An on-line tool for TMDL Action Plans

VASTTOOL.ORG
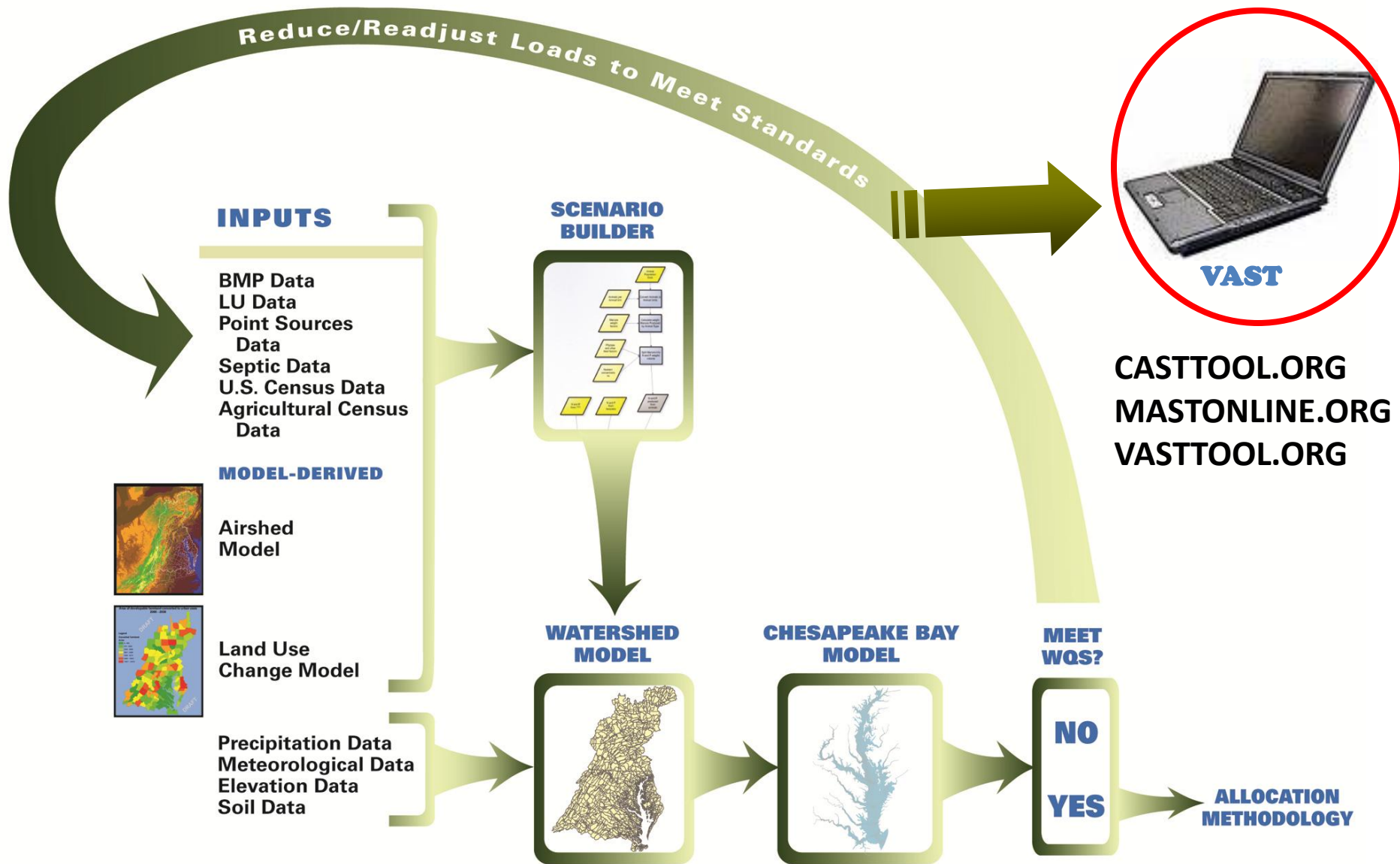# CASTTOOL.ORG
MASTONLINE.ORG

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Outline

- TMDL Planning and Assessment
- VAST Features for Action Plans
- VAST Demonstration
- Consistency with Bay TMDL
- VAST Validation
- Current Users
- Use of VAST in Planning and Assessment
- Future Refinements
- Why VAST?

TMDL Planning and Assessment

- Establish an action plan with <u>measurable goals</u>
  - Best management practices and land use
  - Quantify the load reduction
  - Cost effective and efficient

- Planning, tracking, and reporting for compliance
  - Provide the tools necessary to change plans
  - Interim benchmarks (milestones)

- Process
  - Adaptive and iterative
  - Facilitates a coordinated team

VAST Features for TMDL Planning and Assessment

- Is Replicable , Consistent, and Transparent
  - Consistent with the TMDL model

- Serves as a data management system

- Can accommodate many simultaneous users
  - Online with private log in
  - Private and public scenarios
  - Users can share scenarios with other specified users (access control)
  - County scenarios can be merged for the entire state

VAST Demonstration

WWW.CASTTOOL.ORG

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Consistency with the Bay TMDL

- Based on the same model that was used to determine the TMDL and the allocations. VAST has internal consistency for loads, geographical scale and sectors

- Other available tools have assumptions that may be different from those used in developing the current TMDL

Validation Using 2009 Progress

	+/- 10% of Watershed Model Output by land use and FIPS
Acres per LU	99.82%
TN EOS	95.68%
TP EOS	97.94%
TSS EOS	99.93%

Most of the error is on agricultural land uses. Urban land uses match within +/- 1%.

