Prioritization Framework

Long Term Vision

for

Assessment, Restoration, and Protection

under the Clean Water Act

Section 303(d) Program

Prepared for

USEPA Region 4

Prepared by

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Kentucky
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Contents

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1. Introduction

This document outlines the Kentucky Division of Water's (KDOW) framework for Prioritization, the first of the six elements of "A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program", the Vision.

1.1 The Vision

The Clean Water Act (CWA), created in 1972, was written with the goal to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Section 303(d) of the CWA requires states to identify impaired waters, create a list called the 303(d) list, and develop a Total Maximum Daily Load (TMDL) for each waterbody on the 303(d) list. A TMDL is the calculation of the amount of a pollutant that can enter a waterbody and still meet the water quality standards (WQS). The TMDL serves as a guidance document for implementation of point source and nonpoint source reductions in a watershed in order to meet WQS. TMDLs do not include implementation plans.

In the early 1990's, several states and the Environmental Protection Agency (EPA) were sued for not developing TMDLs as required by the CWA. The lawsuits lead to many states, under consent decrees by the courts, having to develop a specific numbers of TMDLs by a deadline. Many TMDLs were developed and approved. However, many of the approved TMDLs developed were for streams that did not have discharges regulated under the Clean Water Act. Therefore, permitted limits could not be affective. Other TMDLs developed were not sufficient for use in implementation of water quality goals. This resulted in an era of TMDLs with little or no regard for implementation. This Vision focuses on the successful implementation of the CWA's goals of assessment, restoration, and protection.

EPA and combined state experience in assessing and reporting on water quality through the development of over 65,000 TMDLS revealed opportunities to improve program management efficiency and ways to make strides towards water quality improvement and protection. In August 2011, EPA, with TMDL and watershed program managers from each state began the process of developing a new path forward for the TMDL program. States submitted a wish list of ideas to EPA that would support implementation so that waters would eventually meet WQS. This wish list translated into six Goals that make up the Vision.

The six goals are:

1. Prioritization
2. Assessment
3. Protection
4. Alternatives
5. Engagement
6. Integration

The new Vision and Goals provide an updated framework for managing CWA program activities to identify and address impairments. Prioritization is the foundation to guide planning and implementation of the other goals. The Vision states: "*For the 2016 integrated reporting cycle and beyond, States review, systematically prioritize, and report priority watersheds or waters for restoration and protection in their biennial integrated reports to facilitate State strategic planning for achieving water quality goals."* In other words, Kentucky will submit to EPA, in the 2016 Integrated Report to Congress on Water Quality, its priorities for restoration and protection, and in each integrated report thereafter in order to help our planning process and meet water quality goals.

The Assessment goal follows Prioritization in order to develop a full understanding of the conditions of the priority areas identified. Protection and Alternative goals allow for the consideration and use of other tools, as deemed appropriate by Kentucky, in addition to TMDLs, to achieve applicable WQS. Engagement and Integration goals recognize the importance of growth and development of the partnership between the public and other entities to produce environmental results on the ground and in stream.

The Vision fosters stakeholder engagement and allows for flexibility in watershed management in order to promote implementation of water quality goals in a watershed. Because the traditional TMDL is only one among many tools for implementation, different management approaches may be utilized to restore impaired waters and protect healthy waters. The Vision allows for flexibility in watershed management, including development of TMDL Alternatives or Watershed Plans. However, these can only be implemented with the support of many stakeholders, including the public, federal, and state agencies uniting to attain a common goal. The Vision also allows Kentucky to identify and coordinate implementation of key point source and nonpoint source control actions that foster a more effective integration across CWA programs, other statutory programs, and the water quality efforts of other federal departments and agencies to achieve the water quality goals specific to the state.

2. Kentucky's Past TMDL Prioritization Process

Kentucky's past prioritization process began with the 303(d) list of impaired waters (i.e., 2453 listings in 2012), which was filtered to those impairments that were caused by a pollutant with a numeric standard such as pH, *E. coli*, and certain metals. Since numeric WQS were available for the pollutants in the filtered 303(d) list, allowable loads are easily calculated, thereby creating a method for TMDL development. However, the number of listed segments on the filtered list exceeded the KDOW TMDL section's work capacity (i.e., 327 bacteria listings in the 2012, 303(d) list) and additional filters were applied to the process.

