

## ***Consolidated Assessment and Listing Methodology***

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### **Section 303(d) Listing Methodology**

The Clean Water Act, in Section 303(d), requires states to identify and prioritize waterbodies for which technology-based effluent limitations are not stringent enough to attain and maintain applicable state water quality standards, and which require a Total Maximum Daily Load (TMDL) or other restoration strategy. These waterbodies are compiled every two years in the states' Section 303(d) List. Presented below is the New York State Section 303(d) *Listing Methodology* – which guides the development of the New York State *Section 303(d) Impaired/TMDL Waters List*. This Listing Methodology builds on the monitoring data/information and assessment decisions that come out of the Statewide Waters Monitoring Program, Comprehensive Assessment Strategy and Assessment Methodology for the updating of the NYSDEC Waterbody Inventory and Priority Waterbodies List.

By the time the biennial updating of the New York State Section 303(d) List begins, considerable monitoring activity and the assessment of monitoring data that drives the development of the List has been largely completed. The New York State *Monitoring Strategy* and the *Assessment Methodology* outline the planning, collection, and evaluation of all existing and readily available water quality data and information. Those monitoring and assessment efforts culminate in the continuing updating of the Water Inventory/Priority Waterbodies List (WI/PWL) Basin Reports. The biennial report on the quality of the state's waters, as required in Section 305(b), is the compilation of the most current WI/PWL Reports for each of the state's seventeen drainage basins. The list of waterbodies to be included on the New York State Section 303(d) List is also drawn from the updated WI/PWL assessments. The use of the WI/PWL assessment process as the basis for Section 305(b)/303(d) Integrated Reporting activities results in greater consistency and efficiency across these programs than would be the case if separate water quality assessments – independent of the WI/PWL – were conducted for Integrated Reporting purposes every two years.

In its 2010 Integrated Reporting guidance, USEPA reiterated its support of the rotating basin approach as an effective tool for States to make water quality assessment determinations and manage their water quality programs. USEPA outlined an expectation that States will consider all existing and readily available data and information in making water quality attainment determinations, consistent with State assessment and listing methodologies. However the guidance also recognizes that biennial updates will primarily reflect more up-to-date data and information from basins targeted in a rotating basin schedule and that the reported attainment status in waters in non-targeted basins could remain largely unchanged.

This Listing Methodology describes the Integrated Reporting Use Attainment Categories used by USEPA to report nationally on the quality of all waters under Section 305(b). More importantly the methodology also outlines the relationship between the WI/PWL Water Quality Assessment Categories used to characterize waterbodies (detailed in the *Assessment Methodology*) and the national Integrated Reporting Use Attainment Categories. Guidelines for moving from the WI/PWL assessments toward making final Section 303(d) listing decisions and various other issues that affect those decisions are discussed in this methodology as well.

#### **Availability for Public Comment**

When compiled, the New York State *Draft* Section 303(d) List of Impaired/TMDL Waters is presented for Public Notice, and an appropriate period for the receipt of and response to written comments regarding the

*Draft* List is announced.<sup>1</sup> However, as noted above, much of the discussion and decisions regarding which waters are impacted and/or impaired – and which are candidates to be included on the Section 303(d) List – takes place during the water quality assessment process. Consequently while written comments during the Section 303(d) List public notice and comment period are welcome, greater participation in the entire Comprehensive Assessment Strategy – including the monitoring and particularly the assessment and WI/PWL update activities which precede the compilation and submission of the Section 303(d) List – is equally (perhaps more) important and highly encouraged.

In order to effectively and efficiently manage the monitoring and assessment effort, NYSDEC uses a rotating basin approach that evaluates water quality in two or three of 17 drainage areas in the state each year. This allows for coverage of the entire state over a five year period. However, NYSDEC also recognizes that there may be instances where the updating of specific waterbody assessments outside the rotating basin schedule is appropriate. To address this occasional need, **NYSDEC has establish September 30 prior to the issuing of a Section 305(b)/303(d) Integrated Report as the “cutoff” date for submitting data and information to be considered for inclusion in the Section 305(b)/303(d) assessment.**

Establishing a September 30 cut-off date (six months before the Integrated Report is due) allows an opportunity for both consideration of additional data by NYSDEC as well as some time for review and comment on proposed revisions to existing water quality assessments by public stakeholders. However it is important that broader stakeholder input during the the WI/PWL process not be arbitrarily set aside in light of new data. Therefore NYSDEC may deem it more appropriate to defer final consideration of new data until the next appropriate WI/PWL basin update.

The NYSDEC effort to update WI/PWL basin water quality assessment reports on a regular five-year cycle has fallen behind schedule. However more recently, NYSDEC has worked aggressively to update these reports and return to the five-year review and update schedule. In the past two years, WI/PWL assessment reports for 10 of the 17 basin have been updated and reports for the other seven basins are anticipated to be complete by the end of 2009. These reports are available to the public on the NYSDEC website at <http://www.dec.ny.gov/chemical/36730.html>. Comments on these reports, the specific waterbody assessments contained in them, and considerations for the development of the 2010 Section 303(d) List are encouraged.

## **Standards Attainment Categories**

In October 2001, USEPA issued integrated monitoring and assessment guidance to the states encouraging the consolidation of methodologies for the assessment of all waters (Section 305(b) reporting) and the identification of impaired waters under Section 303(d). This guidance established five (5) Integrated Reporting Use Attainment Categories (IR categories) which are to be used to characterize the degree of use support and standards attainment for all waters. The IR categories are outlined below.

**Waters Attaining All Standards** (IR Category 1) describes waters where data and information indicates all standards are met and appropriate uses are supported, and no standards or uses are threatened.

**Waters Attaining Some Standards** (IR Category 2) describes waters where data and information indicates standards are met and appropriate uses are supported (and none are threatened), but where some standards/uses have not been fully assessed due to insufficient data/information.

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<sup>1</sup> The public is also welcome to comment on the *Assessment Methodology* and/or *Listing Methodology*, upon which the development of the Section 303(d) List is based.

**Waters with Insufficient Data** (IR Category 3) describes waters where insufficient or no data is available to make a determination of standards attainment and use support.

