Water Quality Assessments Program

Response to Comments to Oregon's 2022 Draft Assessment Methodology

June 2021

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DEQ is a leader in restoring, maintaining, and enhancing the quality of Oregon's air, land, and water.

DEQ
State of Oregon
Department of
Environmental
Quality

Contents

Introduction

This response to public comments document addresses comments and questions received regarding the Draft Methodology for Oregon's 2022 Water Quality Report and List of Water Quality Limited Waters. The individuals and organizations shown in Table 1 provided comments on the 2022 Assessment Methodology during the public comment period that was held from January 19, 2021, through March 8, 2021. All comments received during the public comment period have been reviewed by DEQ and addressed in this document. In total, there were 91 unique comments from 17 entities. DEQ made modifications to the report based on 14 of these comments.

Table 1: Commenters on the 2022 Integrated Report Methodology

Commenter number	Commenter	Acronym
1	Blue Mountains Biodiversity Project	BMBP
2	Deschutes River Alliance	DRA
3	Eagle Point Irrigation District	EPID
4	Electric Hospital	EH
5	EPA Region 10	ER1
6	Farmers, Middle Fork, and East Fork Irrigation District,	FMF-EFID
7	Hood River Watershed Group	HRWG
8	Klamath Drainage District	KDD
9	Klamath Water Users Association	KWUA
10	Langell Valley Irrigation District	LVID
11	Northwest Environmental Advocates	NEA
12	Northwest Pulp and Paper	NP-P
13	Oregon Farm Bureau, Oregon Dairy Farmers Association, Oregon Cattlemen's Association	OFB/ODFA/OCA
14	Oregon Farm Bureau, Oregon Forest Industries Council, Oregon Water Resources Council	OFB/OFIC/OWRC
15	Oregon Water Resources Congress	OWRC
16	Portland Water Bureau	PWB
17	Santiam Water Control District	SWCD

1.Comments from: Blue Mountains Biodiversity Project

BMBP #1

Description: USFS - 2021 data call

Comment: Has the USFS submitted any data during the more recent, 2021 ODEQ call for data?

Response: The data call for the 2022 Integrated Report was conducted in a separate process from the Assessment Methodology development. The Call for Data closed in early April 2021. DEQ is still assembling data received in the data call, and a summary of data used in the draft Integrated Report will be provided.

BMBP #2

Description: USFS - sediment and turbidity data

Comment: Has the FS shared sediment or turbidity data during the 2021 call for data? The FS did not share sediment or turbidity-related data with ODEQ during the 2018 call for data. Dozens of streams within timber sales in eastern Oregon are currently in violation of the FS's own Riparian Management Objections—and likely ODEQ state standards– for sediment related criteria. Inclusion and assessment of such data is especially important on National Forest lands, given the large amount of spawning and rearing habitat (and Designated Critical Habitat) located on public lands.

Response: The data call for the 2022 Integrated Report was conducted in a separate process from the Assessment Methodology development and the call for data closed in early April. DEQ is still assembling data received in the data call, and a summary of data used in the draft Integrated Report will be provided.

BMBP #3

Description: USFS - temperature data

Comment: Has the FS submitted stream temperature data during the 2021 call for data?

Response: The data call for the 2022 Integrated Report was conducted in a separate process from the Assessment Methodology development and the data call closed in early April. DEQ is still assembling data received in the data call, and a summary of data used in the draft Integrated Report will be provided.

BMBP #4

Description: USFS - DEQ oversight

Comment: Is there an avenue for ODEQ to provide oversight or support for the Forest Service regarding these data accuracy issues, in order to address these lapses in stewardship of water quality data and transparency?

Response: The Blue Mountain Biodiversity Project are always welcome to share data with DEQ. The agency has a Memorandum of Understanding (MOU) with the U.S. Forest Service that sets out the procedures that DEQ and the USFS will implement in order to meet the requirements of State and Federal water quality rules and related regulations. https://www.oregon.gov/deq/FilterDocs/FSdeqWQmou2.pdf.

Included in the MOU is an obligation of DEQ to review the USFS best management practices and associated monitoring protocols. The appropriate time for this review is during TMDL development, during the review and approval of USFS's water quality restoration plans (WQRPs), and periodically during WQRP implementation. WQRPs and related Forest plans serve as the TMDL implementation plan. DEQ will review all available data during TMDL development as well as the proposed BMPs used by USFS and other agencies with responsibility under the TMDL. The MOU and supporting rules and regulations serves as the mechanism for oversight and support.

BMBP #5

Description: TMDL baseline

Comment: How will ODEQ ensure, as it moves forward with the TMDL process, that the FS has included all relevant data in order for this process to have accurate baseline information?

Response: DEQ ensures accurate baseline temperature data by requiring that all data submitted meet certain data quality requirements. The data quality requirements for the Temperature TMDL replacement project are outlined in the data submission guidance posted on DEQ's website: https://www.oregon.gov/deq/wq/Documents/tmdlrDataSolSubGuid.pdf. The long-term objective with TMDL development and implementation is that water quality standards are achieved. The monitoring expectations and requirements that support TMDL implementation will be identified in the TMDL water quality management plan (WQMP), associated TMDL implementation plans, and TMDL monitoring plans. DEQ relies upon our authorities in OAR 340-042 to implement the TMDLs and WQMPs as well as the Memorandum of Understanding that DEQ has with the U.S. Forest Service. See next question for more on the MOU.

BMBP #6

Description: TMDL process

Comment: What are the opportunities for the public to participate in the TMDL process, and what is the timeline for watersheds in eastern Oregon?

Response: Each Total Maximum Daily Load project will include an advisory group to provide information and feedback on the TMDL during development. The advisory group typically consists of local stakeholders, non-government organizations, and various state and federal natural resource agencies. TMDL advisory group meetings are open to the public. Each TMDL project has a web page with meeting materials and project updates. Additionally, DEQ will have a formal public comment period where anyone can provide comments. DEQ will develop a response to comment document that will be available to the public.

The timeline for EPA's final action on the replacement temperature TMDLs are posted to DEQ's website here https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlreplacement.aspx. The table below includes the year we estimate the public process will begin on each of the Eastern Oregon TMDLs and the date by when EPA must take action on the TMDL (approve or disapprove).

Temperature TMDL Replacement Project Area	Estimated Year Public Process Begins	EPA Action by:
John Day River Basin	2024	4/17/2026
Snake River - Hells Canyon	2025	6/4/2027
Lower Grande Ronde, Imnaha, and Wallowa Subbasins	2025	6/4/2027
Middle Columbia-Hood, Miles Creeks	2025	6/4/2027
Walla Walla Subbasin	2026	5/29/2028
Willow Creek Subbasin	2026	5/29/2028
Malheur River Subbasins	2026	5/29/2028

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2. Comments from: Deschutes River Alliance

DRA #1

Description: Dissolved oxygen methodology

Comment: DEQ should be using the 7-D (Mi) to assess DO. The current methodology is not protective.

Response: The dissolved oxygen methodology is protective of aquatic life uses because it is a tiered assessment. In waters designated as cold and cool water habitat, the first tier is to assess the 30-D criteria, the second tier is to assess the 7- Mi, and the third tier is an assessment of the daily minimum values against the absolute minimum criteria. In waterbodies identified as active spawning, DEQ assessed using seven-day average minimum of daily mean values (7-D) when sufficient quantity of continuous data exists. DEQ's methodology for dissolved oxygen is protective of aquatic life because all metrics must be met for 303(d) listing purposes.

The assessment is based on the current DO criteria for spawning. These metrics are identified in Oregon Administrative Rules 340-041-0016. There would have to be a water quality standards rule update to change the spawning metric from the seven-day average minimum of daily mean (7-D) to seven-day average of daily minimums (7-Mi).

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3. Comments from: Eagle Point Irrigation District

EPID #1

Description: Watershed Units - extrapolation

Comment: Multiple commenters commented that DEQ should not be using impairment data from other waterbodies within the HUC12 assessment unit to designate a waterbody as impaired. Decisions to list waterbodies as impaired must be based on water body specific data and cannot be done on a watershed wide scale.

Response: Impairments in watershed assessment units reflect that one or more waterbodies within a HUC-12 or sub-watershed are impaired. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, impairments in watershed units will be displayed at both the waterbody and monitoring station level.

EPID #2

Description: Irrigation infrastructure should not be assessed

Comment: Irrigation infrastructure should not be included in the assessment process.

Response: Irrigation infrastructure varies widely, including both natural and human-made channels and falls under Oregon's definition of waters of the state, which has a broad statutory definition in Oregon Statutes (ORS 468B.005) "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the

State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction. The water quality within irrigation canals (which have a connection to natural surface waters) affects water quality in downstream waterbodies and the aquatic life therein. DEQ assesses waterbodies based on the designated beneficial uses contained in the state rules OAR-340-041 Tables 101A - 330A.

EPID #3

Description: Irrigation infrastructure - should separate from natural waterways

Comment: DEQ should separate irrigation infrastructure from natural waterways in watershed assessment units because of the significant differences between irrigation ditches and natural waterbodies. DEQ should subdivide 2020 Assessment Units in order to distinguish and identify each individually.

Response: Irrigation infrastructure varies widely, including both natural and human-made channels and falls under Oregon's definition of waters of the state, which has a broad statutory definition in Oregon Statutes (ORS 468B.005) "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction. The water quality within irrigation canals (which have a connection to natural surface waters) affects water quality in downstream waterbodies and the aquatic life therein. DEQ assesses waterbodies based on the designated beneficial uses contained in the state rules OAR-340-041 Tables 101A - 330A.

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4. Comments from: Electric Hospital

EH #1

Description: Big Creek bacteria listing

Comment: We have a water quality problem in Big Creek that releases sewage into Sunset Bay. A study done in 2008 concluded further investigation into the source in Big Creek needs to be done.

This is way past due 13 years later. We still have one of the most beautiful bays has regular excessive high levels of bad water.

