

PRIORITIZATION FRAMEWORK

A State Plan for Prioritizing Watersheds for Restoration and Protection in Louisiana

303(d) Program Vision for 2016 through 2022

FINAL

October 31, 2015

Louisiana Department of Environmental Quality (LDEQ)

A. Background

The Clean Water Act (CWA) Section 303(d) Program provides a mechanism for integration of implementation efforts to restore and protect the nation's aquatic resources. Through this process the nation's waters are assessed, restoration and protection objectives are systematically prioritized, and Total Maximum Daily Loads (TMDLs) and alternative approaches are adaptively implemented to achieve water quality goals with collaboration of State and Federal agencies, tribes, the regulated community, and the public. A new long-term vision has been described whereby states may identify and prioritize water bodies for these restoration and protection efforts under the 303(d) Program (ELI 2014a, 2014b; USEPA 2013). The primary goals of this new long-term vision include prioritization, assessment, protection, alternatives, engagement, and integration. This document provides a draft framework for prioritization under the new vision. The new vision will guide the realization of our clean water goals in a manner that recognizes lessons learned from the past two decades of 303(d) Program implementation and addresses new challenges with innovative solutions.

B. Purpose and Objectives

The purpose of this document is to describe the Prioritization Framework for the State of Louisiana under the new long-term vision of the 303(d) Program. The objectives of this Prioritization Framework for Louisiana are:

- By December 31, 2014, to develop a draft Prioritization Framework for watershed restoration and protection in Louisiana to be shared with U.S. Environmental Protection Agency (USEPA) Region 6.
- By September 30, 2015, to have engaged partners in the Prioritization Framework development.
- By October 31, 2015, to finalize the Prioritization Framework and prioritize watersheds for restoration and protection activities.
- For the 2016 Integrated Report (IR), identify the prioritized watersheds for restoration and protection activities in Louisiana for the public to review and provide comments.

These objectives for Louisiana will be realized through the USEPA minimum elements of a Prioritization Framework, which are described below.

C. Elements of a Prioritization Framework

USEPA R6 provided LDEQ a set of minimum elements of a Prioritization Framework (USEPA R6 2014). USEPA R6 recognizes that how states address these elements, both in their documents and in practice, may differ. USEPA R6 stated that the intent of including these minimum elements is to ensure states have a document that can be provided to other state programs, partner agencies and stakeholders that explains and defends the choices to provide limited state time and resources to one area versus another. Seven minimum elements provided by USEPA R6 to LDEQ include 1) mechanisms for prioritization; 2) factors considered in prioritization; 3) consideration of EPA National and Regional Priorities; 4) plan for where state will begin the work; 5) statement on flexibility and approach to changing priorities; 6) description of shifts or changes from past prioritization scheme; and 7) public engagement approach. These seven minimum elements for the Prioritization Framework for Louisiana are presented below.

1) Mechanism for Prioritization

Several mechanisms for prioritization will be considered by LDEQ in the Prioritization Framework for Louisiana. Mechanisms are presented in a relative ranking by those which may be considered high, medium, to low. High mechanisms include those that describe current and historical water quality within a watershed and use of available screening and decision support tools; medium mechanisms include knowledge of national and state water quality initiatives and other strategic frameworks for Louisiana such as the Louisiana Nutrient Management Strategy; low mechanisms may include others that are not yet identified. These mechanisms for prioritization may be weighted and used in combination based on the relative importance to water quality restoration and protection as determined by Louisiana.

High Mechanisms

1. Water Quality Characteristics and Trends

The water quality characteristics and trends will be determined by LDEQ for specific pollutants. The water quality characteristics will describe the current observed concentrations for a specific pollutant in a water body to aid in determining the degree/severity of the impairment. Water quality trends identified through statistical analysis in SAS software will illustrate the overall trajectory of a specific pollutant that may be causing impairment by indicating whether an impaired water body is on the trajectory for recovery through improving water quality, whether the water body is on a trajectory of declining water quality, or whether no observable trend is detected, in which case the water body may not be on a trajectory toward improvement. The information on water quality characteristics and trends will aid in prioritization efforts by identifying current water quality concentrations and the trajectory toward improvement or non-improvement.

