Oh the Awesome Work We Will Now Be Able to Show – CWA 303(d) Measures “WQ-27 and WQ-28”

2015 National Training Workshop on CWA 303(d) Listing & TMDLs

Session #5 Updates on the Measures
April 8, 2015
Overview of Wednesday

• Session #5: Oh the Awesome work we will now be able to show – CWA 303(d) Measures “WQ-27 and WQ-28”
• Session #6: Bringing It All Together: ATTAINS Redesign and CWA 303(d) Measures “WQ-27 and WQ-28”
• Session #7: Live Demonstrations of Measures Calculations
• Murie Lodge Lounge Area (5:00 to 6:00)
  • Draft Marine Catchments
  • Recovery Potential Screening Tool – Example KS
• Informal Evening Session: Murie Lodge Lounge Area (7:30 to 8:30)
  • Discuss Priorities Data Entry Tool
From Past...

FY2014 – 158 TMDLs
We looked at using a state’s original source data
We looked at using a state’s original source data (cont.)
Then we looked at using the state’s original source data conflated to 1:100,000 NHDPlus.
Example of a Montana TMDL that doesn’t correlate well with 1:100K Surface Water (slides 8 to 11)
To Present: Why Catchments Make Sense
TMDL lines correlated to catchments that were not indexed to 1:100K streams
What are NHDPlus Catchments?

• Introduction to NHDPlus with a focus on NHDPlus Catchments
• Discussion of concerns about the use of NHDPlus catchments
NHDPlusV2 is the integration of 3 national datasets.

- National Hydrography Dataset (NHD) (1:100K and better)
- Watershed Boundary Dataset (WBD) (1:24K)
- National Elevation Dataset (NED) (10 meter and better source resampled to 30 meter)
NHDPlusV2 catchments (light yellow lines) tie the landscape to the stream network forming a ‘surface water geofabric’.
NHDPlusV2 catchments correspond well to HUC12s and here is why.
NHDPlusV2 catchments correspond well to the stream network and waterbodies and here is why.

NHD Flowlines and Waterbodies (Blue)

___________

Used to Trench And Scoop Into the Elevation
NHDPlusV2 catchments are local drainage areas.

Catchment (green lines) for each NHD Network Segment (blue lines)
Concerns raised about the use of NHDPlus Catchments

• How do catchment boundaries relate to higher resolution hydrography?
• Catchments for a lake do not capture the problems from upstream, and how will watershed-based priorities translate to catchments?
Question Raised: How do catchment boundaries relate to higher resolution hydrography?

Area in New York where NHD has been updated from 1:100K to 1:24K
How do catchment boundaries relate to higher resolution hydrography?
How do catchment boundaries relate to higher resolution hydrography?
Concern raised: Catchments for a lake do not capture the problems from upstream
Catchments for a lake do not capture the problems from upstream, and how will watershed-based priorities translate to catchments?
Catchments for a lake do not capture the problems from upstream, and how will watershed-based priorities translate to catchments?
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Catchments for a lake do not capture the problems from upstream, and how will watershed-based priorities translate to catchments?
Questions
WQ-27 and WQ-28 Discussion

- Quick glance at the Draft Priorities Data Entry Tool
  - More discussion later today

- Quick glance at the Catchment Indexing Process

- WQ-27
  - Kansas
  - Montana

- WQ-28
  - Kansas
  - Montana
Draft Priorities Data Entry Tool

Welcome to the 303(d) Program Vision Priority Data Entry System. You will use this system to define your state’s priorities information and submit the data to EPA HQ. This system provides a guided walkthrough to help you enter the information. On this page, you will define the Baseline Cycle and Goal Cycle, which will apply to all of your state’s priorities. In addition, you can see the submission status for the state collection of priorities information being submitted to EPA HQ.

Define Baseline and Goal Cycles

To begin adding the state 303(d) Program Vision Priorities information, please first enter the baseline and goal cycles for your state.

If you have already started to add your 303(d) Program Vision Priorities, click the State Priorities tab to continue.

*State  NT  
*Baseline Cycle  2014  
*Goal Cycle  2022  

State Priorities Submission Status Report

The report below shows the submission status for the state collection of priorities information being submitted to EPA HQ. The default status is “Draft”. After the information is submitted to EPA, the status will be updated to “Submitted”.