Several factors went into determining if data were usable for developing a TMDL, including but not limited to the age of data, whether third-party data had been collected under an approved QAPP (Quality Assurance Project Plan) or other KDOW approved methodology, and if the data passed a quality control screening by the TMDL staff. If there were useable data, TMDL staff would consider the following:

- Data quality;
- Maximizing the number of pollutant waterbody combinations;
- Watershed Management Branch (WMB) program considerations/priorities; and
- Unique watershed features or designations such as the presence of a reference reach.

If existing data met the above requirements, a TMDL was developed.

If useable data were not available, TMDL Section staff would consider the following when deciding whether to collect water quality data:

- Proximity to KDOW laboratories with pathogen analysis capability, especially when considering a watershed for *E. coli* collection due to holding time limitations;
- Maximizing pollutant waterbody combinations;
- 3rd party available funding;
- WMB program considerations;
- Accessibility of sampling locations; and
- Unique watershed features or designations such as the presence of a reference reach.

If a watershed met the requirements outlined above, TMDL biologists would collect the necessary data for TMDL development. The data would then be provided to TMDL writers for subsequent TMDL development.

2.1 Lessons Learned

The KDOW has identified several areas where a defined process for prioritization would prevent redundancy and increase efficiency. Without a defined prioritization process, the focus was often on meeting EPA's pace goal. This drove the prioritization in such a way that watersheds with multiple pollutant/waterbody combinations were favored. As a result, TMDLs were commonly developed in areas with no recognizable prospects for implementation.

3. New TMDL Prioritization Framework

2.1 Statement of Flexibility

As new assessments are conducted and new issues arise or new capacity is recognized in the state or various watershed, flexibility will be required in determining priorities. The KDOW will continue work in the initially selected priority watersheds through the Vision timeline, but may discover that some shifting of priorities is required based on local issues, resources, and opportunities. In this case, the

KDOW will work with EPA to modify the priority list to incorporate areas in which the KDOW feels it can be most effective.

2.2 Process for Determining KDOW TMDL Priorities

The KDOW will consider protection and restoration components through the prioritization process of TMDLs, TMDL Alternatives, and Watershed Plans. The KDOW will work through the prioritization process identified in the following sections for the restoration and protection of Kentucky's impaired waters while also considering major impairment factors. Such factors include pollutants (i.e. nutrients, pH, metals), critical issues (i.e. hazardous algal blooms, source water protection, recreational use, the presence of threatened and endangered species, etc.), the potential to develop a statewide or regional pathogen TMDL, and the research necessary for developing sediment methodology. For the protection component of the prioritization, the KDOW will consider the following:

- Healthy Watershed Initiative: An EPA initiative set forth in 2011 that recognizes the need to not only remediate impaired waters, but to also maintain and protect the full chemical, physical, and biological quality of our nation's waters by increasing the focus on protection of source water and healthy watersheds.

- Special Use Waters: Listed rivers, streams, and lakes that are worthy of additional protection. These special uses include cold-water aquatic habitat, exceptional waters, reference reach waters, outstanding state resource waters, outstanding national resource waters, state wild rivers and federal wild and scenic rivers.

- Source Water Areas: Groundwater, streams, rivers, springs or lakes in a watershed, which provide drinking water.

2.3 KDOW TMDL Prioritization Process

When prioritizing watersheds, the 303(d) list will be filtered to the KDOW and EPA priorities. The filtered list will be prioritized using the following steps:

- Using ArcGIS and/or the Recovery Potential tool, the 303(d) list will be examined to determine the feasibility of water quality improvements per identified segment or watershed.
- Once the feasibility of water quality improvements have been identified, additional considerations will be taken into account but not limited to:
    - Listed pollutants;
    - Pollutant waterbody combinations;
    - Location and proximity to TMDL staff offices; and
    - Other KDOW program priorities (i.e. watershed management plans, source waters, exceptional waters).

