Data, Analysis & Reporting (DAR)

Workgroup Meeting

Wednesday, October 28th, 2026
10:00 AM – 12:00 PM

Visit the meeting webpage for meeting materials and additional information.

This meeting was recorded for internal use only to ensure the accuracy of meeting notes. Note that Microsoft Co-Pilot was used for generating transcripts and Google Gemini to refine texts.

Purpose: This meeting will open with key organizational updates, including the presentation of the finalized membership roster and a debrief of the recent Clean Water Goal Team meeting. The core of the agenda will be dedicated to a collaborative discussion on the DAR Workplan, proposed activities, and core deliverables. To conclude, participants will receive information on meeting schedule and workplan development plans for the remainder of 2026.

Minutes

I. Welcome & Announcements **(10:00 - 10:05 AM)**

Lead: **Jimmy Webber** (U.S. Geological Survey, USGS) DAR Co-Chair, and **Amanda Shaver** (Virginia Department of Environmental Quality, VADEQ) DAR Co-Chair.

II. Updates to DAR Membership **(10:05 – 10:15 AM)**

Lead: **DAR Leaders**.

Material: Meeting webpage here.

Amanda Shaver: We have finalized the Signatory and At-Large membership for the DAR WG. At-Large members function on a two-year term, from 2027-2029. While official voting membership is established, all workgroup meetings remain completely open to non-member partners and interested parties.

Jimmy Webber: DAR reports directly to the CWGT. While the CWGT conducts formal policy votes and approves scenario baselines, DAR functions primarily as a technical, collaborative analytical body where formal voting will be rare, focusing instead on technical consensus and cross-partner synthesis.

Signatory Members**		
Jurisdiction	**Voting Member**	**Alternative**
Maryland, MD	Renee Karrh, DNR	Andrew Keppel, DNR
Virginia, VA	Amanda Shaver, DEQ	Joseph Morina, DEQ
Pennsylvania, PA	Ashley Hullinger, DEP	-
District of Columbia, D.C.	TBD	-
West Virginia, WV	Nick Murray, DEP	-
Delaware, DE	Joseph Schell, DNREC	Rachel Owrutsky, DNREC
Federal	Jimmy Webber, USGS	Kaylyn Gootman, EPA

***Note:** The Chesapeake Bay Commission and New York waived signatory membership, allowing for two additional At-Large Membership seats for a total of 15 voting members.*

At-Large Members	
Organization	**At-Large Member**
University of Maryland Center for Environmental Science, UMCES	Qian Zhang
UMCES	Rebecca Murphy
The Pennsylvania State University	Jonathan Duncan
Virginia Institute of Marine Science, VIMS	David Parrish
USGS	Carly Maas
Susquehanna River Basin Commission, SRBC	Jamie Shallenberger
Maryland Department of the Environment, MDE	Becky Monahan
Chesapeake Monitoring Cooperative, CMC	Liz Chudoba

III. Clean Water Goal Team September & October Meeting Debrief (10:15 – 10:30 AM)

Lead: **DAR Leaders**.

Material: Meeting webpage here.

Allison Welch: During the two-day hybrid meeting in September 2026 at the Annapolis office, the CWGT approved several major decisions. Here are some important updates for your awareness:

1. Updating the scenario base year to 2022 and accounting for population/development growth using Method 2022A.
2. Adjusting the hydrologic period to 1998–2007 and the critical period to 2004–2006 [link].
3. Approved draft Management Strategies for the Reducing Excess Nitrogen, Phosphorus, and Sediment (RENPS), Toxics, and Emerging Contaminants (TEC), and Water Quality, Standards Attainment and Monitoring (WQ,SAM) Outcomes for recommendation to the Policy Steering Committee (PSC).

IV. DAR Workplan Expectations and Timeline (10:30 – 10:40 AM)

Lead: **DAR Leaders.**
Material: Meeting webpage here.

Jimmy Webber: Workplans describe actions taken by partners over a three-year window (July 2027 through June 2030) to address specific management approaches, with provisions for annual reviews and adjustments. The organizational hierarchy involves one overarching Clean Water Goal supported by three outcomes (RENPS, TEC, and WQSAM), with DAR aligning primarily under the WQSAM outcome. Workgroup Workplans plans will eventually roll into outcome-level workplans. Workplans should capture ongoing partner activities as well as unfunded high-priority items—inclusion in a workplan does not guarantee dedicated funding.

