I. PROJECT MANAGEMENT

1. Title and Approval Page

Quality Assurance Project Plan for Data Analysis:
Freshwater Numeric Nutrient Criteria Development

State of Rhode Island
Department of Environmental Management
Office of Water Resources

December 15, 2011

Approval Signatures

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Connie Carey, RIDEM/OWR Project QA Officer — Date 12/15/11

Terrence Gray, P.E., RIDEM QA Project Manager — Date 1/9/12

Toby Stover, USEPA RTAG Coordinator — Date 1/10/12

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3. Distribution List

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4. Project/Task Organization

The Rhode Island Department of Environmental Management, Office of Water Resources (RIDEM/OWR) is developing numeric nutrient criteria for freshwater lakes, ponds, and reservoirs (hereinafter "lakes") and freshwater rivers and streams as part of U.S. Environmental Protection Agency (EPA) nutrient reduction initiatives (USEPA 2011). The statistical analyses, data reporting, and implementation of primary and secondary data collection and compilation will be executed by staff contracted through the New England Interstate Water Pollution Control Commission (NEIWPCC). RIDEM/OWR will execute any primary data collection using permanent, contractual and/or seasonal personnel. The organizational chart (Figure 1) describes the principal officials from RIDEM/OWR, NEIWPCC, and the U.S. Environmental Protection Agency (EPA) associated with the numeric nutrient criteria development project and illustrates the pathways of communication that will be utilized during the project.

The EPA requires any data used to characterize environmental processes and conditions be collected and utilized under predetermined guidelines to ensure high data quality. The EPA also requires that projects using secondary data (data not collected specifically for the purpose of the project) to be utilized under predetermined guidelines to ensure that the project objectives are being met with existing data collected for a different project. An important component in this system is the Quality Assurance Project Plan (QAPP). There are two basic formats proposed by the EPA for QAPP development. A project-specific format is designed to address all aspects of a single project, and a generic format is intended to cover a general program where common activities will occur at multiple sites over an extended period of time (USEPA 2001). This document represents the project-specific format for activities related to numeric nutrient criteria development conducted by RIDEM/OWR using both primary and secondary data.

The RIDEM/OWR Program Manager will oversee fiscal matters, contract agreements and general progress of the program. The RIDEM/OWR Project Manager will coordinate primary and secondary data collection and compilation, statistical analyses, and data reporting and will serve as the primary point of contact for the project. Problems encountered during the development of numeric nutrient criteria will be reported by the RIDEM/OWR Program Manager and Project Quality Assurance (QA) Manager, in verbal or written communication, to the RIDEM/OWR Project Manager. The RIDEM/OWR Project Manager will review all primary and secondary data and provide regular written and/or verbal progress updates to the RIDEM/OWR Program Manager and QA Project Manager. The RIDEM/OWR QA Manager is already assigned the duty of ensuring all involved personnel are properly trained in all appropriate protocol associated with primary data collection as stated in the "Quality Assurance Project Plan for Rhode Island Ambient River Monitoring" and "Generic Quality Assurance Project Plan Lake Monitoring by RIDEM/OWR." The RIDEM/OWR QA Project Manager will confirm that data reporting requirements are met with respect to time of delivery and product quality.

This QAPP and any developed addendum will be annually reviewed and updated accordingly. Jane Sawyers (RIDEM/OWR-NEIWPCC), originator of this QAPP, will be responsible for maintaining the official, approved QAPP.

5. Background and Problem Definition

RIDEM/OWR is charged by the Federal Clean Water Act with comprehensively monitoring and assessing the water quality of the state's waters. The OWR also implements the state's Water Quality Standards and Total Maximum Daily Load (TMDL) Programs. The purpose of these programs is to restore, preserve, and enhance the water quality of RI waters through development and implementation of water quality criteria and water quality restoration plans. Development and refinement of numeric nutrient criteria for lakes, rivers and streams provides an integral support to these programs. An important part in this effort is the collection, compilation, and use of high quality data reflective of the status of Rhode Island's water resources to develop numeric nutrient criteria.

EPA recommends development of numeric nutrient criteria for stressors (total phosphorus (TP) and total nitrogen (TN)) and response (chlorophyll *a* (chl *a*) and water clarity) parameters. Other variables indicating trophic state can be implemented when considered necessary (USEPA 2000a). At this time, RIDEM is planning to focus numeric nutrient criteria development on the core parameters of TP, TN, chl *a*, and water clarity. Collection and compilation of lake, stream, and river data by RIDEM/OWR will be used to refine and/or develop water quality criteria. Subsequent to the development and adoption of numeric nutrient criteria, the criteria will be used to assess and report on the water quality status of lakes and rivers in the Integrated Water Quality Monitoring and Assessment Report (Integrated Report) for the 305(b) and 303(d) requirements under the Clean Water Act (CWA), support permitting programs, assess progress to water quality restoration, and develop TMDL plans. Numeric nutrient criteria will be used within these programs to make management, restoration, and implementation decisions by RIDEM/OWR.

Data used to develop numeric nutrient criteria under this QAPP can include physical, chemical, and biological primary and secondary data. The decisions and outcomes rendered under each numeric nutrient criterion will be program-specific in nature. The types of assessment undertaken in response to numeric nutrient criteria development and adoption will be determined by the RIDEM/OWR goals and responsibilities, and any potential decisions and outcomes will be decided independently for assessment.

A. Lakes Background

RIDEM has mapped 20,749 lake acres in Rhode Island at a scale of 1:24,000. This includes 148 lakes or reservoirs of 20 acres or more in size and hundreds of smaller ponds. Lakes in RI can be characterized as small and shallow, and, excluding the kettleholes that dot the state, a number of lakes are actually reservoirs or impoundments of riverine systems. Most of the impoundments were formed with the development of

man-made dams. Among the lakes/reservoirs, 43 are designated as public drinking water supply sources, representing 7,789 acres or 37% of the total lake acreage. There are no major or minor permitted wastewater treatment facilities (WWTF) discharges into lakes in RI.

The principal source of water quality monitoring data concerning the condition of lakes is the University of Rhode Island Watershed Watch Program (URIWW). Initiated in 1987, the program is a professionally supervised volunteer monitoring program with an EPA-approved field and laboratory QAPP (URIWW 2008). The data generated through this program supports lake assessments, criteria development, and TMDLs by RIDEM/OWR. While the data has not been specifically collected to support numeric nutrient criteria development, the URIWW program collects many of the water quality parameters essential to development of numeric nutrient criteria. This QAPP will primarily address the compilation and use of this data as secondary data (i.e. data not collected specifically for the purpose of this project) for the numeric nutrient criteria development project.

There are vital pieces of water quality information necessary to the mission of the RIDEM/OWR, which are not collected by URIWW. The development of numeric nutrient criteria by RIDEM/OWR has necessitated conducting extended monitoring of lakes sampled by URIWW for primary data collection of lake color, macrophyte abundance, substrate composition, and stratification. The collection of this primary data has been documented in a separate QAPP: "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR." This QAPP will address the use of this primary data for statistical analyses and development of numeric nutrient criteria in conjunction with any compiled secondary data from the URIWW dataset or any other future secondary data resource.