Once the 303(d) list is filtered, a watershed will be chosen for the development of TMDLs or a TMDL Alternative. This method of prioritization is dynamic; watershed selection will be updated based on the KDOW priorities or EPA national and regional priorities. For example, if it is determined that improving impaired lakes is a program priority, then this prioritization process methodology would be used to determine where impaired streams are flowing into lakes with potentially harmful algal blooms (HAB). The result would be a TMDL or a TMDL Alternative that outlines pollutant load reductions that could be used to improve pollutant levels in a lake.

2.4 Protective Element of Prioritization

When prioritizing watersheds with protection in mind, the 303(d) list will first be filtered to priority pollutants that have an established methodology for TMDL development. The filtered list will be prioritized with the following steps:

- Using ArcGIS, the following layers will be utilized: Outstanding State Resource Waters (OSRWs), Outstanding Natural Resources Waters (ONRWs), exceptional waters, reference reach, source water areas, National Land Cover Data (NLCD), and the 303(d) layer. Then, these layers will be examined to see where there are impaired streams that flow into OSRWs, ONRWs, exceptional waters, reference reaches, or source water areas. Next, the watersheds are examined for % forest, with >50% forest being desired.

- From the list of watersheds that meets the above criteria, additional considerations will be taken into account but not limited to:

    - Watershed management plans;

    - Pollutant waterbody combinations;

    - Location and proximity to KDOW laboratories with pathogen analysis capability ; and

    - Recovery Potential Tool rankings.

To assist in visualizing how the new prioritization factors will be considered, the KDOW created a flowchart for the new framework, along with another flowchart that documents that past prioritization process (see Appendix A).

2.5 Tools

Both the Commonwealth Office of Technology and the KDOW GIS & Data Analysis Section maintain extensive ArcGIS resources, including maps and downloadable data sets, which the KDOW staff use on a daily basis. This divisional capacity is an indispensable tool when it comes to the prioritization process. Additionally, the TMDL Section has a wide-ranging institutional knowledge of the state's watersheds and access to other water quality professionals. The TMDL Section's knowledge and experience, along with the ability to utilize GIS, allows for a greater ability to accurately and thoroughly comprehend the state's water resources.

The Recovery Potential Screening Tool (RPS) is a method to help states and restoration planners compare restorability across watersheds. The RPS is a technical tool provided by EPA. The RPS looks at several indicators, such as ecological, stressor and social, and measures the likelihood of a water body or watershed being able to have a successful restoration outcome. The tool can be used for supporting watershed planning decisions regarding restoration and/or protection at a variety of scales. EPA developed a spreadsheet tool that is already populated with watershed scale GIS information for each state for 300+ indicators. The RPS allows users to select different indicator combinations within the three categories and compare rankings, visually with color-coded maps, of watershed ranks created by RPS. Additionally, RPS-produced bubble plots allow a quick comparison of ecological, stressor, and social ranks for each watershed, comparing values in tabular format, and a method for exporting output. The RPS tool has been used for impaired water prioritization, NPS program strategies, and special interest projects (i.e. nutrient criteria development, nutrient reduction support) by states across the nation. EPA maintains a website that includes access to the RPS tool and details on its use and applications (http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/recovery/).

2.6 Consideration for EPA National and Regional Priorities

As the KDOW priority pollutants, issues, and areas are reviewed, EPA national and regional priorities will also be examined and incorporated to the decision-making process. In the FY 2016-2017 Draft National Water Program Guidance, EPA identifies 5 areas of focus for the Nation's waters: protecting populations at risk; improving the integrity of the Nation's drinking water and clean water quality; providing safe and sustainable water resources and infrastructure; controlling nutrient pollution; and assuring high quality and accessible infrastructure. Through partnerships with the U.S. Geological Survey, the USDA Natural Resource Conservation Service, and, the U.S. Army Corp of Engineers the KDOW has been able to expand monitoring and watershed management efforts. The KDOW is able to address EPA's areas of focus. Using the prioritization process, the KDOW will be able to identify areas that meet the Commonwealth's goals, as well as, EPA's National goals.

2.7 Where to Begin Work

The KDOW will begin work in watersheds where the below considerations for prioritization are of the greatest importance.

