

# SPOKANE RIVER DO TMDL ADVISORY GROUP MEETING

January 22, 2019



# AGENDA

- |              |  |   |
|--------------|--|---|
| <b>10:00</b> | <b>Welcome and Agenda Review</b>   | Andy Dunau, Spokane River Forum   |
| <b>10:10</b> | <b>Ecology Updates</b> <ul style="list-style-type: none"><li>• Spokane River Basin Monitoring and Study Update</li><li>• Biennial Reports</li></ul><br><b>Stakeholder Updates</b> <ul style="list-style-type: none"><li>• Treatment Plant Upgrade Schedule</li><li>• Nonpoint projects and Lake Spokane USGS Ground Water Study</li><li>• Hangman Settlement Agreement</li></ul>                                     | Cathrene Glick<br>Karl Rains<br><br>Lisa Dally Wilson (SRSP)<br>Walt Edelen, Spokane Conservation District<br><br>Chad Atkins |
| <b>10:45</b> | <b>Advisory Group Planning</b><br>Roles and Responsibilities <ul style="list-style-type: none"><li>• Member List</li><li>• ERO/EAP Coordination and Resources</li><li>• Collaboration and input within regulatory process<ul style="list-style-type: none"><li>○ Schedule</li><li>○ 5 Step Process</li><li>○ Relationship between 10-year assessment, nonpoint source reduction and policy 1-11.</li></ul></li></ul> | Ecology   |
| <b>11:25</b> | <b>10-Year Assessment</b> <ul style="list-style-type: none"><li>• Objectives</li><li>• Schedule</li><li>• Initial input<ul style="list-style-type: none"><li>○ Identifying Reports, Data Needs and Gaps</li><li>○ EAP data and methodology determination</li></ul></li></ul>   | Cathrene Glick  |

# SPOKANE RIVER BASIN

## *MONITORING & STUDY UPDATE*

Update for Spokane River DO Monitoring Workgroup

January 22, 2019

Cathrene Glick – Ecology EAP





# EAP Studies In Progress

# LITTLE SPOKANE RIVER DISSOLVED OXYGEN, PH, AND TOTAL PHOSPHORUS TMDL – WATER QUALITY IMPROVEMENT REPORT AND IMPLEMENTATION PLAN

## Objectives

Conduct a TMDL assessment study, develop TMDL allocations, and develop a water quality improvement implementation plan, with the ultimate goals of:

- Meeting the load allocation for phosphorus at the mouth of the Little Spokane River, established in the Spokane River and Lake Spokane DO TMDL (Moore and Ross, 2010).
- Bringing the Little Spokane River and its tributaries into compliance with DO and pH water quality standards (WQS) where impairments have been identified.
- Establish load and wasteload allocations throughout the watershed based upon the more restrictive of:
  - (1) loading that allows the attainment of WQS for DO and pH in streams within the Little Spokane watershed or
  - (2) loading that meets the load allocation for total phosphorus (TP) set for the mouth of the Little Spokane River in the Spokane River and Lake Spokane DO TMDL.

# WHAT IS PROJECT TIMELINE?

Timeframe	Study Aspect
June 2015 - October 2015	"Dry Season" Sampling ( <i>Completed</i> )
November 2015 – May 2016	"Wet Season" Sampling ( <i>Completed</i> )
June 2016 – February 2019	Data Entry, Data Analytics and Modeling ( <i>Delayed</i> )
<b>March 2019</b>	Draft Report for Internal Review ( <i>Delayed</i> )
<b>September 2019</b>	Final Report ( <i>Delayed</i> )

TEKOA RECEIVING WATER STUDY  
HANGMAN CREEK SPRINGTIME "HIGH FLOW" RUNOFF STUDY  
LOWER HANGMAN CREEK "LOW-FLOW" STUDY  
HANGMAN HILLS GROUNDWATER STUDY

## Objectives

- Assess the Hangman Creek watershed's contribution of pollutants affecting DO in the Spokane River.
- Define seasonal window when Tekoa Wastewater Treatment Plant (WWTP) effluent has the potential to cause a significant impact to DO and pH in Hangman Creek.
- Determine the nutrient and Carbonaceous Biochemical Oxygen Demand (CBOD) loads from the Tekoa WWTP that will protect DO and pH in Hangman Creek.
- Provide additional instream confirmation as to whether impacts from the Latah (Hangman Hills) WWTP have been eliminated as a result of facility upgrades in 2011.
- Define the gaining reaches in the area of interest to determine where groundwater (GW) is flowing into Hangman Creek and characterize nutrient concentrations of GW inputs to the last 9 miles of the creek.
- Quantify what portion of low-flow TP load to Spokane River comes from lower watershed GW.
- Provide accounting of sources of nutrients reaching the Spokane River at low flow in order to set load reductions needed to meet the load allocation at Hangman mouth for the Spokane DO TMDL, for the March-May season and for the June and July-Oct seasons.

# WHAT IS PROJECT TIMELINE?

Timeframe	Study Aspect
May – October 2017	Tekoa receiving water study ( <i>Fieldwork Complete</i> )
January – October 2018	Watershed “high flow” & “low flow” runoff studies ( <i>Complete</i> )
May – October 2018	Hangman Hills groundwater study ( <i>Complete</i> )
<b>November 2018 – December 2019</b>	Draft Report for Internal Review
<b>May 2020</b>	Final Report



# EVALUATION OF GROUNDWATER QUALITY AND DISCHARGE CONDITIONS AT THE TERMINUS OF DEEP AND COULEE CREEKS

## Objectives

- Clarify understanding of surface and subsurface flow components to Spokane River (*both creeks go subsurface much of the year*)
- Assess the nutrient load from Deep and Coulee Creeks to the Spokane River.



