

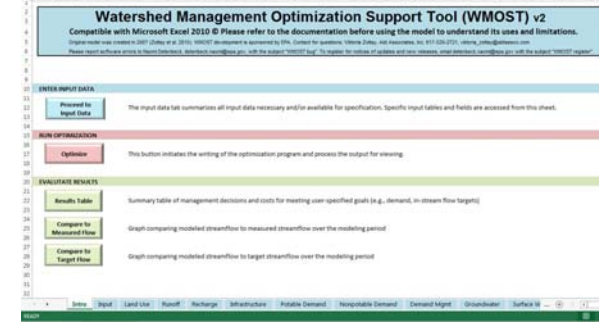
## Tools: Watershed Management Optimization Support Tool (WMOST) v. 2 (Region 1 RARE project + SSWR 4.2B)



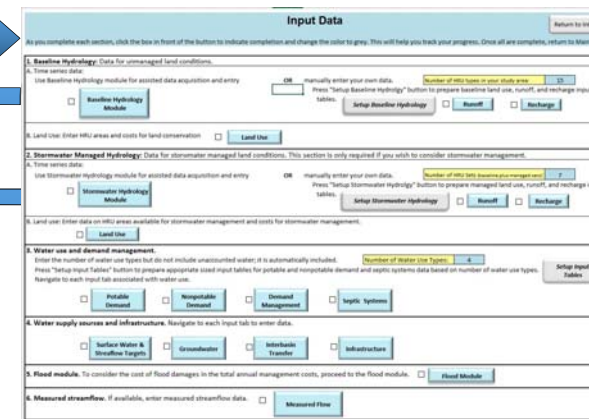
### Optimization Results

After the optimization step, the user is provided with a summary of optimal management choices and associated costs. Graphs are also provided for baseline validation runs and for comparison of target and model flows.

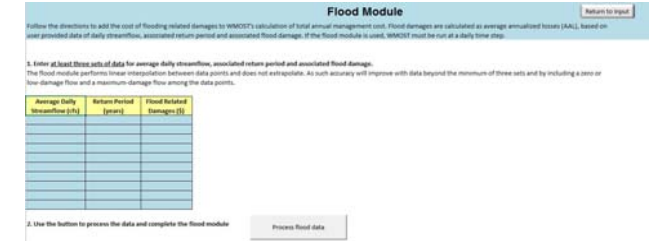
### Main screen – guides the user through the process



### Buttons lead to different input tabs

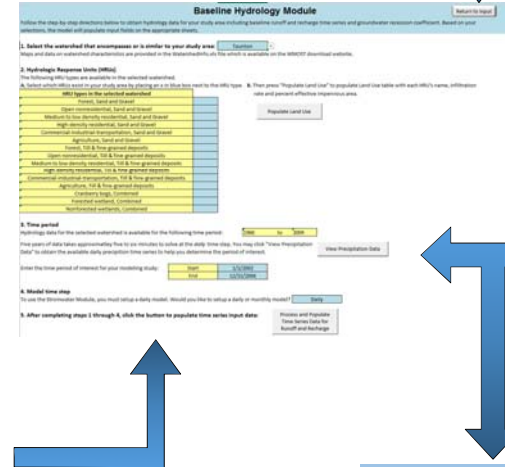


### Flood Module

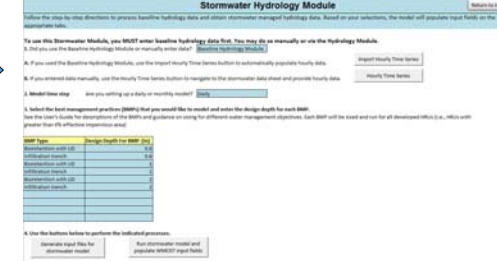


The new flood module allows users to incorporate flooding risks and costs into cost-benefit analyses for green infrastructure

