Supporting Documentation for Review and Approval of U.S. Virgin Islands 2022 303(d) List

Pursuant to Sections 303(d) and 305(b) of the Clean Water Act, the U.S. Virgin Islands Department of Planning and Natural Resources (DPNR) submitted its 2022 integrated water quality assessment report to the U.S. Environmental Protection Agency. The 2022 integrated water quality assessment report contains the U.S. Virgin Islands 2022 Clean Water Act Section 303(d) list of impaired waters that require total maximum daily load development. The U.S. Virgin Islands (2022 303(d) list) and supporting documentation are referred to below collectively as the integrated water quality assessment report. The DPNR submitted its integrated water quality assessment report to EPA, via ATTAINS, on July 13, 2023.

EPA reviewed the integrated water quality assessment to determine whether the U.S. Virgin Islands developed its impaired waters list in compliance with Section 303(d) of the Clean Water Act and EPA's implementing regulations. EPA evaluated whether the U.S. Virgin Islands reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed. EPA has concluded that the U.S. Virgin Islands developed the 2022 303(d) list in compliance with Section 303(d) of the Clean Water Act and 40 Code of Federal Regulations Section 130.7. For the reasons set forth below, EPA Region 2 approves the U.S. Virgin Islands 2022 303(d) list.

Identification of Water Quality Limited Segments for Inclusion on the 303(d) List

Section 303(d)(1) of the Clean Water Act directs states (Section 502 of the Act defines "state" to include the U.S. Virgin Islands) to identify those waters within their jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to achieve any applicable water quality standards and establish a priority ranking for those waters. The ranking must consider the severity of the pollution and the uses of those waters. According to EPA's long-standing interpretation of Section 303(d), the listing requirement applies to waters impaired by point and/or nonpoint sources.

EPA regulations do not require states to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Clean Water Act; (2) more stringent effluent limitations required by state or local authority; and (3) other pollution control requirements required by state, local or federal authority. See 40 CFR 130.7(b)(1).

A state may also exclude a water from the impaired waters list where it demonstrates good cause based on: more recent or accurate data; more sophisticated water quality modeling; flaws in the original analysis that led to the water being listed as impaired; or changes in conditions (e.g., new control equipment or elimination of discharges). See 40 CFR 130.7(b)(6)(iv).

Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing 303(d) lists, states are required to assemble and evaluate all existing and readily available water quality-related data and information. At a minimum, states must consider existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the state's most recent Clean Water Act Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public or academic institutions; and (4) waters identified as impaired or threatened in a nonpoint assessment submitted to EPA under section 319 of the Clean Water Act. See 40 CFR 130.7(b)(5). EPA regulations specify that states should actively solicit data from

organizations and groups such as local governments, federal agencies, academic institutions and members of the public. See 40 CFR 130.7(b)(5)(iii).

In addition to assembling and evaluating all existing and readily available water quality-related data and information, EPA regulations, at 40 CFR 130.7(b)(6), require states to document the data and information used in making its decision to list or not to list waters on the impaired waters list. The documentation needs to include, at a minimum: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; (3) a rationale for not using any existing and readily available data and information; and (4) any other reasonable information requested by EPA.

The U.S. Virgin Islands Department of Planning and Natural Resources' assessment methodology describes the process for evaluating monitoring data and information. The DPNR incorporates its methods document into its integrated report. The methods document describes the process for the consolidation and evaluation of monitoring data and information to determine whether a waterbody's designated use is supported or impaired. The methods include: an explanation of the identification of waterbody type, classification, and use; a description of the U.S. Virgin Islands water quality standards used in evaluation; and a detailed presentation of surface water monitoring and assessment.

The DPNR segments waters into assessment units and assesses water quality standards attainment as specified by its methods document. The methods document was submitted to EPA as part of the 2022 integrated report and is the background document for the 2022 303(d) list.