Washington State

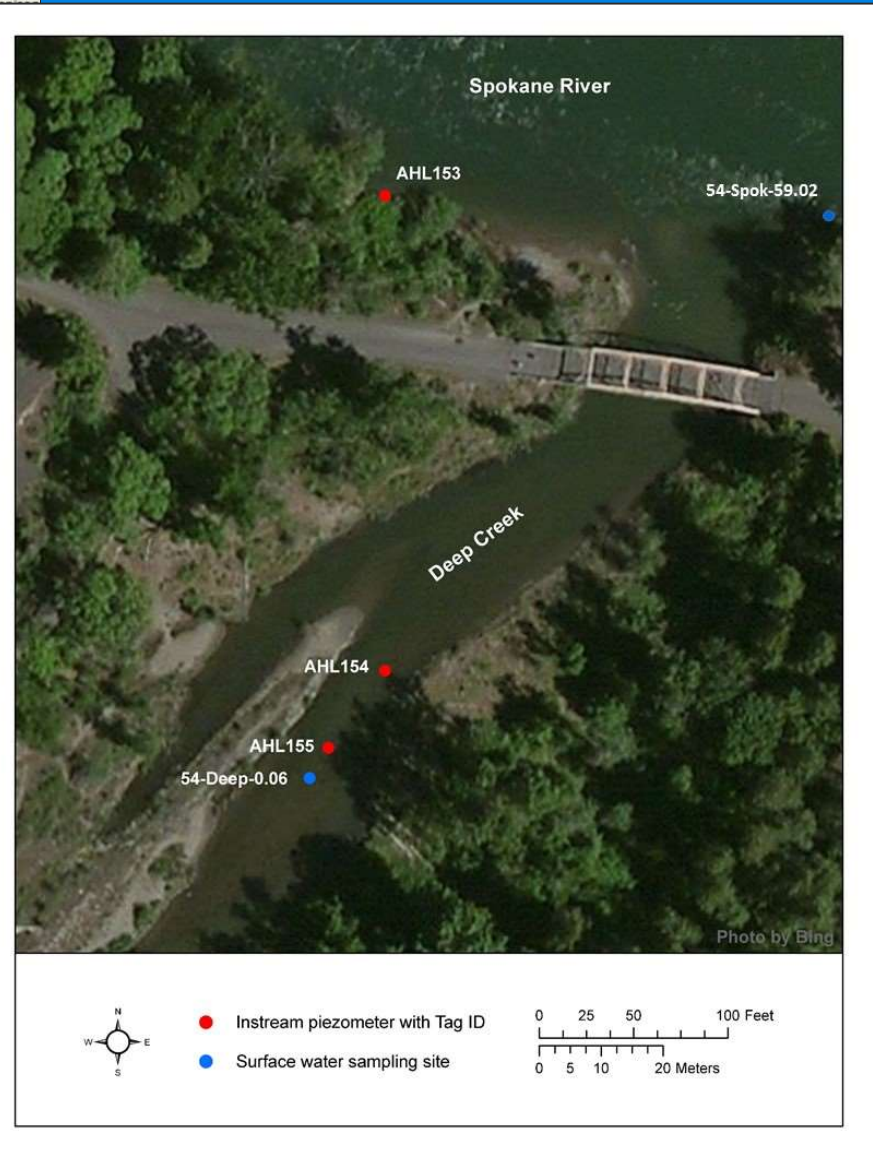
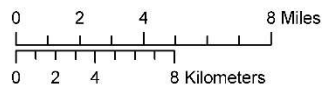
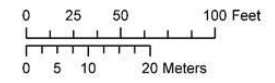


Photo by Bing



- Instream piezometer with Tag ID
- Surface water sampling site



# WHAT IS PROJECT TIMELINE?

Timeframe	Study Aspect
August 2016 – October 2017	Surface and Groundwater study ( <i>Fieldwork Complete</i> )
November 2017 – June 2018	Data Entry, Data Analytics and Modeling
June 2018 – January 2019	(Delay due to Principal Scientist Sabbatical)
<b>January 2019 – March 2019</b>	Draft Report for Internal Review
<b>June 2019</b>	Final Report