**Impaired/Threatened Waters Not Requiring a TMDL** (IR Category 4) describes waters where standards are not being met and/or uses are not supported, but where TMDL development is not necessary because:

- a) a TMDL has been completed, or
- b) other actions required by federal, state and/or local agencies are more appropriate than a TMDL and are expected to result in water quality improvement, or
- c) the impairment/threat is attributed to *pollution* (such as flow alteration, hydrologic modification, degraded habitat, exotic, invasive and/or non-native species, or other cause not associated with a contaminant), rather than a specific *pollutant*, that is suitable to address through development of a TMDL.

**Impaired/Threatened Waters Requiring a TMDL** (IR Category 5) describes waters where standards are not being met and/or uses are not supported, and where TMDL development is an appropriate response to the impairment/threat.

Although the New York State WI/PWL assessment categories differ from the Integrated Reporting categories, the WI/PWL assessment information captures the same waterbody use support information reflected in the IR categories. As a result, the IR categories correlate well with the *severity of water quality problem* and *level and documentation* used in the WI/PWL assessments. The general relationship between the IR categories and the WI/PWL severity/documentation information is outlined in the Table 1. A more detailed discussion of the relationship between the IR categories and the WI/PWL assessment information is presented below.

### **Fully Supporting Waters**

The Integrated Reporting categories of *Waters Attaining All or Some Standards* (IR Categories 1 and 2) include waters listed in the WI/PWL as having *No Known Impact/Impairment*. In addition WI/PWL waters with uses assessed as *Stressed (Known or Suspected)* – these are categorized on the WI/PWL as *Waters Having Minor Impacts* – are also assigned to one of these Integrated Reporting categories. Although *Stressed* waters exhibit indications of minor water quality impacts, these waters meet water quality standards and fully support uses. Consequently, *Waters Attaining All or Some Standards* are the most appropriate of the available USEPA IR categories for these waters.

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Determination as to which of the two *Waters Attaining Standards* categories (i.e., *IR Category 1 - Waters Attaining All Standards* or *IR Category 2 - Waters Attaining Some Standards*) is more appropriate is made on a case-by-case basis. Class C waters (or similar water classes where best uses are aquatic life use support, recreation and fish consumption) with *No Known Impact/Impairment* are often categorized as *Attaining All Standards*. This is because assessments for these waters typically include biological screening, and a favorable biological screening has at least some relationship to these other uses being supported. On the other hand, Class A and B (and similar) waters which support additional uses – drinking water supply and public bathing, respectively – require use-specific monitoring information and assessment. Because assessment of these additional uses require more use-specific indicators – indicators that are not a routine component of routine statewide monitoring efforts – it is more likely that some of the wider range of uses for these waters are not evaluated. Consequently, these waters are more likely to fall into the *Attaining Some Standards* category, unless additional monitoring information specific to assessing these uses is available.

**Table 1 WI/PWL Use Support/Severity/Documentation and USEPA 305(b) Integrated Reporting Categories**

Severity of Problem	Level of Documentation	USEPA Integrated Reporting Categories
Precluded	Known	Impaired/Threatened Waters <sup>1</sup>
Impaired	Known, Suspected	
Stressed	Known, Suspected	Waters Attaining All or Some Standards <sup>2</sup>
	Possible	Waters with Insufficient Data
Threatened <sup>3</sup>	Known	See Below <sup>4</sup>
	Suspected	Waters with Insufficient Data
	Possible	Waters Attaining All or Some Standards <sup>2</sup>
No Known Impact/Impairment		Waters Attaining All or Some Standards <sup>2</sup>
UnAssessed Waters		Waters with Insufficient Data

<sup>1</sup> Determination as to whether a TMDL is required will be made on a case-by-case basis.  
<sup>2</sup> Determination as to whether all or some standards are attained will be made on a case-by-case basis.  
<sup>3</sup> In order to support restoration and protection strategies, the WI/PWL uses a broader definition of *Threatened* to track potential threats to waters that do not meet the EPA threshold of data that reveals a declining water quality trend; hence the assignment of the appropriate Use Attainment Category for WI/PWL *Threatened* waters is dependent upon the Level of Documentation.  
<sup>4</sup> Waters listed in the WI/PWL as having Known Threats to uses will be evaluated on case-by-case basis to determine if the threats meet the EPA threshold for a threatened water and whether the water should be reported as a Category 4 or 5 waters and considered for inclusion on the Section 303(d) List.

**Waters Not Supporting Uses**

The two Integrated Reporting categories that capture *Impaired/Threatened Waters* (IR Categories 4 and 5) correspond to waters listed in the WI/PWL as having *Precluded* and/or *Impaired* uses. These waters are categorized on the WI/PWL as *Impaired Waters*. Determination as to which of the two *Impaired/Threatened Waters* categories (i.e., *IR Category 4 - Impaired/Threatened Waters Not Requiring a TMDL* or *IR Category 5 - Impaired/Threatened Waters Requiring a TMDL*) is more appropriate is made on a case-by-case basis.

The two Integrated Reporting Use Attainment Categories that capture *Impaired/Threatened Waters* correspond to waters listed in the WI/PWL as having *Precluded* and/or *Impaired* uses. Determinations as to whether a waterbody requires a TMDL are made on a case-by-case basis.

Additional discussion regarding this determination is presented later in this methodology.

**Waters with Insufficient Data**

Waters listed in the WI/PWL as *UnAssessed Waters* or as corresponding to *Waterbody Impacts Needing Verification* (these include *Stressed/Possible* and *Threatened/Suspected* waters) are generally assigned to IR Category 3 – *Waters with Insufficient Data*. The inclusion of an IR Category of *Waters with Insufficient Data* recognizes that assessment of a waterbody as impaired should include the attainment of a minimum threshold of confidence and certainty that such a designation is appropriate. Maintaining that minimum threshold is all the more appropriate when one considers that the threshold for delisting waters once they are listed is quite high and requires significant documentation of water quality improvement. Therefore, it is NYSDEC’s

philosophy that the Section 303(d) List be reserved for those waterbodies where impairment of uses is clear. Waters where impairments are suggested but not confirmed are more appropriately included as IR Category 3 - *Waters with Insufficient Data* to make a determination. Additional monitoring and verification of conditions in these waterbodies will be conducted in accordance with New York State Monitoring Strategy. Meanwhile, resources for development of a TMDL and other restoration strategies can be more effectively directed to those water quality problems where benefits are more certain.