2.7.1 Ease of Improvements and Load Reductions

The KDOW will optimize resources by targeting areas where water quality improvements are achievable and through the development of a TMDL or TMDL Alternative where implementation of the TMDL or TMDL Alternative is most needed. Prioritized areas may be separated based on the types of land-use issues encountered, with effluent- dominated systems (point source) likely to be best served by conventional TMDLs, and runoff (nonpoint source) dominated systems utilizing TMDL Alternatives or Watershed Plans. The determination to develop a TMDL , TMDL Alternative, or Watershed Plan will be based on number and/or types of permitted outfalls in order to determine effluent dominated systems.

2.7.2 Stakeholder Involvement

The KDOW does recognize the importance of stakeholder involvement in the development and implementation of TMDLs. The KDOW will consider local government, regional organizations, and inter-agency input in the prioritization process.

2.7.3 Availability of Useable Data

The KDOW will review the availability of all useable water quality data for TMDL development. Useable data is critical for the development of TMDLs and may be a long-term dataset, current collected dataset, or a combination of both. Older data may not provide necessary information on current conditions and when protecting water quality for average conditions, a 10-20 year record of data may be appropriate. However, TMDLs are written for pollutants that have existing water quality criteria and are not dependent on the dataset. The dataset is used only to assess the waterbodies and describe current conditions.

2.7.4 Wasteload Allocations

Information collected from effluent dominated areas may direct the need for updated wasteload allocations (WLA) in permits. TMDL development will help determine permit effectiveness and prioritize areas where there is a need for WLAs.

3. Public Engagement

As part of this prioritization framework, the KDOW will continue to involve the public throughout the TMDL development process. Pursuant to KRS 224.71-150, Kentucky has modified its listing process and developed an interactive website, the Water Health Portal, which contains information in map, table and narrative form regarding water quality of all waters of the Commonwealth. Through a map interface, the Water Health Portal will identify (and link to) completed TMDLs, TMDL Health Reports, and communicate additional assessment information on all 305(b) water bodies. This information will be available through a dashboard interface when any assessed waterbody is selected on the statewide map. The KRS 224.71-150 statute requires KDOW to:

1. Maintain on the web a list of all impaired waters on the 303(d), established TMDLs, public notices pertaining to TMDLs, and information and resources to enhance compliance with applicable WQS.

2. For all impaired waters on the 303(d) list, provide a detailed summary, in plain and unambiguous language understandable by a layperson the basis for the listing, including the location of available data, sources of information utilized, methods of data collection and analysis, and age of the data utilized.

3. Public comment shall be sought no later than 90 days prior to submitting a new 303(d) list to the U.S. EPA and shall offer 60 days for review and public comment on the listing decision, which will provide the opportunity for meaningful public participation in the listing decision.

4. Provide notice and offer the opportunity for public review and input throughout the TMDL development process.

5. Provide information electronically to all persons who have requested to be notified of new waters added to the 303(d) or planned for TMDL development and include reference where additional information may be found.

6. If a waterbody, which was previously listed as impaired on the 303(d) and/or has a TMDL, is found to be meeting WQS, all necessary measures will be taken to remove the listing and any requirements as a result of the establishment of the TMDL, except as necessary to otherwise comply with applicable laws and regulations.