2. Screening Tools

There are currently three identified tools developed by the USEPA and the USGS which may prove useful in determining prioritization for Louisiana. The USEPA Recovery Potential Screening Tool (RPST) provides a systematic approach for comparing waters or watersheds and identifying differences in how well they may respond to restoration (USEPA 2014). The RPST

is a Microsoft Excel based spreadsheet tool that is customized to the water bodies and characteristics for each state. The RPST is a technical method for comparing the relative restorability of large numbers of water bodies. This is a method that measures, for each water or watershed, several ecological, stressor, and social context indicators that are associated with the likelihood that a restoration effort may succeed. The user selects the indicators based on what is most appropriate to the waters being assessed and their surrounding communities, the availability of quality data, and the goals of the restoration effort. Measuring the same indicators on all waters allows for a systematic, even-handed and information-based comparison. Outputs based on scenario criteria selected by the user include ranked watersheds and a statewide map to visualize recovery potential for watersheds in the state.

Another USEPA tool is the WATERSCAPE ArcView Tool (WATERSCAPE – WATERShed Characterization And Prioritization for Environmental results). WATERSCAPE is a GIS-based framework for identifying priority watersheds which enables users to quickly visualize maps and compare alternative prioritization scenarios that reflect their own value systems while recognizing resource limitations. WATERSCAPE, developed by ESRI as an add-on to ArcGIS, combines two types of “scored” state-normalized HUC12 data (relative and intrinsic) on properties of interest in order to identify priority watersheds. The user determines watershed to be evaluated, properties on which to base the analysis, and weighting factors for the priorities. The tool ranks the watersheds based on the predetermined properties and weighting factors. Results are provided in a geospatial layer that is color-coded based on the resulting scores.

The U.S. Geological Survey (USGS) SPAtially-Referenced Regression On Watershed attributes (SPARROW) Modeling Decision Support System (SPARROW DSS) is another tool that may aid Louisiana in prioritization (USGS 2014). SPARROW DSS is an online tool that is watershed based and designed for use in predicting long-term average values of water characteristics, such as concentrations and amounts of selected constituents that are delivered to downstream receiving waters. SPARROW models are available for nitrogen, phosphorus, total organic carbon, suspended sediment, and total dissolved solids. Model estimates can be illustrated through detailed maps that provide information about constituent loadings at multiple scales for specific watersheds or geographic areas.

Medium Mechanisms

3. National and State Water Quality Initiatives

National and state water quality initiatives will also be considered in the Louisiana Prioritization Framework. Current national initiatives active in Louisiana include the U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS) sponsored Mississippi River Basin Initiative (MRBI), National Water Quality Initiative (NWQI), and the Gulf of Mexico Initiative (GoMI). In Louisiana, the USDA NRCS has prioritized six HUC 8 level watersheds under the MRBI program, four HUC 12 level watersheds under NWQI, and three HUC 12 level watersheds under GoMI. These USDA NRCS programs provide targeted conservation practice implementation in the prioritized watersheds to aid water quality protection and restoration.

State water quality initiatives address both nonpoint and point sources. The LDEQ Nonpoint Source Program (NPS) has currently targeted 31 impaired water bodies for restoration activities. The LDEQ NPS works closely with the Louisiana Department of Agriculture and Forestry (LDAF) and the USDA NRCS in Louisiana on identifying and implementing appropriate best management and conservation practices for these targeted watersheds. The LDEQ Compliance Monitoring Strategy, first implemented in 2007, outlines approaches for monitoring permit compliance to aid in addressing potential point source issues (LDEQ 2014a). Through the Compliance Monitoring Strategy, LDEQ performs Watershed Based Inspections to identify both unpermitted point source dischargers and nonpoint sources within targeted watersheds.

