FINAL

Mississippi's Priority Framework Process and Watershed Selection

Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act

Prepared for

USEPA Region 4

Prepared by

Mississippi Department of Environmental Quality

Office of Pollution Control

Surface Water Division

Mississippi Department of

Environmental Quality

PO Box 2261

Jackson, MS 39225-2291

(601) 961-5171

www.deq.state.ms.us

Final: October 2015

(This page intentionally left blank.)

Contents

Executive Summary

The Mississippi Department of Environmental Quality (MDEQ) is complying with a national initiative by the U.S. Environmental Protection Agency (EPA) to develop a new collaborative framework for implementing water programs under the Clean Water Act (CWA). The new framework is designed to help coordinate and focus efforts to advance the effectiveness of existing water programs. Given resource constraints and competing program priorities, leveraging resources and coordinating efforts is crucial. This new approach does not change regulation, policy or issue new mandates but is intended to provide focus for MDEQ water programs to better manage activities and promote collaboration among water program activities to achieve water quality goals for streams, rivers, lakes, and estuaries in Mississippi. For more information on how MDEQ developed the framework, please refer to *Mississippi's Prioritization Framework: Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act* (MDEQ, 2015).

As part of the development of the priority framework, subject matter experts from various MDEQ water programs worked collaboratively to identify *focus areas* that were important to each water program area. Once the focus areas were developed, they were ranked as high, medium, or low priorities. In order to use the focus areas identified by the water programs to select priorities at the watershed level, MDEQ used landscape information representative of the focus areas to calculate metrics on the watershed scale. These metrics are used to characterize and rank watersheds by resource value and potential stressors. Resource value is determined using environmental and human welfare data layers. Environmental data layers considered include erosion potential of soils, percent of impervious area, presence/absence/ amount of wetlands in the watershed, presence of impaired waters, and concentration and types of discharge permits. Human welfare data layers include demographics, fish consumption advisories, drinking water supply intakes, public water supplies, recreational water bodies, public waterways, national and state parks. Other factors considered were the presence of existing watershed plans, ongoing or planned restoration and/or conservation work and active stakeholder groups all of which greatly increase the chances of success and sustainability of watershed initiatives.

Each of the data layers mentioned above were assigned weights based on professional judgment of water program staff. Once these data layers were developed, standardized, and weighted, a GIS based tool produces a relative ranking of every watershed within the state. This ranking was used to screen watersheds identifying opportunities for activities that will address multiple water program goals. A total of twenty-one (21) watersheds were identified as targeted priority

watersheds through this process. The selected priority watersheds represent agency priorities for a 10-year period.

MDEQ will review the selection process and screening criteria annually to either verify or modify the priority watershed list. . Flexibility will be retained to modify priority watershed selection in the face of changing state priorities (e.g. disasters, funding, leveraging opportunities, etc.) as well as changing EPA national and regional priorities.

1 Vision, Components, and Goals

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C §1251(a)). Under Section 303(d) of the CWA, MDEQ is required to identify those waters (e.g., impaired waters) that do not meet Mississippi's water quality standards (WQS). A Total Maximum Daily Load (TMDL) is required for each impaired water body. The TMDL process is designed to restore and maintain the quality of those impaired water bodies through the establishment of pollutant specific allowable loads.

The Vision, developed by EPA in 2013 ([New Vision for the CWA 303(d) Program](#)), encourages states to explore tools beyond TMDLs to attain water quality restoration and protection. The Vision does not represent a new regulation or policy that MDEQ must meet. However, the effort provides MDEQ the opportunity to develop watershed priorities that better integrate program resources to more effectively address the restoration and protection of waters.

This document outlines how MDEQ plans to implement the Vision process. The overarching goal is to build off of the state's existing and tested Basin Management Approach to prioritize watersheds for water quality restoration and protection activities. The Basin Management Approach was developed as a collaborative mechanism to foster stewardship of Mississippi's water resources through integrated watershed planning, education, protection, and restoration initiatives.

