

## Appendix A: Organizations That Submitted Water Quality Data

**Table A- 1: The Organizations/Programs That Submitted Water Quality Data for Assessment in the 2024 IR**

Data Provider	Data Description and Notes	Parameter(s) Measured	Data Tier	Data Use
Alliance for the Chesapeake Bay MD	RiverTrends MD - Started in 2020 and follows the same VA DEQ QAPP as the VA program, monthly sampling in DC and Maryland for air and water temp, dissolved oxygen, pH, conductivity, water clarity, and salinity.	Air and water temp, dissolved oxygen, pH, conductivity, water clarity, and salinity.	II	Data assessed for use in Category 3 assessment to prioritize follow-up monitoring for pH and DO. Tier III data is necessary for regulatory decisions.
Anacostia Riverkeeper	Washington D.C. Department of Energy and Environment (2018) and CBP (2020) approved QAPP - Weekly summer bacteria monitoring using the IDEXX system in DC, Virginia, and Maryland.	E. coli (MPN/100mL), turbidity (NTU), pH, DO	II	Data assessed for use in Category 3 assessment to prioritize follow-up monitoring for pH and DO. Tier III data is necessary for regulatory decisions.
Anne Arundel Community College	CBP Approved QAPP in 2022 - weekly or bi-weekly samples Coordinates with Spa Creek Conservancy and 3 other projects.	Conductivity, dissolved oxygen, pH, salinity, secchi, water temperature, chlorophyll a, enterococcus, total nitrogen (TN), total	II	Data used in Category 3 IR assessments to prioritize follow-up monitoring for pH and DO. Tier III data is necessary for regulatory decisions.

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		phosphorus (TP), and total suspended solids (TSS).		
Anne Arundel County Bureau of Watershed Protection and Restoration	Biological monitoring data from Anne Arundel County.	Benthic Indices of Biotic Integrity	III	Data used for informational purposes. Biological data has undergone full vetting and will be integrated into the biological assessment for future IRs.
Antietam-Conococheague Watershed Alliance	Continuous water temperature data collected with loggers	Water temperature, Air Temperature	III	Data used to update temperature assessments.
Antietam-Conococheague Watershed Alliance	Monthly sampling year-round for conductivity, dissolved oxygen, nitrate-nitrogen, orthophosphate, pH, total dissolved solids (TDS), water temperature, and bacteria.	Conductivity, DO, nitrate-nitrogen, orthophosphate, pH, total dissolved solids (TDS), water temperature, bacteria.	II	Data assessed for use in Category 3 assessment to prioritize follow-up monitoring for pH and DO. Tier III data is necessary for regulatory decisions.

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Baltimore County Department of Environmental Protection and Sustainability	Water quality and biological monitoring data from streams around Baltimore County.	Benthic and Fish Indices of Biotic Integrity, Water Quality Data	III	Data used for informational purposes. Biological data has undergone full vetting and will be integrated into the biological assessment for future IRs.
Blue Water Baltimore	Nontidal water quality data from ambient water monitoring.	Conductivity, dissolved oxygen, pH, salinity, secchi and water temperature. Also sample chlorophyll a, TN, and TP analyzed at the Chesapeake Bay Laboratory (CBL).	II	Data used in Category 3 IR assessments to prioritize follow-up monitoring for pH and DO. Tier III data is necessary for regulatory decisions.
Blue Water Baltimore	Tidal DO data integrated with the Chesapeake Bay Program Assessments- Results of Water Quality Interpolator Model, based on measured DO levels in Chesapeake Bay	Percent exceedance of cumulative frequency distribution (CFD) curves	III-Tidal DO	Data used to update the DO/nutrient assessments for the Chesapeake Bay and its tidal tributaries
Chesapeake Bay Program and MD DNR	Results of Water Quality Interpolator Model, based on measured DO levels in Chesapeake Bay	Percent exceedance of CFD curves	III	Data used to update the DO/nutrient assessments for the Chesapeake Bay and its tidal tributaries