PLEASE DON'T LET SOME CHILD DIE FROM PLAYING IN BIG CREEK.

Response: DEQ conducted a follow up investigation in 2018 to better understand the sources of bacterial contamination in and around Sunset Bay State Park in Coos County. Escherichia coli (E. coli) bacteria normally live in the intestines of healthy people and animals, and most types of E. coli are harmless or cause relatively brief periods of intestinal distress. While a specific source or sources of E. coli were not identified, the investigation suggested that the bacteria sources in Sunset Bay were likely terrestrial rather than marine. E. coli data from the 2018 investigation will be assessed in the upcoming Integrated Report.

For more information on the 2018 investigation visit https://www.oregon.gov/deq/wq/Documents/DEQ20-LAB-0036-TR.PDF.

5.Comments from: EPA Region 10

ER1 #1

Description: Estuary delineation

Comment: Section 3.3.2, paragraph 2: Oregon's approach for differentiating between saline and freshwaters described in this section appears to comport with current EPA guidance. However, later in the listing methodology, Oregon states that it uses the Coastal and Marine Ecological Classification Standard (CMECS) to define the extent of estuaries (see page 17 of 92). Do these different approaches conflict? After a presentation on CMECS given a couple of weeks ago to the ALU updates group, it appears that CMECS is a work-in-progress, e.g. it does not yet include water column data in its determinations of estuarine extent. Please confirm that water column salinity data are appropriately reflected in CMECS such that there is no conflict in its application to define estuarine areas and that it comports with EPA guidance and Oregon rules.

Response: EPA's guidance on applying criteria to be protective in saline and fresh waters instructs states on when to apply saltwater or freshwater criteria to brackish waters and the applicable salinity threshold to differentiate them, but does not instruct states on how to delineate estuarine waters. Coastal and Marine Ecological Classification Standard is a federal estuary classification standard developed jointly by agencies including the EPA and NOAA that provides a framework for delineating estuarine waters. The classification standard is continually updated.

CMECS is provided for states and other organizations to implement the classification in their areas of interest using locally derived data sources. The Oregon Department of Land

Conservation and Development implemented a CMECS classification for Oregon to delineate estuarine areas as part of the Oregon Coastal Atlas in 2017.

The CMECS model uses salinity data to define estuarine versus freshwaters. It is accepted by federal and state agencies as the best available standard and tool for delineating estuarine waters along the Oregon coast. The classification has multiple modules for delineating substrates, vegetation, tidal influence, and water column characteristics. The water column water quality module, mentioned above, has not been completed for Oregon yet. This module would incorporate other types of water quality data apart from salinity. DEQ has a paper describing its use of the DLCD CMECS model from the Oregon Coastal Atlas, which can be provided upon request. For more information, please contact Debra Sturdevant, debra.sturdevant@deq.state.or.us in DEQ's water quality standards program.

ER1 #2

Description: Binomial method

Comment: The application of the binomial method (see Section 3.3.4) has requirements in the CALM guidance beyond what DEQ has described in the IR methods and associated documentation. For example, assumptions regarding the dataset representation of site characteristics are important, including that dynamic pollutant concentrations (and criteria in the case of model-based criteria) be accounted for appropriately into the application.

Response: The requirement EPA refers to in their comment referencing EPA's Consolidated Assessment and Listing Methodology (CALM) guidance are related to data quality objectives for the development of a good study design. EPA recommends that organizations responsible for monitoring ensure: (1) the data used to characterize the environmental processes and conditions of concern are of the appropriate type and quality for their intended use, and (2) environmental technologies are designed, constructed and operated according to defined expectations.

DEQ's data submission protocols require that data collected and submitted as part of DEQ's Call for Data process have a verified project plan. Sampling bias results from systematic error caused by sampling that favors some individuals over other population members. On the other hand, imprecision reflects heterogeneity in the target population and is represented by a smattering of data that is highly dispersed around the true parameter value. The requirement for third parties to submit a verified project plan with their data is a best practice to help ensure the representativeness of data collected using unbiased sampling methods and a sufficient number of independent sampling units to capture the variability inherent in the target population. However, since DEQ is required to assess all available data that are submitted by third parties for the Integrated Report assessment, DEQ cannot identify or control for all potential sources of bias or variation that may be introduced by individual sampling site characteristics or dynamics in pollutant concentrations caused when combining data collected from multiple entities.

As stated in EPA's CALM guidelines, states may select statistical methods that account for uncertainty and can be used to set appropriate bounds on how attainment should be demonstrated from the data assessment. DEQ's peer-reviewed formulation of the exact binomial test for water quality attainment decisions satisfies the CALM guidelines for assessing attainment of water quality criteria. See also our response to comment regarding the assumptions of the exact binomial test.

ER1 #3

Description: Binomial method - data distribution

Comment: Have the data distributions been evaluated for individual pollutants and criteria?

Response: DEQ does not routinely test the distribution of site-parameter concentrations for normality. Normality is not an assumption of the exact binomial test.

The assumptions for applying the binomial test (2002 CALM, p.62) are: 1) the response can have only two outcomes (e.g., attainment, exceedance); 2) the underlying probability of exceedance, p, remains constant from sample to sample; and 3) samples are obtained through an independent random sampling design.

Therefore, the test as applied by DEQ is robust for sample populations where the continuous distribution of concentrations may diverge from assumptions of normality.

The exact binomial test as applied by DEQ meets the first assumption because it is a non-parametric test of two discrete outcomes for each sample - whether it is above or below the criterion threshold. This is not dependent on the underlying distribution of concentration values. DEQ ensures the second assumption to be met by requiring data be assessed for known critical periods of the year when appropriate for parameters that have a known season-dependent component (e.g. a time of year when exceedance probability is more likely, such as during summer maximum temperatures). For parameters where the exceedance probability is not known to be time dependent, all samples are considered. Finally, DEQ attempts to ensure that samples submitted to the Integrated Report have been collected through an appropriate sampling design, by requiring submission of sampling plans with third party data submitted during its Call for Data.

ER1 #4

Description: Binomial method - data transformation

Comment: Were the data transformed and skewness accounted for? Assumptions in the CALM guidance were for evaluation over a three-year period based on daily data; however, there appears to be no temporality included in the evaluation of data that DEQ describes.

Response: Normality is a consideration for assessing criteria expressed as means or other metrics of central tendency. Normality is not an assumption of the exact binomial test that DEQ applies to threshold criteria. Additionally, DEQ does not transform data given that "there is an obvious problem in using transformed data for water quality attainment decisions; i.e., water quality standards are measured on the original scale" (CALM, 2002).

Similar to the fact that the binomial method represents an improvement over earlier absolute threshold and raw score assessment methods and has gained wider adoption among states, refinements to the statistical assessment methodology, such as a generalized linear mixed effects model, may be considered in the future. DEQ did not look at temporality given EPA's previous comments that year-round standards apply year round. Therefore, DEQ no longer includes temporal listings.

ER1 #5

Description: Binomial method - 1 in 3-year exceedance frequency

Comment: How does DEQ take into account datasets that are longer or shorter than three years? Sample size along with distribution are critical for determining the appropriate application of the binomial approach (see assumptions in the CALM guidance, p 313). In OR's binomial explanatory document, the State describes temporality as a source of "error," however, the temporality and variability in the dataset influences how confidence limits are established/implemented, and this does not appear to be reflected in the approach.

Response: Application of the binomial test for the evaluation of both acute and chronic toxic substances is a method that was developed by EPA and it remains to be consistent with EPA guidance. At the time of DEQ's adoption of the binomial methodology in 2018, the states of California, Florida, Iowa, Kansas, Nebraska, Nevada, North Carolina, and Texas also utilized a binomial listing methodology for toxic substances. See Oregon DEQ's detailed analysis of their methodologies in: https://www.oregon.gov/deq/FilterDocs/iri-statmethods.pdf, Appendix 2 p.46-52.

The method as described in DEQ's methodology was selected to provide a comparable level of protection to 1-exceedance-in-3-years in the condition that sample sizes are large. The statistical test is applied on a site-specific basis to sites with large or long-term data sets where a minimum confidence level of 90% is achievable. Sites with less than 18 samples for toxics are listed on the basis of more than 1 exceedance.

ER1 #6

Description: Binomial method - criteria frequency

Comment: Please provide more explanation as to how the state will ensure that criteria magnitudes will not be exceeded too frequently, particularly where pollutant concentrations and criteria, such as for certain toxics, are dynamic in nature.

Response: DEQ ensures that the duration and frequency of water quality criteria for toxics substances are being met by testing for exceedance probabilities in the population of samples for given assessment units of $p < 0.05$ with appropriate controls on type-I and type-II error rates using the exact binomial test. This threshold is given by the EPA as an example of a statistical test that meets data quality guidelines for assessment decisions using statistical methods with a 1-in-3-year frequency of exceedance (CALM 2002, p.4-16).

ER1 #7

Description: HABs

Comment: HABs advisory listings: As noted by footnote 25 (on page 33 of 92), EPA has published recommendations for cylindrospermopsin and total microcystins. Additionally, the Oregon Health Authority has published recommendations for anatoxin a and saxitoxin (and others) for marine waters. It appears that the sources of impairment (anatoxin and saxitoxin) would no longer be included in the assessment/listing if they only have one advisory issued but will be included if they have more than one advisory? Please clarify.

Response: DEQ will identify a waterbody as Category 3B; potential concern if there is a single season public health advisory issued by the Oregon Health Authority, in conjunction with other federal, state, county, city, or local agencies, with no associated toxin data. Waterbodies will be identified as Category 5: impaired where (1) an advisory is a permanent advisory; (2) an advisory has reoccurred for two or more HABs seasons; or (3) only occurred once but had cyanotoxin values above EPA recommended human health recreational water quality criteria or OHA recommended use values for anatoxin a or saxitoxin at the time of assessment; (4) finished water exceeds EPA Drinking Water Health Advisories for Cyanotoxins for vulnerable groups and where the waterbody is the source of water for a public water system; (5) where there is a livestock watering use, only occurred once but had a microcystin value above livestock watering levels of 2.3 µg/L; or (6) Recreational advisories shall be associated with impairments of the water contact recreation use. Drinking water advisories shall be associated with impairments of the domestic water supply use. Exceedance of the reference concentration for livestock shall be associated with impairment of the livestock watering use. The methodology will be updated to reflect these values.