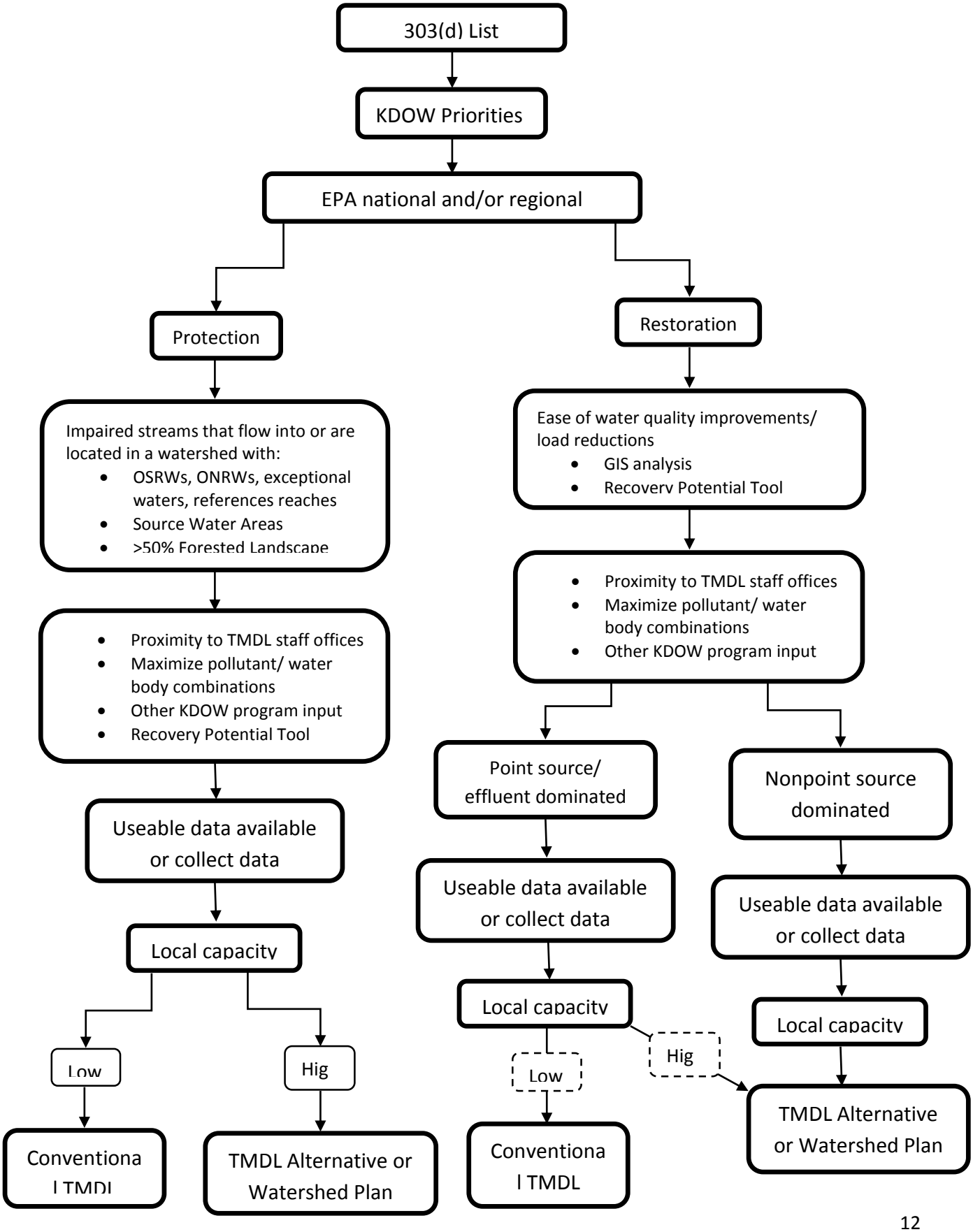
The Public Engagement includes communicating with stakeholders statewide as annual planning is conducted, receiving and incorporating feedback, and developing TMDLs taking the information provided by stakeholders into consideration. The KDOW will emphasize working in watersheds where local capacity has been demonstrated. The agency believes there is greater potential for implementation in these areas. This emphasis in watersheds with local capacity includes working with local stakeholders, to develop a TMDL Alternative or Watershed Plan, with a goal of implementing strategies to improve water quality.

In addition to meeting with stakeholders as part of the TMDL development process, the KDOW creates a TMDL Health Report to inform local stakeholders about the monitoring process when TMDL monitoring is initiated. KDOW publishes a final Watershed Health Report to describe the water health situation at the conclusion of the monitoring process. These reports are available on the Water Health Portal (http://watermaps.ky.gov/WaterHealthPortal/).

TMDLs that are prioritized, planned for development, and under development will be included in the draft 2016 Integrated Report for the public to provide comments.

Appendix A

Long Term Vision for 303(d) – TMDL Prioritization Factors



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Past Prioritization Process