### Baseline Hydrology Module



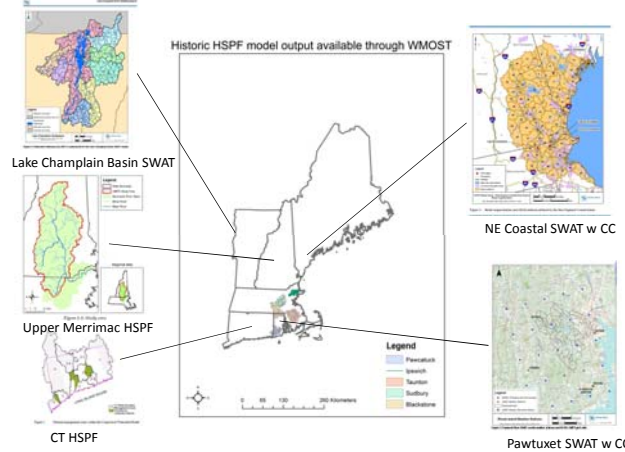
### Stormwater BMP Module



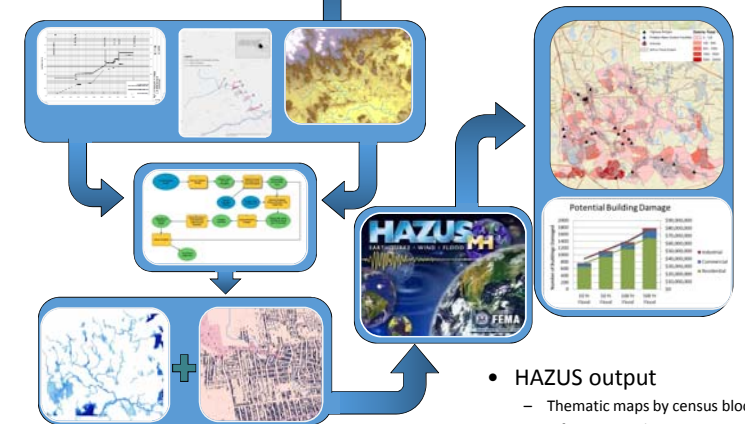
**EPA SUSTAIN**

WMOST interacts with the simulation module in EPA SUSTAIN to automatically route runoff time series through stormwater BMPs and estimate runoff reduction and recharge. Default BMP cost estimates are also imported from SUSTAIN. The future water quality module will use this mechanism to estimate reductions in nutrient, sediment, and metal loads.

### Hydrology time series library



Previous runs of existing HSPF models using 50-year climate records used to generate unit runoff and recharge rate time series for wet and dry years. Alternatively, users can add their own time series from watershed models (HSPF, SWAT, etc). More time series for other regions will be added to the tool in the future.



A protocol is provided for users to generate flood-cost curves for entry into WMOST using FEMA HAZUS software and publically available data from Flood Insurance studies.

### What is WMOST?

- Decision-support tool for integrated watershed and water resources management (stormwater, wastewater, drinking water, land conservation)
- Evaluates costs/benefits of green infrastructure (GI) solutions
- Cost-optimization given user constraints, e.g.,
  - Baseflows (drinking water supply, support fish populations)
  - Peak flows – minimize erosion, flooding costs

### Planned Future Directions

- Summer FY15: Water quality module
- FY16-19 Outreach/training: More case studies (diverse climates), Regional Tools Cafes; “Train the Trainer” events; Technical support for urban partners
- FY16: CSO, climate change, enhanced WQ (regional WQ-flow curves) modules; more hydro time series (Ches Bay)
- FY17: GI Co-benefits and Robust Decision Making modules; more hydro time series (20 watersheds), link w HAWQS
- FY18: Multi-objective optimization; Scaling/linking across basins
- FY19: Synthesis of case studies

### Contacts and Collaborations

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- **Current Collaborators:** Town of Halifax, MA; Monponsett Pond Watershed Association
- **Example Users:** MA Sustainable Water Management Initiative Pilot Communities, Univ of CT-Storrs