

Ohio 2010 Integrated Report

## Section J

# Addressing Waters Not Meeting Water Quality Goals



The Clean Water Act requires that States identify waters not meeting water quality goals and prioritize them for action to restore their beneficial uses. The resulting list of prioritized impaired waters is known as the 303(d) list. Ohio’s 2010 303(d) list is presented in Section L4.

Because of the significant changes included in the 2010 Integrated Report—assessment unit size, methodologies, new data, listing by use—the number of changes to Ohio’s 303(d) list is substantial. This section will explain the method used to transform the 2008 303(d) list into the 2010 list, lay out the prioritizing and delisting processes and results, introduce a crosswalk between the 2008 and 2010 303(d) lists, and report on the status of Ohio total maximum daily load (TMDL) efforts including schedules for future TMDLs and monitoring in Ohio.

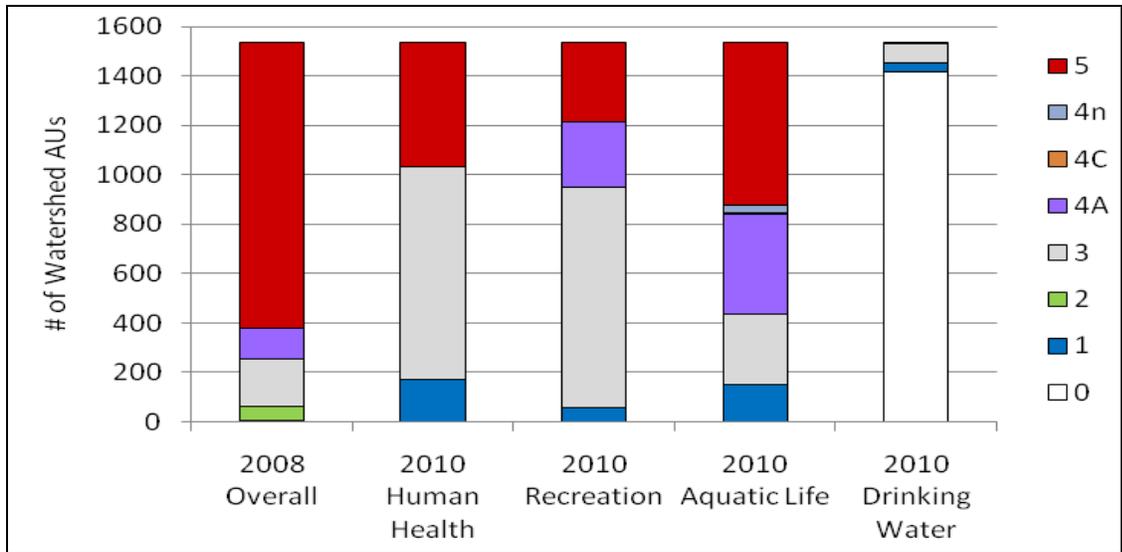
As explained in earlier sections, Ohio modified the five-category listing structure suggested by U.S. EPA to accommodate listing by beneficial use. Another minor change in the 2010 report is the introduction of subcategories to give more information about a water’s status, as shown in Table J-1.

**Table J-1. Category definitions for the 2010 Integrated Report and 303(d) list.**

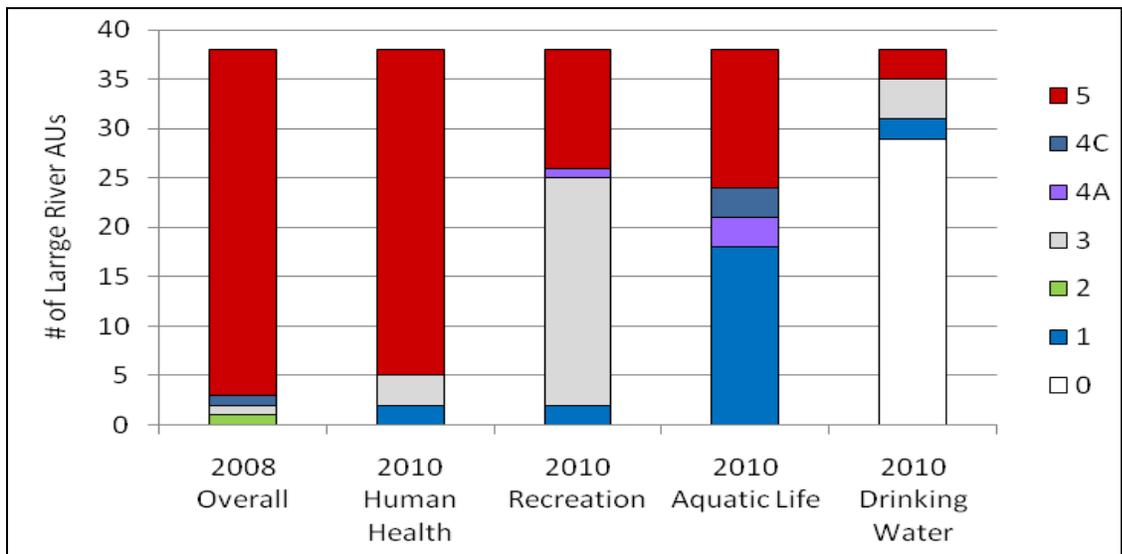
| Category <sup>1</sup> |   | Subcategory |  |
|-----------------------|---|-------------|--|
| 0                     | No waters currently utilized for water supply |             |  |
| 1                     | Use attaining                                 | h           | Historical data  |
|                       |   | x           | Retained from 2008 IR  |
| 2                     | Not applicable in new (2010) Ohio system      |             |  |
| 3                     | Use attainment unknown                        | h           | Historical data  |
|                       |   | i           | Insufficient data  |
|                       |   | x           | Retained from 2008 IR  |
| 4                     | Impaired; TMDL not needed                     | A           | TMDL complete  |
|                       |   | B           | Other required control measures will result in attainment of use |
|                       |   | C           | Not a pollutant  |
|                       |   | h           | Historical data  |
|                       |   | n           | Natural causes and sources                                       |
|                       |   | x           | Retained from 2008 IR  |
| 5                     | Impaired; TMDL needed                         | M           | Mercury  |
|                       |   | h           | Historical data  |
|                       |   | x           | Retained from 2008 IR  |

<sup>1</sup> Shading indicates categories defined by U.S. EPA; additional categories and subcategories are defined by Ohio EPA.

Figures J-1 and J-2 contrast the 2008 and 2010 listing results for the watershed and large river units, respectively. (The 2008 results were translated into the new, smaller assessment units using the process described in the next section.) The effect of the overall category in 2008—that an impairment of any use means the unit is impaired for all uses—is more prominent in the watershed assessment units. The other notable difference is the effect of the new “0” category, which indicates that relatively few assessment units actually contain a public drinking water intake. In general, listing by use (2010) allows more information to be transmitted and presents a more accurate picture of water quality in Ohio. Maps of listing results by unit type and use are included in the Section K.



**Figure J-1. Comparison of 2008 and 2010 listing results for watershed assessment units.** (2008 unit results transformed into 2010 units using procedure described in Section J1.)



**Figure J-2. Comparison of 2008 and 2010 listing results for large river assessment units.** (2008 unit results transformed into 2010 units using procedure described in Section J1.)

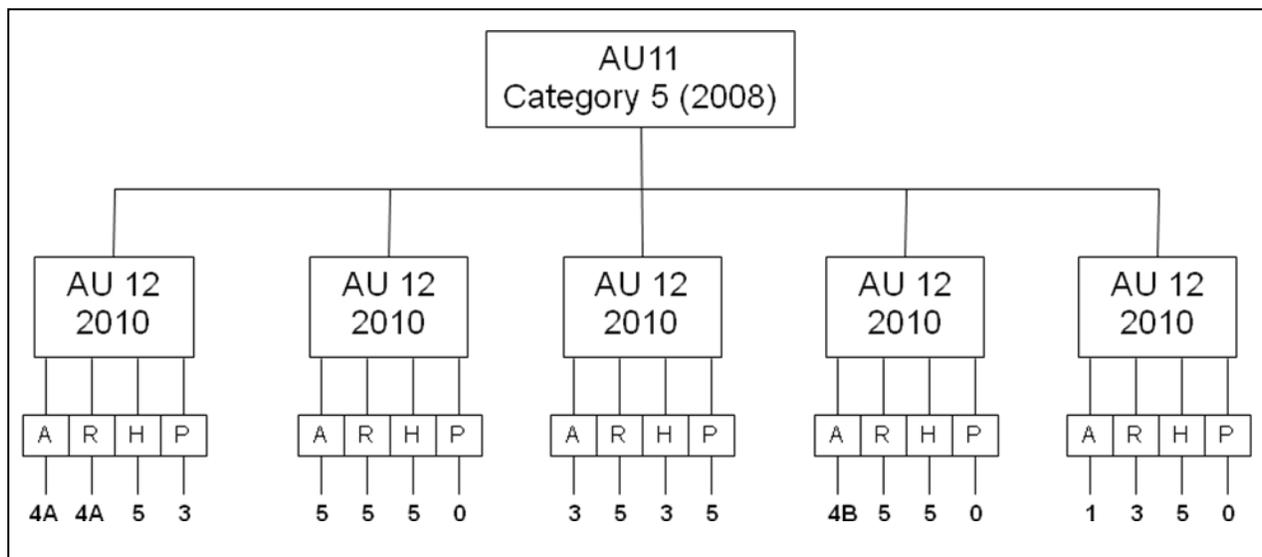
## J1. Transforming the 2008 303(d) List

Ohio's 2010 303(d) list incorporates the most substantial changes since the 2002 list (as described in Section A). The overall effect of the modifications on Ohio's 303(d) list is a "correction" of the list to inject the more detailed results and to remove areas where there are no (and never were) data. This does not imply less environmental vigilance, but rather a refinement of the list to provide a sharper focus on where problems exist. A conservative, multi-step process was developed to ensure that listings approved by U.S. EPA in the 2008 303(d) list were not delisted without good cause and that the process is as transparent as possible.