ER1 #8

Description: Dissolved oxygen - alternate minimum

Comment: Page 54 – dissolved oxygen assessment category: If using the alternate minimum criteria, the state needs to demonstrate why these alternate criteria are protective of the use based on the data and availability of dissolved oxygen, for example, cold water fish. In other words, please describe why the amount of data is pertinent to protection of the designated use, including the exposures to variable DO conditions that are illustrated with that data.

Response: The alternate minimum criteria used in Oregon's dissolved oxygen assessment are part of a tiered assessment approach to the identification of dissolved oxygen impairments. Assessment of dissolved oxygen using summary statistics (i.e. 30-D, 7-Mi, 7-D) is only possible when continuous dissolved oxygen data are collected. For assessment of the year-round criteria, DEQ first looks if the 30-day criteria are met. If the 30-day criteria are met, then the seven day minimum criteria are assessed. Following attainment of both criteria, DEQ assesses if daily minimum criteria values for dissolved oxygen are met. If dissolved oxygen criteria are met in all three tiers or metrics, then the waterbody is determined to be supporting its designated use.

In Oregon's EPA-approved dissolved oxygen standard, DEQ may use these "alternate minimums" when it determines that adequate information exists. The draft methodology defines "adequate information" as at least 15 instances of the 30-D metric data collected during the year-round critical period (July 1 – September 30) within the Integrated Report data window for year-round criteria. To be assessed as supporting its designated use, all three metrics (i.e. 30-day criteria, seven day minimum criteria and daily minimum criteria) have to be met.

ER1 #9

Description: Aluminum - terminology

Comment: Instantaneous water quality criteria (IWQC) is not a term used in the EPA aluminum criteria 304(a) recommendation (2018) upon which the federal promulgated rule for OR is based. As suggested in previous comments on this draft section, please delete that term. An alternate term could be aluminum criteria values or aluminum criteria calculator outputs.

Response: DEQ has decided to use the term Instantaneous Criteria Values (ICVs). EPA decided not use the term IWQC for aluminum, which was the term used by EPA for the copper BLM output values. Therefore, DEQ revised our terminology, but it is important to use a term that is similar to copper, because the concept is the same and it will be less confusing to the public and DEQ staff if the terms are similar. Also, the term clearly refers to the temporal variability of the criteria, which apply when the specific set of input parameter values are present in the water body (as illustrated by EPA's look up tables). We define the term ICV as the values that are output from the calculator.

ER1 #10

Description: Aluminum - default DOC

Comment: Aluminum calculation is not unidirectional with pH and hardness, and therefore despite the language in the defaults discussion (first paragraph under "Aluminum criteria"), we do not anticipate that the State can come up with defaults/estimations for these parameters, only for DOC. As such, the language should be revised to include only default DOC and default criteria application.

Response: DEQ will revise the language to clarify that only default DOC values will be used in the absence of measured input values. If sufficient credible estimates of pH data are unavailable or hardness data are absent, default regional aluminum criteria would be applied.

ER1 #11

Description: Aluminum - bioavailable fraction

Comment: We recommend articulating a secondary methodology for listing in Category 5 in the event the bioavailable method is not available for the 2024 listing cycle IR. For example, we suggest that if total recoverable aluminum data indicates a waterbody is impaired, then it should be listed in Cat 5 (rather than 3B). If at some future time OR has a bioavailable method that it can apply and sufficient bioavailable data collected, a waterbody could potentially be delisted based on such data. Alternatively, we request that DEQ provides a definitive statement that development of the bioavailable method will be completed after the 2022 IR and a summary update of the State's current progress.

Response: In the event the bioavailable method is not available for the 2024 Integrated Report listing cycle, if total recoverable aluminum data indicate a waterbody is impaired, then it will be listed in Category 5. When a bioavailable method becomes available and sufficient bioavailable data are collected, a waterbody may be delisted based on such data. Alternatively, development of the bioavailable aluminum method will be completed after the 2022 Integrated Report cycle, and DEQ will update EPA on the State's current progress.

ER1 #12

Description: Aluminum - insufficient data

Comment: Please define what is meant by "insufficient" in the first sentence under the "Both bioavailable and total recoverable aluminum" section (page 79 of 92), which states, "For water bodies with insufficient bioavailable aluminum results…"

Response: Insufficient refers to minimum data requirements for toxics samples, i.e. 10 samples for Category 2 and 2 samples above criteria for Category 5 for sample sizes less than eighteen.

ER1 #13

Description: Aluminum - binomial method

Comment: See the comments in earlier sections about application of the binomial method for toxics, and the need to ensure that the frequency of exceedance for the criterion is not violated.

Response: Please see our response in Comment ER1 #6.

ER1 #14

Description: Hardness defaults - acute cadmium

Comment: Acute cadmium defaults (Table 20): EPA's defaults were based on the available data at the time of the rulemaking and were specific to the acute cadmium rule. The State can always be more stringent if it determines that more conservative hardness values may be necessary.

Response: DEQ uses a more conservative hardness default for acute cadmium that is consistent with the protective default values used across our hardness-based metals.

ER1 #15

Description: Hardness defaults

Comment: Regarding this statement in the cadmium section, "DEQ prefers to use ambient hardness data specific to the sample result, but uses EPA's default values when sample data are not available in order to calculate criteria for cadmium and other hardness-dependent metals" (emphasis added). Please note that the defaults were developed for acute cadmium, only. The State should not use those defaults for other hardness-based criteria, unless the State provides a justification as to why these hardness defaults are protective for the application of the other criteria, based on the effects levels for those criteria. Each hardness calculation is unique. It was EPA's understanding that the State had compiled hardness defaults to potentially be used to derive other hardness-based criteria on an ecoregional basis and was in the process of evaluating the level of protection of those defaults for individual pollutant criteria. We understand that DEQ plans to update this section and delete the reference to other hardness-dependent criteria and include the table of defaults DEQ employs for the other hardness-dependent criteria.

Response: DEQ uses a more conservative hardness default for acute cadmium that is consistent with the protective defaults used across our hardness-based metals. DEQ will update this section and reference the table of defaults DEQ uses for both cadmium and the other hardness-dependent criteria.

ER1 #16

Description: Table 1

Comment: Table 1 – recommend adding links to the Oregon Administrative Rules for ease of comparison.

Response: DEQ thanks the commenter and will add links to the Oregon Administrative Rules in Table 1.

ER1 #17

Description: Category 1

Comment: Table 3, Category 1 – Oregon indicates that the State does not use this category; however, please consider its application for ORWs, as an example, now that a few have been established.

Response: Category 1 is defined as "All designated uses are supported", however, Oregon has not historically used this category since sufficient data to assess all designated uses have not been available. "Outstanding Resource Waters" means waters designated by the EQC where existing high quality waters constitute an outstanding state or national resource based on their extraordinary water quality or ecological values or where special water quality protection is needed to maintain critical habitat areas. Based on the definition, not all ORWs attain all the applicable water quality criteria, and DEQ believes that being designated an ORW should not automatically place a waterbody in Category 1 regardless of whether or not it is meeting all applicable water quality criteria. DEQ and the public should be aware if ORWs are exceeding criteria so there can be an evaluation and plan for correction if appropriate.

ER1 #18

Description: Category 5-Alt

Comment: Table 3 – Oregon may not be interested in pursuing any Category 5-Alteratives (5-Alt) so may have excluded a description of those plans from the table for that reason. If Oregon might be interested in developing 5-Alt plans in the future or for consistency with EPA's category tables, a description of those plans could be included here. See: https://www.epa.gov/sites/production/files/2018-

09/documents/attains_calculations_of_epa_ir_categories_2018-08-31.pdf for a more detailed description and reference for citation.

Response: DEQ thanks the commenter for the suggestion and will update Table 3 to include a Category 5-Alternative and updated citation.

ER1 #19

Description: Footnote citation

Comment: Footnote citation 13, Sections 303(d), 305(b), and 314 of the CWA (USEPA 2005a, 2006)13: This citation references conference proceedings from 2007. While the citation is fine, a more recent and perhaps more readily available reference for citation using the same language can be found at: https://www.epa.gov/sites/production/files/2018-09/documents/attains_calculations_of_epa_ir_categories_2018-08-31.pdf

Response: DEQ will update its citation.

ER1 #20

Description: NHD

Comment: Section 3.3.3 – Please include the resolution being used for the High Resolution National Hydrography.

Response: The High Resolution National Hydrography dataset utilizes a 1:24,000 resolution. Clarification will be added to the methodology.

ER1 #21

Description: Biocriteria

Comment: Please explain/justify why DEQ is proposing to use subcategory Category 3C: Insufficient data; Potential Concern to identify waters whose biocriteria O/E scores deviate from reference conditions but are not classified as impaired (Table 3 footnote 12). If the scores deviate from expected reference, why would they not list as impaired? Please provide further rationale for this determination. According to Oregon's biocriteria peer review document, it appears that the consensus was to identify two thresholds, attaining (equivalent to reference) and not attaining? Please explain how OR's listing approach comports. (Peer review: https://www.oregon.gov/deq/FilterDocs/assessBiocriteriaSumPeer.pdf). It appears that the use of three thresholds was to have continued only until the last cycle, amid an

additional data collection effort. It is unclear why the three-threshold approach is continuing.

