Computational Guidance: CWA Section 303(d) Bridge Metric
June 8, 2022

Measure Name

Fiscal Years 2023 through 2024 (FY23-FY24) Bridge Metric (i.e., "Bridge Metric")

Measure Contact

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Measure Summary

The Bridge Metric measures the extent of CWA Section 303(d) bridge priorities identified by each state that are covered by, or are in the process of being covered by, EPA-approved/accepted TMDLs or other restoration plans for impaired waters. Plans may also include accepted protection approaches to prevent impairments and maintain water quality.

Bridge Priorities and Commitments

For this Bridge Metric, states will identify two-year bridge **priorities** for FY23-24 no later than September 30, 2022.[1] States will use data from their 2022 Integrated Reports (IRs)[2] (or most recent IR in ATTAINS as, appropriate)[3] to select short-term, two-year bridge priorities (i.e., priorities for the purposes of this metric).[4] Regardless of the way a state defines its bridge priorities, they should be articulated in a manner that allows them to be linked to specific Assessment Unit (AU)/Parameter combinations.

With the FY23-FY24 bridge priority selection, states will indicate their estimated progress for the upcoming 2-year bridge period by identifying which bridge priorities will have a plan in place[5] and which will have a plan in development[6] at the end of the 2-year bridge period. The bridge priorities and associated estimated progress represent the state's bridge **commitments**.

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[1] Identifying bridge priorities is separate from identifying TMDL priorities as part of the CWA Section 303(d) listing process. States should not delay submission of their 2022 IRs (due April 1, 2022) to facilitate this Bridge Metric process.

[2] EPA expects all IR submissions (both attribute and geospatial data) will be submitted electronically to EPA via ATTAINS.

[3] Data from IRs submitted after September 30, 2022 cannot be used for the purposes of this metric. If a state does not submit its 2022 IR by September 30, 2022, it should use data from its most recent IR in ATTAINS.

[4] These FY23-FY24 bridge priorities may include Vision 1.0 priorities that have not been completed, as well as new priorities.

[5] For a plan to count as in place it must be submitted to EPA and approved or accepted by EPA.

[6] Examples of "in development" may include review of existing information, data evaluation, data collection, data analysis, model development, draft of plan, proposal of a TMDL for public comment, and public outreach. The state should work with its EPA region to determine instances of "in development." A plan should not be deemed in progress/in development unless there is an expectation that the plan will be completed, although not necessarily during the bridge period.

EPA's 2013 Vision period ends at the end of FY22. EPA and states are working on a new Vision and associated accountability metric that would begin in FY25. This Bridge Metric only addresses the "bridge" period of FY23-24.[7] Setting bridge priorities from FY23 through FY24 provides states an opportunity to continue to strategically focus their efforts and demonstrate progress in achieving environmental results as begun in the Vision 1.0 effort. EPA recommends states make reasonable efforts, as feasible, to make bridge priority setting for the Bridge Metric transparent to the public.

ATTAINS

Bridge commitments (bridge priority waters in the form of AU/Parameter combinations and the state's estimated associated plan progress) should be entered into ATTAINS no later than September 30, 2022. EPA is currently making updates to the "Priorities Module" within ATTAINS. States should wait until these updates are complete before entering bridge commitments into ATTAINS. EPA headquarters will notify states and regions when ATTAINS is ready to receive bridge commitments and will provide instruction on this process in advance. The basic process is provided below:

- The state identifies the list of AU/Parameter combinations for which plans would either be in development or in place for the reporting period. This list should be based off the state's most recent IR that has been inputted into ATTAINS.
- Using the ATTAINS Priorities Module, the state will identify its bridge commitments.
- The state or region ensures that corresponding geospatial information for all bridge priority waters has been inputted into the ATTAINS system for the Catchment Indexing Process (CIP).
- Geospatial data should have already been processed as part of the state's IR submission, however, if any geospatial data for these bridge priorities are identified as missing, and the state provides that missing geospatial data, EPA will process it through the CIP Tool.

Terminology

Types of Plans

TMDL (Total Maximum Daily Load):

Per 40 CFR 130.2(i), a TMDL is, "the sum of the individual WLAs [Waste Load Allocations] for point sources and LAs [Load Allocations] for nonpoint sources and natural background." TMDLs must also account for seasonal variations in water quality, and include a margin of safety (MOS) to account for any lack of knowledge concerning the relationship between effluent limitations and water quality.

