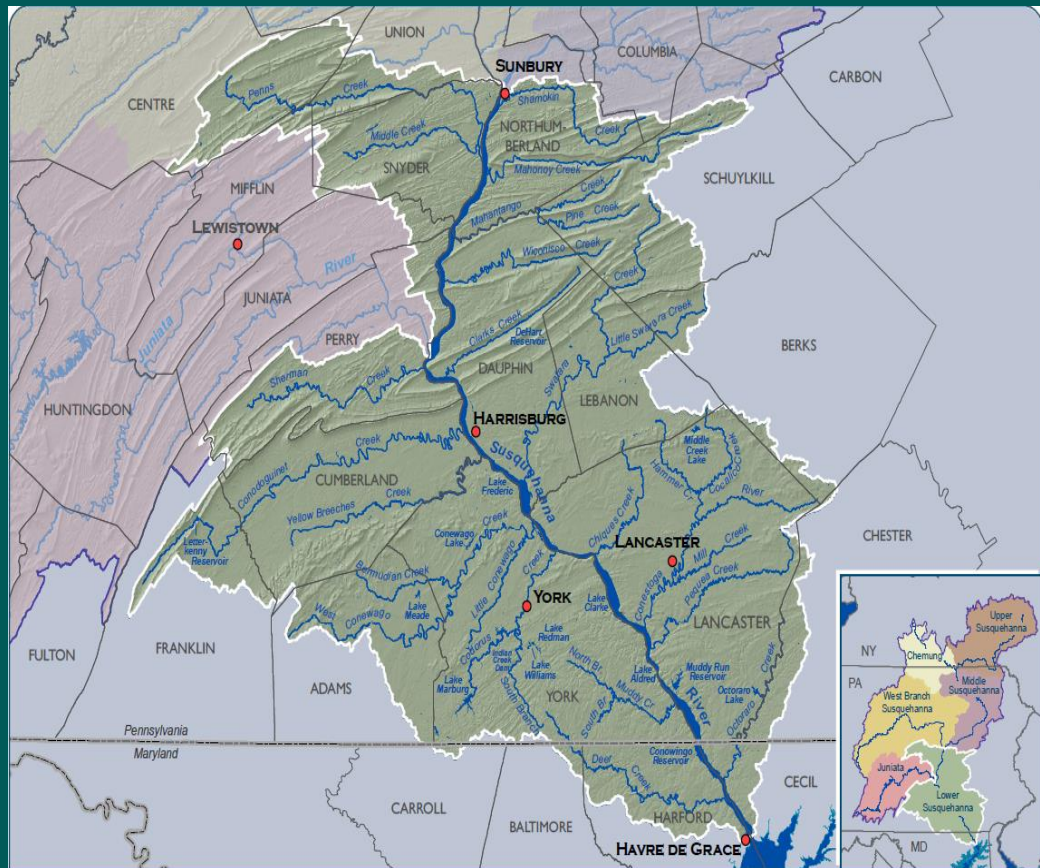


Lower Susquehanna River Watershed Assessment Key Findings



Graphic courtesy of SRBC

Anna Compton
USACE

Scientific and Technical Advisory Committee Workshop
January 13, 2016

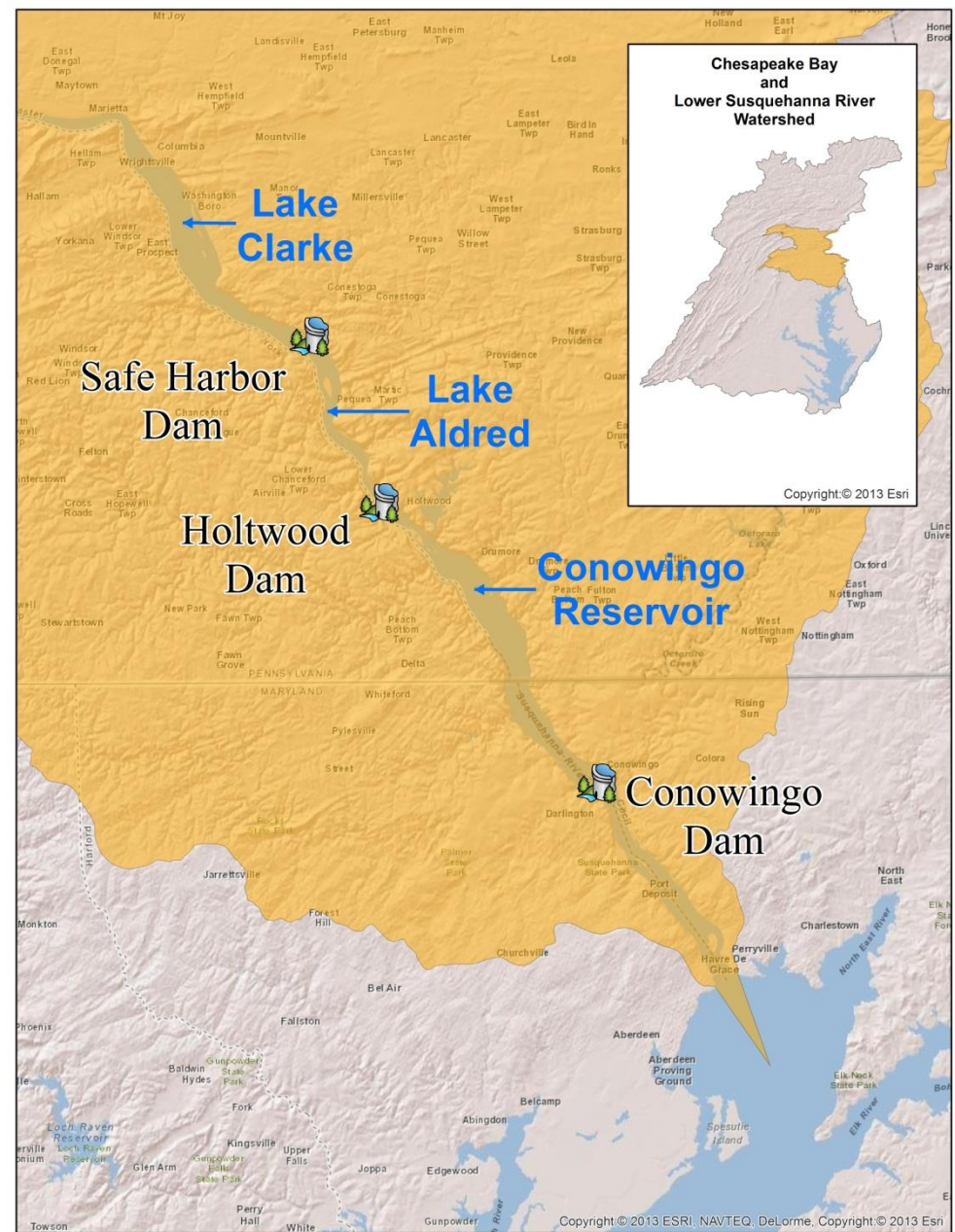
Presentation Overview

- Study Overview
- Key Findings
- Where are we now?

Study Area