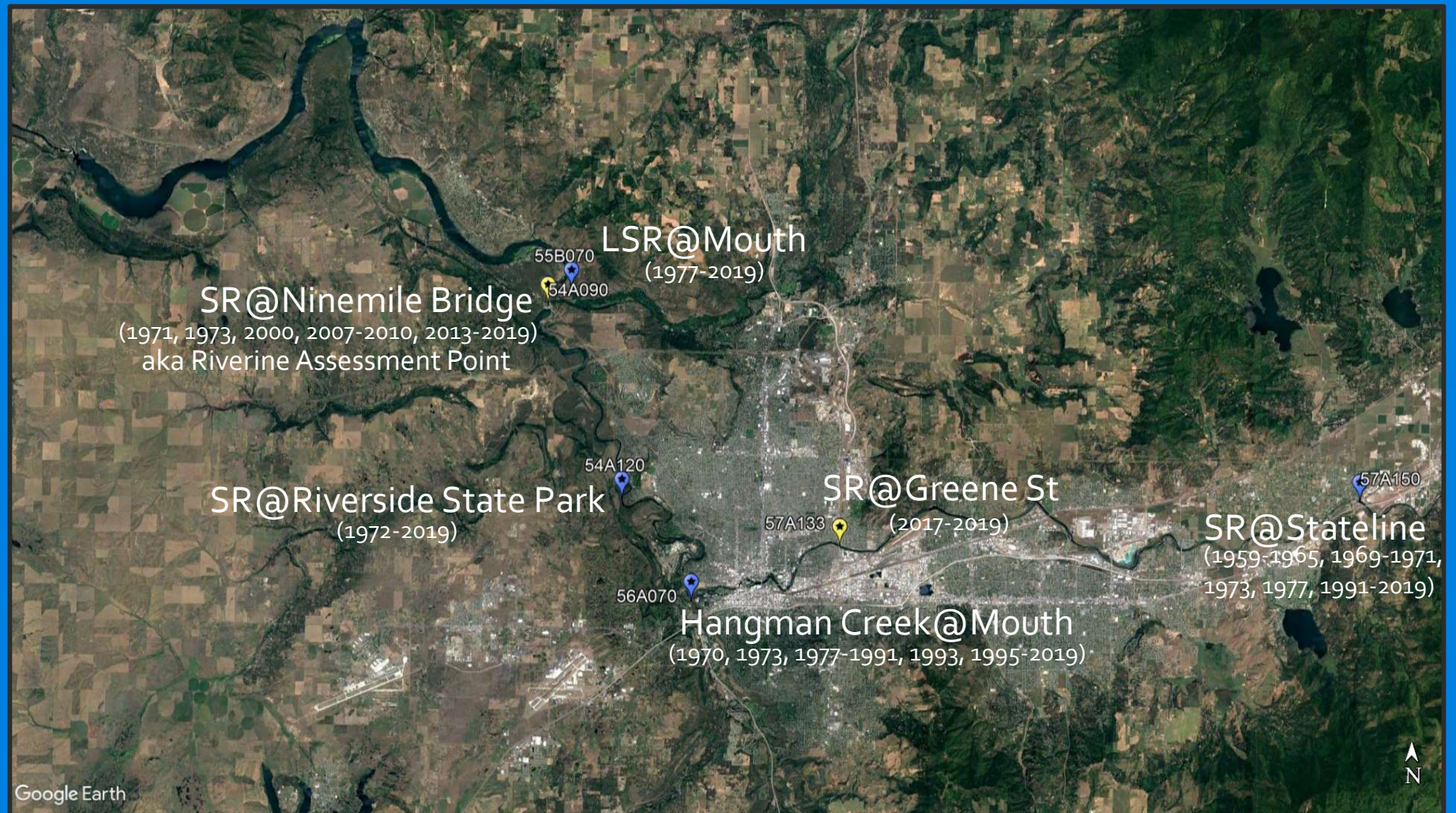


# EAP Ambient Monthly Monitoring Review

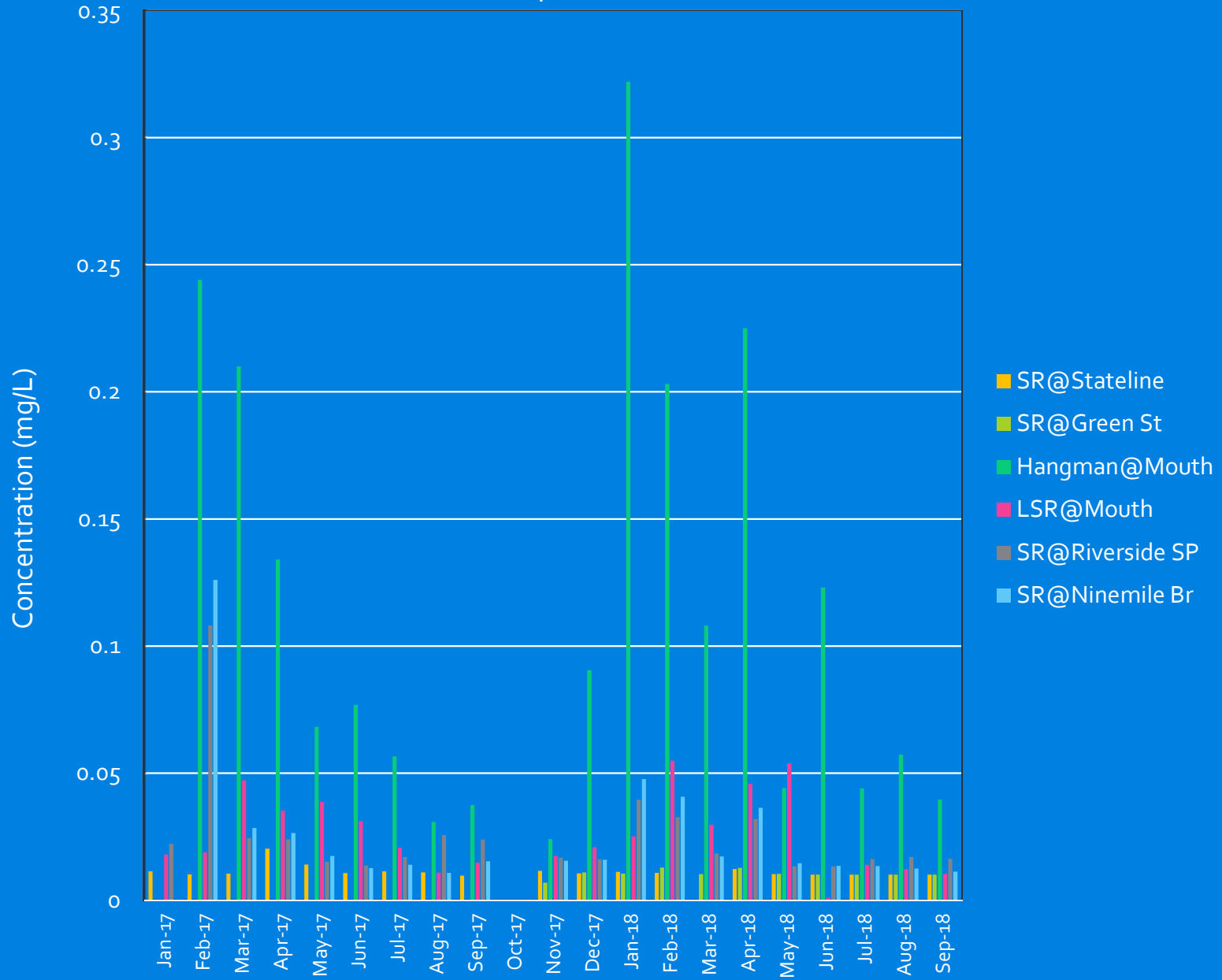
# SPOKANE RIVER WATER QUALITY MONITORING UPDATE