B. Rivers and Streams Background

Rhode Island has approximately 1,420 miles of rivers and streams, mapped at a 1:24,000 scale, ranging from numerous small, first order headwater streams to the large, well known main stem rivers. In the northwest corner of the state, marked by rolling hills and higher elevations, the rivers have higher gradients and flow slightly faster than the streams in the coastal lowlands, which cover more than half the mainland and all of the islands. Many of the coastal rivers are tidally influenced. Except for small portions of the state bordering Connecticut, all of northern Rhode Island is drained by river systems that discharge into Narragansett Bay, while rivers in southern Rhode Island drain directly into Rhode Island Sound. A subset of freshwater rivers are tributaries to drinking water supply reservoirs, and, as source waters within drinking water supply watersheds, these tributaries are also designated for drinking water use.

Freshwater rivers in RI are the receiving waters for six major WWTF discharges. These six facilities discharge into four larger rivers located in the northern part of the state within the Narragansett Basin watershed. The rest of the freshwater rivers in the state are primarily affected by non-point sources of pollution and, in a few cases, minor WWTF and industrial discharges.

Historical sampling of RI rivers typically targeted a few stations on the larger rivers and approximately 40 smaller streams around the state, leaving a large data gap for most river systems. In 2004, RIDEM/OWR began the ambient river monitoring (ARM) program following a rotating basin sampling format with stations located using a combined geometric and targeted sampling design. The initial rotating basin cycle concluded in 2009 after all basins in the state had been sampled. The ARM program has generated a large amount of data and information from rivers and streams across the state necessary for characterization and assessment of stream health, which is critical to numeric nutrient criteria development. Additionally, the URIWW program also collects water quality data at select stream and river sites throughout the state. This QAPP will address the use of the historical RIDEM/OWR and URIWW stream and river data as secondary data (i.e. data not collected specifically for the purpose of this project) for the purpose of numeric nutrient criteria development. The collection of the historical data by RIDEM/OWR and URIWW is covered by their own respective field sampling QAPPs (URIWW 2008; RIDEM 2010a).

A large deficiency identified in historical Rhode Island river and stream data is a lack of information on primary production, especially water column chlorophyll *a* and periphyton, which is necessary for the development of nutrient criteria (ORNL 2007). The development of numeric nutrient criteria by RIDEM/OWR has necessitated conducting extended monitoring on streams sampled by RIDEM/OWR and URIWW for primary data on taxonomic identification of diatoms, chlorophyll *a* abundance of periphyton, percent coverage of periphyton and macrophytes, and habitat features. The collection of this data has been documented in a separate addendum to the ARM QAPP: "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program." This QAPP will address the use of the primary data for statistical analyses and development of numeric nutrient criteria in conjunction with the compiled secondary data from the ARM and URIWW datasets and any other future secondary data source.

6. Project Description

Most secondary data will be compiled from RIDEM/OWR's water chemistry database, WQUAL, or RIDEM/OWR's macroinvertebrate database, BioQual. Lakes, streams, and rivers have also been selected for various studies by the EPA; U.S. Geological Survey (USGS); University of Rhode Island (URI); and other state, federal, and educational institutions. These institutions will be consulted for availability of data and metadata for historical studies. For rivers and streams, a data compilation was conducted by Oak Ridge National Laboratory (ORNL) in 2007, which will also be consulted for availability of secondary data. The compilation completed by ORNL contains data collected by RIDEM/OWR, U.S. Geological Survey (USGS), and URIWW. Any primary data will be collected by RIDEM/OWR permanent, contractual and/or seasonal personnel. Primary data collected will be housed in a database on the Project Manager's network drive.

Because of the large amount of historical data currently available to RIDEM/OWR, this project will primarily use historical data for as many relevant parameters as possible. However, as stated, some primary data will be collected under this project as well. This QAPP is designed to document the compilation and combined use of primary and secondary data for numeric nutrient criteria development conducted by the RIDEM/OWR. The objectives of the numeric nutrient criteria project are as follows:

- Compile and review all relevant, available historical growing season data collected for freshwater lakes, rivers, and streams across Rhode Island.
- Assess the available data in regards to the data quality objectives of numeric nutrient criteria development.
- Identify any secondary data that does not meet data quality objectives of numeric nutrient criteria.
- Identify any relevant parameters for numeric nutrient criteria that do not have an acceptable secondary data source.
- Conduct any needed primary data collection.
- Compile and review any primary data collected through field sampling conducted by RIDEM/OWR.
- Statistically analyze the compiled available primary and secondary datasets for development of each nutrient and response thresholds for Rhode Island freshwater lakes, rivers, and streams.
- Draft and finalize numeric nutrient criteria for promulgation via rule-making for each waterbody type.

The work schedule for this project was submitted to EPA Region 1 in December of 2010 (Table 1; Table 2). The funding, manpower, and equipment resources needed for the data compilation and analysis will be based the on goals and budget of this project. Resource and time constraints will be project-specific in nature. The time constraints of the project will most likely be dependent on funding, which could limit the manpower available for the project.

7. Data Quality Objectives and Acceptance Criteria

A. Data Quality Objectives

Data Quality Objectives (DQOs) are qualitative and quantitative statements that clarify the intended use of the data, define which purposes the data may be used for, and specify tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions. DQOs delineate the type of data needed to support decisions, identify the conditions under which the data should be collected, and state what requirements must be met in order to use the data for its intended purpose. If applicable, the DQOs should specify the tolerable limits of the probability of making a decision error because of uncertainty in the data.

For RIDEM/OWR numeric nutrient criteria development, the intended purpose of the data collection, compilation, and analysis is to provide appropriate information and data to support numeric nutrient criteria development. This QAPP deals specifically with the data quality objectives during the analysis of compiled primary and secondary (i.e. data not collected for the purpose of this project) datasets for numeric nutrient criteria development and outlines the proper data compilation and statistical methods and procedures to be utilized to reduce sources, magnitude, and frequency of errors during data analysis. All DQOs for primary data collected by RIDEM/OWR are detailed in: "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program." This QAPP does not deal with the subsequent use of developed numeric nutrient criteria for implementation of programs. By outlining and following these steps, uncertainties in the data will be reduced and data quality will be assured for proper use and interpretation of the data during development of numeric nutrient criteria.