<table>
<thead>
<tr>
<th>State</th>
<th>Baseline Cycle</th>
<th>Goal Cycle</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT</td>
<td>2014</td>
<td>2022</td>
<td>Draft</td>
</tr>
</tbody>
</table>

1 - 1
303(d) Program Vision Priority Data Entry System

On this page, you can add the information for each of your state's priorities. Fill out the form below and click the Submit button to add a priority to the List of Priorities Entered for Your State on the right. Once a priority is added, you can edit the priority information and add supporting data (GIS, Assessment Units, Causes, Uses) from the report. You will add supporting data for each priority separately; exception: you can upload GIS data and associate an entry with multiple priorities on the GIS page.

Add State Priorities

<table>
<thead>
<tr>
<th>State</th>
<th>Priority ID</th>
<th>Priority Name</th>
<th>Priority Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT</td>
<td>1</td>
<td>Assessment units with cause ALUMINUM</td>
<td>Assessment units with cause ALUMINUM</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Assessment units with cause AMMONIA (TOTAL)</td>
<td>Assessment units with cause AMMONIA (TOTAL)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Assessment units with cause AMMONIA (UNIONIZED)</td>
<td>Assessment units with cause AMMONIA (UNIONIZED)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Assessment units with cause ANTIBIOTIC</td>
<td>Assessment units with cause ANTIBIOTIC</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Assessment units with cause ARSENIC</td>
<td>Assessment units with cause ARSENIC</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Assessment units with cause BOTTOM DEPOSITS</td>
<td>Assessment units with cause BOTTOM DEPOSITS</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Assessment units with cause CADMIUM</td>
<td>Assessment units with cause CADMIUM</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Assessment units with cause CHROMIUM (TOTAL)</td>
<td>Assessment units with cause CHROMIUM (TOTAL)</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Assessment units with cause COPPER</td>
<td>Assessment units with cause COPPER</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Assessment units with cause DISSOLVED OXYGEN SATURATION</td>
<td>Assessment units with cause DISSOLVED OXYGEN SATURATION</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Assessment units with cause ESCHERICHIA COLI</td>
<td>Assessment units with cause ESCHERICHIA COLI</td>
</tr>
</tbody>
</table>
Catchment Indexing Process
Catchment Indexing Process QA
Calculating WQ-27

• Tracks “Plans in Place” for state Long-Term Priorities from 2016 to 2022
  • Priorities: Defined by state (assessment units, watersheds, ecoregions, or basins; pollutants; or designated uses)
  • Plans: TMDLs, Alternatives, Protection
    • Alternatives: Category 5-alt; Category 4b, Category 4c
    • Protection: Waters supporting designated uses
  • Flexibility to change long-term priorities

• Goal of 100% “Plans in Place” by 2022
  • Set annual targets/commitments
  • Report progress annually (end of each fiscal year)
  • Priority recognized under measure when all plans in place
Calculating WQ-27 (Cont.)

• Montana
  • Priorities: Assessment Unit / Cause of Impairment Combinations
  • Used 2014 Integrated Reporting Cycle Geospatial Information for Baseline Cycle
Calculating WQ-27 (Cont.)

Legend
- Assessment Units
- Streams
- Lakes

Hydrography
- WBD HUC 8 NHD

Boundaries
- Counties
- States

WQ-27 Montana
Calculating WQ-27 (Cont.)

Legend
- Assessment Units
  - Streams
  - Lakes
- Hydrography
  - WBD HUC12 NHD
  - SELECTED HUC12
- Boundaries
  - Counties
  - States

Montana

WQ-27 Montana
Calculating WQ-27 (Cont.)

Legend

Assessment Units
- WQ27 Streams
- WQ27 Lakes

Hydrography
- WBD HUC12 NHD
- SELECTED HUC12

Boundaries
- Counties
- States

Miles
Calculating WQ-27 (Cont.)
Calculating WQ-27 (Cont.)

DRAFT: For Demonstration Purposes Only
This information is based on analyzing priorities defined by the state under the 303(d) Vision. The data was associated with catchments to automate the calculation of and report out on this measure.

<table>
<thead>
<tr>
<th>WQ-27 Universe and Baseline Info</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2014 IR Cycle</strong></td>
</tr>
<tr>
<td>Universe area: 1,380,887.18</td>
</tr>
<tr>
<td>Baseline area: 0.00</td>
</tr>
<tr>
<td>Baseline percent: 0%</td>
</tr>
</tbody>
</table>

![Diagram showing WQ-27 Montana]
Calculating WQ-27 (Cont.)