The primary reason for many delistings is that until 2010 Ohio listed by assessment unit—a single overall “status” assigned to the unit. An impairment of one beneficial use caused the assessment unit to be category 5 (impaired) regardless of the status of other uses. In the 2010 listing procedure, Ohio is listing by beneficial use within each assessment unit, so uses that are attaining water quality standards and those with no data to assess will be delisted, leaving the category 5 only for the impaired use in the assessment unit.

Figure J-3 illustrates how the 2008 and 2010 listing procedures differ. In the example, an assessment unit that was listed in 2008 as impaired (i.e., category 5) will appear on the 2010 303(d) list as five units with four uses each; thus, reporting one piece of information changes to reporting 20 pieces of information. Whereas the 2008 list indicated only that the unit was impaired, the new listing indicates all of the following information:

- Aquatic life use is impaired (5) in one unit, not impaired (1) in one, and unknown (3) in one. A TMDL to address impairments has been completed in one unit (4A), and the impairment in the remaining unit is being addressed in some other way (4B, e.g., a discharge permit).
- Recreation use is impaired (5) in three units, unknown (3) in one, and a TMDL to address the impairment in one unit has been completed (4A).
- Human health results based on fish tissue analysis indicate that four of the five units are impaired (5) and one is unknown (3).
- Public drinking water supplies exist in only two of the five units, and one of those is impaired (5). The status of the other is unknown (3).



**Figure J-3. Differences in the 2008 and 2010 listing procedures.**

Table J-2 shows the number of potential listings that could result from the combination of smaller assessment units and listing by individual use. The 17-fold increase in reporting possibilities reveals more about the condition of Ohio’s waters than past lists.

**Table J-2. Expansion of listing opportunities in 2010 303(d) list.**

| Assessment Unit (AU) Type | 2008          |                         |                                   | 2010          |                         |                                   |
|---------------------------|---------------|-------------------------|-----------------------------------|---------------|-------------------------|-----------------------------------|
|                           | Number of AUs | Status Reports per Unit | Total Number of Possible Listings | Number of AUs | Status Reports per Unit | Total Number of Possible Listings |
| Watershed                 | 331           | 1                       | 331                               | 1538          | 4                       | 6,152                             |
| Large river               | 23            | 1                       | 23                                | 38            | 4                       | 152                               |
| Lake Erie shore           | 3             | 1                       | 3                                 | 3             | 4                       | 12                                |
| Totals                    | 357           | 1                       | 357                               | 1,579         | 4                       | 6,316                             |

Figure J-4 shows the steps taken to transform the 2008 list into the 2010 list. In Step 1, the change to the smaller assessment unit size is made. The 2008 category, denoted by a new “x” subcategory, is assigned to each of the four uses evaluated in 2008. As explained earlier, in past 303(d) lists a category 5 (impaired) in any use meant that the unit was impaired, so this step is necessary to properly delist waters.

Next, the “use-specific” analysis results from 2008 were temporarily assigned to each new assessment unit. This information is important so that the proper reason for a category change from the 2008 list can be assigned. It also allows a limited comparison to the 2008 results.

Now that the stage is set, each use in each assessment unit can be evaluated using the appropriate methods and available data to determine the 2010 listing category (Step 3). This is the work explained in Sections E, F, G, and H of this report. For the Aquatic Life use, database limitations dictate that only assessment units monitored between 2005 and 2008 are reevaluated. Assessment units with older data retain the “x” subcategory; these residual assignments will be resolved in future lists as older data are moved into the new database.

In the final step, the 2010 categories are reconciled against the 2008 overall category for each use in each assessment unit. Use and unit changes are listed and delisted as necessary, with appropriate reasons noted. The result is the 2010 303(d) list, updated to the new assessment units (see Table J-2) and reported for each individual beneficial use.

Because not all data for the aquatic life use are available in the new database yet, Ohio EPA expects that this process will need to be repeated in future 303(d) lists until all the residual use assignments are eliminated from the 303(d) list. Likewise, further analysis of TMDLs completed under the old, larger assessment units will be necessary to determine if changes in the 4A assignments can be made.

Table J-3 shows how Black Fork and Clear Fork watersheds in the Mohican River watershed appear in the 2008 and 2010 reports. The four larger, 11-digit assessment units, each with an overall category, are transformed into 72 categories that more accurately report the status of the watershed. These watersheds were monitored in 2007 so some of the changes result from new data in addition to the other changes discussed throughout this report.

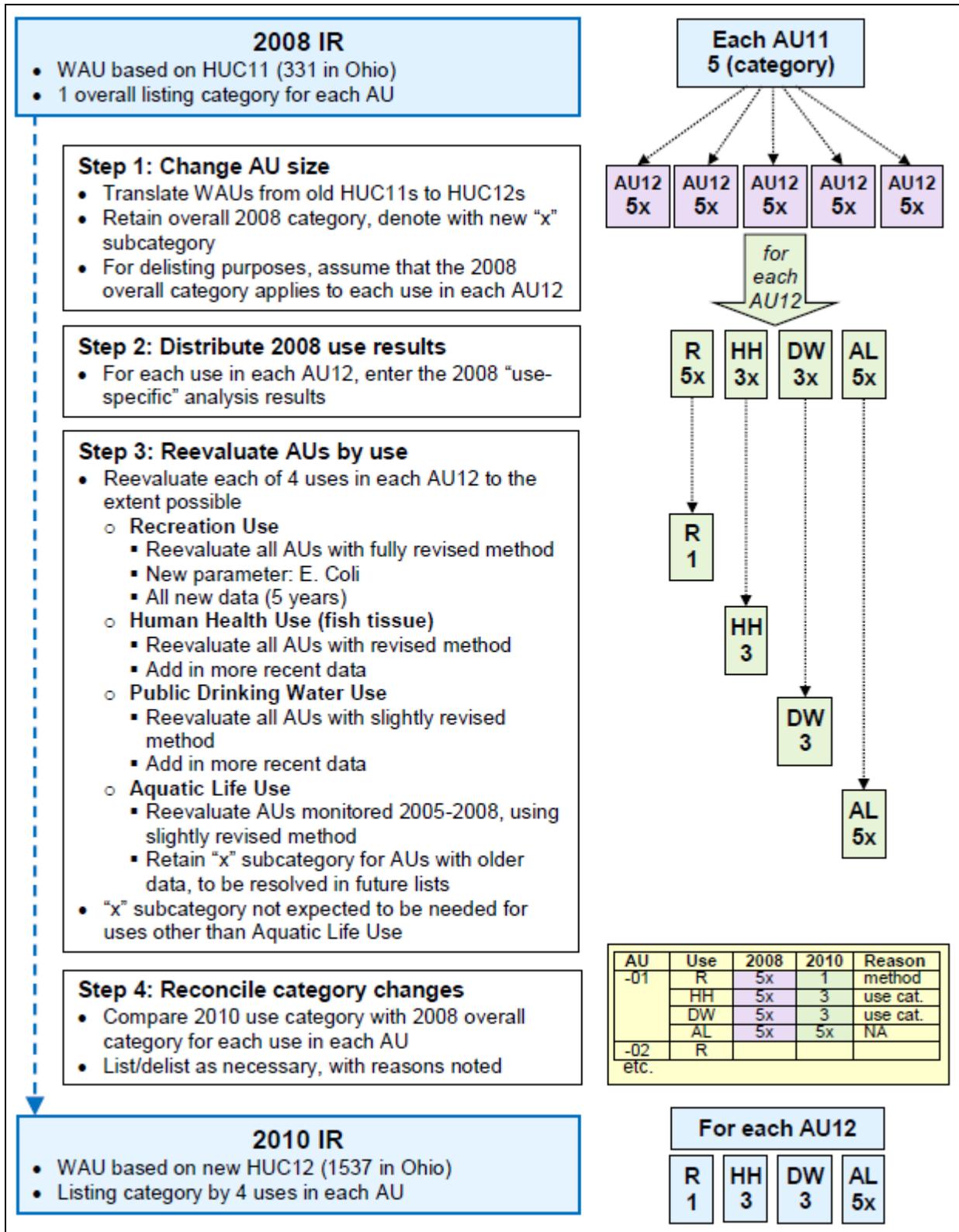


Figure J-4. Steps to transform 2008 list into 2010 list.