Graphic courtesy of SRBC





Chesapeake Bay Program
Science. Restoration. Partnership.



LSRWA Goals

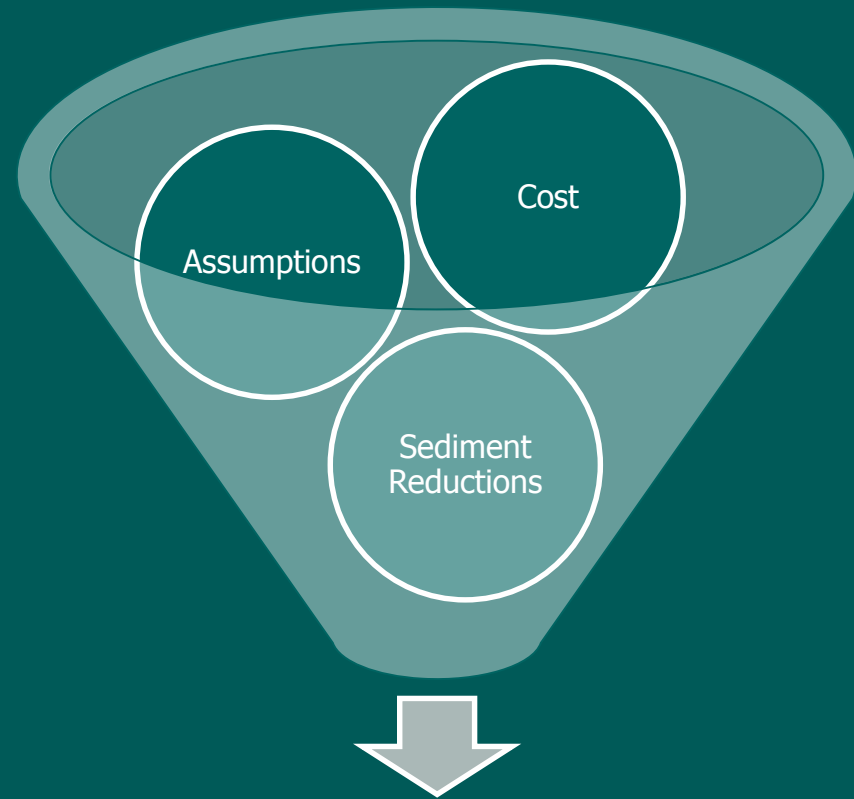
- Determine Bay health effects due to the loss of trapping capacity
- Describe sediment and associated nutrient transport effects during high flow storm events
- Evaluate sediment and associated nutrient load reduction strategies

