June 19, 2017

# CBP Climate Resiliency Workgroup

# Cross Goal Climate Resiliency Analysis Matrix Project

- 3-Case Studies (Black Duck/Tidal Wetlands, SAV & Toxic Contaminants)
- Deliverables:  Decision-Making Matrices and Implementation Methodologies (3 CBP Planning Levels)
- Workshops/Events
  - Climate-Smart Habitat Restoration Workshops – November, 2016
  - Black Duck/Tidal Wetlands and SAV Webinar  - May 31, 2017
  - Toxic Contaminants Climate Adaptation Workshop – late July/early August, 2017
- Project Completion – September, 2017

Update on Climate Change Components

# 2017 TMDL Midpoint Assessment

# CRWG Agenda Items

- **Update: Climate-related components of Chesapeake Bay TMDL Midpoint Assessment: Status and Next Steps**
  - Guidance on Policy Options and Written Expectations for Phase III Watershed Implementation Plans
  - Resilient Best Management Practice Case Study Communication Materials

- **Action Item: CRWG approval - Revised sea level rise projection guidance for application in CBP Water Quality Sediment Transport Model**
- **Action Item: CRWG approval - Request for STAC Peer Review: *CBP Climate Change Assessment Framework and Programmatic Integration and Response Efforts***

# Climate Change & the TMDL
# Mid-Point Assessment: 3 Major Components

**Assessment Procedures**

(PSC Approved)

- Assess how climate change may affect current water quality standards (i.e., nutrient and sediment source loads over time and attainment )
  - Watershed Model
  - WQ Sediment Transport Model

**Guiding Principles**

(PSC Approved)

- WIP Development
- WIP Implementation

**Policy Options**

(PSC Consideration)

- Quantitative (Option #2)
- Qualitative (Options #5,6,7)

# CRWG Recommended Policy Option (5,6,7)

**Optimize Phase III WIP Development and Adaptively Manage BMP Implementation**

- During the development of Phase III WIPs, jurisdictions will **prioritize BMPs that are more resilient** to future climate impacts over the intended design life of the proposed practices.
- During each two-year milestone development period, jurisdictions will **consider new information on the performance of BMPs and the programs that support them**, including the contribution of seasonal, inter-annual climate variability and weather extremes.
- Jurisdictions will **assess this information and adjust plans to implement their Phase III WIPs to better mitigate anticipated increases** in nitrogen, phosphorus or sediment due to climate change.
- Jurisdictions would **provide a narrative consistent with the Guiding Principles** that describes their programmatic commitments to address climate change in their Phase III WIPs.

# What is a "Resilient" BMP?

1) **Assess vulnerability** of BMP's to projected impacts over intended design life
2) **Incorporate** resilient **siting and design principles**
3) **Monitor performance** over-time and adjust implementation, as necessary
4) **Research changes in BMP efficiencies** in response to extreme events or changing conditions.

# Resilient BMP's: A call for candidate projects

**Objective:** Identify one or more "resilient" BMPs within each CB jurisdiction

**Purpose:** 1) Showcase resilient practices; 2) Share lessons-learned; and 3) Compile information, tools and resources

**Project Criteria:**

- ✓ Completed or planned projects
- ✓ Coastal and inland practices; Range of practices (urban, agriculture, etc.)
- ✓ Address one or more of the PSC approved "Guiding Principles"
  - Capitalize on "Co-Benefits"
  - Align with existing climate resiliency plans and strategies
  - Account for and integrate planning and consideration of existing stressors
  - Manage for risk and plan for uncertainty
  - Reduce vulnerability to climate or extreme events over the project design life
  - Build in flexibility and adaptability

**Information Needs:**

- ✓ Brief project description
- ✓ Location
- ✓ Project Contact
- ✓ Photos or project plans (if available)

| Site | Background RSL rate (mm/yr) | Background 1995-2025 RSL Estimate (mm) | 1995-2025 GMSL rate (mm/yr) | 1995-2025 SLR Estimate (cm) |
|---|---|---|---|---|
| BALTIMORE | 1.4 | 42.0 | 3.0 | 13.2 |
| LEWES | 1.7 | 51.9 | 3.0 | 14.2 |
| ANNAPOLIS | 1.7 | 49.8 | 3.0 | 14.0 |
| WASHINGTON DC | 1.4 | 40.5 | 3.0 | 13.1 |
| PORTSMOUTH | 2.3 | 68.4 | 3.0 | 15.8 |
| SOLOMON'S ISLAND | 1.9 | 57.0 | 3.0 | 14.7 |
| GLOUCESTER POINT | 2.0 | 61.2 | 3.0 | 15.1 |
| KIPTOPEKE BEACH | 1.8 | 53.1 | 3.0 | 14.3 |
| CAMBRIDGE II | 1.7 | 52.2 | 3.0 | 14.2 |
| CHESAPEAKE BAY BR. TUN. | 2.2 | 67.2 | 3.0 | 15.7 |
| SEWELLS POINT | 2.5 | 74.4 | 3.0 | 16.4 |

