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The New York State
Consolidated Assessment and Listing Methodology

Section 303(d) Listing Methodology

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Introduction

Section 303(d) of the Clean Water Act (CWA, or “the Act”) 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. These impaired waters – which require a Total Maximum Daily Load (TMDL) or other interim pollutant reduction strategy – are compiled every two years in the states’ Section 303(d) Lists. 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 guidance that come out of the state Monitoring Strategy and Assessment Methodology, used for updating the NYSDEC Waterbody Inventory and Priority Waterbodies List and assessing and reporting on the quality of all waters of the state as required by Section 305(b) of the Act.

It is important to stress that the Section 303(d) Impaired/TMDL Waters List is NOT a List of all impaired waters. Language in the CWA and supporting federal regulation is clear that the List is reserved for those impaired waters that are also candidates for development of a TMDL plan. Some impaired waters – those that already have TMDLs in place, can be addressed by alternative strategies, or are not suitable for a TMDL approach – are not included on the Section 303(d) List. A more comprehensive inventory of all impaired waters is maintained through the WI/PWL. This listing of all impaired waters is also included in the biennial Section 305(b) Water Quality Report.

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 routine updating of water quality information in the NYSDEC Water Inventory/Priority Waterbodies List (WI/PWL) and the compilation, every two years, of the most current WI/PWL information into a biennial CWA Section 305(b) report on the quality of New York State waters. Specific waterbodies and associated pollutants 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) Reporting and 303(d) Listing results in greater consistency and integration across these programs than would be the case if separate water quality assessment efforts were conducted for the WI/PWL, Section 305(b) Reporting and Section 303(d) List development.

This Listing Methodology describes the federal CWA Integrated Reporting Use Attainment Categories established 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 using the WI/PWL assessment information to make 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.¹ 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 ongoing water quality assessment process. Consequently while written comments during the Section 303(d) List public notice and comment period are welcome, the public is also encouraged to participate in the entire monitoring and assessment process – particularly the assessment and WI/PWL update activities which precede the compilation and submission of the Section 303(d) List.

In order to effectively and efficiently manage the monitoring and assessment effort, NYSDEC uses a rotating basin approach that evaluates water quality in three major 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 need, data and information submitted to NYSDEC up until September 30 of odd-numbered years – 6 months prior to the submittal of a Section 303(d) List to EPA – will be considered in the compiling of the next Section 305(b)/303(d) integrated assessment.

Section 303(d) List Development Schedule

April 2015*	Solicitation of “All Available Data.”
April – Sept	Other Data/Information submitted to NYSDEC
Oct – Dec	NYSDEC Reviews Data/Compiles Draft List
Jan 2016*	NYSDEC Releases Draft List for Public Comment
Jan – Feb	45-day Public Comment Period on the Draft List
March 2016*	NYSDEC Prepares Response to Comments and <i>Proposed</i> Final List for April 1 Submittal to USEPA
April	USEPA Conducts 30-day Review of List
May	USEPA Approval/Disapproval of List

* The 303(d) List development begins in April of odd-numbered years and concludes in May of even-numbered years.

Establishing this September 30 “cut-off” date allows for the opportunity to consider more recent data for waters that may not be scheduled for reassessment until after the next Section 303(d) List is issued. Additionally, the 6 months between a September 30 cut-off date and the April 1 date by which the List is due to USEPA allows for consideration and comment by all parties on any revised re-assessment. As noted above, the WI/PWL update process includes a public participation and review component. The September 30 cut-off date allows time to provide that same level of public input.

Standards Attainment Categories

USEPA has 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 standards for all uses are met and standards attainment and uses are not threatened.

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

¹ Because the *Assessment Methodology* and *Listing Methodology* are integral to the development of the Section 303(d) List, these documents are also made available for public comment along with the Draft List.

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 (and the waterbody/impairment is not included on the Section 303(d) List) because:

- a) a TMDL has already 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 restoration, 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 can be effectively addressed through the development of a TMDL.

Impaired/Threatened Waters Requiring a TMDL (IR Category 5) describes waters where standards are not being met and one or more uses are not supported, and where TMDL development or an alternative interim loading reduction strategy is the most appropriate response to the impairment/threat. Category 5 waters comprise the Section 303(d) List.