Managing Sediment

- In-Reservoir Options
- Upstream Best Management Practices

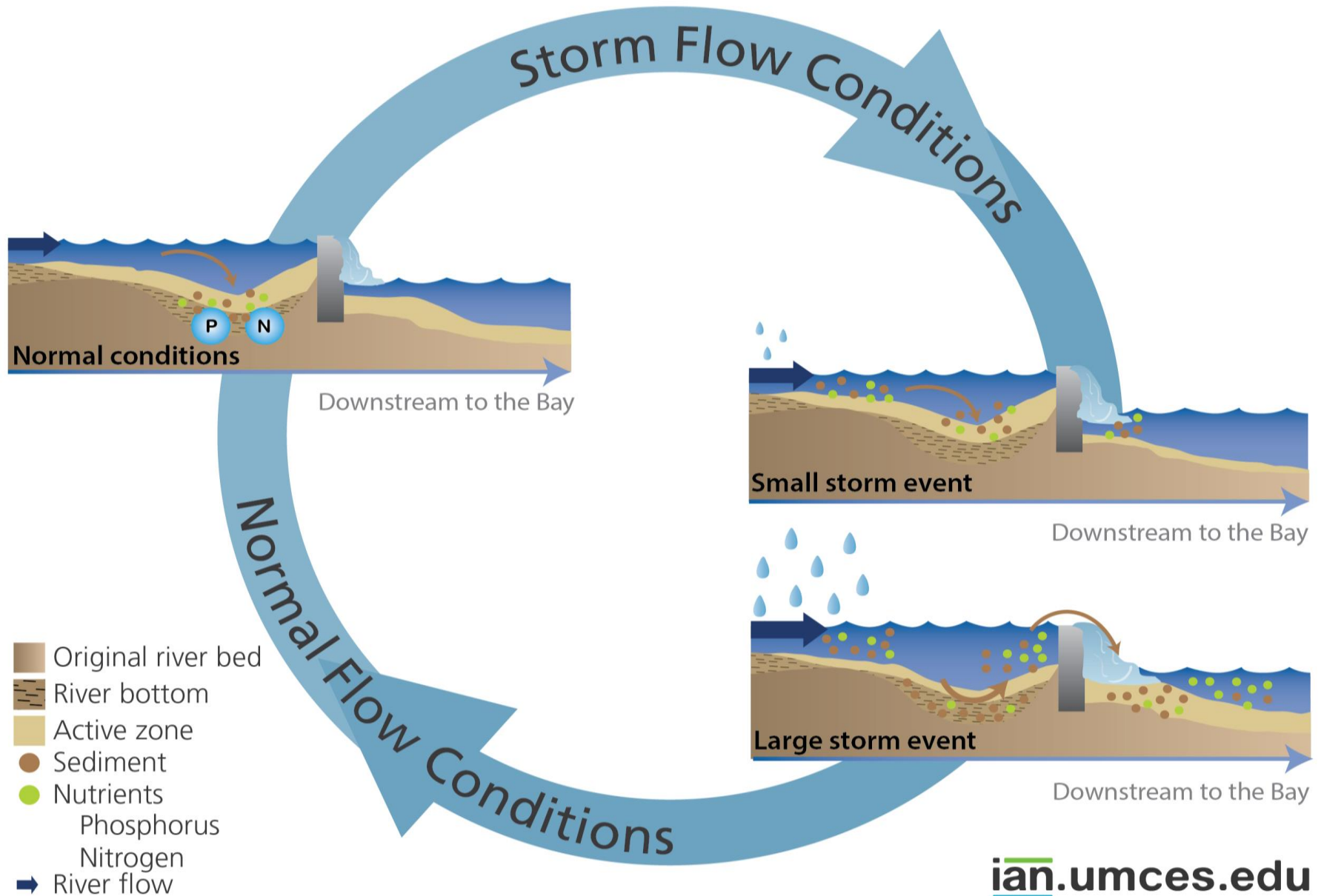


Photo credit: Washington DOT (Top) Chesapeake Bay Program (Bottom)



