Prioritization Document:
How Tennessee Implements the Priority Goal for TMDL Development Under the CWA 303(d) Long-Term Vision

Division of Water Resources
Tennessee Department of Environment and Conservation

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Introduction and Executive Summary

This Priority Framework Document outlines the process by which the Tennessee Department of Environment and Conservation (TDEC, or the department) plans to implement the prioritization portion of the national long-term vision for assessment, restoration, and protection under the Clean Water Act Section 303(d) program (the "303(d) long-term vision") through 2022.

At this initial stage of implementing the 303(d) long-term vision, our focus is on assessing water quality and prioritizing the development of restoration goals (total maximum daily loads [TMDLs] and TMDL alternatives). This Priority Framework Document primarily addresses prioritizing our TMDL development: how we have traditionally determined our annual work load, what changes we've made to implement the 303(d) long-term vision, and other related topics.

Mechanism for Prioritization—Tennessee uses GIS analysis to identify HUC-12s with both source water protection areas and nutrient-impaired waters. Tennessee also uses the Recovery Potential Screening Tool (Screening Tool) developed by the U.S. Environmental Protection Agency (EPA). Utilizing the Screening Tool in our approach allows us to prioritize water bodies based on HUC-12-specific ecological, stressor, and social indicators. Tennessee will use both GIS analysis and the Screening Tool in our prioritization process.

Consideration of EPA National and Regional Priorities—Tennessee will work closely with EPA Region 4 during the prioritization process, allowing us to receive feedback while keeping EPA informed about our progress. We will take into consideration EPA and state priorities (e.g., source water protection areas, Gulf hypoxia, and the nine-element nutrient framework memo [Stoner memo of March 10, 2012]).

Plan for Where to Begin Work—Tennessee utilizes an ongoing rotating watershed approach to watershed management. An important element of the resulting TMDL or alternative development schedule will be integration of the priority TMDLs into the watershed approach. Watershed management groups will continue to be an important factor in our screening process. This will distribute our work load while following the rotating watershed schedule when addressing our priority watersheds.

Changes and Shifts from Past Efforts—From 2001-2010, TDEC set its TMDL work load priority to be in compliance with a schedule set by a federal consent decree. Since the consent decree was lifted, our priority has been based on human health concerns, risk to aquatic life, programmatic needs (such as wasteload allocations needed for permits), and availability of EPA-approved tools and models. Typically, high priority TMDLs are developed within two years, medium priority within two to five years, and low priority more than five years. Under the new long-term vision, Tennessee is developing a new prioritization scheme.

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TMDLs as Part of the Watershed Approach in Tennessee

The department establishes restoration goals for impaired waters through specialized studies known as total maximum daily loads, or TMDLs. The TMDL is a quantitative determination of the maximum amount of a pollutant that a waterbody can receive each day and still meet water quality standards. TMDL development is only one part of TDEC's activities leading to improved water quality (see Figure 1).

Figure 1. TDEC's Watershed Cycle.

In Tennessee, the department implements its water quality improvement activities through a rotating watershed approach (see Table 1). The USGS has delineated fifty-five HUC-8 watersheds in Tennessee. The division has split three of these for accounting purposes, resulting in a total of 58 watersheds that have been aggregated into 5 groups (see Figure 2). In any given year, the department will be at one point of the cycle activities in each group.

Activities in Cycle	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Planning & Data Review	1	2	3	4	5	1	2	3	4	5
Water Quality Monitoring	4	5	1	2	3	4	5	1	2	3	4
Water Quality Assessment	2	3	4	5	1	2	3	4	5	1	2
TMDL or Alternative (Restoration Plan) Development and Stakeholder Engagement	1	2	3	4	5	1	2	3	4	5	1
	2	3	4	5	1	2	3	4	5	1	
Permit Issuance	5	1	2	3	4	5	1	2	3	4	5

Table 1. TDEC's Rotating Watershed Approach Timeline and Activities.

