



Delaware River Basin Commission

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Kristen Bowman Kavanagh, P.E.
Executive Director

Minutes
Water Quality Advisory Committee
December 4, 2025

Members & Alternates who attended:

Chair:

Sarah Rickard, reserved Member from NYSDEC

Other Reserved

DNREC

Member: Stephen Williams

NJDEP

Member: Frank Klapinski

PADEP

Member: Michael (Josh) Lookenbill

EPA

Alternate: Kathryn Flynn (R2)
Member: Taylor Krolik (R3)
Rep. Greg Voigt (R3)
Rep. Jessica Martinsen (R3)

National Park Service

Alternate: Caleb Tzilkowski

Non-Reserved

Academia/Science

Member: John Jackson (Stroud Water Research Center)

Environmental Professional

Alternate: Kacy Manahan (Delaware Riverkeeper Network)

Local Watershed Organizations

Alternate: Erin Landis (Wissahickon Trails)

Regulated Community Industrial

Regulated Community Municipal

Member: Jay Cruz (PWD)
Alternate: Bryan Lennon (Wilmington)

Other Attendees:

- _____
Leah Gaffney (ANDRIS Consulting)
- _____
Jean Malafronte (ANDRIS Consulting)
- _____
Preston Luitweiler (Aqua America)
- _____
Greg Cavallo (Cavallo Environmental)
- _____
Scott Schreiber (CCMUA)
- _____
Eileen Althouse (CDM Smith)
- _____
Zach Eichenwald (CDM Smith)
- _____
Colleen Hughes (CDM Smith)
- _____
Paula Kulis (CDM Smith)
- _____
Michael Rockel (CTEH, LLC)
- _____
Julia Palmer (Delaware Riverkeeper Network)
- _____
Charles Hurst (DELCORA)

- _____
Dana Craft (GCUA)
- _____
Brandon Bach (HDR)
- _____
Jake Metch (HDR)
- _____
Andrew Thuman (HDR)
- _____
Victor Bierman (LimnoTech)
- _____
Brenda Gotanda (Manko, Gold, Katcher & Fox)
- _____
Jane Rowan (Mott MacDonald)
- _____
Eileen Murphy (Musconetcong Watershed)
- _____
Samantha Jalkowski (NJDEP)
- _____
Robert Bourdon (NOAA)
- _____
Brent Gotsch (NYCDEP)
- _____
Duke Adams (PADEP)

Matthew Amato (DRBC)
 Thomas Amidon (DRBC)
 Sarah Beganskas (DRBC)
 Jacob Bransky (DRBC)
 Pam Bush (DRBC)
 Jeremy Conkle (DRBC)
 Joseph Fogarty (DRBC)
 Mike Heller (DRBC)
 Kristen Bowman Kavanagh (DRBC)
 Avery Lentini (DRBC)
 Naomi Mendelsohn (DRBC)
 Elaine Panuccio (DRBC)
 Chad Pindar (DRBC)
 Kate Schmidt (DRBC)
 Namsoo Suk (DRBC)
 John Yagecic (DRBC)
 Li Zheng (DRBC)

Denise Hakowski (EPA Region 3)
 Greg Voigt (EPA Region 3)

Hoss Liaghat (PADEP)

Kathy Klein (PDE)

Kelly Anderson (PWD)
 August Ebert (PWD)
 Melanie Knezich (PWD)
 Kinman Leung (PWD)
 Noella Maillard (PWD)
 Julie Midgette (PWD)
 Melanie Murphy (PWD)

Maryam Tavallali (Rutgers)

Alex Ridyard (Sage Services)

Renee Bowen (Unaffiliated)
 Jason Fagel (Unaffiliated)
 Bill Muszynski (Unaffiliated)
 Erik Silldorff (Unaffiliated)

Brit Merola (USGS)

Howard Neukrug (Water Center at Penn)
 Steve Tambini (Water Center at Penn)

Elizabeth Cody (Weston Solutions)

Welcome and Call to Order

The meeting was called to order by Sarah Rickard at approximately 1:00 PM. Voting members introduced themselves.