Water Quality Effects

Finding 1: Conditions are Different Than Previously Understood



Finding 2: Loss of Long-Term Trapping Impacts the Bay

Excess Nutrients ↘

Algae Blooms ↘

Low Dissolved Oxygen ↘

Harm to Aquatic Life



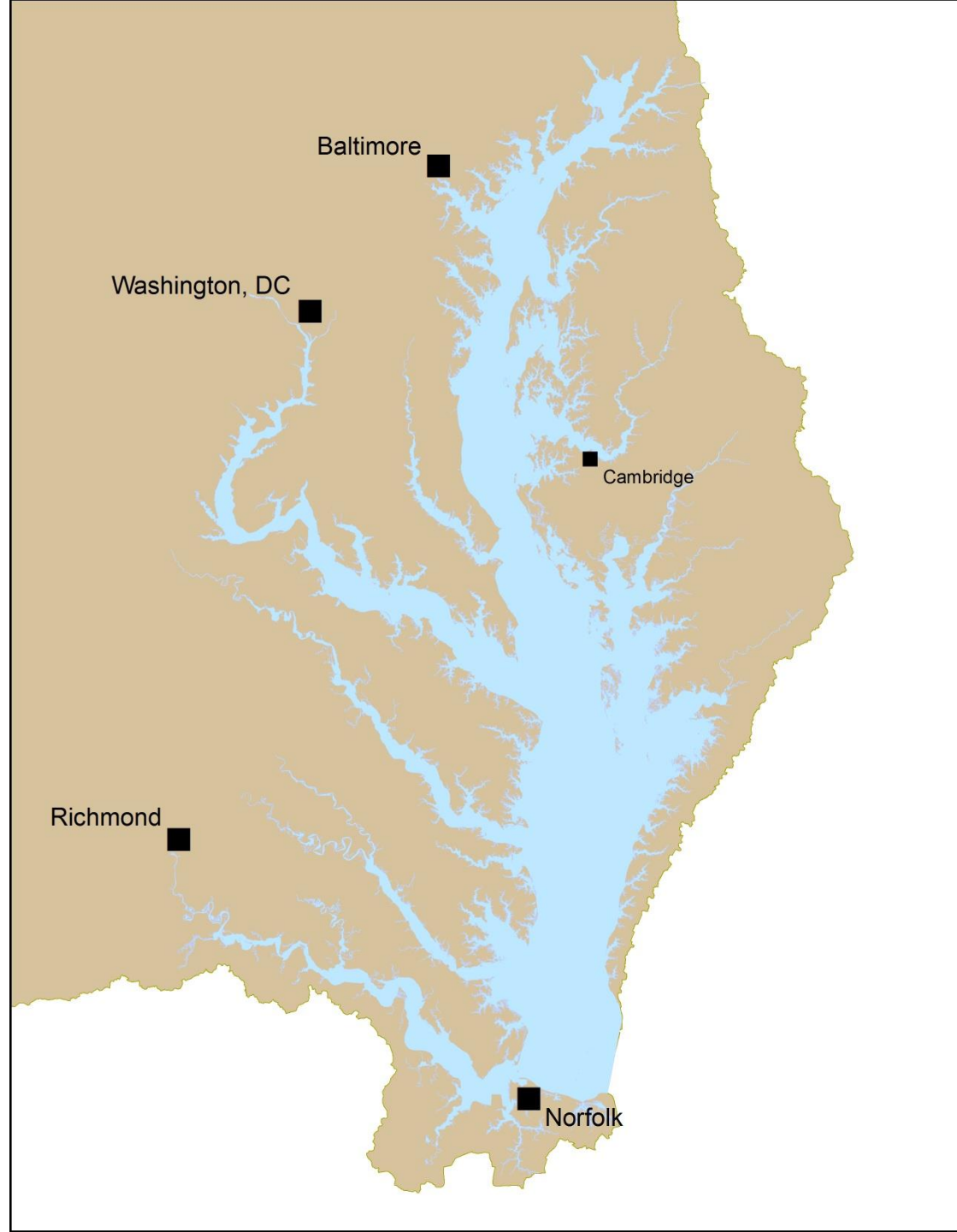
Photo: Wikimedia



Photo: Chesapeake Bay Program

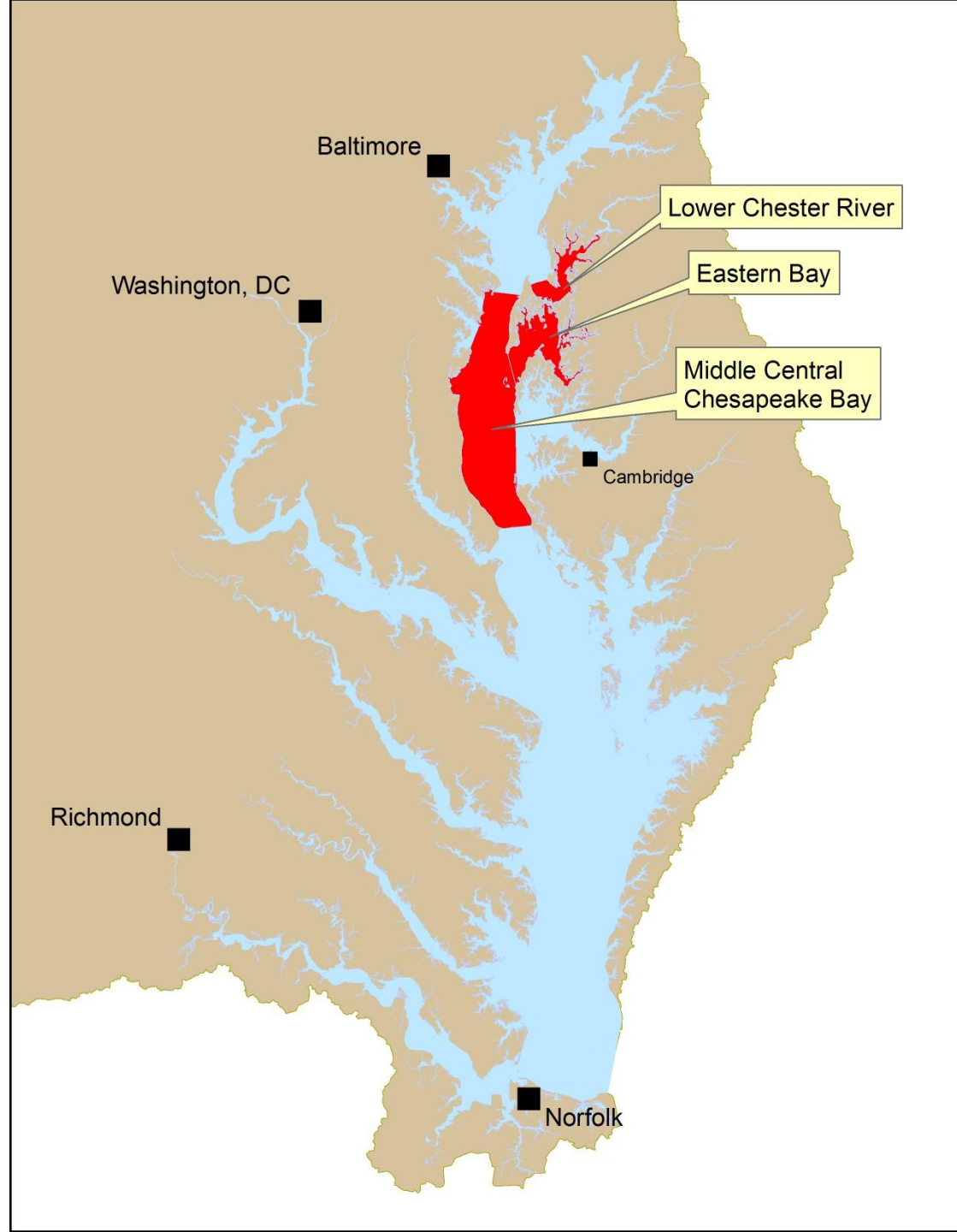
Finding 2 Continued:

