Information Concerning 2014 Clean Water Act Sections 303(d), 305(b) and 314 Integrated Reporting and Listing Decisions

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C.20460

OFFICE OF WATER

September 3, 2013

MEMORANDUM

SUBJECT: Information Concerning 2014 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions

FROM:
Denise Keehner, Director /s/
Office of Wetlands, Oceans, and Watersheds

TO:
Water Division Directors, Regions 1 – 10
Robert Maxfield, Director, Office of Environmental Measurement and Evaluation, Region 1

I am pleased to provide you with information to assist you and your States as you prepare and review the 2014 Integrated Reports (IR), in accordance with Clean Water Action (CWA) Sections 303(d), 305(b), and 314. This memorandum focuses on: 1) timeliness of State IR submissions and EPA approvals, 2) recommendations for the appropriate consideration of Natural Conditions in listing decisions, 3) potential approaches for the identification of nutrient-related impaired waters for the 303(d) list based on narrative nutrient water quality criteria and/or direct evidence of failure to support designated uses, 4) an update on tools and formats for submitting IR data to EPA – Assessment and Total Maximum Daily Load Tracking and Implementation System (ATTAINS), and 5) an update on EPA's development of guidance on how States can address antidegradation policies and procedures in their Section 303(d) programs. In addition, EPA will continue to work with the States and Regions in the coming months to identify any issues that may necessitate further clarification in future reporting cycles.

Over the past year, EPA and the States have developed a Long-Term Vision and Goals for assessment, restoration, and protection under the CWA Section 303(d) Program, which was endorsed by the Association of Clean Water Administrators. The development of a new long-term vision was an important element of the program's evolution and will better prepare and align efforts under the program to address current and future challenges and opportunities for protecting and restoring water quality. As part of this effort, EPA and the States developed six goal statements with milestones for completion: prioritization (2016), assessment (2020), protection (2016), alternatives (2018), engagement (2014), and integration (2016). EPA and the States intend to carry out this Vision and associated goals consistent with a more detailed implementation plan.

In addition, EPA and the States continue to make progress on the Integrated Reporting Georeferencing Pilot. As geospatial data and technology have evolved, EPA continues to seek efficiencies and improvements in the georeferencing of State water quality assessment and impairment decisions at the federal level. It is anticipated that this effort will be finalized by the end of 2013.

This memorandum is not regulation and does not impose legally binding requirements on EPA or the States. EPA recommends that the States prepare their 2014 IRs consistent with previous IR guidance including EPA's 2006 IR Guidance, which is supplemented by EPA's 2008, 2010, and 2012 IR memos and this memorandum available at EPA Guidance.

I would like to thank our State partners, interstate commissions, and Regions for their input on the information in this enclosure. I particularly appreciate the continued hard work and dedication in developing the IRs so that we can report to the public on the status of the nation's waters. If you

have any questions or comments concerning this memorandum, please contact me or have your staff contact Shera Reems at 202-566-1264 or reems.shera@epa.gov.

Enclosure

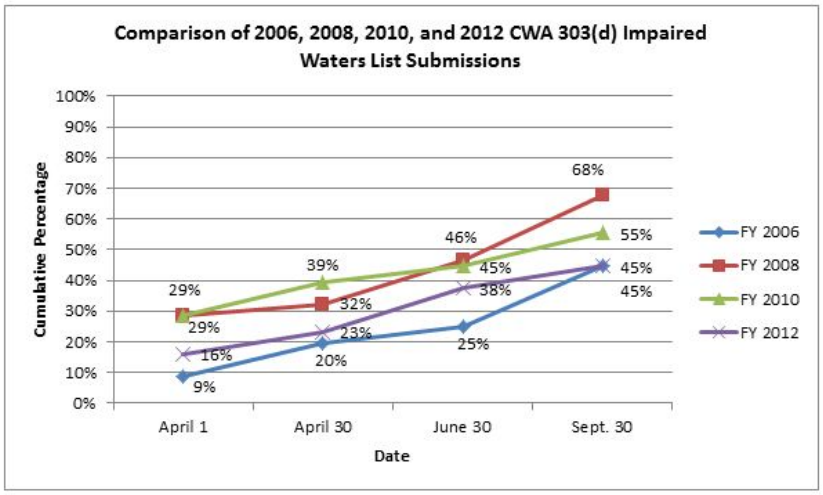
cc: Regional Section 303(d) Coordinators
Regional Monitoring Coordinators
Regional Water Quality Standards Coordinators
Regional NPDES Coordinators
Alexandra Dunn, Association of Clean Water Administrators

