NOTICE OF COMMENT PERIOD
Department of Environmental Management
Office of Water Quality
Notice of Public Comment Period for the 2018 List of Impaired Waters
and Consolidated Assessment and Listing Methodology
under Section 303(d) of the Clean Water Act

DOCUMENT #18-128
PURPOSE OF NOTICE

The Indiana Department of Environmental Management (IDEM) is soliciting public comment for the development of its draft 2018 303(d) List of Impaired Waters and the Consolidated Assessment and Listing Methodology (CALM) used to develop it. Any person having water quality data to support or refute the listing of a specific waterbody or to add a waterbody to the list will be able to provide that information to IDEM during the public comment period. Comments and suggestions regarding the CALM will also be accepted during this period. IDEM will review and respond to all comments received. IDEM submit its finalized 2018 303(d) List of Impaired Waters as part of its 2018 Integrated Report to U.S. EPA by August 31, 2018. All public comments received during the public comment period and IDEM’s responses will be included in its August 31, 2018 submittal to U.S. EPA.

The 303(d) list and the CALM will also be available April 11, 2018 on IDEM’s website at: http://www.in.gov/idem/nps/2647.htm


SUBJECT MATTER

Basic Purpose and Background

The IDEM Office of Water Quality (OWQ) is preparing to update its 303(d) List of Impaired Waters, as required by Section 303(d) of the federal Clean Water Act (CWA) and the Water Quality Planning and Management regulation contained in the Code of Federal Regulations (CFR) at 40 CFR Part 130. Under the CWA, each state is required to assemble all existing and readily available water quality-related data and information for use in assessing its waters for compliance with the state’s water quality standards (WQS). Water quality criteria are developed to protect uses articulated in Indiana’s WQS, including recreational uses, aquatic life use, and the use of some waters as a drinking water resource. The state is then required to prepare and make public a list of those waters not meeting WQS and the methodology used to evaluate the data and determine impairment status. The 303(d) List of Impaired Waters will identify the following:

- The portion of the waterbody that is impaired.
- The pollutant or pollutants not meeting WQS, thereby causing the impairment.
- A schedule for development of a Total Maximum Daily Load (TMDL).

A TMDL evaluation is a process that quantifies the amount of a specific pollutant that a waterbody can assimilate and still meet WQS. What constitutes a pollutant is described in Section 502(6) of the CWA and includes materials such as sewage, chemical wastes, biological materials, and wastes from industrial, municipal, and agricultural operations. The definition also encompasses drinking water contaminants that are regulated under Section 1412 of the Safe Drinking Water Act (SDWA). A TMDL
is a written, quantitative assessment that accomplishes the following:

- Identifies how much of the pollutant is coming from point sources and nonpoint sources.
- Specifies the amount of pollutant reduction necessary from each source in order to meet the WQS set for that pollutant.
- Lays the groundwork for developing and implementing a plan to reduce the amount of the pollutant coming from each source.

As part of IDEM’s TMDL process, the public is invited to participate in the plan to develop and implement the TMDL.

Status of U.S. EPA Approval of Indiana’s 303(d) List of Impaired Waters

On May 8, 2013, U.S. EPA issued a partial approval of Indiana’s 2010 303(d) list and proposed the addition of a number of reaches it believes to be impaired for various metals to Indiana’s list. IDEM had removed these impairments, which were originally identified in the draft 2010 303(d) list in response to public comments received prior to submittal of its finalized list to U.S. EPA.

On June 14, 2013, U.S. EPA published its partial approval and the proposed additions to Indiana’s 303(d) list for a 30-day public comment period and reopened the comment period on September 13, 2013 to allow an additional 30 days for the public to comment.

On May 14, 2014, U.S. EPA issued its final decision to add one hundred thirty-nine (139) metals-related impairments to IDEM’s 2010 303(d) list. More detailed information regarding U.S. EPA’s final decision and the issues leading up to it can be found online at: http://www.in.gov/idem/nps/3889.htm.

The issues raised by U.S. EPA in response to IDEM’s 2010 303(d) list have yet to be resolved. IDEM did not include the impairments U.S. EPA added to Indiana’s 2010 303(d) list to the finalized 2012 303(d) list IDEM submitted to U.S. EPA for approval on December 28, 2012, nor were they added to the finalized 2014 303(d) list IDEM submitted to U.S. EPA on September 25, 2015 or the finalized 2016 303(d) list submitted on February 23, 2017. Because each 303(d) list builds upon the list from the previous cycle, these impairments are likewise not included in the draft 2018 303(d) list published in this notice.

To date, U.S. EPA has not communicated with IDEM regarding approval of IDEM’s finalized 303(d) lists for the 2012, 2014, and 2016 cycles. Nonetheless, IDEM continues to make progress in its water quality assessments and remains committed to moving forward in its reporting of results to the public, despite the unresolved issues associated with earlier 303(d) lists.

Applicable Federal Law

The 303(d) List of Impaired Waters is developed pursuant to Section 303(d) of the federal CWA. This notice serves as a solicitation for any additional water quality-related information that may be used to further develop and refine the 2018 303(d) list and satisfies the federal Water Quality Planning and Management regulation in 40 CFR Part 130.

REQUEST FOR PUBLIC COMMENTS

At this time, IDEM solicits the following:

(1) Water quality data or water quality-related information to support or refute the listing of a specific waterbody or to add a waterbody to the 303(d) list.

(2) Comments and suggestions regarding the CALM.

Comments may be submitted in one of the following ways:
(3) By mail or common carrier to the following address:
LSA Document #18-128 2018 Draft 303(d) List of Impaired Waters
Janet Pittman, Administrative Assistant
Rules Development Branch
Office of Legal Counsel
Indiana Department of Environmental Management
100 North Senate Avenue, MC 65-46
Indianapolis, IN 46204-2251

(4) By facsimile to (317) 233-5970. Please confirm the timely receipt of your faxed comments by calling the Rules Development Branch at (317) 232-8922.

(5) By electronic mail to jpittman@idem.in.gov. To confirm timely delivery of your comments, please request a document receipt when you send the electronic mail. PLEASE NOTE: Electronic mail comments will NOT be considered part of the official written comment period unless they are sent to the address indicated in this notice.