Although the WI/PWL assessment categories differ from the Integrated Reporting categories, the WI/PWL assessment information captures the same basic level of use support reflected in the IR categories. As a result, the IR categories correlate well with the Waterbody Use Impact *Levels of Severity* and *Evaluation Confidence Levels* used in the WI/PWL assessments. The general relationship between the IR categories and the WI/PWL severity/confidence information are outlined in the table below. A more detailed discussion of the relationship between the IR categories and the WI/PWL assessment information is also presented below.

Waters Supporting Uses

The Integrated Reporting categories of *Waters Attaining All Standards* and *Waters Attaining Some Standards* (IR Categories 1 and 2) include waters listed in the WI/PWL as having *No Known Impacts* (fully supported uses), as well as waters having *Minor Impacts (supported uses)*. WI/PWL waters assessed as having *Minor Impacts* are considered to have fair to good water quality and exhibit some indications of stress, but also meet water quality standards and are considered to support uses. The use of the *Minor Impacts* category allows for the separation of waters that are fully supported and have no water quality concern from waters that – although supporting of uses – are less than optimum and that should be monitored more closely for changes.

Which one 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 determined on a case-by-case basis, and is dependent upon what uses are appropriate for the waterbody classification and which of those uses have been evaluated. The NYSDEC monitoring strategy focuses primarily on the support of aquatic life and general recreational uses. Therefore an assessment of *No Known Impacts* or only *Minor Impacts* in Class C/SC waters (or similar water classes where best uses are aquatic life use support, recreation and fish consumption) is often categorized as attaining all standards (IR Category 1). Waters with classifications of A/SA and B/SB – which support additional uses, such as potable water supply use and public bathing use, respectively – require additional specific use support information and assessment that is typically the purview of state and local health department programs. NYSDEC works closely with the health departments to obtain available information, but where such use-specific monitoring has not been conducted waters that are otherwise found to be supporting uses are more likely to be categorized as *Waters Attaining Some Standards* (IR Category 2).

WI/PWL Use Support/Severity/Confidence and CWA 305(b) Integrated Reporting Categories

Use Impact Level of Severity	Evaluation Confidence Level	WI/PWL Assessment Categories	USEPA 305(b) Integrated Reporting Categories
Precluded	Known	Impaired	Impaired/Threatened Waters ¹ (IR Category 4 or 5)
Impaired	Known	Impaired	Impaired Waters ¹ (IR Category 4 or 5)
	Suspected	Minor Impacts	Waters Attaining Some Standards (IR Category 2)
	Unconfirmed	Needs Verification	Waters with Insufficient Data (IR Category 3)
Stressed	Known, Suspected	Minor Impacts	Waters Attaining All or Some Standards ² (IR Category 1 or 2)
	Unconfirmed	Needs Verification	Waters with Insufficient Data (IR Category 3)
Threatened ³	Known	Threatened	See Below ⁴ (IR Category 1, 2, 4 or 5)
	Suspected	No Known Impacts	Waters Attaining All or Some Standards ² (IR Category 1 or 2)
Fully Supporting	Known, Suspected	No Known Impacts	Waters Attaining All or Some Standards ² (IR Category 1 or 2)
	Unconfirmed	Unassessed	Waters with Insufficient Data (IR Category 3)
Unassessed	N/A	Unassessed	Waters with Insufficient Data (IR Category 3)

¹ Determination as to whether a TMDL is required – and whether the waterbody is assigned to IR Category 4 or 5 – will be made on a case-by-case basis.

² Determination as to whether all or some standards are attained – and whether the waterbody is assigned to IR Category 1 or 2 – will be made on a case-by-case basis.

³ 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.

⁴ 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 assessed in the WI/PWL as *Known to be Impaired*, and have one or more uses that are evaluated as not supported (i.e., precluded or impaired). Which one of the two *Impaired/Threatened Waters* categories (i.e., Category 4 – *Impaired/Threatened Waters Not Requiring a TMDL* or IR Category 5 – *Impaired/Threatened Waters Requiring a TMDL*) is more appropriate is determined on a case-by-case basis. Additional discussion regarding this determination is presented later in this methodology.

Waters with Insufficient Data

The Integrated Reporting category of *Waters with Insufficient Data* (IR Category 3) includes waters with WI/PWL assessments of *Needing Verification* and those waters that are *Unassessed*. The inclusion of an IR category of *Waters with Insufficient Data* recognizes that any waterbody assessment 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 an assessment could result in a Section 303(d) listing. Once listed the threshold for delisting a waterbody 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 and verified.