INFORMATION CONCERNING 2014 CLEAN WATER ACT SECTIONS 303(d), 305(b), AND 314 INTEGRATED REPORTING AND LISTING DECISIONS

1. Timeliness of State Integrated Report (IR) submissions and EPA action on State Section 303(d) lists.

The U.S. Environmental Protection Agency (EPA) and States need to continue best efforts to provide on-time State Integrated Report (IR) submittals (all 56 States and Territories by April 1, 2014) and EPA action on the States' Clean Water Act (CWA) Section 303(d) lists (within 30 days of their submission). While EPA and the States made progress from the 2006 to the 2008 reporting cycle, this progress did not continue with the 2010 and 2012 reporting cycles. For the 2008 reporting cycle, 38 States submitted their IRs by the end of the fiscal year compared to 31 for the 2010 reporting cycle and 25 for the 2012 reporting cycle (see Figure 1). Also, EPA action on States' Section 303(d) lists continues to fall short of the progress made in the 2008 reporting cycle. For the 2012 reporting cycle, of the 25 lists submitted to EPA by the end of FY 2012, EPA had taken action on only 15 lists as of the end of the calendar year, and these lists took an average of 53 days to approve. This average will be significantly higher once all 303(d) lists are approved. Timely State submittal of IRs and EPA review and approval or disapproval of lists is central to meet EPA and State responsibilities under the CWA and to evaluate EPA and State success in accomplishing our strategic plan goals to restore and maintain the nation's waters.

Figure 1: Timeliness of State 2006, 2008, 2010, and 2012 IR Submissions



EPA recognizes that State resources to complete these actions are limited. Hence, both EPA and the States need to continue best practices to provide timely information on the status of the nation's waters, including the State identification of waters under Section 303(d)(1)(A) of the CWA. Such Section 303(d) lists consist of "water quality limited" waters (i.e., waters that fail to meet one or more applicable water quality standard). In the 2008 IR Memo,[1] "Information Concerning 2008 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions," EPA outlined several best practices used by States and Regions to help facilitate improved timeliness of submission and review of water quality reports and Section 303(d) lists. We recommend that States and Regions refer back to these best practices and identify areas in which it is feasible to make improvements.

As an outcome of the EPA and State effort to identify opportunities to reduce State reporting burden under CWA Sections 303(d) and 305(b)[2], EPA will soon provide additional recommendations to move toward more timely IR submittals and EPA review and approval or disapproval of 303(d) lists. One driver for this effort was a request by a number of States for EPA to evaluate whether a change in reporting frequency from two years to four or five years would reduce State burden. EPA commenced a series of meetings with State partners that first identified key steps in the IR process, followed by discussions focused on those steps requiring the highest level of effort by States. These steps included: 1) State review and use of available data to make assessment decisions, 2) State preparation of data and associated geospatial information and entry into an assessment database, 3) State preparation and submission of final Section 303(d) lists and 305(b) reports to EPA, and other relevant documentation, 4) State preparation or refinement of its assessment and listing methodology, and 5) State response to public comments. During each discussion, EPA

requested State input on a series of questions, including how a change in reporting frequency would help or not help alleviate State burden. At the conclusion of these meetings, while a few States indicated that EPA should lengthen the reporting cycle, the majority of States recommended that EPA not change the length of the reporting cycle. EPA and the States did identify several areas within the existing framework as good candidates for streamlining to improve the efficiency of assessment, listing, and reporting. In addition to this effort described above, EPA is currently working to identify opportunities to maximize efficiencies and streamline EPA's Section 303(d) list review process.

1. Information Concerning 2008 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions
2. Undertaken pursuant to Executive Order 13563 "Improving Regulations and Regulatory Review"

2. Recommendations for the appropriate consideration of Natural Conditions to support removing a water from or not including a water on the Section 303(d) list

In the 2006 IR Guidance, "Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act," and the 2008 IR Memo, "Information Concerning 2008 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions," EPA provided information on the role of natural conditions concentrations of pollutants in 303(d) listing decisions.

EPA stated that applicable water quality standards are the basis for determining whether a waterbody must be included on a State's Section 303(d) list. States may have approved natural conditions provisions in EPA approved water quality standards that specify the applicable aquatic life water quality criterion will be equal to the natural conditions level of a pollutant if it is determined that the natural conditions does not meet the otherwise applicable criteria. In the absence of an EPA-approved natural conditions provision or an EPA-approved site-specific criterion based on natural conditions, the otherwise applicable criterion is the basis for determining whether a waterbody belongs on the State's Section 303(d) list.

