

3. Framework for Identifying and Tracking Impaired Waters for the 2002 Integrated 303(d) List

Recent EPA guidance (the November 19, 2001 “2002 Integrated Water Quality Monitoring and Assessment Report” memo and the April 2001 Draft Consolidated Assessment and Listing Methodology report) has been published to aid the States in 303(d) List development. These guidelines encourage: consistency in listing waterbodies of the same designated use; close coordination between the 305(b) Report and 303(d) List; public involvement in the regulatory decision making process; quality control of data used for listing decisions; development of a statewide monitoring strategy to assess unassessed waters and targeted monitoring of impaired waters; and, the adoption of a five-part Integrated 303(d) List to better characterize waterbody attainment status. To be more consistent with this guidance, Maryland has made substantial improvements in 2002 by adopting a more integrated approach to the 303(d) list.

The major change in Maryland’s 303(d) listing process for 2002 was the partial adoption of an integrated approach to listing embodied in the proposed (November 2001) five-part structure recommended by EPA. The five-part listing structure proposed for the 2002 Integrated 303(d) List describes the following categories of waterbody attainment status:

1. **Part-1:** Attaining all water quality standards and no standard is threatened.
2. **Part-2:** Attaining some water quality standards; no standards are threatened; and insufficient or no data and information are available to determine if the remaining standards are attained or threatened.
3. **Part-3:** Insufficient or no data and information to determine if any water quality standard is attained.
4. **Part-4:** Impaired or threatened for one or more water quality standards but not needing a TMDL. Part 4 consists of the following three sub-parts:
 - Part-4a – Impaired for one or more water quality standards and a TMDL has been completed.
 - Part- 4b – Impaired for one or more water quality standards but doesn’t need a TMDL because other pollution control requirements are reasonably expected to result in the attainment of water quality standards in the near future.
 - Part-4c – Impaired for one or more water quality standards but doesn’t require a TMDL because impairment is not caused by an identifiable pollutant.
5. **Part-5:** Impaired or threatened for one or more water quality standards by pollutant(s) and requiring a TMDL [i.e., 303(d) List].
6. **Part-6:** MDE also added a sixth part to the 5-part list to describe those waterbodies that are no longer listed as impaired because water quality standards have been attained. This may include the collection and analysis of new data or removal of erroneous listing from the 1996 or 1998 303(d) lists (see Section 5.4).

Part-5 of the above list describes the actual 303(d) List and includes those waterbodies that may require a TMDL. Parts 1-4 and Part 6 of the list comprise the water quality assessment portion of the Integrated 303(d) List and are included to: provide a more comprehensive assessment of the State’s surface waters; to more effectively combine the State’s 303(d) List and 305(b) Report; and, to direct water quality planning and monitoring activities. The part of the 2002 Integrated 303(d) List on which a given waterbody appears is called its attainment status (see section 5.1).

Due to the short timeframe between guidance for the 5-part List and submittal of the 2002 Integrated 303(d) List, Maryland could not implement Parts 1 or 2 of the 5-part list in 2002. The fully combined 305(b)/303(d) report, as recommended in the EPA guidance to include assessments for all waters, will be evaluated during the next listing cycle.

MDE's next step in implementing EPA guidance was to coordinate more closely with DNR, the agency responsible for 305(b) reporting in Maryland, in order to acquire all readily available data. For the purposes of synchronizing collection of statewide monitoring data for both 305(b) and 303(d) reporting, a joint letter between MDE and DNR (Appendix A), dated April 16, 2001, was sent to over 200 federal, state, local and private groups to request any and all data that they may have on the quality of the State's surface waters. A comprehensive list of those who provided data is included in Appendix B.

To improve stakeholder participation in Maryland's 303(d) listing process, MDE went beyond the current regulatory requirements and developed listing methodologies, based upon current numeric and narrative water quality criteria in COMAR, for 7 different water quality parameters. These included: pH, sediments, bacteria, toxics, dissolved oxygen in stratified lakes, sanitary and combined sewer overflows, and biocriteria. The implementation of publicly reviewed listing methodologies promotes transparency in the regulatory decision-making process and allows more objective interpretation of the State's WQS. As a result, independent investigators using the same data should reach similar conclusions about a waterbody's impairment status. At the end of this public process, final 303(d) listing methodologies were adopted to document the decision making process by which WQLS are listed (Section 4).

The listing methodologies were developed in close coordination with DNR. The public was notified of the process via mail (Appendix C). A letter was mailed to over 200 organizations and private citizens, posted on MDE's web site and in local libraries, and published in several local newspapers. The results are documented in a Comment Response Document (Appendix D).

As a result of listing methodology development, DNR also adopted the listing methodologies for use in determining impairments for the 2001 update to the 2000 305(b) report and will use the methodologies for determining waterbody impairment status in future 305(b) reports. These listing methodologies thereby provide a consistent framework for making both 305(b) assessment and 303(d) listing decisions. MDE and DNR will be developing other listing methodologies for other environmental parameters not covered in the current round of public review and for use in future listing decisions. The same public review process will be used in the development of any new methodologies. Also, old methodologies will be revised and resubmitted to the public as they are revised.

In conjunction with listing methodology development, MDE constructed a new Integrated 303(d) listing meta-database. The new database accommodates the different use attainment status categories identified in the 5-part List. This allows a more comprehensive assessment of State's water quality than was done in the past. It also facilitates documentation of the data used for listing decisions, and links individual impairments to related data summaries, results, and citations, as well as stakeholder comments or concerns. This will help MDE to more easily address public and other inquiries about the data used to support listing decisions. Close coordination with DNR on data documentation in the meta-database further ensures that

impairments identified on the State's 305(b) Report, and considered for integrated 303(d) listing, are electronically linked to the data sources and data results.

Greater detail has been provided about integrated listings in the meta-database to facilitate data retrieval and the grouping of impairments by type, geographical location, and monitoring station. Impairments can then be plotted in a geographic information system (GIS) to provide spatial representation of data and to promote targeted monitoring strategies for TMDL development and data gap analysis. Since the National Hydrography Data Set (NHD) is still in the early stages of implementation, MDE remained consistent with the assessment units used in earlier Maryland 303(d) lists by continuing to list watersheds at the 8-digit basin code scale (see Section 5.2) rather than as reaches or assessment units. However, the new 303(d) listing meta-database is fully capable of capturing a range of geographic locations and is compatible with the national database. MDE is also complementing the Integrated 303(d) listing meta-database by considering EPA's new STORET database system for storage of the raw data used for 303(d) listings.

Lastly, efforts were made in the current list to differentiate between sediment, water column, and fish tissue impairments. In the past, no distinction was made between those waterbodies listed due to sediment contamination, fish consumption advisories or water column impairment. New categories were added to the 303(d) listing database to differentiate between these kinds of impairments. This is an important distinction that will clarify which medium of the waterbody is impaired and help to better target TMDL modeling and implementation.

3.1 Water Quality Assessment

As described earlier, only those waters listed with an attainment status of 5 in the 2002 Integrated 303(d) List comprise what has been historically known as the 303(d) List, or more specifically those waters that may require a TMDL. Waters with an attainment status other than 5 comprise the water quality assessment portion of the current list and are included to provide a more comprehensive assessment of the State's water quality. Only five attainment status designations have been used in the current integrated list. These are: (1) Part-3 (insufficient data to make an impairment determination); (2) Part-4a (TMDL completed); (3) Part-4b (technological fix expected to resolve the impairment in the near future); (4) Part-5; and, (5) and Part-6 (de-listed). Waters listed on Part-6 of the integrated list are described in Section 5.4.