In keeping with this philosophy, waters with possible impairment of specific uses (i.e., *Suspected* or *Unconfirmed* impairment, as opposed to having *Known* impairment) are not automatically included in IR Category 4 or 5. In fact, these waters are more typically assessed as *Needing Verification* or having *Minor Impacts*. Waters with *Unconfirmed* impairment are the result of data and/or information that suggests an impairment, but the evidence of that impairment is inadequate to support that designation with any reasonable certainty. Such waters are assessed as *Needs Verification* and typically assigned to IR Category 3, pending the collection of additional data to clarify the level of water quality impact. Waters with *Suspected* impairment also reflect uncertainty that creates a hesitancy for listing. However *Suspected* differs from *Unconfirmed* impairment in that the uncertainty regarding *Suspected* impairment often revolves around conflicting opinions about the interpretation of data/information, rather than the lack of it. Waters with *Suspected* impairment are typically assessed as having *Minor Impact*, as there is usually consensus that the level of water quality problem rises to that level at a minimum, and assigned to IR Category 2 as *Waters Attaining Some Standards*. However *Impaired/Suspected* waters that have previously been included on the Section 303(d) List may continue to be assessed as *Impaired* (and included in IR Category 5) until clarity regarding the assessment is reached.

Additional monitoring and verification of conditions in these waterbodies where impairment is possible but not clear and verified will be conducted in accordance with New York State Monitoring Strategy. Meanwhile, resources for development of a TMDL or other restoration strategies can more appropriately and effectively be directed to waters with documented water quality problems needing to be addressed.

Threatened Waters

The use of the term “threatened” in the WI/PWL encompasses a wide range of threats and is much broader than USEPA's use of the same term. Consequently not all waters assessed in the WI/PWL as *Threatened* are appropriate to include in IR Category 4 or 5, as *Impaired/Threatened Waters*.

To satisfy the more specific USEPA definition of a “threatened” water, available data must indicate a declining trend in water quality that predicts the non-attainment of standards in the future – specifically, by the end of the current listing cycle. Whether these waters meet this threshold and are therefore appropriate to assign to IR Category 4 or 5 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.

The WIPWL definition of *Threatened* includes conditions of sub-optimum water quality, increased susceptibility to impacts (including lesser impacts that do not meet the threshold of impairment), and land use changes or ecosystem disruption the impact of which has not been quantified. Although these conditions do not necessarily portend inevitable future impairment, such circumstances are important to track and address with water quality protection measures.

Impaired/Threatened Waters Not Requiring a TMDL

Waters determined to be *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 an appropriate response are assigned to IR Category 4 but are not included on the Section 303(d) List (see also Appendix: *General Comments on Listing/Delisting Decisions and Delisting Due to Other Required Control Measures*). Such Impaired/Threatened Waters Not Requiring a TMDL fall into one of the following three sub-categories of IR Category 4:

Impaired/Threatened Waters where a TMDL is Complete/Being Implemented (IR Category 4a)

Once a TMDL has been developed and approved, the waterbody is assigned to this sub-category and is no longer included on the Section 303(d) List. This highlights the fact that although the Section 303(d) List is often considered by the public to be a comprehensive list the impaired waters in the state, it is – by statutory definition – limited to those impaired waters of the state that require the development of a TMDL. Progress regarding completion of TMDLs and the delisting of waters where TMDLs have been established will be evaluated with the development of each subsequent 303(d) List.

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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 means to address pollutants and restore uses. These actions may include the correction of failing or inadequate treatment facilities, modification of SPDES discharge permit limits to reduce pollutant loads, implementation of best management practices (BMPs) to specifically address impairments through a SPDES general permit, zoning restrictions or other local initiatives. Such TMDL alternatives typically require a regulatory enforceable mechanism (e.g., permit requirement, consent order, local law) to assure implementation of the strategy. These strategies must also include the reasonable expectation that they will result in the full restoration of the waterbody, rather than mere water quality improvement that will require additional future measures to meet water quality standards and support uses. Progress and effectiveness of such enforceable actions – relative to the development of a TMDL – will be evaluated during the development of each subsequent 303(d) List to determine if continued assignment of the water to IR Category 4b is appropriate.