“BLUE” = LONG TERM SITES

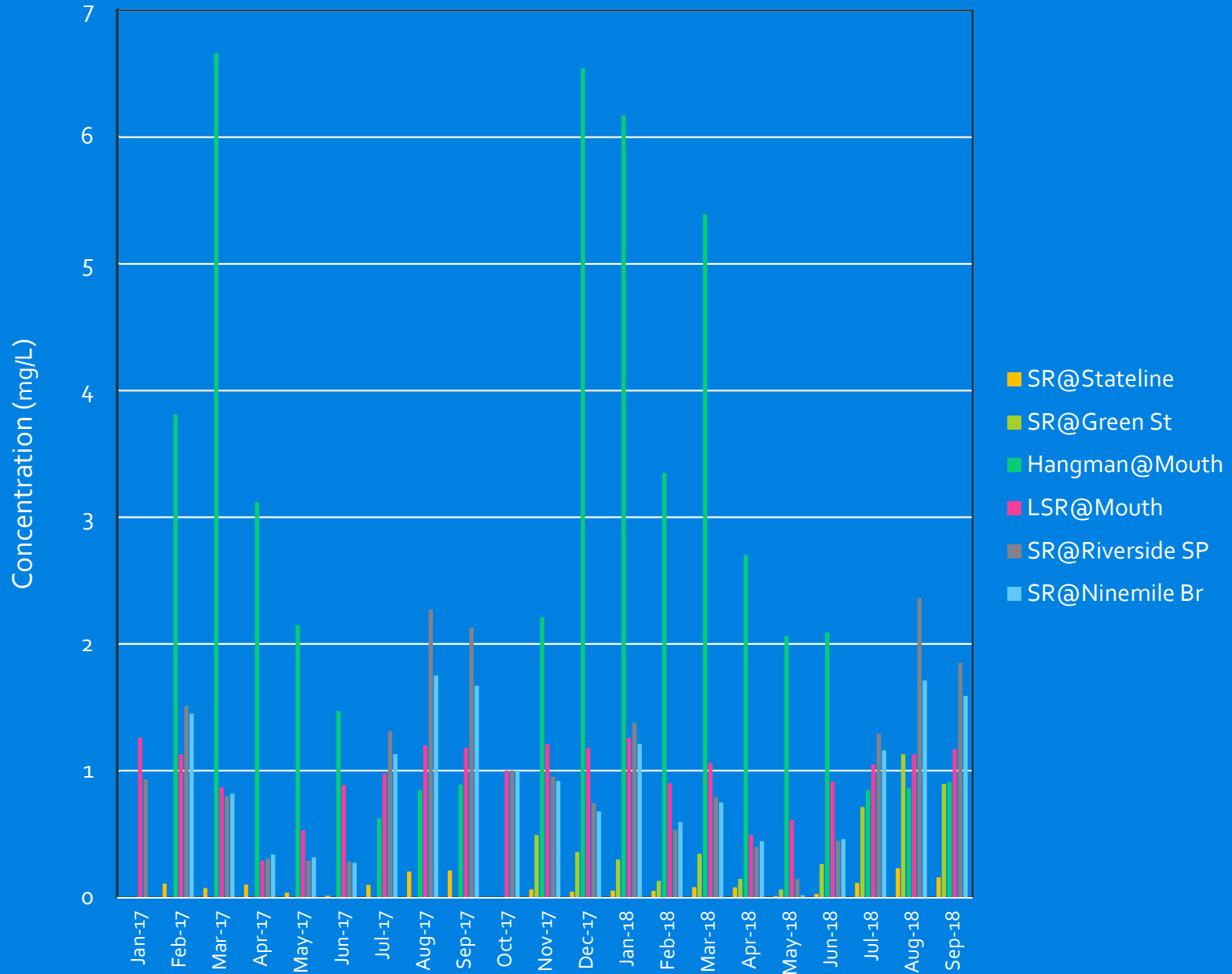
“YELLOW” = 2017-2019 BASIN SITES



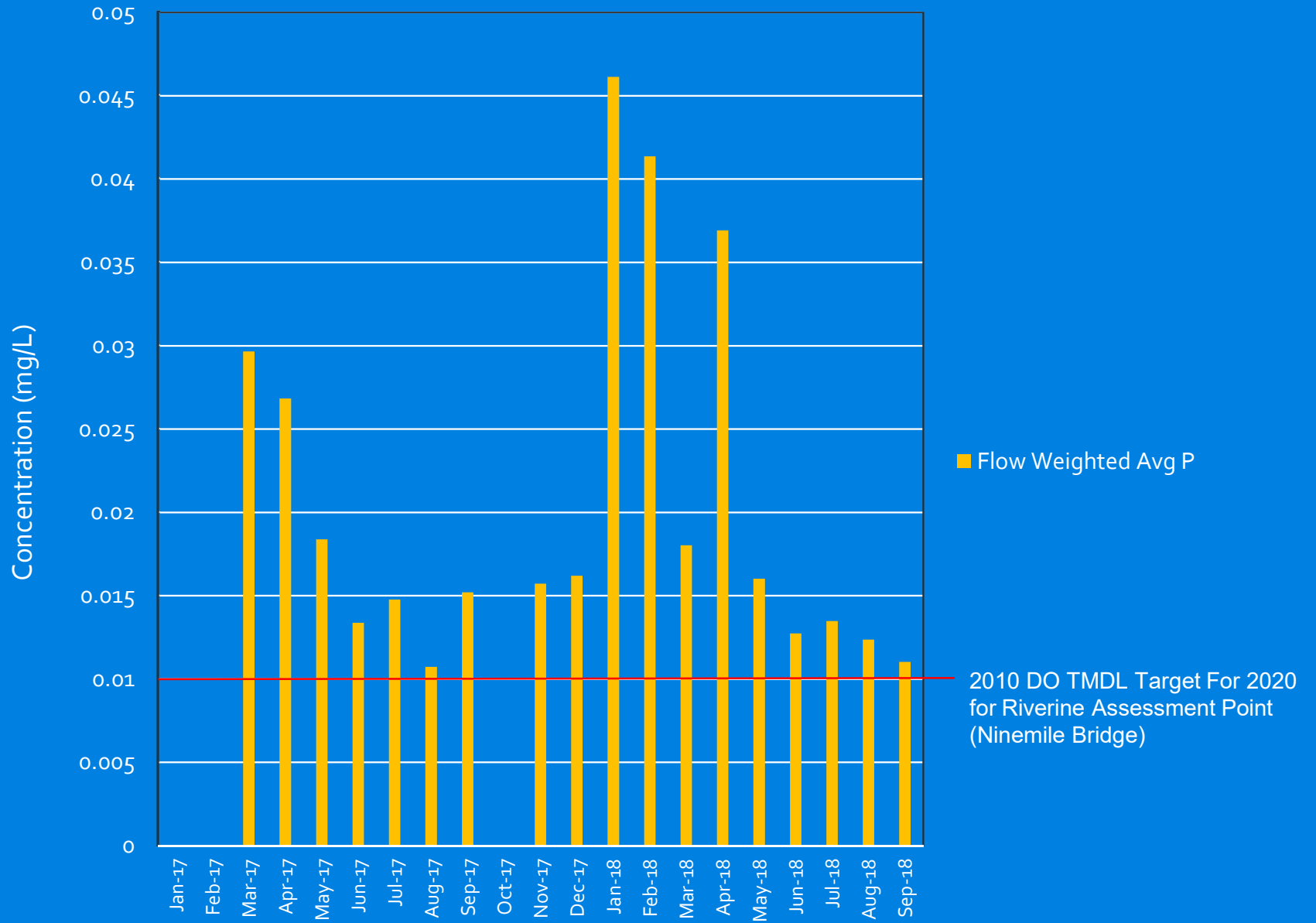
# Total Phosphorus



# NO<sub>2</sub>\_NO<sub>3</sub>



# Flow Weighted Phosphorus Spokane River @ Ninemile + Little Spokane River @ Mouth







# Biennial Reports Update

# BIENNIAL REPORTS UPDATE

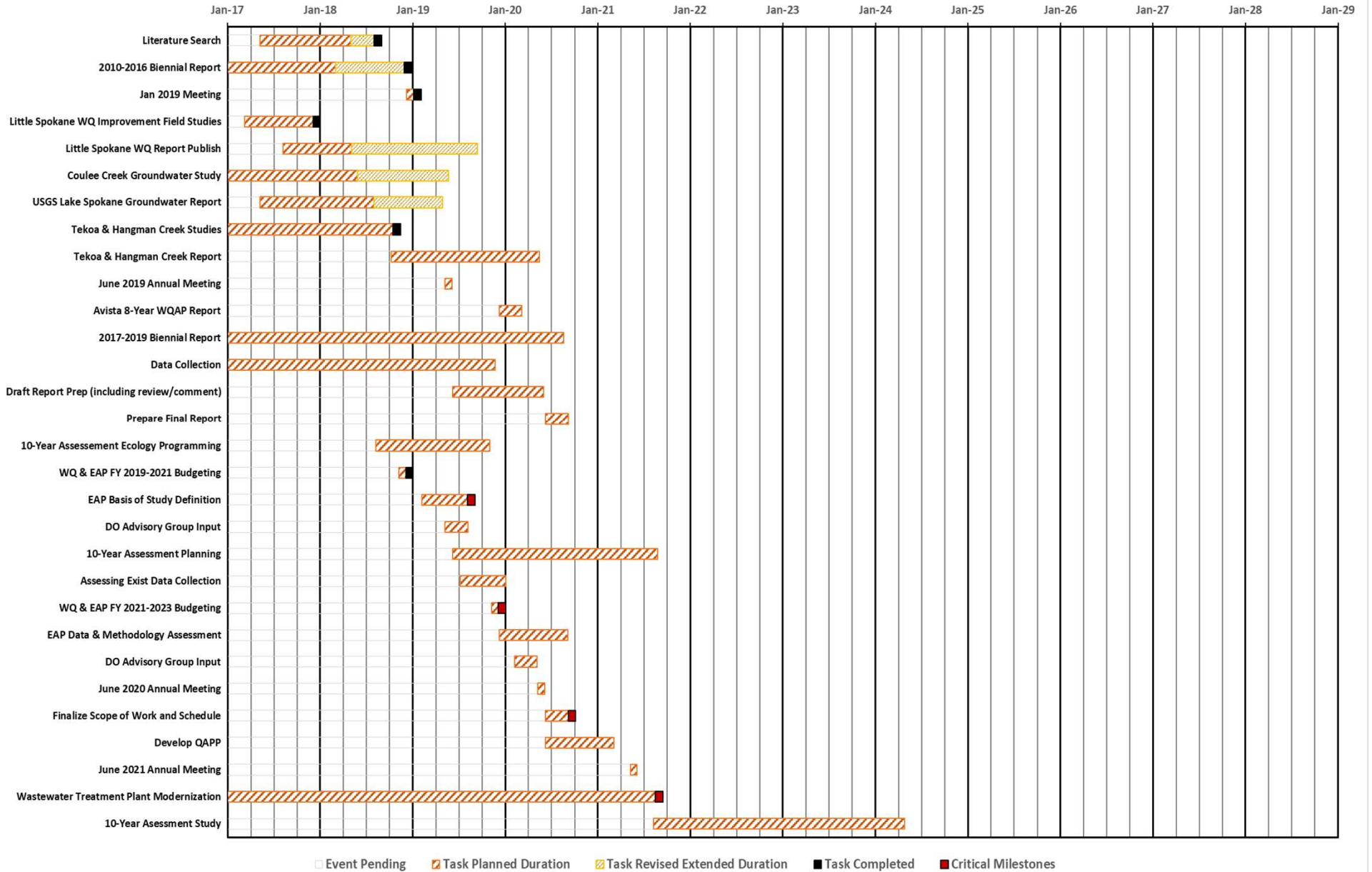
## 2010 – 2016 Biennial Report

- Updated information/data for 2015 – 2016.
- Finalized and published on November 28, 2018 at the following address:  
<https://fortress.wa.gov/ecy/publications/documents/1510038.pdf>
- No substantive changes from version last distributed to this group in July 2017.

## 2010 – 2019 Biennial Report

- Will update information/summarize data for 2017 – 2019 (see following schedule).
- Will culminate in 10 years of data collection and draft report to be completed in time to support development of the QAPP for the 10-Year Assessment.
- Karl Rains will be the lead in preparing the report and will seek input from stakeholders during its preparation.

## SPOKANE RIVER DO TMDL 2017-2019 BIENNIAL REPORT PROJECT PLANNING TIMELINE





# Stakeholder Updates

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# SCHEDULE OF TREATMENT PLANT UPGRADES

Lisa Dally Wilson and/or dischargers