4. Other Strategic Frameworks

Other strategic frameworks for Louisiana will be considered in the Louisiana Prioritization Framework. For example, the Louisiana Nutrient Management Strategy provides a framework for the state of Louisiana to manage nitrogen and phosphorus to protect, improve, and restore the nutrient-related water quality in Louisiana's inland and coastal waters (Louisiana Nutrient Management Strategy Interagency Team 2014). The Louisiana Nutrient Management Strategy recognizes the role all stakeholders, through voluntary participation within a watershed community, play in nutrient management. The Louisiana Nutrient Management Strategy implementation is focused on key areas that include 1) river diversions, 2) nonpoint source management, 3) point source management, 4) incentives, 5) leveraging opportunities, and 6) new science-based technologies/applications. Through this effort the state will comprehensively evaluate the nutrient management activities that are already occurring within the state to leverage the best use of existing resources and future planned activities regarding nutrient water quality in Louisiana. Consideration of other strategic frameworks will aid in the prioritization for Louisiana.

Low Mechanisms

5. Others Not Yet Identified

Other mechanisms for prioritization that are subsequently identified may be evaluated for consideration in future iterations of this Prioritization Framework.

2) Factors Considered in Prioritization

Louisiana will consider several factors in the prioritization of water bodies for restoration and protection under the new vision of the 303(d) Program. Factors are presented in a relative ranking by those which may be considered high, medium, to low. These factors or Louisiana include high factors of pollutants causing the impairment; sources; and restoration potential; medium factors of state and federal agency partnerships; regionalization efforts; participation of watershed groups; and low factors of watershed characteristics; water quality standards, monitoring, assessment, and modeling; permits; inspections and compliance; and funding availability.

High Factors

1. Pollutant Causing Impairment

The specific pollutant that is causing or contributing to water quality impairment will be considered in the prioritization. Pollutants that represent human health and aquatic life concerns may be given higher priority than those that are less of a concern to human health and aquatic

life. In addition, the number of pollutants that may be contributing to the impairment will be considered such that a restoration measure that is being implemented may help to improve multiple pollutants and water quality impairments. The degree and severity of impairment will be considered.

2. Pollutant Sources

Suspected sources of pollutants will be considered in prioritization such that those suspected to be from natural sources may be given lower priority. In certain cases, LDEQ may conduct investigative activities to verify the pollutant sources. The restoration potential of a watershed will also be considered in prioritization

3. Restoration Potential

Water bodies where specific pollutant concentrations are severely impaired compared to the respective water quality attainment goal may be in more need of intervention through restoration measures than those with less severity (those where specific pollutant concentrations may be close to meeting the attainment goal). Conversely, water bodies that are less severely impaired may be closer to attaining the water quality goal and may require minimal implementation efforts to help them achieve restoration. Finally, water bodies that are healthy but show declining water quality could be considered as candidates for protection.

Medium Factors

4. State and Federal Agency Partnerships

State and federal agency partnerships are instrumental to water quality restoration and protection in Louisiana. Enhanced partnerships among state agencies including the LDAF, Louisiana Department of Natural Resources (LDNR), Louisiana Department of Health and Hospitals (LDHH), Louisiana Department of Wildlife and Fisheries (LDWF), and the Coastal Protection and Restoration Authority of Louisiana (CPRA) and among federal agencies including USEPA, USGS, and USDA NRCS provide a multitude of opportunities for collaboration on water quality priorities for the state of Louisiana. Interagency efforts currently underway, such as the LDEQ NPS Program and the Louisiana Nutrient Management Strategy, will be continued and enhanced to aid in determining prioritization for water bodies in Louisiana under the new vision of the 303(d) Program.

5. Participation of Watershed Groups

Watershed groups that are active in projects to restore and protect water quality and are most knowledgeable of water quality issues impacting their local water bodies will be key to realizing water quality improvements under the new vision of the 303(d) Program. Participation of watershed groups, such as the Lake Pontchartrain Basin Foundation and the Bayou Vermilion District, that play an active role in improving water quality will be considered in the prioritization of water bodies for Louisiana.

6. Regionalization

Some areas in Louisiana are experiencing rapid population growth. Some local governments and parishes in Louisiana are considering regionalization for sewer treatment systems without a centralized waste treatment facility in heavily populated areas. LDEQ supports such regionalization efforts that will reduce the number of dischargers and result in water quality

improvement. Regionalization efforts proposed and in development in Louisiana will be considered in prioritization.