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### **Threatened Waters**

The assignment of waters listed in the WI/PWL as *Threatened* to an appropriate USEPA IR category is dependent upon the WI/PWL level of documentation for the threat. This is because the use of the term "threatened" in the WI/PWL is much broader than USEPA's use of the term, encompassing a wider-range of threats.

To satisfy the more stringent USEPA definition of a "threatened" water, available data must indicate a declining trend in water quality that is predictive of the non-attainment of standards in the future – specifically, by the end of the current listing cycle. Only WI/PWL *Threatened* waters with a level of documentation of *Known* potentially meet this threshold. Consequently, only waters listed on the WI/PWL as **Known** to be *Threatened* are considered for assignment to the *Impaired/Threatened Waters* IR categories. Whether these waters are, in fact, designated as *Impaired/Threatened* is dependent upon the rate of water quality decline (i.e., does the water meet the USEPA condition that non-attainment is expected by the end of the current listing cycle?), which will be evaluated on a case-by-case basis.

Waters listed in the WI/PWL as *Threatened*, but with a level of documentation of *Suspected* or *Possible*, reflect intuitive or potential threats, and do not meet the USEPA threshold of "threatened." WI/PWL *Threatened* waters characterized as *Suspected* have some reasonable evidence to suggest declining water quality but results remain inconclusive. Consequently *Threatened Suspected* waters are typically designated as IR Category 3 - *Waters with Insufficient Data*. *Threatened Possible* waters, where anecdotal evidence (with limited documentation) suggests a threat, are assigned to the *Waters Attaining All/Some Standards* IR categories, until additional information allows for better quantification of the threat.

### **Impaired/Threatened Waters Not Requiring a TMDL**

Waters assessed as *Impaired/Threatened Waters* are designated as either requiring a TMDL (IR Category 5) or not requiring a TMDL (IR Category 4). Waters assessed as *Impaired/Threatened Waters* but where TMDL development is not the most appropriate response to the water quality issue are assigned to IR Category 4 and are not included on the Section 303(d) List. (See also *Appendix: Comments on Listing/Delisting Decisions and Delisting Due to Other Required Control Measures*.) These *Impaired/Threatened Waters Not Requiring a TMDL* fall into one of the following three sub-categories.

#### *Impaired/Threatened Waters where a TMDL is Completed and Being Implemented* (IR Category 4a)

Once a TMDL has been developed and approved, the waterbody is no longer included on the Section 303(d) List. Progress regarding completion of TMDLs and the delisting of waters where TMDLs are in place will be evaluated with the development of each subsequent 303(d) List.

#### *Impaired/Threatened Waters where Other Controls are More Suitable* (IR Category 4b)

This sub-category recognizes that for some water quality impairments and threats, actions other than TMDL development provide a more appropriate and effective response. Assignment of waters to this sub-

category is based on the availability and appropriateness of other strategies that are expected to be more effective in addressing impairments/threats than TMDLs. These strategies may include the correction of failing or inadequate treatment facilities, implementation of best management practices (BMPs) to specifically address impairments, zoning restrictions or other local initiatives. Progress and effectiveness of these strategies – relative to the development of a TMDL – will be evaluated during the development of each subsequent 303(d) List.

#### *Waters Impaired by Pollution, Not by Pollutant(s)* (IR Category 4c)

Waterbodies assigned to this sub-category are not meeting standards due to *pollution* and no specific *pollutant* is contributing to the impairment. Because TMDLs represent a pollutant-specific approach, the development of a TMDL for these waters is NOT required. Specific examples of impairments/threats that fall into this sub-category include, but are not limited to:

- exotic, invasive, non-native species,
- flow alteration or other hydrologic modification, or
- natural conditions or conflicting use.

### **Section 303(d) Listed Waters**

For waters where none of these three conditions apply, the waterbody/pollutant is designated an *Impaired/Threatened Water Requiring a TMDL* (IR Category 5). ***This list of waters – that do not meet water quality standards in spite of technology-based effluent limits and for which TMDL development to attain water quality standards is required – represents the New York State Section 303(d) List.***

#### **Prioritization of Section 303(d) List Waters**

The Section 303(d) List of *Impaired/Threatened Waters* requiring a TMDL or other strategy includes an indication of priorities for the development of TMDLs for waters/pollutants. While all waters on the Section 303(d) List need to be addressed, the identification of those specific waterbodies/pollutants that are high priority for TMDL development during the next two-year reporting cycle reflect the understanding of the water quality problem and sources, the availability of the data necessary to develop a TMDL, the value (i.e., presumed effectiveness) of a TMDL toward addressing the problem, and other factors.

To provide a more general sense of these factors and their impact on priorities and the timing of TMDL development, the waters on the New York State Section 303(d) List are segregated into sub-parts. These sub-parts allow for clarification of widely differing conditions as well as limitations and other circumstances which affect the scheduling and development of TMDLs. These sub-parts are outlined below:

#### **Part 1 - Individual Waterbody Segments with Impairments Requiring TMDL**

These *Impaired/Threatened Waters* have been identified by the state to have use impairments and to need a segment-specific TMDL. TMDLs or other appropriate strategies for these waters and specified pollutants are either currently being developed by NYSDEC, or they are scheduled for future development by NYSDEC. If an alternative strategy other than a TMDL is identified as appropriate to address a waterbody impairment, that waterbody may be considered for delisting to IR Category 4b.

#### **Part 2 - Multiple Segment/Categorical Impaired Waterbody Segments**

These are *Impaired/Threatened Waters* that also require a TMDL or other strategy to attain water quality standards. However, because these waters are impaired by similar pollutants/sources it may be more effective to develop a TMDL to address the impairment of multiple waterbodies rather than the specific waterbody. Due to the complexity of the problem and number of segments involved, development of multiple segment TMDLs/strategies for these waters may require additional time and involvement of agencies (USEPA, others) outside NYSDEC in order to complete.

These *Multiple Segment/Categorical Impaired Waterbody Segment* groupings include:

- Atmospheric Deposition (Acid Rain) Waters - where much of the pollutant source lies outside of New York State and for which the issue requires a national effort/program. TMDLs for some of these waters have been developed. But the implementation of the TMDL and restoration of these waters will require USEPA leadership at the national level.
- Fish Consumption Waters - which in many cases are the result of either historic/legacy pollutants (PCBs, dioxins, mirex, etc.) in bottom sediments, the continuing discharge of which has effectively been regulated, or; atmospheric deposition pollutants (mercury) that must, like acid rain waters, be addressed nationally.
- Shellfishing Waters - where this specific use is restricted due primarily to urban/stormwater runoff sources. TMDLs for many previously listed Shellfishing Waters have been completed. The scheduling of TMDL development for the remaining waterbodies is dependent upon available resources as well as the implementation and evaluation of the impact of new stormwater regulations which are expected to address, at least in part, this water quality issue.