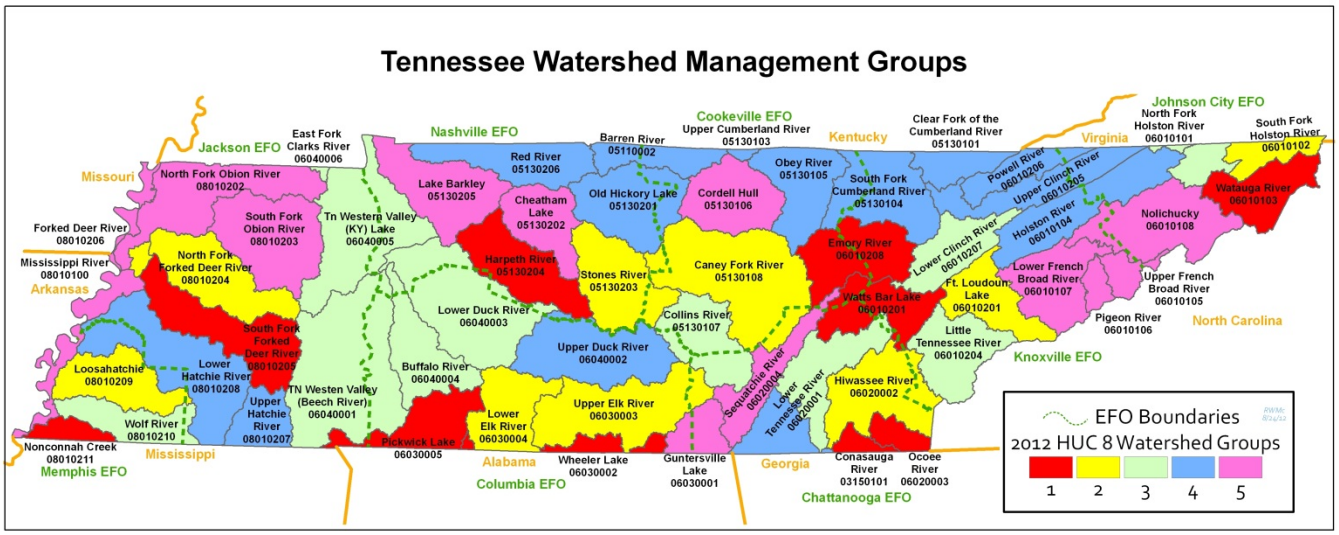

Figure 2. Tennessee's Watershed Management Groups.

TMDLs and Past Prioritization Efforts

Using a rotating watershed approach, TDEC regularly assesses Tennessee's rivers and lakes to determine whether they meet their applicable water quality standards. Surface waters not meeting their standards are determined to be impaired and in need of restoration. Every two years, TDEC submits to EPA a list (303(d) List) of these water bodies that do not meet water quality standards—or are not expected to meet water quality standards in the next two years. Section 303(d) of the Clean Water Act requires a TMDL for all impaired waters (Integrated Report reporting category 5).

From 2001-2010, TMDL development in Tennessee was driven by a schedule associated with a federal lawsuit against EPA. The lawsuit resulted in a consent decree which included a schedule for TDEC to develop a prescribed number of TMDLs per year. If TDEC were unable to develop TMDLs by the consent decree date, EPA would be required to develop the TMDL. Although Tennessee was not a party to the lawsuit, TDEC participated in the development of the consent decree schedule, which was tailored to follow Tennessee's rotating watershed approach. For ten years, TDEC prioritized its workload in concert with the federal consent decree schedule, establishing TMDLs for a majority of the waterbodies on the consent decree list. The consent decree was lifted in 2010.

In the five years since the consent decree was lifted, TDEC has been prioritizing TMDL development based on human health concerns, programmatic needs, and availability of EPA-approved tools. Beginning in FY-2016, TDEC will be using GIS analyses and the Screening Tool for initial prioritization of TMDL development under the new vision.

