

# Partnership Modeling Tools

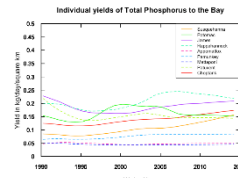
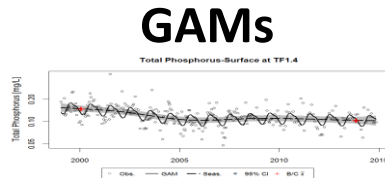


## CAST

### WRTDS



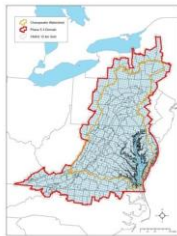
Interaction/  
Analytical Tools



Decision  
Models/  
Databases



Land Change  
Model



Airshed  
Models

Scenario Builder

- Inputs**
- BMP Type and location (NEIEN/State supplied)
  - Land acres
  - Remote Sensing, NASS Crop land Data layer
  - Crop acres
  - Yield
  - Animal Numbers (Ag Census or state supplied)
  - Land applied biosolids
  - Septic system (#s)

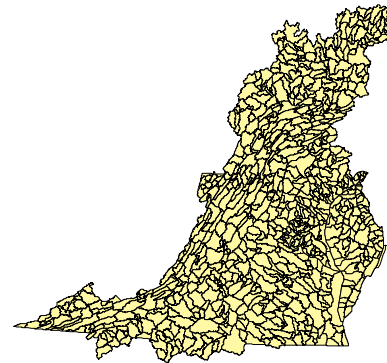
**Parameters**  
(Changeable by user)

- BMP types and efficiencies
- Land use change (BMPs, others)
- RUSLE2 Data: % Leaf area and residue cover
- Plant and Harvest dates
- Best potential yield
- Animal factors (weight, phytase feed, manure amount and composition)
- Crop application rates and timing
- Plant nutrient uptake
- Time in pasture
- Storage loss
- Volatilization
- Animal manure to crops
- N fixation
- Septic delivery factors

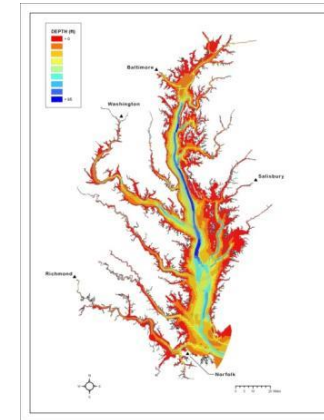
**Outputs**

- BMPs, # and location
- Land use
- % Bare soil, available to erode
- Nutrient uptake
- Manure and chemical fertilizer (lb/segment)
- N fixation (lb/segment)
- Septic loads