Response: DEQ is continuing to use three thresholds for biocriteria because the updates to its biocriteria assessment methodology are ongoing. Models are currently being revised and updated with additional reference sites. Additional lines of evidence will also be identified in future Integrated Report cycles. Category 3C was added in the 2018/2020 Integrated Report cycle because of the uncertainty that a single sample accurately assesses a true deviation from reference. Given limited resources, DEQ has prioritized resampling these waterbodies for a better assessment of true condition. The peer review did agree that the use of two thresholds was appropriate, resulting in three assessment categories: attaining, limbo, non-attaining/impaired. Based on the combination of work performed by a statistician on sample variability and public comment on variability, DEQ decided to implement the 4th category (5th% – 10th%) for waterbodies with only a single sample. For O/E models, low values represent more taxa loss and a lower biological condition. Thus, DEQ used the lower percentiles to set impairment. The categories and their associated taxa loss percentiles are:

>25th = Attaining; 25th – 10th = Uncertain, revisit for more data (lower priority); 10th – 5th = single sample, revisit for more data (high priority); multiple samples < 5th = Impaired

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ER1 #22

Description: Fecal coliform delisting

Comment: Bacteria: DEQ added the following paragraph, "DEQ will assess existing E.coli data to make the determination of impairment or attainment for the recreational use for those freshwater assessment units previously identified as impaired for fecal coliform. This methodology will apply only to those waterbodies where current E.coli data exists. E. coli monitoring will be required to remove the fecal coliform listing for those fresh waters previously identified as Category 5 for fecal coliforms where no current E. coli data exists." Please provide some context as to why this has been included. Our understanding is that DEQ will clarify this language to be specific about the pathogen indicators and uses that they are intended to protect.

Response: Before 1996, when the fecal coliform was the applicable criteria to freshwaters, and enterococcus was the freshwater recreational criteria (years 1995 – 1996), Category 5 303(d) listings for impairment of the recreational use were based on these criteria and TMDLs were developed for these indicators. When E. coli was adopted as the freshwater recreational criteria in 1996, these freshwater fecal coliform listings were not modified to reflect the current applicable recreational criteria, E. coli. DEQ proposed to correct this error by utilizing existing E.coli data to make the determination of impairment or attainment for the recreational use for those assessment units previously identified as impaired for fecal coliform. This modification does not apply to fecal coliform listings in areas designated for the shellfish harvesting use.

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6. Comments from: Farmers, Middle Fork, and East Fork Irrigation District,

FMF-EFID #1

Description: Irrigation infrastructure should not be assessed

Comment: Irrigation infrastructure should not be included in the assessment process.

Response: Irrigation infrastructure varies widely, including both natural and human-made channels and falls under Oregon's definition of waters of the state, which has a broad statutory definition in Oregon Statutes (ORS 468B.005) "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction. The water quality within irrigation canals (which have a connection to natural surface waters) affects water quality in downstream waterbodies and the aquatic life therein. DEQ assesses waterbodies based on the designated beneficial uses. The beneficial uses were designated in the state rules OAR-340-041 Tables 101A - 330A and were designated on a basin scale.

FMF-EFID #2

Description: Watershed Units - single conclusion

Comment: Commenter is concerned the proposed methodology still wraps all data analysis into a single conclusion for the entire watershed assessment unit, continuing the issues from the 2018/2020 Integrated Report where an impairment at one monitoring site or waterway results in an entire watershed assessment unit being listed as impaired, even when the data and/or hydrologic system do not support that conclusion. Mapping an entire watershed assessment unit as impaired could create significant liability for districts, water users, and other landowners within it. Even if the entire watershed assessment unit is hydrologically connected, it is a significant stretch to state an impairment found at one or two monitoring sites implies impairment throughout the entire HUC-12 sub-watershed. Commenter suggests breaking watershed assessment units into smaller assessment units based on hydrologically separate drainage systems.

Response: Due to EPA reporting requirements, DEQ must report assessment conclusions at the assessment unit level. For smaller order streams (Strahler Stream Order 4 or less), this means that assessment conclusions are reported at the watershed unit scale, or HUC-12 level, which is the smallest watershed scale delineation available in Oregon. The water

quality assessment, however, will be conducted at the monitoring station level. Decisions to list waterbodies will be based on waterbody specific data and information. Consequently, watershed assessment units identified as impaired indicate that one or more waterbodies within the assessment unit (HUC-12) are impaired based on the data that were assessed. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, DEQ will display the specific streams and monitoring locations within a watershed unit where data and information suggest a water quality impairment.

FMF-EFID #3

Description: Watershed units - scientifically defensible

Comment: Commenters continue to believe that watershed scale assessment units for stream order 4 or less streams does not represent sound agency policy or standards for scientific rigor. In order to be scientifically defensible, decisions to list waterbodies as impaired must be based on water body specific data and cannot be done on a watershed wide scale. Watersheds are composed of hundreds of individual water bodies. Within a watershed, water quality can easily differ from water body to water body, particularly when those waterways are not hydrologically connected, are under different ownership and may have experienced differing current and historic riparian management.

Response: Due to EPA reporting requirements, DEQ must report assessment conclusions at the assessment unit level. For smaller order streams (Strahler Stream Order 4 or less), this means that assessment conclusions are reported at the watershed unit scale, or HUC-12 level which is the smallest watershed scale delineation available in Oregon. The water quality assessment; however, will be conducted at the monitoring station level. Decisions to list waterbodies will be based on waterbody specific data and information. As a result, watershed assessment units identified as impaired indicate that one or more waterbodies within the assessment unit (HUC-12) are impaired based on the data that were assessed. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, DEQ's interactive map will display assessment conclusions at both the waterbody and monitoring station level.

FMF-EFID #4

Description: GIS watershed impairment layer

Comment: Commenter suggests instructions for the new GIS impaired waters layer be included in the methodology.

Response: The new impaired waters layer was developed for the interpretation of the 2018/2020 Integrated Report results. The 2022 Integrated Report will not only identify and display impaired waterbodies within a watershed, but also display impairments by each monitoring station from the assessment. A separate instructional document will be made available on DEQ's website.

7. Comments from: Hood River Watershed Group

HRWG #1

Description: Watershed Units - extrapolation

Comment: Multiple commenters commented that DEQ should not be using impairment data from other waterbodies within the HUC12 assessment unit to designate a waterbody as impaired. Decisions to list waterbodies as impaired must be based on water body specific data and cannot be done on a watershed wide scale.

Response: Impairments in watershed assessment units reflect that one or more waterbodies within a HUC-12 or sub-watershed are impaired. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, impairments in watershed units will be displayed at both the waterbody and monitoring station level. Please also see response to comment FMF-EFID #2 above.

HRWG #2

Description: Watershed units - procedure document

Comment: It would be helpful to have a memo or procedure that clarifies DEQ's method for determining waterbody impairment in watershed units.

Response: Assessment conclusions for waterbodies within a watershed unit will be identified at the monitoring station level, following procedures outlined in DEQ's 2022 Assessment Methodology. If any monitoring station is assessed as Category 5, then the watershed unit will be identified as impaired. The Category 5 status for the watershed unit reflects that a waterbody within the assessment unit was identified as impaired, not that the entire watershed unit is impaired. Impaired streams in watershed assessment units will be displayed at both the waterbody and monitoring station level. This new map layer will be made available at the same time as DEQ's response to comments, and a set of instructions for interpreting impairments within watershed units will be posted on DEQ's website.

HRWG #3

Description: Watershed units - HUC 10 vs HUC-12

Comment: It is unclear how HUC-10's are used to split stream/river assessment units versus HUC-12's at the watershed level.

Response: In the absence of other criteria used to define river/stream assessment units such as a designated use or change in stream order, larger stream/river assessment units are split at HUC-10 boundaries. The objective of using HUC-10 boundaries was to avoid creating extremely long river and stream units. HUC-12 delineations are used to group smaller order streams (4th order or less) into watershed units, rather than split them. DEQ will add some additional clarifying text.

HRWG #4

Description: Figure 2 legend

Comment: The Figure 2 legend is confusing with use of multiple colors.

Response: DEQ appreciates your comment and will clarify the legend in Figure 2.

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8. Comments from: Klamath Drainage District

KDD #1

Description: Irrigation infrastructure should not be assessed

Comment: Irrigation infrastructure should not be included in the assessment process.

Response: Irrigation infrastructure varies widely, including both natural and human-made channels and falls under Oregon's definition of waters of the state, which has a broad statutory definition in Oregon Statutes (ORS 468B.005) "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction. The water quality within irrigation canals that have a connection to natural surface waters, affects water quality in downstream waterbodies and the aquatic life therein. DEQ assesses waterbodies based on the designated beneficial uses. The beneficial uses were

designated in the state rules OAR-340-041 Tables 101A - 330A and were designated on a basin scale.

KDD #2

Description: Overwhelming evidence

Comment: Anomalous events as identified in the Assessment Methodology (i.e. fish kills, public health advisories, etc.) as factors considered as overwhelming evidence do not indicate impairment of the entire watershed, and a robust monitoring effort is needed to quantify these assumptions.

Response: Overwhelming evidence uses multiple lines of evidence based on a specific rationale to conclude that a waterbody is impaired. When sample sizes do not meet minimum requirements to assign a Category 5 status, additional evidence may be used to indicate that the applicable water quality standard is not being attained. Overwhelming evidence includes other credible and compelling information indicating the waterbody is in fact impaired. These additional lines of evidence; however, would not be used independent of data unless identified specifically in the methodology document (i.e. HABs). The overwhelming evidence indicators identified in the draft assessment methodology represent additional lines of evidence that would support an impairment conclusion in addition to data collected. These indicators alone, would not be enough evidence in and of themselves to support a 303(d) listing.