Developing a comprehensive and holistic framework for evaluating and setting watershed restoration priorities requires active engagement across MDEQ and with interested stakeholders. Thus, a critical component of development of MDEQ's Priority Framework Document (PFD) involves stakeholder outreach and coordination.

1.1 MDEQ VISIONING WORKSHOP

The concept of the PFD was developed through a two day Visioning Workshop held on October 7th and 8th, 2014, at the Eagle Ridge Conference Center in Raymond, Mississippi. The objective of the workshop was for representatives from key MDEQ water programs (including the TMDL program, nonpoint source, basin management staff, monitoring & assessment, permitting, compliance and enforcement, Office of Land and Water, and the Office of Community Engagement) to collectively consider Mississippi's approach for selecting watershed priorities. The Visioning Workshop was facilitated as an active participatory process so that water program representatives directly

engaged in identifying the state's process for designating watershed restoration and protection priorities in accordance with EPA's Vision for the §303(d) program. This included attendee participation in outlining the PFD and developing concepts for key sections.

1.2 PUBLIC/STAKEHOLDER ENGAGEMENT

MDEQ sought early engagement from key stakeholders to provide initial feedback on the proposed prioritization process. An external stakeholder presentation was given at the nutrient stakeholders meeting on November 20, 2014, with representatives from federal and state agencies, NGO's, and private organizations in attendance. MDEQ incorporated feedback and submitted the final PFD to EPA Region 4 at the end of February 2015.

Public outreach efforts will continue throughout implementation of MDEQ's prioritization process. A series of public presentations will be held across the state to obtain local input on the overall approach, objectives, and indicators. A summary of the PFD will also be posted on the MDEQ TMDL web page and MDEQ will use social media tools such as Facebook and Twitter to raise awareness and seek continued input on the PFD and watershed prioritization activities.

2 A New Vision: Proposed Prioritization Framework Process

The outcome of the workshop was to create the landscape for crafting a new process for prioritizing water quality management activities in Mississippi. This new approach includes a discrete process for identifying a list of target water program focus areas that are then used to develop a list of target watersheds for water quality work including TMDL development and implementation. The overall process consists of two phases: identify target focus areas (i.e. water program priorities) and select priority watersheds. The first phase identified the set of water quality program areas that are high priorities for the state over a decadal timeframe. This serves as the basis for selecting watersheds for activities over that 10-year time period, which is the second phase. Both phases are directed and managed by a steering committee composed of representatives from MDEQ management, water quality programs, and data management. The following sections detail the roles and responsibilities of different participating representatives, the processes of Phase 1 and Phase 2, and the schedule.

2.1 ROLES AND RESPONSIBILITIES

The PFD is directed and managed by a steering committee (SC) composed of the following individuals:

Surface Water Division (SWD) Chief;
Modeling and TMDL Branch (MTB) Chief;
Environmental Permits Division (EPD) Chief;
Geographic Information System (GIS) Specialist;
Mississippi Watershed Characterization and Ranking Tool (MWCRT) Specialist;
Nonpoint Source (NPS) Chief;
Water Quality Standards (WQS) Chief;
Office of Community Engagement (OCE) Director;
Field Services Division (FSD) Chief;
Water Quality Assessment Branch (WQA) Chief;
Basin Management Branch (BMB) Chief;
Stressor Identification (SID) Lead;
Data Integration Division (DID) Chief;
Office of Land and Water (OLWR) representatives (Regulates water quantity)

The SC is responsible for oversight of all aspects of focus area and watershed selection. The SC manages the development of candidate and targeted focus areas (Phase 1) and selection of priority watersheds (Phase 2). They coordinate with the Office of Pollution Control Management (OPC-M) to solicit policy feedback for targeted focus area and watershed selection. Similarly, they coordinate with the Office of Community Engagement (OCE), the Basin Teams, and Public Relations (PR) programs to solicit public feedback for targeted focus area and watershed selection. The SC, with input from the Basin Teams, OCE and PR programs, coordinates the vetting of priority focus areas with the public using public meetings, dissemination of information on the website and social media, and development of presentations and fact sheets.

