Delaware River Basin Commission

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DELAWARE * NEW JERSEY
PENNSYLVANIA * NEW YORK
UNITED STATES OF AMERICA

WATER POLLUTION CONTROL PROGRAM

Calendar Year 2021 Clean Water Act § 106 Grant

Task Table

July 31, 2020

Goal 2: Protecting America's Waters			
Objective 2: **Objective 2.2**: Protect and Restore Watersheds and Aquatic Ecosystems			
Work Plan Component/Program: II. DRBC Criteria-Based Programs **Work years**: 2021:	**EPA Contact(s)**: Bill Richardson, Katie Bentley	**Basin Commission Contact(s)**: J. Yagecic	**PRC**: 202B06
Project Description: Estuary bacteria monitoring			

Environmental Outcomes	Measures	Outputs for FY 2021 (Commitments)	Status/Comment
Estuary bacteria monitoring.		DRBC will perform bacteria monitoring in Zones 3 and upper 4 in the Delaware Estuary. If social distancing is required due to COVID-19, DRBC will continue the shore based monitoring begun in 2019. If social distancing is no longer required, DRBC will perform the boat-based monitoring originally scheduled for 2020, for which a QAPP has already been submitted. In addition to analysis of E. Coli, Fecal Coliform, and Enterococcus, DRBC will perform limited qPCR monitoring to help quantify the proportion of bacteria originating from human sources verses animal sources.	

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Goal 2: Protecting America's Waters			
Objective 2: **Objective 2.2**: Protect and Restore Watersheds and Aquatic Ecosystems			
Work Plan Component/Program: II. DRBC Criteria-Based Programs **Work years**: 2021	**EPA Contact(s)**: Bill Richardson	**Basin Commission Contact(s)**: J. Yagecic	**PRC**: 202B06
Project Description: Thermal Exceedance Shading Study			

Environmental Outcomes	Measures	Outputs for FY 2021 (Commitments)	Status/Comment
Attaining temperature criteria and targets		During the summer of 2020, numerous reservoir releases were required to meet multi-agency temperature targets for protection of aquatic life in the upper Delaware. With climate change, the challenge of maintaining suitable water temperatures will only worsen. This portion of the basin is sparesely populated and thermal discharges are absent. One option for combating weather-based thermal heating is to identify stream reaches with insufficient tree canopy to provide shading. Once identified, these reaches could be targeted for tree-planting using other funding sources, including NFWF grants. Under this project, DRBC will acquire a hemisperical camera and processing software. DRBC will assess at least 50 miles of stream reaches in the upper Delaware Basin. All activity can be peformed while social distancing if required due to COVID-19.	

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Goal 2: Protecting America's Waters			
Objective 2: **Objective 2.2**: Protect and Restore Watersheds and Aquatic Ecosystems			
Work Plan Component/Program: II. DRBC Criteria-Based Programs **Work years**: 2021	**EPA Contact(s)**: Bill Richardson	**Basin Commission Contact(s)**: J. Bransky	**PRC**: 202B06
Project Description: Mainstem Delaware River Biological Monitoring			

Environmental Outcomes	Measures	Outputs for FY 2021 (Commitments)	Status/Comment
Monitor mainstem Delaware River macroinvertebrate community for water quality and aquatic life protection.		• Collect macroinvertebrate and periphyton samples, with laboratory analysis including enumeration and identification to genus level. All data entered into database and readily available. Monitoring composed of: • Biomonitoring at 25 sites including West Branch Delaware River at Hancock, East Branch Delaware River at Hancock, Delaware River Buckingham, Long Eddy, Callicoon, Castillo del Rio, Ascalona, Pond Eddy, Port Jervis, DEWA NB, Caddoo Road, Spackmans Island, Bushkill Access, Worthington Access, Arrow Island, Portland, Capush Island, Getters Island, Wy-Hit-Tuk Park, Raubs Island, Upper Black Eddy, Rush/Treasure Island, Bulls Island, Washington Crossing, Rotary Island (Trenton); • Macroinvertebrate 3-kick composite, 500-organism subsample to genus, Periphyton Ash free dry mass, benthic chlorophyll-a, Periphyton community composition, RBP habitat, and other site analyses; • Monitoring is performed once in in August-September index period.	

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Goal 2: Protecting America's Waters			
Objective 2: **Objective 2.2**: Protect and Restore Watersheds and Aquatic Ecosystems			
Work Plan Component/Program: II. DRBC Criteria-Based Programs **Work years**: 2021	**EPA Contact(s)**: Bill Richardson	**Basin Commission Contact(s)**: J. Bransky	**PRC**: 202B06
Project Description: Delaware River Basin Tributary Biological Monitoring			

Environmental Outcomes	Measures	Outputs for FY 2021 (Commitments)	Status/Comment
Initiate a basin-wide tributary macroinvertebrate monitoring program		• Develop and initiate a long term, basin wide tributary macroinvertebrate monitoring program • Results will allow DRBC to monitor trends in macroinvertebrate community composition on a basin-wide scale (currently, DRBC uses state data collected and analyzed using varying methodologies which can be difficult to compare). • Representative sample sites would be selected from across the various regions of the basin ranging from urban, degraded streams to pristine headwater streams. • Main outputs for FY 2021 would be the methodology development and collection and preservation of samples. Sample analysis would not occur until FY2022.	

