#### Scenario Builder and Watershed Model Progress toward the MPA

Gary Shenk Modeling Workgroup 10/5/2015

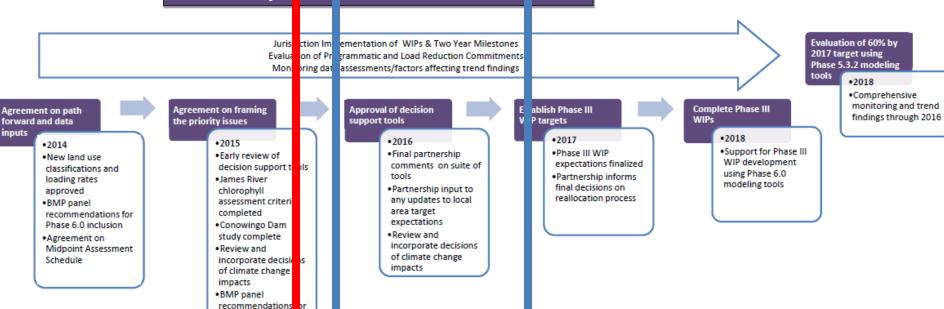


#### Scenario Builder and Watershed Model Progress toward the MPA

Gary Shenk Modeling Workgroup 10/5/2015



#### Midpo nt / ssessment Timeline



### **CREATE** The Models

inputs

Crunch time **Expect changes** Nothing guaranteed

**REVIEW** 

The Models

Phase 6.0 inclusion

### **USE** The Models

# Crunch Time -10/1 - 12/20

No new information from partnership past 9/30

- Lot of work to put all the pieces together
- Calibration



## **Development Timeline**

- October 2014 Rough Draft of major changes to nutrient processing in Scenario Builder will need to be complete. Continued sensitivity refinement
- February 2015 draft targets for draft land Uses
- March 2015 All major partnership decisions are made on changes to scenario builder processing and data. Scenario builder final modifications begin.
- April 2015 <u>final</u> targets approved by Modeling Workgroup for draft land uses
- Early October 2015 All inputs are <u>final</u> and delivered to the WSM by the scenario builder team for the final calibration run. F<u>inal</u> targets are based on this information.
- December 2015 Phase 6 draft model is complete.
- December 2015 December 2016 Evaluation followed by fine tuning during the next year.
   Key scenarios available
- September 2016 Final comments on the draft Phase 6 model
- December 2016 All models are <u>final</u>. The partnership decision-making process begins to discuss how these new models will be used in the WIP3 process