# Lake Spokane USGS Ground Water Study

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# LAKE SPOKANE USGS GROUND WATER STUDY

Spokane CD



# Hangman Creek Settlement Agreement Update





A word cloud centered around the text "HCW Watershed". The words are arranged in a roughly circular shape, with "HCW Watershed" being the largest and most prominent. Other words include "Livelihood", "Connections", "Stewardship", "Productivity", "Sustainability", "Water Quality", "Practices", "Ecosystem", "Nature", "Forests", "Efficiency", "Recreation", "Trout", "Land", "Conservation", "Involvement", "Lifestyle", "Science", "Legacy", "Community", "Habitat", "Healthy", "Riparian", "Viability", "Restoration", "Profitability", "Critical Areas", "Pride", "Fishing", "Family", "Hunting", and "Partners". The words are in various colors, including white, light blue, and green, and are oriented in different directions.

**HCW Watershed**

Livelihood  
Connections  
Stewardship  
Productivity  
Sustainability  
Water Quality  
Practices  
Ecosystem  
Nature  
Forests  
Efficiency  
Recreation  
Trout  
Land  
Conservation  
Involvement  
Lifestyle  
Science  
Legacy  
Community  
Habitat  
Healthy  
Riparian  
Viability  
Restoration  
Profitability  
Critical Areas  
Pride  
Fishing  
Family  
Hunting  
Partners