It is essential to prioritize the TMDL workload and to identify alternatives to traditional waterbody-by-waterbody TMDL development. Threats to drinking water supplies or to human health will be given a high priority for TMDL development, as will water segments where a pollutant has contributed to the documented decline of a threatened or endangered species.

Screening Tool Overview

The Screening Tool utilizes ecological, stressor, and social indicator data which are measured on a HUC-12 basis. Ecological indicators reflect the capacity of the waterbody to regain its functions based on its natural watershed characteristics. The stressor indicators measure the pressures on the waterbody, using metrics like number and severity of impairments. Social indicators include many human and political factors that can influence waterbody recovery, such as stakeholder and community involvement, existing restoration efforts, or regulatory and economic incentives. More information is available at:
http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/recovery.

To customize the tool, the user can select from among dozens of HUC-12-specific indicators. In addition, each indicator can be individually weighted. This provides for a great deal of flexibility in the application of the screening tool, and allows TDEC to select an overall approach and specific indicators reflective of water quality restoration priorities in Tennessee.

The new EPA Screening Tool has over 300 user-defined indices. By choosing specific indicators, the user can focus the tool on agricultural or urban scenarios. Tennessee is using the new tool to evaluate ecological (i.e., biological indices, local disturbance index, percent natural cover), stressor (i.e., nutrient-impaired steams, impaired stream length, percent agriculture) and social (i.e., source water protection areas, number of NRCS and 319 projects, jurisdictional complexity) indicators and their weighting to prioritize watersheds.

Mechanism for Prioritization and Factors Considered in Prioritization

The department will prioritize in a stepwise approach (see Figure 3). In Step 1, GIS analyses will be used to identify HUC-12s with source water protection areas and streams impaired by nutrients. Next, the HUC-12s identified in Step 1 will be evaluated against planned TMDLs and recovery projects (known and planned) that would qualify as TMDL alternatives. In Step 3, the HUC-12s identified in Step 2 will be compared using the Recovery Potential Screening Tool (RPS Tool). The RPS Tool uses ecological factors, stressors, and social indicators that align with department priorities. Characteristics related to riparian disturbance will be the chief ecological metric, nutrient impairment for stressor, and source water protection area for social indicator.