Under the U.S. Virgin Islands coastal water quality monitoring program, ambient water quality is monitored on a quarterly basis. Through an in-kind assistance agreement, an EPA contractor conducted quarterly ambient monitoring between October 2019 and September 2021. Ambient monitoring currently includes sampling and analysis of water quality at 36 sites around St. Croix and 58 sites around St. Thomas and St. John. The inventory of physical, chemical and microbiological data used to develop the 2022 integrated water quality assessment report and make water quality assessments consists of a search of monitoring results from samples taken between October 1, 2019, and September 30, 2021, downloaded from the water quality portal located at https://www.waterqualitydata.us/portal/ on November 22, 2021. The portal includes data from the ambient water quality monitoring programs. To ensure that the U.S. Virgin Islands considers all readily available data and information, on April 1, 2022, the DPNR solicited water quality data for the 2022 303(d) list through a notice on its website. The DPNR did not receive any additional data or information as a result of the notice. After the evaluation of all existing and readily available data and information, the DPNR, in keeping with its assessment methodology, and based on designated use support, placed its assessment units in one of the following five categories:

- Category 1: Waters that are attaining the applicable water quality standards for all designated uses.
- Category 2: Waters that are attaining some of the designated uses, but no data is available to make attainment determinations for the remaining designated uses.
- Category 3: Waters for which insufficient available data and/or information to determine if any designated uses are being attained.
- Category 4: Waters in which designated uses are impaired or threatened and development of a TMDL is not necessary. A TMDL has been developed by a state and approved by EPA or a TMDL has been established by EPA (4a). Other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period (4b). A water where a

designated use is impaired or threatened by a cause that is not a pollutant (e.g., hydrologic and habitat alterations) (4c).

- Category 5: Waters where at least one water quality standard is not attained and the development of a TMDL is needed. Category 5, therefore, is the U.S. Virgin Islands 303(d) list.

New Listings

EPA reviewed the data and information for which the DPNR based its assessment determinations in this cycle and compared the waterbody/pollutant combinations listed in 2022 with those listed in 2020. EPA concluded that the U.S. Virgin Islands properly assembled and evaluated all existing and readily available data and information, including data and information relating to the categories of waters specified in 40 CFR 130.7(b)(5).

The US Virgin Islands DPNR adopted a new water quality criterion for nitrogen which states: "*Nitrogen as total N shall not exceed concentration of 207 ug/l in more than 10 percent of samples over a three-year period in estuarine, marine and coastal waters*." This criterion is applicable to all classes of marine and coastal waters of the US Virgin Islands and was approved by EPA on August 20, 2020. Monitoring results for nitrogen data collected between May 2018 and August 2021 were assessed against the updated water quality criterion for the 2022 integrated water quality assessment report. All assessment units monitored for nitrogen exceed the new water quality criterion for nitrogen and therefore, all are included on the 303d list.

Each listing contains the assessment unit name, the assessment unit identification number, the impairment type and the impairment cause. The 2022 303(d) list contains 250 waterbody/pollutant combinations. Ninety-nine of these waterbody/pollutant combinations are new additions to the 2022 303(d) list. The additions are:

VI-STC-02	Frederiksted Harbor for nitrogen
VI-STC-06	Sprat Hall Beach for nitrogen
VI-STC-12	Cane Bay for nitrogen
VI-STC-13	Baron Bluff subwatershed for nitrogen
VI-STC-16	Salt River Lagoon, Marina for nitrogen
VI-STC-18	Salt River Bay for nitrogen
VI-STC-23	St. Croix-By-the-Sea for nitrogen
VI-STC-24	Long Reef Backreef, west for nitrogen
VI-STC-25	Princess subwatershed, offshore for nitrogen
VI-STC-26	Christiansted Harbor for nitrogen
VI-STC-27	Long Reef Forereef, east for nitrogen
VI-STC-29	Christiansted Harbor, east for nitrogen
VI-STC-30	Beauregard Bay for nitrogen
VI-STC-31	Buccaneer Beach for nitrogen
VI-STC-34	Punnett Point, east for nitrogen
VI-STC-35	Tamarind Reef Lagoon (Southgate Lagoon) for nitrogen
VI-STC-39	Teague Bay for nitrogen
VI-STC-40	Teague Bay Backreef for nitrogen
VI-STC-41	Buck Island Backreef for nitrogen
VI-STC-46	Grapetree Bay for nitrogen
VI-STC-47	Turner Hole Backreef for nitrogen