Other Restoration Approaches:

Other restoration approaches are near-term plans, or descriptions of actions, with schedules and milestones that are more immediately beneficial or practicable to achieving water quality standards than TMDLs. For additional information on factors to consider, but which are not required, when pursuing this approach and elements to consider including in the description, see the 2016

[7] EPA is not expecting states to submit detailed justifications to accompany their FY23-24 bridge commitments. EPA and states are contemplating that states would submit long-term prioritization frameworks by April 1, 2024, as part of Vision 2.0. The approach of this Bridge Metric remains a leading candidate approach for use in a metric for Vision 2.0.

Integrated Reporting Memo. EPA will consider the adequacy of the state's description of the restoration approach in determining whether to accept such an approach and plan for recognition under the Bridge Metric.

Protection Approach:

A protection approach constitutes a strategic set of steps followed by a water quality program and its partners, intended to provide a basis for protecting healthy waters and their associated ecosystem structure, functions and underlying uses, and the implementation of protection activities. There are numerous variations of protection approaches. Such approaches may be comprehensive or focused on individually targeted areas. These approaches can be a part of an overall state healthy watersheds strategy and coordinated with partner agencies. Some examples of practices that a state may consider for protection include forest preservation, riparian buffer ordinances, runoff control structures, or land acquisition.

A protection plan includes documentation of steps to be taken and activities to be implemented that are reasonably expected to result in a specified level of protection of one or more water bodies for a specified amount of time. Some types of CWA-related plans, such as protection TMDLs and nine-element watershed plans developed under CWA Section 319, may be considered protection plans under this Bridge Metric if they include elements germane to the 303(d) Vision's protection goal. Example elements may include:

- Identification of specific waters to be protected and risks to their condition;
- Activities proposed and/or implemented that are expected to resist degradation or impairment of these waters, or improve water quality (e.g. quantification of loading or assimilative capacity);
- Time frames over which a protection target condition is expected to be attained, maintained, or improved;
- Quantitative and qualitative measures of expected success and planned responses to observed changes in risks or condition; and
- Monitoring to evaluate water quality conditions and plan implementation success over time.

To identify those areas that are appropriate for employing protection practices, a state might use the results of a Healthy Watersheds Assessment https://www.epa.gov/hwp, use a screening tool such as the Recovery Potential Screening Tool available at https://www.epa.gov/rps, or identify candidate areas individually. EPA will consider the adequacy of the state's description of the protection approach in determining whether to accept such an approach and plan for recognition under the Bridge Metric.

Bridge Metric Terminology

Bridge Period:

Fiscal Years 2023 and 2024 (i.e., October 1, 2022 to September 30, 2024).

Bridge Priorities

Priority waters in the form of AU/Parameter combinations. The term bridge priority is unique to this metric and is not synonymous with priorities identified as part of the CWA Section 303(d) priority ranking requirement.

Bridge Commitments:

Priority waters in the form of AU/Parameter combinations (i.e., bridge priorities); **and** the state's estimated associated plan progress during the bridge period for each AU/Parameter combination (i.e., a plan in place or a plan in development).

Catchment-based Indexing:

An automated process that corresponds state geospatial information (e.g., streams, lakes, HUCs, basins) with NHDPlus high resolution catchments. Catchments represent the local drainage area for the individual stream segments of a specific stream network. The process to correspond the state's geospatial information to catchments varies depending on the type of input file: linear files (representing rivers and streams), area files (representing lakes, ponds, or reservoirs), or boundary files (representing Watershed Boundary Dataset Hydrologic Units). EPA will be responsible for the Catchment Indexing Process (CIP) Tool.[8] For more information about NHDPlus HR catchments, see https://www.usgs.gov/national-hydrography/nhdplus-high-resolution. While catchment indexing is performed on NHDPlus HR catchments, measures are calculated using NHDPlus VF-Gen catchments, which are medium resolution catchments based off of NHDPlus HR.

[8] The catchment area is not meant to define the geographic extent of the TMDL. This is only for measures purposes.