(6) Hand delivered to the receptionist on duty at the thirteenth floor reception desk, Office of Legal Counsel, Indiana Government Center North, 100 North Senate Avenue, Indianapolis, Indiana.

Regardless of the delivery method used, to properly identify each comment with the action it is intended to address, each comment document must clearly specify the LSA document number of the action on which you are commenting.

COMMENT PERIOD DEADLINE
All comments must be postmarked, faxed, or time stamped not later than [publication date plus 90 days]. Hand-delivered comments must be delivered to the appropriate office by 4:45 p.m. on the above-listed deadline date.

Additional information regarding this notice may be obtained from Jody Arthur in the Watershed Assessment and Planning Branch, Office of Water Quality, (317) 308-3179 or (800) 451-6027 (in Indiana).

DEVELOPMENT OF INDIANA’S 2018 303(D) LIST OF IMPAIRED WATERS
For the development of the 2018 Draft 303(d) List of Impaired Waters, IDEM has followed, to the degree possible, the 305(b) and 303(d) reporting methods outlined in U.S. EPA “Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act” (U.S. EPA, 2003) and the additional guidance provided in U.S. EPA memorandums containing information concerning CWA Sections 303(d), 305(b), and 314 integrated reporting and listing decisions for the 2006, 2008, 2010, 2012, 2014, and 2016 cycles (U.S. EPA, 2005-2015).

For the 2018 cycle, U.S. EPA issued a memorandum focusing primarily on the transition of state water quality assessment reporting systems, including Indiana’s Assessment Database (ADB) to the new, federal Assessment and Total Maximum Daily Load Tracking and Implementation System (ATTAINS) online (U.S. EPA, 2017). U.S. EPA’s goal for this transition is to more effectively analyze and share state water quality assessment information across its water programs and to measure progress toward its Strategic Plan.

For Indiana, this transition promises to streamline the integrated reporting process, achieve some internal data management efficiencies, and result in greater consistency between the water quality
information U.S. EPA reports online for Indiana with the information IDEM reports on its own website. The draft 2018 303(d) list contained in this notice was developed using IDEM’s 305(b) Assessment Database (ADB). Interpretation of the data and listing decisions take into account U.S. EPA’s guidance and IDEM’s current CALM. Indiana will begin using the new ATTAINS system with its submittal of the 2018 Integrated Report.

**Indiana’s Consolidated List**

One aspect of U.S. EPA’s guidance calls for a comprehensive listing of all monitored or assessed waterbodies in the state based on the state’s assessment and listing methodology. Each waterbody assessment unit (AU), which may consist of an entire waterbody or a segment of a larger waterbody, is to be placed in one or more of five categories depending on the degree to which it supports designated uses. U.S. EPA guidance encourages states to place a waterbody AU in additional categories as appropriate in order to more clearly illustrate where progress has been made in TMDL development and other restoration efforts. Therefore, waterbodies are assigned to one category for each of the following designated uses: aquatic life use, recreational use, fish consumption\(^1\), and public water supply\(^2\).

A detailed explanation of the five categories is provided in IDEM’s CALM in Appendix 1. The following is a summary of the five categories:

- **Category 1** The available data or information, or both, indicate that all designated uses are supported and no use is threatened.
- **Category 2** The available data or information, or both, indicate the individual designated use is supported.
- **Category 3** The available data or other information is insufficient to determine if the individual designated use is supported.
- **Category 4** The available data or information, or both, indicate that the individual designated use is impaired or threatened but a TMDL is not required.
  - A. A TMDL for one or more pollutants has been completed and approved by U.S. EPA and is expected to result in attainment of all WQS applicable to the designated use.
  - B. Other pollution control requirements are reasonably expected to result in the attainment of all WQS applicable to the designated use in a reasonable period of time.
  - C. The impairment is not caused by a pollutant.
- **Category 5** The available data or information, or both, indicate the individual designated use is impaired or threatened, and a TMDL is required.
  - A. The individual designated use is impaired or threatened by one or more pollutants and requires a TMDL.

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\(^1\) Fish consumption is not a designated use in Indiana’s WQS. IDEM assesses Indiana waters for fish consumption pursuant to current U.S. EPA policy and in keeping with CWA goals, which are reflected in Indiana’s WQS (327 IAC 2-1-1.5 and 2-1.5-3).

\(^2\) The designation for public water supply use is applicable only to waters that serve as a routine or emergency source of water for a public water system.
B. The waterbody is impaired due to the presence of mercury or PCBs, or both, in the edible tissue of fish at concentrations exceeding Indiana’s human health criteria for these contaminants.

The 303(d) List of Impaired Waters consists of all impairments listed in Category 5. This category includes waters where the WQS is not attained because the waterbody AU is impaired or threatened by one or more pollutant(s) for each of which a TMDL is required. It should be noted that U.S. EPA’s most recent guidance does not change existing rules for listing and delisting impairments from Category 5. The existing regulations still require states, at the request of the U.S. EPA’s Regional Administrator, to demonstrate good cause for not including impairments on the 303(d) list that were included on previous 303(d) lists (pursuant to 40 C.F.R. 130.7(b)(6)(iv)). In general, IDEM will consider delisting an impairment only if one of the following is true:

- New data indicate that WQS are now being met for the specific cause of impairment to the AU under consideration.
- The assessment or listing methodology, or both, has changed, and the AU would not be considered impaired in accordance with the new methodology.
- An error is discovered in the sampling, testing, or reporting of data that led to an inappropriate listing.
- IDEM determines that another program other than the TMDL program is better suited to address the water quality problem.
- IDEM determines that the water quality problem is not caused by a pollutant for which a TMDL can be developed.
- A TMDL has been approved by U.S. EPA for the impairment.