3 Phase 1: Identifying Targeted Focus Areas and Factor Profiles

The goal of phase 1 is to identify a series of targeted water quality program focus areas that drive the selection of targeted watersheds. To begin the process, members of the SC identified candidate water program focus areas. This incorporated input from all major programs and was an exhaustive process across the many water programs administered by MDEQ and represented on the SC. This exhaustive list was reviewed and discussed by the SC and condensed into a list of targeted focus areas representing the most critical water program priorities.

Prior to this coordinated approach, each water program would identify program priorities (i.e. focus areas) independently based on the needs of the individual program areas. If there was overlap among water programs, it was more fortuitous than planned. By coordinating the selection of a set of targeted focus areas across departments, greater efficiency can be gained, for example through cooperation on data collection, analysis, and implementation.

3.1 TARGETED FOCUS AREAS

In March of 2015, the SC met to develop a list candidate focus areas. These represent broad topics or areas of concern or focus related to the individual water programs represented on the SC. Each program representative presented candidate topics for the SC to consider. A total of 53 candidate focus areas were identified. Following discussion, members of the SC that represented the water program areas then ranked each candidate for their respective program with a High (A), Medium (B), and Low (C) value. The candidate focus areas and their associated preliminary ranking are presented in Table 1 below.
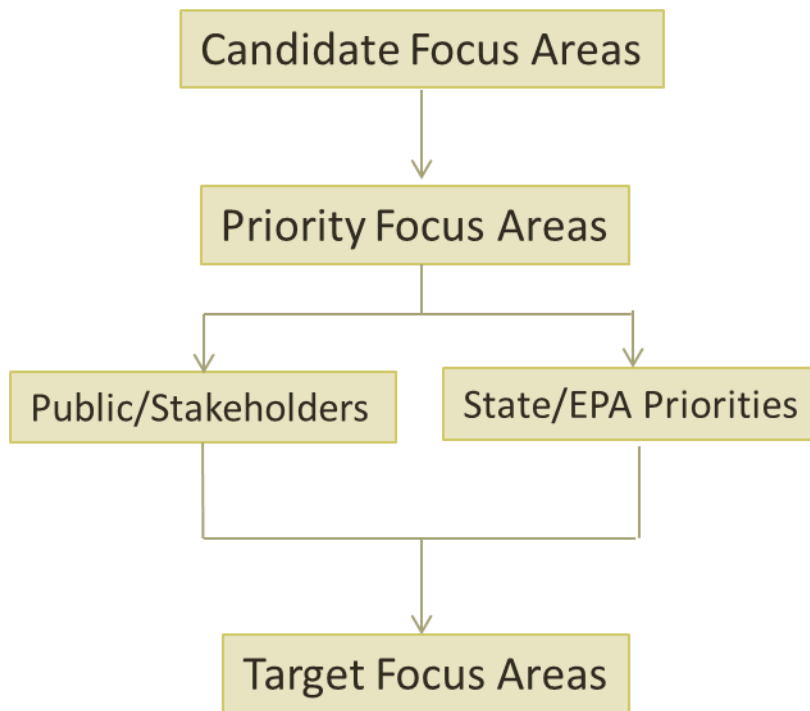
Table 1: Candidate Focus Areas with Associated Rank