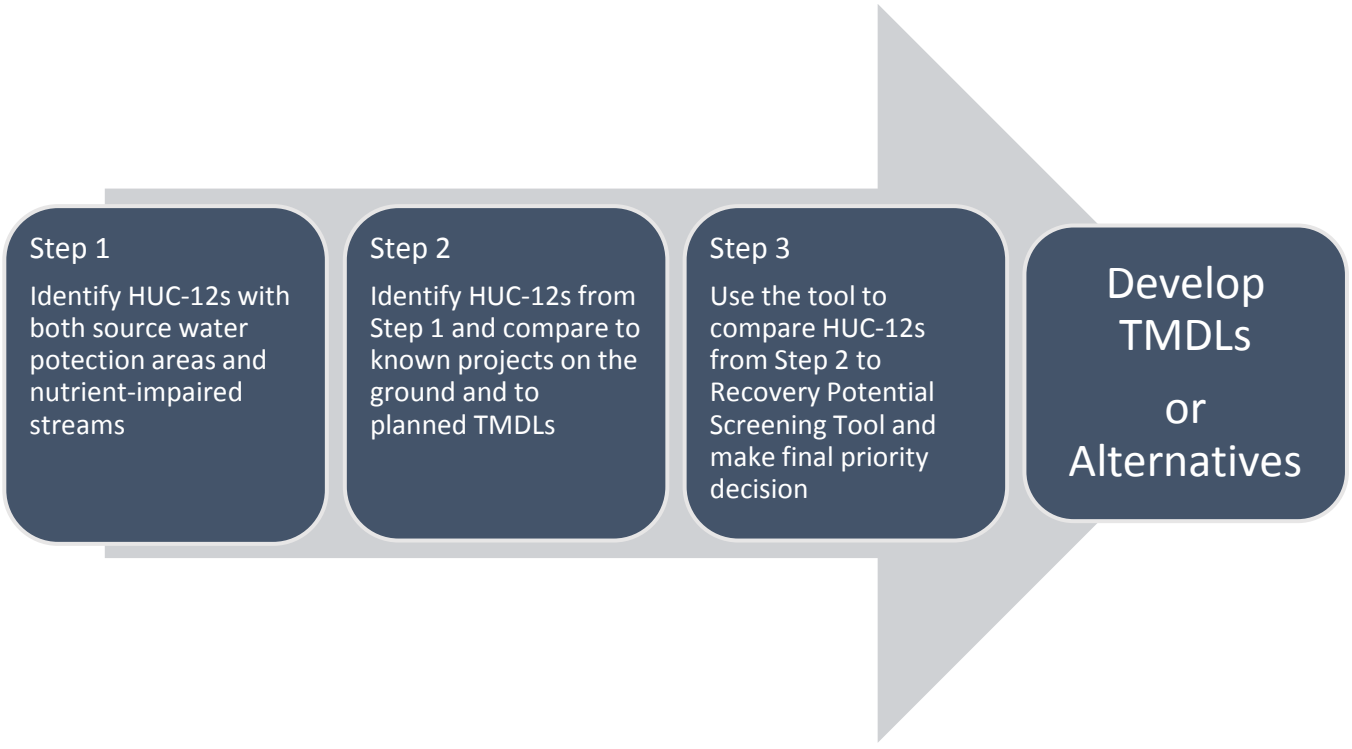

Figure 3. Stepwise Approach to Prioritization

The locations of HUC-12s with both source water protection areas and nutrient-impaired streams is illustrated in Figure 4. The location of Tennessee's priority watersheds are illustrated in Figure 5.

Complementary Measure (WQ-28)

Pathogen impairments—Tennessee currently develops TMDLs to address bacterial indicator impairments and will continue to identify opportunities to develop these TMDLs outside of priority areas.

Alternative Restoration Approach—Tennessee will work with EPA Region 4 to develop alternative restoration plans for impaired waters in addition to priority areas. These near term plans are designed to attain water quality standards in the absence of a TMDL.

Healthy Watershed Protection Approach—Tennessee will work with EPA Region 4 to develop watershed protection plans. These plans are a set of actions that in the near term are designed to maintain or protect unimpaired waters. The protection approach will include Exceptional Tennessee Waters, which are those designated as worthy of special protection because of their natural or geographic attributes. This designation is intended to prevent lowering of existing water quality and to preserve the exceptional ecological and recreational significance of the waterbody. Many Exceptional Tennessee Waters have aquatic threatened or endangered species and/or are areas managed by the state or federal government, including wildlife refuges, waters within state or national parks or forests, state scenic rivers, state natural areas, and federal wild and scenic rivers.

Consideration of EPA National and Regional Priorities

Prioritization updates that are consistent with the department's policies and priorities, as well as EPA national and regional priorities, will require active internal communication and regular communication with EPA for input and feedback.

To assist with communication and organization, Tennessee will create a Continuing Planning Process (CPP) document (as described in 303(e) of the Clean Water Act) which will incorporate the prioritization schedule. Development of the CPP will add support to communicating the prioritization plans to EPA and communicating with the public.

Additionally, setting a prioritization plan that coordinates with the rotating watershed approach for the public to review has several advantages:

- Incorporates national and regional priorities on a watershed-by-watershed basis
- Promotes transparent and engaged public participation before TMDLs are prepared
- Analyzes more waters in priority areas of the state, with results able to support TMDLs and alternative plans designed to meet water quality standards
- Avoids artificial priority setting by not favoring any geographic area of the state
- Achieves better stakeholder relationships by focusing on an area and spending more time working with stakeholder groups there

Flexibility in Approach

Tennessee intends to be flexible by working with EPA to modify the prioritization scheme to meet changing needs, especially as related to 1) integrating with Tennessee's nutrient reduction framework and 2) reflecting EPA and Tennessee's changing priorities.