Administrative items

WQAC Liaison Thomas Amidon provided a [membership update](#), during which he reminded members of the purpose of the Water Quality Advisory Committee, the membership structure, and explained that the DRBC would be defining interim appointments such that one non-reserved member term expires every year. Erin Landis asked if appointment terms would be 5 years, and Tom answered that the default term length and the one used by WQAC is 5 years.

Minutes from meeting held on September 15, 2025 were provided to the Members on December 2, 2026 for review and comment. Minor comments were received clarifying the associations of participants, one minor edit about *E. coli*, and a request to move Jay Cruz’s comments to the open comment period. Frank Klapinski moved that the minutes be approved with the changes discussed, and Jay Cruz seconded the motion. The September 15, 2026 minutes were approved unanimously with Kacy Manahan abstaining because she was not present at that meeting.

Proposed Bacteria Criteria Update

John Yagecic provided an [update](#) on proposed bacteria criteria, highlighting the reasons for DRBC to propose revised bacteria criteria, the rationale and basis for the criteria, and an anticipated schedule.

Kelly Anderson asked whether the co-regulator meeting agenda and/or minutes can be shared with the WQAC, to which John replied that formal agenda and minutes are generally not prepared for co-regulator meetings, but that broader rollout for feedback was happening through this WQAC meeting and that the Public Participation process would allow full review and comment on the proposal. Jason

Cruz recommended that DRBC be explicit in describing whether the 5 minimum samples would be expected to vary spatially, temporally, or both. Jason suggested that DRBC remove ambiguity, and that more data is better. John expressed his gratitude for the feedback.

Congratulations to John Yagecic

After John's presentation, Tom offered public congratulations to John Yagecic, DRBC's Manager of Water Quality Assessment, who retired from DRBC in December 2025. Tom acknowledged John's outstanding service to the Commission for the past 25 years in various capacities, in addition to being the long-time staff liaison to the Commission's Water Quality Advisory Committee. Prior to joining the Commission, John worked for the U.S. Army Corps of Engineers for nine years, and received his undergraduate and Master's engineering degrees from Penn State University and the University of Illinois at Chicago. John is a registered professional civil engineer in multiple states and was an adjunct instructor at Temple University for many years. John's knowledge and expertise is matched only by his tenacity and drive to solve problems and make improvements. Greg Voigt and Frank Klapinski also acknowledged John's contributions, and the committee wished John all the best in his future endeavors.

Estuary Dissolved Oxygen Model Enhancements

Matt Amato [presented a description](#) of enhancements DRBC has made to its dissolved oxygen model of the estuary related to predicting phytoplankton and sediment oxygen demand. He explained the goals of the model enhancements and the manner in which DRBC expects to use the model, followed by detailed descriptions of the various model enhancements, the results of the enhancements in terms of model performance, lessons learned and remaining steps.

Kinman Leung asked if the modeling team simulated other years besides 2018 and 2019; Matt answered that DRBC also simulated 2012 and that more comparisons will be provided when the work is finalized. Kacy Manahan asked about the "older sources of carbon" coming down from the tributaries in the estuary (things like wood from trees); Matt replied that typically the carbon from the tributaries is older and tends to be more resistant to decomposition. Andrew Thuman asked whether the EPA DO criteria need to be re-evaluated to reflect updated model output; Tom replied that the criteria values themselves were not based on model output directly, and Greg Voigt (EPA) echoed that model improvements will inform implementation of the criteria but will not change the criteria. Bryan Lennon asked whether the model provides insight as to the role of sediment as a sink/source for nutrients; Matt replied that nutrient predictions for benthic fluxes do exist and are in agreement with measurements. Bryan initiated a deeper conversation of sinks and sources for ammonia; Namsoo Suk affirmed the importance of these various sediment processes that DRBC is dynamically simulating and that will yield insights into the importance of various sources of ammonia. Bryan encouraged DRBC to look specifically at the processes that dominate during critical conditions to ensure that any ammonia limits will achieve the desired goal. Kelly Anderson asked if additional work is being planned to update the data on fish spawning / fish growth and health of the sturgeon; Greg indicated that data continue to be collected on juvenile abundance and that work is ongoing.