Rank	Office of Land and Water Resources	Office of Community Engagement	Non Point Source Management	Water Quality Standards	Modeling and TMDLs	Environmental Permits Division	Basin Management	Field Services Division
A	Source Water Protection Areas Delta Base Flow Loss	Sanitary Sewer Overflows Environmental Justice Areas	Sediment Nutrients Urban Stormwater Legacy Work/On-going Projects	Nutrients Higher Use Waters	Model Calibration	Common Permit Type Urban Stormwater Number of Permits in watershed Major Discharges	Watershed Planning Legacy Work New Funding or Leveraging Opportunities	Beach Monitoring Index Development Bacteria Fish Advisories
B		Environmental Justice Industrial Dischargers	Failing Septic Tanks Watershed Protection	Bacteria Standards	Multiple Pollutants Stressor ID Severe Impairment	Growing Areas	Projects Under Construction	NRDA Data Management
C	Flow transfer Fracking		Forestry Fracking	Outstanding Resource Waters Reference Waters	TMDL Alternatives	Trading/Credits	Existing Watershed Plans	Ambient Monitoring Site Selection Program Support

The process for selecting target focus areas is shown below:

```
          ┌─────────────────────────┐
          │   Candidate Focus Areas │
          └─────────────────────────┘
                       │
                       ▼
          ┌─────────────────────────┐
          │    Priority Focus Areas │
          └─────────────────────────┘
            │                     │
            ▼                     ▼
  ┌──────────────────┐  ┌──────────────────┐
  │ Public/Stakeholders│ │ State/EPA Priorities│
  └──────────────────┘  └──────────────────┘
            │                     │
            └──────────┬──────────┘
                       ▼
          ┌─────────────────────────┐
          │    Target Focus Areas   │
          └─────────────────────────┘
```

The targeted focus areas will drive major program activities, although they can be adjusted as priorities change (e.g., disasters). This phase will retain flexibility to re-align targeted focus area(s) in the face of changing state, national and regional priorities. The ultimate selection and application of focus areas remains with the OPC-M and they will retain the ability to adjust focus areas as needed. The focus areas were vetted with the public and stakeholders and then used to generate *factor profiles*.

3.2 FACTOR PROFILES

Factor profiles are a set of landscape scale information developed to geographically represent the targeted focus areas (i.e. water program priorities) and are used as a metrics to score and rank a watershed. Ideally factor profiles are represented by geographic data sets that already exist within MDEQ or are readily available from other sources (i.e. Census data). In some cases, new data layers were created to represent targeted focus areas. Geographic data layers were carefully chosen and needed to be readily available, precise enough to spatially quantify the subject focus area, and prevent double weighting where possible. These data were used as a metric in the screening process allowing the focus areas to be objectively scored on a

spatial scale. This effort supports priority watershed selection under Phase 2 of the process.

The geospatial data layers used as factor profiles were initially assigned a score of 1-3 based on whether the program staff that submitted the corresponding targeted focus area (i.e. water program priority) ranked the focus area as high (3 points), medium (2 points), or low (1 point). The data layers were then classified by resource value as representing either environmental or human welfare concerns. In July 2015, the SC met to determine if the geospatial data layers selected to represent the factor profiles accurately represented the targeted focus areas. Once the data layers were reviewed and agreed upon, further attention was given to determine if the corresponding factor profile weights/scores were sufficient to influence the relative ranking of watersheds. The SC agreed that designated uses of water bodies that most directly affect human health should have higher weights/scores. As a result the scores for Source Water Protection, Public Water Supply, and Recreational Water data layers were raised from the default score of 3 to 5. Additionally, the score for Section 303(d) Listings was increased to 9 to reflect the relative importance targeting work on waters not meeting one of their current designated uses. A complete listing of all focus areas, associated data sets, and assigned profile weight/score is provided in Table 2 below.