**IDEM’s Methods for Prioritizing TMDL Development**

The CWA does not clearly define the timeline for TMDL development. However, IDEM works with U.S. EPA Region 5 every 303(d) listing cycle to determine IDEM’s short term TMDL schedule, which identifies the TMDLs to be developed for the next cycle. IDEM usually submits this list along with the agency’s long term TMDL development schedule to U.S. EPA with the Integrated Report each cycle. However, IDEM’s negotiations with U.S. EPA regarding the short term TMDL schedule (the TMDLs to be developed for the 2020 cycle) is complete as of this notice and included in Appendix 2. While it is possible for this list to change somewhat depending on unanticipated factors that can impact IDEM’s TMDL monitoring activities and/or development, it accurately reflects IDEM’s current plans for TMDL development in the short term.

IDEM’s long term schedule for TMDL development was developed in accordance with the methods described in IDEM’s TMDL Program Priority Framework. This framework was developed in 2015 and describes IDEM’s methods for prioritizing waters for TMDL planning and watershed restoration. It also includes the agency's long term TMDL development schedule, which identifies the watersheds in which TMDLs will be developed through the 2022 cycle. More detailed information on IDEM’s 303(d) TMDL Program Priority Framework and the long term schedule for TMDL development can be found in IDEM’s CALM (Appendix 1).

The specific waterbodies identified on IDEM’s long term schedule, like those identified in IDEM’s short term schedule, may change based on unanticipated circumstances. Although the specific waterbodies may change, IDEM will follow the methods described in its Program Priority Framework when prioritizing impaired waters for TMDL development to help ensure ongoing consistency with U.S. EPA’s long term vision.
How Impairment Information Is Organized on Indiana’s 303(d) List of Impaired Waters

IDEM currently maintains assessment information for all Indiana waters in its ADB for CWA 305(b) reporting and 303(d) listing purposes and to provide assessment information when requested by the public. Every lake, stream, or reach of stream in the ADB is assigned a unique assessment unit identification (AUID).

Generally, each lake or reservoir is considered one AU and is assigned a single AUID. For flowing waters, the sizes of AUs vary based on a number of factors such that a single AUID may represent an entire stream or only one reach of it. IDEM’s methods for defining representative AUs are discussed in detail in the CALM.

On the 303(d) list, impairments are listed individually in order to achieve consistency with the way U.S. EPA tracks TMDL development and to facilitate more effective planning by IDEM. Therefore, a single AU may appear on the 303(d) list for one or more impairments.

Revisions to Indiana’s Reach Index for Mapping Impairments

IDEM defines the geographical extent and location of each AU within a given 12 or 14 digit hydrologic unit code (HUC) for mapping purposes through a process called reach indexing. Reach indexing uses software tools that work within geographical information systems (GIS) applications to delineate one or more AUs for a given waterbody and to “key” these AUs to the National Hydrography Dataset (NHD)\(^3\), which allows them to be mapped. This “key” is called the Reach Index. IDEM developed its first statewide Reach Index in 2002 to facilitate mapping of Indiana’s 305(b) assessments and 303(d) listings in GIS applications and to incorporate this information into IDEM’s ADB and U.S. EPA’s national databases.

IDEM’s original Reach Index was developed using the NHD at medium resolution (1:100,000 scale). When the NHD became available for Indiana in high resolution (1:24,000 scale), IDEM found that a significantly greater number of first and second order streams\(^4\) appeared at this scale than were visible in its original Reach Index. These small streams and stream networks are an important component of the hydrology in their watersheds and can have significant effects on water quality in larger streams. Therefore, IDEM began working to revise its Reach Index in 2008 to incorporate the high resolution NHD allowing still more accurate application of assessment data as well as a more comprehensive picture of water quality conditions throughout Indiana.

In early 2014, IDEM completed its high resolution indexing for the entire state of Indiana, and all of the resulting changes have been entered into the ADB. In 2017, IDEM completed a full review of the High Resolution (HR) Reach Index to identify any remaining errors in the segmentation such as inconsistency with our guidelines for indexing, typographical errors and other issues resulting in incorrect representation of assessment units for flowing water. The HR Reach Index is now finalized. While IDEM may in the future make additional changes, any revisions of IDEM’s HR Reach Index are expected to be limited and conducted only when needed to support National Pollutant Discharge Elimination System permit development, such as the application of site-specific criteria, or other IDEM

\(^3\) The NHD is a database created by U.S. EPA and the United States Geological Survey that provides a comprehensive coverage of hydrographic data for the United States. It uniquely identifies and interconnects the stream segments that comprise the nation's surface water drainage system and contains information for other common surface waterbodies such as lakes, reservoirs, estuaries, and coastlines.

\(^4\) Stream order is a measure of the relative size of streams. Streams sizes range from the smallest “first-order” stream (for example, a small creek) to the largest or “twelfth-order” stream (for example, the Amazon River).
OWQ program needs.

IDEM will provide a full record of all segmentation changes to date U.S. EPA with its submittal of its 2018 Integrated Report to facilitate the tracking of information pertaining to the 303(d) list and TMDL development. IDEM did not report any changes to the HR Reach Index for the 2016 cycle because its final review was still underway. With this notice, IDEM is reporting all the final changes to the HR Reach Index including the AUs that were re-indexed and their AUIDs retired (Appendix 7). All of the changes to the 303(d) list to date resulting from the changes to HR Reach Index are also reported in this notice in Appendices 8 (impairments removed) and 9 (impairments added back). However, IDEM expects to make additional changes to its 303(d) list as the Agency works to evaluate the original assessment information for any AUID re-indexed to ensure its proper application to newly indexed AUs.

HOW IDEM DEVELOPED THE DRAFT 2018 303(D) LIST

Each 303(d) list builds upon the previous list. To develop the draft 2018 303(d) list in this notice, IDEM used as its basis the finalized 2016 303(d) list submitted to U.S. EPA in an addendum to its 2016 Integrated Water Quality Monitoring and Assessment Report (IR) on February 23, 2017. Although IDEM is still awaiting U.S. EPA approval of its finalized 303(d) list for 2016 as well as its 2012 and 2014 303(d) lists, IDEM chose to use its finalized 2016 list as a starting point because it provides the most current information available from which to develop the 2018 303(d) list. The tables in this notice identify all impairments removed from and added to Category 5 as well as those added to Category 4A based on the approval of TMDLs developed for them. Tables summarizing all changes made to date for the 2018 cycle are also provided in this notice.