**Table J-3. Example of transformation from the 2008 to the 2010 303(d) lists.**

| 2008 List                             |          | 2010 List      |   |                       |   |    |    |
|---------------------------------------|----------|----------------|---|-----------------------|---|----|----|
| AU (11 digit)                         | Category | AU (12 digit)  | Drainage Area (mi <sup>2</sup> ) <sup>1</sup> | Category <sup>2</sup> |   |    |    |
|                                       |          |                |   | HH                    | R | AL | DW |
| 05040002 010<br>161.4 mi <sup>2</sup> | 5        | 05040002 01 01 | 20.84   | 3                     | 5 | 5  | 3i |
|                                       |          | 05040002 01 02 | 39.47   | 3i                    | 5 | 5  | 3i |
|                                       |          | 05040002 01 03 | 23.00   | 3                     | 5 | 3i | 0  |
|                                       |          | 05040002 01 04 | 17.14   | 3                     | 5 | 1  | 0  |
|                                       |          | 05040002 01 05 | 61.62   | 3                     | 5 | 5  | 0  |
| 05040002 020<br>139.7 mi <sup>2</sup> | 5        | 05040002 02 01 | 31.94   | 5h                    | 5 | 5  | 0  |
|                                       |          | 05040002 02 02 | 21.65   | 1                     | 3 | 3  | 0  |
|                                       |          | 05040002 02 03 | 29.41   | 5h                    | 5 | 5  | 0  |
|                                       |          | 05040002 02 04 | 47.81   | 5h                    | 5 | 5  | 0  |
|                                       |          | 05040002 02 05 | 8.97  | 5h                    | 1 | 5  | 0  |
| 05040002 030<br>112.1 mi <sup>2</sup> | 5        | 05040002 03 01 | 33.78   | 5                     | 1 | 3i | 1  |
|                                       |          | 05040002 03 02 | 47.69   | 3                     | 5 | 1  | 0  |
|                                       |          | 05040002 03 03 | 29.63   | 3                     | 5 | 5  | 0  |
| 05040002 040<br>105.3 mi <sup>2</sup> | 2        | 05040002 04 01 | 24.63   | 3                     | 5 | 1  | 0  |
|                                       |          | 05040002 04 02 | 15.62   | 3                     | 5 | 1  | 0  |
|                                       |          | 05040002 04 03 | 22.89   | 3                     | 5 | 1  | 0  |
|                                       |          | 05040002 04 04 | 14.15   | 3                     | 5 | 1  | 0  |
|                                       |          | 05040002 04 05 | 29.37   | 5                     | 5 | 1  | 0  |

<sup>1</sup> Drainage areas for the 12-digit AUs will not add up to the 11-digit AU areas because the 12-digit areas were redrawn in 2008 (i.e., the 11- and 12-digit AUs represent two different systems). See Section A1 for further discussion.

<sup>2</sup> Refer to Table J-1 for category descriptions.

## J2. Prioritizing the Impaired Waters: the 303(d) List

The impaired waters were identified and assigned a category by individual beneficial use in Sections E, F, G, and H. After waters are identified as impaired and requiring a TMDL, the category 5 waters are prioritized to produce the 303(d) list (see Table L4). Because Ohio uses a highly integrated monitoring and TMDL linkage to ensure efficient use of resources, it makes sense to continue to set priorities by assessment unit rather than by individual use.

### Ohio River and Lake Erie

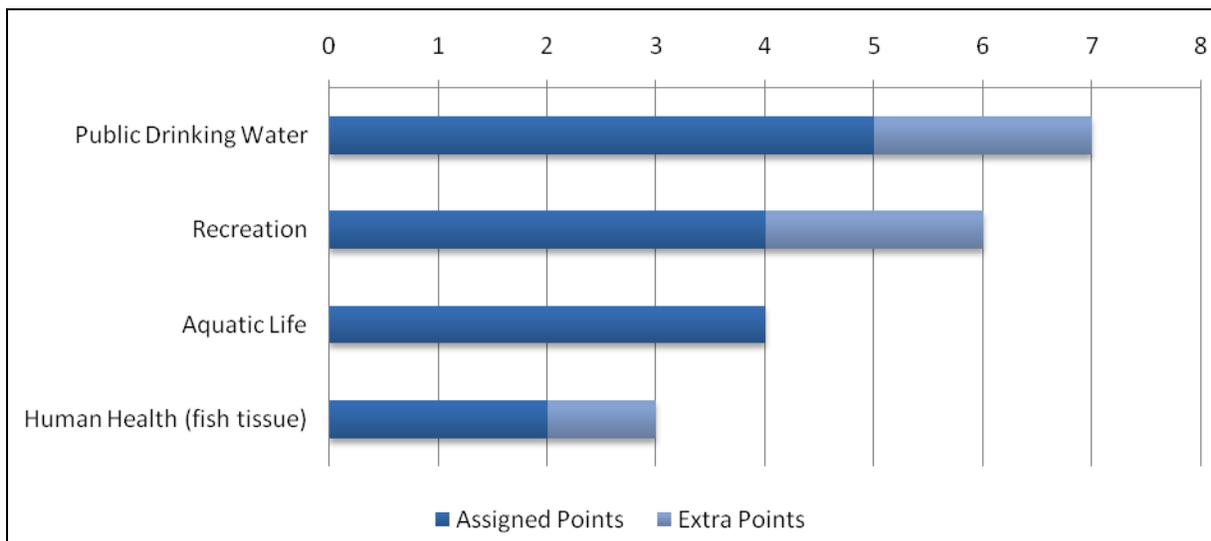
Other organizations have accepted lead responsibility for TMDLs in two special waters affected by multiple jurisdictions: U.S. EPA for the open waters of Lake Erie and ORSANCO for the mainstem of the Ohio River. Ohio EPA automatically assigns these waters a low priority for *Ohio EPA-initiated action*. Ohio EPA is participating in TMDL and similar actions conducted by the lead organizations. Lake Erie nearshore areas are assigned the priority of their contiguous watershed assessment units.

### Inland Waters

For inland waters, a point system similar to that used in the 2008 Integrated Report was used to assign priority. Points were adjusted to reflect methodology changes for all uses. A total of 20

points could be assigned to an assessment unit, distributed as shown in Figure J-5. The priority results for specific assessment units are reported in Section L and in assessment unit summary information available on the web page.

As a practical matter, only the 1,538 watershed and 38 large river assessment units are included in the priority-setting exercise. Lake Erie nearshore areas were assigned the priority of the appropriate surrounding or contiguous watershed assessment unit.



**Figure J-5. Priority points assigned based on use impairment or other factors (extra points).**

The assessment units were assigned priority points using the guidelines in Table J-4. The points assigned to the public drinking water and human health uses are straightforward. For the recreation and aquatic life uses, points are assigned based on a computed index score (see Section F2 and G2). The lowest quartile (scores between 0 and 25) get the fewest points because a TMDL may not be the most effective way to address the impairments. Scores in this range indicate severe basin-wide problems, comprehensive degradation that may require significant time and resources and broad-scale fixes, including, possibly, fundamental changes in land use practices. Educating about how water quality is affected by various practices and encouraging stewardship may be more effective in these areas than a traditional TMDL approach.

Scores in the highest quartile (between 75.1 and 100) generally indicate a localized water quality issue. Addressing the impairment may not require a complete watershed effort; rather, a targeted fix for a particular problem may be most effective. Thus, these receive the next lowest number of priority points. The most points are awarded for scores in the middle quartiles (between 25.1 and 50 and between 50.1 and 75), indicating problems of such scale that purposeful action should produce a measurable response within a 10-year period. These waters are the best candidates for a traditional TMDL.

Two additional points may be awarded to assessment units that are impaired for the Recreation use and contain Class A waters. Class A waters are those most suitable for recreation, such as popular paddling streams and lakes with public access points developed, maintained, and publicized by governmental entities.

**Table J-4. Priority points for impaired assessment units.**

| Points  | Condition   | # Assessment Units |       |
|---|---|--------------------|-------|
|   |   | WAUs               | LRAUs |
| <b>Human Health Use impairment (fish tissue contaminants) (maximum of 3 points)</b> |   |                    |       |
| 2   | Listed as impaired for Fish Contaminants (Human Health Use)                                       | 503                | 33    |
| + 1   | Additional point in assessment units that have greater than 500 parts per billion PCBs or mercury | 14                 | 6     |
| <b>Recreation Use impairment (maximum of 6 points)</b>                              |   |                    |       |
| 1   | Listed as impaired, with assessment unit score <sup>1</sup> between 0 and 25                      | 27                 | 1     |
| 2   | Listed as impaired, with assessment unit score <sup>1</sup> between 75.1 and 100                  | 49                 | 8     |
| 3   | Listed as impaired, with assessment unit score <sup>1</sup> between 25.1 and 50                   | 105                | 0     |
| 4   | Listed as impaired, with assessment unit score <sup>1</sup> between 50.1 and 75                   | 144                | 3     |
| + 2   | Additional points if assessment unit contains Class A waters                                      | 60                 | 12    |
| <b>Aquatic Life Use impairment (maximum of 4 points)</b>                            |   |                    |       |
| 1   | Listed as impaired, with assessment unit score <sup>1</sup> between 0 and 25                      | 260                | 4     |
| 2   | Listed as impaired, with assessment unit score <sup>1</sup> between 75.1 and 100                  | 102                | 8     |
| 3   | Listed as impaired, with assessment unit score <sup>1</sup> between 25.1 and 50                   | 135                | 2     |
| 4   | Listed as impaired, with assessment unit score <sup>1</sup> between 50.1 and 75                   | 168                | 1     |
| <b>Public Drinking Water Use impairment (maximum of 7 points)</b>                   |   |                    |       |
| 5   | Listed as impaired for Public Drinking Water Use for one indicator                                | 4                  | 3     |
| + 2   | Additional points in assessment units impaired for second indicator                               | 0                  | 1     |
| 1   | Not listed as impaired, but on watch list; one point for each indicator                           | 30                 | 5     |

<sup>1</sup> The assessment unit score is reported on the summary sheets in Section L.