EPA's guidance on the appropriate use of natural conditions provisions for making 303(d) listing decisions remains unchanged for the 2014 reporting cycle. For example, as discussed in the EPA IR guidance for the 2006 and 2008 reporting cycles, if a State has an EPA-approved natural conditions provision or site-specific criterion based on natural conditions, it may use these as the basis for determining if a water should be included on a State's Section 303(d) list. When a State evaluates whether a potential designated use impairment is the result of natural conditions, the State should consider all sources of the pollutant being evaluated. If the pollutant concentrations do not meet the EPA-approved water quality standards, and anthropogenic sources of the pollutant are present, the water is considered impaired and should be included on the State's Section 303(d) list even if natural sources of the pollutant are present. In the 2008 IR Memo, EPA provided several theoretical examples to illustrate these recommended approaches; however, note that these examples do not address all possible scenarios or variations in EPA-approved water quality standards. In addition, EPA continues to support its statement that natural conditions provisions are not appropriate for human health criteria. For more information see, "Establishing Site Specific Aquatic Life Criteria Equal to Natural Background (PDF) (3 pp, 125K, About PDF)".

If a State determines that a water fails to meet an applicable water quality standard solely due to naturally occurring levels of a pollutant, and it has an approved applicable natural conditions provision, the State should include in its IR submission for the 2014 and future reporting cycles a rationale for either removing or not including the water/pollutant combination on the State's Section 303(d) list. The rationale should identify the geologic or other conditions that cause the natural loading of the pollutant to exceed otherwise applicable water quality standards. In addition, the rationale should document why anthropogenic sources of pollutant loading, such as municipal, industrial, agricultural, contaminated groundwater, or anthropogenic airborne deposition, were determined not to be sources of pollutant loading. The rationale should also cite the approved, applicable natural conditions provision upon which the State is relying. Including this rationale will provide interested stakeholders with a more complete understanding of the State's use of its natural conditions provision and help expedite EPA's review of the State's IR submission.

More information on EPA's existing guidance on the use of natural conditions provisions for making Section 303(d) listing decisions is available at Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act and Information Concerning 2008 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions.

3. Identifying nutrient-impacted waters for the Section 303(d) list for States without numeric nutrient water quality criteria

Addressing nutrient pollution in our nation's waters is one of EPA's top priorities. Over the past decade EPA has called upon the States and others to increase their efforts to address nutrient pollution. In a March 2011 memorandum to the States, tribes and territories, EPA reiterated the need for action by stating, *"States, EPA, and stakeholders, working in partnership, must make greater progress in accelerating the reduction of nitrogen and phosphorus loadings to our nation's waters."*

National monitoring efforts, such as USGS reports on surface water quality[3] and EPA's National Aquatic Resource Surveys,[4] document the widespread impacts of nutrients on our nation's waters. A USGS report examining changes in nutrient concentrations at selected sites monitored between 1993 and 2003 indicates increasing levels of nutrients at about one-third of the sampled sites. EPA's National Aquatic Resource Surveys (NARS) report that nutrients are a widespread problem. NARS, often referred to as probability-based surveys, provide nationally consistent and scientifically-defensible assessments of our nation's waters and can be used to track changes in condition over time. Each survey uses standardized field and laboratory methods and is designed to yield unbiased estimates of the condition of the whole water resource being studied (i.e., rivers and streams, lakes, wetlands, or coastal waters). Based on completed survey results, about 50% of the nation's streams and 45% of the nation's lakes are in fair to poor condition for nitrogen or phosphorus levels relative to reference condition waters. This translates to about 300,000 miles of

perennial streams and seven million acres of lakes across the U.S. The analyses show that when streams and lakes rate poor for excess levels of nitrogen and phosphorus they are twice as likely to have poor biological health based on benthic macroinvertebrate condition.

While the NARS probability-based results are not directly comparable to the national tally of segment-specific waters included on States' Section 303 (d) lists, it is helpful to consider the magnitude of the differences between the two regarding the effects of nutrients. Based on information submitted by the States, about 155,000 miles of rivers and streams and about four million acres of lakes are included on States' Section 303(d) lists for nutrients or nutrient-related impairment causes.[5,6] EPA expects States will consider the NARS findings to increase efforts to identify and manage nutrient pollution. The NARS raw data as well as data in EPA's STORET database are available at the Water Quality Portal. These data can be used, along with other existing and readily available data and information, to evaluate whether waters are meeting applicable water quality standards including designated uses, narrative and numeric criteria, and antidegradation policies. These findings could also be used to set monitoring priorities to generate sufficient data and analyses to identify and manage nutrient pollution. As States gain experience implementing State scale statistical surveys to complement the targeted monitoring, they will be in a position to use such surveys as a feedback mechanism to gauge completeness of the Section 303(d) list and effectiveness of overall efforts to reduce nutrient pollution.

