Staffer Project: Toxic Contaminants Management with CAST

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<u>My other WQGIT workgroups:</u> Wastewater Treatment Workgroup, Trading and Offsets Workgroup, Watershed Technical Workgroup, and Toxic Contaminants Workgroup

Chesapeake Assessment Scenario Tool (CAST)

- User Interface for the Phase 6 Watershed Model
  - Predict the effect on N/P/TSS loads from BMP implementation
  - Used to build management plans (e.g. Phase III WIPs), and assess progress towards TMDL (e.g. 2013 progress)
  - Cost estimates of implementation scenarios
  - Compare load effects of different scenarios across geographies

BMP Co-Benefits

- 2017 Co-Benefits Report and Scoring
  - Impacts of BMPs on **non-nutrient and non-sediment related** CBP priorities
  - -5 to +5 score per BMP per priority (in theory)
- Management tools: expand focus beyond nutrients and sediment
  - But how?
  - Coupling with CAST in some way
  - Co-Benefits Scores as an assessment tool ("top down"):
    - Average of scores for all BMPs in an existing scenario
    - How to count BMPs is an issue

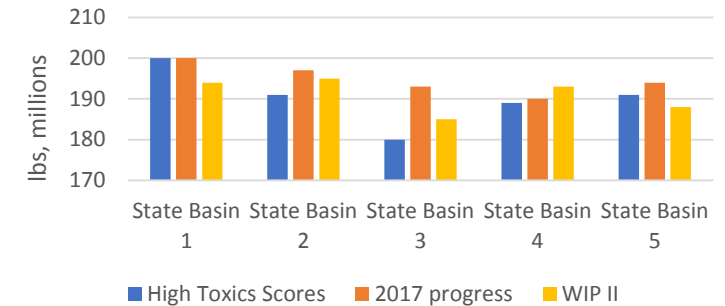# "Bottom Up" Approach: Co-Benefits Scores as a Planning Tool

- Feasibility of targeting toxic contaminants management within constraints of nutrient and sediment TMDL implementation

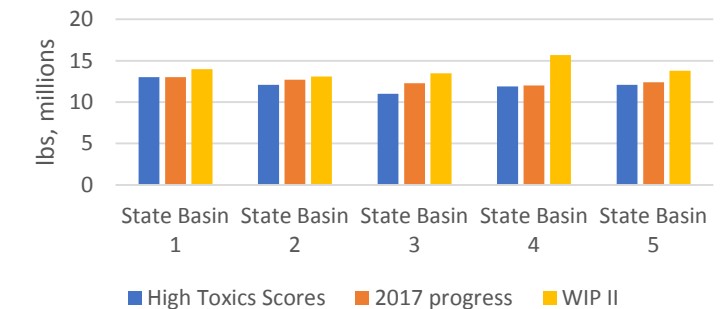Create an "input deck" of high scoring BMPs for Toxics. Add to CAST on top of recent progress

Assess loads and cost for High-Scoring Toxics Management Scenario

Compare loads and costs to existing management scenarios (ex. WIP II, Recent progress, Phase III Planning Targets)
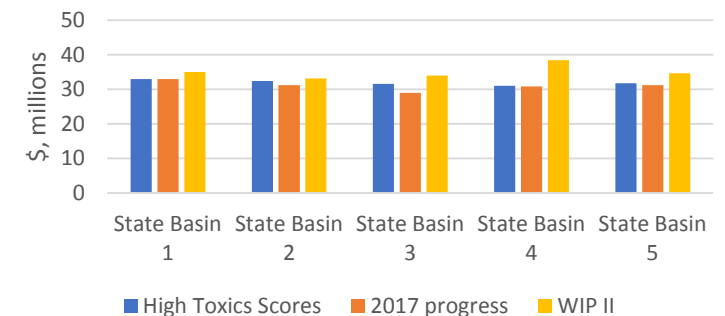
Nitrogen Loads Edge of Tide