### J3. Removing Waters from the 303(d) List

Federal regulations require a demonstration of good cause for not including water bodies on the Section 303(d) list that were included on previous 303(d) lists (40 CFR 130.7(b)(6)(iv)). Over time, U.S. EPA has modified the wording of reasons for delisting in guidance (U.S. EPA, 2005, 2006b, 2009) to be used in preparing this report. Ohio EPA will use the following delisting causes for the 2010 303(d) list, subdivided where possible to indicate the many changes made in the 2010 listing:

- Use is being met: new data
- Use is being met: change in methodology (varies by use; includes changes due to size of assessment units, see sections E, F, G, H for individual methodology descriptions)
- Use is being met: change in methodology (listing by use)
- Use is being met: combination of listing by use, change in methodology and new data
- Use is being met: flaw in original listing
- TMDL completed and approved

Tables J-5 through J-7 summarize the number of watershed, large river, and Lake Erie nearshore assessment units being delisted from the 2008 303(d) list. Section J1 explains the procedure Ohio EPA used to transform the 2008 303(d) list so that waters that are not impaired and/or do not require a TMDL can be delisted.

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## **Watershed Assessment Unit Results**

A total of 3,239 watershed assessment unit/uses are being delisted, and 124 are being added to the 303(d) list. The pie chart in Figure J-6 shows delistings in watershed assessment units by reason for all uses; the bar chart shows delisting reasons for each use.

About 64% of the watershed delistings are due solely to the shift to listing by use rather than a single overall category. The human health (fish tissue) and public drinking water uses are particularly pronounced at 87% and 76%, respectively. Recreation and aquatic life are much less affected at 43% and 46%, respectively, although listing by use remains the primary reason for delisting for these uses.

Most of the methodology changes involve the recreation use (76%), which could be expected since the methodology for that use changed most profoundly—due to indicator, water quality standard, and general approach to grouping data (refer to Section F for details). The human health use (fish tissue) also had notable methodology changes (see Section E), and the second highest number of delistings for this use was due to methodology. The biggest reason for new listings for this use was methodology as well (63%).

Methodology changes for the aquatic life and public drinking water uses were relatively minor to accommodate the change in assessment unit size. Delistings due to methodology changes for these two uses were small.

Many delistings are also due to a combination of changed methodology, new data, and listing by use. The completion of TMDLs led to delisting 259 assessment unit/use combinations for the aquatic life and recreation uses. TMDL status is presented in more detail in Section J4.

More than 2,400 waters had no change in status from 2008; half of those waters are impaired and half are not. The status of 362 watershed assessment units/uses changed between 2008 and 2010, but no delistings are necessary.

## **Large River Assessment Unit Results**

A total of 75 large river assessment unit/uses are being delisted; two are being added (due to new data). Figure J-7 shows delistings in the large river assessment units.

About 45% of the delistings are due solely to listing by use instead of by a single overall category, with the public drinking water use accounting for 20 of the 34 total delistings for this reason. Methodology was involved in 20 of the 24 delistings of the recreation use in large rivers.

Overall, the large river listings were more stable because more data are available for these waters. About 43% of the 152 unit/use combinations had no change in status from 2008; most are impaired. The status of 9 units/uses changed between 2008 and 2010 but resulted in no delistings.

One delisting is due to a flaw in the original listing. On the 2008 303(d) list, a public water supply intake was mistakenly identified on the Tiffin River, but no intake exists.

## Lake Erie Nearshore Assessment Unit Results

Four assessment unit/uses are being delisted for the Lake Erie nearshore units; none is being added. All three units are being delisted for the public drinking water use, and the Lake Erie islands are being delisted for recreation use. All of the delistings are due solely to the shift to listing by use rather than by a single overall category.

**Table J-5. Delisting status of watershed assessment units.**

|  | Number of assessment units |      |      |      |        |
|--|----------------------------|------|------|------|--------|
|  | HH                         | R    | ALU  | PDWS | Totals |
| <b>Delistings</b>  |                            |      |      |      |        |
| Use is being met   |                            |      |      |      |        |
| New data   | 11                         | 11   | 53   | 0    | 74     |
| Methodology: change varies by use                              | 33                         | 262  | 47   | 0    | 343    |
| Methodology and new data                                       | 18                         | 0    | 0    | 0    | 18     |
| Methodology: listing by use                                    | 593                        | 377  | 236  | 873  | 2079   |
| Methodology: listing by use, method, data                      | 29                         | 113  | 41   | 283  | 465    |
| Flaw in original listing                                       | 0                          | 0    | 0    | 0    | 0      |
| TMDL completed   | 0                          | 124  | 135  | 0    | 259    |
| <b>New listings</b>  |                            |      |      |      |        |
| New data   | 10                         | 40   | 14   | 0    | 65     |
| New methodology  | 35                         | 14   | 0    | 0    | 49     |
| New data/methodology   | 11                         | 0    | 0    | 0    | 11     |
| <b>Not delisted: change in use status from 2008 to 2010</b>    |                            |      |      |      |        |
| Use not impaired   | 9                          | 79   | 26   | 102  | 216    |
| Use impaired   | 0                          | 129  | 12   | 4    | 145    |
| <b>Not delisted: no change in use status from 2008 to 2010</b> |                            |      |      |      |        |
| Use not impaired   | 348                        | 247  | 338  | 275  | 1208   |
| Use impaired   | 441                        | 142  | 635  | 1    | 1220   |
|  | 1538                       | 1538 | 1538 | 1538 | 6152   |

**Table J-6. Delisting status of large river assessment units.**

|  | Number of assessment units |    |     |      |        |
|--|----------------------------|----|-----|------|--------|
|  | HH                         | R  | ALU | PDWS | Totals |
| <b>Delistings</b>  |                            |    |     |      |        |
| Use is being met   |                            |    |     |      |        |
| New data   | 0                          | 0  | 0   | 1    | 1      |
| New methodology: varies by use                                 | 1                          | 10 | 6   | 1    | 18     |
| New methodology and new data                                   | 0                          | 0  | 2   | 0    | 2      |
| New methodology: listing by use                                | 2                          | 4  | 8   | 20   | 34     |
| New methodology: listing by use, method, data                  | 0                          | 10 | 2   | 6    | 18     |
| Flaw in original listing                                       | 0                          | 0  | 0   | 1    | 1      |
| TMDL completed   | 0                          | 0  | 1   | 0    | 1      |
| <b>New listings</b>  |                            |    |     |      |        |
| New data   | 1                          | 1  | 0   | 0    | 2      |
| New methodology  | 0                          | 0  | 0   | 0    | 0      |
| New data/methodology   | 0                          | 0  | 0   | 0    | 0      |
| <b>Not delisted: change in use status from 2008 to 2010</b>    |                            |    |     |      |        |
| Use not impaired   | 0                          | 2  | 0   | 0    | 2      |
| Use impaired   | 0                          | 7  | 0   | 0    | 7      |
| <b>Not delisted: no change in use status from 2008 to 2010</b> |                            |    |     |      |        |
| Use not impaired   | 2                          | 0  | 4   | 6    | 12     |
| Use impaired   | 32                         | 4  | 15  | 3    | 54     |
|  | 38                         | 38 | 38  | 38   | 152    |

**Table J-7. Delisting status of Lake Erie nearshore assessment units.**

|  | Number of assessment units |   |     |      |        |
|--|----------------------------|---|-----|------|--------|
|  | HH                         | R | ALU | PDWS | Totals |
| <b>Delistings</b>  |                            |   |     |      |        |
| Use is being met   |                            |   |     |      |        |
| New data   | 0                          | 0 | 0   | 0    | 0      |
| New methodology: varies by use                                 | 0                          | 0 | 0   | 0    | 0      |
| New methodology and new data                                   | 0                          | 0 | 0   | 0    | 0      |
| New methodology: listing by use                                | 0                          | 1 | 0   | 3    | 4      |
| New methodology: listing by use, method, data                  | 0                          | 0 | 0   | 0    | 0      |
| Flaw in original listing                                       | 0                          | 0 | 0   | 0    | 0      |
| TMDL completed   | 0                          | 0 | 0   | 0    | 0      |
| <b>New listings</b>  |                            |   |     |      |        |
| New data   | 0                          | 0 | 0   | 0    | 0      |
| New methodology  | 0                          | 0 | 0   | 0    | 0      |
| New data/methodology   | 0                          | 0 | 0   | 0    | 0      |
| <b>Not delisted: change in use status from 2008 to 2010</b>    |                            |   |     |      |        |
| Use not impaired   | 0                          | 0 | 0   | 0    | 0      |
| Use impaired   | 0                          | 0 | 0   | 0    | 0      |
| <b>Not delisted: no change in use status from 2008 to 2010</b> |                            |   |     |      |        |
| Use not impaired   | 0                          | 0 | 0   | 0    | 0      |
| Use impaired   | 3                          | 2 | 3   | 0    | 8      |
|  | 3                          | 3 | 3   | 3    | 12     |