Chesapeake Bay Water
Quality Under
Watershed
Implementation Plans
Fully Achieved



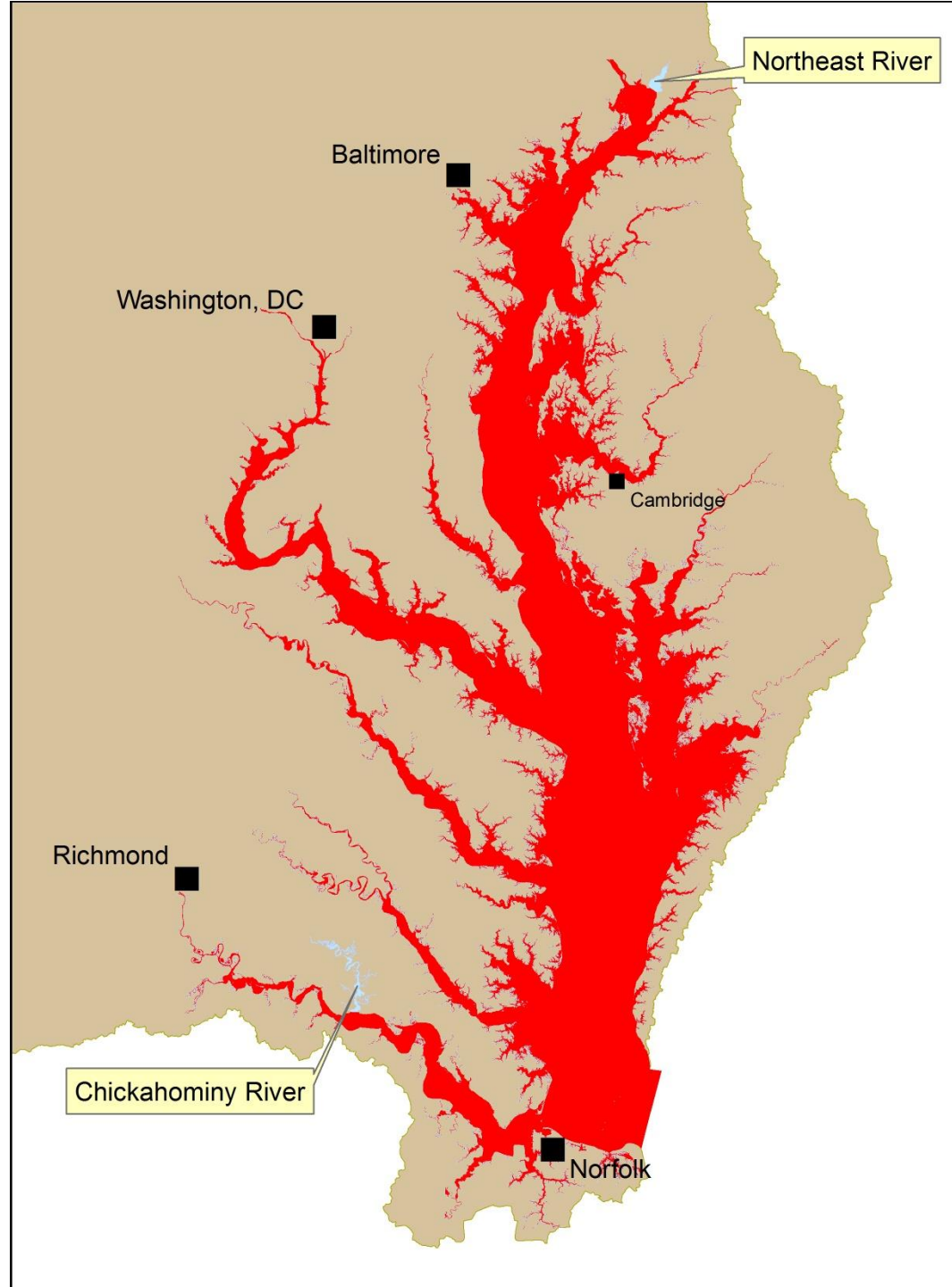
Finding 2 Continued:

Chesapeake Bay Water
Quality Under
Watershed
Implementation Plans
Fully Achieved:
Dams in Dynamic
Equilibrium