Additional Principles in Setting Priorities

Embrace Stakeholder Engagement—Create outreach materials and coordinate watershed meetings that engage the public and are targeted to appropriate audiences; focus on the goal of public action to implement restoration; achieve broad involvement and support in the areas identified as priority waters, as well as the specific TMDL development plans.

Identify TMDL Alternatives—Provide information and support for shorter paths to implementation and, ultimately, restoration; maintain a plan for pursuing alternatives such as 5-alt restoration plans. Use the Screening Tool to focus on areas where a TMDL can be implemented; use data-driven, objective tools to identify those watersheds where we should focus our efforts; encourage restoration and protection activities at non-priority waters by application of the new long-term TMDL/303(d) Vision.

Use a Comprehensive, Holistic Approach—Follow watershed-based planning through coordination of the priority setting processes followed by monitoring, assessment, and restoration programs; consider how to develop and present non-TMDL water protection goals; integrate the process into the rotating watershed approach to assure all areas of the state are addressed in a timely fashion.

Plan for Where Tennessee Will Begin Work.

Tennessee will begin work on the prioritized HUC-12s (see Figure 5). The first set of waterbodies will be in the Tennessee Valley and chosen based on the position of the watershed in the watershed cycle, so that it fits the watershed approach timeline we have been using since 1996. In 2016, Tennessee will be preparing TMDLs for Group 2 watersheds (see Table 1). Tennessee will review the prioritization scheme annually and note any changes in the continuous planning process document and by communication with EPA.

Public Engagement Approach.

Tennessee will use three methods to engage the public:

1. Make draft prioritization plan available at watershed meetings. Tennessee holds meetings for 20% of its watersheds each year.
2. Include prioritization plan in Tennessee's Continuing Planning process.
3. Include prioritization as part of Tennessee's Integrated Report submitted to EPA every two years and available to the public.
4. Conduct watershed meetings and use social media and TDEC web site to improve transparency

