



Meeting Summary for 2020 Listing Methodology Public Meeting
January 18, 2018
Lewis and Clark State Office Building
Jefferson City, Missouri

Data Codes:

- There was some confusion in relation to the use of data codes within assessments. It was discussed that data codes stem from a 1997 United States Environmental Protection Agency (EPA) guidance document which strived to create some consistency among the states when describing type, frequency, spatial values, and the quality of data received. In the Listing Methodology Document these codes are used to describe how the data was collected. The data used for assessments is organized on a project-specific basis and the quality of the data is reviewed on a project-specific basis.
- It was requested that some clarifying language be added to the 2020 Listing Methodology Document to further describe how and why data codes are used.

Data Age:

- It was mentioned that the second bullet point in regard to data age is not consistent with the summary listed on page two of the 2020 Listing Methodology Document response to comments.
- A stakeholder commented that the use of the word “significant” after the third bullet point can be considered vague. It was suggested that the word “material” replace the word “significant.”
- It was also suggested that the Department not track formatting changes on the online version of the 2020 Listing Methodology Document.

Total Organic Carbon (TOC) Normalization:

- Meeting attendants requested that the Department explain why the use of Total Organic Carbon (TOC) normalization has been excluded from the 2020 Listing Methodology Document. The Department believes there is too much uncertainty in the relationship between TOC and metals/Polycyclic Aromatic Hydrocarbons (PAHs) in sediment as well as unknown seasonal and spatial variability in the amount of TOC in sediment. Biological community data that shows impairment is also required to list a stream for sediment toxicity due to metals or PAHs. The Department noted that some mining streams in the state have low TOC concentrations and that normalization can potentially cause false indications of impairment.

- It is uncertain as to how many states currently have sediment guidelines. The Department first started assessing streams against sediment guidelines in the 2008 Listing Methodology Document. Stakeholders brought up Ohio and Wisconsin’s use of TOC normalization; however it was uncertain as to the age of their reference documents.
- The Department clarified that some normalization is allowed in the 2020 Listing Methodology Document. It is accounted for in a different analytical method called Acid Volatile Sulfide and Simultaneously Extracted Metals with Fractional Organic Carbon (ΣSEM-AVS/FOC). This process is based on the theory that sulfides and organic carbon chemically bind to toxic compounds such as metals and PAHs. The analytical method analyzes that amount of acid volatile sulfides, metals, and organic carbon in a sediment sample. It then subtracts the sulfides from the sum of the metals. The remaining amount of metals is then normalized for the amount of organic carbon in the sample. The result can give a better approximation of the toxicity. However this method is not for PAHs. Instead the Department, in the original 2020 Listing Methodology Document, has moved to assessing on total PAHs available in sediment rather than individual PAHs.
- Staff reached out to John Besser, Ph.D. and Jeffery Steevens, Ph.D. with United States Geological Survey – Columbia Environmental Research Center (USGS-CERC) for more information regarding normalizing TOC, but they were unable to attend this meeting. They did provide an email to staff which will be shared on the Department’s website.
- The Department will do further research into finding a compromise in TOC normalization.

Chronic Criteria:

- Stakeholders raised concerns during the public comment period about how the Department assesses chronic criteria. Some alternative suggestions were given. The Department discussed these alternatives during the meeting.
- Stakeholders believe the “one-in-three year” method has disadvantages when collecting larger amounts of data. Exceedances are more likely to be found when using this method rather than an alternative such as the 10 percent method.
 - The Department clarified that only samples collected during stable flows are considered for assessing chronic criteria. This greatly reduces the amount of samples available for assessment, while also increasing the likelihood of correctly identifying an impaired stream.
- Another alternative provided by stakeholders involves using the 90th percentile of the data to assess against chronic criteria. An explanation of this procedure can be found on the Department’s website under the January 18 meeting attachments (<https://dnr.mo.gov/env/wpp/waterquality/303d/january-18-2018-lmd-meeting-documents.zip>).
- Using either the 10 percent method or 90th percentile method necessitates the consideration of all data regardless of stable or unstable flow conditions. Higher flows can bias a dataset in these circumstances, which is why the Department maintains the process of using more than one

exceedance of the chronic criteria during stable flows in the last three years of available data to assess a stream as impaired.