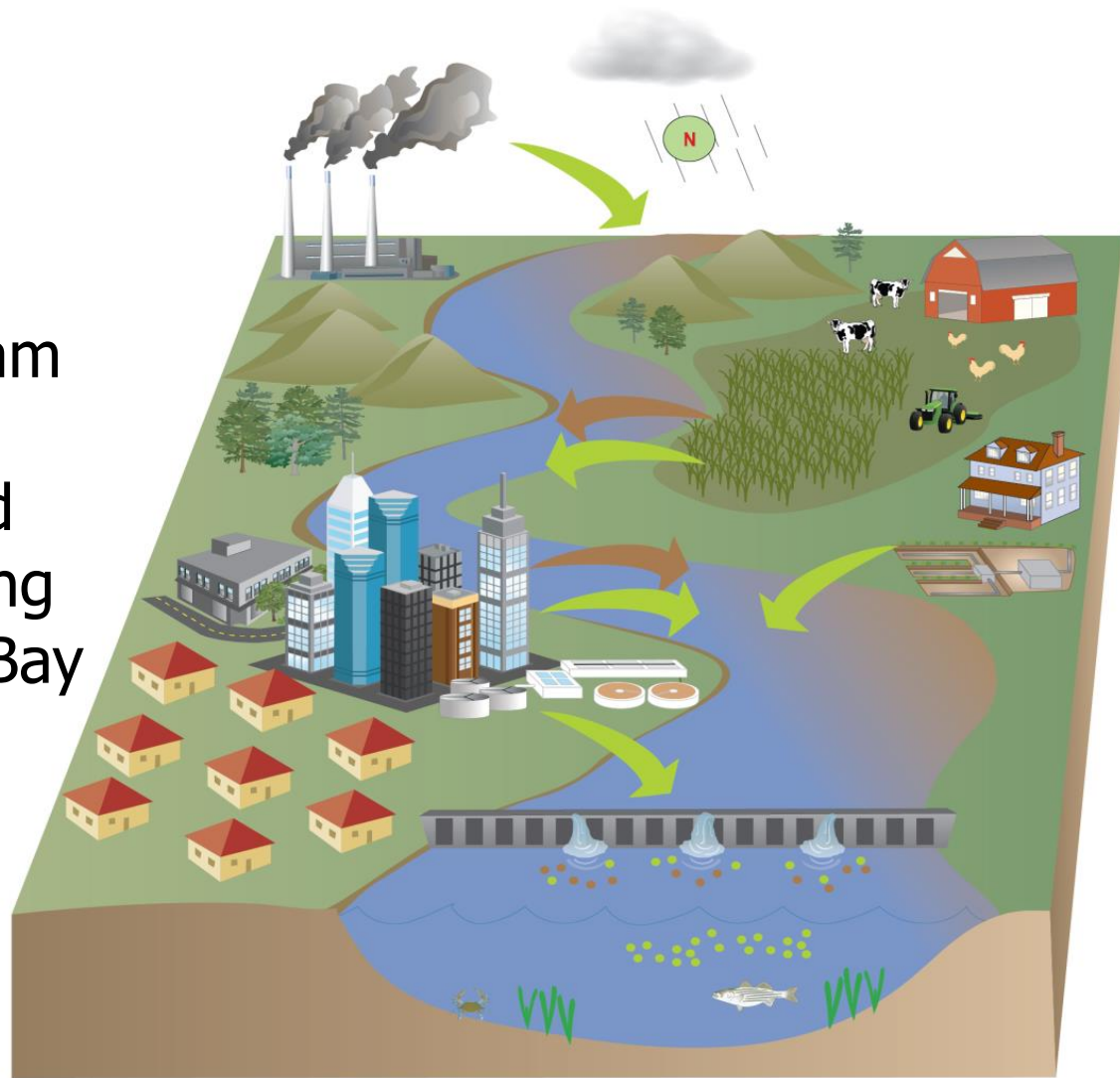


Finding 2 Continued:

Chesapeake Bay Water
Quality if We
Don't Do Anything
More



Finding 3:
Sources Upstream
Deliver More
Sediments and
Nutrients Causing
More Impact to Bay



Development



Stormwater runoff



Agriculture



Septic systems



Wastewater treatment



Atmospheric inputs



Nutrients

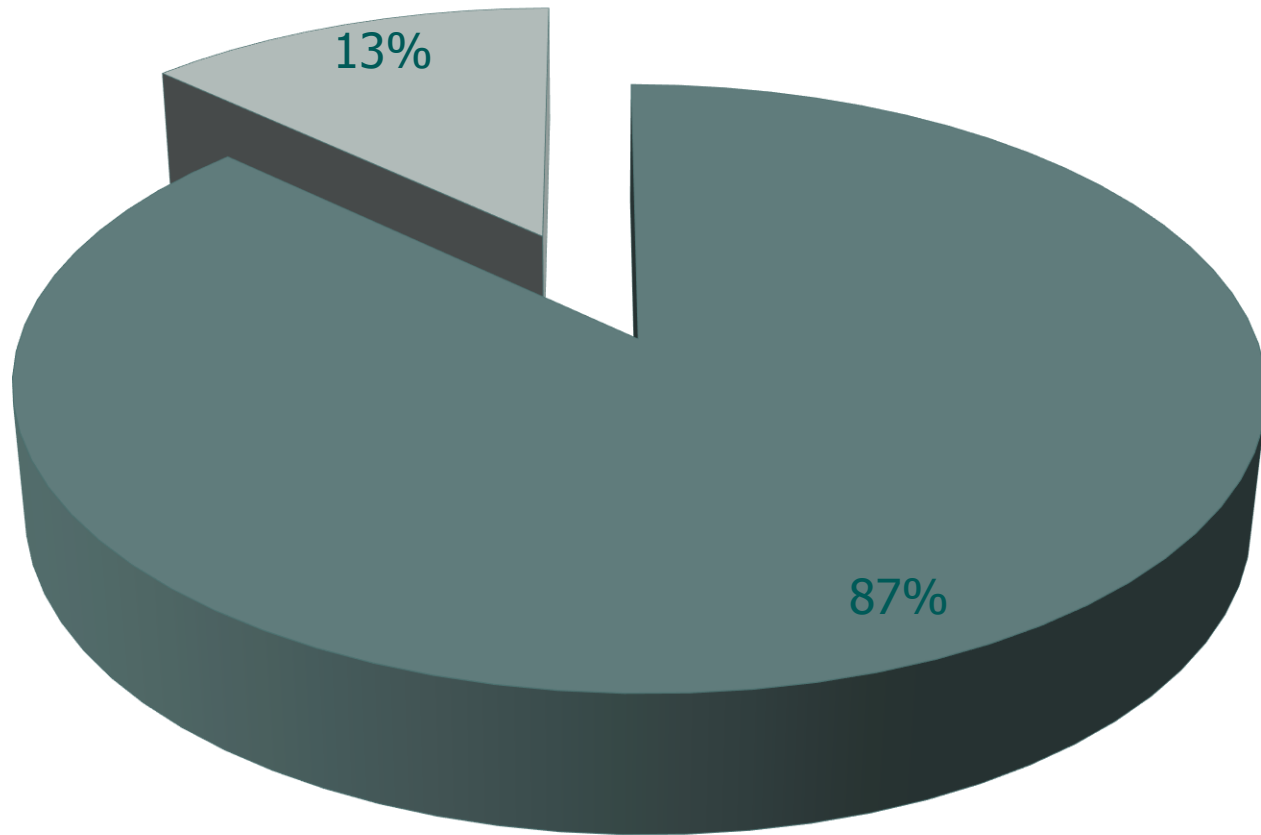
Sediment

Graphic courtesy of UMCES

Finding 3 Continued:

Estimated Sediment Loads 2008-2011

■ Susquehanna Watershed ■ Conowingo



Finding 3 Continued:

With or Without the Dams,
Large Storms Will Continue
To Contribute Sediment
and Nutrients to the Bay