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

Waterbodies assigned to this sub-category are not meeting standards due to waterbody conditions that are unrelated to a specific pollutant. Because TMDLs are pollutant-specific load reduction strategies, the development of a TMDL is NOT required for waters where no pollutant has been identified. Specific examples of conditions causing impairments/threats that fall into this sub-category include, but are not limited to:

- exotic, invasive, non-native species,
- excessive native aquatic plant growth (unaccompanied by elevated nutrient levels),
- flow alteration or other hydrologic modification.

Natural Conditions and Conflicting Use

There are other instances where TMDL development may not be an effective strategy to address waters that meet the criteria for impairment. Some of these cases fall into a broad category of impairments related to natural conditions unrelated to anthropogenic sources. Examples of such impairments where TMDLs would not be effective may include rivers that carry high sediment loads (either routinely due to geology or during scouring of stream beds during high flow events) that may discourage recreation, low water dissolved oxygen at lower lake depths related to lake morphology, habitat that does not support diverse biological communities, and elevated pathogens levels that are the result of wildlife and waterfowl. The most appropriate means to address natural conditions is to include recognize the circumstances where natural conditions exist and make allowances for such conditions in the water quality standards. However, in cases where natural conditions allowances are not reflected in the standards, the waters may be assigned to IR Category 4c – Impaired/Threatened Waters Not Requiring a TMDL (Waters Impaired by Pollution, Not by Pollutant(s)).

A TMDL approach also may not be effective in addressing impairments that are related to support of conflicting uses. 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. For waters where impact or impairment is due to an inherent inability to support multiple conflicting uses, IR Category 4c may also be the most appropriate assessment option.

Section 303(d) Listed Waters

For impaired waters where none of the IR Category 4 conditions apply, the waterbody is designated an *Impaired/Threatened Water Requiring a TMDL* (IR Category 5). This list of waters and associated pollutants – that do not meet water quality standards in spite of technology-based effluent limits and for which TMDL development or an interim alternative loading reduction strategy to attain water quality standards is required – represents the New York State Section 303(d) List of Impaired/TMDL Waters.

Prioritization of Section 303(d) List Waters

The Section 303(d) List of Impaired/Threatened Waters requiring a TMDL or other interim strategy is organized to provide an indication of those waterbodies/pollutants that are priorities for the development of TMDLs. While all waterbodies/pollutants on the Section 303(d) List require action to address impairments, grouping these listings based on the type of impairment and the level of understanding of the problem helps to identify impairments where such actions are most likely to be successful. This likelihood of success is one factor in the prioritization of waterbodies/pollutants on the List.

The waterbodies/pollutants on the New York State Section 303(d) List are segregated into separate parts and sub-parts of the List, as described below. This delineation highlights differing conditions, limitations and other circumstances which influences the scheduling and development of TMDLs and other interim alternatives. These parts/sub-parts are:

Part 1 – Waterbodies/Pollutants with Impairments Requiring Individual TMDLs

These impaired/threatened waters have been identified as needing a segment-specific TMDL or interim alternative loading reduction strategy. A single TMDL may address multiple Part 1 listings that are closely related (e.g., connected or proximate waters with the same pollutant, or listings for related pollutants, such as nutrients and low dissolved oxygen, in the same waterbody). However most Part 1 listing will require an individual TMDL and/or alternative strategy. If an alternative to a TMDL is expected to fully address a waterbody impairment, that waterbody may be considered for delisting as an IR Category 4b Water.

Part 2 – Waterbodies with Shared Impairments Appropriate for Categorical TMDLs

These are impaired/threatened waters that also require a TMDL or interim alternative loading reduction strategy to attain water quality standards. However Part 2 waterbodies share similar pollutants/sources and it may be more efficient and effective to develop TMDLs to address similar impairments in multiple waterbodies rather than multiple TMDLs for each waterbody with similar problems. Due to the complexity of the problem and number of segments involved, development of TMDLs/strategies to address categories of impairment affecting multiple waterbodies may require additional time and involvement of agencies (USEPA, others) outside NYSDEC in order to complete. These shared impairment categories include:

Atmospheric Deposition (Acid Rain) Waters (Part 2a), where much of the actual pollutant source lies outside of New York State and for which the issue requires a national effort/program. Multiple-segment TMDLs for some of these waters have been developed. But the effective implementation of these TMDLs and restoration of these waters will require USEPA leadership at the national level.