- Additional supporting documents will be shared on the Department’s webpage (<https://dnr.mo.gov/env/wpp/waterquality/303d/january-18-2018-lmd-meeting-documents.zip>).

Related to Chronic Criteria

- Discussion occurred on Bee Fork, which is listed as impaired for cadmium in sediment. Additional data was collected by LimnoTech in September of 2017. That data was then submitted to be considered for assessments during the Public Notice Period as a comment, along with a statement concerning a discharge that was completely removed from this waterbody. Concern was raised as to why the stream is still listed as impaired. The removal of a discharge would constitute a “significant” change, however only one data point was collected after the discharge was removed. The Department was in contact with the organization that collected the data before they collected it. The Department clearly stated the requirements for how much data would be needed to make an assessment. The Department considered the new data for its assessment of Bee Fork, but since only one sample was collected it failed to meet the Listing Methodology Document requirements for reassessing the stream.
- A stakeholder commented that the West Fork Black River was added to the 303(d) List in response to comments received from EPA. Three monthly samples from 2014, all of which showed exceedance of the acute water quality standard, were collected during the time of an unusual event (West Fork mine collapse and West Fork Black River diversion around sinkhole from mine collapse). Stakeholders stated that this data is not representative of the current situation, since a waste water treatment plant is now in place at this location. The Department will need additional instream data to show impairment no longer exists. A stakeholder asked if the impairment is limited to the mixing zone, or if it is listed as impacting an entire stream segment. Department staff showed a map viewer available through the 2018 303(d) List that shows what the Department believes is the impaired portion of the stream.

Stream Segments

- The Department is currently only able to track impairments via the Water Body Identifier (WBID) located in Missouri’s Water Quality Standards. The Water Protection Program is in the queue for project prioritization with the Office of Administration – Information Technology Department to develop a technological way to sub-segment and sync waterbodies to indicate smaller, more accurate impairment lengths.
- In the meantime, the Department will work on including a column on the 303(d) List that shows if the entire WBID is impaired or not so it is more visible to the public.
- The Department would like stakeholders to provide circumstances that would justify splitting a WBID into smaller assessment units.

Assessing Small Streams:

- Department staff gave a brief background on how biological assessments are approached and why they are appropriate. The primary inquiry being answered is whether or not the stream in question possesses biological integrity and is meeting the requirements of the Clean Water Act. Until a more robust dataset on small reference streams is developed, the Department uses the 13-step process outlined in the Listing Methodology Document for assessing smaller streams. The Department has provided on their website a document which explains these 13-steps in more detail (<https://dnr.mo.gov/env/wpp/waterquality/303d/january-18-2018-lmd-meeting-documents.zip>). The Department asked stakeholders to comment on this additional detail.
- Rather than comparing small headwater streams to pre-settlement conditions, Department staff explained that they strive to find the best available and most representative waterbody in an Ecological Drainage Unit (EDU) surrounded by realistic and modern land uses. Biological criteria are based on the 25th percentile of the reference streams.
- In an effort to further research small reference streams, the Department contracted with the University of Missouri – Columbia to develop a model which is used to select potential candidate reference headwater streams. The Department’s Environmental Services Program staff are currently looking at these potential candidates and are collecting data on approximately 12-20 sites per year. It will take years to develop a robust dataset for small stream assessments.
- Concerns were raised about how the Department has assessed streams using biological criteria in the past, citing litigation. The Department and stakeholders agreed that these issues should not occur going forward due to changes in the Listing Methodology Document; that previous listing method is no longer used. (Related to Kirksville WWTF)
- Further discussion led to the idea of possibly using Aquatic Ecological Subtypes (AES) rather than EDUs for stream comparisons. The Department will look into AES types further for potential use.
- It was also specified that there is a difference between using a reference stream comparison versus a control stream comparison.
- A Clean Water Commissioner who attended the meeting added that there needs to be common ground found for these 13-Steps in the Listing Methodology Document.