Since most secondary data will be compiled from the RIDEM/OWR WQUAL and BioQual databases, metadata about the type and quality of data collected will be available in historical records maintained by RIDEM/OWR. Data that is secured from an outside source, such as USGS, EPA, or URI, will be reviewed for metadata. For any secondary data without metadata, the source of the data will be contacted to provide the following metadata:

- Type of data collected (parameters, date, waterbody type, sampling location)
- Geographic representation (state, regional, national)
- Sampling design (probability-based or targeted design)
- Methods and equipment used for collection and analysis
    - Including any available SOPs, QAPPs, or references to methods
    - Use of chains of custody identified
    - Description of training required to collect and analyze water quality.
    - A description of Quality Control/Quality Assessment procedures used to internally review the method or equipment
    - Any generated QA reports

To meet the data quality objectives, the following quality assurance benchmarks will be verified through the metadata to ensure the use of data reflecting proper, consistent field, handling, and laboratory procedures:

- Standard Operating Procedures (SOPs) or professionally-accepted methods appropriate for the time period were implemented during sampling and field data collection and subsequent analysis.
- Primary and secondary data will preferably have been collected under a QAPP.
    - Applies only to data collected after implementation of the QAPP process.

- EPA-approved or other standardized methods (i.e. Standard Methods for the Examination of Water and Wastewater) were adhered to for all physical, biological, or chemical analysis procedures.
- Trained personnel performed the field collection and laboratory analyses for primary and secondary data.
    - Trained personnel are any person having undergone classroom or field training to collect or process water quality samples and data.
- Chain of Custody forms were completed when handling samples and transferring custody from field crews to the State Health Laboratories, authorized state vendors for analytical laboratory services, or other certified laboratories.

B. Data Quality Indicators

Data quality indicators (DQI) are the quantitative statistics and qualitative descriptors used to evaluate data quality and interpret the degree of acceptability of data to the user. The principal data quality indicators are: precision, accuracy, sensitivity, bias, representativeness, completeness, and comparability. The DQI of all primary data for lakes collected under this project are documented in the QAPP: "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR." The DQI of all primary data collected for streams under this project are documented in the ARM QAPP Addendum: "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program."

To determine that the secondary data meet the project's quality objectives, the data quality indicators are compared against predetermined standards deemed *acceptance criteria* instead of measurement performance criteria typically used for the primary data. Acceptance criteria will be evaluated through the available metadata, including information on SOPs, QAPPs, and methods. Where principal data quality indicators stated above are appropriate for secondary data, they will be discussed below:

Precision

Precision is a measure of agreement among repeated measurements of the same property under identical, or substantially similar conditions, expressed generally in terms of the standard deviation (USEPA 2002). Precision of duplicate sample analyses run in a laboratory should be assessed with a relative percent difference (RPD), and an RPD no greater than 25% should require the water sample to be reanalyzed. If the data from the replicate samples are not within the acceptable RPD range, the data will not be used from these samples. A laboratory QAPP or SOP should state the number of replicates required and a limit of RPD greater than 25% or less. For some analytes, such as pH, RPD is not an appropriate measurement. The laboratory should indicate that an appropriate measurement of precision was conducted and limit of acceptable difference between replicate samples. If available QA reports indicate greater than 20% of duplicate field or replicate analytical samples violate the RPD precision requirement, the data collected during those sampling events will not be used for further analysis. If field duplicates were conducted, then similar requirements for number of duplicates and a RPD greater than 20% or less.

Accuracy

Accuracy is the overall agreement of a measurement to a known value and includes error from both bias (systematic error) and precision (random error) (USEPA 2002). The accuracy of each laboratory method should be established by the laboratory calibration and use of its pre-determined method detection limit (MDL) and quantitation level (QL). The QL is the minimum concentration of a substance that can be reliably identified, measured, and reported with confidence it is accurate. The MDL is the lowest concentration of a substance that can reliably be measured and reported with some degree of confidence that the substance is present in the sample. The accuracy will be evaluated by request of the MDL and QL of the laboratory for each parameter used in the compilation of secondary data. Field data or laboratory data not requiring an MDL or QL will be evaluated by the SOP or established method used to collect the data. Field data or laboratory data that does not have an established MDL or QL, where one is appropriate, will not be used for further analysis.

Bias

Bias is the persistent influence of a measurement process that causes error in one direction (USEPA 2002). All laboratory analysts for secondary data analysis should be trained to use the laboratory equipment with the same SOP or standardized method to reduce operator bias. All secondary field data collectors should be trained with the same SOP or standardized method to reduce operator bias. Data from sampling events not completed under an SOP or standardized method, where one is appropriate, will not be used for further analysis.

Sensitivity

The method and instrument detection limit should be addressed by the range of measurements capable by the equipment listed in a QAPP or SOP. If this information is not available in a QAPP or SOP, the secondary data source will be contacted to provide the information. Data from sampling events not completed with an SOP or standardized method indicating sensitivity of the method and instrument detection limit, where one is appropriate, will not be used for further analysis.

Completeness

Completeness is the measure of valid data obtained from sampling. The completeness of the number of lakes and stream and river segments will be determined through statistical analyses or the data. If statistically valid threshold(s) and relationships can be determined through the numeric nutrient criteria development process, then the dataset will be considered complete. If completeness is not met, then best professional judgment will be used to determine whether collection of primary or compilation of further secondary data will produce correct data interpretations and conclusions.

Data Comparability

A number of lakes, rivers, and streams have been routinely monitoring by the RIDEM/OWR and URIWW. The secondary data compiled by RIDEM can be compared against the range of historical data collected by RIDEM/OWR and URIWW. The data

collected can be also be compared to values typical of a similar water body (i.e. deep, highly turbid, colored, etc.) throughout New England and similar Ecoregion XIV states.

Representativeness
The representativeness of the individual sampling locations and data will be addressed by the project-specific goals. The numeric nutrient criteria project will need to address if specific conditions are being sought or excluded from the data collection. This will be addressed through statistical analysis of the data and potential categorization.

8. Special Training/Certification

Data compilation and statistical analyses will be overseen by a qualified limnologist as Project Manager. The Project Manager is trained in lake and stream data collection techniques, analysis, and interpretation. The Project Manager has acquired the educational and work-related experience to perform the necessary data compilation and statistical analyses. The Program Manager and Project QA Manager have reviewed and accepted the qualifications of the Project Manager. Any further statistical training or consultation required will be sought out, as needed, by the Project Manager. A copy of any training certificates received by the Project Manager will be filed with the Project QA Manager. No forms will be required to document training for this project. All members of the Project Team will be familiar with project fieldwork, SOPs, and QAPPs necessary for project execution.

9. Documentation and Records

The retention of all field collection records generated by RIDEM/OWR follows the policy of the State of Rhode Island General Records Retention Schedule GRS5 (Appendix B). Electronic data is permanently stored in OWR's water quality database, WQUAL, and macroinvertebrate database, BioQual. The Project Manager will be responsible for determining the extent and scope of data records documentation required for each data source.

If available, the Project Manager will request the data record retention and document policy of the organization providing the secondary data. At a minimum, the secondary data source should retain any original field notes, instrument data sheets, copies of chains of custody, and laboratory results for samples comparable to the State of Rhode Island General Records Retention Schedule GRS5 (Appendix B). The explicit location and organization of these hardcopy files should be identified by the data source providing the information. All electronic data should be permanently retained and backed up in a separate storage device (i.e. CD/DVD, flash drive).