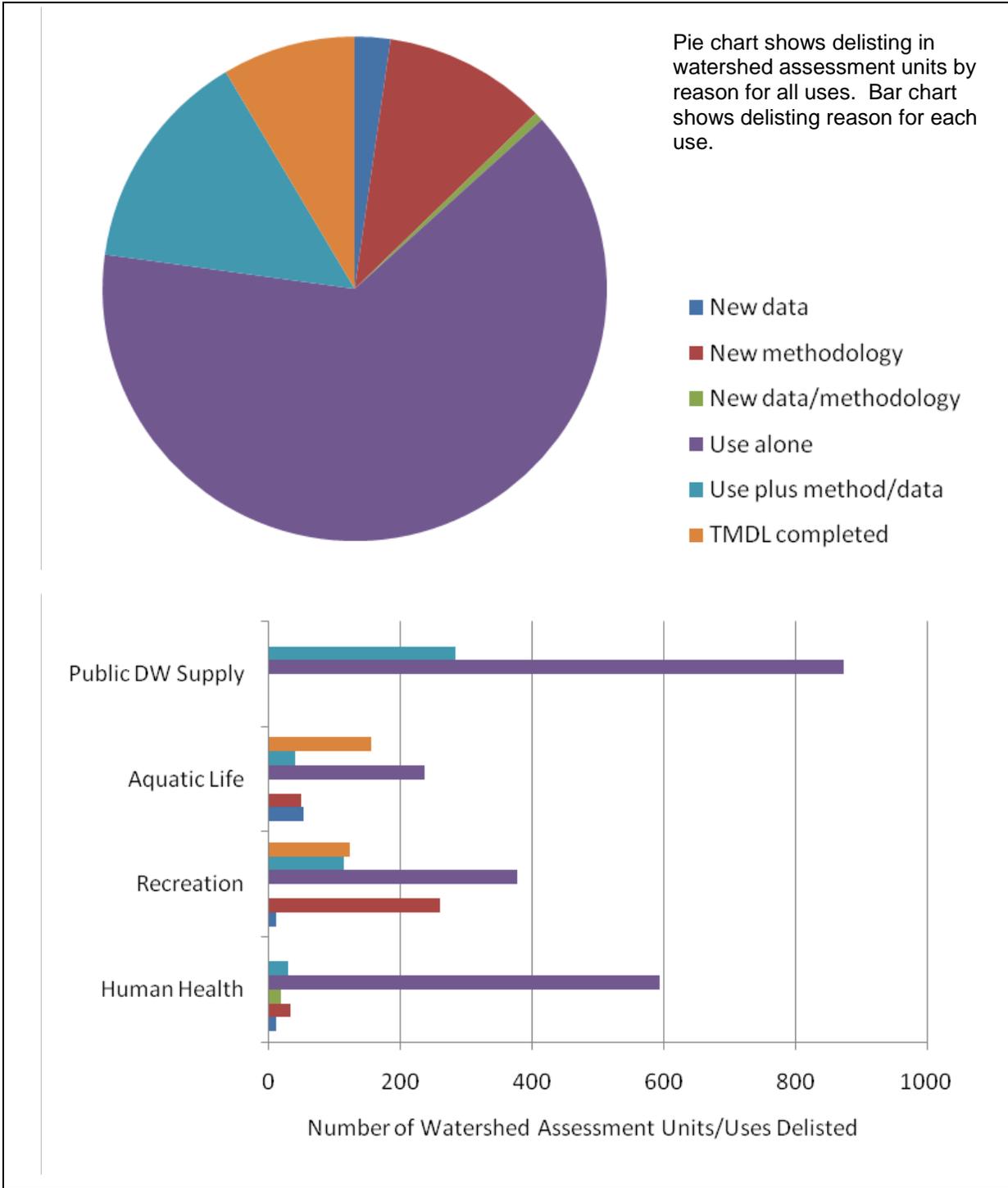
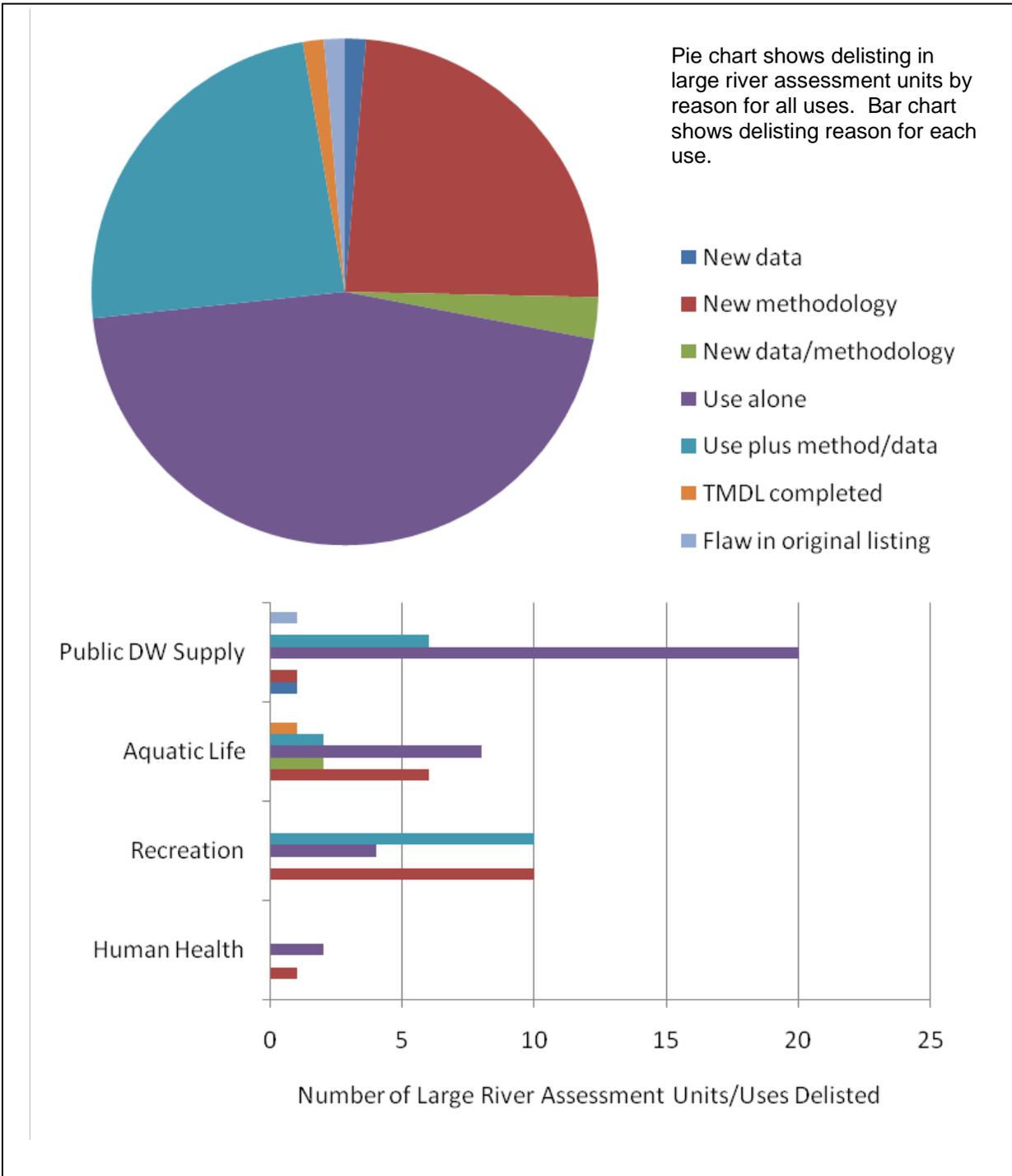


Figure J-6. Delisting in watershed assessment units.



**Figure J-7. Delisting in large river assessment units.**

Carrying forward the example used in Table J-3, Table J-8 shows how the Black Fork and Clear Fork of the Mohican River (four watershed assessment units) changed from the 2008 to the 2010 reports. Similar tables in Section M provide detailed delisting information for watershed, large river, and Lake Erie nearshore assessment units.

**Table J-8. Example of how selected assessment units changed from the 2008 to the 2010 303(d) lists.**

| 2008 List    |          |    |    |    |    | 2010 List      |              |        |            |        |              |        |                |        |  |
|--------------|----------|----|----|----|----|----------------|--------------|--------|------------|--------|--------------|--------|----------------|--------|--|
| AU (11)      | Category |    |    |    |    | AU (12)        | Human Health |        | Recreation |        | Aquatic Life |        | Drinking Water |        |  |
|              | Cat      | HH | R  | AL | DW |                | Cat          | Reason | Cat        | Reason | Cat          | Reason | Cat            | Reason |  |
| 05040002 010 | 5        | 3i | 5h | 5  | 3i | 05040002 01 01 | 3            | U      | 5          | none   | 5            | none   | 3i             | U      |  |
|              |          |    |    |    |    | 05040002 01 02 | 3i           | U      | 5          | none   | 5            | none   | 3i             | U      |  |
|              |          |    |    |    |    | 05040002 01 03 | 3            | U      | 5          | none   | 3i           | UM     | 0              | UM     |  |
|              |          |    |    |    |    | 05040002 01 04 | 3            | U      | 5          | none   | 1            | D      | 0              | U      |  |
|              |          |    |    |    |    | 05040002 01 05 | 3            | U      | 5          | none   | 5            | none   | 0              | U      |  |
| 05040002 020 | 5        | 5  | 5h | 5  | -  | 05040002 02 01 | 5h           | none   | 5          | none   | 5            | none   | 0              | U      |  |
|              |          |    |    |    |    | 05040002 02 02 | 1            | MD     | 3          | M      | 3            | M      | 0              | U      |  |
|              |          |    |    |    |    | 05040002 02 03 | 5h           | none   | 5          | none   | 5            | none   | 0              | U      |  |
|              |          |    |    |    |    | 05040002 02 04 | 5h           | none   | 5          | none   | 5            | none   | 0              | U+     |  |
|              |          |    |    |    |    | 05040002 02 05 | 5h           | none   | 1          | D      | 5            | none   | 0              | U+     |  |
| 05040002 030 | 5        | 3i | 5h | 5  | 3i | 05040002 03 01 | 5            | new D  | 1          | D      | 3i           | UM     | 1              | U+     |  |
|              |          |    |    |    |    | 05040002 03 02 | 3            | U      | 5          | none   | 1            | D      | 0              | U      |  |
|              |          |    |    |    |    | 05040002 03 03 | 3            | U      | 5          | none   | 5            | none   | 0              | U      |  |
| 05040002 040 | 2        | 3i | 1h | 1  | -  | 05040002 04 01 | 3            | none   | 5          | new D  | 1            | none   | 0              | none   |  |
|              |          |    |    |    |    | 05040002 04 02 | 3            | none   | 5          | new D  | 1            | none   | 0              | none   |  |
|              |          |    |    |    |    | 05040002 04 03 | 3            | none   | 5          | new D  | 1            | none   | 0              | none   |  |
|              |          |    |    |    |    | 05040002 04 04 | 3            | none   | 5          | new D  | 1            | none   | 0              | none   |  |
|              |          |    |    |    |    | 05040002 04 05 | 5            | new D  | 5          | new D  | 1            | none   | 0              | none   |  |

