	DO_I_DC
CB3MH	MD	16.00%	21.32%	11.65%
CB4MH	MD	46.03%	52.35%	40.21%
CB5MH	MD/VA	14.21%	18.97%	10.32%
CHSMH	MD	37.36%	41.47%	30.60%
POTMH	MD/VA	20.24%	24.55%	13.09%
RPPMH	VA	18.98%	26.43%	10.58%
EASMH	MD	25.35%	33.06%	21.78%
PATMH	MD	24.78%	34.22%	6.73%

Nutrient	loading	Calibration	1985_progress	2009_progress	E3
Start	End	1993_1995	1993_1995	1993_1995	1993_1995
Cbseg	State	DO_M_DW	DO_M_DW	DO_M_DW	DO_M_DW
CB3MH	MD	2.06%	3.26%	1.14%	0.01%
CB4MH	MD	20.96%	26.11%	15.89%	2.82%
CB5MH	MD/VA	4.19%	5.43%	3.09%	0.00%
CB6PH	VA	0.00%	0.41%	0.00%	0.00%
CB7PH	VA	0.00%	0.00%	0.00%	0.00%
CHSMH	MD	25.70%	34.02%	19.88%	0.00%
EASMH	MD	5.89%	29.16%	2.72%	0.28%
PAXMH	MD	6.30%	12.96%	3.96%	0.00%
POTMH	MD/VA	4.12%	5.93%	3.03%	0.00%
RPPMH	VA	5.86%	9.49%	3.92%	0.00%
SBEMH	VA	0.03%	7.77%	0.00%	0.00%
YRKPH	VA	0.00%	0.00%	0.00%	0.00%
PATMH	MD	12.44%	21.97%	3.57%	0.00%
MAGMH	MD	51.01%	57.13%	43.25%	1.94%
SOUMH	MD	18.59%	32.09%	13.54%	2.96%
SEVMH	MD	6.08%	13.41%	6.08%	0.00%

Summarized on next slide

Estuarine Model Response to Loads



Summary

- First look at full system
- Early results, no firm conclusions can be drawn
- Modeling system is consistent with earlier work