All data compiled for this project will be stored on the Project Manager's network drive. All statistical analyses and reporting will be primarily stored on the Project Manager's network drive. Every three months an electronic back-up copy of all data compilation

and statistical analyses will be generated on a DVD or flash drive. All data compiled, statistical analyses, and reports generated will follow the State of Rhode Island General Records Retention Schedule GRS5 (Appendix B).

Individuals identified in Section I, 3 will receive a hard and/or electronic copy of this QAPP from the Project Manager. The Project Manager will be responsible for maintaining and providing the most recent version of the QAPP to the individuals identified in Section I, 3.

II. DATA GENERATION AND AQUISITION

1. Sampling Process Design

This QAPP is designed to document the compilation and combined use of primary and secondary data for numeric nutrient criteria development conducted by the RIDEM/OWR. The sampling process designs of primary data collection are documented in "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program."

The target population of this study will be all fresh waters of Rhode Island. The compilation of data will seek to gain a representative sample of the freshwaters of Rhode Island. The available secondary data for lakes was not selected using a specific sampling design selection technique. Lakes are sampled for the URIWW program based on interest of volunteers, which is closely aligned with the philosophy of a judgmental design. Because of the large number of lakes covered by URIWW, a statistical survey will not be included to supplement the dataset in the lakes criteria development. The lakes with available data will be compared to the lakes located across Rhode Island to determine whether a representative sample of the target population has been achieved.

Stream stations sampled in the ARM program are located based on a combined geometric and targeted design. This design has generated information down to a large geographic scale, which should ensure a representative sample to complete population of the streams across Rhode Island. The streams with available data will be compared to streams across Rhode Island to determine whether a representative sample has been achieved. Due to the low numbers of large rivers in Rhode Island, a representative sample most likely will not be achieved by sampling a subset of the large river population. The large river data compilation will most likely include all members of the target population.

The goal of this study is to determine numeric nutrient criteria that are appropriate and protective for Rhode Island fresh waters. The data critical to reaching this goal will be influenced by the statistical analyses of available data. The core parameters, as recognized by EPA, TN, TP, chl *a*, and water clarity, will initially be considered as critical to reaching the goal of this study. Additional primary and secondary data parameters, such as habitat, substrate composition, and canopy cover, will be considered

critical, unless statistical analysis indicates they do not explain a significant portion of the relationship between stressor and response variables.

2. Sampling Methods

This QAPP is designed to document the compilation and combined use of primary and secondary data for numeric nutrient criteria development conducted by the RIDEM/OWR. Sampling methods for primary data collection are documented in "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program." Sampling methods for secondary data should adhere to the DQIs stated earlier in this QAPP.

3. Sample Handling and Custody

This QAPP is designed to document the compilation and combined use of primary and secondary data for numeric nutrient criteria development conducted by the RIDEM/OWR. Sampling handling and custody for primary data collection is documented in "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program." If a QAPP or SOP is available, sampling handling and custody for secondary data should be comparable to those procedures outlined in the primary data collection QAPPs.

4. Analytical Methods

This QAPP is designed to document the compilation and combined use of primary and secondary data for numeric nutrient criteria development conducted by the RIDEM/OWR. Analytical methods for primary data collection are documented in "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program." Analytical methods for secondary data will adhere to the DQIs stated earlier in this QAPP.

5. Quality Control

This QAPP is designed to document the compilation and combined use of primary and secondary data for numeric nutrient criteria development conducted by the RIDEM/OWR. Quality control methods for primary data collection are documented in "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program." Quality control procedures

of secondary data should adhere to the DQI stated earlier. If quality control reports are available from the data source for secondary data, then the Project Manager will request a hard or electronic copy of the quality control report.

6. Instrument/Equipment Testing, Inspection, and Maintenance

This QAPP is designed to document the compilation and combined use of primary and secondary data for numeric nutrient criteria development conducted by the RIDEM/OWR. Instrument and equipment testing, inspection, or maintenance for primary data collection is documented in "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program." Secondary data should state in an SOP or QAPP the necessary instrument and equipment testing, inspection, and maintenance.

7. Instrument/Equipment Calibration and Frequency

This QAPP is designed to document the compilation and combined use of primary and secondary data for numeric nutrient criteria development conducted by the RIDEM/OWR. Instrument and equipment calibration and frequency for primary data collection is documented in "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program." Secondary data should state in the SOP or QAPP the necessary instrument and equipment calibration and frequency.

8. Inspection/Acceptance of Supplies and Consumables

This QAPP is designed to document the compilation and combined use of primary and secondary data for numeric nutrient criteria development conducted by the RIDEM/OWR. Inspection and acceptance for supplies and consumable for primary data collection is documented in "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program." This section is not applicable to secondary data compilation.

9. Non-direct Measurements

The principal source of secondary data will be from RIDEM/OWR's water chemistry database, WQUAL, or RIDEM/OWR's macroinvertebrate database, BioQual. Other potential sources of secondary data will be the STORET and WQX databases hosted by EPA and the National Water Information System (NWIS) hosted by USGS. Literature

values, from peer-reviewed sources and texts, will primarily be used a check of the statistical analyses and drafted threshold and criteria. A model constructed by RIDEM/OWR for non-wadeable river nutrient reduction may be consulted for evaluation of drafted threshold and criteria. More information regarding the development of the model can be found at: http://yosemite.epa.gov/OA/EAB_WEB_Docket.nsf/Verity%20View/813462245ADA13F4852575270067F4EA/$File/Memorandum%20in%20Opposition%20...112.pdf

The principal sources of secondary data, WQUAL and BioQual, were selected, because they contain the largest amount of data from Rhode Island waters on the recommended parameters for numeric nutrient criteria development. Furthermore, WQUAL is managed in-house by RIDEM/OWR and contains only water quality information from Rhode Island lakes, rivers, and streams. BioQual was developed by TetraTech under contract to RIDEM/OWR and is managed by RIDEM/OWR. BioQual contains information on many stream and river habitat and biological attributes necessary to develop numeric nutrient criteria. BioQual also only houses information on Rhode Island rivers and streams. The acceptance of the data compiled from these resources will be evaluated by the DQI stated in Section I, 7.

Nutrient criteria development efforts will focus on secondary data collected outside of winter conditions, and the Project Manager will be responsible for deciding any seasonal factor to either avoid or capture through the compilation of secondary data (i.e. phytoplankton growing season, algaecide application, spawning, high or low precipitation).

10. Data Management

The Project Manager will review all data from primary field and laboratory data analysis collected for this project. The data will be reviewed and managed as described in the QAPP and QAPP Addendum: "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program."

Secondary data will primarily be compiled from RIDEM/OWR's water quality database, WQUAL. Compilation of the records will occur on the Project Manager's network drive. Compiled records will be saved on the Project Manager's network drive and backed up on a different storage media. Any statistical analysis, transformation of data for statistical analysis, or compilation of the data with other secondary data will be saved on the Project Manager's network drive and backed-up on a different storage media. Any secondary data collected from a source other than WQUAL will be saved on the Project Manager's network drive and backed-up on a separate, different storage media.