# HANGMAN SETTLEMENT AGREEMENT BETWEEN ECOLOGY AND SPOKANE RIVERKEEPER

## Elements of the Agreement

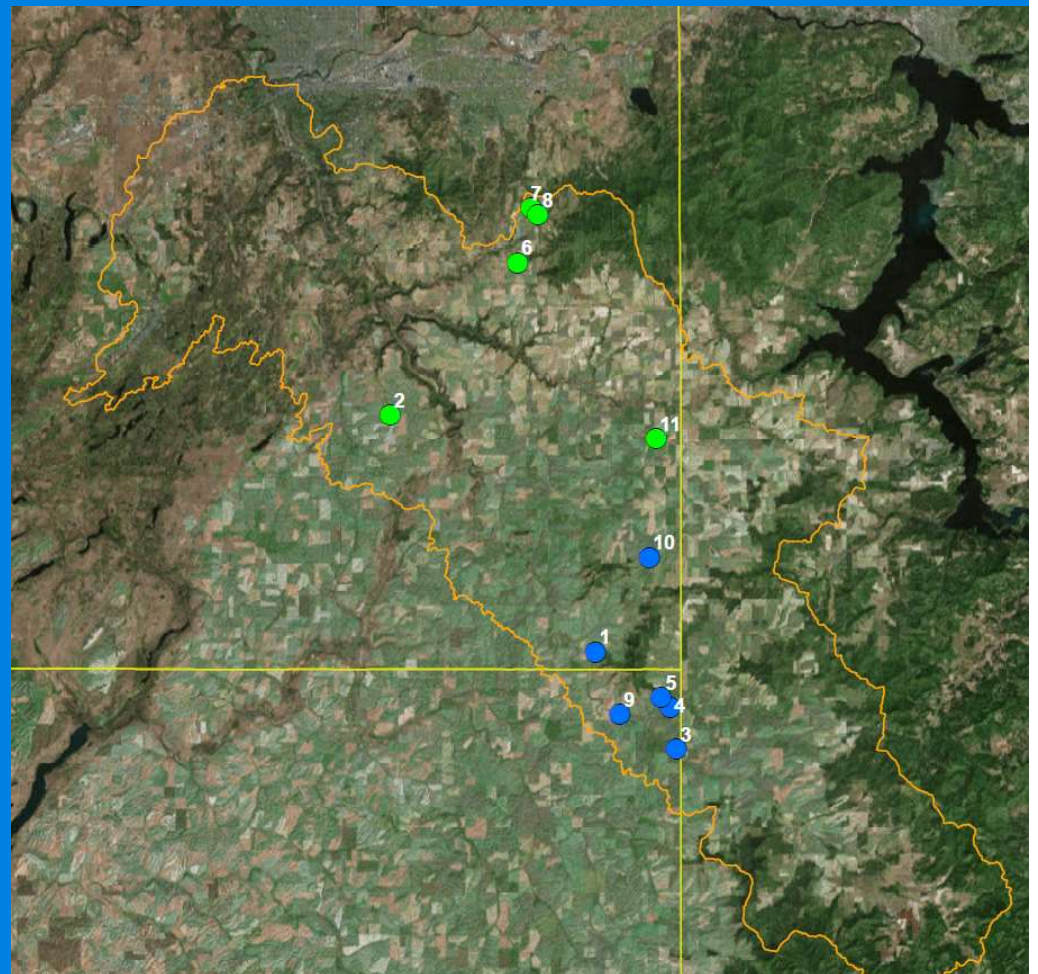
- Riparian Assessment
  - Forest, Ag, Suburban areas, Golf Courses, etc.
- Tillage Watershed Evaluation
  - Prioritize 10 sites for contact
- Livestock Watershed Evaluation
  - Prioritize 5 sites for contact
- Outreach and Education
- Financial Assistance.



# HANGMAN SETTLEMENT AGREEMENT BETWEEN ECOLOGY AND SPOKANE RIVERKEEPER

## Watershed Evaluations

- Contacted 15 sites in Fall 2018
  - 10 tillage and 5 livestock
- Phone calls and technical assistance letters
- Refer them to the Spokane CD
- Offered/performed site visits
- Reach out again in Feb 2019
- March 2019 – Next round of evaluations





# Advisory Group Planning

# ROLES & RESPONSIBILITIES

## Member List

- Review and provide any edits for your respective organizations.

## Ecology Eastern Region Office (ERO)/Environmental Assessment Program (EAP) Coordination and Resources

- EAP is the science arm of the agency and is funded by the programs it works for/with.
- EAP has limited resources to perform investigations across the state; the Central Region Office and ERO share EAP resources.
- ERO has received a greater share of these resources the past few years and indications are that resources may shift to priority watersheds under CRO for the next few years, before a shift back in advance of the field survey for the 10-Year Assessment.

## ROLES & RESPONSIBILITIES (CONT.)

### Collaboration and input within the regulatory process

- Schedule
- Five-Step Process
  - Literature Search (complete)
  - Policy Review (2019)
  - Model Workshop (2019)
  - Identify how we evaluate the success of the TMDL (2019-2020)
  - QAPP Development (2020)
- Relationship between 10-Year Assessment, nonpoint source reduction, and Ecology Water Quality Program Policy 1-11.

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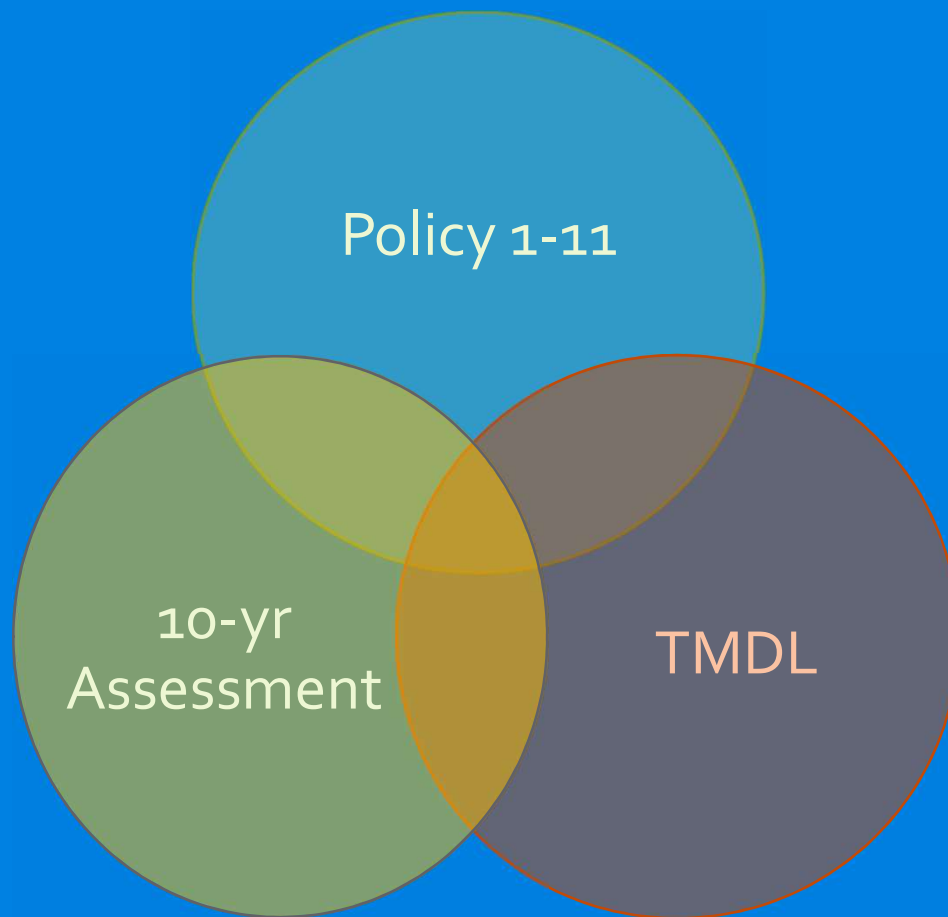
## ROLES & RESPONSIBILITIES (CONT.)