### Part 3 - *Waterbodies for which TMDL Development May be Deferred*

These are waters where the scheduling of TMDL development may be deferred, pending 1) verification of the suspected impairment, or 2) verification of the specific pollutant/cause, or 3) evaluation of the effectiveness of other restoration measures already underway. These sub-parts of Part 3 of the list are described as follows.

- *Waterbodies Requiring Verification of Impairment*  
For some listed waterbodies, there is some degree of uncertainty as to whether the water quality impacts rise to the level of an impairment. As discussed earlier in this methodology, waters where there such uncertainty exists are typically categorized as *Waters with Insufficient Data* (Category 3). However a number of waters with suspected impairments are included on the current Section 303(d) List. In most cases these are previously listed waterbodies for which more recent information suggests that the waterbody may not be impaired, but where such information is insufficient to meet the requirements for de-listing the waterbody. In keeping with the requirements for de-listing, these waters continue on the Section 303(d) List. However it may be appropriate to defer the development of TMDLs to address these suspected impairments until such impairments can be verified.
- *Waterbodies Requiring Verification of Cause/Pollutant*  
In some cases, water quality impairments may be identified, yet there may be uncertainty as to the specific cause/pollutant regarding that impairment. Before prioritization and scheduling of TMDL development of these waters can be conducted, the cause/pollutant needs to be verified. Waters requiring this verification have been segregated to this part of the list pending such verification.
- *Waterbodies Pending Implementation/Evaluation of Other Restoration Measures*  
For some impaired waters, considerable measures are in place or underway that are expected to address water quality impairments. Where it can be shown that such measures will result in achieving water quality standards and restoration of uses in the waterbody, these waters can be delisted as Category 4b (*Impaired/Threatened Waters where Other Controls are More Suitable*) waters. However in some cases the waters and impairments are sufficiently complex that such a demonstration is not possible. Nonetheless proceeding with development of a TMDL in these instances would provide no additional benefit to the work that is already underway. Consequently, TMDL development for these waters may be deferred until the effect of other activities can be evaluated. (See also *Appendix: Comments on Listing/Delisting Decisions and Delisting Due to Other Required Control Measures*)

## Other Listing Issues

In compiling the Section 303(d) List a number of other issues which have an impact on listing decisions should be considered. These issues are discussed below.

### Delisting of Waters from Section 303(d) List

The removal of waterbodies from the list (delisting) and movement of waterbodies within the list is governed by specific guidelines. The most common justification for delisting a waterbody from the Section 303(d) List is the completion of a TMDL to address the listed pollutant. Once a TMDL has been developed for a water on the Section 303(d) List, the water is moved from Category 5 to Category 4a (*Impaired/Threatened Water Not Requiring a TMDL*) and is, by definition, no longer included on the list. Note that these waters continue to be considered to be impaired (pending future assessment that shows standards are met and uses are fully supported), but they are no longer appropriate for listing on the Section 303(d) List of Impaired Waters Requiring a TMDL. The delisting of waters for which TMDLs have been developed will occur during the compilation of the next Section 303(d) List after the TMDL has been approved.

Delisting of a previously listed water *prior* to the development of a TMDL can occur only 1) if the water is shown to be meeting all applicable water quality standards, or 2) if, upon re-examination, the original basis for listing the water is determined to be inaccurate. Based on these thresholds, the following presumptions guide delisting of waters for the three types of assessment criteria outlined in the *Assessment Methodology*.

#### Use Restriction Orders

For listings based on use restriction orders, waters will be delisted if the restriction is lifted by the issuing authority. This applies to drinking water advisories, public bathing beach closures, fish and shellfish consumption advisories. The lifting of a restriction order represents sufficient evidence that standards that previously were not being met are now being met. As a result, this justification for delisting corresponds to the first of the two thresholds for delisting: that the water is meeting applicable water quality standards.

As long as a use restriction order remains in effect, the waterbody cannot be delisted. Subsequent monitoring data showing water quality improvement and the attainment/maintenance of standards alone is not sufficient to delist; that data will be forwarded to the appropriate agency for consideration regarding the lifting of the use restrictions. If use restriction orders are modified, the degree of use impairment should be re-evaluated in light of the assessment methodology to determine the appropriateness of continued listing. For example, if a seasonal shellfishing restriction for a listed waterbody is lifted due to improved water quality but an administrative closure in the waterbody remains in effect for portion of the waterbody due to proximity of wastewater discharges, the water may be delisted since the assessment methodology indicates that administrative closures alone do not result in listing.

#### Numerical and Narrative Standards and Criteria

For listings based on the failure of the water to meet water quality standards, delisting requires more recent monitoring data showing that the standards are now being attained and maintained. In most of these delistings, measurable evidence of a sufficient water quality improvement is needed. However, if the applicable water quality standard or criteria is revised to be less stringent, if site-specific criteria are developed for the waterbody, or if other water quality measures are determined to be more appropriate, and existing data meets the new threshold, then waters may be delisted without a documented improvement in water quality.

#### Surrogate Water Quality Indicators

For listing based on surrogate water quality indicators, requirements for delisting are similar to those for listing based on standards and criteria. Generally, delisting requires monitoring data showing sufficient water quality improvement and that conditions resulting in the original listing (as outlined in the Assessment and Listing Methodologies) are no longer present. However, if more appropriate and/or accurate indicators are developed and implemented, waters may be delisted without documented water quality improvement as reflected in the original surrogate indicators.

The justification for delisting waters based not on water quality improvement, but on changes in water quality standards, criteria and/or indicators corresponds to both of the two thresholds for delisting outlined above. In such cases the waters are, in fact, *meeting all (new) applicable water quality standards*. Additionally, in these cases the *basis of the original listing* (i.e., the standard, criteria or indicator) has, in fact, *been re-evaluated and determined to be inaccurate* (or, at a minimum, less accurate than the revised standard, criteria or indicator).