IDEM’s Use of External Data

Section 303(d) of the CWA requires that states consider all readily available data sources in the preparation of their 303(d) lists. On September 23, 2015, IDEM launched its External Data Framework (EDF) to provide a systematic, transparent, and voluntary means for external organizations to share the water quality data they collect with IDEM for potential use in its CWA assessment and listing processes.

IDEM is currently working with the Army Corps of Engineers and the Marion County Health Department through the External Data Framework to receive and evaluate the water quality data they are collecting for potential use in IDEM’s water quality assessments and 303(d) listing processes. These organizations are still in the process of collecting and formatting their data for submittal through the EDF.

IDEM is also working to develop an online tool to assist EDF participants (and anyone else collecting water quality monitoring data) to better document the quality of the data they collect. The Online Quality Assurance Project Plan (QAPP) Tool will allow users to fill out a pre-formatted QAPP template that includes all the necessary elements that the organization collecting the data or any secondary users of the data set (including IDEM) would need to determine whether it is reliable for their needs. The tool will allow users to develop their QAPPs over as many sessions as they need, will provide an extensive library of documents to help the user understand the information needed in different sections of the QAPP, and will allow users to email IDEM staff directly with any questions they may have.

While the QAPP tool will be available to any organization conducting water quality monitoring, IDEM is developing it primarily for use by EDF participants to help them provide sufficient quality assurance documentation with their data submittals. IDEM Nonpoint Source Program grantees will also benefit from this tool as they are required to develop QAPP for any monitoring they conduct with grant funds. IDEM expects to complete development of the QAPP tool by late 2018.
The public is invited to explore IDEM’s EDF website and its Secondary Data Portal to learn more about the EDF and how to submit water quality data for potential use in the development of IDEM’s 303(d) list for future cycles:

- IDEM Office of Water Quality’s EDF website: http://in.gov/idem/cleanwater/2485.htm

The public is also encouraged to use this comment period as an opportunity to provide feedback to IDEM regarding the EDF. All comments received during the public comment period for the 2018 303(d) list will be reviewed and evaluated to identify potential improvements to the process or to suggest any changes in external data policy.

**Impairments Removed from Category 5A as a Result of TMDL Development**

For the 2018 cycle, IDEM submitted TMDL reports for the St. Joseph River, the South Fork Blue River, and the Upper Mississinewa River watersheds, all of which have been approved. As a result, IDEM moved a total of two hundred sixty-one (261) impairments previously listed in Category 5 to Category 4A.

To facilitate public review, all impairments moved into Category 4A for the 2018 cycle (Figure 1) are identified in Appendix 3 and are keyed to the TMDL in which they are addressed. To date, IDEM has completed a total of two thousand seventy six (2,076) TMDLs for impairments to Indiana Waters (Figure 2). The TMDL reports for approved TMDLs, along with information on their development, can be found online at: http://www.in.gov/idem/nps/2347.htm.
Figure 1: Impairments moved to Category 4A for the 2018 cycle based on TMDL approvals.
Figure 2: All impairments to date for which a TMDL has been approved (Category 4A waters).
Impairments Removed from Category 5 Based on New or Revised Assessments Indicating that Applicable WQS Are Being Met

This section includes impairments removed from Category 5 based on more recent data or other information that have become available since IDEM’s submittal of its finalized 2016 303(d) list on February 23, 2017 (Figure 3). Most of the impairments removed from Indiana’s 303(d) list are located in the Upper Wabash River basin, which was sampled by IDEM in 2016, and the Lower Wabash River basin sampled in 2017. There is also a number of impairments removed based on studies conducted by IDEM in other basins in 2016 and 2017.

As a result of these assessments, IDEM has found that WQS are now met for a total of twenty (20) previously identified impairments (Appendix 4). These impairments have been removed from Category 5A for the 2018 cycle.
Figure 3: Impairments removed from Category 5 based on improvements in water quality.
Impairments Added to Category 5 Based on New or Revised Assessments

This section includes impairments added to Category 5 based on more recent data or other information that have become available since IDEM’s submittal of its finalized 2016 303(d) list on February 23, 2017 (Figure 4).

For a lake or stream to be listed, IDEM must have sampling data representative of that waterbody, and the data collected must support 303(d) listing in accordance with IDEM’s CALM.

The impairments added to the 303(d) list on the basis of new or revised assessments are located mostly in the Upper Wabash River basin, which was sampled by IDEM in 2016, and the Lower Wabash River basin sampled in 2017, and the Great Miami basin, which was sampled for TMDL development in 2014. However, a few additional impairments were also identified in other areas of the state (Figure 4).

Based on these assessments, IDEM has added a total of two hundred thirty-three (233) impairments to Category 5, which are shown in Figure 4 and identified in Appendix 5.
Figure 4: Newly identified impairments added to Category 5.
Changes to Category 5 Based on IDEM’s Ongoing Review to Identify Errors and Omissions and to Ensure Consistency with Indiana’s WQS

IDEM routinely reviews its 303(d) list for errors and omissions, and to ensure consistency with Indiana’s WQS and the information IDEM maintains in its ADB. As of this notice, IDEM has not identified any additional impairments that should be added to Category 5 but found three (3) impairments that should be removed for the 2018 cycle (Appendix 6). IDEM’s review of its 303(d) list continues and is expected to result in additional changes as IDEM prepares for its transition to U.S. EPA’s new ATTAINS database.

Impairments Removed from Category 5 Based on Changes to Indiana’s High Resolution Reach Index

IDEM has made a number of changes to Category 5 as a result of the re-indexing completed during its final review of the HR Reach Index. These changes have the appearance of increasing the number of impairments to Indiana waters significantly. However, this is not the case. Table 1 illustrates the effect that re-indexing has on the 303(d) list both in terms of the number of impairments and stream miles listed. Based on the changes to Indiana’s 303(d) list from 2016 to 2018, which are summarized in Table 2, the number of listed stream impairments grew by eighty-two (82) percent while the number of stream miles impaired increased by only three (3) percent.

Table 1: Example of how re-indexing can change the number of impairments and stream miles impaired on Indiana's 303(d) list.