VI-STC-49	Madam Carty Backreef for nitrogen
VI-STC-52	Great Pond Bay for nitrogen
VI-STC-56	Bugby Hole Backreef for nitrogen
VI-STC-59	Canegarden Bay for nitrogen
VI-STC-61	Hess Oil Virgin Islands Harbor for nitrogen
VI-STC-62	Limetree Bay for nitrogen
VI-STC-63	Martin-Marietta Alumina Harbor for nitrogen
VI-STC-64	Manning Bay/Estate Anguilla Beach for nitrogen
VI-STC-65	Hovensa, west for nitrogen
VI-STC-66	Hovensa subwatershed, offshore for nitrogen
VI-STC-75	Diamond subwatershed, offshore for nitrogen
VI-STC-77	Long Point Bay for nitrogen
VI-STC-79	Good Hope Beach for nitrogen
VI-STC-82	Sandy Point, nearshore west for nitrogen
VI-STJ-02	Hawksnest Bay for nitrogen
VI-STJ-03	Trunk Bay for nitrogen
VI-STJ-05	Cinnamon Bay for nitrogen
VI-STJ-06	Maho Bay/Francis Bay for nitrogen
VI-STJ-13	Round Bay for nitrogen
VI-STJ-15	Coral Harbor for nitrogen
VI-STJ-16	Coral Bay for nitrogen
VI-STJ-17	Salt Pond Bay for nitrogen
VI-STJ-19	Great Lameshur Bay for nitrogen
VI-STJ-21	Genti Bay for nitrogen
VI-STJ-23	Fish Bay for nitrogen
VI-STJ-25	Rendezvous Bay for nitrogen
VI-STJ-26	Chocolate Hole for nitrogen
VI-STJ-28	Great Cruz Bay for nitrogen
VI-STJ-29	Turner Bay for nitrogen
VI-STJ-30	Cruz Bay for nitrogen
VI-STT-01	Botany Bay for nitrogen
VI-STT-02	Stumpy Bay for nitrogen
VI-STT-04	Santa Maria Bay for nitrogen
VI-STT-05	Caret Bay for nitrogen
VI-STT-07	Dorothea for nitrogen
VI-STT-08	Hull Bay for nitrogen
VI-STT-10	Magens Bay for nitrogen
VI-STT-13	Mandahl Bay (Marina) for nitrogen
VI-STT-15	Sunsi Bay for nitrogen
VI-STT-16	Spring Bay for nitrogen
VI-STT-17	Mandahl Bay subwatershed, offshore for nitrogen
VI-STT-18	Water Bay for nitrogen
VI-STT-19	Smith Bay for nitrogen
VI-STT-21	St. John Bay for nitrogen
VI-STT-22	Red Bay for nitrogen
VI-STT-23	Vessup Bay for nitrogen
VI-STT-24	Red Hook Bay for nitrogen
VI-STT-25	Great Bay for nitrogen

VI-STT-28 Cowpet Bay for nitrogen
VI-STT-32 Nazareth Bay for nitrogen
VI-STT-35 Mangrove Lagoon for nitrogen
VI-STT-36 Frenchman Bay subwatershed, east for nitrogen
VI-STT-37 Frenchman Bay for nitrogen
VI-STT-38 Limetree Bay for nitrogen
VI-STT-39 Morningstar Bay for nitrogen
VI-STT-40 Pacquereau Bay for nitrogen
VI-STT-43 St. Thomas Harbor, inner for nitrogen
VI-STT-45 Gregerie Channel for nitrogen
VI-STT-46 Sprat Bay for nitrogen
VI-STT-47 Hassel Island at Haulover Cut to Regis Point for nitrogen
VI-STT-49 Druif Bay for nitrogen
VI-STT-50 Flamingo for nitrogen
VI-STT-51 Krum Bay for nitrogen
VI-STT-52 Lindbergh Bay for nitrogen
VI-STT-53 Cyril E. King Airport subwatershed, offshore for nitrogen
VI-STT-54 Perseverance Bay, offshore for nitrogen
VI-STT-55 Brewers Bay for nitrogen
VI-STT-56 Perseverance Bay for nitrogen
VI-STT-57 Fortuna Bay for nitrogen
VI-STC-75 Diamond subwatershed, offshore for enterococcus
VI-STJ-13 Round Bay for transparency / clarity
VI-STJ-28 Great Cruz Bay for enterococcus
VI-STJ-30 Cruz Bay for dissolved oxygen
VI-STT-08 Hull Bay for temperature
VI-STT-17 Mandahl Bay subwatershed, offshore for phosphorus
VI-STT-34 Benner Bay Lagoon Marina for transparency / clarity
VI-STT-45 Gregerie Channel for turbidity
VI-STT-47 Hassel Island at Haulover Cut to Regis Point for turbidity