Yellow shading indicates official listing category. Reason refers to reason for delisting. Key to delisting columns:

|        |  |
|--------|--|
| T      | Delist, TMDL completed   |
| D      | Delist, new data   |
| M      | Delist, methodology change                                     |
| MD     | Delist, both new data and methodology change                   |
| U      | Delist, change to listing by use                               |
| U+     | Delist, change to listing by use, plus data and/or methodology |
| new D  | New listing due to data  |
| new M  | New listing due to change in methodology                       |
| new MD | New listing due to data and methodology                        |
| none   | No delisting   |

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## **J4. Schedule for TMDL Work**

Once waters are assessed and the impaired waters are prioritized, the next step is to determine a schedule to address the monitoring needs of all waters and restoration needs (including TMDLs) of the impaired ones. Various factors must be considered, including Ohio's ongoing TMDL work, the process identified to do TMDLs, the monitoring strategy, and the resources available for the work.

TMDL projects are transitioning from the old HUC11-scale watersheds to the new, smaller HUC12-scale watersheds. Through 2009, TMDLs have been completed using the HUC11-scale assessment units. Ohio EPA will work with U.S. EPA to transition the approved projects into the new HUC12-scale assessment unit reporting system before the 2012 Integrated Report. Projects submitted for approval after April 1, 2010, will reflect the new HUC12-size units. Tables in Section J4 and the TMDL status map in Section K reflect current information based on the HUC11 units.

### **J4.1. Ohio TMDL Status**

Ohio EPA is currently working on TMDLs in about 75 project areas, encompassing more than half of Ohio, as illustrated in the "Ohio TMDL Program Progress" map in Section K. Most of these TMDLs address Aquatic Life Use impairments, and many also address Recreation Use impairment. TMDLs in 38 of the areas are approved, and implementation is proceeding. Table J-9 summarizes Ohio TMDLs approved by U.S. EPA.

### **J4.2. Long-Term Schedules for Monitoring and TMDLs**

Ohio's five-year basin approach (see Section D) provides a foundation for scheduling monitoring and TMDL projects. The assessment methodology allows that, generally, aquatic life use monitoring data up to ten years old are valid for judging assessment units, so it follows that each assessment unit must be monitored at least once every ten years to maintain coverage. However, resources to maintain this pace are no longer available; cycling through the entire basin rotation would take about 15 to 20 years at current resource levels. Thus, each assessment unit is assigned to one of the next three monitoring cycles using the following factors:

- Ohio EPA's five-year basin monitoring strategy
- time since most recent assessment
- distribution of work effort among Ohio EPA district offices
- priority ranking
- TMDL schedule

Experience in completing TMDLs indicates that local involvement is a key to success. However, it is difficult to gauge the level of local interest sufficient to sustain a TMDL effort. Thus, the schedule is flexible and can be influenced by expressions of local interest to undertake a TMDL (e.g., significant interest from local citizens and decision-makers, especially combined with involvement from local governments).

In an effort to maintain the monitoring and TMDL schedule, Ohio EPA is committed to researching and pursuing additional resources, both in terms of funding and partnering opportunities.

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The scheduling and TMDL information is reported on the table in Section L5. A map illustrating the long-term monitoring schedule is included in Section K. Detailed information for each assessment unit is also available on the IR web site (<http://www.epa.ohio.gov/dsw/tmdl/2010IntReport/index.aspx>).

#### **J4.3 Short-Term Schedule for TMDL Development**

Ohio EPA has scheduled several TMDL projects during the next two years, as indicated in Table J-10. Because Ohio's TMDL process begins with a watershed assessment, all TMDLs to be completed in the next two years are already in progress.

The TMDL goal is restoration of the designated use through the attainment of applicable criteria. Pollutants to be targeted for pollutant load characterization and as measures of interim progress will be determined as part of the TMDL process described in Section C1.

**Table J-9. Ohio TMDLs<sup>1</sup> approved by U.S. EPA.**

| <b>Assessment Unit Code<sup>4</sup></b> | <b>Assessment Unit Name</b>  | <b>U.S. EPA Approval Date</b> | <b>Pollutants Allocated, per U.S. EPA<sup>2</sup></b>  |
|---|--|-------------------------------|--|
| 04110002 020                            | Cuyahoga River (below Black Brook to below Breakneck Creek)  | 10/11/2000                    | dissolved oxygen   |
| 04110002 030                            | Cuyahoga River (below Breakneck Creek to below Little Cuyahoga River)  |                               |  |
| 04110001 070                            | Rocky River (below West Br. to Lake Erie [including East Br.] and Lake Erie tribs [above Porter Cr to above Cuyahoga R]): Plum Creek | 12/04/2001                    | phosphorus, nitrogen   |
| 05090202 010                            | Little Miami River (headwaters to above Massies Creek)   | 07/02/2002<br>05/13/2003      | phosphorus, sediment   |
| 05090202 020                            | Little Miami River (above Massies Creek to below Beaver Creek)   |                               |  |
| 05090202 030                            | Little Miami River (below Beaver Creek of above Caesar Creek)  |                               |  |
| 05090202 040                            | Anderson Fork Caesar Creek   |                               |  |
| 05090202 050                            | Caesar Creek (except Anderson Fork)  |                               |  |
| 05060001 060                            | Bokes Creek (Scioto River above Bokes Creek to above Mill Creek)   | 09/27/2002<br>07/31/2003      | phosphorus, sediment   |
| 05040001 100                            | Sugar Creek (headwaters to above Middle Fork Sugar Creek)  | 11/20/2002<br>07/08/2003      | phosphorus, nitrogen, sediment   |
| 05040001 110                            | South Fork Sugar Creek   |                               |  |
| 05040001 120                            | Sugar Creek (upstream Middle Fork to mouth)  |                               |  |
| 05090101 020                            | Raccoon Creek (headwaters to above Hewett Fork)  | 3/20/2003                     | pH (acid), metals  |
| 05090101 030                            | Raccoon Creek (above Hewett Fork to below Elk Fork)  |                               |  |
| 05060001 070                            | Mill Creek (Scioto River basin)  | 9/02/2003                     | CBOD, ammonia, phosphorus, sediment, aldrin, d-BHC, dieldrin, endosulfan, endrin, heptachlor |
| 05030201 110                            | East Fork Duck Creek   | 9/23/2003                     | TSS, aluminum, iron, manganese, BOD, ammonia   |
| 05030201 120                            | Duck Creek (except East Fork)  |                               |  |
| 04110002 040                            | Cuyahoga River (below Little Cuyahoga River to below Brandywine Creek)   | 9/26/2003                     | fecal coliform, phosphorus   |
| 04110002 050                            | Cuyahoga River (below Brandywine Creek to below Tinkers Creek)   |                               |  |
| 04110002 060                            | Cuyahoga River (below Tinkers Creek to Lake Erie)  |                               |  |
| 04110002                                | Cuyahoga River (mainstem)  |                               |  |
| 05080001 090                            | Stillwater River (headwaters to above Swamp Creek)   | 06/15/2004                    | nitrates, phosphorus   |
| 05080001 100                            | Stillwater River (above Swamp Creek to above Greenville Creek)   |                               |  |
| 05080001 110                            | Greenville Creek (headwaters to below West Branch)   |                               |  |
| 05080001 120                            | Greenville Creek (below West Branch to Stillwater River)   |                               |  |
| 05080001 130                            | Stillwater River (below Greenville Creek to above Ludlow Creek)  |                               |  |

