

Expanded Monitoring in support of Estuary Eutrophication Modeling

Water Quality Advisory Committee

May 11, 2017



Delaware River Basin Commission

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Presented to an advisory committee of the DRBC on May 11, 2017.
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Expanded Monitoring

- * Description of expanded monitoring efforts in support of development of the estuary eutrophication model
 - * Initiated monitoring (happening now)
 - * Planned (upcoming)

Initiated Monitoring

- * Year-round Boat Run monitoring for nutrients
 - * Started January 2017
 - * Monthly
 - * Nutrients and nutrient related parameters
 - * Expected to continue through 2019
- * Routine nutrient monitoring, Delaware River at Trenton
 - * Started January 2017
 - * Twice per month
 - * Nutrients
 - * Through 2019
 - * Coordination with USGS

Initiated Monitoring (continued)

- * Addition of Salinity to NOAA PORTS

1. Lewes, DE
2. Cape May, NJ
3. C&D Canal at Chesapeake City, MD

- * All tidal boundaries

- * Salt flux necessary to establish accuracy of hydrodynamic modeling

- * <https://tidesandcurrents.noaa.gov/ports/ports.html?id=8557380&mode=threedaysct>

Initiated Monitoring (continued)

Tributary Nutrient Monitoring

- * Assunpink Creek
- * Neshaminy Creek
- * Mantua Creek
- * Christina River
- * Murderkill River
- * Pennypack Creek
- * Pennsauken Creek
- * Cohansey River
- * Schuylkill River
- * Frankford / Tacony Creek
- * Started in 2016
- * Selected based on USGS SPARROW Model
- * 4 sampling events / year
- * Continue in 2017, 2018
- * Will expand in future (DWRF)

Planned Monitoring

- * Nitrate & DOC (or TOC) Spectral analyzer deployments
 - * Cooperative with USGS
 - * Expected Deployment in January 2018
 - * Trenton, NJ and Chester, PA USGS water quality monitors
 - * Concurrent grab sampling
 - * Post-interpret spectral signal to construct continuous time series starting January 2018

Planned Monitoring (continued)

- * Upper Estuary Primary Productivity Measurement
 - * Zones 2, 3, 4, upper 5
 - * Summer 2018
 - * Follows 2014 project in lower estuary
 - * http://www.nj.gov/drbc/library/documents/nutrients/nutrients-chlor-a_DelawareBay_UMd2015.pdf
 - * UMCES Incubation and analysis

Planned Monitoring (continued)

- * Estuary Phytoplankton
 - * Data compilation and review underway
 - * Additional monitoring possible
 - * Still under development

Planned Monitoring (continued)

- * Additional Point Discharge Monitoring
 - * Frequency & participation under development
 - * 1st round notifications summer 2017
 - * Monitoring to commence 2018
 - * Coordination with Expert Panel, Modeling consultant

Planned Monitoring (continued)

- * Routine monitoring, Schuylkill River at Philadelphia
 - * May commence late summer 2017
 - * Twice per month in 2018
 - * Nutrients and related

Questions / Discussion ?

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