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Goal 2: Protecting America's Waters			
Objective 2: **Objective 2.2**: Protect and Restore Watersheds and Aquatic Ecosystems			
Work Plan Component/Program: II **Work years**: 2021	**EPA Contact(s)**: Bill Richardson	**Basin Commission Contact(s)**: R. MacGillivray	**PRC**: 202B06
Project Description: Delaware River and Bay Water Quality Criteria Review			

Environmental Outcomes	**Measures**	**Outputs for FY 2021 (Commitments)**	**Status/Comment**
Protect people and aquatic life by maintaining water quality criteria based on current science and risk assessment		Initiate a review of existing DRBC water quality criteria and develop recommendations regarding revisions as needed to reflect the current science and risk assessment procedures in Zones 2 through 6 Develop uniform criteria in shared waters of Zones 1 that harmonize DRBC criteria with basin states. Review of human health criteria will include an evaluation of available information on parameters for exposure assessment (e.g., bioaccumulation factors (BAF) and fish consumption). Review of aquatic life criteria will include evaluations of available information and monitoring data specific to the Delaware River and Bay that can inform ammonia criteria application and implementation (e.g., data collected for eutrophication model), aluminum criteria (e.g., Mixed Linear Regression) and copper (e.g., Biotic Ligand Model).	

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Goal 2: Protecting America's Waters			
Objective 2: Objective 2.2: Protect and Restore Watersheds and Aquatic Ecosystems			
Work Plan Component/Program: IV. Assessment & Management **Work years**: 2021	**EPA Contact(s)**: Bill Richardson	**Basin Commission Contact(s)**: R. MacGillivray	**PRC**: 202B06
Project Description: Contaminants of Emerging Concern: PFAS			

Environmental Outcomes	Measures	Outputs for FY 2021 (Commitments)	Status/Comment
Protect people and aquatic life by monitoring and water quality		Collect PFAS occurrence data in main stem Delaware River by concurrent monitoring of fish, surface water and sediment for an expanded list of 40 PFAS that includes 11 perfluorinated carboxylates (C4-C14); 8 perfluorinated sulfonates (C4-C10, C12); 3 fluorotelomer sulfonates (2:4, 2:6, 2:8); 3 perfluorooctane sulfonamides; 2 perfluorooctane sulfonamide ethanols; 2 perfluococtane sulfonamideacetic acids; 4 additional analytes in EPA Method 537 Rev 1, HFPO-DA, ADONA, 11CL-PF3OUdS, 9CL-PF3ONS; 4 additional, analytes in EPA Method 533, PFEESA, PFMPA, PFMBA, NFDHA and 3 analytes associated with landfill leachate 3:3 FTCA, 5:3 FTCA, 7:3 FTCA	

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Goal 2: Protecting America's Waters			
Objective 2: **Objective 2.2**: Protect and Restore Watersheds and Aquatic Ecosystems			
Work Plan Component/Program: IV. Assessment & Management **Work years**: 2021	**EPA Contact(s)**: Bill Richardson	**Basin Commission Contact(s)**: R. MacGillivray	**PRC**: 202B06
Project Description Effects Based Assessment of Contaminant Mixtures			

Environmental Outcomes	**Measures**	**Outputs for FY 2021 (Commitments)**	**Status/Comment**
Protect people and aquatic life by maintaining water quality criteria based on current science and risk assessment		Literature Review: Identification of river basin-specific contaminants. Collect mode of action–related information for identified contaminants. Gather information on effects-based assays for contaminant mixtures (e.g., WET, endocrine disruptor assays, photosystem II inhibition, mutagenicity and metabolic activation)	

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Work Plan Component/Program: II. DRBC Criteria-Based Programs **Work years**: 2021	**EPA Contact(s)**: Bill Richardson	**Basin Commission Contact(s)**: J. Yagecic	**PRC**: 202B06
Project Description: 1,4-Dioxane trackdown			

Environmental Outcomes	Measures	Outputs for FY 2021 (Commitments)	Status/Comment
Monitoring and trackdown of 1,4-Dioxane.		1,4-Dioxane is a synthetic industrial chemical. It is one of the most mobile organic contaminants because of its low absorption potential and miscibility. It was classified as a likely human carcinogen in 2017. 1,4-Dioxane is a likely contaminant at many sites contaminated with certain chlorinated solvents (particularly 1,1,1-trichloroethane [TCA]) because of its widespread use as a stabilizer for chlorinated solvents. 1,4-Dioxane is released into the environment from wastewater discharge, unintended spills, leaks, historical disposal practices of solvents, and unregulated manufacturing waste streams. (EPA and ITRC) In early 2020, DRBC was contacted by NJ American Water regarding 1,4-Dioxane detected at their drinking water intake in Delran, NJ. DRBC performed one round of monitoring in the Delaware Estuary suggesting localized sources of 1,4-Dioxane. In addition, NJ American performed limited additional monitoring suggesting a 2nd upstream source. Montoring was suspended due to COVID-19. Under this project, DRBC proposes to expend 1,4-Dioxane monitoring in the hopes of identifying and controlling sources. If COVID-19 distancing requirements continue in 2021, all sample collection will be shore or bridge based, which can be performed while social distancing.	