<table>
<thead>
<tr>
<th>Original AU ID to be Split and Retired</th>
<th>AU Size (Miles)</th>
<th>Original Impairment to be Delisted</th>
<th>New AU ID Resulting from Split</th>
<th>AU Size (Miles)</th>
<th>Impairment Added Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stream Reach A</td>
<td>3.5</td>
<td>E. COLI</td>
<td>Stream Reach B</td>
<td>2.6</td>
<td>E. COLI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DISOLVED OXYGEN</td>
<td></td>
<td></td>
<td>DISOLVED OXYGEN</td>
</tr>
<tr>
<td>One stream reach originally listed</td>
<td>3.5 miles</td>
<td>Two impairments originally listed</td>
<td>Two stream reaches now listed</td>
<td>3.5 miles</td>
<td>Four impairments</td>
</tr>
<tr>
<td></td>
<td>originally</td>
<td>listed</td>
<td>now listed</td>
<td>now listed</td>
<td>now listed</td>
</tr>
</tbody>
</table>

In keeping with U.S. EPA policy, no impairment may be delisted without good cause as described under the heading of Indiana’s Consolidated List of this notice. It should be noted that re-indexing alone does not constitute good cause for delisting. Although retiring an impaired AU requires delisting of its impairments, it is IDEM’s policy to add those impairments back to the 303(d) under their new AU IDs unless good cause can be shown to do otherwise.

With this notice, IDEM is reporting all the final changes to the HR Reach Index including the AUs that were re-indexed and their AU IDs retired (Appendix 7). All of the changes to the 303(d) list to date resulting from the changes to HR Reach Index are also reported in this notice. IDEM removed a total of one thousand three hundred seventy-four (1,374) impairments from Category 5 and added a total of four thousand three hundred eighty-three (4,383) impairments back as a result of changes in segmentation (re-indexing). These changes are identified in Appendices 8 and 9, respectively. Although few changes will be made to the HR Reach Index going forward, IDEM expects to make additional changes to its 303(d) list in the future as IDEM works to evaluate the original assessment information for any AUID.
re-indexed to ensure its proper application to newly indexed AUs.

**Summary of Changes to Indiana’s 303(d) List for the 2018 Cycle**

Table 2 summarizes the proposed removals from and additions to Indiana’s 303(d) list and the impact of these changes in terms of:

- The total number of impairments and the total number of individual waterbodies impaired. Note that these values differ because a single waterbody may be listed for one or more individual impairments.
- The total number of impairments and individual waterbodies impaired, broken out by waterbody type (streams versus lakes).
- The total number of stream miles and lake acres impaired.

Table 3 provides a comparison of the 2016 and 2018 303(d) lists in terms of the types of changes made (removals and additions to Category 5).

Table 4 provides a simple comparison of the finalized 2016 303(d) list and the 2018 list contained in this notice.

Table 5 provides a comparison of the different types of impairments identified on Indiana’s 303(d) list, both in 2016 and now.

The combined changes made to date for the 2018 cycle result in a 303(d) List of Impaired Waters containing a total of six thousand seven hundred thirty-eight (6,738) impairments. Figure 5 shows the location of all waters on Indiana’s draft 2018 303(d) list. Figures 5 through 10 show the location of the following top five types of impairments of Indiana waters:

- E. coli. (Figure 6)
- Impaired Biotic Communities. (Figure 7)
- PCBs in Fish Tissue. (Figure 8)
- Dissolved Oxygen. (Figure 9)
- Nutrients and nutrient-related parameters (Figure 10)

Appendix 10 consists of all Category 5A and Category 5B impairments that together comprise the 2018 303(d) list of impaired waters for Indiana. The 303(d) list is a subset of Indiana’s Consolidated List, which will be submitted to U.S. EPA with IDEM’s 2018 IR.
Table 2: Changes to the 2016 303(d) List submitted to U.S. EPA on February 23, 2017.

<table>
<thead>
<tr>
<th>Nature of Change</th>
<th>Total Number of Impairments</th>
<th>Total Number of Individual Waterbodies*</th>
<th>Stream Impairments</th>
<th>Individual Streams**</th>
<th>Stream Miles</th>
<th>Lake Impairments</th>
<th>Individual Lakes***</th>
<th>Lake Acres***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impairments moved from Category 5 to Category 4A based on TMDL development*</td>
<td>261</td>
<td>176</td>
<td>261</td>
<td>176</td>
<td>1,491</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Impairments removed from Category 5 based on new or revised assessments indicating the applicable WQS are being met</td>
<td>20</td>
<td>17</td>
<td>20</td>
<td>17</td>
<td>276</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Impairments removed from Category 5 as a result of ongoing review for errors and inconsistencies in listing</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>22</td>
<td>1</td>
<td>1</td>
<td>1,854</td>
</tr>
<tr>
<td>Impairments removed from Category 5 due to changes in segmentation</td>
<td>1,374</td>
<td>949</td>
<td>1,374</td>
<td>949</td>
<td>18,315</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Impairments Added to Category 5</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impairments added to Category 5 based on new or revised assessments</td>
<td>233</td>
<td>172</td>
<td>233</td>
<td>172</td>
<td>1,338</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Impairments added back to Category 5 due to changes in segmentation</td>
<td>4,383</td>
<td>2,894</td>
<td>4,383</td>
<td>2,894</td>
<td>19,253</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

*The term “waterbodies” includes streams, stream reaches, and Great Lakes shoreline reaches, which are measured in miles and are included in the values shown for streams. Lakes are also considered waterbodies.

**The term “streams” refers to all streams, reaches of streams, and Great Lakes shoreline reaches defined by a unique Assessment Unit ID (AUID).

***For accurate year-to-year comparisons, this value does not include Lake Michigan, which is 154,176 acres in size.
Table 3: Changes to Indiana’s 303(d) List of Impaired Waters in terms of the total number of impairments added to or removed from the finalized 2016 303(d) list submitted to U.S. EPA on February 23, 2017.