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Elk and North East Rivers Watershed Associations	All the data is in the Alliance for the Bay's Chesapeake Data Explorer (web site). It consists of monthly values (April through November of each year) of 10 measured parameters for each of ~18 sites (exact number varies by year) in the Elk River and North East River watersheds, in Cecil County, MD, including both tidal and non-tidal sites.	Air temperature (C), water temperature (C), pH, conductivity (uS/cm), dissolved oxygen (% saturation), dissolved oxygen (mg/l), turbidity (NTU), clarity (Secchi tube cm), total nitrogen (mg/l), and total phosphorus (mg/l). All are from near-surface (0.3 m deep) samples. Total nitrogen and total phosphorus are lab measurements, the others are in-situ at the date and time of sampling.	II	Data used in Category 3 IR assessments to prioritize follow-up monitoring for pH and DO. Tier III data is necessary for regulatory decisions.
Gunpowder Valley Conservancy	River Trends in MD	DO and pH	II	Data assessed for use in Category 3 assessment to prioritize follow-up monitoring for pH and DO. Tier III data is necessary for regulatory decisions.
Howard County Government, Stormwater Management Division	BIBIs and component metrics (raw values and normalized scores; 1, 3, 5) for Piedmont, RBP habitat for high gradient, MBSS PHI for Piedmont.	Benthic Indices of Biotic Integrity, Water Quality Data	II	Data used for informational purposes. Biological data will undergo full vetting to be integrated into the biological assessment for future IRs.

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	<p>EMCs and concentrations (1 for each rise, peak, falling limb for storms) for MS4 storm sites, including MS4 mandated parameters. EMCs and concentrations (1 for each rise, peak, falling limb for storms) for voluntary monitoring including nitrate/nitrite-N, nitrate, nitrite, Total Kjeldahl Nitrogen, total nitrogen, total phosphorus, TSS. Biological and habitat data are collected following a QAPP and associated SOPs for the Howard County Biological Monitoring and Assessment Program.</p>			
<p>Lancaster Water Quality Volunteer Coalition</p>	<p>The Water Quality Volunteer Coalition program is a partnership program with the Lancaster County Conservation District, and other community partners. Volunteers conduct monthly testing on streams like</p>	<p>Physical, chemical, and biological water quality</p>	<p>II</p>	<p>Data used in Category 3 IR assessments to prioritize follow-up monitoring for pH and DO. Tier III data is necessary for regulatory decisions.</p>

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	Climbers Run, Kellys Run, Pequea Creek, Fishing Creek, Steinman Run, Tucquan, and Trout Run.			
MD DNR- Coastal Bays Monitoring Program	MD DNR Coastal Bays Monitoring Program	Nutrients, Oxygen, Algae	II	Data used for informational purposes. Integration with state datasets is not yet possible.
MD DNR- Core Trends Program	Maryland's portion of this national ambient monitoring effort includes 37 Core stations located in non-tidal and tidal freshwater and estuarine areas and 25 Trend stations located on larger, non-tidal streams and rivers (4th order and larger). The 62 stations that comprise this monitoring program are sampled monthly, year-round, for physical and chemical parameters.	Temp, DO, pH, Specific Conductance, TSS, Nutrients, Turbidity, Chl-a, Phaeophytin, Sulfate, Alkalinity, Temperature.	III	Data used to update pH and nutrient assessments.

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MD DNR- Freshwater Fisheries	Continuous water temperature data collected with loggers	Water temperature, Air Temperature	III	Data used to update temperature assessments.
MD DNR- MBSS	Maryland Biological Stream Survey Data collected to assess current condition of ecological resources in Maryland's streams and rivers	Data is collected at each site on the physical, chemical, and biological (fish and insects) characteristics, and then combined into an overall assessment.	III	Data used in updating the Biological Assessment Methodology for Non-tidal Wadeable Streams.
MD DNR- MBSS	Continuous water temperature data collected with loggers	Water temperature, Air Temperature	III	Data used to update temperature assessments.
MDE - Compliance Program's Sewage Overflow Database	Web-accessible Sewage Overflow Database provides data on location and volume of sewage overflows	Gallons of untreated sewage discharged from leaky infrastructure	III	Data summarizes the areas with the most frequent sewage overflows. Information included in the IR narrative.
MDE- Abandoned Mine Lands Division	pH and mine discharge information from Georges Creek and McDonald Mine.	pH, acidity, specific conductance, TDS, TSS, alkalinity, sulfates, and metals.	III	Data used to update Georges Creek pH assessment.