Delistings

The U.S. Virgin Islands delisted 8 waterbody/pollutant combinations from the 2018 303(d) list. According to 40 CFR 130.7(b)(6)(iv), the U.S. Virgin Islands has shown good cause to delist these 8 waterbody/pollutant combinations based on one of the following reasons:

1. Applicable water quality standard attained: 2 waterbody/pollutant combinations have been delisted because monitoring data from October 2017 through September 2021 shows attainment with the water quality criterion. These are:

   VI-STC-41 – Buck Island Backreef for temperature
   VI-STJ-16 – Coral Bay for enterococcus

2. Original basis for listing was incorrect: Although the standards for dissolved oxygen, pH, temperature and turbidity are currently defined as applicable one meter below the surface and one meter above the sea floor, samples have been and are taken at distances above one meter below the surface and below one meter above the sea floor. The U.S. Virgin Islands assesses waters as impaired for these parameters if the criteria are not met at any depth. During this cycle,

there were instances where multiple samples were taken at different depths on the same day and at the same time. For assessment purposes, the DPNR used the worst-case result to determine attainment. If the DPNR determines that the data set adequately represents water quality conditions and there are at least two exceedances of the surface water quality standards, the DPNR determines that a use is not attained. The justification for using two exceedances for this determination is that the first exceedance could have the potential to be an outlier and not adequately represent water quality conditions, but the second exceedance confirms that the water quality standard is not attained. During the 2020 cycle, exceedances of the water quality standard taken at the same day and time at different depths were double counted; they were counted as two exceedances instead of one. Because there was only one exceedance and not two, the following waterbody/pollutant combinations have been delisted:

VI-STC-24 – Long Reef Backreef, west for pH
VI-STC-34 – Punnett Point, east for turbidity
VI-STC-35 – Tamarind Reef Lagoon (Southgate Lagoon) for pH
VI-STC-49 – Madam Carty Backreef for dissolved oxygen
VI-STC-52 – Great Pond Bay for dissolved oxygen
VI-STC-52 – Great Pond Bay for pH

Priority Ranking

Section 303(d)(1)(A) of the Clean Water Act and EPA regulations at 40 CFR 130.7(b)(4) require states to prioritize waters on their impaired waters lists for TMDL development. EPA regulations further require states to identify those waterbody segments targeted for TMDL development in the next two years. The DPNR ranks the waters on its 2022 303(d) list as high, medium or low priority for TMDL development taking into account the severity of the pollution and waterbody uses. With respect to taking into account the severity of the pollution, the DPNR includes consideration of the number of parameters for which an assessment unit is impaired - the more impairments, the higher the ranking. The DPNR ranked the 21 assessment units within the St. Thomas East End Reserve (STEER) and the St. Croix East End Marine Park (STXEEMP) as high priority for TMDL development. The STEER and STXEEMP were two areas identified as priority areas in 2018, under the U.S. Virgin Islands Coral Reef Management Program. The STEER is a collection of marine reserves and wildlife sanctuaries, and contains the last remaining mangrove lagoon on St. Thomas, as well as nursery grounds for important fisheries. The STEER watershed is home to more than 33% of the population of St. Thomas. The STXEEMP contains significant marine resources and ecosystems, including coral reefs, sea grass beds and wildlife habitat and is protected as a natural area for the use and benefit of future generations. These 21 assessment units were identified based on shape files from the World Database on Protected Areas (https://www.protectedplanet.net/), current as of January 2020. The World Database on Protected Areas is a joint project between the United Nations and the International Union for Conservation of Nature. The compilation and management of the database is carried out by the United Nations Environment World Conservation Monitoring Centre, in collaboration with governments, non-governmental organizations, academia and industry. There are monthly updates of the data which are made available online through the Protected Planet website where the data is both viewable and downloadable. The DRPN ranked an additional 10 assessment units as high priority for TMDL development because TMDLs for these assessment units are already in development. The 49 assessment units in other marine protected areas are designated as medium priority. The remaining 97 assessment units that do not overlap with protected areas are designated as low priority.