• Kansas
  • Priorities: HUC 12s
    • EPA interpreted information provided as Assessment Units with Phosphorus and Nitrate Impairments
      • Discussion Point on Plan Area
    • Priorities included waters with TMDLs “Plans in Place”
  • Used 2014 Integrated Reporting Cycle Geospatial Information for Baseline Cycle
Calculating WQ-27 (Cont.)
Calculating WQ-27 (Cont.)
Calculating WQ-27 (Cont.)
Calculating WQ-27 (Cont.)

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<td><strong>2014 IR Cycle</strong></td>
</tr>
<tr>
<td>Universe area:</td>
</tr>
<tr>
<td>Baseline area:</td>
</tr>
<tr>
<td>Baseline percent:</td>
</tr>
</tbody>
</table>

2,118,539
105,224

- Green: State priorities with all plans in place
- Yellow: State priorities with at least one plan needed
Calculating WQ-28

• Tracks “Plans in Place” and progress towards “Plans in Place” within and outside of priorities
  • Plans: TMDLs, Alternatives, Protection
    • Alternatives: Category 5-alt; Category 4b, Category 4c
    • Protection: Waters supporting designated uses
  • Progress: Planning and Developing
  • Based on information at assessment unit level
  • Uses a weighted approach
  • “Rolling” baseline

• Report progress annually (end of each fiscal year)
  • Universe and baseline updated with each new Integrated Report
Calculating WQ-28 (Cont.)

• Montana
  • Entire state (within and outside of priorities)
  • Used 2014 Integrated Reporting Cycle Geospatial Information for Baseline Cycle
Calculating WQ-28 (Cont.)
Calculating WQ-28 (Cont.)

Legend
- Assessment Units
  - Streams
  - Lakes
- Hydrography
  - WBD HUC12 NHD
  - SELECTED HUC12
- Boundaries
  - Counties
  - States

Montana
Calculating WQ-28 (Cont.)

Legend
- Assessment Units
  - WQ28 Streams
  - WQ28 Lakes
- Hydrography
  - WBD HUC12 NHD
  - SELECTED HUC12
- Boundaries
  - Counties
  - States

WQ-28 Montana
Calculating WQ-28 (Cont.)
Calculating WQ-28 (Cont.)

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<table>
<thead>
<tr>
<th>WQ-28 Universe and Baseline Info</th>
<th>Current Measure Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2014 IR Cycle</strong></td>
<td><strong>Catchment Acres</strong></td>
</tr>
<tr>
<td>Universe area:</td>
<td>12,099,269.36</td>
</tr>
<tr>
<td>Baseline area (weighted):</td>
<td>1,656,035.67</td>
</tr>
<tr>
<td>Baseline percent:</td>
<td>13.69%</td>
</tr>
<tr>
<td><strong>FY 2015</strong></td>
<td><strong>Catchment Acres</strong></td>
</tr>
<tr>
<td>Universe area:</td>
<td>12,099,269.36</td>
</tr>
<tr>
<td>WQ-28 area (weighted):</td>
<td>1,656,035.67</td>
</tr>
<tr>
<td>WQ-28 percent:</td>
<td>13.69%</td>
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WQ-28 Montana
Calculating WQ-28 (Cont.)

<table>
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<tr>
<th>2014 IR Cycle</th>
<th>Catchment Acres</th>
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</thead>
<tbody>
<tr>
<td>Universe area:</td>
<td>12,099,269.36</td>
</tr>
<tr>
<td>Area with all plans in place:</td>
<td>352,847.06</td>
</tr>
<tr>
<td>Area with progress*:</td>
<td>2,798,809.26</td>
</tr>
<tr>
<td>Area with no plans in place:</td>
<td>8,947,613.04</td>
</tr>
</tbody>
</table>

* "Area with progress" refers to the area in which some plans are in planning, in development, or in place.
Calculating WQ-28 (Cont.)

• Kansas
  • Entire state (within and outside of priorities)
  • Used 2014 Integrated Reporting Cycle Geospatial Information for Baseline Cycle
Calculating WQ-28 (Cont.)
Calculating WQ-28 (Cont.)
Calculating WQ-28 (Cont.)