Methodology for Computation of Results

The process to calculate progress for the Bridge Metric includes the following steps:

- Step 1: States submit to EPA their 2-year bridge commitments (i.e., bridge priorities and associated estimated progress) in ATTAINS before the start of FY23.
    - Step 1.5: EPA processes the bridge commitments in ATTAINS.
- Step 2: EPA calculates the catchment square miles associated with the bridge priority universe and commitments based on the states estimated plan progress that is entered.
- Step 3: EPA calculates progress quarterly throughout FY23 and FY24 based on the plans and associated progress that are entered into ATTAINS.

Step 1: State submits "bridge commitment data" to EPA through ATTAINS

- The state identifies the list of AU/Parameter combinations for which plans would either be in development or in place for the bridge period. This list should be based off the state's most recent IR that has been inputted into ATTAINS.
- Using the ATTAINS Priorities Module, the state will identify its bridge commitments.
- The state or region ensures that corresponding geospatial information for all bridge priority waters has been inputted into the ATTAINS system for the Catchment Indexing Process (CIP).
- Geospatial data should have already been processed as part of the state's IR submission, however, if any GIS for these bridge priorities are identified as missing, and the state provides that missing GIS, EPA will process that GIS through the CIP Tool.

Step 2: EPA calculates the catchment square miles associated with the bridge priority universe and commitments

EPA will sum the area of the catchments that correspond to state bridge priorities. EPA plans to have these calculations visible within the Priorities Module in ATTAINS such that states can see their universe as they are entering their bridge commitments.

EPA will calculate a weighted size for each AU/Parameter combination based on the corresponding catchment size and the number of AU/Parameter combinations to be addressed by a plan in each corresponding catchment. EPA will develop two calculations for each state, one calculation representing the total universe size for the bridge priorities, and the second calculation representing the calculated bridge commitment size based on the state's proposed progress for the reporting period.

An example of how the weighted size is calculated is demonstrated in Tables 1 and 2.

Catchment	Size (sq. miles)	# of AU/Parameters	Weighted Catchment Size
A	4	2	4/2 = 2 sq. miles
B	6	3	6/3 = 2 sq. miles
C	3	1	3/1 = 3 sq. miles

Table 1. Example showing how catchment sizes are weighted by the number of AU/parameter combinations

Bridge Priority AU	Parameter	Associated Catchments	Weighted AU/Parameter Size (Sum of Weighted Catchment Size for each Associated Catchment)
AU 1	Dissolved Oxygen	A, B	Catchment A Weighted Catchment Size + Catchment B Weighted Catchment Size = 2+2 = 4 sq. miles
AU 1	Pathogens	A, B	Catchment A Weighted Catchment Size + Catchment B Weighted Catchment Size = 2+2 = 4 sq. miles
AU 2	Pathogens	B, C	Catchment B Weighted Catchment Size + Catchment C Weighted Catchment Size = 2+3 = 5 sq. miles

Table 2. Example demonstrating how the weighted catchment sizes are used to calculate an AU/Parameter weighted size.

The AU/Parameter weighted sizes are then summed to give a total universe size for the state's bridge priorities. In the example above, the total weighted size would be 13 square miles (4+4+5).