# 2025 Estimates of Total Sea Level Rise in the Chesapeake Bay

## GMSL Scenario: Low

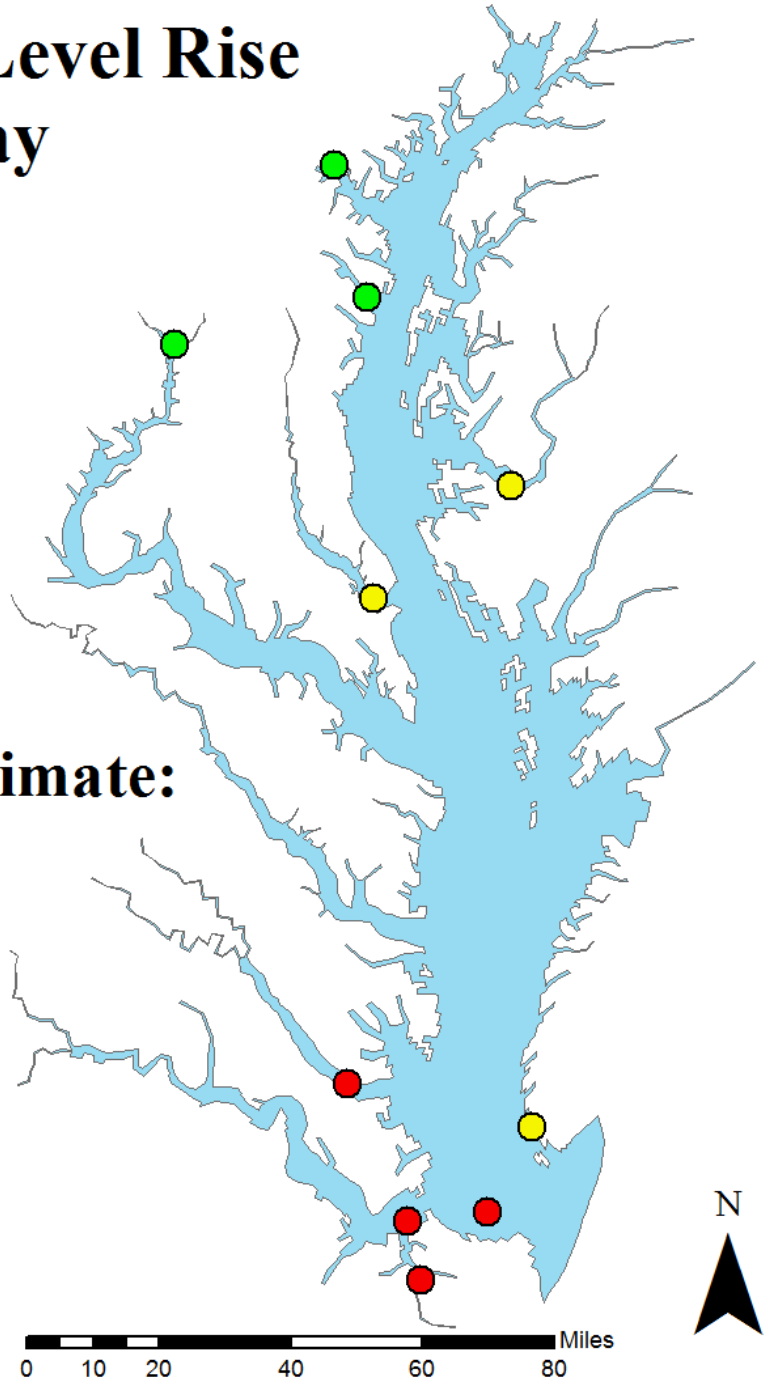
### Median Estimates (cm)

### 1995 - 2025

- 13 - 14
- 14 - 15
- 15 - 16.5

**Average SLR Estimate:**

***14.7 cm***




Coordinate System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: -75.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000
Units: Meter

# CRWG Workgroup Priorities - 2016

1. Water Quality and the 2017 Mid Assessment
2. Monitoring Needs and Long Term Trend Assessments
3. Climate Data and Information Portals
4. Communications, Outreach, Education and Capacity Building
5. Green Infrastructure and Coastal Resiliency
6. Research Agenda, Capacity and Needs
7. Ocean Acidification
8. Climate Change and Diversity
9. Climate Impact Vulnerability Assessments
10. Climate Change Indicators and Performance Metrics

# CRWG Workgroup Priorities - 2017

- Water Quality and the 2017 Midpoint Assessment
  - BMP Siting and Design Guidelines
  - Climate Impact Vulnerability Assessments
  - Additional guidance on Phase III WIP development and Implementation
- Monitoring Needs and Long Term Trend Assessments
  - Research Agenda, Capacity and Needs- Regional Workshop?
  - Climate Change Indicators and Performance Metrics- 2016 GIT funded project
- Climate Data, Information and Mapping
  - Watershed-wide/Coast-wide mapping layer
  - USACE Comprehensive Study
  - CBP Cross GIT Mapping Project
  - Regional adaptation priorities
- Green Infrastructure and Coastal Resiliency
  - Lessons learned
  - Performance metrics
  - Regional priorities

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Chesapeake Bay Program
Science. Restoration. Partnership.

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