III. ASSESSMENT AND OVERSIGHT

1. Assessments and Response Action

The RIDEM/OWR Project Manager will provide oversight for each primary field data collection as stated in the QAPP and QAPP Addendum "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program." For secondary data, the RIDEM/OWR Project Manager will perform the following assessment of compiled data:

- Existing data meet basic project specifications of numeric nutrient criteria development.
- Quality of the data meet the acceptance criteria specified in Section I, 7.
- Sufficient quantity of data met the acceptance criteria.

As stated in the milestones provided to EPA in December 2010, the compilation of lake data will occur in Winters of 2010 and 2011. The assessment of primary and secondary lake data will occur once in Winter 2011. Due to the nature of data collection needed for river and stream data, the compilation of data will occur over several years. Assessments of primary and secondary rivers data will occur in the Winters of 2011 through 2015.

If the data do not meet the above criteria, the Project Manager will eliminate the data from the final compilation of data. The elimination of data will be discussed in the data analysis report regarding statistical analyses. No stop work orders are required for the compilation of secondary data. If inconsistencies are detected in historical data, the RIDEM/OWR Project Manager will stop data compilation and analysis and discuss both field and laboratory inconsistencies with RIDEM/OWR QA Project Manager and Program Manager. If further qualifications of data are required after review, the Project Manager will address the issues in any reports generated from the compilation and analysis of data.

2. Reports to Management

The number of reports and the frequency of submittal to management were documented in the nutrient criteria development milestones submitted to EPA in December 2010 (Table 1; Table 2). All reports indicated in the milestones will be completed by the Project Manager. All reports will be circulated and maintained in-house by RIDEM/OWR. Reports listed in the milestones will also be submitted to the EPA Region 1 RTAG Coordinator and EPA Region 1 Water Quality Standards Coordinator. Prior to adoption, drafted criteria will be publicly announced and comments will be addressed by the Project Manager. Following any necessary revisions, drafted criteria will be incorporated into the Water Quality Regulations and submitted, as required, to the Rhode Island Secretary of State.

As needed, the Project Manager will meet and communicate with responsible management, usually at least the RIDEM Program Manager and QA Project Manager, to compose a schedule and identify the outcomes to be reported in management reports. The RIDEM/OWR Project Manager will coordinate electronic or verbal communications on the project progress and updates to the Program Manager and QA Project Manager.

The contents of reports will also be mandated by the project goals and funding source requirements, but the reports could include updates on data collection and compilation, summary of actions-to-date, interim assessments of attainment of goals or final summary of the project and conclusions, and/or significant QA problems and recommended solutions. The person responsible for generating the report to management will be dictated by the project goals and funding source requirements, but the process will usually involve the identified Project Manager. Outside of the agreed upon report schedule, the Project Manager will communicate, as needed, verbal or written updates to other RIDEM/OWR personnel and management.

IV. DATA VALIDATON AND USABILITY

1. Data Review, Verification, and Validation

Primary data collected for this project will be reviewed, verified, and validated using the methods described in the QAPP and QAPP Addendum "Generic Quality Assurance Project Plan for Lake Monitoring by RIDEM/OWR" and "Addendum for Numeric Nutrient Criteria Development Fieldwork to be Conducted in Coordination with the Ambient River Monitoring Program." Final data review will follow the basic procedures as outlined in RIDEM's Quality Management Plan (QMP; RIDEM 2010b). At a minimum, final review of data consists of:

- Checking consistency and range of parameters.
- Checking the completeness and appropriateness of the sampling and testing.
- Checking that the correct methods were used.
- Checking for transcription errors.
- Checking that the work was done in accordance with the plan, or if changes were necessary, that changes were adequately documented.

The criteria that will be used to review the secondary data for acceptance, rejection, or qualification of data are described below:

A. Secondary Lake Data

To meet the assessment objectives, secondary lake data will be evaluated and compiled by the Project Manager during the Winters of 2010 and 2011 using the following criteria:

- Data collected after 2000 will be used.
- Lakes must have been sampled for two growing seasons (mid-May through end of October) after 2000 to be included in the dataset.
    - Exceptions may be granted for potential reference lakes or other reasons as determined by the Project Manager.
- Data from 1 meter discrete depth samples will be used.
- Readings below detection limit will be assessed as ½ the detection limit
- Secchi depth reading>total depth will be corrected to average total depth for the sample season collection date.
    - If depth is not available or depth of sampling date is confirmed by URIWW, Secchi will be assumed>total depth.
- Any data point obviously a typographic error by best professional judgment will be deleted.
    - Example: Secchi depth 19 m in a lake 1.9 m deep.
- Multiple Secchi depth readings on a single date for a single project will be averaged.
- Multiple laboratory readings on a single date from the same depth will be averaged.
    - This does not apply to samples collected as field duplicates
- Waterbodies with two geographic sampling locations will be assessed using the readings at the deepest point to ensure all lakes are represented equally in the dataset.

B. Secondary Stream and River Data

To meet the assessment objectives, secondary stream and river data will be evaluated and compiled using the following criteria:

- Data collected after 2000 will be used.
- Stream segments must have been sampled at least twice for water chemistry parameters after 2000 to be included in the dataset.
- Data from grab samples only will be used.
- Readings below detection limit will be assessed as ½ the detection limit
- Multiple laboratory readings on a single date from the same sampling location will be averaged.
    - This does not apply to samples collected as field duplicates
- Stream segments, as defined by the waterbody identification number listed in WQUAL, with two geographic sampling locations will be averaged.
- Any data point obviously a typographic error by best professional judgment will be deleted.

As stated earlier, the Project Manager will review secondary data throughout the project and address any data quality concerns that are identified by the violation of the data quality objectives and best professional judgment. The Project Manager will follow-up on any data issues, through verbal or written communication, to the RIDEM/OWR QA

Project Manager and Program Manager. The Project Manager or other RIDEM/OWR personnel may solicit internal or external review of data and methods for the project to assess whether the data meets the objectives and goals of the project.

2. Verification and Validation Methods

While the verification process will evaluate the specific dataset in regards to data quality, data validation will evaluate the use of the dataset for the end use of the project. The Project Manager will be responsible for verifying the field and laboratory reports and data packages, as well as data entries and transmittals, for completeness and adherence to requirements set forth in Section I, 7. Along with the procedures set forth in the RIDEM SOP BEP-WR-1 Summary Guidance for Reviewing Environmental Monitoring Data (Appendix B), which contains a checklist for review of environmental data and reports, data quality will be assessed by comparing data with the data quality indicators discussed earlier. Decisions to qualify, accept or reject data will be discussed by the RIDEM/OWR Program and Project Managers and the QA Project Manager. The RIDEM/OWR Project Manager will make the final determination to reject data and remove any unusable data. Assumptions of the project design and limitations in the data set will be documented for future communication to data users and water quality managers.