Other reasons for the delisting of Section 303(d) List waters without documentation of specific water quality improvement include:

*Reassessment Based on New Methodology*

Waters previously listed based on water quality assessment guidance pre-dating the more recent *Assessment Methodology* should be re-evaluated. If any of these waters do not meet the new thresholds for listing, they will be proposed for delisting. Justification for such delistings from Part 3a of the List will reflect that the waterbody is meeting applicable water quality standards and that the original basis for listing is no longer accurate/appropriate.

*Verification of Cause/Pollutant Not Suitable for TMDL Development*

As noted previously, some impairments are a result of pollution, rather than a pollutant. Such waters do not require TMDL development. Justification for such delistings from Part 3b of the List where verification of the cause indicates that the impairment is the result of pollution, rather than a pollutant, will reflect that the original basis for listing is no longer accurate/appropriate, and the waterbody/pollutant will be assigned to IR Category 4c.

*Implementation/Evaluation of Other Restoration Measures*

Waterbodies are included on Part 3c of the List if they are undergoing restoration measures, but it cannot be readily demonstrated that the specific measures will result in the complete elimination of the impairment. If it is determined during re-evaluation that the measures being undertaken will result in the waterbody achieving water quality standards and the full restoration of uses, then a delisting is appropriate and the waterbody/pollutant is assigned to IR Category 4b.

### **Age of Data/Information**

Ideally data and information used in the listing decisions would have been collected within the preceding five years (one statewide cycle of the Comprehensive Assessment Strategy rotating basin schedule). However given resource limitations, the size of New York State and the number of waterbodies (nearly 5,000 segments), it is not always possible to assess all waters within one or (in the case of more remote waters) even two five year cycles. Waters with data/information indicating *No Known Impairment* is typically assessed and considered as having no impairment (*Water Attaining All/Some Standards*) for as long as 10 years (2 rotating basin cycles), assuming no subsequently collected data/information contradicts this assessment. Waters assessed as having *No Known Impairment* based on data that is greater than 10 years old may also be considered to continue to have *No Known Impairment* in the WI/PWL if watershed conditions (land use, level of development, pollutant sources, etc) have not changed significantly and it is reasonable to assume – based on best professional judgement – that water quality has not changed significantly. However waters that have not been assessed in ten years should be considered *evaluated* rather than *monitored* (*evaluated* and *monitored* assessments are discussed in the *Assessment Methodology*). For waters previously assessed as having *No Known Impairment* but where watershed conditions have changed and there is no more recent verification of fully supporting water quality should be listed as *UnAssessed* in the WI/PWL and assigned to the *Waters with Insufficient Data* category.

Once a waterbody is assessed as an *Impaired Segment* and included on the Section 303(d) List, the water must not be removed based solely on passage of time that results in the initial assessment data/information

becoming more than 10 years old. Delisting of waters requires subsequent data/information that corresponds to the delisting justifications outlined above. Absent such a delisting justification, waters previously assessed as impaired will continue to be listed.

### **Impacts Due to Natural Conditions/Conflicting Uses**

Waters where impacts result from natural conditions, unrelated to anthropogenic sources (such as rivers that carry high sediment loads that may discourage recreation, low dissolved oxygen at lower depths in lakes, habitat that does not support diverse biological communities, and so on) are evaluated on a case-by-case basis during the WI/PWL assessment. Some of these waters may be listed as impaired. However, in other cases where natural conditions cause impacts or impairment, the waters may be listed as *Impaired/Threatened Waters Not Requiring a TMDL* (due to a cause related to pollution rather than a pollutant). For waters where surrogate indicators suggest an impact or impairment due to natural conditions but where there is no specific water quality standards exceedance, the water may be considered to be supporting appropriate uses and not listed. Even in waters where specific water quality standards are not met 100% of the time or in 100% of the waterbody due to assumed natural conditions, the decision whether or not to list the water as impaired depends on the frequency of non-compliance with standards and/or the degree to which the sampling data is representative of the larger waterbody. It may be appropriate to consider such waters as fully supporting of uses, fully supporting but stressed, or – in cases where there is uncertainty regarding the presence of a natural condition – the water may be considered to have insufficient data to make a determination.

Similarly, waters where an impact or impairment is due to multiple conflicting uses, both or all of which cannot be reasonably resolved, need to be considered on a case-by-case basis as well. Examples of such conflicting uses include fluctuating flood control reservoir levels that affect aquatic life or the administrative closure of portions of larger waters for shellfishing due to the proximity of recreational boating marinas.

### **Waters Needing Verification of Impact/Impairment**

USEPA's Consolidated Assessment and Listing Methodology guidance recognizes the occurrence of conflicting indicators and proposes approaches to resolve such conflicts. In cases where the conflict may be attributed to artifacts of the data or environmental factors USEPA suggests delaying the classification in order to collect more data, re-evaluate the criteria, investigate site-specific criteria or conduct use attainability analysis. This approach is supported by the Integrated Reporting category of *Waters with Insufficient Data* which tracks these waters until sufficient information is available to determine the attainment status and whether it is to be listed. Because the threshold for de-listing typically requires a demonstration of water quality improvement, it is most appropriate to use this category when there is uncertainty whether current conditions support uses or not.

In addition to waters with conflicting indicators of use support, impacts based on anecdotal information or insufficient data will be listed in the WI/PWL as *Stressed (Possible)*, tracked as *Waters Needing Verification of Impact*, and assigned to the Integrated Reporting Use Attainment Category of *Waters with Insufficient Data*. Because clear evidence of an impairment or non-attainment of standards is lacking, these waters will not be included on the Section 303(d) List. Such waters will be a priority for re-evaluation during subsequent rotating basin monitoring and assessment cycles. The reasoning for this approach lies in the difficulty in showing water quality improvement (a requirement for delisting) if there is insufficient baseline information to document an impairment.

Although it has been suggested that *Waters with Insufficient Data* be included on the Section 303(d) List, NYSDEC suggests that it is more appropriate that the Section 303(d) List be reserved for waters where there is a clear impairment to uses. The practical effect of not listing *Waters with Insufficient Data* is not significant. Whether the waterbody is listed or not, these waters require additional monitoring to better document water quality conditions before a TMDL can begin to be developed. In accordance with the *Comprehensive Assessment Strategy*, the rotating basin monitoring cycle will return to all basins within 5

years, which, given the likely low priority assigned the water if placed on the list and the resource limitations of the state, equals or improves the time frame for monitoring under a TMDL approach.