Low Factors

7. Water Quality Program Activities

Water quality standards provide the basis for determining whether a water body is meeting its designated uses and criteria. LDEQ recognizes the importance of having appropriate water quality standards in Louisiana with consideration of natural conditions, such as naturally dystrophic waters, and ecoregional characteristics found in the state. LDEQ is working through an improved, streamlined Use Attainability Analysis (UAA) process for refining water quality standards which are currently inappropriate for many Louisiana water bodies. For example, LDEQ is continuing to revise the dissolved oxygen (DO) water quality standard based on an ecoregional approach throughout the state. Thus, status of water quality standards projects will be considered in prioritization.

LDEQ conducts water quality monitoring in Louisiana water bodies through the Ambient Water Quality Monitoring Network (AWQMN) and performs biennial assessments in Sections 303(d)/305(b) Integrated Reporting (IR). Routine monitoring activities under the AWQMN provide water quality data that is used to make determinations of water body impairments in the biennial IR. Monitoring through the AWQMN is based on a rotating schedule, where each water body is monitored monthly for a full year once every 4 years. The water sampling year under the AWQMN is October through September. Consideration in prioritization will be made regarding the routine monitoring schedule for water bodies across the state.

Water quality modeling and Total Maximum Daily Loads (TMDLs) will be considered in prioritization. As water quality standards are revised to those more appropriate for Louisiana water bodies, existing TMDLs may need to be revised to reflect those revised standards. Prioritization will consider the need for TMDL revision for a water body.

Permitting needs will be considered. The Louisiana Pollutant Discharge Elimination System (LPDES) Permitting Program administers the surface water discharge permitting program for Louisiana. Changes in loading to Louisiana streams may require additional activities to be undertaken to implement discharger permits. Such activities may include new or revised TMDLs, instream modeling, or watershed (nonpoint source) modeling.

The LDEQ NPS works to address nonpoint sources within Louisiana water bodies through prioritization of impaired water bodies and development and implementation of Watershed Implementation Plans (WIPs) in partnership with state and federal agencies. The prioritized water bodies in the LDEQ NPS Program will be considered in the prioritization under the new vision of the 303(d) Program.

8. Inspections and Compliance

Inspections and compliance regarding water quality in Louisiana will be considered in prioritization. The LDEQ Compliance Monitoring Strategy provides an approach for monitoring permit compliance, identifying unpermitted dischargers, and documenting nonpoint sources in watersheds. Under the Compliance Monitoring Strategy, the LDEQ Inspection Division

annually selects targeted watersheds to perform Watershed Based Inspections. Consideration will be given regarding the watersheds targeted by the LDEQ Compliance Monitoring Strategy for a given fiscal year. In addition, regionally-based resources such as availability of personnel and equipment, and the occurrence within a watershed of other environmental response situations may be given consideration in prioritization.

9. Watershed Characteristics

Watershed characteristics will also be considered in prioritization. Land use, watershed basin, and ecoregion may be taken into account when prioritizing water bodies. Land uses such as forest, agricultural, or urban; watershed basins that encompass local drainage patterns; and an ecoregional approach whereby the natural ecology of a region is considered may play a role in prioritization for Louisiana. General agency knowledge of the watershed and of activities occurring in the area can also be useful in determining prioritizations.

10. Funding Availability

Funding availability will also be considered in prioritization in Louisiana. The availability of funding in watersheds and those watersheds with existing or planned funding to support water quality restoration and protection through state or federal programs may aid in determining prioritization for Louisiana.

3) Consideration of USEPA National and Regional Priorities

LDEQ will consult with USEPA R6 during the stakeholder engagement phase of drafting the Prioritization Framework (between January 1, 2015 and September 30, 2015) to discuss the National and Regional Priorities of USEPA R6. LDEQ will consider information presented by USEPA R6 on National and Regional priorities. USEPA priorities will be acknowledged as a factor to be considered (see element 2, State and Federal agency partners input) in prioritizing watersheds for restoration and protection.

4) Plan for Where the State will Begin Work

LDEQ will develop a plan to work on restoration and protection with consideration of the rotating monitoring schedule of the AWQMN. In development of the plan LDEQ will consider limited available regional-based resources, focus on basin(s) considered most impacted by human activities/man-made sources rather than natural sources, and consider TMDL revisions following water quality standards refinement.