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MDE- Beach Certification Program	Bacteria data collected at designated bathing beaches by County HDs.	Enterococcus levels	III	Data used to update beach assessments.
MDE- Fish Tissue Monitoring Program	Fish Tissue data on Chlordane, PCBs, Hg, and PFAS content	Concentration of Chlordane, PCBs, mercury, and PFOS in fish tissue	III	Data used to update fish consumption assessments for Chlordane, PCBs, mercury, and PFOS.
MDE- Lakes	Water quality and profile data collected at lakes	Nutrients, depth, temperature, salinity, pH, DO, secchi depth, chlorophyll a, flow.	III	Data used to update lake assessments.
MDE- National Wetland Condition Assessment	The NCWA is a collaborative survey of our Nation's wetlands.	The NWCA examines the chemical, physical and biological integrity of wetlands through a set of commonly used and widely accepted indicators.	III	Data used for informational purposes. Integration with state datasets is not yet possible.
MDE- Port Tobacco	Follow up monitoring for Port Tobacco bacteria impairments.	Qualitative watershed data	III	Data used to demonstrate that Port Tobacco was erroneously listed.



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MDE- Shellfish Certification Program	Bacteria data for stations in the Tidal areas of the Chesapeake Bay and Coastal Bays in MD	Fecal coliform	III	Data used to update bacteria assessments as they relate to the shellfish harvesting designated use.
MDE- Shellfish Certification Program	Tidal DO data integrated with the Chesapeake Bay Program Assessments- Results of Water Quality Interpolator Model, based on measured DO levels in Chesapeake Bay	Percent exceedance of CFD curves	III- Tidal DO	Data used to update the DO/nutrient assessments for the Chesapeake Bay and its tidal tributaries
MDE- Sulfates	Sulfate study to review previous Biological Stressor Identification impairment listings for sulfates.	Literature review and sulfate concentrations from MBSS data, MD Ion Study Data, Western MD pH TMDL Data, Marcellus Shale Natural Gas Baseline Data, and MD DNR Monthly Core Trend Data	III	Data used to update sulfate assessments.
MDE- Temperature	Continuous water temperature data collected with loggers	Water temperature, Air Temperature	III	Data used to update temperature assessments.

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MDE- Tier II Biological Sampling	Raw count data of biological sampling of fish and aquatic macroinvertebrates; station summary data on some of Maryland's Tier II streams.	Benthic and Fish Indices of Biotic Integrity, Water Quality Data	III	Data was used to update MD's Tier II High Quality Waters.
MDE- WQA and TMDLs	WQA approved for Harbor (MD-PATMH-Middle_Harbor and MD-PATMH-Curtis_Bay_Creek) Zinc in Sediments- TMDL approved for TSS in MD-02130903	Zinc in Sediments and TSS	III	Data used to update Zinc in Sediments and TSS assessments.
Nanticoke Watershed Alliance	Tidal DO data integrated with the Chesapeake Bay Program Assessments- Results of Water Quality Interpolator Model, based on measured DO levels in Chesapeake Bay	Percent exceedance of CFD curves	III- Tidal DO	Data used to update the DO/nutrient assessments for the Chesapeake Bay and its tidal tributaries
Nanticoke Watershed Alliance	Nanticoke River watershed sites, plus four Fishing Bay sites through 2021.	DO, water clarity, temp, salinity, pH (since 2020), conductivity, total nitrogen, total phosphorus, chlorophyll a	pH- II, DO- II	Tier II data used in Category 3 IR assessments to prioritize follow-up monitoring. Tier III data is used to update pH and DO assessments;

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			and III	however, additional data are required for a conclusive assessment.
Nature Forward (formerly Audubon Naturalist Society)	Benthic macroinvertebrate surveys for 20+ stream sites in Maryland. Collections subsampled - approximately 100 macroinvertebrates identified to Family level, some to Genus. (Data in CMC Chesapeake Data Explorer also includes 3 stream sites in Washington DC. Data submitted under "Audubon Naturalist Society" (organization name changed in October 2022 to Nature Forward.)	Benthic macroinvertebrate surveys	I	Data used for informational purposes - Benthic index of biotic integrity calculated using family or genus level identification inconsistent with MD assessment methods.
Patapsco Heritage Greenway	Physical & chemical data, 11 stations on the Patapsco & tributaries, twice a month, some bio monitoring	Physical and chemical water quality data	II	Data used in Category 3 IR assessments to prioritize follow-up monitoring for pH and DO. Tier III data is necessary for regulatory decisions.