### **Alignment of the Assessment and Monitoring Programs**

The proposal for a New York State Comprehensive Assessment Strategy – with a goal of assessing ALL the waters of the state, not just waters with known or suspected impacts – was first presented in the 1998 New York State Section 305(b) Report. The strategy sought to integrate and build on three cornerstones: a rotating drainage basin approach (already in place for the New York State monitoring program), enhanced communication and public involvement in the assessment process, and use of the New York State Priority Waterbodies List (now the Waterbody Inventory and Priority Waterbodies List) to drive the assessment process. The strategy lays out a continuous iterative process that incorporates public and stakeholder input into a thorough updating of water quality information. The strategy also sets out a schedule to complete basin assessments throughout the entire state over a five-year cycle.

The first assessments to reflect the Comprehensive Assessment Strategy (including assessments for waters with No Known Impacts) were published in 2001. These assessments addressed the waters of the Lake Champlain, Susquehanna River and Atlantic Ocean/Long Island Sound Basins, and the results of these basin assessments were reported in 2002 Section 305(b) Report. As additional basin assessments were completed, progress toward comprehensive assessment of ALL waters of the state was reported in subsequent Section 305(b) Reports and annual updates. The increase in the percent of assessed river/stream miles in the state from 7% in 1996, to 51% (2004) and 62% (2009) reflects this progress.

It was originally envisioned that comprehensive assessments would be conducted at the conclusion of two-year Rotating Integrated Basin Monitoring Program (RIBS) monitoring cycles, and would result in completed assessments for all 17 drainage basins in the state by 2006. Unfortunately the initial assessments and the effort to include significantly greater number of waters have taken more time to complete than originally planned. However in recent years, considerable progress has been made toward completing the comprehensive assessments for the remaining basins and aligning the assessment and the RIBS monitoring efforts.

By early 2009, comprehensive WI/PWL basin assessment reports for all 17 drainage basins in the state had been completed; with ten of the 17 having been updated since 2007. Updates of seven (7) remaining basin assessment reports, which were last updated between 2001 and 2006, are scheduled to be completed by the end of 2009, in time for inclusion in the 2010 Section 305(b)/303(d) Integrated Reporting effort. A revised schedule for comprehensive WI/PWL basin report updates is presented in Table 2. The schedule presents a path for achieving the full alignment of the WI/PWL assessment program with the Division of Water RIBS monitoring program by the next Section 305(b)/303(d) Integrated Reporting effort in 2012.

While scheduled basin assessments are being updated, it is anticipated that new and additional water quality data and information for waters in basins that have been updated more recently (since 2007) will become available. This data will be reviewed and considered in the development of the 2010 Section 303(d) List of Impaired/TMDL Waters. However the focus of this review will be to identify clearly impaired waters that, even without the benefit of a comprehensive assessment associated with the WI/PWL update process, are obviously appropriate to include on the 2010 Section 303(d) List. Waters where evidence of impairment is not as clear will be reviewed more fully during the appropriate scheduled WI/PWL basin assessment. These future comprehensive assessments conducted through the WI/PWL update process may ultimately identify additional waters that meet the threshold of impaired waters, and these waters will be included on subsequent Section 303(d) Lists. However without the more thorough review and public/stakeholder involvement provided by the comprehensive assessment, it may be more appropriate to consider the yet-to-be-assessed waters in these basins to be *Waters with Insufficient Data* to make a determination regarding listing (Integrated Reporting Category 3).

<b>Table 2 Status/Schedule of Comprehensive Assessment (WI/PWL) Report Updates</b>		
<b>Drainage Basin</b>	<b>Most Recent Update</b>	<b>Next Scheduled Update</b>
Allegheny River Basin	May 2007	2010
Atlantic Ocean/Long Island Sound Basin	April 2002	Summer 2009
Black River Basin	May 2007	2010
Chemung River Basin	May 2007	2010
Delaware River Basin	December 2002	Summer 2009
Genesee River Basin	March 2003	Summer 2009
Housatonic River Basin	July 2008	2010
Lake Champlain Basin	July 2001	Spring 2009
Lake Ontario (Minor Tribs) Basin	August 2007	2009
Lower Hudson River Basin	July 2008	2010
Mohawk River Basin	April 2003	Fall 2009
Niagara River/Lake Erie Basin	September 2005	Fall 2009
Oswego River/Finger Lakes Basin	December 2007	2010
Ramapo (Hackensack/Passaic) River Basin	July 2008	2010
Saint Lawrence River Basin	February 2009	2011
Susquehanna River Basin	April 2001	Summer 2009
Upper Hudson River Basin	May 2007	2010

### Segmentation of Waterbodies

As discussed in the *Assessment Methodology*, the designation of specific waterbodies in the Waterbody Inventory must strike a balance between being too specific (resulting in more segments than can be assessed with finite resources) and too general (resulting in segments that are too large and diverse and difficult to assess accurately). Determining the specific boundaries for individual waterbody segments is based on a number of considerations, including waterbody type, stream classification, hydrologic drainage, waterbody length/size, and homogeneity of land use and watershed character. Waterbody segments are **not** defined based upon the length/size of area impacted by a specific water quality problem. Because estimates of the extent of water quality impacts are often inexact and may change regularly, using this information to establish segment boundaries would make the Waterbody Inventory/Priority Waterbodies List considerably more

Determining the specific boundaries for individual waterbody segments is based on a number of considerations, including waterbody type, stream classification, hydrologic drainage, waterbody length/size, and homogeneity of land use and watershed character. Waterbody segments are **not** defined based upon the length/size of area impacted by a water quality problem.

difficult to manage and update, while providing little added benefit. However, some flexibility in the segmenting of waterbodies is allowed in order to provide sufficient protection of all waterbody uses.

Generally water quality impairment affecting more than 10-20% of a waterbody length/area is assigned to the entire waterbody segment in the database. Any limitation regarding the extent of the impairment is noted in the segment narrative. If impairments affect a lesser percentage of the total waterbody area, the impairment may not be recorded for the entire segment. However, the nature and extent of the impact will also be recorded in the segment narrative. Additionally, if the limited area does not support waterbody uses, the affected area of the segment may be considered for inclusion on the Section 303(d) List.