Bay Watershed  
Model



Bay WQSTM

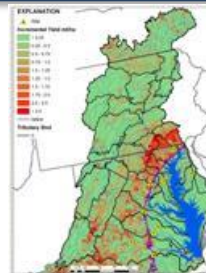


Related  
Tools

APPLE



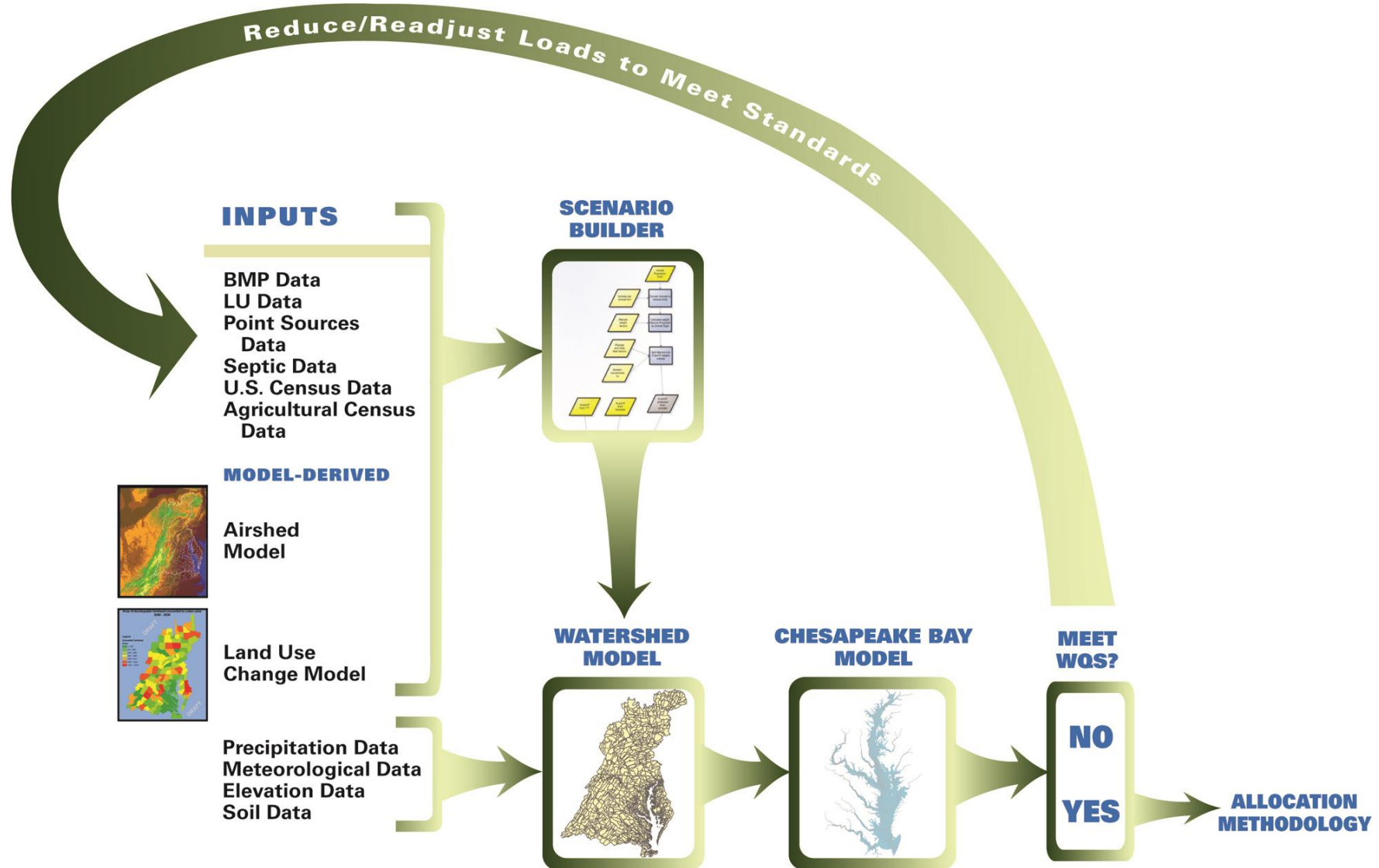
sparrow



**SWAT** Soil & Water Assessment Tool



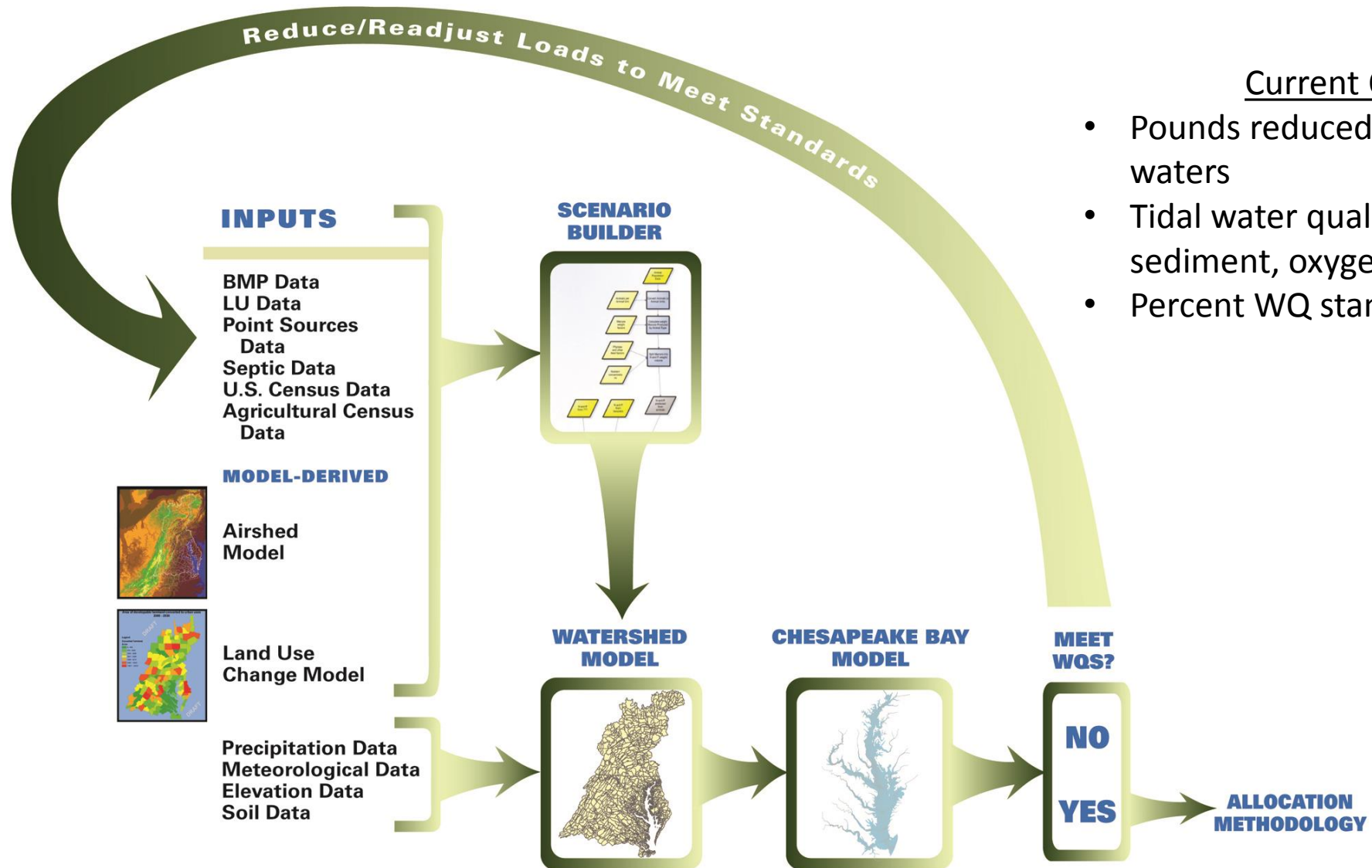
# Application of Partnership Tools





Chesapeake Bay Program  
A Watershed Partnership

# Application of Partnership Tools



## Current Outputs

- Pounds reduced delivered to tidal waters
- Tidal water quality changes (N, P, sediment, oxygen, clarity, algae)
- Percent WQ standard attainment

**We want to  
build a  
system...**

**...so we need  
requirements**

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- **What is the best construct of an optimization system to meet the priority requirements?**

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- What is the best construct of an optimization system to meet the priority requirements?
- **Agreement on requirements which reflect priority management application needs**