February 2013 Storm

***Photo credit:
NASA***

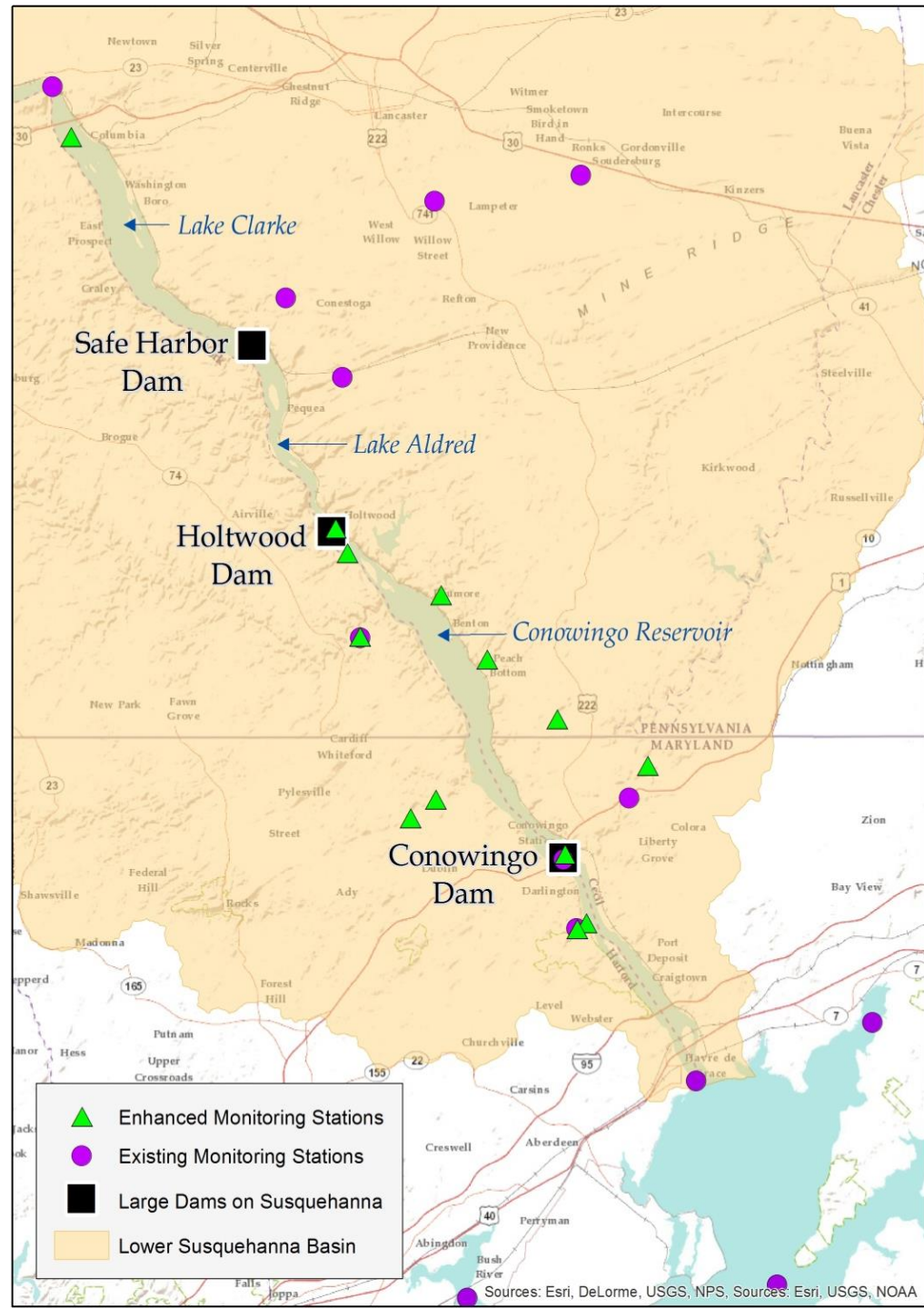
Finding 4: Dredging, Bypassing, and Dam Operational Changes, By Itself, Does Not Provide Sufficient Benefits to Offset Impacts From the Loss of Long-Term Trapping Capacity

- Dredging = Minimum, Short Lived Water Quality Benefits
- Cost: \$15-270 Million Every Year
- Back to Mid-1990's = \$496 million to \$2.8 billion
- Only 'Keeping Up' With Inflowing Sediment
- Reducing Nutrients at Their Source More Effective