The validation of the dataset will be the identification of viable nutrient criteria thresholds for each type of waterbody. The statistical analyses that will be implemented to identify the potential thresholds are described below in Section III, 3. A weight of evidence approach of all statistical procedures implemented will be used to determine the final criteria. If valid thresholds are identified, then the dataset will be considered valid.

3. Reconciliation with User Requirements

The ultimate goal of this project is to statistically analyze the available primary and secondary data to develop numeric nutrient criteria for the freshwaters of the State of Rhode Island. The statistical analysis of the data, for lakes, streams, and rivers, should produce appropriate thresholds and ultimately criteria for selected stressor and response attributes. Whether this goal can be accomplished is the true measure of whether the primary and secondary data adequately address the user requirements stated in the objectives of the project in Section I.7. The statistical analyses to be implemented for numeric nutrient criteria development are addressed below:

A. Statistical Approach

The process proposed for Rhode Island is similar to the stressor-response approaches promoted by EPA (USEPA 2010) and the graphical and statistical methods undertaken by the State of Maine (MEDEP 2009). The proposed statistical analyses for lakes, rivers, and streams are similar, but the rivers and streams analyses are expanded to accommodate data available only for streams and rivers.

Reference Selection

The U.S. Environmental Protection Agency (EPA) recommends selecting reference water bodies for numeric nutrient criteria development and identifies "minimally impacted" conditions as a baseline to protect the United States' waters (USEPA 2000a). Reference condition for this analysis will be based on the definition by Stoddard et al. (2006), which emphasizes reference condition as the biological condition *without* human disturbance and minimally disturbed sites as the biological condition *without significant* human disturbance. Sites identified by geographic analysis of land use will be evaluated through field reconnaissance to determine the waterbody is in a minimally disturbed state. If minimally disturbed sites are not available in Rhode Island, then sampling stations located in other states with similar landscape and geological conditions will be consulted.

Basic Visual Representation

Data will initially be analyzed in basic visual representation (scatter plots, box and whisker, etc.), followed by application of the EPA-recommended percentile analysis, which has been utilized in initial data exploration by many states. The percentile method examines the lower 25th percentile of all lakes or stream reaches and the upper 25th percentile of reference sites to determine potential numeric criteria (USEPA 2000a, b). Any outliers will be highlighted for future consideration in development. Univariate relationships between stressors (TP and TN) and response (turbidity and periphytic chlorophyll *a*) will initially be explored through simple linear regression, if appropriate assumptions for the method can be met. Other potential relationships will be assessed in correlation analyses or appropriate non-parametric method(s).

Some statistical procedures may require evaluation of normality and homogeneity to assess the appropriateness of the data. Probability plots will be used to assess normality of the data. Any data requiring transformation will be checked prior to and after transformation for normality. Homogeneity of the data will be evaluated by a plot of the residuals of the data.

Categorization of Waterbody Types

A large question in the development of nutrient criteria is the categorization of different kinds of lakes, streams, and rivers. Based on the substantial amount of research and literature indicating large differences between deep and shallow lakes' chemistry and biology, initial development of lake nutrient criteria will focus on lakes greater than two meters in maximum depth. Previous research and literature also indicates that small streams and larger rivers also are different in regards to chemistry and biology. Nutrient criteria development will initially divide rivers and streams into small, wadeable streams and large, mainstem rivers.

Any categorization of waterbodies beyond those stated above will need to be statistically analyzed. Further categorization of lakes, streams, and rivers will be assessed using ordination methods that scale objects, in this case lake, streams, or rivers, based on similarities or dissimilarities between them. Multidimensional scaling is a group of ordination procedures that graphically shows relationships between objects based on a

smaller set of new variables formulated from the original variables (Quinn and Keough 2002). Large river categorization may be addressed in a multivariate ordination procedure, but there may be issues with the potentially low number of waterbodies in Rhode Island that fall into this category.

Following potential categorization of waterbodies, the statistical process will re-evaluate the basic visualization, univariate relationships, and, if sufficient data exists and assumptions are met, multivariate linear regression to determine whether it is appropriate to proceed with further analysis on separate groups of lakes, streams, and rivers. The subsequent multivariate and univariate regressions will be used to assess stressor-response relationships.

Identification of Thresholds

The detection of a response threshold along an ecological gradient can be determined by several methods. The method to be employed for Rhode Island lakes is a non-parametric deviance reduction as suggested by Qian et al. (2003) and Paul and McDonald (2005). This method seeks to find a change point that separates observations into two groups when the observations from many sites are ordered along an ecological gradient (Qian et al. 2003). The method used is similar to regression tree analysis, and in this study, the first split on a single-predictor regression tree analysis will be identified as the change point (Paul and Zheng 2007). The analysis will be run in Systat®13 with least-squares loss, which works to minimize the sum of squared deviations (Wilkinson 2009a), and will identify the split with the smallest within group deviation.

The candidate threshold from this analysis will be reviewed in light of available knowledge and previous scatter plots to assess whether the change point is appropriate for the relationship examined, because non-parametric change point analysis will find a change point without considering whether one truly exists in the dataset (USEPA 2010). An approximate χ^2 test will be used to determine whether the change point is statistically significant as well. A small p-value will result when a large reduction in deviance is achieved (Qian et al. 2003). The χ^2 test assumes that the deviance reduction divided by the scale will be approximately χ^2 distributed (Paul and McDonald 2005). Uncertainty about the change point will be calculated using a bootstrap resampling method (Qian et al. 2003). Both analysis of statistical significance and uncertainty will be run in Systat®13.

Conditional probability is used to assess the likelihood of impact on a system when a threshold of a water quality pollutant is exceeded (Paul and MacDonald 2005). A conditional probability will be used to assess the probability of exceeding a response threshold (chl *a* or water clarity) provided that a specific level of stressor (TP or TN) or greater has occurred (Hollister pers. comm.). The conditional probability will be performed in the R statistical platform using a programming language written by the EPA Atlantic Ecology Division (AED) (Hollister pers. comm.).

TITAN Analysis

With the addition of diatom taxonomic identification to the sampling protocol for streams, and potentially large rivers, threshold indicator taxa analysis (TITAN) will be explored in nutrient criteria development. TITAN is a recently developed statistical tool that holds promise to nutrient criteria development. TITAN detects changes in taxa distribution along an environmental gradient using taxon-specific, indicator value scores that integrate taxa response (Baker and King 2010). A few states in the New England area have expressed interest in using TITAN, and Connecticut has had some initial success using TITAN for waste-receiving stream projects (Becker pers. comm.). A multivariate version of TITAN is also in the process of development (Stover pers. comm.). Should this program become available during numeric nutrient criteria development, it will be implemented as necessary to support stream and river criteria.