The timeline for Workplan Development and Approval is as follows:

1. **Late November 2026:** Submit high-level bulleted workplan ideas (1–2 sentence activity descriptions with identified lead agencies) to the CWGT.
2. **December 2026 – January 2027:** Flesh out detailed activity descriptions and deliverables.
3. **February 2027:** Complete the final DAR Workgroup Workplan using the standardized Excel matrix template.
4. **March 2027:** Roll up workgroup plans into the WQSAM outcome-level workplan.
5. **April – May 2027:** CWGT review and approval.
6. **Early Summer 2027:** Final sign-off by the PSC.

Discussion:

Q: *Becky Monahan:* Would all management approaches and workplan actions be fully completed within the three-year window, or do multi-year research initiatives carry over into subsequent cycles?

- ***A:*** *Jimmy Webber:* Management Approaches represent a 6-year strategic vision by the CWGT, while workplan actions represent 3-year operational commitments. Actions do not need to be fully finalized in three years; multi-year projects (e.g., 5-year analyses) should be included with explicit milestones detailing what will be accomplished during the intial 3-year period.

Comment: *Breck Sullivan:* There is a lot of great opportunity for cross-GT/cross-WG collaboration, especially within the WQSAM Outcomes WGs. I encourage DAR to coordinate shared activities with groups like Monitoring WG.

- ***A:*** *Jimmy Webber:* Agreed, there are a lot of shared initiatives like analyzing data from the vertical profile monitoring network. This will be explicitly reflected in the DAR workplan to demonstrate inter-WG alignment.

V. DAR Workplan Development and Brainstorm (10:40 – 11:50 AM)

Lead: **DAR Workgroup**
Material: Meeting webpage here.

The DAR WG will be leading 3 WQ,SAM Management Approaches:

- **Management Approach 2.3.4:** Maintain and advance water quality data analysis to address information gaps and inform science-based management decisions.

- **Management Approach 2.3.5:** Improve monitoring to model integration and transparency.
- **Management Approach 2.3.6:** Develop unified progress narratives and communication products across audiences and scales.

Discussion:

Q: *Jeff Chanat:* Should workplan suggestions focus on specific individual analytical methodologies and watershed studies or target broader multi-method synthesis frameworks?

- ***A:*** *Jimmy Webber:* All ideas are welcome. Broad programmatic umbrellas will ensure flexibility, while specific projects can be embedded as concrete deliverables.

Comment: *Jenna Scheuler:* There is a need to link water quality monitoring data and METRIC model comparisons directly to Watershed Implementation Plans (WIPs) and on the ground action tracking to support adaptive management.

- ***Response:*** *Jimmy Webber:* Agreed, a key priority is evaluating Best Management Practices (BMPs) implemented on the landscape and tying them directly to observed stream monitoring trends and model estimates.

Comment: *Becky Monahan:* There remains confusion around the partnership regarding when and why loads, concentrations, and indicators are evaluated. DAR should establish clear definitions and guidance on parameter selection.

- ***Response:*** *Amanda Shaver:* Certainly, load reductions drive watershed restoration goals, but concentration dictates ecosystem responses. We should add a dedicated communication product clarifying parameter usage and aligning with stated integrated reporting needs.
- ***Comment:*** *Jamie Shallenberger:* Maybe consider a 4-tiered classification framework: Pristine/Limited Impact, Pulse Stressed, Regime Shifted, and Critically Degraded. This can help translate complex, multi-variable water quality and living resources datasets into accessible communication layers for broad audiences.
- ***Response:*** *Jimmy Webber:* I like this concept, like a public report card that can distill quantitative complexity into summary layers.
- ***Comment:*** *Liz Chudoba:* We should connect the CMC roundtables to gather feedback on effective communication methods used with volunteer monitoring networks.
- ***Response:*** *Amanda Shaver:* That level of connection and collaboration is welcomed. We can list engagement with the CMC as a specific workplan action to improve public communication and state DEQ outreach.

Comment: *Rebecca Murphy:* We should conduct high-level synthesis reviews linking non-tidal watershed load patterns with estuarine trend responses, drawing on past synthesis efforts regarding SAV clarity and trend drivers.

- ***Response:*** *Jimmy Webber:* Agreed. Synthesizing literature and empirical data across the non-tidal/tidal interface is a core technical function for DAR.

Q: *Jon Duncan:* Would evaluating continuous monitoring sensor bias fall under DAR's purview? For instance, I have results from high-frequency continuous sensor networks in small agricultural

headwater catchments, detailing multi-day to multi-week nitrate spikes that standard discrete NTN bottle sampling and WRTDS load models miss.