The CWA and EPA's implementing regulations require States to identify water-quality limited segments still requiring TMDLs where pollution controls are not stringent enough to meet any applicable water quality standard. Applicable water quality standards include designated uses and the criteria that must be met to support the uses as well as antidegradation requirements.[7] Furthermore, if a designated use is not supported and the segment currently fails to meet an applicable water quality standard or is "threatened," it must be included on the State's Section 303(d) list even if the specific pollutant causing the water quality standard exceedance is not known at the time.

Lack of numeric criteria for nitrogen and phosphorus adopted into State water quality standards and/or an inability to readily apply narrative criteria are sometimes cited as reasons for not assessing or including waters on States' Section 303(d) lists for nutrient-related impairments of designated uses. A number of States have listed waterbodies for nutrients and nutrient-related impacts based on a range of methods starting from simple visual assessments to straightforward decision matrices to more complicated stressor ID analyses.

Listing Approaches

A State can determine whether a waterbody is attaining its applicable narrative nutrient or other relevant narrative criteria and designated uses by using results of visual assessments. For example, field observations of excessive algal growth, macrophyte proliferation, adverse impacts on native vegetation (e.g., eelgrass), presence or duration of harmful algal blooms, unsightly green slimes or water column color, and/or objectionable odors may be a basis to include a waterbody on the State's Section 303(d) list for failing to meet one or more applicable narrative criteria and designated uses.[8]

A State can also place a waterbody on its Section 303(d) list by using other existing and readily available water quality-related information from local, State, or federal agencies, members of the general public, or academic institutions.[9] Evidence of narrative criteria and/or designated use impairment can include documentation of fish kills (aquatic life use) and beach closures or outbreaks of waterborne illness among swimmers (recreational use). A particular case of the latter related to nutrients is illness resulting from blooms of toxic blue-green algae (cyanobacteria). States should also consider feedback from the general public and waterbody users about the condition of the waterbody such as photographs or testimonials of abundant algal mats that impede recreation or create unsightly aesthetics in the waterbody.

It is important to note, however, that lack of plant growth or other visual pieces of evidence is not a reason to exclude or delist a waterbody for nutrient pollution as a cause of impairment where nutrient levels are elevated because other factors may be masking the nutrient response.

Another approach to assessing waterbodies is to evaluate nitrogen and phosphorus data sets derived from water column samples. For instance, some States have developed numeric water quality targets or thresholds for nitrogen and/or phosphorus that are used as quantitative "translations" of their narrative criteria. Unlike EPA approved water quality standards containing numeric nutrient criteria, the nitrogen and phosphorus target values are often described in State guidance or methodology documents. A State can also use the numeric target values in combination with measurements, such as dissolved oxygen, pH and/or chlorophyll-*a* (or other nutrient pollution response parameters), to reach a nutrient-related cause of impairment when implementing their narrative criteria.

Some States complete stressor identification analysis aimed at determining whether nutrients caused or contributed to the failure to meet the narrative criteria. Often, the stressor ID methods involve using multiple lines of evidence, including information on the causal variables (e.g., total nitrogen or total phosphorus) and response indicators (e.g., chlorophyll-*a*, dissolved oxygen, pH, macroinvertebrates, periphyton). States may set benchmarks, weigh particular indicators, or invoke statistical analyses using confidence levels. Some States use a step-wise or tiered approach. States employing the tiered approach often identify a set of core parameters on which to base their evaluation. Depending on the number of indicators that exceed threshold values (weighted or unweighted), the final assessment invokes secondary and sometimes tertiary parameters.

Because nutrients increase the overall productivity of a waterbody, biological information can provide an important clue into nutrient impairment, and a number of States include some kind of biological assessment as one of the lines of evidence when assessing whether a waterbody is meeting its narrative criterion. Data on macrophyte cover, chlorophyll-*a*, algae assemblages, including diatoms, are used to gauge the biological condition of the water. Biological condition is often measured using an Index of Biological Integrity (IBI), Observed/Expected (O/E) models, and other analytical techniques. When making decisions regarding impairments related to nutrient pollution, it is important to use information on biological endpoints that

are sensitive to increased concentrations of nutrients. Linking nutrients to the biological response can be done via stressor identification, multiple lines of evidence, or other means. Additionally, some States have used biological information independently and will list the source of the biological impairment in the "unknown" category until the stressor-ID or TMDL analysis determines the pollutant of concern.