KDD #3

Description: Watershed Units - single conclusion

Comment: Commenter is concerned the proposed methodology still wraps all data analysis into a single conclusion for the entire watershed assessment unit, continuing the issues from the 2018/2020 Integrated Report where an impairment at one monitoring site or waterway results in an entire watershed assessment unit being listed as impaired, even when the data and/or hydrologic system do not support that conclusion. Mapping an entire watershed assessment unit as impaired could create significant liability for districts, water users, and other landowners within it. Even if the entire watershed assessment unit is hydrologically connected, it is a significant stretch to state an impairment found at one or two monitoring sites implies impairment throughout the entire HUC-12 sub-watershed. Commenter suggests breaking watershed assessment units into smaller assessment units based on hydrologically separate drainage systems.

Response: Due to EPA reporting requirements, DEQ must report assessment conclusions at the assessment unit level. For smaller order streams (Strahler Stream Order 4 or less), this means that assessment conclusions are reported at the watershed unit scale, or HUC-12 level which is the smallest watershed scale delineation available in Oregon. The water quality assessment, however, will be conducted at the monitoring station level. Decisions to list waterbodies will be based on waterbody specific data and information.

Consequently, watershed assessment units identified as impaired indicate that one or more waterbodies within the assessment unit (HUC-12) are impaired based on the data that were assessed. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, DEQ will display the specific streams and monitoring locations within a watershed unit where data and information suggest a water quality impairment.

KDD #4

Description: DEQ Authority

Comment: ODEQ Has Exceeded Its Authority. The commenter believes ODEQ has exceeded its authority with respect to the overall process for this Methodology, the Water Quality Report, the List of Water Quality Limited Waters and related mapping. The basin wide approach for ODEQ's designation of beneficial use by basin is based in part, and by ODEQ's admission, on a web-based mapping tool that has not been officially adopted.

Response: Section 303(d)(1)(A) of the Clean Water Act requires states to identify those waters within its boundaries that do not meet applicable water quality standards. States are required to establish a priority ranking for TMDL development, taking into account the severity of the pollution and the uses to be made of such waters. Section 305(b) requires States to report on the overall condition of Oregon waters. The beneficial uses are in Oregon Administrative Rules Chapter 340, Division 41. No change in designated uses, as established in the State rule, occurred during creation of the mapping tool or in the Integrated Report assessment process. The web-based mapping tool was the first visual display of the designated beneficial uses in an interactive map. Changing any beneficial uses would need to be completed through a formal rule making process, outside of the Integrated Report assessment process. If there are any mistakes, discrepancies or omissions in any map display or references to applicable water quality standards, the Oregon Administrative Rules Chapter 340, Division 41 govern.

KDD #5

Description: Integrated Report requirement

Comment: Section 1, paragraph 3, ODEQ acknowledges EPA recommends submitting an Integrated Report, inferring it is not required. Commenter believes ODEQ has gone beyond its authority, at least at this time, while TMDLs are under dispute, and maps and tools have not undergone public input or formal adoption.

Response: Submitting an Integrated Report to EPA is a requirement irrespective of any current disputes to other Clean Water Act programs or actions. Specifically, section 303(d)(1)(A) of the Clean Water Act requires states to identify those waters within its boundaries that do not meet applicable water quality standards. States are required to establish a priority ranking for TMDL development, taking into account the severity of the pollution and the uses to be made of such waters. Section 305(b) requires States to

report on the overall condition of Oregon waters. The web-based mapping tool is used to display the designated beneficial uses so that they could be viewed in an interactive map.

KDD #6

Description: Data collection

Comment: Data collection is arbitrary and prone to bias. Although the Methodology lays out a process for data collection and verification, the process set forth does not adequately protect against bias in the data submitted. ODEQ must further develop a mechanism for eliminating bias from data collection, especially where the data is pooled and applied across a watershed assessment unit.

Response: DEQ is required to assess all readily available data which includes data that are collected by DEQ, data pulled from publicly accessible databases, and data submitted during its data call. DEQ only uses high quality data for assessment. Data collected through the Volunteer Monitoring Program and DEQ data must have data quality level of A or B after DEQ's evaluation to be used in the Integrated Report. The effect of sampling bias is reduced by the use of the binomial distribution for assessment conclusions. There are several conditions that are met when using the binomial method. The first is that each sampling event is considered an equivalent event. Second, each sample results in one of two outcomes, attain criteria or does not attain criteria. Third, the probability of criteria attainment remains the same for each sample. Lastly, the samples are independent of one another such that the outcome of any one sample does not affect the outcome of the others. Sample results collected in close proximity to one another or collected in the same 24-hour period are aggregated to a single result. Data are no longer pooled when watershed units are assessed but are assessed at the monitoring station level.

KDD #7

Description: Data window

Comment: Also, Section 3.2.1 defines the data window as January 1, 2016 through December 31, 2020. Data collected outside of the data window will not be used. (Methodology, Sec. 3.2.2, p. 14.) This Methodology results in determinations based on a very narrow dataset and one that does not tell the entire story. Certain anomalies may be perceived as the norm. This limitation is arbitrary, and it does not employ best available science.

Response: The Clean Water Act requires states to assess water quality and report to the EPA every two years. Using a discrete assessment window (i.e. period of record) for Oregon's 2022 Integrated Report ensures DEQ uses all of the most current available data for the 2022 assessment. The most recent five-year period of record should reflect the current status of water quality in Oregon for the listing cycle. Incorporation of data greater than five years old may bias assessment results to an historic water quality condition.

KDD #8

Description: Metadata requirements

Comment: Permission to enter private property (when applicable) is not a metadata requirement. If data were collected while trespassing (which could be argued as encouraged by DEQ considering its "call for data"), that data would be collected illegally and should not be used in a legal document. The Methodology needs to acknowledge this challenge and present a solution to ensure necessary data is collected legally.

Response: DEQ is required to use all readily available data for the assessment. Sampling performed by Oregon DEQ followed proper procedures for access to waters on private properties that include obtaining written consent to sample. Oregon DEQ did not evaluate private property permission status for third-party submitted data. DEQ does not authorize or encourage trespassing to collect water quality information.

KDD #9

Description: QA/QC - Volunteer monitoring

Comment: Regarding QA/QC requirements, the Methodology lacks an explanation or description of how volunteers in the Volunteer Monitoring Program are trained. Additionally, there is no explanation for who determines the quality level of the data and whether they are qualified to make that determination or not.

Response: The Integrated Report uses three streams of data; DEQ managed data, readily available data and data submitted through the call for data process. DEQ managed data includes data that DEQ collects, analyzes and reports and data collected under the Volunteer Monitoring Program. DEQ owned data, including data collected under the Volunteer Monitoring Program, goes through a rigorous review process and is assigned a final Data Quality Level (https://www.oregon.gov/deq/FilterDocs/DataQualMatrix.pdf) (https://www.oregon.gov/deq/wq/Documents/AWQMSguiddatausers.pdf).

DEQ managed data must have Data Quality Level of A or B to be included in the Integrated Report.

All data from the Volunteer Monitoring program are collected under the Volunteer Water Quality Monitoring Quality Assurance Project Plan https://www.oregon.gov/deq/FilterDocs/volunteerQAplan.pdf. This document outlines the training and quality assurance procedures participants in the program must follow when collecting water quality samples. Additionally, DEQ staff assist partners in developing a project specific sampling and analysis plan. Raw data is submitted to the DEQ laboratory for review and for uploading to Ambient Water Quality Monitoring System database. Trained DEQ laboratory staff use automated tools and also manually review the data to assign a final DQL. The QAPP, individual sampling and analysis plan,

and two part review of the raw data by DEQ staff ensures that we are using high quality data for the Integrated Report.

KDD #10

Description: Naturally occurring conditions

Comment: ODEQ Must Consider and Address Naturally Occurring Conditions. The Methodology is silent with regard to ODEQ's consideration and integration of negative naturally occurring conditions and the relation to existing "State Standards." For example, Upper Klamath Lake arguably faces water quality problems, however, certain conditions are naturally occurring or historic. Moreover, water users who may be looked to for solutions by ODEQ have little to no control downstream of the lake. (See also Comment re Tribal Waters, below.) ODEQ must take this issue under closer consideration and update the Methodology accordingly.

Response: Determination of natural condition is made by the Water Quality Standards program. DEQ assesses against current designated beneficial uses and their applicable criteria. The Integrated Report does not make the determination of the cause of the impairment, whether natural or anthropogenic. If site-specific standards were adopted, DEQ would assess them accordingly in its Integrated Report.

KDD #11

Description: Tribal waters

Comment: Methodology Lacks Clarity Regarding Tribal Waters. Section 3.1, page 13, acknowledges ODEQ assesses segments within Oregon's jurisdiction, and tribal water are outside that jurisdiction lacking a government-to-government agreement otherwise. However, the Methodology fails to address a situation where tribal waters are tributary to waters of the State. If those waters of the State are below standards, who is the responsible party?

Response: The goal of the Integrated Report is to assess the current status of water quality for Waters of the State within Oregon's jurisdiction and to determine which waterbodies are not supporting their designated uses. Sources of impairment and allocation of loads are determined through the Total Maximum Daily Load process. During that process, coordination occurs with any neighboring jurisdictions, including tribes and states that border Oregon waters.

KDD #12

Description: Regulatory complexities

Comment: ODEQ must consider regulatory complexities associated with the Klamath Project and the 2019 Biological Opinion. Klamath Project operations and Endangered Species Act requirements (some of which are presently under consideration in the 9th Circuit and in state court) are very complicated and will impact the quantity, and potentially quality, of water flowing through Project districts' canals and ditches. In low water years especially, districts may have very little control over the amount of water flowing into and out of its infrastructure. ODEQ's Methodology and the outcome (the Report and Visualization Tool) fail to take these realities into account (See Methodology, Sec. 3.3.1, p. 16 (referencing Category 4c as an example).

Response: DEQ is required to assess data against current applicable water quality standards and designated uses. The current beneficial uses were designated at the basin scale in state rules OAR-340-041 Tables 101A-330A. The water quality within irrigation canals that have a connection to natural surface waters, affects water quality in downstream waterbodies and the aquatic life therein. . Causes of impairment and possible solutions to identified water quality issues are part of the TMDL development and implementation process.