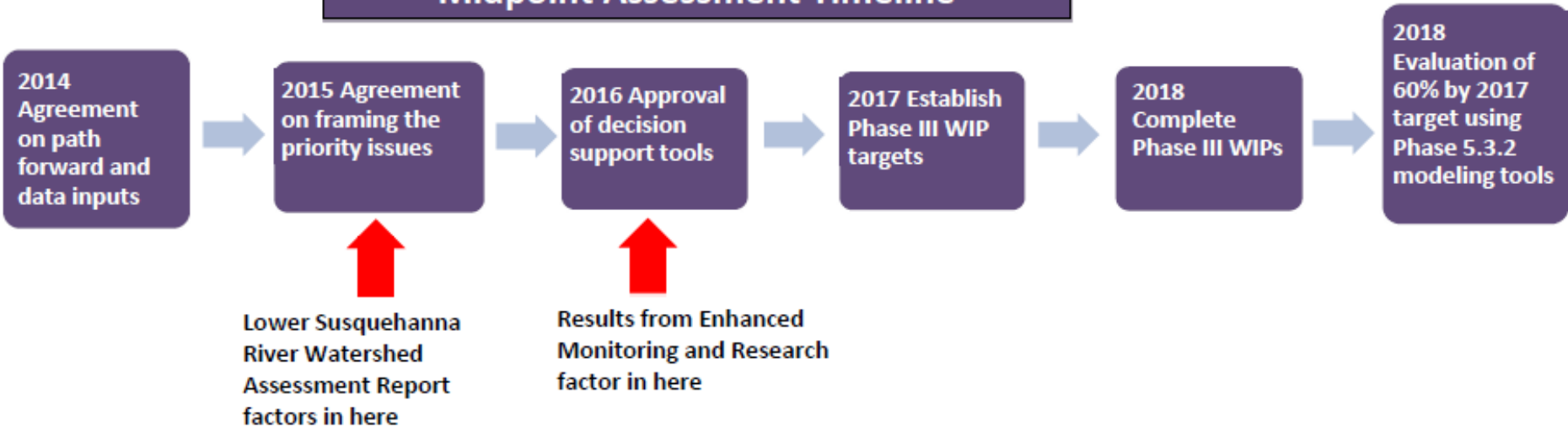
Enhanced Monitoring and Modeling

- Short-Term
- Long-Term



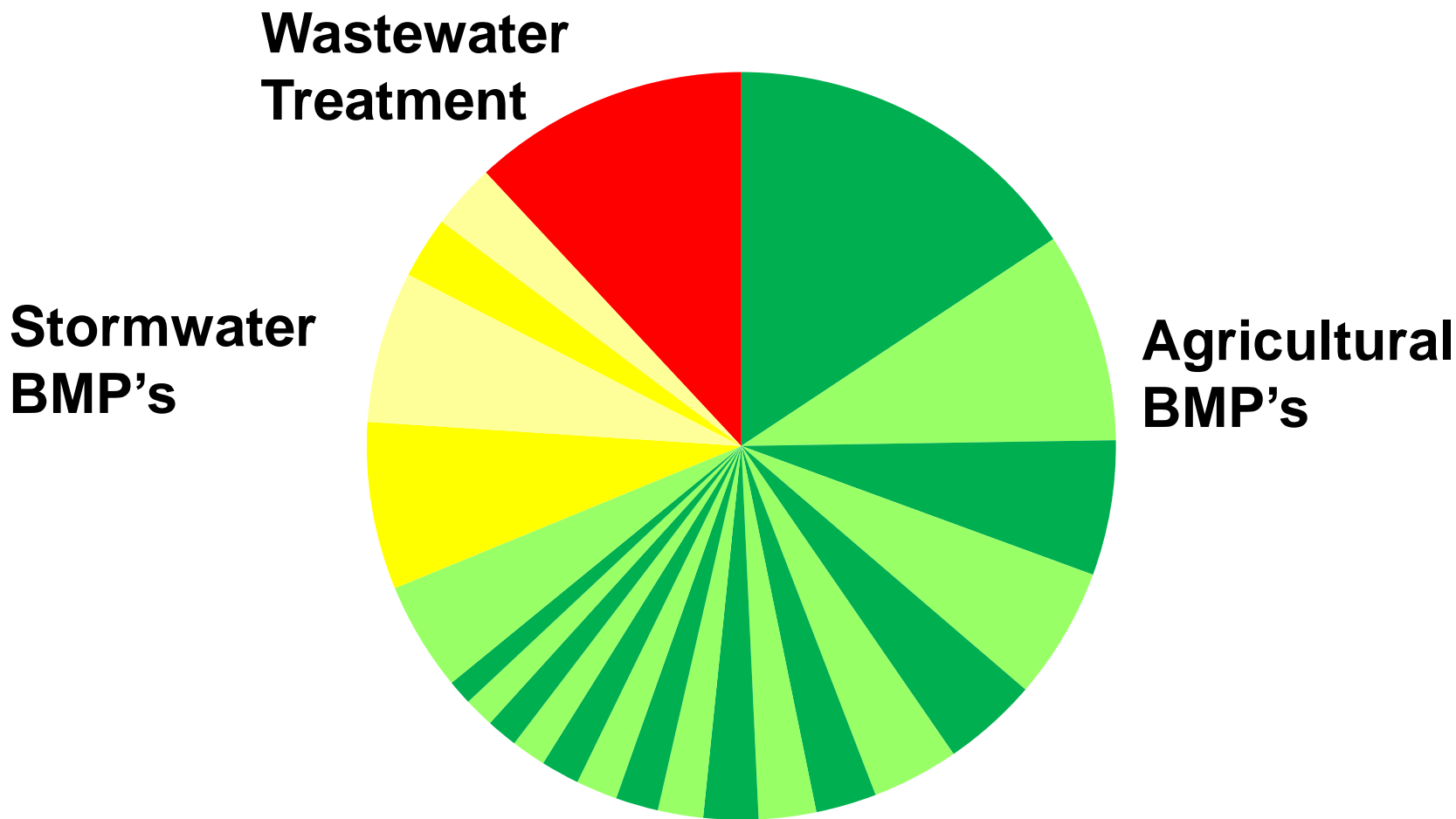
Integrate LSRWA Findings into Bay Total Maximum Daily Load Midpoint Assessment

Chesapeake Bay TMDL 2017 Midpoint Assessment Timeline



Develop and Implement Management Options

Relative Contributions of Pennsylvania's Watershed Implementation Plan Best Management Practices



Where Are We Now?

LSRWA website: <http://bit.ly/LSRWA>

- ✓ Agency Technical Review/Legal May 2014
- ✓ Technical Edit May 2014
- ✓ STAC/Quarterly group June - August 2014
- ✓ Public November 2014 - January 2015
- ✓ USACE North Atlantic Division May 2015
- ✓ USACE HQ August 2015
- ✓ Report Submitted to ASA (CW) October 2015

- Final Report 2016
- Final Report roll-out and posting 2016