lbs, millions

State Basin 1 | State Basin 2 | State Basin 3 | State Basin 4 | State Basin 5

■ High Toxics Scores   ■ 2017 progress   ■ WIP II

Phosphorus Loads Edge of Tide

lbs, millions

State Basin 1 | State Basin 2 | State Basin 3 | State Basin 4 | State Basin 5

■ High Toxics Scores   ■ 2017 progress   ■ WIP II

Total Cost

$, millions

State Basin 1 | State Basin 2 | State Basin 3 | State Basin 4 | State Basin 5
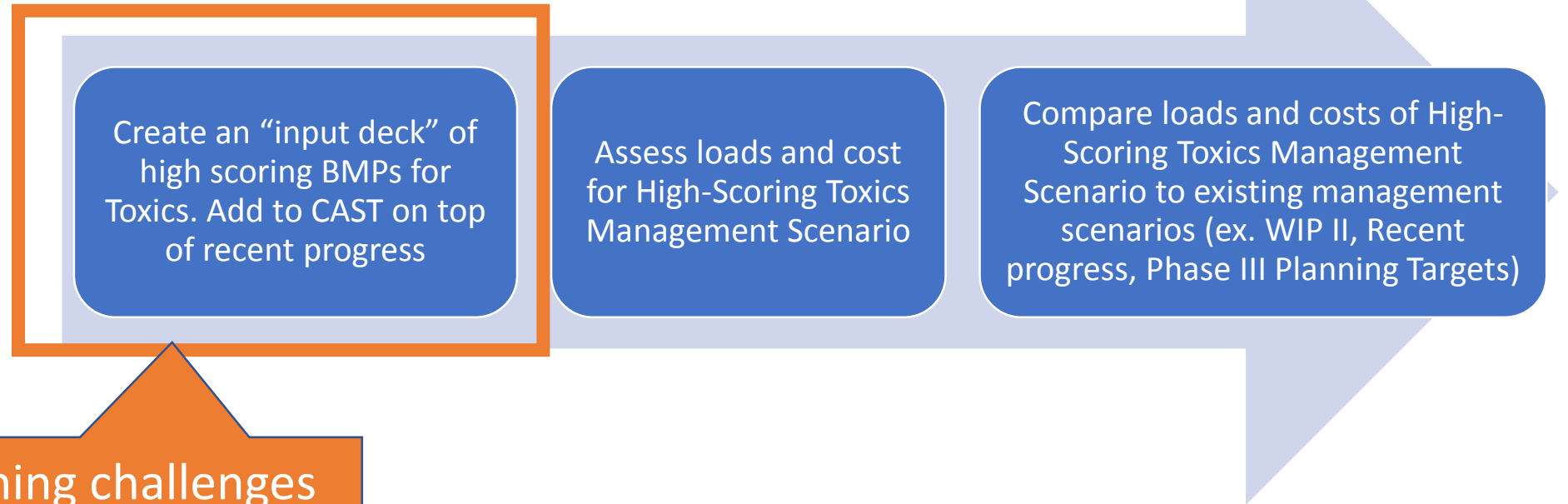
■ High Toxics Scores   ■ 2017 progress   ■ WIP II

Following the Initial Project:

- Similar analyses for all outcomes
- Identify knowledge gaps for additional co-benefits use and optimization
- Additional targeting for toxics management with other spatial data:
    - Legacy contamination
    - Vulnerable communities and environmental justice considerations
    - Cross-outcome map data
- Outreach to local managers and stakeholders:
    - Does this add to existing management tools?
    - Use in conducting public outreach for TMDL-related management?

Progress So Far (February 2018):

Create an "input deck" of high scoring BMPs for Toxics. Add to CAST on top of recent progress

Assess loads and cost for High-Scoring Toxics Management Scenario

Compare loads and costs of High-Scoring Toxics Management Scenario to existing management scenarios (ex. WIP II, Recent progress, Phase III Planning Targets)

Some beginning challenges

- Updating BMP names in report to match current CAST naming conventions
- Populating scores that are not 1:1 with Phase 6 BMPs
- Inclusion of new BMPs with no "official" scoring
  - Consideration: including co-benefits scores for new BMPs in later optimization work?

Thank you!

Questions? Comments? Suggestions?

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