KDD #13

Description: Delisting methodology

Comment: Delisting of water bodies and the statistical method is arbitrary and unscientific. "Waters shall be considered for delisting if data in the period of record meet the minimum data requirements to delist." (See Methodology, Sec. 3.3.5, pp. 18-20.) The Methodology fails to define the "period of record" and why that data is necessary to meet minimum requirements during that period. ODEQ should explain why the data cannot meet requirements outside of the period of record. This is a sideboard that is not scientifically justified.

Response: DEQ's delisting methodology was peer-reviewed for the 2018/2020 Integrated Report. DEQ utilizes the binomial statistical method to reduce the probability of creating errors in listing waterbodies as impaired. For waters to be removed from the 303(d) list, or delisted, current water quality must demonstrate attainment of water quality standards. The period of record is defined in Section 3.2.1 Data Window. The period of record for Oregon's 2022 Integrated Report includes data collected in calendar years 2016 through 2020 (Jan. 1, 2016 to Dec. 31, 2020) that are representative of the current water quality. If water quality criteria were met outside of this current period of record, but current data demonstrate impairment, then the waterbody would retain its impairment listing for the 2022 Integrated Report since the current data are the most representative of existing water quality.

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9. Comments from: Klamath Water Users Association

KWUA #1

Description: Watershed Units - extrapolation

Comment: Multiple commenters commented that DEQ should not be using impairment data from other waterbodies within the HUC12 assessment unit to designate a waterbody as impaired. Decisions to list waterbodies as impaired must be based on water body specific data and cannot be done on a watershed wide scale.

Response: Impairments in watershed assessment units reflect that one or more waterbodies within a HUC-12 or sub-watershed are impaired. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, impairments in watershed units will be displayed at both the waterbody and monitoring station level.

KWUA #2

Description: Irrigation infrastructure should not be assessed

Comment: Irrigation infrastructure should not be included in the assessment process.

Response: Irrigation infrastructure varies widely, including both natural and human-made channels and falls under Oregon's definition of waters of the state, which has a broad statutory definition in Oregon Statutes (ORS 468B.005) "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction. The water quality within irrigation canals that have a connection to natural surface waters, affects water quality in downstream waterbodies and the aquatic life therein. DEQ assesses waterbodies based on the designated beneficial uses. The beneficial uses were designated in the state rules OAR-340-041 Tables 101A - 330A and were designated on a basin scale.

KWUA #3

Description: Overwhelming evidence

Comment: Anomalous events as identified in the Assessment Methodology (i.e. fish kills, public health advisories, etc.) as factors considered as overwhelming evidence do not indicate impairment of the entire watershed, and a robust monitoring effort is needed to quantify these assumptions.

Response: Overwhelming evidence uses multiple lines of evidence based on a specific rationale to conclude that a waterbody is impaired. When sample sizes do not meet minimum requirements to assign a Category 5 status, additional evidence may be used to indicate that the applicable water quality standard is not being attained. Overwhelming evidence includes other credible and compelling information indicating the waterbody is in fact impaired, however, these additional lines of evidence would not be used independent of data unless identified specifically in the methodology document (i.e. harmful algal blooms). The overwhelming evidence indicators identified in the draft assessment methodology represent additional lines of evidence that would support an impairment conclusion in addition to data collected. These indicators alone, would not be enough evidence in and of themselves to support a 303(d) listing.

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10. Comments from: Langell Valley Irrigation District

LVID #1

Description: Irrigation infrastructure should not be assessed

Comment: Irrigation infrastructure should not be included in the assessment process.

Response: Irrigation infrastructure varies widely, including both natural and human-made channels and falls under Oregon's definition of waters of the state, which has a broad statutory definition in Oregon Statutes (ORS 468B.005) "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction. The water quality within irrigation canals that have a connection to natural surface waters, affects water quality in downstream waterbodies and the aquatic life therein. DEQ assesses waterbodies based on the designated beneficial uses. The beneficial uses were designated in the state rules OAR-340-041 Tables 101A-330A and were designated on a basin scale.

LVID #2

Description: Watershed Units - data pooling

Comment: Data pooling improperly results in irrigation delivery canals being listed as impaired waterbodies.

Response: For the 2022 Integrated Report, DEQ has revised its methodology to assess watershed units at the monitoring station level and the map will reflect assessments at each individual monitoring station. Data will not be pooled across stations in a watershed assessment unit. In addition, the Integrated Report interactive map will display the specific streams within a watershed unit where water quality impairment occurs.

LVID #3

Description: Watershed Units - liability

Comment: Mapping an entire watershed assessment unit as impaired could create significant liability.

Response: Due to EPA reporting requirements, DEQ must report assessment conclusions at the assessment unit scale. For smaller order streams (Strahler Stream Order 4 or less), this means that assessment conclusions are reported at the watershed unit scale, or HUC-12 level which is the smallest watershed scale delineation available in Oregon. Watershed assessment units identified as impaired indicate that one or more waterbodies within the assessment unit (HUC-12) are impaired. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, DEQ will display assessment conclusions at both the waterbody and monitoring station level.

11. Comments from: Northwest Environmental Advocates

NEA #1

Description: Integrated Report cycle

Comment: The proposed 303(d) list is not a 2022 Report

Response: EPA Approved Oregon DEQ's submittal of its 2014/2016/2018/2020 Integrated Report in November 2020 and DEQ reviewed and assessed readily available data and information for the time period from Jan. 1, 2008, through Dec. 31, 2017 for the

report. Consequently, DEQ is updating its assessment methodologies for the 2022 Integrated Report, which will be submitted in April of 2022.

NEA #2

Description: Methodology

Comment: Where Oregon has failed to include in the methodology the way in which it will obtain and review data and information that apply to all of Oregon's water quality standards, the methodology is deficient.

Response: EPA regulations require states to describe the methodology, data, and information used to identify and list water quality limited segments requiring TMDLs. The assessment methodology contains the "decision rules" used to evaluate data and information. Oregon Administrative Rules (OAR 340-041-0046) also require the specific evaluation process be identified. DEQ's draft 2022 Assessment Methodology outlines these decision rules in the document and meets both federal and state requirements.

NEA #3

Description: Data window - five year Period of Record (POR)

Comment: DEQ is incorrect that it can and should create a "data window" in which it assesses only "data collected in calendar years 2016 through 2020".

Response: The purpose of the Integrated Report is to provide the most current water quality status report to Congress every two years. Establishing a period of record or "data window" for which the report applies is a standard practice for assessment purposes. DEQ's approach is consistent with EPA's recent memo titled "Information Concerning 2022 Clean Water Act Section 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions", where EPA recommended that "Establishing a reasonable "cut-off" date can be a useful approach for timely completion of an Integrated Report For example, setting a "cut-off" date for data and information used in preparation of a draft CWA 303(d) list, after which no additional data or information would be considered in preparing the draft CWA 303(d) list, can encourage third-parties to submit data and information early. If electing to use a "cut-off" date, a state should clearly explain that data and information submitted after that date would be considered during the next listing cycle."

Please also see response to comment for KDD #7.

NEA #4

Description: Anecdotal information

Comment: It does not explain how chemical, physical and biological data, will not in and of itself, be adequate to support a listing decision.

Response: DEQ identified in its data submission guidelines that non-numeric data such as journal articles, state and federal reports and findings and observations (i.e. chemical, physical, and biological data) may be used to assess various narrative criteria. To be used for assessment purposes, non-numeric data (i.e. anecdotal information) must meet the following requirements: (1) Related to a specific location – DEQ cannot assess water quality based on regional (e.g. state, basin or west coast) conclusions. Latitude and longitude where the data were collected are required; and (2) Reference the beneficial use impairment (i.e. which narrative criteria are not being met) which helps DEQ understand the context of the submission. Anecdotal information alone such as reports of an "oily sheen" on a water's surface may be a natural phenomenon such as a humic sheen produced by bacteria. This iridescent, rainbow-like sheen is an organic, non-petroleum humic sheen caused by bacteria. In some cases, it may even contain a red precipitate that may also be visible where the sheen occurs. DEQ must do its due diligence to determine that the information provided does, in fact, represent a waterbody impairment.

NEA #5

Description: Single assessment unit category

Comment: Each assessment unit should be assigned a category determination for each applicable use as well as each applicable pollutant or criterion or violation of the antidegradation policy.

Response: Each assessment unit will be assigned a category determination for each evaluated designated beneficial use for each pollutant or parameter that is assessed consistent with EPA guidance and regulations.

NEA #6

Description: Independent applicability

Comment: Although DEQ states that it is using the policy of "independent applicability," Draft Methodology at 15, it seems to muddle the very concept by referencing criteria for pollutants and parameters as beneficial use impairments and generally ignoring beneficial use impairments that must be protected under the policy.

Response: The concept of independent applicability was introduced in the 2010 assessment methodology (https://www.oregon.gov/deq/wq/Documents/ir2022AssessMethod2022DF.pdf) to

explain that numeric criteria within a water quality standard were developed to protect designated beneficial uses and that these parameter and use combinations are assessed independently for the same assessment unit (Table 1 page 11). For purposes of water quality standards attainment or nonattainment determinations, when data for one parameter or pollutant indicates an exceedance rate above that outlined in the assessment methodology, that assessment unit will be considered impaired for the corresponding beneficial use regardless of attainment of other uses or parameters.

NEA #7

Description: Overwhelming evidence factors

Comment: Factors are drawn too narrowly. In addition, the catchall "[s]tudies or other data/info demonstrate impairment of a specific location" is so vague as to not be helpful. By not being clear, DEQ virtually guarantees that those with such data and information will likely not participate in the call for data.

Response: In its assessment methodology, DEQ identifies examples of overwhelming evidence it may consider, but evidence is not limited to these specific factors. DEQ further clarifies in its data submission guidelines that data and information submitted to DEQ must be collected from waters under the state of Oregon's jurisdiction, related to a specific waterbody or location, and include a reference to which beneficial uses may be impaired and for what parameter.