To assist States, EPA is providing a number of examples of approaches that can be used for assessing whether waters are attaining nutrient-related narrative criteria and/or supporting designated uses. These examples are presented to inform States that have not yet established nutrient assessment methods for applicable narrative criteria and to illustrate how some States assess their waters pending the adoption of numeric nutrient criteria.

EPA does not endorse one method over another, nor does it limit potentially acceptable methods to those provided here. Likewise, the appropriateness of a particular method will depend on the variety of fact-specific circumstances that may be present.

3. USGS Circular 1350: Nutrients in the Nation's Streams and Groundwater
4. National Aquatic Resource Surveys
5. For purposes of presenting State information in ATTAINS, EPA compiles State reported impairments into national category groups, and as such, EPA defines "nutrient-related" as impairments that fall under the following parent category groups: nutrients, organic enrichment/oxygen depletion, ammonia, algal growth, and noxious aquatic plants. See Water Quality Assessment and Total Maximum Daily Loads Information
6. Based on the most recent data available in ATTAINS for each State, the sum of the size reported for unique assessment units that are identified as impaired (i.e., either on a State's Section 303(d) list or have an approved TMDL for rivers and streams and lakes). Information was pulled for only nutrient-related national categories, defined as impairments that fall under the following parent category groups: nutrients, organic enrichment/oxygen depletion, ammonia, algal growth, and noxious aquatic plants. See Water Quality Assessment and Total Maximum Daily Loads Information. For 303(d) data, size is an optional field, and several waters did not have size information. Therefore, this information likely underestimates the extent of the nutrient problem across the nation. (accessed: January 14, 2013)
7. EPA's 303(d) listing regulations at 40 CFR 130.7(b)(3) define a "water quality standard applicable to such waters" and "applicable water quality standards" as "those water quality standards established under 303 of the Act, including numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements."
8. Specific listing decisions depend on the particular language provided in a State's narrative criteria or designated use description.
9. 40 C.F.R Section 130.7(b)(5) requires that each State assemble and evaluate "all existing and readily available" water quality-related data and information, which "at a minimum," includes water quality problems that have been reported by local, state, or federal agencies, members of the public, or academic institutions.

State Examples of Section 303(d) Listing Approaches for Nutrient-related Narrative Criteria

Oregon

Narrative Criterion: *For all surface waters, the development of fungi or other growths having deleterious effect on stream bottoms, fish or other aquatic life, or that are injurious to health, recreation, or industry may not be allowed.*

- Oregon has placed waters on the Section 303(d) list based on health advisories. Specifically, these health advisories are issued by the Oregon Department of Human Services, in conjunction with other agencies, warning that potentially harmful levels of cyanotoxins produced by algae are present in the water. The health advisories are based on visible scum, with supporting photographs and water analysis, cell counts or toxicity levels, or a combination of two or more options. The advisories apply to several designated uses, including domestic and industrial water supply, irrigation livestock watering, fish and aquatic life, fishing, boating, contact recreation, and aesthetic quality. Additional details on the State's assessment method and the health advisory protocol are available at: Methodology for Oregon's 2010 Water Quality Report And List of Water Quality Limited Waters (PDF) (88 pp, 1.2MB, About PDF) EXIT Disclaimer and Harmful Algae Blooms (PDF) (88 pp, 1.2MB, About PDF) EXIT Disclaimer.

Vermont

Narrative Criterion: *In all waters, total phosphorus loadings shall be limited so that they will not contribute to the acceleration of eutrophication or the stimulation of the growth of aquatic biota in a manner that prevents the full support of uses. In all waters nitrates shall be limited so that they will not contribute to the acceleration of eutrophication, or the stimulation of the growth of aquatic biota, in a manner that prevents the full support of uses.*

- Vermont uses public feedback and complaints in addition to field surveys of algae blooms to assess waters for attainment of the above water quality standard. For the swimming/contact recreation use in lakes, waters are considered impaired if an ongoing record of public complaint concerning the algal conditions in the water has been established. For cyanobacteria (blue-green algae), waters displaying ongoing summer blooms of toxin producing cyanobacteria and having microcystin concentrations at elevated levels (i.e., World Health Organization (WHO) guideline of 1 µg/l) are considered impaired. For the drinking water supply use, waters are considered impaired if they display ongoing summer blooms of toxin producing cyanobacteria and have microcystin concentrations in excess of the same WHO guideline above. Additional details on the State's assessment method are available at: Vermont Surface Water Assessment and Listing Methodology (PDF) (34 pp, 675K, About PDF) EXIT Disclaimer.