Final Analysis

The final criteria will be determined from the potential nutrient and response targets identified in the statistical analyses and compared with literature, similar ecoregion or state criteria, and other relevant benchmarks for nutrient criteria. The results from all methods will be evaluated cumulatively to ascertain whether a suitable number or range of numbers has been identified for the entire population or identified categories of Rhode Island lakes, streams, or rivers. The process and results will be evaluated by several qualifications, including but not limited to:

- Are the numbers from each analysis comparable?
- Do(es) the number(s) effectively protect Rhode Island water resources?
- Do(es) the number(s) effectively protect downstream water resources?
- Do(es) the number(s) reflect appropriate conditions for Rhode Island water resources?
- How do(es) the number(s) compare to other New England States and similar Ecoregion XIV numeric nutrient criteria?

B. Criteria Development

RIDEM expects the numeric nutrient criteria development will be an iterative process and may need to be reevaluated and reassessed throughout the process to ensure that the methods and conditions used for numeric nutrient criteria development reflect current knowledge, guidance, and data. As new techniques and information on Rhode Island lakes, streams, and rivers and water quality becomes available, the graphical and statistical methods will be reviewed to ensure efficient and effective numeric nutrient derivation. Furthermore, the numeric nutrient criteria process will also need to be evaluated in light of financial and manpower constraints of RIDEM. Should economic conditions limit the ability of RIDEM to proceed on any part of the numeric nutrient criteria development, the graphical and statistical methods presented in this document will be reviewed in light of available data and manpower. If the project team determines that the goals of the project have not been met, the team will determine if additional data need to be collected or specify limitations on data use for the project and data users.

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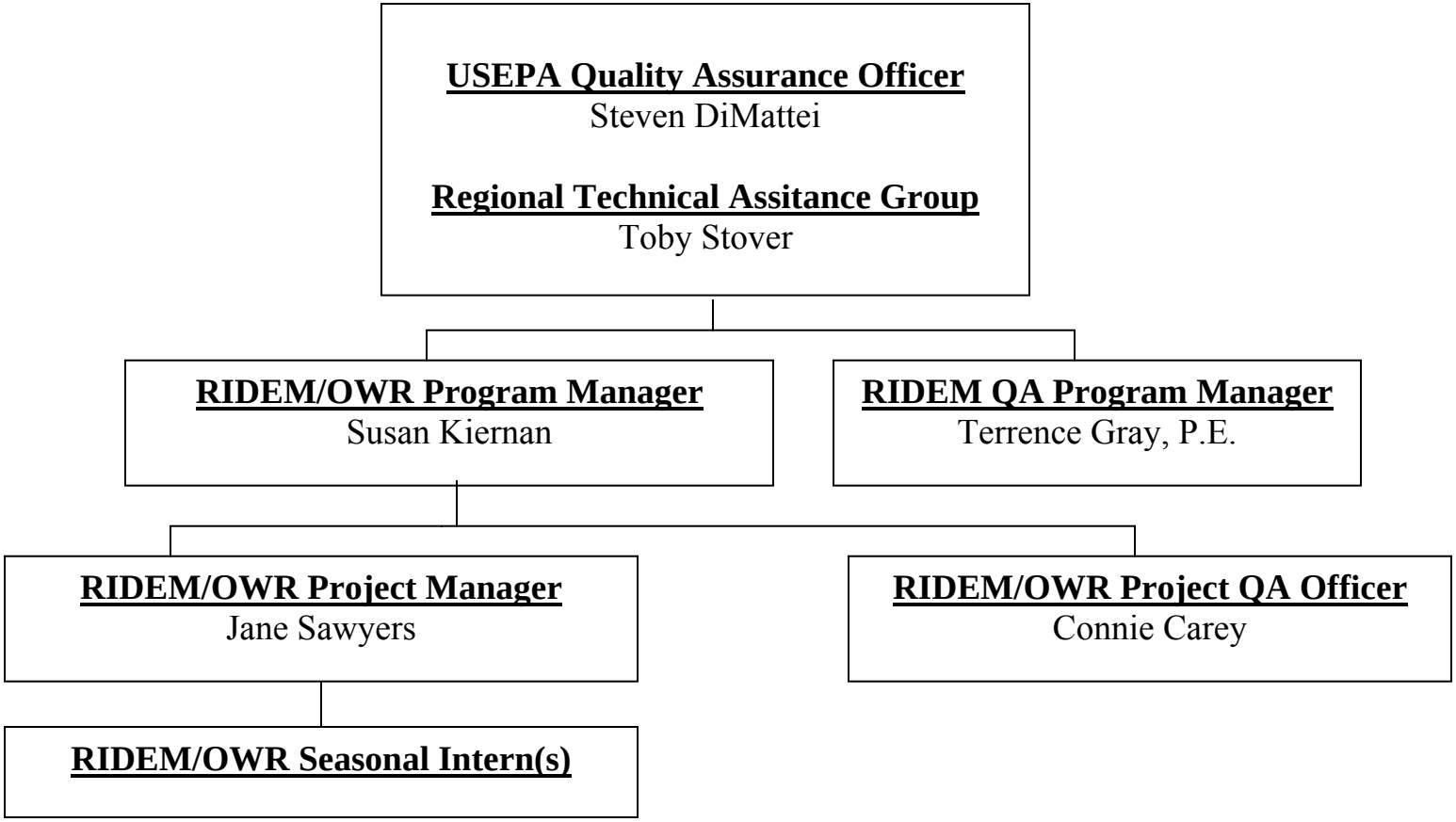
FIGURES

Figure 1: Organizational Chart for RIDEM Numeric Nutrient Criteria Development



TABLES

Table 1. Freshwater Lake Numerical Nutrient Criteria Development Milestones

Milestone	2011	2012	2013	2014	2015	2016	2017	2018
Lakes and Ponds								
Compilation and review of existing data for lakes and ponds completed	X							
Data analysis plan (QAPP) developed; target universe of lakes specified	X							
Sampling plan (QAPP) Developed – Year 1 to collect needed data	X							
Sampling plan executed throughout field season (May – October)	X							
Preliminary Data Analysis Report		X						
Sampling Plan Developed* – Year 2 if needed		X						
Sampling Plan Year 2 executed		X						
Data analysis and report		X						
Draft criteria documentation			X					
Internal and external stakeholder review of draft criteria			X					
Final criteria documentation				X				
Promulgation of criteria via rule-making				X	X			

*** Schedule will be advanced by one year if a second year of data collection is not deemed necessary.**

Table 2. Freshwater River and Stream Numerical Nutrient Criteria Development Milestones

Milestone	2011	2012	2013	2014	2015	2016	2017	2018
Rivers and Streams -Non-Wadeable								
Compilation and review of existing data for non-wadeable rivers and streams completed	X							
Data analysis plan (QAPP) developed;		X						
Sampling plan (QAPP) Developed –to collect needed data		X	X	X	X			
Sampling plan executed throughout field season (May – October)		X	X	X	X			
Preliminary Data Analysis Report		X	X	X	X			
Preliminary draft criteria documentation				X	X			
Internal review of draft criteria					X			
Revised draft criteria documentation					X	X		
Internal and external review of criteria						X		
Final criteria documentation						X		
Promulgation of criteria via rule-making							X	
Rivers and Streams - Wadeable								
Compilation and review of existing data for wadeable rivers and streams completed		X	X	X				
Multi-year Sampling plan (QAPP) Developed – coordinated with ambient river monitoring (rotating basin schedule)	X	X	X	X				
Sampling plan executed throughout field season (May – October)*	X	X	X	X				
Preliminary Data Analysis Report – updated annually as new data is generated	X	X	X	X				
Preliminary draft criteria documentation					X			
Internal review of draft criteria					X			
Revised draft criteria documentation					X			
Internal and external review of criteria						X		
Final criteria documentation						X		
Promulgation of criteria via rule-making							X	