Assessing Historical Delaware Estuary Data Against EPA's New Dissolved Oxygen Criteria

Jake Bransky presented an [assessment](#) of historical data against EPA's new dissolved oxygen criteria. After summarizing the criteria, Jake provided an assessment from 2000 to 2025 in Zones 1E through Zone 5. The new criteria would nearly always have been met in Zones 1E, Zone 2, and Zone 5 during all three regulatory seasons, and at all locations throughout the Overwintering season (Nov-Feb). However, the new criteria would not have been satisfied during any of years evaluated in Zone 3 and rarely

satisfied in Zone 4 during the Juvenile Development season (Jul-Oct). The Spawning and Larval Development season (Mar-Jun) also showed years that would not have met the criteria in Zones 3 and 4, though most of those years were in the oldest part of the dataset before 2010.

Bryan Lennon asked if the term "exceeded" seems confusing" when discussing dissolved oxygen; Jake agreed that the term can lead to confusion, and he attempted to avoid it unless specifically talking about frequency as opposed to magnitude. Bryan indicated that Jake did a good job communicating a difficult topic. Erik Sildorff asked if DRBC can or will compare the criteria to the data from the PWD Buoy B; Jake indicated that this has not been done but that the methodology he presented could be applied to Buoy B data or any other long term data sets. Elizabeth Cody asked if DRBC foresees the States or the DRBC setting new point source discharge permit limits (DO, BOD, Total N) in Zones 3 and 4; Tom affirmed that this is a good question, and an excellent segue to his presentation.

A Strategy to Implement New Dissolved Oxygen Criteria in the Delaware River Estuary

Thomas Amidon presented a [summary](#) of [A Strategy to Implement New Dissolved Oxygen Criteria in the Delaware River Estuary](#), published by DRBC in October 2025. Tom reviewed the historical improvement of dissolved oxygen in the Delaware River Estuary from its anoxic condition in the 1960s to its current significantly improved condition, and DRBC's role in understanding and reducing the remaining area where episodes of lower dissolved oxygen (the 'sag') persist. Tom summarized the core elements of the strategy developed by DRBC in collaboration with the co-regulating estuary States to implement EPA's new dissolved oxygen criteria.

Kelly Anderson asked if, moving forward, the agenda and meeting frequency of the coregulator group can be shared with the WQAC, since bacteria and ammonia are billion-dollar management programs that require municipalities to navigate multiple regulatory mandates; Tom replied that meetings will be deliberative among co-regulator agencies, and Namsoo added that DRBC will seek to maintain transparency. Kacy Manahan stated that previous studies pointed to a small handful of dischargers whose upgrades would improve the DO, but the implementation plan calls for a WLA study first; Tom explained that the "pathway" report was a screening study to determine what degree of DO improvement would be expected from feasible WWTP reductions, while the WLA study will determine the specific set of discharge allocations that would be needed to meet the DO criteria. Bryan Lennon pointed out that while the number of WWTPs may be small, the size/population served/economic impact is not small. Bryan then added that an argument could be made that DRBC needs to take a step back and look at the assimilative capacity of each river segment (irrespective of plants) because allocating waste loads is "tricky and political"; Tom responded that the spatially explicit model helps us understand the relative impact of one discharger versus another, and hundreds of simulations will be run to arrive at a combination that is "most effective and least painful." Jason Cruz asked what will be the approach to nonpoint sources; Tom replied that stormwater and nonpoint sources will likely be treated as a background sources and that a reserve capacity to accommodate future growth will also need to be considered. Scott Schrieber asked if the DRBC will look at results of the model when only side stream treatment is implemented; Tom replied that DRBC looked at a similar scenario in a coarse manner during EPA's rulemaking and could certainly consider other scenarios as well. Scott also asked if the DRBC would support side stream treatment as an initial investment, study the impact, and revise the implementation from there; Tom answered that the impact of sidestream treatment can be evaluated using the model, but that initial results suggest it will not suffice to satisfy the criteria.

Adjournment

Jason Cruz moved to adjourn the meeting, and Frank Klapinski seconded the motion. All voted in favor and the meeting was adjourned at approximately 3:40 PM.