Montana

Narrative Criterion: *State surface waters must be free from substances attributable to municipal, industrial, agricultural practices or other discharges that will…create conditions which produce undesirable aquatic life.*

- Montana's assessment method to address nitrogen and phosphorus pollution for wadeable streams includes an "overwhelming evidence of nutrient impairment" provision for which photo documentation is adequate to make an impairment determination for aquatic life use. The State defines overwhelming evidence of nutrient impairment as either fish kills that involve massive growths of senescing algae mats (bottom attached or floating) or stream beds covered with filamentous algal growth for a substantial distance. Sample photos and more details can be found in Montana's Assessment Methodology for Determining Wadeable Stream Impairment Due to Excess Nitrogen and Phosphorus EXIT Disclaimer.

Delaware

Narrative Criterion: *Waters shall be free from…any pollutants that may impart undesirable…colors to the water or to aquatic life found therein, may endanger public health, or may result in dominance of nuisance species.*

- The State's 2010 assessment methodology includes numeric water quality targets for nitrogen and phosphorus in guidance that can be used for the majority of waterbody types in the State as a basis for Section 303(d) listing for aquatic life use. Additional details are available at: State of Delaware 2010 Combined Watershed Assessment Report (305(b)) and Determination for the Clean Water Act Section 303(d) List of Waters Needing TMDLs (PDF) (165 pp, 4.4MB, About PDF) EXIT Disclaimer.

Iowa

Narrative Criterion: *Waters shall be free from materials attributable to wastewater discharges or agricultural practices producing objectionable color, odor, or other aesthetically objectionable conditions.*

- Iowa uses Trophic State Index (TSI) values for chlorophyll-*a* and Secchi depth as a basis for Section 303(d) listing (i.e., "aesthetically objectionable condition") for primary contact recreation for lakes. Under a different narrative criterion, the State also uses TSI values for chlorophyll-*a* or total suspended solids concentrations to assess aquatic life use support in shallow lakes. Additional details on both assessment methods are available at: Methodology for Iowa's 2012 Water Quality Assessment, Listing, and Reporting Pursuant to Sections 305(b) and 303(d) of the Federal Clean Water Act (PDF) (155 pp, 4.4MB, About PDF) EXIT Disclaimer.

New Mexico

Narrative Criterion: *Plant nutrients from other than natural causes[10] shall not be present in concentrations that will produce undesirable aquatic life or result in a dominance of nuisance species in surface waters of the state.*

- New Mexico uses a two-tiered approach to assess whether wadeable, perennial streams are attaining the State's narrative nutrient criterion and support aquatic life use. Both stressor and response variables are used in two sequential levels of assessment to determine if the State's narrative criterion is attained.

  The Level I assessment is a screening evaluation and based on a review of available data, including on-site observation (i.e., percent algal cover, periphyton growth, and presence of anoxic layer) and in-stream measurement (i.e., total nitrogen, total phosphorus, dissolved oxygen, and pH) indicators. Except for pH, all of the thresholds for these indicators are provided in the State's listingguidance. The threshold for pH is a separate State water quality standard. If two or more Level I indicators exceed their Level 1 thresholds, a Level II assessment is subsequently used.

  The Level II assessment uses a multiple lines of evidence approach to take into account diverse lotic systems. This level of the assessment uses a more robust set of measurements for both stressor (percent total nitrogen and total phosphorus concentrations above threshold concentrations) and response (diel fluctuations of dissolved oxygen and pH, and chlorophyll-*a* ($\mu g/cm^2$) variables.

  A waterbody is considered not attaining the narrative criterion if at least one causal variable and one response variable exceed thresholds in the Level II assessment. More information is available at: Nutrient Criteria Development EXIT Disclaimer.

10. New Mexico has an additional stand-alone provision for natural conditions in their water quality regulations.

Moving Forward to Improve Section 303(d) Listing Programs for Nutrients

EPA strongly encourages States to evaluate the status of their waters with respect to nutrient pollution and to add to their Section 303(d) list waters failing to meet applicable nutrient-related narrative criteria or waters with evidence of unsupported designated uses. For those States that have developed nutrient-related assessment methodologies, EPA anticipates that they will continue to improve their efforts and enhance their nutrient assessment programs. For States without nutrient-related assessment methodologies, EPA is providing the above examples to demonstrate the flexibility States have to develop nutrient-related assessment methodologies based on applicable narrative criteria pending the completion of numeric nutrient criteria.