<table>
<thead>
<tr>
<th>Total Number of Impairments on the 2016 303(d) List Submitted to U.S. EPA on February 23, 2017</th>
<th>3,780*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impairments moved from Category 5 to Category 4A based on TMDL development</td>
<td>261</td>
</tr>
<tr>
<td>Impairments removed from Category 5 based on new or revised assessments indicating the applicable WQS are met</td>
<td>20</td>
</tr>
<tr>
<td>Impairments removed from Category 5 as a result of ongoing review for errors and inconsistencies in listing</td>
<td>3</td>
</tr>
<tr>
<td>Impairments removed from Category 5 due to changes in segmentation</td>
<td>1,374</td>
</tr>
<tr>
<td><strong>DELISTINGS TOTAL</strong></td>
<td>1,658</td>
</tr>
<tr>
<td>Impairments added to Category 5 based on new or revised assessments</td>
<td>233</td>
</tr>
<tr>
<td>Impairments added back to Category 5 due to changes in segmentation</td>
<td>4,383</td>
</tr>
<tr>
<td><strong>ADDITIONS TOTAL</strong></td>
<td>4,616</td>
</tr>
<tr>
<td>Total Number of Impairments on Draft 2018 303(d) List</td>
<td>6,738</td>
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</table>

*This value corrects the value of 3,786 impairments reported in the summary tables submitted in Appendix O with Indiana’s addendum to its 2016 Integrated Report submitted to U.S. EPA on February 23, 2017.
Table 4: Comparison of the finalized 2016 303(d) List of Impaired Waters Submitted to U.S. EPA as part of IDEM’s addendum to its 2016 Integrated Report (IR) on February 23, 2017 and the 2018 303(d) List of Impaired Waters. The values shown for 2016 correct those reported in the narrative addendum based on the impairments identified in Attachment 7 of the addendum.

<table>
<thead>
<tr>
<th>303(d) List</th>
<th>Total Number of Impairments</th>
<th>Total Number of Individual Waterbodies*</th>
<th>Stream Impairments</th>
<th>Individual Streams**</th>
<th>Stream Miles</th>
<th>Lake Impairments</th>
<th>Individual Lakes ***</th>
<th>Lake Acres***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finalized 2016 303(d) List from Attachment 7 of Indiana’s 2016 IR addendum</td>
<td>3,780</td>
<td>2,509</td>
<td>3,606</td>
<td>2,371</td>
<td>20,849</td>
<td>174</td>
<td>138</td>
<td>58,196</td>
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<tr>
<td>Draft 2018 303(d) List</td>
<td>6,736</td>
<td>4,391</td>
<td>6,563</td>
<td>4,254</td>
<td>21,423</td>
<td>173</td>
<td>137</td>
<td>56,342</td>
</tr>
</tbody>
</table>

*The term “waterbodies” includes streams, stream reaches, and Great Lakes shoreline reaches, which are measured in miles and are included in the values shown for streams. Lakes are also considered waterbodies.

**The term “streams” refers to all streams, reaches of streams, and Great Lakes shoreline reaches defined by a unique Assessment Unit ID (AUID).

***For accurate year-to-year comparisons, this value does not include Lake Michigan, which is 154,176 acres in size.
Table 5: Comparison of the types of impairments shown on the finalized 2016 303(d) List of Impaired Waters Submitted to U.S. EPA as part of IDEM’s addendum to its 2016 Integrated Report (IR) on February 23, 2017 and the 2018 303(d) List of Impaired Waters. The values shown for 2016 correct those reported in the narrative addendum based on the impairments identified in Attachment 7 of the addendum.

<table>
<thead>
<tr>
<th>Cause of Impairment</th>
<th>Number of Impairments on the Finalized 2016 303(d) List as Shown in Attachment 7 of Indiana’s 2016 IR Addendum</th>
<th>Number of Impairments on the 2018 303(d) List</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. COLI</td>
<td>1,386</td>
<td>2,381</td>
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<tr>
<td>IMPAIRED BIOTIC COMMUNITIES</td>
<td>807</td>
<td>1,553</td>
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<tr>
<td>PCBs (FISH TISSUE)</td>
<td>597</td>
<td>1,256</td>
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<tr>
<td>DISSOLVED OXYGEN</td>
<td>323</td>
<td>565</td>
</tr>
<tr>
<td>NUTRIENTS</td>
<td>277</td>
<td>449</td>
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<tr>
<td>TOTAL MERCURY (FISH TISSUE)</td>
<td>68</td>
<td>139</td>
</tr>
<tr>
<td>DIOXIN (WATER)</td>
<td>69</td>
<td>69</td>
</tr>
<tr>
<td>PCBs (WATER)</td>
<td>69</td>
<td>69</td>
</tr>
<tr>
<td>TOTAL MERCURY (WATER)</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>PH</td>
<td>22</td>
<td>38</td>
</tr>
<tr>
<td>CHLORIDE</td>
<td>18</td>
<td>50</td>
</tr>
<tr>
<td>ALGAE</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>TASTE AND ODOR</td>
<td>12</td>
<td>12</td>
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<td>AMMONIA</td>
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<td>23</td>
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<tr>
<td>FREE CYANIDE</td>
<td>6</td>
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<td>OIL AND GREASE</td>
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<td>PESTICIDES</td>
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<td>SILTATION</td>
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<td>SULFATE</td>
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<td>CADMIUM (DISSOLVED)</td>
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<tr>
<td>COPPER (DISSOLVED)</td>
<td>0</td>
<td>1</td>
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<tr>
<td>NICKEL (DISSOLVED)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ZINC (DISSOLVED)</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,780</strong></td>
<td><strong>6,736</strong></td>
</tr>
</tbody>
</table>
Figure 5: All Category 5 waters on Indiana’s 2018 303(d) list.
Figure 6: All waters in which E. coli impairments have been identified to date, including those for which a TMDL has been approved (Category 4A) and those on Indiana’s 2018 303(d) list (Category 5).
Figure 7: All waters in which impaired biological communities (IBC) have been found to date, including those for which a TMDL has been approved (Category 4A) and those on Indiana’s 2018 303(d) list (Category 5)
Figure 8: All waters in which high concentrations of PCBs in fish tissue have been found and which appear in Category 5B of Indiana’s 2018 303(d) list.
Figure 9: All waters in which low dissolved oxygen (DO) concentrations have been identified to date, including those for which a TMDL has been approved (Category 4A) and those on Indiana’s 2018 303(d) list (Category 5).
Figure 10: All waters in which impairments for nutrients and nutrient-related issues have been identified to date, including those for which a TMDL has been completed (Category 4A) and those on Indiana’s 2018 303(d) list (Category 5).
MAP INFORMATION SOURCES

All information used to create the maps in this report was obtained from IDEM databases and Geographical Information Systems Libraries, and the State of Indiana Geographical Information Office.

