

## RESOLUTION FOR THE MINUTES

A Resolution for the Minutes authorizing the Executive Director to partner with the U.S. Geological Survey (USGS) to obtain funding for and perform novel bacterial monitoring in urbanized areas of the Delaware River Basin.

WHEREAS, Section 101(a)(2) of the Clean Water Act sets as a national goal, “wherever attainable[,]. . . water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water”; and

WHEREAS, for interstate waters within the Delaware River Basin, the basin states’ regulations implementing the Clean Water Act defer or refer to DRBC water quality standards; and

WHEREAS, “recreation” (also referred to as primary contact recreation) is a designated use for all water quality zones in the main stem Delaware River, except within a 27-mile-long segment in the urban Delaware River Estuary that comprises Zone 3 and the portion of Zone 4 above River Mile 81.8 (“upper Zone 4”), where the designated uses include only “recreation-secondary contact”; and

WHEREAS the causes of elevated bacteria in Zones 3 and the upper portion of Zone 4 are generally understood to include: 1) discharges of raw sewage from combined sewer overflows (CSOs) following certain wet weather events from the City of Philadelphia, Pa., City of Camden, N.J., City of Gloucester, N.J., DELCORA wastewater system in Delaware County, Pa., and City of Wilmington, Del.; 2) localized urban runoff during wet weather events (including bacteria from animal sources); 3) overflows of existing sanitary sewer systems during extreme wet weather events; 4) runoff from upstream sources during extreme wet weather events; and 5) unspecified dry weather sources including localized in-situ animal sources such as Canada geese.

WHEREAS, based upon extensive collection and analysis of Fecal Indicator Bacteria (FIB) in the Delaware River Estuary, the 2020 Water Quality Assessment Report indicates that “recreation” is supported in Zones 2, 5, and 6; and “recreation-secondary contact” is supported in Zone 3 and upper Zone 4; and

WHEREAS, in response to requests by non-governmental organizations and members of the public that the Commission upgrade from “recreation - secondary contact” to primary contact “recreation” the use designation and corresponding water quality criteria for Zone 3 and upper Zone 4 of the Estuary, the Commission has asked its Water Quality Advisory Committee (WQAC), a body comprised of members from diverse stakeholder groups, to evaluate the matter and provide the Commission with a recommendation; and

WHEREAS, during the summers of 2019 and 2020, DRBC collected shore-based samples from locations in Zone 3 and upper Zone 4 and had them tested for *E. coli*, fecal coliform and enterococci to determine whether water quality that supports primary contact “recreation” is being attained or is close to being attained in these areas. The sampling and analytical results indicated

that water quality in the tested sites does not support primary contact “recreation”; however, the potential for attainment at some sites was greater than at others; and

WHEREAS, the Commission’s FY2022 – FY2024 Water Resources Program (WRP) provides that the DRBC will actively engage with the WQAC and our Clean Water Act co-regulators to identify near- and long-term measures for improving water quality and increasing opportunities for safe recreation in Zone 3 and upper Zone 4; and

WHEREAS the WRP further provides for the staff to acquire a better understanding of conditions and trends based upon shore-based monitoring, tributary, and non-point source monitoring, including near-real-time bacteria indicator monitoring; and

WHEREAS current Fecal Indicator Bacteria (FIB) sampling methods are labor intensive and there is a multi-day lag time between sample collection and receipt of results. This results in uncertainty about the potentially harmful bacterial concentration in the water body at the time of recreation.

WHEREAS, as part of the USGS Next Generation Water Observing System (NGWOS) Delaware River Basin Pilot, the USGS is testing in Philadelphia a novel instrument called the Fluidion ALERT System, which performs remote sampling and rapid in-situ analysis, including telemetered Fecal Indicator Bacteria (FIB) sampling; and

WHEREAS, on February 5, 2021 the USGS in cooperation with the DRBC submitted a successful proposal to the EPA Urban Water Federal Partnership (UWFP) for a grant of \$116,500 to:

- a. establish an additional USGS near real-time FIB monitoring location in a back channel of the Delaware River at the mouth of the Cooper River at Pyne Point Park in Camden, New Jersey to assess the technological readiness of the Fluidion ALERT System;
- b. install a stage sensor and water-temperature sensor for monitoring tidal elevation to characterize streamflow conditions and water temperature and aid in data analysis;
- c. collect weekly validation samples to be analyzed using standard EPA FIB methods;
- d. validate the *E. coli* and total coliform concentrations produced by the Fluidion ALERT system by comparing them to analytical data derived by standard EPA methods; and
- e. publish the results; and

WHEREAS the DRBC and USGS also submitted a successful proposal to the William Penn Foundation on March 29, 2021 for a grant of \$100,100 to fulfill the non-federal match requirement of the UFWP grant and to perform additional related tasks, as follows:

- a. develop recommendations for an expanded network of real time bacterial monitoring in the urban Delaware River Estuary, and
- b. evaluate opportunities for sustaining a network of USGS-operated and -maintained bacterial monitors through funding and cooperative agreements; and

- c. prepare and deliver to the public an engaging, user-friendly and informative “geonarrative” that summarizes findings from the exploration into ways of expanding and sustaining near-real-time bacteria monitoring in the Delaware River Estuary.

Now therefore, BE IT RESOLVED by the Delaware River Basin Commission:

1. The Commission supports the collection of additional FIB water quality data using both traditional and innovative methods to furnish the Commission, state and federal co-regulators, and the public with timely and accurate information about whether river conditions support primary contact recreation.

2. The Executive Director is authorized and directed to enter into a Joint Funding Agreement with the USGS to implement the joint UWFP grant proposal entitled *Novel Bacterial Monitoring in Urbanized Areas of the Delaware River Basin in Support of Recreational Water Quality Criteria*.

3. The Executive Director is authorized and directed to enter into an agreement with the William Penn Foundation for a related grant in the amount of \$100,100 to be allocated as follows: UWFP match - \$30,600; USGS labor and expenses - \$39,500; and DRBC labor and expenses - \$30,000.

ADOPTED: June 9, 2021