To facilitate stakeholder input and EPA review of States' Section 303(d) lists, States are encouraged to describe or reference in their assessment methods the rationale for selecting the approach and associated threshold levels for the stressor and/or response parameters used to translate the narrative criteria. In addition, States may need to consider updating their monitoring protocols to address any new or modified stressor and/or response parameter used in the methodology.

As discussed in the 2006 IRG, States should also include in their assessment methods their data quality, quantity, and representativeness expectations and protocols for making water quality attainment determinations. Such expectations are particularly important when information from stakeholders can be used to assess whether applicable water quality standards are being met. For example, to facilitate a timely submittal of States' Section 303(d) lists and EPA review, States should consider including expectations that stakeholder data and information (e.g., waterbody user testimonials and photographs of waterbody conditions) include supporting information such as the date, specific location, and period of time that the waterbody condition was observed. Regarding location, States should also consider making available to the public information about their waterbody segmentation approach to facilitate stakeholders' ability to associate the observations with specific waterbody segments if more specific geographic measurement tools (e.g., hand held geographic positioning systems) are not available. The protocols should be published along with any solicitation for data and information. Ideally, such QA/QC protocols should be made available to the public in advance of any such solicitation for any given IR cycle. As a general matter, the protocols should strike a balance between employing only the very highest quality data and information and employing the most useful information about the conditions of as many segments as possible. Additional details on EPA's previous guidance regarding data quality, quantity, and representativeness considerations for making Section 303(d) listing decisions are available at: 2006 Integrated Report Guidance.

When States do not evaluate all existing and readily available data and information relevant to applicable narrative criteria and designated uses or fail to provide a rationale for not using certain existing and readily available data or information, EPA will take appropriate actions consistent with the CWA.[11] For example, in 2010, one State modified its assessment methods to make attainment decisions based on numeric criteria only and removed from the list a number of lakes originally listed for not attaining the State's narrative nutrient criterion based on trophic conditions. EPA conducted an independent analysis of available data for each lake removed from the State's Section 303(d) list and concluded that 12 of the lakes should be added to the State's Section 303(d) list based on not meeting the narrative nutrient criterion.

Together, EPA and its State partners are responsible for achieving the goals of the CWA to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Thus, EPA encourages States to renew their efforts to identify those waters impaired by nutrient pollution that are not meeting applicable water quality standards.

11. See 40 CFR 130.7(d)(2)

4. Assessment and Total Maximum Daily Load (TMDL) Tracking and Implementation System (ATTAINS)

As discussed in the 2012 IR Memo,[12] IR data include State water quality assessment decisions, attribute data, and the geospatial data representing the geographic locations of those assessed waters. This information is needed in order for EPA and the public to better understand the status of the nation's waters. EPA's ATTAINS database[13] is the repository for State IR attribute data, and the Reach Address Database[14] contains State IR geospatial data. EPA compiles State-submitted IR data to develop and publish the National Water Quality Inventory Report to Congress (CWA Section 305(b)), determine States' variable portion of the Section 106 grant allocation formula, inform water quality decisions, and to conduct national analyses with various stakeholders to help restore the nation's waters.

12. Information Concerning 2012 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions
13. Water Quality Assessment and Total Maximum Daily Loads Information
14. Geospatial Data Downloads

A. Information update on using and reporting Statewide Statistical Survey Data in ATTAINS, and the National Water Quality Inventory Report to Congress

In the 2010 IR Memo,[15] EPA discussed how States can use CWA Section 106 grant funds to improve monitoring programs and to implement statistically-valid surveys. EPA continues to support both Statewide statistical surveys and site-specific targeted monitoring to cost-effectively meet the reporting requirements under CWA Sections 303(d) and 305(b). EPA's discussion in the 2010 IR memo remains unchanged.

For the 2014 reporting cycle, EPA will again seek to incorporate Statewide statistical survey findings reported in ATTAINS into its national water quality summary. To assist States with reporting Statewide statistical survey data results to EPA, a new web entry tool is available. This tool replaces all Statewide statistical survey data submission tools used in prior cycles, including the Excel spreadsheet template provided for the 2010 and 2012 reporting cycles, and the probability survey module in the Assessment Database (ADB). For the 2014 reporting cycle, the Statewide statistical survey web data entry tool is the only mechanism for reporting Statewide statistical survey results to EPA. States may request access to the Statewide statistical survey web data entry tool available at: EPA Web Application Access.