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Prince George's County Department of the Environment	Non-tidal biological monitoring data and accompanying water quality data from streams around Prince George's County.	Benthic and Fish Indices of Biotic Integrity, Water Quality Data	III	Data used for informational purposes. Biological data has undergone full vetting and will be integrated into the biological assessment for future IRs.
Prince George's County Department of the Environment	Prince George's County Department of the Environment (DoE) received a 2017 Community-based Marine Debris Removal grant from the National Oceanic and Atmospheric Administration (NOAA). The grant funded the installation of two Bandalong™ Litter Trap at Cabin Branch in the Lower Beaverdam Creek subwatershed and on Guilford Run in the Northeast Branch subwatershed. The grant also required stream surveys be conducted for pre- and post-installation scenarios to evaluate: 1) trash levels 2) benthic macroinvertebrate	Benthic and Fish Indices of Biotic Integrity, Water Quality Data, trash levels	III	Data used for informational purposes. Biological data has undergone full vetting and will be integrated into the biological assessment for future IRs.

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	community health and 3) fish community health.			
Severn River Association	Water Quality Monitoring Data profiles at 52 stations on the Severn River, collected weekly April-October.	Water column -- depth, temperature, dissolved oxygen, pH, salinity, clarity.	II	Data used in Category 3 IR assessments to prioritize follow-up monitoring for pH and DO. Tier III data is necessary for regulatory decisions.
South River Federation (Now part of Arundel Rivers Federation)	Tidal DO data integrated with the Chesapeake Bay Program Assessments- Results of Water Quality Interpolator Model, based on measured DO levels in Chesapeake Bay	Percent exceedance of CFD curves	III- Tidal DO	Data used to update the DO/nutrient assessments for the Chesapeake Bay and its tidal tributaries
Susquehanna River Basin Commission	Water Quality (43 parameters total) and fish population data	Water Quality (43 parameters total) and fish population data	I	Data used for informational purposes. Data needs to be accompanied by metadata and a QAPP or similar documentation.

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SWCA Environmental Consultants on behalf of PEPCO	Qualitative Long Term Monitoring plan to characterize the spatial extent of natural attenuation (of oil presence) over time. Visual inspections of oil based on modified Shoreline Clean-up Assessment Technique procedures at the tidal Patuxent River 2000 oil spill site.	Qualitative Oil spill data including visual inspection notes	III	Data used to update oil spill assessments.
Town of Preston	Drinking Water Contaminants Report	Inorganic Contaminants, Volatile Organic Contaminants	I	Data used for informational purposes. The Integrated Report assesses surface water quality and not groundwater or well water.
Trout Unlimited	Continuous water temperature data collected with loggers	Water temperature, Air Temperature	III	Data used to update temperature assessments.
Upper Potomac Riverkeeper	Acid Mine Drainage metals data (Aluminum, Manganese, Iron).	Aluminum, Manganese, Iron	II	Data used to support and refine metals assessments. Data needs to be accompanied by a QAPP or similar documentation.

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Virginia Institute of Marine Science and MD DNR	Counts of acres submerged aquatic vegetation (SAV) coverage and measured water clarity for select tidal tributaries to the Chesapeake Bay.	SAV coverage (acres) and water clarity acres	III	Data used to update the SAV/sediment assessments for the Chesapeake Bay and its tidal tributaries.
Waterfront Partnership of Baltimore	Surface water bacteria data and other parameters in the Baltimore Harbor	Enterococcus levels	I	Data used for informational purposes. Data needs to be accompanied by metadata and a QAPP or similar documentation.