Table 2: Weighted Factor Profile Data Sets

| Focus Area	Data Source	Resource Value	Assigned Weight
Source Water Protection	OLWR Source Water Protection Area	Human	5
	OLWR Groundwater Wells	Human	3
Delta Base Flow Loss	No data available*		Not scored
Flow Transfer	No data available*		Not scored
Fracking	Shifting priorities		Not scored
Sewer Overflows	NPDES Permits	Environmental	3
Environmental Justice	Demographic Index	Human	3
Industrial Dischargers	NPDES Major Permits	Environmental	3
Sediment	NPS Erosion Potential Score	Environmental	3
Nutrients	NPS Erosion Potential Score	Environmental	3
Urban Stormwater	NPS Impervious Area Score	Environmental	3
Legacy Work	New data set created	Environmental	3
Failing Septic Tanks	No data available*		Not scored
Watershed Protection	Watershed Improvement Plan Score	Environmental	1
Forestry	NPS Forest Score	Environmental	1
Higher Use Waters	Public Water Supply Recreational Waters	Human	5
Bacteria Standards	Captured in Higher Use Waters		Not scored
Outstanding Resource Waters	FSD Least Disturbed Waters	Environmental	3
Reference Waters	Captured Above		Not scored
Model Calibration	New data set created	Environmental	3
Multiple Pollutants	Section 303(d) Listings	Environmental	9
Stressor ID	Captured Above		Not scored
Severe	Captured Above		Not scored

Impairments			
TMDL Alternatives	Captured Above		Not scored
Common Permit Types	New data set created based on SIC code	Environmental	3
Number of Permits	NPDES Permits	Environmental	3
Major Discharges	NPDES Major Permits	Environmental	3
Growing Areas	No data available*		Not scored
Trading/Credits	No data available*		Not scored
Watershed Planning	Watershed Improvement Plan Score	Environmental	1
New Funding	New data set created	Environmental	3
Projects Under Construction	NPS Best Management Practice	Environmental	3
Existing Watershed Plans	Watershed Improvement Plan Score	Environmental	1
Beach Monitoring	Captured in Recreational Waters		Not scored
Index Development	No data available*		Not scored
Bacteria	Captured in Recreational Waters		Not scored
Fish Advisories	FSD Fish Advisory	Human	3
NRDA activities	No data available*		Not scored
Data Management	No data available*		Not scored
Ambient Monitoring			Not scored
Site Selection			Not scored
Program Support			Not scored

*indicates where no geospatial scale data are readily available to represent the candidate focus area topic. MDEQ recognizes the importance of this information and will work to develop the appropriate data layers for future iterations of the process.

4 Phase 2: Identifying Priority Watersheds

The factor profiles generated in Phase 1 were used to screen watersheds to identify priority watersheds for activities which will address the water program focus area goals. The factor profiles established how screening metrics and/ or landscape elements should be weighted. Every watershed in the state was ranked based on this weighted screening process. Once the initial ranking was completed, the results were reviewed by the SC and a total of 21 watersheds were chosen as priority watersheds. The priority list will be vetted with stakeholders and the public as well as with other local, state, and federal agency partners. Any feedback received as a result of the vetting process will be considered as the list is narrowed to a final set of targeted watersheds. The process for selecting priority watersheds is shown below:
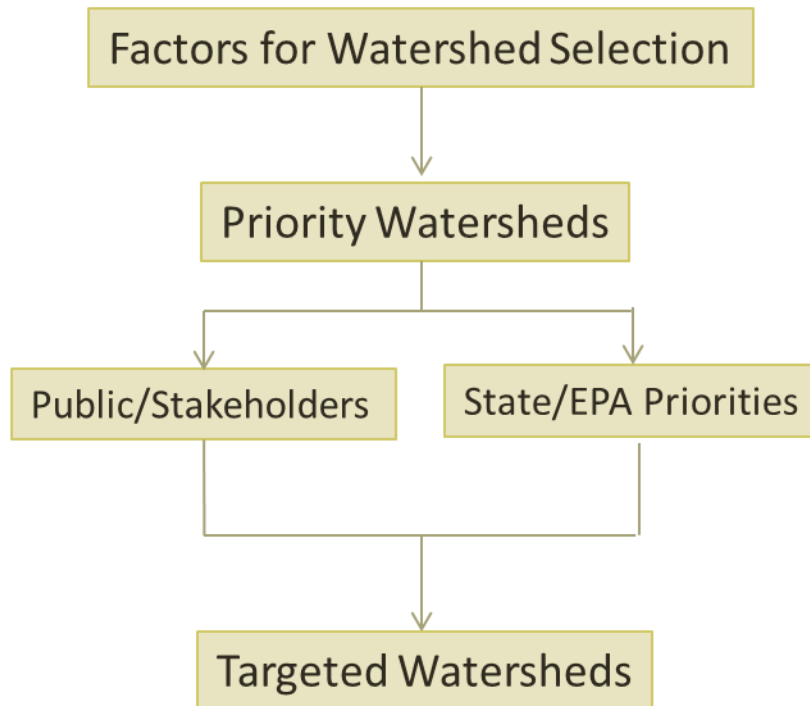
4.1 WEIGHTED WATERSHED RANKING