Note: Part 2a waters include original listings of smaller ponds (less than 6.4 acres) impaired by acid rain that have subsequently been consolidated into larger segments and are no longer assessed as individual waterbodies. These smaller acid rain ponds are outlined in *Appendix A – Smaller Lakes Impaired by Atmospheric Deposition (Acid Rain)* of the List.

Fish Consumption Waters, which in most 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 nonpoint sources, including urban/stormwater runoff. Multiple-segment TMDLs have been completed for many previously listed Shellfishing Waters. The scheduling of TMDL development for the remaining waterbodies is dependent upon an evaluation of stormwater and other source contributions, and whether common approaches are appropriate to address the impairments in these multiple-segments.

Part 3 - Waterbodies for which TMDL Development May be Deferred

These are waters where the development of a TMDL may be deferred, pending 1) verification of the suspected impairment, or 2) verification of the specific pollutant, cause, or source of the impairment, or 3) the development, implementation, or evaluation of other restoration measures. These sub-parts of Part 3 of the List are further 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 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 delisting the waterbody. In keeping with the requirements for delisting, these waters continue on the Section 303(d) List. However it may be appropriate to defer the development of a TMDLs to address suspected impairments until such impairments can be verified.

Waterbodies Requiring Verification of Cause/Pollutant/Source

In some cases, water quality impairments may be identified, yet there may be uncertainty as to the specific cause/pollutant or source of that impairment. Because a TMDL is a pollutant load reduction plan, its effectiveness requires some certainty regarding the specific pollutant causing the impairment and the source(s) of that pollutant. Therefore it is reasonable to defer scheduling of TMDL development for waters where that certainty is lacking until the cause/pollutant/source of impairment can be verified.

Waterbodies Requiring Development/Implementation/Evaluation of Other Restoration Measures

For some impaired waters, interim alternative measures that are expected to address water quality impairments are under consideration or in place. 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 IR Category 4b (Impaired/Threatened Waters where Other Controls are More Suitable) Waters. However in some cases the waters and impairments are sufficiently complex that a demonstration of full restoration of the water is not possible. Nonetheless proceeding with development of a TMDL where better interim alternatives are under consideration or underway is of limited value and appropriate to defer until the effectiveness of other activities can be evaluated (see also Appendix: *General Comments on Listing/Delisting Decisions and Delisting Due to Other Required Control Measures*).

Within this broad characterization of the type of waterbody/pollutant and knowledge of the type of impairment, specific individual waterbody/pollutant listings where active TMDL/strategy development is planned or underway are also identified. These final priorities for active TMDL/strategy development reflect a number of additional considerations, including: the availability of data necessary to develop a TMDL/strategy, participation from local stakeholders (particularly for implementation), the anticipated effectiveness of a TMDL toward addressing the problem, use of the water for drinking, swimming and other human health considerations, economic/financial benefits, and the potential to address the impairment through other means. Progress toward TMDLs/strategies for these priority waterbody/pollutant listings will be re-evaluated through the established rotating basin monitoring cycle, and by other means (i.e., as required by consent order, permit requirements, etc), as appropriate. The priorities themselves will be re-evaluated during each 2-year listing cycle to determine if adequate resources are in place to support continued efforts to address these water quality impairments.

Delisting of Waters from the Section 303(d) List

The removal of waterbodies from the list (delisting) and movement of waterbodies within the list is governed by specific guidelines and considerations. The most common justification for delisting a waterbody from the Section 303(d) List is the completion and approval 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 and removed from this List during the subsequent 303(d) Listing cycle (see also discussion of *Impaired/Threatened Water Not Requiring a TMDL*). Note that waters for which TMDLs have been approved continue to be assessed as 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.

Delisting of a previously listed water prior to the development of a TMDL can occur only if:

- the water is shown to be meeting all applicable water quality standards (restoration), or
- the original basis – standard or criterion – for listing has been revised or replaced (reassessment), or
- the original listing determination is determined to have been inaccurate (correction).

Based on these thresholds, the following presumptions guide delisting of waters for the three types of evaluation 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, such delistings correspond to a restoration.