APPENDIX A
State of Rhode Island
General Records Retention Schedule
GRS5: Daily Operations Records

GRS5 Daily Operations Records

GRS5.1 General Correspondence and Memoranda

Routine written communications created or received in the normal course of agency business. May include, but is not limited to, referral letters, requests for information pertaining to the agency, requests for publications that the agency provides to the public, requests for the services provided by the agency, requests for records under the Access to Public Records Act (RIGL § 38-2), any other correspondence that does not affect agency policy or procedures, and routine internal memos (unless specific to agency policy or procedures). Records may be arranged chronologically, by subject, or in some other order that is meaningful to the agency. This series does not include correspondence that involves personnel decisions, allegations of misconduct, the agency's facilities, complaints, or the agency's budget.

Retention: Retain one (1) year.

Note: When a written communication initiates a substantive transaction that requires creating a separate file, it becomes part of another appropriate series, rather than the General Correspondence series.

See also: Executive Records - Correspondence and Memoranda - GRS1.1.

GRS5.2 Phone Logs

Includes all records of incoming and outgoing calls to and from agency personnel.

Retention: Retain one (1) year.

GRS5.3 Mail Logs

Includes all records of incoming and outgoing mail to and from agency personnel.

Retention: Retain one (1) year.

GRS5.4 Surveys/Questionnaires

Surveys/questionnaires conducted by an agency or municipality in response to issues identified as significant to operations or policy, or to gather information. Includes forms distributed by the agency or municipality that were filled out and returned and the data compilations from the survey/questionnaire.

a) Completed survey/questionnaire forms

Retention: Retain one (1) year.

b) Compiled data

Includes compilations of data that were created from surveys/questionnaires conducted or distributed by the agency or municipality.

Retention: Retain until report is compiled and issued. Before disposal of Compiled Data, consult State Archives to review for historical value.

GRS5.4 Surveys/Questionnaires (continued)

c) Reports and recommendations
Reports, summaries, and recommendations issued, instituted, or arising from surveys/questionnaires.
Retention: Permanent.

d) Surveys unrelated to agency mission or programs
May include compiled data and reports.
Retention: Retain until of no further administrative value.

See also: Executive Records - Special Plans, Publications, Studies and Report - GRS1.6.

GRS5.5 Contact Lists and Directories
Includes mailing lists, directories, and rosters compiled by the agency for contact purposes.

Retention: Retain until superseded or of no further administrative value.

GRS5.6 Scrapbooks/Photo Albums/Clippings
Includes records of activities and events, official in nature, and relating to the agency, usually compiled by staff members, which may contain photographs, announcements, clippings, advertisements, and other items reporting the event, activity, or program.

Retention: Permanent.

Note: Newspaper clippings should be photocopied and originals discarded.

GRS5.7 Public Relations Records
Includes records relating to public relations activities of the agency including, but not limited to, press releases, newsletters, brochures, audiovisual materials, and supporting documentation.

a) Publicity and press releases
Includes newsletters, press releases, brochures, and other items designed to inform the public of the agency's mission, programs, projects, events, or activities.
Retention: Retain one copy of each permanently.

b) Supporting documentation
Includes supporting documentation, such as drafts and research notes, used in the preparation of newsletters, press releases, brochures, and other items created for public relations purposes.
Retention: Retain until of no further administrative value.

GRS5.7 Public Relations Records (continued)

c) Audio/visual records
Includes audio, video, and photographic items in analog or digital format.
Retention: Permanent.

See also: Information Management Records - Website Documentation - Web page content - GRS7-X.Xc.

GRS5.8 Daily and Weekly Reports
Internally generated reports on routine agency activities created on a daily and/or weekly basis. These reports and returns may be used for internal purposes or be shared with other municipal departments and state agencies. This does not include reports that are part of another series (such as reports on receipts and expenditures, which fall under the Fiscal section of this schedule, or vehicle use reports, which fall under GRS4.6).

Retention: Retain one (1) year.

GRS5.9 Monthly, Quarterly, and Periodic Reports
Internally generated reports on agency activities created for any time period of time greater than weekly, but less than yearly/annual. These reports may be used for internal purposes or may be shared with other municipal departments or state agencies. This does not include reports that are part of another series.

Retention: Retain three (3) years.

Note: For Annual Reports, see Executive Records - Statistical Records and Annual Reports - GRS1.5.

GRS5.10 Complaints
Complaints against agency about problems involving delivery of services, job performance of employees, personal interactions with the agency and/or any other difficulties. May include, but are not limited to, letters of complaint, notes from telephone conversations, and agency responses.

Retention: Retain three (3) years.

Note: When this record series appears on agency specific schedule, retain for whichever period is the longer of the two.

GRS5.11 Reference Material
Documents used by staff as sources for reference. May include, but is not limited to, reference books, brochures, published reports, manuals, periodicals, material from websites, and clippings.

Retention: Retain until of no further administrative value.

GRS5.12 Professional Organization Membership Files (Added 4/2009)
Employees of state agencies and local government agencies sometimes join professional organizations and attend meetings and conferences of these organizations. These records document this professional involvement. They may include, but are not limited to, publications of the organization, handouts distributed at conferences and notes taken at conferences.

Retention: Retain until of no further administrative value.

Note: No notification required for destruction

GRS5.13 Outreach and Training Records (New series added 10/2009)
Agencies, as part of their programs, sometimes offer training in certain aspects of their areas of responsibility and expertise. Training and outreach activities include lectures, workshops, and presentations. Documentation of these activities may include, but are not limited to, pamphlets, brochures, guides, guidelines, lecture notes/talking points, evaluation forms and compiled data, electronic presentations and web-based workshops (PowerPoint, webinar etc.).

a) Evaluation Forms and Compiled Data
Retention: Retain until of no further administrative value.

b) Electronic Presentations
Retention: Retain each substantive version permanently.

c) All Other Records
Retention: Retain one copy as a permanent record.

See also: GRS5.7 Public Relations Records

GRS5.14 Staff Meeting Minutes (New series added 11/2010)
Periodically, agency staff come together to discuss internal office matters. These records document those meetings. The files include not only meeting minutes, but also any other records used for reference at the meetings and other documents generated as a result of the meetings.

Retention: Retain three (3) years.

Note: For meeting of entire agency or committees within an agency that are more substantive in nature and involve policymaking, see GRS1.7 Meeting Minutes.

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