The DPNR has targeted the 35 waterbody/pollutant combinations in the STEER and STXEEMP for TMDL development over the next two years. These 35 waterbody/pollutant combinations are:

VI-STC-16 – Salt River Lagoon, Marina for enterococcus
VI-STC-16 – Salt River Lagoon, Marina for transparency / clarity
VI-STC-16 – Salt River Lagoon, Marina for nitrogen
VI-STC-18 – Salt River Bay for enterococcus
VI-STC-18 – Salt River Bay for turbidity
VI-STC-18 – Salt River Bay for nitrogen
VI-STC-33 – Punnett Bay for turbidity
VI-STC-35 – Tamarind Reef Lagoon (Southgate Lagoon) for enterococcus
VI-STC-35 – Tamarind Reef Lagoon (Southgate Lagoon) for nitrogen
VI-STC-36 – Green Cay Beach for enterococcus
VI-STC-37 – Southgate subwatershed, offshore for enterococcus
VI-STC-37 – Southgate subwatershed, offshore for turbidity
VI-STC-39 – Teague Bay for pH
VI-STC-39 – Teague Bay for nitrogen
VI-STC-40 – Teague Bay Backreef for pH
VI-STC-40 – Teague Bay Backreef for nitrogen
VI-STC-46 – Grapetree Bay for pH
VI-STC-46 – Grapetree Bay for nitrogen
VI-STC-47 – Turner Hole Backreef for dissolved oxygen
VI-STC-47 – Turner Hole Backreef for enterococcus
VI-STC-47 – Turner Hole Backreef for pH
VI-STC-47 – Turner Hole Backreef for nitrogen
VI-STC-49 – Madam Carty Backreef for pH
VI-STC-49 – Madam Carty Backreef for nitrogen
VI-STC-52 - Great Pond Bay for nitrogen
VI-STT-25 - Great Bay for nitrogen
VI-STT-28 - Cowpet Bay for nitrogen
VI-STT-34 – Benner Bay Lagoon Marina for enterococcus
VI-STT-35 – Mangrove Lagoon for enterococcus
VI-STT-35 – Mangrove Lagoon for nitrogen
VI-STT-36 – Frenchman Bay subwatershed, east for enterococcus
VI-STT-36 – Frenchman Bay subwatershed, east for phosphorus
VI-STT-36 – Frenchman Bay subwatershed, east for nitrogen
VI-STT-36 -- Frenchman Bay subwatershed, east for turbidity

EPA has reviewed the U.S. Virgin Islands priority ranking of listed waters for TMDL development and concludes that the U.S. Virgin Islands properly considered the severity of pollution and the uses to be made of such waters. EPA believes that the 35 waterbody/pollutant combinations selected by the U.S. Virgin Islands for completion of a TMDL over the next two years, is an appropriate target for near-term TMDL development.

Public Participation

The availability of the U.S. Virgin Islands 2022 draft 303(d) list was publicized by posting a notice on the U.S. Virgin Islands Department of Natural Resources website on April 1, 2022. The public comment period for the 2022 303(d) list concluded on May 2, 2022. During the public comment period, the draft 2022 303(d) list was available on the DPNR website. The DPNR did not receive any additional data as a result of the data solicitation and did not receive any comments on the draft 2022 303(d) list.