### **Transition from Previous Section 303(d) Lists**

USEPA guidance regarding integrated water quality monitoring and assessment and the development of state Consolidated Assessment and Listing Methodologies (first proposed in 2000 and updated in subsequent 305(b)/303(d) Reporting/Listing cycles) somewhat alters the criteria whereby some waterbody/pollutants were originally listed. As was stated previously, the delisting of previously listed waters prior to the development of a TMDL or the identification of other controls more suitable than a TMDL can occur only 1) if the water is shown to be meeting all applicable water quality standards, or 2) if, upon re-examination, the original basis for listing the water is determined to be inaccurate. However, a few of the current listing pre-date the *Assessment and Listing Methodologies* currently in use. Therefore it is possible that some of the older waterbody/pollutant listing that appear on *Part 3a (Waters Requiring Evaluation Based on the New Methodology)* of the List, may be suggested for delisting not because the original basis for listing the water is determined to be inaccurate, but because the original basis for listing no longer applies.

Other issues regarding the transition from the 1998 Section 303(d) List to subsequent lists are discussed below.

### **Acid Rain Segments**

Prior to the development of the comprehensive monitoring strategy the 1998 Section 303(d) List included 388 waterbodies impacted by atmospheric deposition. Because the subsequent development of a comprehensive monitoring strategy required limiting the WI/PWL database to lakes and ponds of 6.4 acres or larger, many of these smaller lakes and ponds are no longer tracked as individual waterbodies in the database. Instead they have been combined into multiple-lake waterbody segments. Where these larger combined segments have been determined to be impaired by acid rain, they are included in Part 2a (Acid Rain Waters) of the List. Where the acid rain-impaired waters within a segment represent a very small percentage of the entire multiple-lake waterbody and the overall assessment of the larger waterbody is not impaired, the larger waterbody is not listed but the smaller, previously listed pond is included in Appendix A - *Smaller Lakes Impaired by Atmospheric Deposition (Acid Rain)*. Appendix A allows for the accounting of small previously listed acid rain ponds that are not tracked individually but that continue to be impaired. In the 2008 Section 303(d) List there were 80 such waterbodies. Footnotes identifying the smaller ponds within a multiple-lake segment and which multiple-lake segment includes a specific small pond are used to help track these previously listed waters.

### **Listed Waterbodies Not Meeting Dissolved Oxygen Standards**

During the development of the 2008 Section 303(d) List, USEPA identified 46 waterbodies where available data and/or other information indicates that water quality standards are not being met at times in portions of the waterbody – primarily at lower depths of these lakes – and should be listed. While acknowledging that such seasonal low dissolved oxygen and lower lake depth is in many cases a naturally occurring phenomenon, USEPA held that because existing New York State water quality standards for dissolved oxygen are expressed in the terms “never to be less than,” waters with any instances of dissolved oxygen below the applicable standard is to be considered to be impaired and included on the state’s Section 303(d)

List. NYSDEC expressed concerns regarding this overly stringent interpretation and application of its standard; concerns expressed in the NYSDEC Response to Comments on its 2008 Section 303(d) List and further addressed in the *Assessment Methodology*. Although NYSDEC believes there are more effective ways to categorize these waters, the 2008 List includes a recognition of these waters in Appendix B - *Listed Waterbodies Not Meeting Dissolved Oxygen Standards, Pending Verification of Use Impairments/Pollutants/Sources*.

### **Waterbody Re-Segmentation**

Implementation of a more systematic approach to defining the bounds of individual waterbody segments (discussed previously in the *Assessment Methodology* and *Listing Methodology*) has result in some inconsistency regarding the number of segments, total area/length affected and the specific waterbody names listed on Section 303(d) Lists issued since 1998. However the effort to more consistently define waterbody segments is largely complete and changes to future Section 303(d) Lists that are the result of re-segmentation, and not related to changing 303(d)/TMDL status, are expected to be infrequent.

### **Impaired/Delisted Waters NOT Included on the NYS 2008 Section 303(d) List**

Included with but separate from the NYS 2008 Section 303(d) List are a few supplemental listings. Although these waterbody/pollutant listings are not considered to be on the Section 303(d), they provide additional information toward understanding listing decisions and clarify how impairments are considered. Specific supplemental lists are described below.

#### Waterbody Segments Not Listed Because TMDL is Not Necessary

A list of *Other Impaired Waterbody Segments Not Listed (on 303(d) List) Because Development of a TMDL is Not Necessary* is included with the Section 303(d) List. The purpose of this supplement is to provide a more comprehensive inventory of waters of the state that do not fully support designated uses and that are considered to be impaired.

Section 303(d) of the Clean Water Act stipulates that impaired waters that do not require a TMDL are not to be included on the Section 303(d) List. There are three (3) justifications for not listing an impaired water:

Category 4a - TMDL development is not necessary because a TMDL has already been established for the segment/pollutant.

Category 4b - TMDL is not necessary because other required control measures are expected to result in restoration in a reasonable period of time.

Category 4c - TMDL is not appropriate because the impairment is the result of pollution, rather than a pollutant that can be allocated through a TMDL.

#### 2008 Waterbody/Pollutant Delistings

A separate list of water/pollutant combinations that were included on the previous (2006) Section 303(d) List, but that are NOT included on the 2008 List is also available. This information provides some linkage and continuity between the previous and proposed new list. The specific reason that the waterbody no longer appears on the List (i.e., delisting action, reassessment, re-segmentation, etc.) is also presented. Some of these waters (those that have been delisted but that remain *Impaired*) also appear on the list of *Other Impaired Waterbody Segments Not Listed Because Development of a TMDL is Not Necessary*.

Appendix

## **Comments on Listing/Delisting Decisions and Delisting Due to Other Required Control Measures**

The discussion below is taken from the New York State Response to Comments regarding The 2006 NYS Section 303(d) List of Impaired Waters Requiring a TMDL (May 17, 2007). These discussion concern specific listing issues that came up during the development of the 2006 Section 303(d) List and that are also expected to affect the development of future lists.

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### **GENERAL COMMENT on Listing/Delisting Decisions**

In responding to the comments received on the 2006 Section 303(d) List, a few broad issues regarding the listing and delisting of waters arose that should be addressed at the outset of this response to the comments. These issues largely concern the intent of the Section 303(d) List. The List is **not** a comprehensive list of waters that meet a threshold of *Impaired*. Rather the List is defined as including only those impaired waters *for which development of a Total Maximum Daily Load (or other restoration strategy) is necessary* to address the impairment and restore the waterbody uses of the water. If a TMDL or other strategy has been developed, or if a TMDL is not appropriate to address the impairment, then inclusion on the List is not appropriate even if the water continues to be impaired.