As long as a use restriction order remains in effect, the waterbody cannot be delisted. If subsequent monitoring data shows water quality improvement and the attainment/maintenance of standards, such data is forwarded to the appropriate agency for consideration regarding the lifting of the use restrictions. Such information should be incorporated into the WI/PWL Fact Sheet for the waterbody, and may also include a recommendation that the waterbody be considered for delisting during the next listing cycle.

If use restriction orders are modified, the degree of use impairment should be re-evaluated 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 data showing that the waterbody failed to meet water quality standards, delisting due to restoration typically requires more recent monitoring data showing that the standards are now being attained and maintained. However, if the applicable water quality standard or criteria that was the basis of the listing is revised to be less stringent, if site-specific criteria are developed for the waterbody, or if alternative water quality standards/criteria are determined to be more appropriate and are being met, then waters may be delisted without a documented improvement to water quality. A delisting due to new or revised standards/criteria is considered to be a reassessment rather than a restoration, unless also accompanied by a measureable water quality improvement.

Surrogate Water Quality Indicators

For listings based on surrogate water quality indicators, requirements for delisting are similar to those outlined for numerical and narrative standards and criteria. Generally, delisting requires monitoring data showing sufficient water quality improvement and that conditions resulting in the original listing are no longer present. However, if more appropriate and/or accurate indicators are developed and implemented, waters may be delisted without documentation of water quality improvement. Such a delisting would be considered a reassessment rather than a restoration.

Reassessment of Waters

Delisting due to reassessment is most likely to occur for waters included on Part 3 of the List. Part 3 waters all require verification of some aspect of its assessment prior to development of a TMDL. That reassessment could lead to a revision of the use support evaluation and the listing decision for the waterbody. Specifically:

- Part 3a waters – requiring verification of impairment – may subsequently be determined to have impacts that do not reach the threshold of an impairment (reassessment) or perhaps never did (correction). These waters would be removed from the List and designated as IR Category 1 (attaining all standards) or 2 (attaining some standards) waters, as appropriate.
- Part 3b waters – requiring verification of pollutant/cause/source – may be determined to be impaired by causes that are not appropriate to address through a TMDL. These waters would be removed from the List and designated as IR Category 4c (impaired by pollution, not pollutant) waters.

- Part 3c waters – requiring development/implementation/evaluation of other restoration measures – may be determined to be (or perhaps have been) more appropriately addressed through an alternative other than a TMDL. If that alternative is subsequently determined to be sufficiently enforceable and adequate to completely restore the waterbody uses, then such waters would be removed from the List and designated as IR Category 4b (not requiring a TMDL due to other required control measures) waters. If the other restoration measures have been determined to have fully addressed the impairment and that the water is meeting standards, it would be appropriate to assign the water to IR Category 1 or Category 2.

Other Listing Issues

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

Waters Needing Verification of Impact/Impairment

USEPA's Consolidated Assessment and Listing Methodology guidance recognizes the occurrence of both inadequate data as well as 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 deferring the assessment/listing decision in order to collect more data, re-evaluate the criteria, investigate site-specific criteria or conduct use attainability analysis. This approach is supported by IR Category 3 – Waters with Insufficient Data which tracks these waters until sufficient information is available to determine the attainment status and whether it is appropriate to be listed.

In addition to waters with conflicting indicators of use support, possible use impacts/impairments based on anecdotal information but with insufficient actual data will typically be qualified as *Unconfirmed*. This qualifier results in the waterbody being assessed in the WI/PWL as *Needing Verification* of impact/impairment, and assigned to IR Category 3 and tracked as a *Water 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.

Although it has been suggested that *Waters with Insufficient Data* be included on the Section 303(d) List, NYSDEC believes 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.

Segmentation of Waterbodies

As discussed in the Assessment Methodology, the boundaries of specific waterbody segments 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, homogeneity of land use and watershed character. Once defined, waterbody segments generally remain static and are not adjusted to reflect the changing length/size of area impacted by a specific water quality problem.

Generally water quality impacts or impairments affecting more than 10-20% of a waterbody length/area are assigned to the entire waterbody segment. Any limitation regarding the extent of the impairment is noted in the segment narrative. If impacts/impairments are limited (specifically, if 80-90% of the waterbody does not experience impacts/impairment) the waterbody may be considered to be meeting uses and – in the case of impairment that is limited – excluded from the Section 303(d) List.