NEA #8

Description: Withdrawn criteria

Comment: Just because a numeric criterion no longer exists does not mean that Oregon water quality standards are met. Instead, the narrative criterion and/or beneficial use support and/or antidegradation policy might require listing of the water body. It depends upon the pollutant or parameter for which there is no longer a numeric criterion and the reason that criterion was withdrawn.

Response: If water quality standards have changed or the beneficial use designations for a water body have been refined since it was first listed in Category 5: 303(d), only the numeric or narrative water quality criteria applicable to the currently designated beneficial uses are applied to evaluate data and information. If there are no currently applicable water quality criteria because the pollutant criteria are withdrawn, then DEQ cannot assess the criteria that is no longer applicable, however it will consider all supporting information when determining whether a beneficial use is being supported. DEQ is required to assess the water quality of a waterbody based on its current applicable designated uses and criteria.

NEA #9

Description: Individual toxics criteria

Comment: Commenter supports DEQ's proposal to retain Category 5 listings where toxic criteria for a family or group of chemicals were replaced by criteria for individual chemicals but no data are available that pertain to the new individual criteria.

Response: DEQ thanks the commenter for their support.

NEA #10

Description: Category 4A for Watershed TMDLs

Comment: Commenter disagrees with DEQ's proposal to place waters into Category 4A because a watershed was subject to a TMDL for the same pollutant. DEQ's Total Maximum Daily Loads (TMDLs) are not sufficiently clear on to which waters they apply and EPA's approval of watershed, subbasin, and basin TMDLs are applicable only to specified waters.

Response: DEQ places waterbodies into Category 4A for waters where a TMDL has been developed and approved. TMDLs developed at a watershed or sub-watershed scale would encompass all waterbodies within that watershed or sub-watershed unless specifically noted in the TMDL document.

NEA #11

Description: Category 4B

Comment: DEQ should make clear where it intends to house its Category 4B determinations for public comment.

Response: Category 4B determinations will be available for public comment during the public comment period for the draft Integrated Report. Determinations will be available on DEQ's website with the draft report.

NEA #12

Description: Dissolved oxygen methodology

Comment: DEQ should be using the 7-D (Mi) to assess DO. The current methodology is not protective.

Response: the dissolved oxygen methodology is protective of aquatic life uses because it is a tiered assessment. In waters designated as cold and cool water habitat, the first tier is to assess the 30-D criteria, the second tier is to assess the 7- Mi, and the third tier is an assessment of the daily minimum values against the absolute minimum criteria. In waterbodies identified as active spawning, DEQ assessed using seven-day average minimum of daily mean values (7-D) when sufficient quantity of continuous data exists. DEQ's methodology for dissolved oxygen is protective of aquatic life because all metrics have to be met for 303(d) listing purposes.

The assessment is based on the current DO criteria for spawning. These metrics are identified in OAR 340-041-0016. There would have to be a water quality standards rule update to change the spawning metric from the seven-day average minimum of daily mean (7-D) to seven day average of daily minimums (7-Mi).

NEA #13

Description: Sedimentation

Comment: DEQ's statement that for this list "[c]ategorical listings for sedimentation will be made using sampling site documentation in conjunction with other data and overwhelming evidence of impairment," is tantamount to saying nothing at all. It is not helpful. In addition, it does not make clear how this approach differs from the past approach, described here, so as to illuminate the reader.

Response: DEQ does not have a peer reviewed assessment methodology for sediment at this time. An excess sediment Category 5 listing would be based on multiple lines of evidence that excess sediment was the cause for beneficial uses not to be supported. DEQ staff are unclear how the historical sedimentation listing decisions were made in previous Integrated Report cycles, but would rely on scientific evidence and site-specific data to support a sedimentation listing in this cycle.

NEA #14

Description: 7-DADM calculation

Comment: As DEQ explains, its listing methodology for compliance with the spawning criteria results in "the 7th calendar day of the spawning period is the first day that the 7dAM is required to meet the spawning criteria." As this is obviously contrary to the biologically-based numeric criterion and where/when use maps adopted into the water quality standards for the protection of various species, it is not an acceptable method by which to measure compliance.

Response: DEQ's methodology reflects the metrics contained in its water quality standards, which is a calculation of the rolling seven-day average daily maximum (7-DADM) values using the current day and the previous six days. The "7th calendar day of the spawning period" is the first day in which all days making up the 7-DADM value are

in the spawning period. Thus, there are not enough daily maximum values in the spawning period to calculate 7-DADM before the 7th calendar day. Although numeric criteria change abruptly, natural systems do not. If spawning criteria are exceeded in the first 6 days of the spawning season, then it is likely that additional exceedances occur on the 7th day and beyond, which would result in a temperature impairment. Most temperature impairments have multiple exceedances of the criteria; therefore any additional exceedance of the criterion would have no impact on a listing.

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12. Comments from: Northwest Pulp and Paper

NP-P #1

Description: Aluminum

Comment: The aluminum multilinear regression model output is most sensitive to changes in DOC concentration (DeForest et al. 2017).1 As such, default DOC values should not be used to generate Category 5 listings (designated use is not supported or a water quality standard is not attained and a TMDL is needed). Instead, when exceedances occur using default DOC data (along with pH and hardness), the waterbody should be listed as a Category 3B (Insufficient to determine use support but some data indicate non-attainment of a criterion). Additionally, it should be explicitly stated that water quality measurements should be taken simultaneously to ensure they reflect the same hydrologic and environmental conditions. If these measurements are not collected simultaneously or within a reasonable and defined time period, then the waterbody should also be listed as Category 3B.

Response: Copper criteria generated using the Biotic Ligand Model are most sensitive to changes in dissolved organic carbon concentration. However, aluminum criteria values are most sensitive to pH values at both the high and low ends of the pH range. While recognizing that aluminum criteria values calculated using default estimates for DOC may differ from the criteria values derived from measured DOC, DEQ must be able to derive protective criteria to be used in regulatory programs when the measured DOC data are not available. Major permitted facilities, and other sources with aluminum discharges that may have the reasonable potential to exceed the aluminum standard, will be required to collect simultaneous input parameter data. DEQ's monitoring program is also collecting input parameters when collecting aluminum samples. Thus, DEQ expects to have measured input parameter data available to calculate the aluminum criteria values for the majority of the time. Similar to copper, when exceedances of the criteria based on default DOC data occur, the waterbody will be listed as Category 5: Impaired. DEQ will add additional clarifying language regarding simultaneous collection of water quality input parameters.

NP-P #2

Description: Overwhelming evidence - extreme exceedance

Comment: Table 8 describes "Extreme exceedance of criteria" and defines this as samples exceeding at 2 times (2x) the acute magnitude, and "Other lines of evidence", with examples of documented fish kill, studies or other data/info that demonstrate impairment of a specific location, and public health advisories. Both categories of overwhelming evidence factors are vague and should be more specific (e.g. how many samples must exceed two times (2x) the acute magnitude and during what time period? What sort of data/info would demonstrate impairment, and at what frequency? How much data is needed to be considered "overwhelming"). Suggested solution: We recognize that DEQ is being intentionally vague here, but greater specificity and transparency is warranted to allow for consistent and transparent analysis.

Response: In the case of limited data sets, or interpretation of narrative criteria absent assessment methodologies, the concept of "overwhelming evidence" has routinely been used for making decisions that waterbodies are impaired using other information than just the number of samples available. Intermediate listing categories, such as Category 3B, that signify uncertain status between attainment and impairment can also be used to identify waters that cannot be reliably considered either impaired or attaining given the limited data available. EPA's 2002 "Consolidated Assessment and Listing Methodology" states: "An assessment methodology should take into account the balance between desired data requirements and the practical realities affecting the availability of information and the strength of the available evidence…Generally, decisions should be based on very small sample sizes only when there is overwhelming evidence for impairment. EPA does not recommend making decisions based on small sample sizes of water column chemistry for attainment." Two times the criteria is often used because of the way acute criteria (CMCs) for toxic substances are derived. A final acute value (FAV), which is expected to be lethal to 50% of sensitive species, is divided by two to obtain the acute criterion (i.e., CMC = FAV/2) (Stephan and others, 1985). This acute criterion derivation is performed to reduce a lethal concentration to a concentration expected to kill few, if any, organisms. It follows that if a reliably measured concentration is greater than twice the acute criterion (i.e., is greater than or equal to the FAV), it is likely to be lethal to sensitive organisms used in criterion development. Therefore, the assessor may conclude the water body is likely not meeting the narrative criteria "free from toxics in toxic amounts" if more than one excursion has been documented at a magnitude of twice the acute criterion.

Any assessment conclusion based on the use of overwhelming evidence will be documented and published as part of the draft Integrated Report. Therefore, the public will have the opportunity to review and comment on any conclusion DEQ draws from such data and information.

NP-P #3

Description: Human health uses (drinking and fishing)

Comment: The process for determining waterbody attainment for toxic substances, including those water quality criteria derived to protect human health, are summarized

starting on page 72/92. Because human health water quality criteria (HHWQC) are derived using a risk-based approach, it is possible that a resulting criteria value will be below the available detection level or quantitation limit for a given substance. Such a scenario is captured by DEQ's "Cat 3D: insufficient data; not technologically feasible to assess: Insufficient data to determine use support because numeric criteria are less than quantitation limits." DEQ describes scenarios for classifying water bodies broadly as Category 3 (insufficient data) and 3B (insufficient data; potential concern). Category 3D is not specifically listed as an option (page 75 of 92), but there may be value in including this category in the case of HHWQC where it is often not technologically feasible to measure analytes that have risk-based criteria concentrations.

Response: DEQ agrees that adding this clarification to the toxic substances methodology would add value to the methodology. DEQ will provide additional language to include Category 3D in the assessment classifications identified in the methodology.

