AGENDA

Chesapeake Bay Program
Climate Smart Restoration Workshop:
Toxic Contaminants

Workshop in support of the CBT Project: Cross-Goal Climate Resiliency Analysis and Decision-Making Matrix and Implementation Methodology

UMCES Annapolis Office
429 4th Street
Annapolis, MD 21403

Day 1: Monday, July 31, 2017

9:30 – 10:00 AM	**Sign-in, Distribute Materials**	***Main Room***
	Welcome & Introduction to Workshop *Zoe Johnson (CBP/NOAA) & Anna Hamilton (Tetra Tech)* *Workshop Objectives*: A hands-on event, focused on applying the Climate Resiliency framework and decision matrix to Chesapeake Bay Program's Toxic Contaminants Management Strategy in order to pilot the approach for ultimate application to all CBP management strategies. *Project Goals*: To develop and provide a structured but easily applied process to make Toxic Contaminant management decisions 'climate smart'.	***Main Room***
10:15 – 10:45 AM	**Overview of Climate Smart, Adaptation Design Tool** *Anna Hamilton (Tetra Tech)*	***Main Room***
10:45-11:15 AM	**Linkages Between Climate Changes & TMDLs** *Hope Herron (Tetra Tech)*	***Main Room***
11:15-11:45 AM	**Introduction to Workshop Exercise & Strawmen** *Anna Hamilton (Tetra Tech)*	***Main Room***
11:45 AM – 1:15 PM	**LUNCH (on your own)**	
1:15 – 3:00 PM	**Breakout Groups: Work through the Climate Resiliency Decision Matrix for 3 example management activities[1] (expectation – work on first 2 example activities)** Example Management Activity 1[2]: Potomac PCB Remediation. Example Management Activity 2: Potomac River PCB TMDL. Example Management Activity 3: Hampton Roads/Norfolk Area Waste Site Facilities, Vulnerability to SLR. **Group 1 - Main Room**	

[1] Example management activities are grounded in Toxic Contaminants Workgroup approaches (e.g., linking with the TMDL process, an initial focus on PCBs), but any specific projects or actions presented are examples only, not actually being considered or recommended.

[2] See descriptions of each example management activity appended to end of this agenda.

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	Group 2 - CBP Fish Shack *Facilitators: Hope Heron (Tetra Tech) & David Gibbs (EPA)*
3:00 – 3:15 PM	**BREAK**
3:15 – 4:15 PM	**Continue Breakout Group work (expectation – work on 3rd example activity, and consider/summarize information relevant to higher levels captured in the notes)** **Group 1 - Main Room** **Group 2 - CBP Fish Shack** *Facilitators: Hope Heron (Tetra Tech) & David Gibbs (EPA)*
4:15 PM – 5:00 PM	**Reconvene, Brief Report-outs, Compare Key Outcomes** ***Main Room*** *Anna Hamilton & Hope Herron (Tetra Tech) & David Gibbs (EPA)*

Day 2: Tuesday, August 1, 2017

9:00 – 9:15 AM	**Recap of Key Outcomes from Activity 1 Matrices** ***Main Room*** *Anna Hamilton (Tetra Tech)*
9:15 – 10:15 AM	**Breakout Groups: Explore Activity 2 of the Design Tool, What are we missing?** **Group 1 - Main Room** **Group 2 - CBP Fish Shack** *Facilitators: Hope Heron (Tetra Tech) & David Gibbs (EPA)*
10:15 – 10:30 AM	**BREAK**
10:30 – 11:30 PM	**Breakout Groups: Decision context, applying results to decisions, emerging Insights** **Group 1 - Main Room** **Group 2 - CBP Fish Shack** *Facilitators: Hope Heron (Tetra Tech) & David Gibbs (EPA)*
11:30 – 12:15 PM	**Reconvene: Group Comparisons, information gaps, successes/issues, applicability to workgroup process, applicability across different workgroups** ***Main Room*** *Anna Hamilton & Hope Herron (Tetra Tech) & David Gibbs (EPA*
12:15 – 12:30 PM	**Wrap Up: Project Timeline & Next Steps** *Zoe Johnson (CBP/NOAA)*

Toxic Contaminants Workgroup – Example Management Activities at Various Levels

Example Management Activity 1: Potomac River PCB Remediation.