Age of Data/Information

An effort is made to reassess all waters of the state at least as frequently as every ten years, or within two five-year rotating basin monitoring cycles. However this is not always possible and some waterbodies go longer periods without being reassessed. If a waterbody has not been reassessed within ten years, the Assessment Methodology allows for reducing the level of confidence for use evaluations from *Known* to *Suspected*, or from *Suspected* to *Unconfirmed*. Such changes may result in the overall waterbody assessment changing, typically to *Needs Verification* or *Unassessed*. However, once a waterbody is assessed as Impaired and included on the Section 303(d) List, the water cannot be delisted based solely on passage of time and an inability to reassess the waterbody.

Listed Waterbodies Not Meeting Dissolved Oxygen Standards

During the development of the 2008 Section 303(d) List, USEPA identified a number of waterbodies where available data and/or other information indicates that “never less than” water quality standards for dissolved oxygen were not being met at times in portions of some waterbodies – primarily at lower depths of lake segments – and should be listed. While acknowledging that such seasonal low dissolved oxygen at 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 (see also Appendix: *General Comment on Naturally Occurring Low Dissolved Oxygen Waters*). NYSDEC is also working to address this issue through revisions to its dissolved oxygen standard to recognize naturally occurring dissolved oxygen. In the meantime, the 2008 and subsequent Lists include a recognition of these waters in *Appendix B – Listed Waterbodies Not Meeting Dissolved Oxygen Standards, Pending Verification of Use Impairments/Pollutants/Sources*.

Supplemental Lists Associated with the New York State Section 303(d) List

Although waterbody/pollutant listings that do not require a TMDL (IR Category 4 Waters) are not included on the Section 303(d) List, NYSDEC typically provides a separate list of these waterbodies/pollutants at the time that the Section 303(d) List is updated. This list of *Other Waterbody/Pollutant Impairments Not Listed Because Development of a TMDL is Not Necessary* provides a more complete view of impaired waters in the state and also provides additional information toward understanding listing decisions and how impairments are considered.

NYSDEC will also compile for each updated Section 303(d) List a separate list of water/pollutant combinations that were included on the previous Section 303(d) List, but that are NOT carried over to the subsequent List. This *Delisted Waters List* provides some linkage and continuity between the previous and proposed new list. The specific reason for the delisting of the waterbody/pollutant (i.e., restoration, reassessment, correction, TMDL development, etc) is indicated on this list. Some of these waters (those that have been delisted but that remain Impaired) will also appear on the list of *Other Waterbody/Pollutant Impairments Not Listed Because Development of a TMDL is Not Necessary*.

Appendix

Public Comments/Responses

Regarding Previous New York State Section 303(d) Lists

The excerpts below are taken from the New York State Response to Comments regarding previously issued NYS Section 303(d) Lists. These discussions concern specific listing issues that are expected to be raised during the development of future lists.

GENERAL COMMENT on Listing/Delisting Decisions (2006)

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:

- Waters where a TMDL has already been developed and approved by USEPA;
- 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;
- 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:

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

GENERAL COMMENT on Delisting Due to Other Required Control Measures (2006)

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 reevaluated 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. The complete NYSDEC Response to Comments on the 2006 Section 303(d) List, as well as the Response to Comments on the 2008 List are also available. These documents may be helpful in further clarifying various assessment and listing issues.

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.

GENERAL COMMENT on Naturally Occurring Low Dissolved Oxygen Waters (2008)

USEPA commented that 46 waters that are not included on the Section 303(d) List but where there is data showing that water quality standards for dissolved oxygen are not being met should be listed. While acknowledging that seasonal dissolved oxygen levels at lower depths of waterbodies is in many cases a naturally occurring phenomenon, USEPA suggests that because the current New York State water quality standard for dissolved oxygen is expressed in the terms “never to be less than,” waters with any instances of dissolved oxygen value below the applicable standard are to be considered an indication of impairment. USEPA states that NYSDEC may opt to defer making a listing decision on these waters only if there is other data or information that is more representative or of higher quality that indicates aquatic life support is being met. If there is no more representative or higher quality data or information available to contradict data showing contravention of the dissolved oxygen standard, then it is appropriate to list the waterbody.