The diagram consists of three overlapping circles on a blue background. The top circle is light blue and labeled 'Policy 1-11'. The bottom-left circle is light green and labeled '10-yr Assessment'. The bottom-right circle is dark grey and labeled 'TMDL'. The central area where all three circles overlap is a darker, brownish-yellow color.

# How We Get to Clean Water

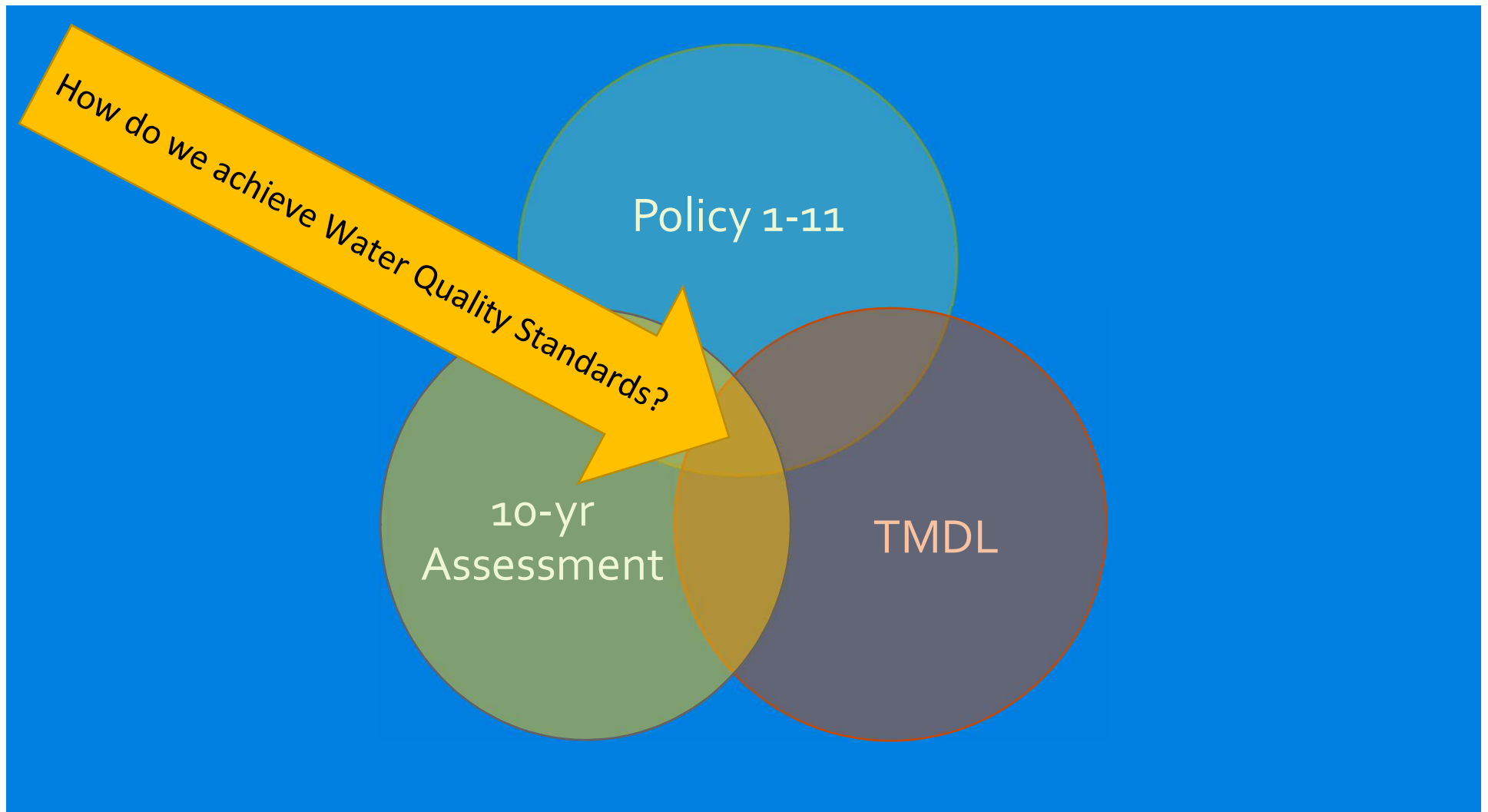
Relationship between Policy 1-11, the TMDL,  
and the 10-year Assessment

## ROLES & RESPONSIBILITIES (CONT.)





## ROLES & RESPONSIBILITIES (CONT.)



## ROLES & RESPONSIBILITIES (CONT.)

# Clean Water Act Framework

### Policy 1-11

- Chapter 1:
  - Methodology
- Chapter 2:
  - Credible data

- 1) Clean Water Act Sections 303(d) and 305(b)
  - Determine whether a surface water is supporting its designated use
  - Inventory the waters of the state (5 categories)
    - Category 1: Meets standards
    - Category 2: Waters of concern
    - Category 3: Insufficient data
    - Category 4: Has a clean up plan
    - Category 5: Needs a clean up plan (303(d) list)
- 2) Establish a total maximum daily load (TMDL)
  - Load Allocations (nonpoint source)
  - Waste Load Allocations (point source)
- 3) Make revisions to the water quality standards

## ROLES & RESPONSIBILITIES (CONT.)

# Total Maximum Daily Load

- 1) Water body identified as Category 5 (303(d) listed)