B. Information on the data systems EPA will support for tracking assessment decisions for inclusion in ATTAINS

As discussed in the 2012 IR Memo,[16] EPA reports on the status of the nation's waters, shares this information with the public and other interested parties, and prepares a biennial National Water Quality Inventory Report to Congress. Data management of water quality assessment decisions is key to analyzing and sharing data across water programs and measuring progress in EPA's Strategic Plan.

In addition to the timely submission of IR data, States should also ensure consistency between their IR report and the associated electronic data submitted to EPA. States and EPA Regions should work together during the review of the IR and ensure that corrections to the report are also made to the associated electronic data. EPA expects that the States' associated electronic data, including geospatial data, should be submitted immediately following EPA's final action on States' Section 303(d) lists.

EPA recognizes that States need flexibility in the tools they use to collect and report IR data. As such, for the 2014 reporting cycle, EPA will continue to support the existing tools for reporting site-specific targeted monitoring data: EPA Assessment Database (ADB), State compatible assessment database, and the Exchange Network (EN) Office of Water Integrated Reporting (OWIR) data flow. As mentioned in the previous section, States that conduct Statewide statistical surveys should report this information in their IR report and use the Statewide statistical survey web data entry tool to submit the associated electronic data. For information on these tools, please visit the following Web sites:

- Site-specific targeted monitoring results
  - EPA Assessment Database
  - ADB Compatible Database
  - EN OWIR data flow (IR attribute data) EXIT Disclaimer
- Statistical survey results
  - Statewide statistical survey web data entry tool

As part of EPA's effort to streamline 303(d) and 305(b) reporting (described in Section 1), EPA is considering revisions to the processes that EPA and States use to manage and report 303(d) and 305(b) data, including the ATTAINS data system and the ADB.[17] Working with State partners, EPA expects to make significant progress on these efforts in 2013 and 2014. The first effort has been completing the Integrated Reporting Georeferencing Pilot, which was first discussed in the 2012 IR Memo.

For geospatial data, EPA recommends that States use the Hydrography Event Management (HEM) Tool and HEM EPA Add-On Tools, based in ArcGIS 9.x or ArcGIS 10, to manage assessed and impaired water events. For the 2014 reporting cycle, EPA will continue to support geodatabase or shapefile geospatial data formats, or files sent via the EN utilizing the NHDEvent data flow. For States that are interested in using the EN for submitting their geospatial data and are also using the HEM Tool to manage their geospatial events locally, there is a tool called "HEM to NHDEvent XML Conversion Tool" (HEM2XML) that converts geospatial events into the EN NHDEvent format. For more information on these tools and associated documentation, please visit the following Web sites:

- HEM Tool EXIT Disclaimer
- HEM EPA Add-on Tools EXIT Disclaimer
- EN NHDEvent dataflow (IR geospatial data) EXIT Disclaimer
- HEM2XML tool

15. Memorandum: Information Concerning 2010 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions
16. Information Concerning 2012 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions
17. In the interim, for States upgrading their computers to the Windows 7 operating system, please see the installation instructions

5. Antidegradation and Listing Guidance

Antidegradation is a component of a State's water quality standards (i.e., designated uses, criteria to meet those uses, and antidegradation requirements) that focuses on maintaining and protecting the chemical, physical, and biological integrity of the nation's waters, consistent with the CWA and its implementing regulations. CWA Section 303(d) and EPA's implementing regulations require States to identify waters not meeting any applicable water quality standard (CWA §303(d)(1)(A), 40 C.F.R. 130.7(b)(3)). EPA's listing regulations specify that "applicable water quality standards" refer to criteria, designated uses, and antidegradation requirements (40 CFR 130.7(b)(3)).

Most State water quality assessments have focused on whether numeric and narrative water quality criteria are being attained, and typically, these assessments capture where waters are most in need of restoration. However, it is possible that some waters are not meeting the antidegradation portion of water quality standards. For example, it is possible that available data and information for a water identified by a State as an Outstanding National Resource Water (ONRW) indicates degradation in water quality. If those data and information indicate that the water is not meeting the State's requirement for maintenance and protection of the water quality of the ONRW under the antidegradation portion of its water quality standards, in accordance with CWA and EPA regulations, the waters would be listed on the State's Section 303(d) list even if pollutant concentrations do not exceed water quality criteria levels.

EPA is working to develop additional guidance to address how antidegradation requirements should be considered when assessing waters under CWA Section 303(d).