Louisiana priorities may focus on three to five high priority watersheds for restoration and protection activities where sources of impairment will be identified and verified leading to selection of the appropriate TMDL or alternative measure to restore or protect water quality in the respective watershed. LDEQ will revisit priorities during each biennial reporting cycle and will report any changes in priorities in the biennial reporting in April of even numbered years.

5) Statement on Flexibility and State's Approach to Changing Priorities

LDEQ will utilize adaptive management to address changing priorities or conditions impacting water quality in Louisiana.

6) Description of Changes From the Past to New Prioritization Scheme

In the past, LDEQ employed a prioritization approach that was mandated by an USEPA consent decree for TMDLs. Under that approach, TMDL work was prioritized by basin and restoration.

TMDL alternatives, while they may have been implemented, were not directly considered under the 303(d) Program. LDEQ is no longer under the USEPA consent decree. The new long-term vision for the 303(d) Program allows LDEQ to prioritize watersheds based on TMDLs or restoration alternatives to TMDLs. LDEQ believes this new vision will allow for more effective alternative approaches to TMDLs that will result in watershed restoration and protection.

7) Public Engagement Approach

As part of the Prioritization Framework, LDEQ will solicit stakeholder engagement from January 2015 through September 2015. Targeted stakeholders will include those within LDEQ, other state and federal agencies, watershed groups, local governments, special groups, the regulated community (such as industry), the non-regulated community (such as agricultural groups and non-governmental groups), and the general public. These stakeholder engagement interactions may be in the form of in-person meetings, conference calls, postings on LDEQ webpages, and/or presentations at local or regional meetings or conferences. LDEQ will consider for the Prioritization Framework the feedback garnered from all stakeholders during the engagement phase.

Following the engagement phase, LDEQ will prioritize the watersheds for restoration and protection. LDEQ will identify the priorities for restoration and protection in Louisiana through the 2016 Integrated Report (IR) for all stakeholders to review and provide comments. LDEQ will utilize the agency website to disseminate information and provide documents to the public on the Prioritization Framework for Louisiana (LDEQ 2014b). LDEQ will review and update the Prioritization Framework during subsequent biennial IR reporting. Additionally, LDEQ will continually compile any new information or stakeholder interest received to capture for priority setting in the next IR.

D. References

Environmental Law Institute (ELI). 2014a. *Menu of Approaches: Potential Approaches for States, Tribes, and Territories to Achieve the Goals of the Clean Water Act Section 303(d) Program Vision*.

Environmental Law Institute (ELI). 2014b. *State Prioritization Approaches Directory: How States, Tribes, and Territories Are Implementing their Programs Consistent with the Prioritization Goal of the CWA Section 303(d) Program Vision*. October 7, 2014.

Louisiana Department of Environmental Quality (LDEQ). 2014a. *Inspection Division Compliance Monitoring Strategy, Fiscal Year 2014-2015*.
http://www.deq.louisiana.gov/portal/Portals/0/surveillance/SOP_1839_R15.docx

Louisiana Department of Environmental Quality (LDEQ). 2014b.
<http://www.deq.louisiana.gov/portal/>

Louisiana Nutrient Management Strategy Interagency Team. 2014. *Louisiana Nutrient Management Strategy: Protection, Improvement, and Restoration of Water Quality in Louisiana's Water Bodies*. Coastal Protection and Restoration Authority of Louisiana, Louisiana Department of Agriculture and Forestry, Louisiana Department of Environmental Quality, and Louisiana Department of Natural Resources. Baton Rouge,

Louisiana.

<http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/WaterQualityStandardsAssessment/NutrientManagementStrategy.aspx>.

U.S. Environmental Protection Agency (USEPA). 2013. *A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program*. December 2013.

U.S. Environmental Protection Agency (USEPA). 2014. *Recovery Potential Screening: Tools for Comparing Impaired Waters Restorability*.
<http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/recovery/>.

U.S. Environmental Protection Agency Region 6 (USEPA R6). 2014. *Proposed Minimum Elements of a Prioritization Framework Document*.

U.S. Geological Survey (USGS). 2014. *SPARROW Decision Support System*.
<http://cida.usgs.gov/sparrow/>.