Finished

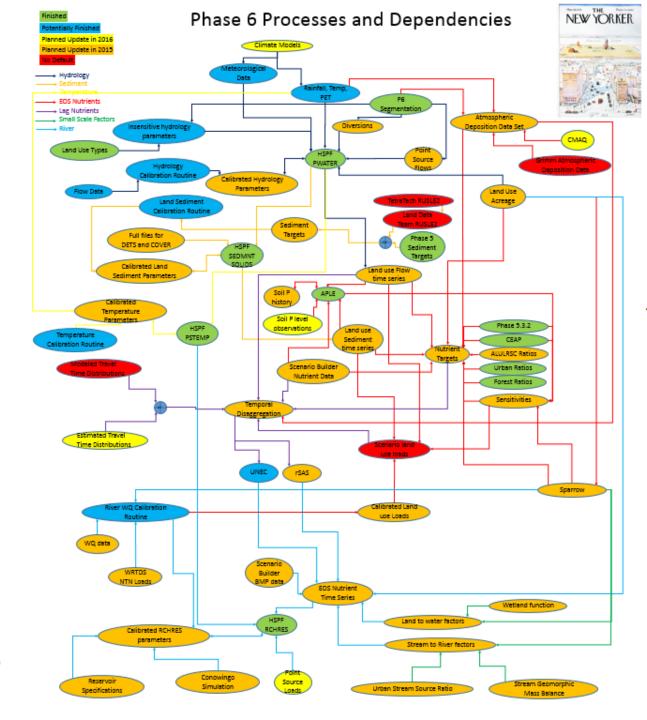
Potentially Finished

Planned Update in 2016

Planned Update in 2015

No Default

Each box represents a dataset, model, or process



7/21/15

Finished

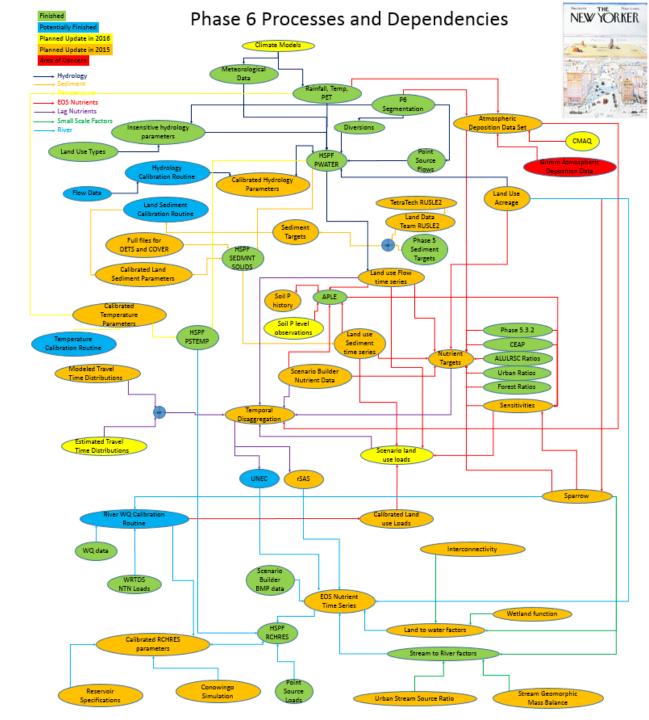
Potentially Finished

Planned Update in 2016

Planned Update in 2015

Area of Concern

Each box represents a dataset, model, or process



9/3/15

Finished

Potentially Finished

Planned Update in 2016

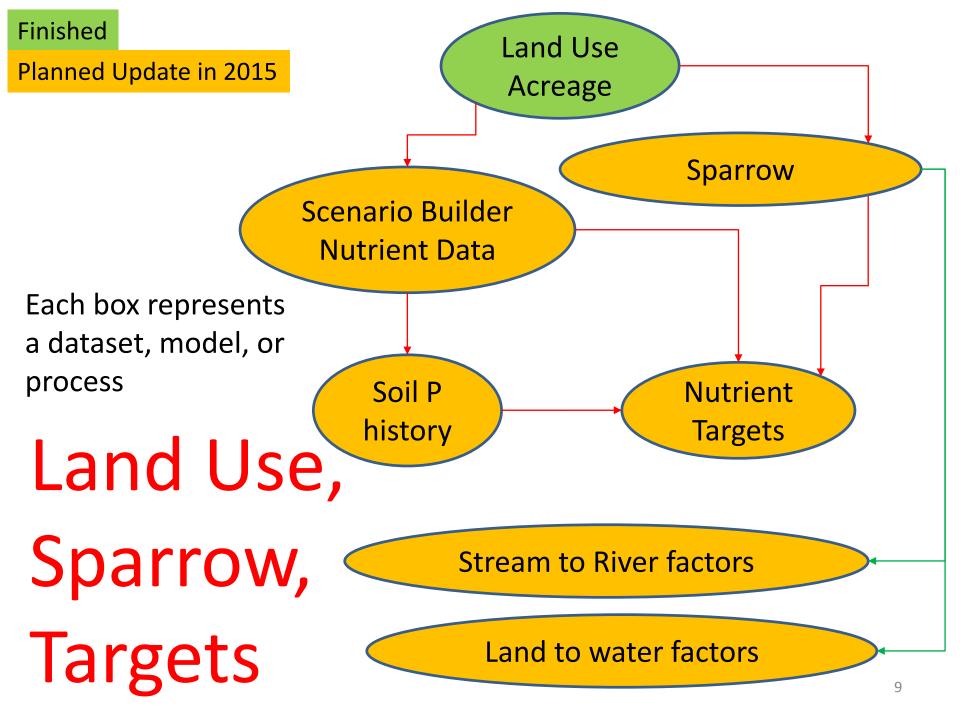
Planned Update in 2015

Area of Concern

Each box represents a dataset, model, or process

NEW YORKER Phase 6 Processes and Dependencies Planned Update in 2016 Climate Models Planned Update in 2015 Rainfall, Temp **EOS Nutrients** Segmentation Lag Nutrients Small Scale Factors Deposition Data Set nsensitive hydrology Diversions parameters CMAQ Land Use Types Source rimm Atmospheric **PWATER** Deposition Data Calibration Routine Calibrated Hydrology Flow Data Land Use TetraTech RUSLE2 Land Sediment Calibration Routine Targets Full files for Phase 5 DETS and COVER Sediment SEDMINT Calibrated Land Sediment Parameter Soil P APLE Soil P level Phase 5.3.2 Land use Temperature PSTEMP ALULRSC Ratios Scenario Builder Urban Ratios Nutrient Data Forest Ratios Estimated Travel Scenario land UNEC r5A5 Sparrow WQ data Interconnectivity Builder Time Series Wetland function Land to water factors RCHRES Stream to River factors Stream Geomorphic Urban Stream Source Ratio Mass Balance