The weighted factor profiles developed in Phase 1 were used to generate a complete ranking map as shown in Figure 1 below. This map depicts low, medium and high watershed rankings based on the weighted factor profiles developed. Watersheds with high and medium rankings represent areas where overlapping water program priorities were identified.
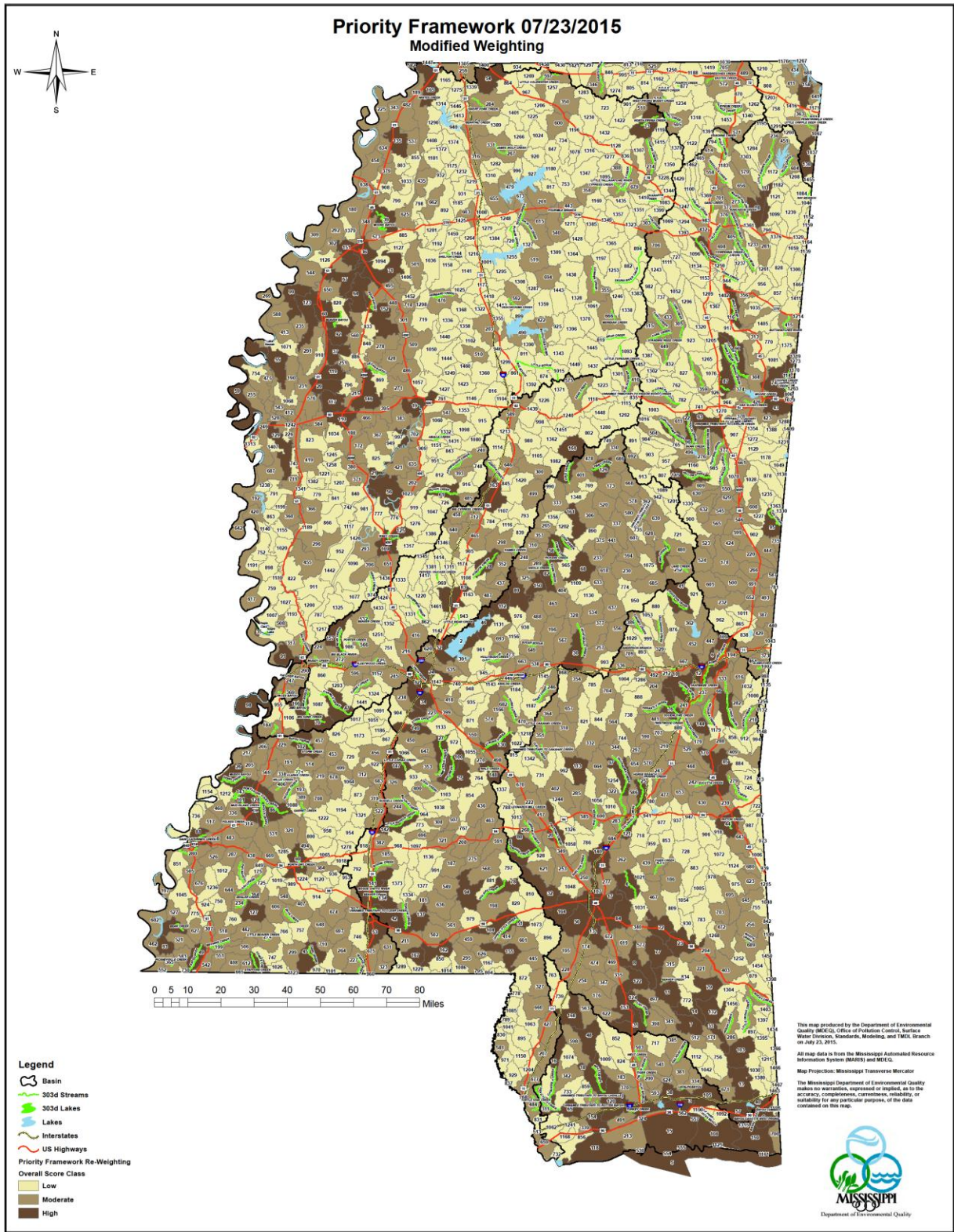
Figure 1. Watershed ranks based on factor profile weights

