QUANTIFICATION OF BMP IMPACTS ON CBP MANAGEMENT STRATEGIES

Urban Stormwater Workgroup Meeting

July 26, 2016

Contract

- Tetra Tech awarded contract from Chesapeake Bay Trust
  - James Davis-Martin, Project Technical Lead
  - Mark Sievers, Tetra Tech Lead and Urban Lead
  - Steve Dressing, Tetra Tech Agriculture Lead

Goal

To quantify the effect the Bay Model's best management practices (BMPs) have on each management strategy to better enable jurisdictions, localities, and others to assess the impact of their watershed implementation plans on all management strategies or additional goals

Intended Result

A matrix that assigns each BMP (or BMP group) an impact score for each management strategy or goal

Management Strategy	BMP 1	BMP 2	BMP 3	Etc.
A	-X to +X	-X to +X	-X to +X	-X to +X
B	-X to +X	-X to +X	-X to +X	-X to +X
C	-X to +X	-X to +X	-X to +X	-X to +X
Etc.	-X to +X	-X to +X	-X to +X	-X to +X

Management Strategies & Additional Goals – WQGIT

Management Strategy
Forest Buffers
Tree Canopy
2017 and 2025 WIPs
Water Quality Standards Attainment and Monitoring
Toxic Contaminants Research
Toxic Contaminants Policy and Prevention*
Climate Monitoring and Assessment
Climate Adaptation

* Will be completed by Toxic Contaminant Workgroup.

Additional Goal
Community Development/Jobs
Flood Control/Mitigation
Bacteria Loads
Property Values
Groundwater Recharge/Infiltration
Drinking Water Protection/Security
Biodiversity and Habitat
Air Quality
Recreation
Energy Efficiency

Process

- Develop narrative guidelines for assigning impact scores
  - Review each management strategy, focusing on the *Factors Influencing Success* section, to help identify and assess the factors for which BMP impacts are of greatest concern
  - Technical memorandum on the rationale for the guidelines
    - GIT/Wkgp review

Example Draft Impact Score Guidelines

Value	Score	Score Narrative for Groundwater Recharge/Infiltration	Score Narrative for Tree Canopy
5	Substantial Improvement	Practice maximizes infiltration at the site without contaminating groundwater resources	Practice directly creates tree canopy
4	Moderate to Substantial Improvement	Somewhere between 3 and 5 → BPJ	Somewhere between 3 and 5 → BPJ
3	Moderate Improvement	Practice creates substantial increase in infiltration at the site without contaminating groundwater resources compared to situation without practice	Practice establishes policies, regulations, ordinances, or program priorities that should result in increased tree canopy.
2	Slight to Moderate Improvement	Somewhere between 1 and 3 → BPJ	Somewhere between 1 and 3 → BPJ
1	Slight Improvement	Practice creates minor increase in infiltration at the site without contaminating groundwater resources compared to situation without practice	Practice reduces the impact of development, pests/diseases, utility-related or homeowner/property owner removals, mortality due to poor maintenance or site conditions, natural mortality due to aging, or deer browse on canopy loss.
0	No Effect	Practice has no impact on groundwater recharge/infiltration than without the practice.	Practice has no impact on tree canopy
-1	Slight Worsening	Practice creates slight decrease in infiltration at the site compared to situation without the practice	Practice worsens the impact of development, pests/diseases, utility-related or homeowner/property owner removals, mortality due to poor maintenance or site conditions, natural mortality due to aging, or deer browse on canopy loss.
-2	Slight to Moderate Worsening	Somewhere between -1 and -3 → BPJ	Somewhere between -1 and -3 → BPJ
-3	Moderate Worsening	Practice creates substantial decrease in infiltration at the site compared to situation without practice	Practice establishes policies, regulations, ordinances, or program priorities that should result in decreased tree canopy.
-4	Moderate to Substantial Worsening	Somewhere between -3 and -5 → BPJ	Somewhere between -3 and -5 → BPJ
-5	Substantial Worsening	Practice minimizes infiltration at the site or uses/removes groundwater.	Practice directly removes tree canopy

Process

- Group BMPs
  - Group BMPs with similar function and potential impacts to help simplify analysis and result presentation
  - Simplify presentation of results in tabular format
- Early involvement of GITs/Workgroups
  - General input on project
  - BMPs of concern
  - Ideas on assigning BMP impact scores
  - Impacts (positive and negative) of BMPs on management strategies
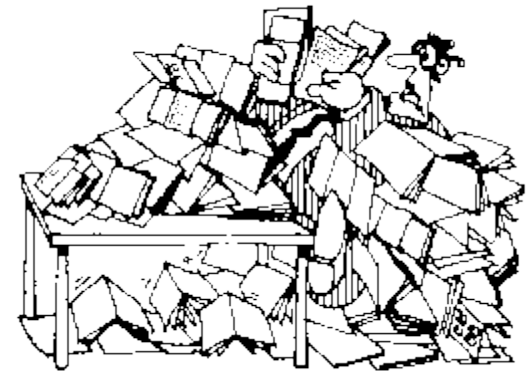 - Information sources

Process

- Gather information
  - Management strategies
  - **Management strategy team and GIT/Wkgp members**
    - Inform and focus the search for information used in scoring impacts
  - BMP Panel reports
  - Scientific literature
  - Toxic contaminants study
  - Best professional judgment

Process

□ Assign impact scores to BMP groupings

□ Develop draft project report for review and comment

□ Final report

- Final impact scores

- Rationale behind the BMP groupings

- Impact scoring guidelines

- Appendix with literature list

Tentative Timeline

Task #	Task Description	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1	BMP List and Groupings	✓	✓								
2	Impact Score Guidelines	✓	✓								
3	GIT/Wkgp Meetings	✓	✓	✓	✓	✓	✓				
4	Literature Search			✓	✓	✓	✓				
5	Literature Review and Scoring					✓	✓	✓	✓		
6	Final Documentation								✓	✓	✓

Questions for You

- Suggestions on impact score guidelines or how we might group BMPs in our scoring matrix?

- Which specific BMP (or BMP groups) do you feel would have the greatest impact (positive or negative) on management strategy goals?

  - What do you think their impacts might be?

  - Do you feel they would have a great impact (positive or negative)?

- What are the top impacts that concern you?

Questions for You

- Do you have any information sources that you can provide us or direct us to for this project?

- Are there specific individuals on the GIT that we should contact for assistance?

Communications

- Send all information and inquiries to Mark Sievers, Tetra Tech
  - mark.e.sievers@tetratech.com
  - 703-385-2605