REFERENCES CITED

Indiana Administrative Code (IAC): http://www.in.gov/legislative/iac/title327.html


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APPENDIX 1
IDEM’s 2018 Consolidated Assessment and Listing Methodology (CALM)

[PLACEHOLDER]
APPENDIX 2

IDEM’s Total Maximum Daily Load
Program Priority Framework and Development Schedule
Indiana’s 303(d) TMDL Program Priority Framework:

A Process for Implementing the National CWA 303(d) Long-Term Vision in Indiana

Watershed Planning and Restoration Section
Watershed Assessment and Planning Branch
Office of Water Quality
Indiana Department of Environmental Management

July 8, 2015
Background

The U.S. Environmental Protection Agency (U.S. EPA) has worked with State program managers to develop a new long-term Vision and Goals for the Clean Water Act (CWA) Section 303(d) Program. In Section 303(d) of the CWA, States are required to develop a list of impaired waters that do not meet State water quality standards, and establish priority rankings for waters on the list to develop Total Maximum Daily Loads (TMDLS). The purpose of this revision to the existing CWA Section 303(d) program is to assist with focusing State efforts to advance the effectiveness of the program in the future. Currently there are six tenants that form the groundwork of the new national long-term vision ("the Vision"): 

Prioritization – 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

Assessment – By 2020, States identify the extent of healthy and CWA Section 303(d) impaired waters in each State’s priority watersheds or waters through site-specific assessments

Protection – For the 2016 reporting cycle and beyond, in addition to the traditional TMDL development priorities and schedules for waters in need of restoration, States identify protection planning priorities and approaches along with schedules to help prevent impairments in healthy waters, in a manner consistent with each State’s systematic prioritization

Alternatives – By 2018, States use alternative approaches, in addition to TMDLs, that incorporate adaptive management and are tailored to specific circumstances where such approaches are better suited to implement priority watershed or water actions that achieve the water quality goals of each state, including identifying and reducing nonpoint sources of pollution

Engagement – By 2014, EPA and the States actively engage the public and other stakeholders to improve and protect water quality, as demonstrated by documented, inclusive, transparent, and consistent communication; requesting and sharing feedback on proposed approaches; and enhanced understanding of program objectives

Integration – By 2016, EPA and the States identify and coordinate implementation of key point source and nonpoint source control actions that foster effective integration across CWA programs, other statutory programs (e.g., CERCLA, RCRA, SDWA, CAA), and the water quality efforts of other Federal departments and agencies (e.g., Agriculture, Interior, Commerce) to achieve the water quality goals of each state (U.S. EPA 2013).
Indiana’s Current Approach

The Clean Water Act (CWA) Section 303(d) Program in Indiana is administered by the Indiana Department of Environmental Management’s (IDEM) Watershed Assessment and Planning Branch (WAPB), which also conducts surface water quality monitoring according to the Indiana Surface Water Quality Strategy, 2011-2019. While the WAPB uses data from several of its monitoring programs to determine water quality status, it primarily relies on a stratified, random sampling design to meet the CWA 305(b) requirement to “assess all waters.” This approach is employed in a rotating basin cycle of nine years and will result in a comprehensive and updated data set for the entire state by 2019. Water quality data collected are assessed using applicable water quality criteria in the State’s water quality standards and waterbodies are placed into one or more categories of the state’s Consolidated List, available biennially in Indiana’s Integrated Report.

While only a portion of the 63,600 miles of streams and rivers in Indiana have been monitored to date (leaving approximately 40,000 miles unassessed due to lack of data), approximately 20,000 miles of streams are listed as impaired under Category 5. Since the inception of the TMDL program in Indiana, 46 TMDL documents have been developed resulting in 1,225 individual TMDLs moving waterbodies from the 303(d) List of Impaired Waters Category 5 into Category 4a. Prior to the commencement of the Vision, IDEM’s WAPB worked with U.S. EPA Region 5 every 303(d) listing cycle to determine the number of TMDLs to be developed. With the development of a national focus on showing results of water quality improvement, including the advent of several U.S. EPA focused success measures, Indiana has been moving toward a more holistic approach of TMDL development. In 2005, the TMDL and Nonpoint Source Program (NPS) were combined into the same section to realize efficiencies and better integrate the work of the two programs with the intended outcome that better outreach to watershed organizations would lead to implementation of the Reasonable Assurance section of the TMDL. In 2010, the TMDL and NPS program areas were part of an agency reorganization that resulted in a move to the Assessments Branch, which conducts surface water monitoring. This move allowed the integration of TMDL staff with other monitoring staff, yielding multiple benefits, including a more rigorous sampling design.

In 2012, it was determined that IDEM’s involvement in monitoring for watershed management planning would coincide with monitoring done in preparation for a TMDL in the same watershed. The first TMDL project in which this occurred was the Deep River TMDL project, which was monitored in 2013. The TMDL report was approved by U.S. EPA in 2014 and the watershed group is currently incorporating information from the TMDL into a watershed management plan. This TMDL development and implementation strategy has been replicated in four additional watersheds to date, with plans to begin monitoring in yet another watershed in 2015. Key to the success of these projects is the availability of a watershed group in the TMDL watershed – without local support, implementation of the nonpoint source sections of the TMDL is likely to be compromised.
Moving forward with the Vision

At the June 2014 Watershed Planning and Restoration Section staff meeting, a program priority team committee was formed to begin work on Indiana’s strategy to implement the national Vision for TMDL programs. The core members of the team were the NPS and TMDL program manager, the TMDL program team leader, the NPS senior watershed planner, and two watershed specialists and Section 319 grant project managers. Ad hoc members were involved as needed, including upper management, other program areas, and watershed monitoring staff. The team members began meeting regularly starting in August 2014, working toward the development of the new Indiana 303(d) TMDL Vision.