The Potomac River PCB TMDL (Hayward and Buchanan, 2007) identifies a variety of sources contributing to PCB loads, some of which will require substantial (up to 99%) load reductions in order to achieve TMDL targets. On-the-ground actions that might be implemented to achieve Potomac River PCB TMDL targets will be determined through ongoing and future TMDL processes, but may include BMPs such as some of the sediment trapping/remediation BMPs evaluated for co-benefits of contaminant reduction. These types actions represent the most specific level (in terms of location and method) of activity that would be implemented through the auspices of the Toxic Contaminants Workgroup for which potential climate change effects can be assessed and accounted for. From information in Hayward and Buchanan (2007) on the general types of PCB sources that contribute to observed environmental concentrations, a fictitious example 'project' is presented that includes an arbitrarily selected, fictitious site on the Potomac River (a real location but not an actual facility or otherwise identified contaminated site), and presents of a set of BMPs that might commonly be utilized to remediate various aspects of PCB contamination, such as erosion and runoff of contaminated sediments, and groundwater (GW) contamination through leaching, etc.

Example Management Activity 2: Potomac River PCB TMDL.

PCBs have been identified by the Toxic Contaminant Workgroup as a primary work plan focus, and the Total Maximum Daily Load (TMDL) process is a key mechanism through which Toxic Contaminant Workgroup goals are intended to be implemented. There are numerous places of potentially meaningful intersection between the TMDL process and climate change assessment, including (for example) target identification and source assessment, characterization of pathways, assessment and modeling of loading and load reduction options, assessment of water body and ecological responses (risk assessment), remedial investigations and consideration of implementation options for remedial actions. The Potomac River PCB TMDL has been published (Interstate Commission on the Potomac River Basin, 2007), and various recommended next steps are underway for filling data/information gaps and initiating remediation investigations. This TMDL will be used as a strawman for exploring where critical components of assumptions of the TMDL may be vulnerable to climate change (e.g., the assumptions regarding seasonality and critical flow conditions), and how they might be reviewed/revised.

Example Management Activity 3: Vulnerability of Virginia Waste Sites to SLR.

Overarching questions regarding the locations and nature of key sources of contaminants to the Chesapeake Bay help drive the formulation of approaches (or strategies) and objectives for remediation. Ongoing and future climate changes, including sea level rise (SLR), storm surge, and associated frequencies of flooding, can impact land-based industrial or waste facilities and contaminated sediment sites, potentially increasing releases from already identified sources, or placing new sources at risk of contaminant release. This represents a large spatial scale (e.g., Bay-wide) of impact, with the potential of altering assumptions about the processes and pathways that contribute loadings to the Bay, and thus affecting strategy/approach-level decisions.

The example being considered is to examine the future risk of inundation of low-lying lands in the Hampton Roads/Norfolk, VA area of the lower Bay due to SLR and storm surge, and the associated threats to various types of waste facilities. This will be done using information from the Climate Central Surging Seas Risk Finder on the numbers of various types of waste-associated facilities in Virginia under future risk of inundation with SLR. In particular we will focus on EPA-listed waste sites (as well as some other facilities, structures, roads, etc.) that would be inundated at 5-feet above local high tide as a starting point for considering the potential additional exposure risks. This example provides an avenue for considering the implications of the vulnerabilities of these facilities, and how such information could affect strategies for meeting work group goals of reducing contaminant loading and effects in the Bay.

As an additional example, we present outputs from an EPA effort (by the Exposure Analysis and Risk Characterization Group, EPA Office of Research and Development) that identified and mapped waste facilities in the Norfolk, VA/Hampton Roads area of the southern Chesapeake Bay, as well as associated mapping of hurricane storm surge projections. The original objective for use of these results was to consider on a regional, rather than a single-site basis, how to sustain the functionality of municipal waste management across a system of sites that supports a large population, under the risk of a storm that could take out a few to several of the contributing units within the regional waste management system. This example provides an additional picture of how climate changes in SLR and storm surge can spatial pattern and number of waste facilities that may be at risk in the future.