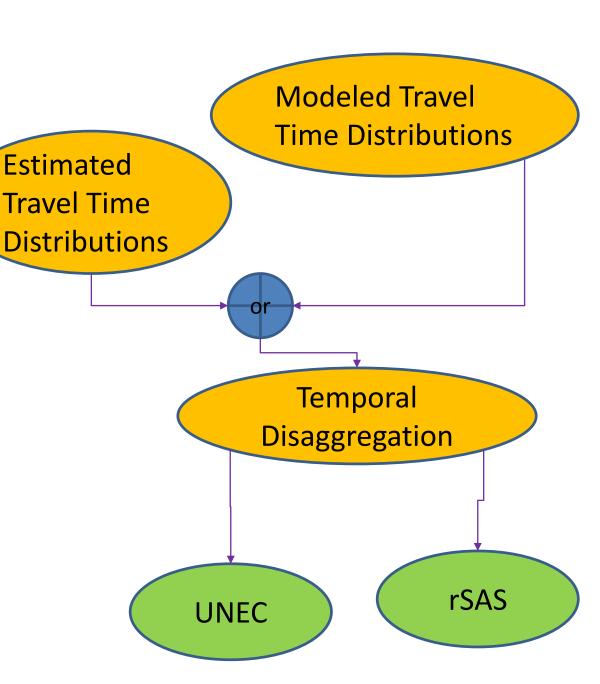
Today

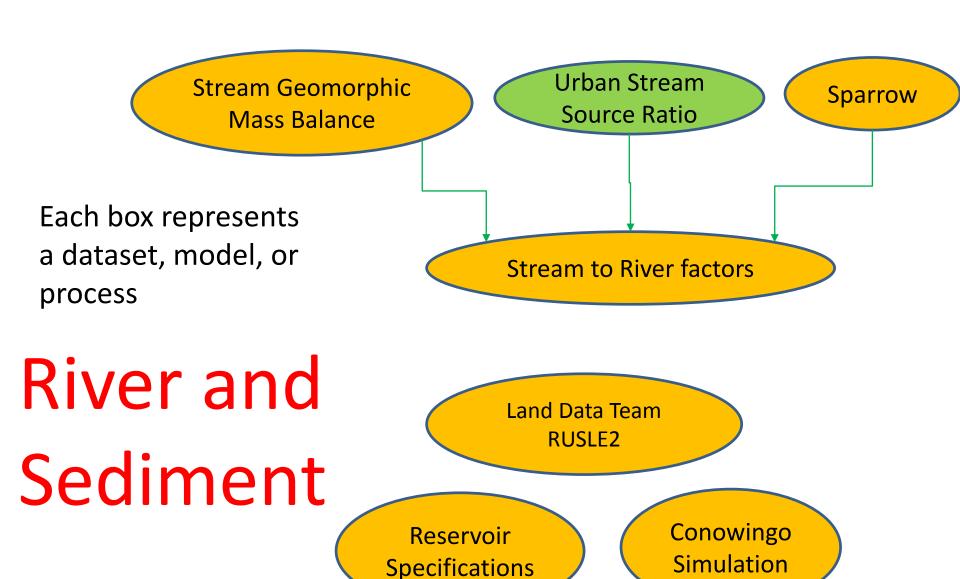


Planned Update in 2015

Each box represents a dataset, model, or process

Lag Time















### Load for a land use in a segment =

Estimated

Average + Sensitivity \* △ Inputs

Load 

★

**BMPs** 

\*

**Watershed Delivery Variance** 

\*

**Stream Delivery** 

\*

Phase 6

**River Delivery** 











### "Calibration"

Multiple Lines of Evidence And multiple models





Estimated with Sparrow Watershed Delivery Variance Estimated by Land Data team



Estimated with Sparrow Stream Delivery
Estimated by USGS / WVU / Land Data team



Simulated in HSPF River Delivery
Calibrated with data, WRTDS, and Sparrow

# Crunch Time -10/1 - 12/20

No new information from partnership past 9/30

- Lot of work to put all the pieces together
- Calibration