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Goal 2: Protecting America's Waters			
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Work Plan Component/Program: II. DRBC Criteria-Based Programs **Work years**: 2021	**EPA Contact(s)**: Dana Hales, Joel Blanco	**Basin Commission Contact(s)**: T. Amidon	**PRC**: 202B06
Project Description: PCBs - Ongoing PMP Management			

Environmental Outcomes	Measures	Outputs for FY 2021 (Commitments)	Status/Comment
Implementation of Stage 1 & 2 PCB TMDLs (Zones 2-6)		• Ongoing Point Source Data Review and Assessment. Ongoing Pollutant Minimization Plan review and management. Readily available data for action level option evaluation. • By November 30, 2021 DRBC will provide a list of PMPs reviewed by DRBC and by the states, plus a slide set on PMP activities during 2021.	

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Work Plan Component/Program: II. DRBC Criteria-Based Programs **Work years**: 2021	**EPA Contact(s)**: Bill Richardson	**Basin Commission Contact(s)**: J. Yagecic	**PRC**: 202B06
Project Description: Boat Run monitoring program			

Environmental Outcomes	Measures	Outputs for FY 2021 (Commitments)	Status/Comment
Assessment of Bacteria, eutrophication, metals, and conventional parameters (i.e., nutrients, dissolved oxygen, chlorides).		Management and execution of an expanded Boat Run monitoring program including continuation of year-round monitoring for nutrient and nutrient-related parameters. All data readily available in STORET/WQX. Monitoring composed of: • 22 sample locations in the Delaware River and Bay between River Miles 6.5 and 131; • Analysis of routine, bacterial, nutrient, algal, sodium and biotic ligand model parameter groups; • Monitoring is performed monthly for routine, nutrient, and algal parameters from April through October. Upon upload of all data to STORET/WQX, links to a pre-canned query for the resultant data set will be provided. All 2021 data uploaded by February 28, 2022 and pre-canned queries posted on DRBC web page by March 15, 2022.	

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Goal 2: Protecting America's Waters			
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Work Plan Component/Program: II. DRBC Criteria-Based Programs **Work years**: 2021	**EPA Contact(s)**: Katie Bentley, K.L. Lai	**Basin Commission Contact(s)**: N. Suk	**PRC**: 202B06
Project Description: Estuary Eutrophication Model Development			

Environmental Outcomes	**Measures**	**Outputs for FY 2021 (Commitments)**	**Status/Comment**
A model for determining Delaware Estuary dissolved oxygen response to nutrient loadings.		• Finalize calibration of Delaware Estuary Eutrophication model. • Prepare baseline future condition simulation. • Utilize model to determine sensitivity of DO to various loading conditions. • Assess attainability of various DO levels using model scenarios. • In November 2021, DRBC will provide to EPA slides documenting the progress and status of model development and implementation.	

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Goal 2: Protecting America's Waters			
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Work Plan Component/Program: II. DRBC Criteria-Based Programs **Work years**: 2021	**EPA Contact(s)**: Bill Richardson, Katie Bentley	**Basin Commission Contact(s)**: E. Panuccio	**PRC**: 202B06
Project Description: Enhanced Non-tidal Chloride Monitoring			

Environmental Outcomes	Measures	Outputs for FY 2021 (Commitments)	Status/Comment
Assessment of non-tidal Delaware River tributaries' chloride, TDS, and salinity to identify potential problem areas		• Monthly sample collection spanning 12 months (30 non-tidal tributary sites in SPW). • Analytical parameters include TDS and chloride (specific conductance data collected via loggers and/or water quality meters). • Upon upload of all data to STORET/WQX, links to a pre-canned query for the resultant data set will be provided. All 2021 data uploaded by February 28, 2022 and pre-canned queries posted on DRBC web page by March 15, 2022.	

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Goal 2: Protecting America's Waters			
Objective 2: **Objective 2.2**: Protect and Restore Watersheds and Aquatic Ecosystems			
Work Plan Component/Program: II. DRBC Criteria-Based Programs **Work years**: 2021	**EPA Contact(s)**: Dana Hales, Joel Blanco	**Basin Commission Contact(s)**: N. Suk	**PRC**: 202B06
Project Description: Stage 2 PCB TMDLs			
Environmental Outcomes	**Measures**	**Outputs for FY 2021 (Commitments)**	**Status/Comment**
Finalization of Stage 2 PCB TMDLs		Provide support to EPA (or states) for informational meetings and pulic hearings to establish the Stage 2 PCB TMDLs for the Delaware River Estuary and Bay. Provide technical support to EPA Regions 2 and 3 to finalize Stage 2 PCB TMDLs report based on comments from stake holders and general public. Provide technical support to EPA in preparation of responses to comments document. All tasks are dependent on EPA/states' progress toward the establishment of Stage 2 PCB TMDLs.	

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