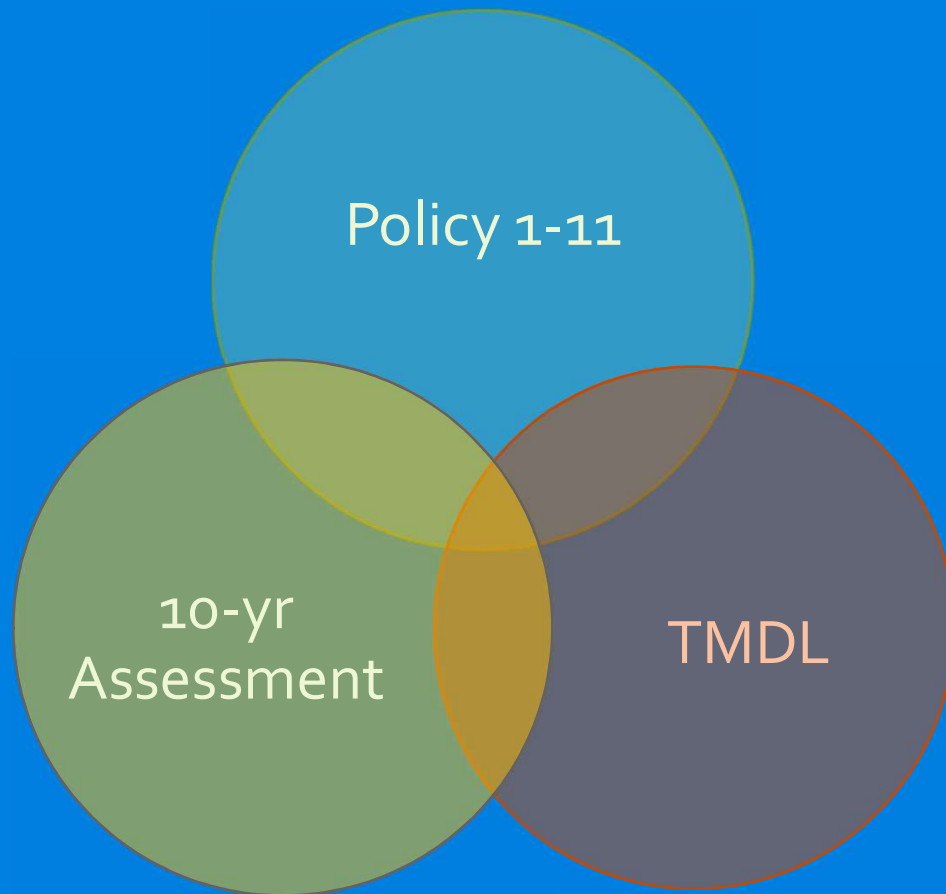
How much pollution can the water body receive and still meet water quality standards?

- 2) Develop a budget:
  - Waste Load Allocations (point sources)
  - Load Allocations (nonpoint sources)
- 3) Develop a plan: Water Quality Implementation Plan
  - Monitoring
  - Reasonable Assurances
  - Estimate of when water quality will be achieved



## ROLES & RESPONSIBILITIES (CONT.)

# Monitoring



### **Monitoring is not Policy 1-11:**

- 1) Does not modify the TMDL
- 2) Does not reclassify the water to another category

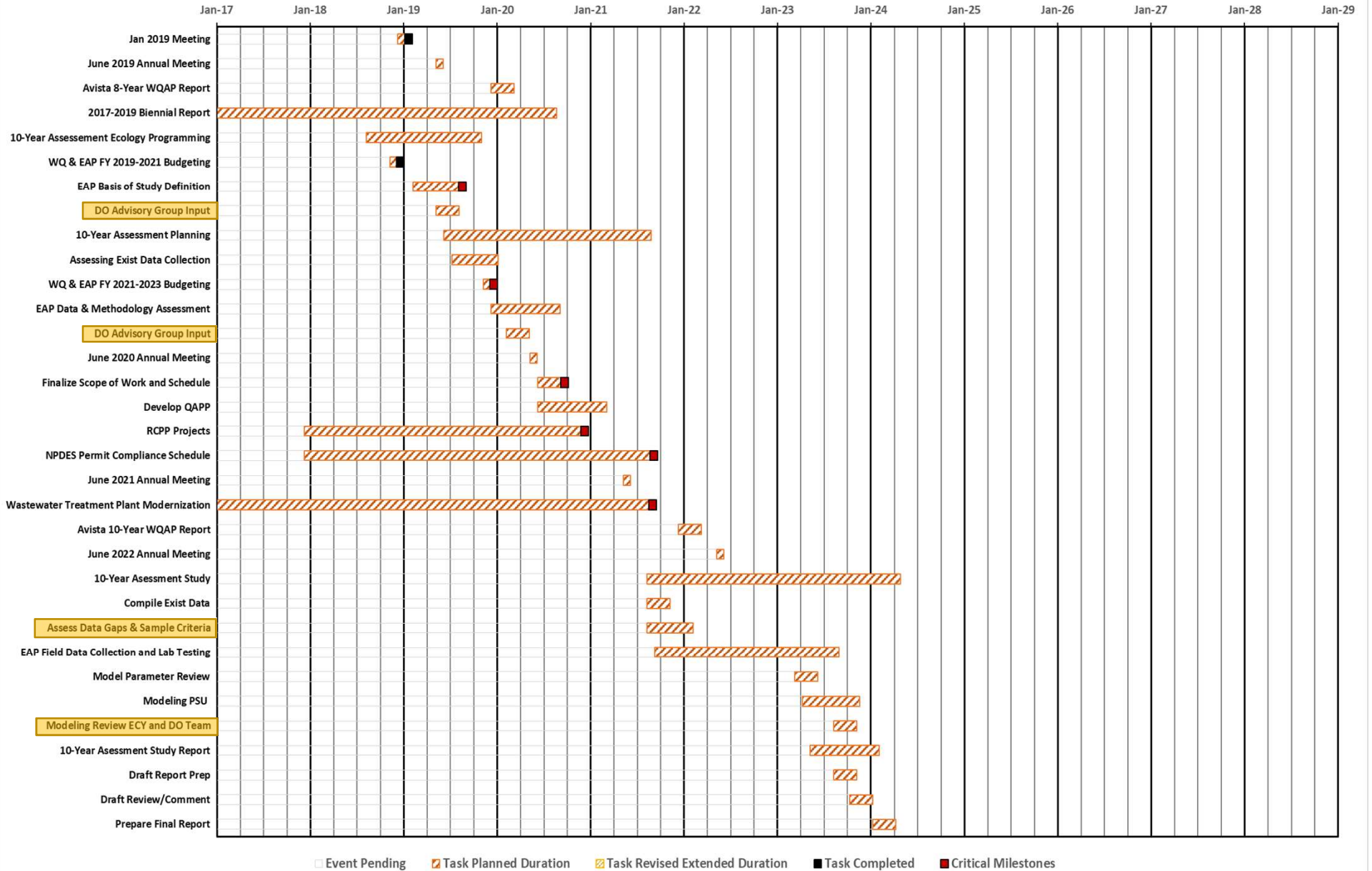
### **Monitoring is a management tool:**

- 1) Described in a TMDL
- 2) Tracks progress over time (i.e., 10-year assessment)
- 3) Used to evaluate how we are doing
- 4) Adaptive management principles help adjust actions



# 10-Year Assessment “Effectiveness Monitoring” Study Schedule Update

## SPOKANE RIVER DO TMDL 10-YEAR ASSESSMENT PROJECT PLANNING TIMELINE



Thank You

Contact:

Karl Rains

Dept. of Ecology – Water Quality Program

[karl.rains@ecy.wa.gov](mailto:karl.rains@ecy.wa.gov)

509-329-3601 (office)

509-828-7934 (cell)



DEPARTMENT OF  
**ECOLOGY**  
State of Washington