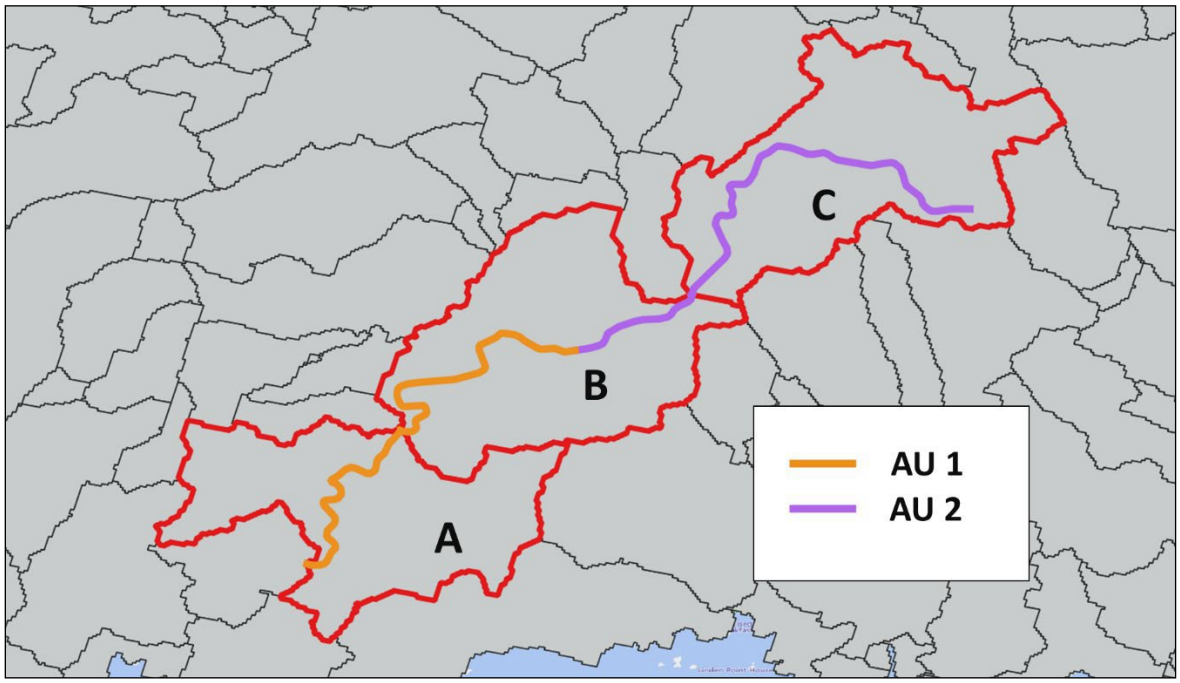

Figure 1. Assessment Unit / Catchment relationships

Step 3: EPA calculates results

Results are calculated based on the data that are entered into ATTAINS. ATTAINS compares data that are entered in the Actions module against the information provided in the Priorities module. ATTAINS uses the Assessment Units, Pollutants, and Addressed Parameters that are entered into each Action to determine if a plan is in place for a bridge priority. These must match exactly between the plan that is entered in the Actions module and the bridge priority that has been identified in the Priority module. ATTAINS gives full credit for any plan that has been approved or accepted and half credit for any plan in development that has been entered into ATTAINS but not marked final.[9] Information regarding the plans should be entered as they are completed.

Table 3 demonstrates how the metrics are calculated using the bridge priorities identified above in Tables 1 and 2.

Bridge Priority AU	Parameter	Expected Plan	Expected Progress by 2024	Bridge Commitment Size	Current Status	Calculated Size (Measure result)
AU 1	Dissolved Oxygen	Protection	Development	4 (weighted size) * .5 (progress factor) = 2 sq. miles	Not Started	0
AU 1	Pathogens	TMDL	Complete	4 (weighted size) * 1 (progress factor) = 4 sq. miles	Complete	4
AU 2	Pathogens	TMDL	Complete	5 (weighted size) * 1 (progress factor) = 5 sq. miles	Complete	5
TOTALS				**11 sq. miles**		**9 sq. miles**

Table 3. Example demonstrating how the final calculations are made for this metric

Based on the information provided in Table 2, the state has a universe of 13 sq. miles. In this example, the state set bridge commitments to have one plan under development (for AU 1 for Dissolved Oxygen) and another plan that would be complete (for both AU 1 and AU 2 for Pathogens) by 2024. This would give the state a bridge commitment of 11 sq. miles (2+4+5).

Let's say that as of July 2024 the state has so far made progress by completing one TMDL but has not yet begun the protection plan. The state's interim progress as of July would be 9 sq. miles. The state would need to begin, but not complete, the protection plan prior to September 30, 2024 to meet its bridge commitment of 11 sq. miles. The AU 1 protection priority could continue to be a priority for the state for subsequent years.

[9] States can meet 2-year bridge commitments with a mix of plans in development and plans that have been addressed by an approved or accepted plan (i.e., plan in place).

Target Setting

Full achievement of bridge commitments is not required to achieve the EPA-set national target. For the Bridge Metric, EPA will use a factor of .85 x total national bridge commitments to set a target in square miles for the end of FY24.

For example:

- A national bridge commitment totaling 1,000 square miles x .85 = a national target of 850 square miles.