GROUP		USERS
VAST		408
MAST		298
CAST:	Virginia	107
	West Virginia	86
	Pennsylvania	93
	Maryland	105
	District of Columbia	78
	New York	70
	Delaware	67

Use of Vast in TMDL Planning and Assessment

- Chesapeake Bay TMDL Phase I and Phase II WIPs
  - Worked with multiple Region 3 jurisdictions
  - Identified BMPs that were most effective
    - Practices that convert land uses to a lower loading land use (buffers)
    - Urban infiltration practices-reduction of 85%-N and P, 95%-Sediment
    - Bioswale-reduction of 70%-N, 75%-P, and 80%-Sediment
    - Bioretention-reduction of 75%-N, 70%-P and, 80%-Sediment
    - Stream restoration (new)-reduction of 0.2 lbs/ft-N, 0.068 lbs/ft-P and, 310 lbs/ft-Sediment

  - Quantify the impacts of various management actions
  - Improve local management decisions
  - Allow involvement of a broad team

Future Refinements

- BMP costs—CBP costs and user-defined

- Delineate geographic area of scenario
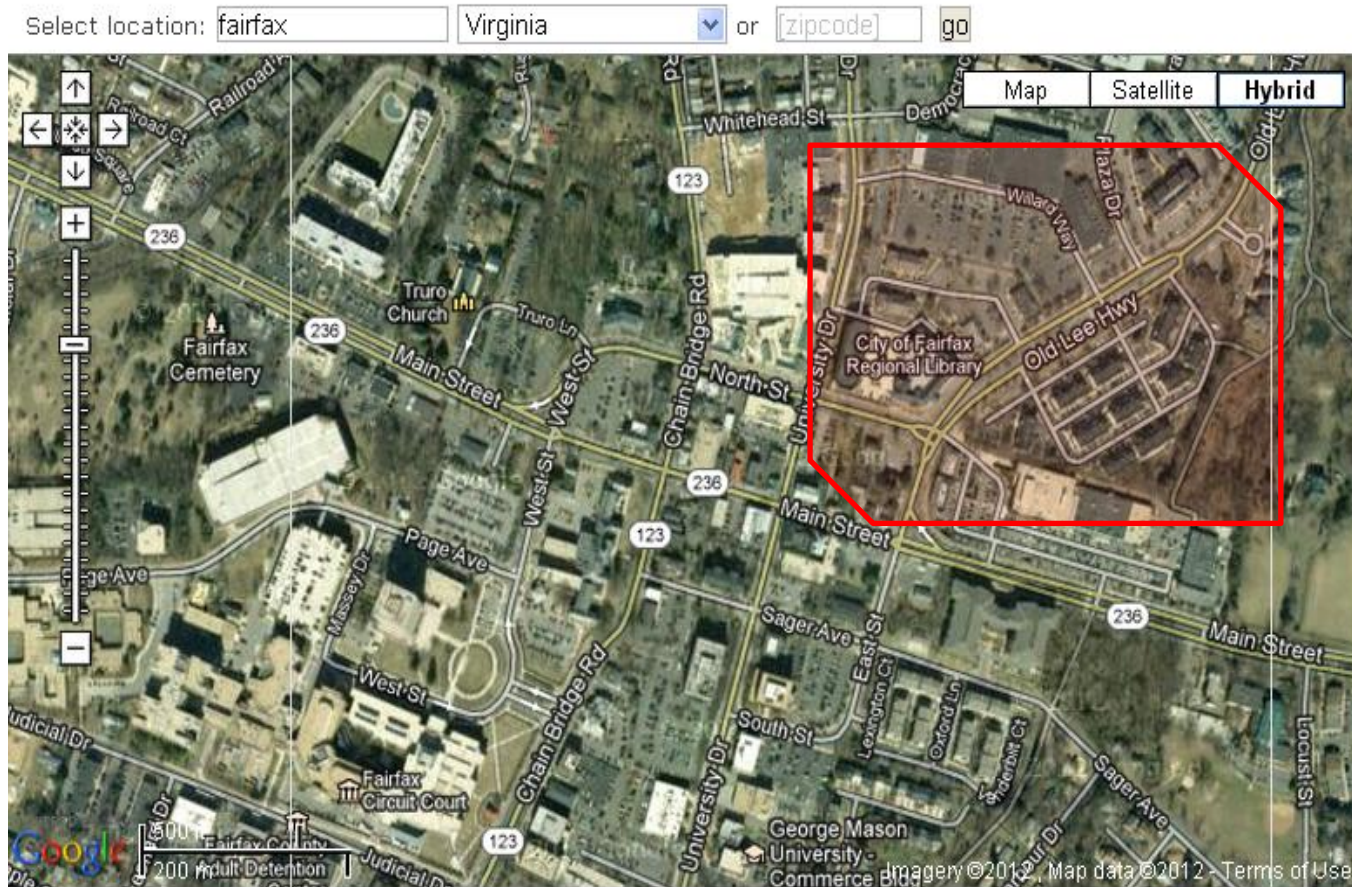
Why VAST?

- Replicable, consistent, transparent

- Consistent with EPA Watershed Model Phase 5.3.2 and WIP Phase II

- Calculates all BMPs identically to CBP (except for Ag loads)

- No average delivery factor—the delivery factor is for each segment, like the Watershed Model

- Compares among scenarios and with TMDL allocations (where state provides)

- Facilitates an iterative process to determine if TMDL allocations are met

- Allows involvement of all departments and local planners in the Action Plan

- Quantifies the impacts of various management actions

- Builds load reduction strategies (by local area), improves local management decisions

QUESTIONS?

We encourage you to test the tool at:
www.casttool.org
www.vasttool.org
www.mastonline.org