Indiana’s TMDL Program Prioritization

Priority Watershed Selection Criteria

The focus of this process document is defining the method used to prioritize which waters will be the focus of TMDL planning and watershed restoration. The process for determining the TMDL priority watersheds will meet the following criteria (Figure 1). The first four criteria are required elements, while the remaining criteria are additional considerations when choosing between watersheds identified by working through the first four.

1. First, the prioritization will begin by identifying those watersheds with impairments based upon Indiana’s water quality standards and 303(d) list, since the CWA mandates that TMDLs be developed for impaired waterways. As the monitoring and assessment process continues to discover new impairments, the priority list will be updated from the most recent 303(d) List of Impaired Waters.

2. The second criterion ranks watersheds based on their current ability to meet Indiana’s aquatic life designated use. Waters that have been designated with an impaired biotic community, but show a reasonable expectation for ecological recovery by means of a “good” habitat score (QHEI) and likely due to nutrient and/or sediment will be prioritized first for TMDL development. Indiana has a highly modified hydrologic landscape, and where current law and codes prohibit physical stream restoration, NPS improvements will most reasonably show biological community response where adequate habitat already exists. Within these watersheds identified for impaired aquatic life use, IDEM will also prioritize impairments of the recreational use due to exceedances of the E. coli criteria.

3. The third criterion will identify those watersheds where neither an existing TMDL, nor a watershed planning effort has been completed. This criterion minimizes duplication of efforts where work is already progressing to improve water quality.
(4) The fourth criterion to be considered for TMDL development is the reasonable expectation that an entity to drive implementation exists in the watershed. Part of the TMDL process requires the State to provide “reasonable assurance” that the load reduction recommendations will be implemented. The presence of a dedicated entity (e.g. watershed group) motivated to implement a TMDL will reinforce the reasonable assurance of NPS reductions.

Additional Criteria Considered:

- Identify those surface waters that provide a source of water for public drinking water use. Citizens rely on adequate clean water for drinking, commercial and industrial uses for everyday life.

- Identify waters that are upstream of public-access lakes used for recreation. Nutrient-induced harmful algal blooms have been on the rise recently in Indiana lakes and reservoirs, threatening the use of these waterbodies for primary contact recreation.

- Identify waters that are home to endangered, threatened or rare species. Water quality pollution and loss of habitat have reduced the number of some species to critical numbers; restoration and protection of the remaining populations should be a priority.

- TMDL development based on priorities specific to the State of Indiana. This step is based on conversations about overlapping priorities with internal and external agency partners such as the Indiana Conservation Partnership (ICP)\(^1\), as well as consideration of time sensitive or current relevant high profile issues (e.g. Western Lake Erie Basin eutrophication).

\(^1\) The ICP is comprised of eight Indiana agencies and organizations who share a common goal of promoting conservation. Members include the Indiana Association of Soil and Water Conservation Districts, Indiana Department of Environmental Management, Indiana Department of Natural Resources, Indiana State Department of Agriculture, Purdue Cooperative Extension Service, Indiana State Soil Conservation Board, USDA Farm Service Agency and the USDA Natural Resources Conservation Service.
Figure 1 Priority watershed selection process

- Prioritize by 303(d) Listed Waters
- IBC Impairments with "Good" Habitat
- Lack of Multiparameter TMDL and Watershed Plan
- Presence of Entity for Implementation
- Others:
  - Drinking Water Source
  - State Partner Priorities
  - Influence on Recreational Lake
  - ETR Species
Priority List 2015-2022

The key to IDEM’s current TMDL implementation strategy is the availability of a local stakeholder group ready, willing, and able to implement the TMDL. Due to the nature and dynamics of such groups, the availability of a cohesive group of stakeholders to lead a watershed planning and/or implementation effort subsequent to development of a TMDL is often unknown on a long-term basis. Therefore, though IDEM’s process for choosing TMDL watersheds remains consistent, its list of priority watersheds is in a necessary state of flux. IDEM also finds itself with resource constraints that limit its TMDL development commitment to providing TMDLs for one 10-digit watershed per fiscal year. These TMDLs will be restricted to streams and rivers with E. coli impairment, and impaired biotic communities caused by one or more of the following conditions:

- Dissolved oxygen
- Algae
- Total Suspended Solids
- Phosphorus

IDEM has agreed with U.S. EPA to develop three TMDLs that are already in progress using the prior selection methods, and one TMDL using the new Vision prioritization method, each focused on 10-digit watershed scales. These four TMDLs are high priority for completion in the short term, as watershed groups are poised to develop plans and drive implementation in the area. These four TMDLs and their completion years are as follows:

- Southern Whitewater River (2015)
- Mississinewa River (2016)
- South Fork Blue River (2016)
- Salt Creek (2017)

The 10-digit watersheds listed in Appendix A may meet IDEM’s criteria for TMDL development over the next six years. Each watershed has been selected using the four priority watershed selection criteria (p.3-4). They have been further prioritized for potential short-term and long-term selection using the additional watershed selection criteria (p.4), categorizing them as either high (green), medium (coral), or low (blue). Beginning in 2016, IDEM will select one 10-digit watershed per year for TMDL development and implementation after 2017, as agreed upon with U.S. EPA.

TMDL Alternatives and Protection Strategies

IDEM does not expect to explicitly prioritize TMDL alternatives or protection strategies at this time, but will explore the use of TMDL alternatives and protection strategies as the situation arises, and work with USEPA to collaborate on mutually acceptable plans.
## APPENDIX A - Potential IDEM Priority Watershed Selections with Impaired Biotic Communities

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
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<td>White</td>
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<td>T100</td>
<td>N</td>
<td>-</td>
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<td>YES</td>
<td>MIDDLE E.</td>
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<td>W</td>
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<td>-</td>
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<td>-</td>
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</tbody>
</table>

Notice of Public Comment Period for Indiana’s 2018 303(d) of Impaired Waters: Appendix 2