| Assessment Unit Code <sup>4</sup> | Assessment Unit Name  | U.S. EPA Approval Date | Pollutants Allocated, per U.S. EPA <sup>2</sup>  |
|-----------------------------------|---|------------------------|--|
| 05080001 140                      | Stillwater River (above Ludlow Creek to Great Miami River)  |                        |  |
| 05080001                          | Stillwater River (mainstem)   |                        |  |
| 04100007 010                      | Auglaize River (headwaters to below Pusheta Creek)  | 09/23/2004             | ammonia, phosphorus, pathogens, sediment   |
| 04100007 020                      | Auglaize River (below Pusheta Creek to above Jennings Creek)  |                        |  |
| 04100007 060                      | Auglaize River (above Jennings Creek to above Little Auglaize River)  |                        |  |
| 04110002 010                      | Cuyahoga River (headwaters to below Black Brook)  | 09/27/2004             | phosphorus, sediment   |
| 04100011 020                      | Sandusky River (headwaters to above Broken Sword Creek)   | 09/30/2004             | phosphorus, pathogens, sediment  |
| 04100011 030                      | Broken Sword Creek  |                        |  |
| 04100011 040                      | Sandusky River (below Broken Sword Creek to above Tymochtee Creek)  |                        |  |
| 04100011 050                      | Tymochtee Creek (headwaters to below Warpole Creek)   |                        |  |
| 04100011 060                      | Tymochtee Creek (downstream Warpole Creek to Sandusky River)  |                        |  |
| 04100011 070                      | Sandusky River (below Tymochtee Creek to above Honey Creek)   |                        |  |
| 04100011 080                      | Honey Creek   |                        |  |
| 05090203 010                      | Mill Creek  |                        |  |
| 04100012 040                      | Lake Erie Tributaries (below Huron River to above Vermilion River) [Old Woman and Chappel Creeks]                 | 08/31/2005             | nutrients, siltation, habitat alteration   |
| 05030204 060                      | Monday Creek  | 09/22/2005             | pH, metals, sediment   |
| 05060001 130                      | Big Walnut Creek (headwaters to Hoover Dam)   | 09/26/2005             | nutrients (phosphorus), pathogens, siltation, organic enrichment, flow, habitat alteration |
| 05060001 140                      | Big Walnut Creek (below Hoover Dam to above Alum Creek)   |                        |  |
| 05060001 150                      | Alum Creek (headwaters to Alum Creek Dam)   |                        |  |
| 05060001 160                      | Big Walnut Creek (above Alum Creek [except above Alum Creek Dam] to Scioto River)                                 |                        |  |
| 04110003 010 (partial)            | Lake Erie Tributaries (East of Cuyahoga River to West of Grand River; excluding Chagrin River) [Euclid Creek]     | 09/27/2005             | nutrients (phosphorus), organic enrichment, habitat alteration                             |
| 04100012 010                      | West Branch Huron River (headwaters to above Slate Run)   | 09/28/2005             | nutrients (phosphorus), siltation, organic enrichment, flow, habitat alteration            |
| 04100012 020                      | West Branch Huron River (above Slate Run to above East Branch Huron River)  |                        |  |
| 04100012 030                      | Huron River (above East Branch to Lake Erie) and Lake Erie Tributaries (below Sawmill Creek to below Huron River) |                        |  |

| Assessment Unit Code <sup>4</sup> | Assessment Unit Name  | U.S. EPA Approval Date   | Pollutants Allocated, per U.S. EPA <sup>2</sup>   |
|-----------------------------------|---|--------------------------|---|
| 05030101 070                      | Middle Fork Little Beaver Creek   | 09/28/2005               | nutrients (phosphorus), pathogens, siltation, organic enrichment, flow, habitat alteration, unionized ammonia |
| 05030101 080                      | West Fork Little Beaver Creek   |                          |   |
| 05030101 090                      | Little Beaver Creek (downstream Middle and West Forks to mouth)                             |                          |   |
| 05030204 070                      | Sunday Creek  | 03/31/2006               | sediment, bacteria, acidity   |
| 05060001 190                      | Big Darby Creek (headwaters to below Sugar Run)   | 03/31/2006<br>10/27/2009 | phosphorus, bacteria, sediment  |
| 05060001 200                      | Big Darby Creek (below Sugar Run to above Little Darby Creek)                               |                          |   |
| 05060001 210                      | Little Darby Creek  |                          |   |
| 05060001 220                      | Big Darby Creek (below Little Darby Creek to Scioto River)                                  |                          |   |
| 04100010 020                      | Toussaint Creek   | 09/22/2006               | phosphorus  |
| 05040004 020                      | Wakatomika Creek (headwaters to downstream Brushy Fork)                                     | 09/28/2006               | bacteria, manganese, iron, aluminum, total dissolved solids, alkalinity                                       |
| 05040004 030                      | Wakatomika Creek (downstream Brushy Fork to mouth)  |                          |   |
| 05040001 100                      | Sugar Creek (headwaters to above Middle Fork Sugar Creek)                                   | 05/08/2007               | bacteria  |
| 05040001 110                      | South Fork Sugar Creek  |                          |   |
| 05040001 120                      | Sugar Creek (upstream Middle Fork to mouth)   |                          |   |
| 04110003 020                      | Chagrin River (headwaters to downstream Aurora Branch)                                      | 07/10/2007               | nutrients (phosphorus and nitrate), bacteria, total suspended solids  |
| 04110003 030                      | Chagrin River (downstream Aurora Branch to mouth)   |                          |   |
| 05060001 090                      | Olentangy River (headwaters to downstream Flat Run)   | 09/18/2007               | nutrients (phosphorus), bacteria, total suspended solids  |
| 05060001 100                      | Whetstone Creek   |                          |   |
| 05060001 110                      | Olentangy River (downstream Flat Run to downstream Delaware Run); excluding Whetstone Creek |                          |   |
| 05060001 120                      | Olentangy River (downstream Delaware Run to mouth)  |                          |   |
| 05120101 020                      | Beaver Creek (Grand Lake St. Marys and tributaries)   | 09/28/2007               | nutrients (phosphorus and nitrate), bacteria  |
| 05120101 030                      | Beaver Creek (downstream Grand Lake St. Marys Dam to mouth)                                 |                          |   |
| 05030202 090                      | Leading Creek   | 1/9/2008                 | total dissolved solids, total suspended solids, chlorides   |
| 04110001 020                      | West Branch Black River (headwaters to Black River)   | 8/20/2008                | phosphorus, nitrate, bacteria, total suspended solids   |
| 04110001 030                      | East Branch Black River (headwaters to below Coon Creek)                                    |                          |   |

| Assessment Unit Code <sup>4</sup> | Assessment Unit Name   | U.S. EPA Approval Date  | Pollutants Allocated, per U.S. EPA <sup>2</sup>                                     |
|-----------------------------------|--|-------------------------|---|
| 04110001 040                      | East Branch Black River (below Coon Creek to Black River)  |                         |   |
| 04110001 050                      | Black River (below East Branch to Lake Erie) and Lake Erie tribs (below Black R. to above Porter Cr) |                         |   |
| 05040001 050                      | Nimishillen Creek  | 9/25/2008<br>12/16/2009 | sediment,<br>bacteria   |
| 04100007 110                      | Powell Creek   | 6/18/2009               | phosphorus,<br>nitrate-nitrogen,<br>total suspended<br>solids, biological<br>oxygen |
| 04100008 010                      | Blanchard River (headwaters to downstream Potato Run)  | 7/2/2009                | phosphorus,<br>bacteria,<br>sediment  |
| 04100008 020                      | Blanchard River (downstream Potato Run to upstream Eagle Creek)                                      |                         |   |
| 04100008 030                      | Blanchard River (upstream Eagle Creek to upstream Ottawa Creek)                                      |                         |   |
| 04100008 040                      | Blanchard River (upstream Ottawa Creek to upstream Riley Creek); excluding Blanchard R.              |                         |   |
| 04100008 050                      | Riley Creek  |                         |   |
| 04100008 060                      | Blanchard River (downstream Riley Creek to mouth); excluding Blanchard R. mainstem                   |                         |   |
| 04100008                          | Blanchard River (mainstem)   |                         |   |
| 05060002 070                      | Salt Creek (headwaters to upstream Queer Creek)  | 8/12/2009               | sediment<br>(bedload),<br>habitat   |
| 05060002 080                      | Middle Fork Salt Creek   |                         |   |
| 05060002 090                      | Salt Lick Creek (excluding Middle Fork)  |                         |   |
| 05060002 100                      | Salt Creek (upstream Queer Creek to mouth); excluding Little Salt Creek and Middle Fork Salt Creek   |                         |   |
| 05080001 090                      | Stillwater River (headwaters to above Swamp Creek)   | 9/8/09 <sup>3</sup>     | phosphorus  |
| 05080001 100                      | Stillwater River (above Swamp Creek to above Greenville Creek)                                       |                         |   |
| 05080001 110                      | Greenville Creek (headwaters to below West Branch)   |                         |   |
| 05080001 120                      | Greenville Creek (below West Branch to Stillwater River)   |                         |   |
| 05080001 130                      | Stillwater River (below Greenville Creek to above Ludlow Creek)                                      |                         |   |
| 05080001 140                      | Stillwater River (above Ludlow Creek to Great Miami River)   |                         |   |
| 05080001                          | Stillwater River (mainstem)  |                         |   |
| 05040001 010                      | Tuscarawas River (headwaters to downstream Wolf Creek)   | 9/15/09                 | fecal coliform,<br>sediment,<br>phosphorus  |
| 05040001 020                      | Chippewa Creek   |                         |   |
| 05040001 030                      | Tuscarawas River (downstream Wolf Creek to downstream Sippo Creek); excluding Chippewa Creek         |                         |   |
| 05040001 090                      | Tuscarawas River (downstream Sippo Creek to upstream Sugar Creek); excluding Tuscarawas R. mainstem  |                         |   |