- ***A:*** *Amanda Shaver:* I think this would fall directly under DAR's charge to address monitoring information gaps.
- ***Response:*** *Jimmy Webber:* Over a decade of continuous sensor data exists and DAR should evaluate whether sensors can transform trend estimation and land management responsiveness.
- ***Comment:*** *Jeff Chanat:* Jon, we should meet offline as there are other new analytical methods specifically designed for calculating loads and trends using unit-value high-frequency continuous sensor data.
- ***Response:*** *Jamie Shallenberger:* SRBC has a network of 40-45 continuous monitoring stations deployed over 15 years. There is a lot of value in concentration duration frequency analysis and to pair high-density stream observations with high-resolution agricultural BMP implementation and cropland productivity data.
- ***Response:*** *Jimmy Webber:* DAR's work must directly serve state partners and land managers by connecting high-resolution stream data to conservation practice effectiveness.

Comment: *Jeff Chanat:* We should synthesize regional watershed modeling approaches (like SPARROW and SWAT) alongside local small-catchment studies to better understand large regional-scale drivers influencing water quality trends.

Comment: *Qian Zhang:* DAR should consider two estuarine priorities: 1) quantifying riverine load delivery impacts on tidal water quality, and 2) leveraging satellite remote sensing to expand spatial monitoring coverage in tidal waters.

- ***Response:*** *Jimmy Webber:* I like both of those ideas, especially considering riverine-estuarine linkages and satellite remote sensing align with non-tidal large-river remote sensing efforts.

Comment: *Breck Sullivan:* I suggest that DAR adopt and operationalize the 4D Interpolator tool currently being developed by the Bay Oxygen Research Group (BORG), especially considering that BORG will sunset once the tool development and training wraps up.

- ***Response:*** *Amanda Shaver:* Agreed, DAR is the natural home for applying the 4D Interpolator to inform management decisions, criteria attainment, and potential BORG 2.0 analytical tools.
- ***Response:*** *Rebecca Murphy:* two additional estuarine topics: 1) re-engaging Chesapeake Bay Program (CBP) in seasonal hypoxic volume forecasting using the 4D interpolator, and 2) evaluating changing environmental conditions, such as seasonal shifts in hypoxia duration and thermal trends affecting habitat criteria.

Comment: *Breck Sullivan:* There should be explicit text in the workplan for bringing external guest scientists to present state-of-the-art research during monthly DAR meetings.

- ***Response:*** *Jimmy Webber:* Agreed, guest presentations will build WG capacity and ground future technical activities.

Comment: *Jon Duncan:* The impact of landscape legacies (such as groundwater nitrate storage and channel-stored legacy phosphorus) in causing lag times between high BMP implementation and delayed stream trend improvements.

- ***Response:*** *Jimmy Webber:* Landscape legacy lag-time analysis is directly relevant to DAR'S mission of explaining trend trajectories to managers.

VI. DAR Winter Meeting Plans (11:50 AM – 12:00 PM)

Lead: **DAR Chairs**

Material: Meeting webpage here.

DAR Leaders: The DAR leadership team will meet on November 5th, 2026, to review and synthesize the whiteboard sticky notes into 5-6 consolidated bullet points per management approach. The WG will reconvene November 18th, 2026, to review the refined draft before submission to the CWGT at the end of November. The December meeting is canceled due to the holidays, with regular monthly meetings resuming in January 2027.

VII. Adjourn (12:00 PM)

Next meeting: November 18th from 10AM-12PM.

Allison Welch, CRC	Amanda Shaver, DEQ
Qian Zhang, UMCES	Renee Karrh, DNR
Peter Tango, USGS	Hunter Turner, WVDA
Jon Harcum, Tetra Tech	Jamie Shallenberger, SRBC
Rachel Owrutsky, DNREC	Tish Robertson, VA DEQ
Breck Sullivan, USGS	Douglas Moyer, USGS
Joseph Morina, VA DEQ	Nick Murray, WVDEP
Jon Duncan, PSU	Cassia Pianca, VIMS
Carly Maas, USGS	Jimmy Webber, USGS
Rebecca Murphy, UMCES	Andrew Keppel, MD DNR
Jenna Schueler, CBF	Becky Monahan, MDE
Durga Ghosh, USGS	Jeff Chanat, USGS
Liz Chudoba, CMC	Ashley Hullinger, PA DEP
Mary Stack, ICPRB	Cynthia Johnson, VA DEQ
Blessing Edje, DOEE	Alexander Soroka, USGS