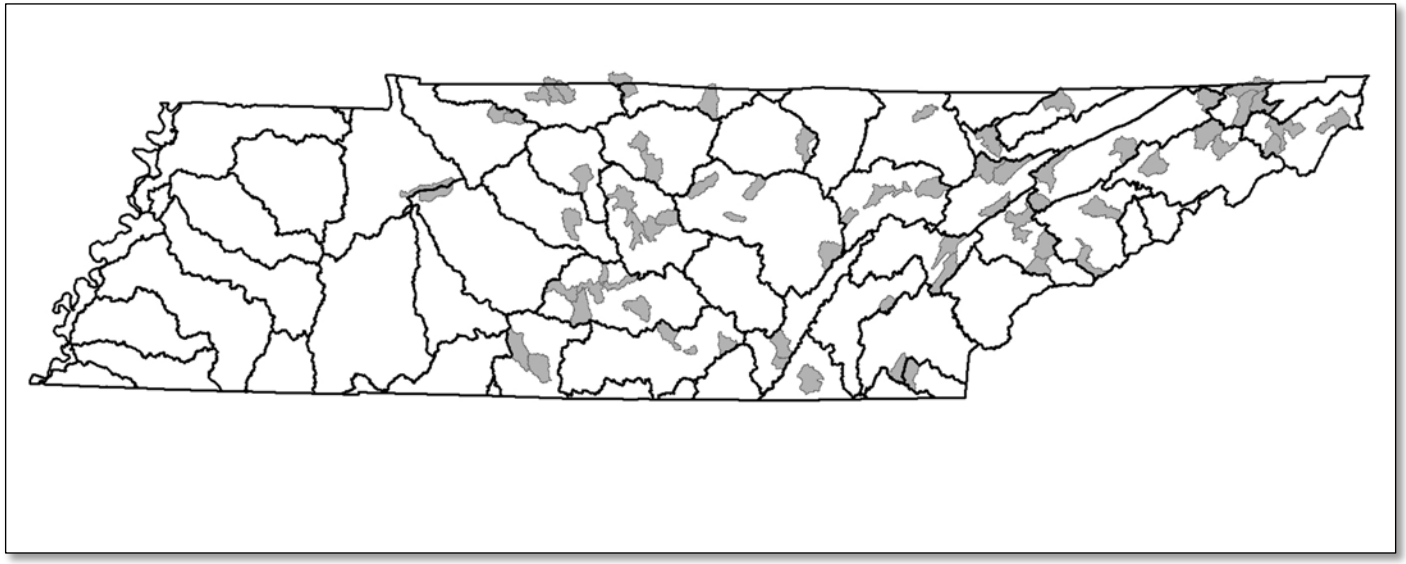

Figure 4. HUC-12s with Both Source Water Protection Areas and Nutrient Impaired Streams.

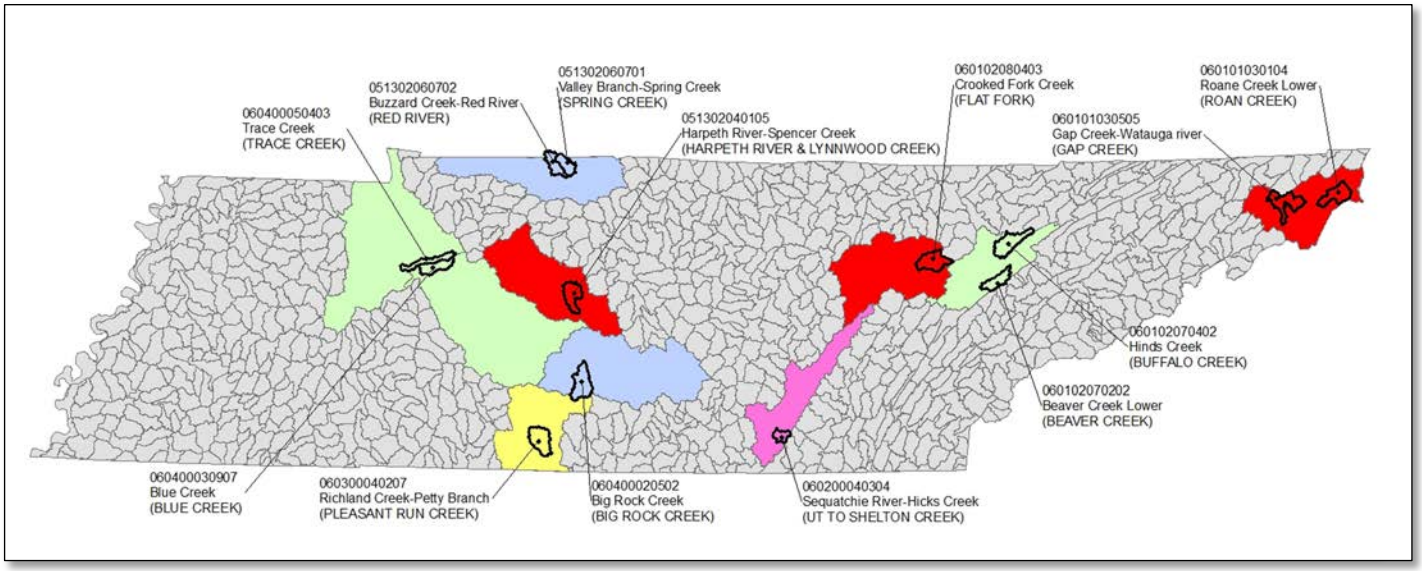

Figure 5. HUC-12s with Source Water Protection Areas and Nutrient Impaired Streams Selected as Priority Areas.