| Assessment Unit Code <sup>4</sup> | Assessment Unit Name   | U.S. EPA Approval Date | Pollutants Allocated, per U.S. EPA <sup>2</sup>      |
|-----------------------------------|--|------------------------|--|
| 05040001 130                      | Tuscarawas River (downstream Sugar Cr. to upstream Stillwater Cr.); excluding Tuscarawas R. mainstem |                        |  |
| 05040001 180                      | Tuscarawas River (downstream Stillwater Cr. to upstream Evans Cr.); excluding Tuscarawas R. mainstem |                        |  |
| 05040001 190                      | Tuscarawas River (upstream Evans Creek to mouth); excluding Tuscarawas R. mainstem                   |                        |  |
| 05040001                          | Tuscarawas River (mainstem)  |                        |  |
| 05030204 010                      | Hocking River (headwaters to Enterprise); excluding Rush Creek and Clear Creek                       | 9/25/09                | fecal coliform, total phosphorus, sediment (bedload) |
| 05030204 020                      | Rush Creek (headwaters to upstream Little Rush Creek)  |                        |  |
| 05030204 030                      | Rush Creek (upstream Little Rush Creek to mouth)   |                        |  |
| 05030204 040                      | Clear Creek  |                        |  |
| 05030204 050                      | Hocking River (Enterprise to upstream Monday Creek); excluding Hocking R. mainstem dst. Duck Creek   |                        |  |
| 05030204 080                      | Hocking River (downstream Monday Creek to Athens/RM 33.1); excluding Hocking R. mainstem             |                        |  |
| 05030204 090                      | Federal Creek  |                        |  |
| 05030204 100                      | Hocking River (downstream Athens/RM 33.1 to mouth); excluding Federal Creek and Hocking R. mainstem  |                        |  |
| 05030204                          | Hocking River (mainstem)   |                        |  |

<sup>1</sup> One or more assessment units may be included in a TMDL report. The determination is made on a project-by-project basis, at the discretion of Ohio EPA.

<sup>2</sup> The TMDL goal is restoration of the designated use through the attainment of applicable criteria; pollutants listed here were specifically recognized in U.S. EPA decision documents. TMDL reports typically include such parameters for targeting, pollutant load characterization, and measuring interim progress, and may explore other indicators of watershed condition.

<sup>3</sup> TMDL revised for one pollutant.

<sup>4</sup> TMDLs have been completed using the HUC11-scale assessment units. Ohio EPA will work with U.S. EPA to transition the approved projects into the new HUC12-scale assessment unit reporting system before the 2012 Integrated Report.

**Table J-10. Short-term schedule for TMDL development.**

| <b>Assessment Unit Code<sup>2</sup></b>   | <b>Assessment Unit Name</b>  |
|---|--|
| <b><i>TMDLs to be withdrawn from U.S. EPA<sup>1</sup></i></b>                         |  |
| 04100012 050  | Vermilion River (headwaters to above East Branch)  |
| 04100012 060  | Vermilion River (above East Branch to Lake Erie)   |
| 04110001 060  | West Branch Rocky River (bacteria)   |
| 04110001 070  | Rocky River and East Branch Rocky River (bacteria)   |
| <b><i>TMDLs approval by U.S. EPA after public review of 2010 303d) list began</i></b> |  |
| 04100009 070  | Swan Creek (headwaters to upstream Blue Creek)   |
| 04100009 080  | Swan Creek (upstream Blue Creek to mouth)  |
| 05040001 050  | Nimishillen Creek (phosphorus only)  |
| 05080001 150  | Mad River (headwaters to downstream Kings Creek)   |
| 05080001 160  | Mad River (downstream Kings Creek to downstream Chapman Creek)                                       |
| 05080001 170  | Buck Creek   |
| 05080001 180  | Mad River (downstream Chapman Creek to upstream Mud Creek); excluding Buck Creek and Mad R. mainstem |
| 05080001 190  | Mad River (upstream Mud Creek to mouth); excluding Mad R. mainstem                                   |
| 05080001  | Mad River (mainstem)   |
| 05090201 090  | East Fork White Oak Creek; North Fork White Oak Creek  |
| 05090201 100  | White Oak Creek (North Fork/East Fork to mouth)  |
| <b><i>TMDLs pending approval by U.S. EPA</i></b>                                      |  |
| 05030101 180  | Yellow Creek (headwaters to upstream Town Fork)  |
| 05030101 190  | Yellow Creek (upstream Town Fork to mouth)   |
| 05030101 100  | Ohio River tributaries (downstream Little Beaver Creek to upstream Yellow Creek)                     |
| 05080002 030  | Twin Creek (headwaters to upstream Bantas Fork)  |
| 05080002 040  | Twin Creek (upstream Bantas Fork to mouth)   |
| 05060001 170  | Walnut Creek (headwaters to downstream Sycamore Creek)   |
| 05060001 180  | Walnut Creek (downstream Sycamore Creek to mouth)  |
| <b><i>TMDLs expected to be submitted to U.S. EPA in FFY 2010</i></b>                  |  |
| 05060003 010  | Paint Creek (headwaters to downstream East Fork)   |
| 05060003 020  | Sugar Creek  |
| 05060003 030  | Rattlesnake Creek (headwaters to upstream Lees Creek)  |
| 05060003 040  | Rattlesnake Creek (upstream Lees Creek to mouth)   |
| 05060003 050  | Paint Creek (downstream East Fork to upstream Rocky Fork); excluding Sugar Cr. and Rattlesnake Cr.   |
| 05060003 060  | Rocky Fork Paint Creek   |
| 05060003 070  | Paint Creek (downstream Rocky Fork to downstream Lower Twin Creek); excluding Paint Creek mainstem   |
| 05060003 080  | North Fork Paint Creek (headwaters to downstream Compton Creek)                                      |
| 05060003 090  | North Fork Paint Creek (downstream Compton Creek to mouth)   |
| 05060003 100  | Paint Creek (downstream Lower Twin Creek to mouth); excluding North Fork and Paint Creek mainstem    |
| 05060003  | Paint Creek (mainstem)   |
| 05030103 010  | Mahoning River (headwaters to downstream Beech Creek)  |
| 05030103 020  | Mahoning River (downstream Beech Creek to downstream Berlin Dam)                                     |
| 05030103 030  | Mahoning River (downstream Berlin Dam to downstream West Branch)                                     |
| 05030103 040  | Mahoning River (downstream West Br. to upstream Duck Cr.); excluding Mahoning River dst. Eagle Cr.   |
| 05060002 140  | South Fork Scioto Brush Creek  |
| 05060002 150  | Scioto Brush Creek (excluding South Fork)  |

| <b>Assessment Unit Code<sup>2</sup></b>                              | <b>Assessment Unit Name</b>   |
|--|---|
| 05090202 060   | Little Miami River (downstream Caesar Creek to downstream Turtle Creek); excluding LMR mainstem   |
| 05090202 070   | Todd Fork (headwaters to upstream East Fork Todd Fork)  |
| 05090202 080   | Todd Fork (downstream East Fork Todd Fork to mouth)   |
| 05090202 090   | Little Miami River (downstream Turtle Creek to downstream O'Bannon Creek); excluding LMR mainstem |
| 05090202 140   | Little Miami River (downstream O'Bannon Creek to mouth); excluding East Fork LMR and LMR mainstem |
| 05090202   | Little Miami River (mainstem)   |
| <b><i>TMDLs expected to be submitted to U.S. EPA in FFY 2011</i></b> |   |
| 04110004 050   | Mill Creek  |
| 04110004 060   | Grand River (downstream Mill Creek to mouth); excluding Grand R. mainstem                         |
| 04110004   | Grand River mainstem  |
| 04110004 010   | Grand River (headwaters to downstream Swine Creek)  |
| 04110004 020   | Grand River (downstream Swine Creek to upstream Rock Creek)                                       |
| 04110004 030   | Rock Creek  |
| 04110004 040   | Grand River (downstream Rock Creek to upstream Mill Creek)  |
| 05090201 030   | Ohio Brush Creek (headwaters to downstream Baker Fork)  |
| 05090201 040   | West Fork Ohio Brush Creek  |
| 05090201 050   | Ohio Brush Creek (downstream Baker Fork to mouth); excluding West Fork                            |
| 05040002 010   | Black Fork Mohican River (headwaters to downstream Whetstone Creek)                               |
| 05040002 020   | Black Fork Mohican River (downstream Whetstone Creek to downstream Rocky Fork)                    |
| 05040002 030   | Clear Fork Mohican River (headwaters to downstream Cedar Fork)                                    |
| 05040002 040   | Clear Fork Mohican River (downstream Cedar Fork to mouth)   |
| 05040002 050   | Jerome Fork Mohican River   |
| 05040002 060   | Muddy Fork Mohican River  |
| 05040002 070   | Lake Fork Mohican River   |
| 05040002 080   | Mohican River; Black Fork Mohican R. (downstream Rocky Fork to mouth); excluding mainstem         |
| 05040002   | Mohican River (mainstem)  |
| 05040003 010   | Kokosing River (headwaters to upstream North Branch)  |
| 05040003 020   | North Branch Kokosing River   |
| 05040003 030   | Kokosing River (downstream North Branch to upstream Jelloway Creek)                               |
| 05040003 040   | Kokosing River (upstream Jelloway Creek to mouth)   |
| 05080002 070   | Fourmile Creek (excluding Sevenmile Creek)  |
| 05080002 080   | Indian Creek  |

<sup>1</sup> Projects being withdrawn from U.S. EPA consideration for approval due to changes in water quality standards or other significant change affecting load calculations.

<sup>2</sup> TMDLs are transitioning from the HUC11-scale to the HUC12-scale watersheds.