Legend
- **WQ28 Streams**
- **WQ28 Lakes**

Hydrography
- **WBD HUC12 KS**
- **SELECTED HUC12**

Boundaries
- Counties
- States

WQ-28 Kansas
Calculating WQ-28 (Cont.)

Legend
Assessment Units
- WQ28 Streams
- WQ28 Lakes
Hydrography
- WBD HUC12 NHD
- SELECTED HUC12
- Catchments
WQ28
- All plans in place
- Area with progress
- No plans in place
Boundaries
- Counties
- States

WQ-28 Kansas
Calculating WQ-28 (Cont.)

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<th>Current Measure Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2014 IR Cycle</strong></td>
<td><strong>FY 2015</strong></td>
</tr>
<tr>
<td>Universe area: 9,196,567.08</td>
<td>Universe area: 9,196,567.08</td>
</tr>
<tr>
<td>Baseline area (weighted): 2,308,999.17</td>
<td>WQ-28 area (weighted): 2,341,058.18</td>
</tr>
<tr>
<td>Baseline percent: 25.11%</td>
<td>WQ-28 percent: 25.46%</td>
</tr>
</tbody>
</table>

WQ-28 Kansas
Calculating WQ-28 (Cont.)

### WQ-28 Baseline Plan Breakdown

<table>
<thead>
<tr>
<th>2014 IR Cycle</th>
<th>Catchment Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universe area</td>
<td>9,208,272.81</td>
</tr>
<tr>
<td>Area with all plans in place</td>
<td>1,005,168.97</td>
</tr>
<tr>
<td>Area with progress*</td>
<td>2,854,352.63</td>
</tr>
<tr>
<td>Area with no plans in place</td>
<td>5,348,751.21</td>
</tr>
</tbody>
</table>

* "Area with progress" refers to the area in which some plans are in planning, in development, or in place.
Questions
Timeline for Reporting on WQ-27 in FY 2016

• States submit information (data) that outlines “draft” long-term priorities from now to July 2015
Timeline for Reporting on WQ-27 in FY 2016 (Cont.)

• EPA calculates universe and baseline
  • States work with EPA to QA universe and baseline results from now to September 2015

• States work through scenarios for developing “draft commitments” from now to September 2015
Timeline for Reporting on WQ-27 in FY 2016 (Cont.)

• States submit “draft final” FY 2016 commitments by late September/early October 2015
Timeline for Reporting on WQ-27 in FY 2016 (Cont.)

- Regions enter approved TMDLs into NTTS from October 1, 2015 to September 30, 2016
- EPA works with states to design, build, and test the data entry tool for alternatives and protection plans from now to Spring/Summer 2016
Timeline for Reporting on WQ-27 in FY 2016 (Cont.)

- States submit 2016 Integrated Reports on April 1, 2016

- States inform EPA if adjustments should be made to WQ-27 universe, baseline, and “draft final” commitments set in October 2015. This should occur in April 2016
  - If yes, work with EPA to modify WQ-27 information in April and May 2016, and submit adjustments in May 2016
  - If no, nothing more to do at this time
Timeline for Reporting on WQ-27 in FY 2016 (Cont.)

• EPA to calculate end-of-year results based on plans in place that were entered into ATTAINS by September 30, 2016. This will occur during October 2016. Generally end-of-year results are due at the end of October or early November.
  • EPA will coordinate with states and Regions to confirm calculations and end-of-year results calculated are correct.

• October 2016
  • We survived the first year reporting on WQ-27
  • We did it!
Timeline for Reporting on WQ-28 in FY 2016

- EPA calculates universe and baseline
  - EPA will use most recent IR data available in ATTAINS
  - For “protection” waters, the state will need to identify these waters for EPA
- States work with EPA to QA universe and baseline results from now to July 2016
Timeline for Reporting on WQ-28 in FY 2016 (Cont.)

• Regions enter approved TMDLs into NTTS from October 1, 2015 to September 30, 2016

• EPA works with states to design, build, and test the data entry tool for alternatives and protection plans from now to Spring/Summer 2016
Timeline for Reporting on WQ-28 in FY 2016 (Cont.)

• EPA to calculate end-of-year results based on plans in place that were entered into ATTAINS by September 30, 2016. This will occur during October 2016. Generally end-of-year results are due at the end of October or early November.
  • EPA will coordinate with states and Regions to confirm calculations and end-of-year results calculated are correct.

• October 2016
  • We survived the first year reporting on WQ-28
  • We did it!
Questions