The most obvious reason for removing a water from the Section 303(d) List (delisting) is because the conditions in that water have improved to the point where the water supports its waterbody uses and no longer meets the threshold of being impaired. A number of those commenting on the proposed List expressed concern that by not listing a specific water, NYSDEC is stating that the water is not impaired. However that is not necessarily true. USEPA regulations and guidance concerning Section 303(d) Listing also recognize specific circumstances when a water that meets the threshold of being impaired should not be included on the Section 303(d) List. These circumstances include:

- o Waters where a TMDL has already been developed and approved by USEPA;
- o Waters where other required control measures are expected to result in the attainment of applicable water quality standards in a reasonable period of time, and;
- o Waters where the impairment is the result of pollution that is not the result of a specific pollutant (substance) and for which a loading (TMDL) cannot reasonably be developed.

In presenting the 2006 Section 303(d) List, New York State is including a supplemental listing of *Impaired/DeListed Waters NOT Included on the 2006 Section 303(d) List*. This listing includes *Other Impaired Waterbody Segments Not Listed Because Development of a TMDL is Not Necessary*. The purpose of this supplement is to provide a more comprehensive inventory of waters in the state that do not fully support waterbody uses and are considered to be impaired, irrespective of whether a TMDL has been completed, some other strategy is more effective than a TMDL, or whether a TMDL is even practical for the specific pollutant of concern. The supplemental listing includes notations indicating the justification for the decision to not include the waterbody/pollutant on the 2006 Section 303(d) List.

Also included in the supplemental listing of *Impaired/DeListed Waters NOT Included on the 2006 Section 303(d) List* is a list of *2006 Delisted Waters (Waters listed in 2004, but that are NOT included in the 2006 Section 303(d) List)*. This listing is included to provide easier tracking of specific waters from the previous (2004) List.

Most of the comments NYSDEC received on the draft Section 303(d) List concerned specific waterbodies/pollutants and the decision whether or not it was appropriate to include them on the List. The listing decisions regarding each of these specific waterbodies/pollutants are outlined in more detail below in the *Response to Comments on Specific 2006 Section 303(d) Listed Waters*. As noted previously, the listing decision for a specific waterbody/pollutant typically hinges on one or more of the following issues:

1. whether water quality impacts meet the threshold of being impaired;
2. whether a TMDL already in place is reasonably expected to address the impairment;
3. whether some other strategy to address the impairment is appropriate/adequate, and/or;
4. whether a TMDL is an appropriate approach to address a particular impairment.

### **GENERAL COMMENT on Delisting Due to Other Required Control Measures**

In the Draft Section 303(d) List, NYSDEC proposed delisting a number of waters due to other significant required control measures that are in place and are expected to address water quality impairments. Two groups of waters in particular were the focus of considerable comment and discussion. One of these was the New York City CSO waters where an Order on Consent between NYSDEC and the New York City Department of Environmental Protection to develop and implement watershed and facility plans to address CSO discharges and bring these waters into compliance with the Clean Water Act. The other group of waters included the reaches of the Upper Hudson River where impairment to fish consumption due to PCB contaminated sediments is being addressed by a Record of Decision calling for the remediation of the river through dredging of the sediments. In both of these instances NYSDEC believes that these other required control measures are the appropriate means to address the water quality impairments, and that restoration of the waters will occur over a period of time that is reasonable, given the magnitude and complexity of the problem. It is also NYSDEC's position that not only would the development of a TMDL provide no additional benefit to the considerable work that currently is underway but would more likely complicate and possibly contradict the measures already in place.

Prior to the public noticing of the Draft List, NYSDEC discussed its proposal to delist these waters with USEPA, which has approval authority for the Final Section 303(d) List. USEPA agreed that the NYSDEC proposal was deserving of consideration and encouraged NYSDEC to submit a Draft List that included the delisting of these waters, so that the approach could be considered fully.

Upon review of the Draft List, USEPA agreed that for these waters the development of a TMDL in addition to the other control measures would be of little if any value. However, USEPA also expressed some concerns about the delisting of some of these waters. Primarily these concerns focused on whether the other required control measures would, in fact, be sufficient to meet existing water quality standards. NYSDEC acknowledges that while these measures will result in water quality improvement, any assurance that water quality standards would be fully met through these alternative strategies is no more and no less than the assurance that a TMDL would result in meeting standards. In fact, because there is no requirement for implementation of control measures specified by a TMDL, the alternative enforceable/required measures currently in place carry with them greater assurance for the implementation of actions that will result in significant water quality improvement than does a TMDL.

In discussions of the proposed List with USEPA, NYSDEC continued to contend that the appropriate approach in these cases is to delist these waters, and then re-evaluate compliance with water quality standards once the control measures have been implemented (in much the same way that conditions would be re-evaluated post-TMDL implementation). NYSDEC also pointed out that if water quality standards are still not being achieved after implementation, the water would be included on subsequent Section 303(d) Lists and a TMDL to resolve the remaining impairment could be developed. This approach would be comparable to the way that a second (phased) TMDL would address a situation where a TMDL did not result in full compliance with standards.

Recognizing legitimate concerns on both sides, USEPA and NYSDEC reached a compromise regarding the listing of these waters on the Section 303(d) List. It was agreed (and is reflected in the Final 2006 Section 303(d) List) that these waters would remain on the List and not be delisted. However with both USEPA and NYSDEC recognizing that the development of a TMDL on top of other control measures would be of little if any value to the restoration of these waters, it was also agreed that these waters would be included on Part 3c of the List and identified as *Waterbodies for which TMDL Development May be Deferred Pending Implementation/Evaluation of Other Restoration Measures*.

While NYSDEC would have preferred USEPA concurrence to delist these waters, we are satisfied that this listing approach recognizes 1) that other strategies can be as effective (or more effective) in restoring impaired waters, 2) that it is reasonable to await the outcome of these strategies to determine water quality compliance and if additional measures need to be taken, 3) that it allows resources to develop TMDLs to be directed to waters where no other measures are being taken, and 4) TMDLs remain an option to address remaining water quality problems in these waters.