Following the July meeting, the SC received a tabular report of the watershed rankings that form the basis of the map in Figure 1. From this list, each member of the SC was asked to select 25 watersheds from the top 100 rankings where their individual program would need to work in the next 10 years. In August, the SC was able to reach consensus on the 21 watersheds shown in Figure 2 below. The 21 targeted priority watersheds were selected in geographic areas where there were multiple overlapping water program priorities/focus areas.
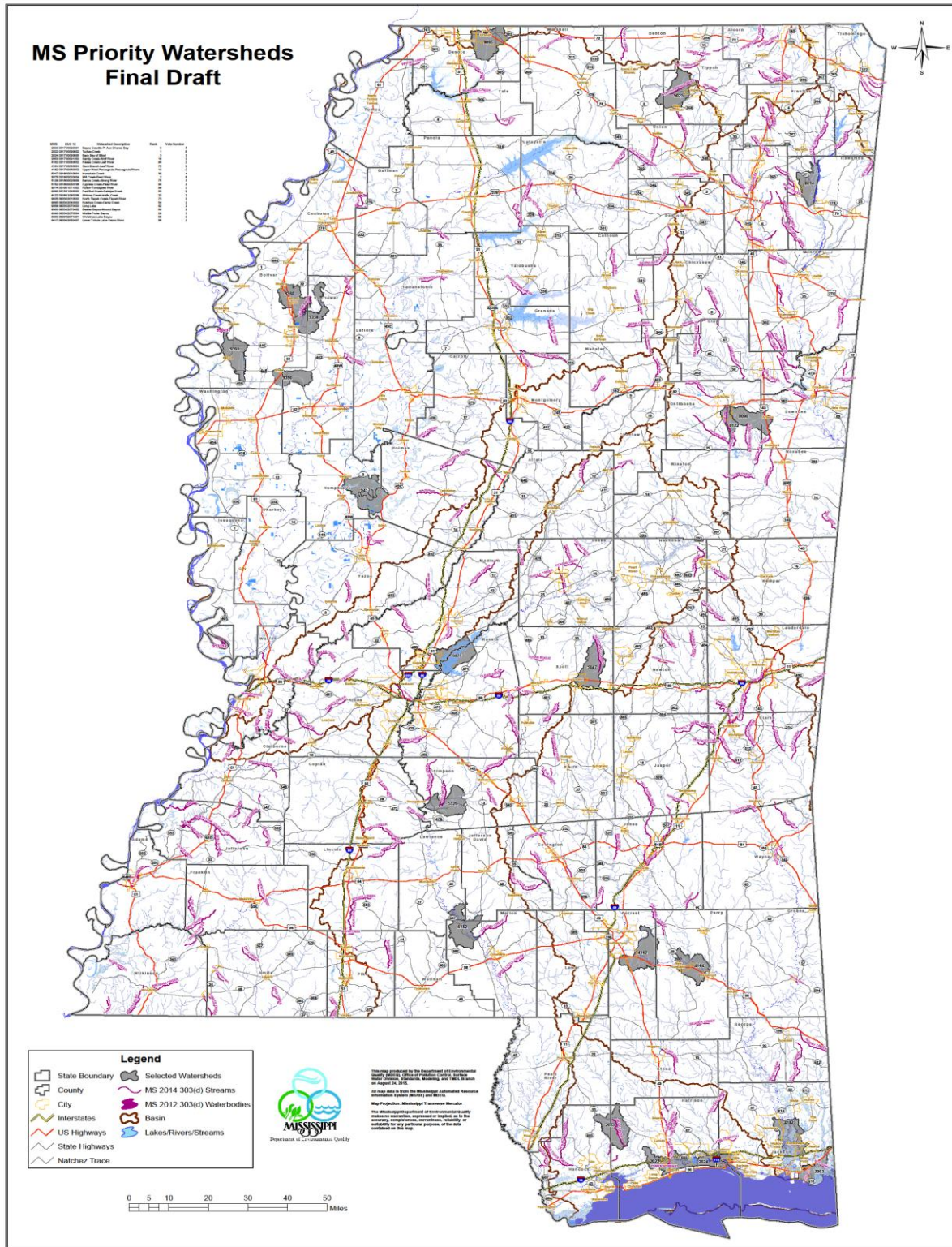
Figure 2. Final Draft Priority Watersheds