NYSDEC responds that the Department is concerned with this inappropriate interpretation of the dissolved oxygen standard as it applies to making Section 303(d) List decisions. Consistent application of such an interpretation would result in the addition to the List of a significant number of lakes (perhaps most all lakes in the state) due to conditions that are natural in origin, that do not result in impairment to uses, and for which a TMDL is not necessary. While the New York State water quality standards do not specifically address such conditions (except with regard to trout spawning waters), it is widely accepted that morphology and other natural conditions contribute to periodic dissolved oxygen depletion in significant numbers of thermally stratified waters (the most recent New York State Section 305(b) Water Quality Report states that “more than 70% of assessed waters that are thermally stratified experience hypoxia in the hypolimnion”). However such bottom water conditions are not necessarily representative of the water as a whole and aquatic life and other uses are often fully supported in these waters.

USEPA suggests that because the New York State water quality standard for dissolved oxygen is written in terms of “never less than” there is no discretion in listing waters with low dissolved oxygen. However USEPA

recognizes that natural conditions can result in episodes of low dissolved oxygen that do not meet the standard without an impairment of uses. In fact USEPA independent applicability policy allows for resolving just such inconsistencies in assessment indicator results by allowing the weighing of the higher quality or more representative data set more favorably in the assessment decision. NYSDEC does not argue that waters with low dissolved oxygen (and no other available data) should be delisted or even routinely assessed as fully supporting; merely that it is more appropriate to defer decisions regarding such waters until full support or impairment can be verified through the collection of other data and evaluation of additional indicators and application of USEPA independent applicability policy.

In actuality, the USEPA and NYSDEC positions on this issue are largely in agreement except for how periodic low dissolved oxygen waters should be categorized while additional data to verify use support or impairment is collected and evaluated. NYSDEC believes that tracking waters in need of such verification of conditions is precisely the role of the USEPA Integrated Reporting Category 3 - Waters with Insufficient Data to make a Listing Determination. Requiring waters with periodic low dissolved oxygen but needing further verification to be included on the Section 303(d) List not only duplicates the Category 3 List, but it also confuses the Integrated Reporting assessments by including among Section 303(d) Waters that are known to have impairments and are in need of restoration, a large number of waters that are likely in their natural state and are widely considered to be fully supporting of uses.

A further concern of NYSDEC is that once one accepts that periodic low dissolved oxygen in lakes can and frequently does occur, it is overly cumbersome and of no additional benefit to the assessment effort to initially assume these waters are impaired and include them on the Section 303(d) List until other contradictory data is collected. Such an approach will result in the routine listing and subsequent delisting of waters – which is likely to be confusing and will negatively impact the credibility of the listing process. This “assumed impairment” approach also detracts attention and resources from addressing real and confirmed water quality problems, in order to verify there are no impairments in waters where there are currently no indication of impairment beyond limited excursions of the dissolved oxygen standard that, it is widely acknowledged, are in many instances natural in origin.

NYSDEC acknowledges that available monitoring data shows water quality standards for dissolved oxygen in a number of waters, including 46 specific waterbodies identified by USEPA, are not met at all times/seasons or depths. However NYSDEC has not verified that specific uses of these waters are actually impaired or determined that the violation of the water quality standard is a result of factors other than natural conditions. Although NYSDEC continues to believe it would be more appropriate to assign such waters to Integrated Reporting Category 3 until impairments and causes are verified, the 2008 Section 303(d) List has been modified to include low dissolved oxygen waters. These waters are recognized in Appendix B (Listed Waterbodies Not Meeting Dissolved Oxygen Standards, Pending Verification of Use Impairments/Pollutants/Sources) of the List. While it is not practical to include a listing of all the waters that correspond to the USEPA interpretation and application of the dissolved oxygen standard for listing decisions, the 46 waterbodies specifically identified by USEPA are listed in Appendix B.

NYSDEC will continue to evaluate the dissolved oxygen standards language in order to more appropriately reflect the impact of natural conditions and occurrence of periodic low dissolved oxygen in waters of the state. In the meantime, NYSDEC will review dissolved oxygen data in conjunction with other available data (particularly biological assessments that are more directly reflective of aquatic life use) to reach the most appropriate water quality assessment decisions. This approach is discussed in more detail in the Assessment of Naturally Occurring Low Dissolved Oxygen Waters section of the (May 2009) Assessment Methodology.