4.2 PUBLIC/STAKEHOLDER ENGAGEMENT AND FEEDBACK

The SC will work with the OCE and PR programs to vet the priority watersheds with stakeholders and the public as well as with other local, state, and federal agency partners. The priority watershed selection process will be disseminated and feedback solicited via public meetings, the MDEQ website and social media, presentations and fact sheets. Feedback will be gathered by the OCE and PR programs and communicated to the SC for incorporation into the targeted watershed selection process.

4.3 TARGETED WATERSHEDS

The SC will consider public and stakeholder feedback as well as input from local, state, and federal agency partners and use that to form the recommendation of a final set of targeted watersheds presented to OPC-M. The final list selected by OPC-M will be communicated to the public and stakeholders in a report that describes the process and reasoning behind the final selection. The ultimate selection of watersheds remains with OPC-M, and OPC-M retains the flexibility to modify the targeted watersheds as needed.

4.4 SCHEDULE

Priority focus areas are developed to represent water program goals over a 10 year timescale, however, priority watersheds may be identified and updated as needed. It is anticipated that most of the priority watersheds will remain on the prioritized list for several years to allow for implementation of water program activities, flexibility will be retained to re-align targeted watershed selection in the face of changing state priorities as well as changing EPA national and regional priorities applicable to Mississippi and adopted by MDEQ.

A public meeting will be held to receive comments from the public on October 27, 2015, at 5:00 p.m. in the MDEQ Commission Hearing Room at 515 Amite Street, Jackson, MS. All comments received during the public notice period and at the public hearing will be considered prior to finalizing the list of priority watersheds.

4.5 STATEMENT ON AVAILABILITY OF/ACCESS TO DOCUMENTATION

The MDEQ is committed to a transparent decision-making process that incorporates public and stakeholder feedback. The SC will make documents detailing the water program area and watershed prioritization efforts available to the public via public meetings, the MDEQ website, social media, and with presentations and fact sheets all of which will be used to vet these decisions with the public as detailed above. The MDEQ will solicit feedback on the priority focus areas and watersheds via these same outlets and will consider that feedback into their final targeted focus area and watershed selections. This final selection process including the incorporation of feedback will be documented and the final selections and decision documentation made available via the MDEQ website.