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13. Comments from: Oregon Farm Bureau, Oregon Dairy Farmers Association, Oregon Cattlemen's Association

OFB/ODFA/OCA #1

Description: Watershed Units - single conclusion

Comment: Commenter is concerned the proposed methodology still wraps all data analysis into a single conclusion for the entire watershed assessment unit, continuing the issues from the 2018/2020 Integrated Report where an impairment at one monitoring site or waterway results in an entire watershed assessment unit being listed as impaired, even when the data and/or hydrologic system do not support that conclusion. Mapping an entire watershed assessment unit as impaired could create significant liability for districts, water users, and other landowners within it. Even if the entire watershed assessment unit is hydrologically connected, it is a significant stretch to state an impairment found at one or two monitoring sites implies impairment throughout the entire HUC-12 sub-watershed. Commenter suggests breaking watershed assessment units into smaller assessment units based on hydrologically separate drainage systems.

Response: EPA reporting requirements are that DEQ must report assessment conclusions at the assessment unit level. For smaller order streams (Strahler Stream Order 4 or less), this means that assessment conclusions are reported at the watershed unit scale, or HUC-12 level which is the smallest watershed scale delineation available in Oregon. The water

quality assessment, however, will be conducted at the monitoring station level. Decisions to list waterbodies will be based on waterbody specific data and information. As a result, watershed assessment units identified as impaired indicate that one or more waterbodies within the assessment unit (HUC-12) are impaired based on the data that were assessed. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, DEQ will display the specific streams and monitoring locations within a watershed unit where data and information suggest a water quality impairment.

OFB/ODFA/OCA #2

Description: Watershed Units - single waterbody approach

Comment: We renew our request for ODEQ to move forward with a waterbody by waterbody approach to evaluating watersheds. If ODEQ does not, we strongly encourage ODEQ to break the watershed into multiple assessment units if the monitoring stations show that a stream in one portion of the watershed is impaired while a stream or streams in another part of the watershed are not impaired, and the stream that has an impairment is not hydrologically connected to the impaired stream.

Response: DEQ will display the specific streams and monitoring locations within a watershed unit where data and information suggest a water quality impairment. Watershed assessment units identified as impaired indicate that one or more waterbodies within the assessment unit (HUC-12) are impaired based on the data that were assessed. It does not mean that all of the waterbodies within the watershed are impaired. As DEQ has previously identified, breaking assessment units at the waterbody level would result in over two million assessment units which are not feasible to assess or manage in EPA's two-year reporting cycle.

OFB/ODFA/OCA #3

Description: Watershed units - scientifically defensible

Comment: Commenters continue to believe that watershed scale assessment units for stream order 4 or less streams does not represent sound agency policy or standards for scientific rigor. In order to be scientifically defensible, decisions to list waterbodies as impaired must be based on water body specific data and cannot be done on a watershed wide scale. Watersheds are composed of hundreds of individual water bodies. Within a watershed, water quality can easily differ from water body to water body, particularly when those waterways are not hydrologically connected, are under different ownership and may have experienced differing current and historic riparian management.

Response: Due to EPA reporting requirements, DEQ must report assessment conclusions at the assessment unit level. For smaller order streams (Strahler Stream Order 4 or less), this means that assessment conclusions are reported at the watershed unit scale, or HUC-12 level which is the smallest watershed scale delineation available in Oregon. The water quality assessment; however, will be conducted at the monitoring station level. Decisions

to list waterbodies will be based on waterbody specific data and information. As a result, watershed assessment units identified as impaired indicate that one or more waterbodies within the assessment unit (HUC-12) are impaired based on the data that were assessed. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, DEQ's interactive map will display assessment conclusions at both the waterbody and monitoring station level.

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14. Comments from: Oregon Farm Bureau, Oregon Forest Industries Council, Oregon Water Resources Congress

OFB/OFIC/OWRC #1

Description: Watershed Units - extrapolation

Comment: Multiple commenters commented that DEQ should not be using impairment data from other waterbodies within the HUC12 assessment unit to designate a waterbody as impaired. Decisions to list waterbodies as impaired must be based on water body specific data and cannot be done on a watershed wide scale.

Response: Impairments in watershed assessment units reflect that one or more waterbodies within a HUC-12 or sub-watershed are impaired. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, impairments in watershed units will be displayed at both the waterbody and monitoring station level.

OFB/OFIC/OWRC #2

Description: Irrigation infrastructure - should separate from natural waterways

Comment: DEQ should separate irrigation infrastructure from natural waterways in watershed assessment units because of the significant differences between irrigation ditches and natural waterbodies. DEQ should subdivide 2020 Assessment Units in order to distinguish and identify each individually.

Response: Irrigation infrastructure varies widely, including both natural and human-made channels and falls under Oregon's definition of waters of the state, which has a broad statutory definition in Oregon Statutes (ORS 468B.005) "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the

State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction. The water quality within irrigation canals (which have a connection to natural surface waters) affects water quality in downstream waterbodies and the aquatic life therein. DEQ assesses waterbodies based on the designated beneficial uses. Beneficial uses were designated on a basin scale in state rules OAR-340-041 Tables 101A - 330A.

OFB/OFIC/OWRC #3

Description: Watershed Units - single conclusion

Comment: Commenter is concerned the proposed methodology still wraps all data analysis into a single conclusion for the entire watershed assessment unit, continuing the issues from the 2018/2020 Integrated Report where an impairment at one monitoring site or waterway results in an entire watershed assessment unit being listed as impaired, even when the data and/or hydrologic system do not support that conclusion. Mapping an entire watershed assessment unit as impaired could create significant liability for districts, water users, and other landowners within it. Even if the entire watershed assessment unit is hydrologically connected, it is a significant stretch to state an impairment found at one or two monitoring sites implies impairment throughout the entire HUC-12 sub-watershed. Commenter suggests breaking watershed assessment units into smaller assessment units based on hydrologically separate drainage systems.

Response: EPA reporting requirements are that DEQ must report assessment conclusions at the assessment unit level. For smaller order streams (Strahler Stream Order 4 or less), this means that assessment conclusions are reported at the watershed unit scale, or HUC-12 level which is the smallest watershed scale delineation available in Oregon. The water quality assessment, however, will be conducted at the monitoring station level. Decisions to list waterbodies will be based on waterbody specific data and information. Consequently, watershed assessment units identified as impaired indicate that one or more waterbodies within the assessment unit (HUC-12) are impaired based on the data that were assessed. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, DEQ will display the specific streams and monitoring locations within a watershed unit where data and information suggest a water quality impairment.

OFB/OFIC/OWRC #4

Description: Splitting watershed units

Comment: We also strongly encourage ODEQ to invest the time and resources into splitting units by land use, water quality standards, and separating natural streams from human-made infrastructure.

Response: As a general matter, assessment units are intended to be fixed over time while both land use and water quality standards are subject to change over time. While DEQ understands the implication that natural streams and human-made infrastructure may have important differences as they relate to water quality, there are a number of barriers to addressing this request. First, there is a lack of a statewide GIS coverage of irrigation infrastructure; irrigation infrastructure may be human made or natural streams that have been human altered, and some infrastructure functions similarly to natural streams. Furthermore, any data analysis and results would require DEQ to maintain a separate version of the NHD, and would be prohibitive in terms of the level of resources required to produce and maintain. DEQ is continuing to make improvements to how data are displayed by adding specificity to the location of water quality data and impaired stream segments, and invites further suggestions for improvements to data display. DEQ encourages engagement in discussions regarding instances where water quality standards may need to be reviewed to reflect appropriate goals for specific waters.

OFB/OFIC/OWRC #5

Description: Irrigation infrastructure - watershed unit boundaries

Comment: At the very least we request a pathway for individuals to submit a request for changes to boundaries of specific watershed assessment units based on hydrologic differences.

Response: For the 2022 Integrated Report, DEQ will add localized information in watershed units by displaying the specific streams and monitoring locations within a watershed unit where water quality exceedances occur. This is the result of continuous improvement process based on the comments on the 2018/2020 Integrated Report. DEQ uses the High Resolution National Hydrography Dataset (NHD) to draw its assessment units. The NHD is the federal and state standard and represents the water drainage network of the United States with features such as rivers, streams, canals, lakes, ponds, coastline, dams, and stream gages. The NHD is developed and maintained by a partnership between the USGS and EPA. DEQ created watershed assessment units based on the HUC12 sub-watershed units, which represents the smallest watershed boundary unit identified in the NHD.

If the commenter believes an assessment unit should be split, DEQ requests that any suggested boundary change be brought to the attention of the DEQ's Water Quality Assessment staff following release of the draft Integrated Report. Any suggested boundary changes should be based solely on disparate water quality results and stable, fixed landscape features rather than transitory changes in land use. It is not practical to split assessment units on land uses, due to the complexity in landscape scale and land use changes over time. DEQ will evaluate the requests based on its overall objectives for assessment units when determining whether to split assessment units.

OFB/OFIC/OWRC #6

Description: TMDL Implementation

Comment: It is not clear how assessing watershed assessment units by individual monitoring stations may impact the implementation of TMDLs or other regulatory actions. With the more localized exceedance information, will remedies be more localized within a watershed assessment unit?

Response: It is unlikely TMDL development or TMDL implementation activities conducted by DEQ will be substantially different by assessing individual monitoring stations in watershed assessment units. TMDLs already consider data at individual monitoring stations as part of the process for developing TMDL allocations. The scale and scope of TMDL development is also unlikely to change. For most water quality limited parameters, TMDLs are developed at the watershed scale (HUC10) and consider potential pollutant sources watershed wide. TMDL implementation will continue to occur through the framework set up by the water quality management plan and by the TMDL rules within OAR 340-42.

OFB/OFIC/OWRC #7

Description: Dissolved oxygen delisting

Comment: We support the proposed update to include delisting criteria for continuous dissolved oxygen data. This change will allow for increased options when implementing plans to collect additional samples. However, we urge DEQ not to remove the acceptance of grab sample data for general monitoring. We request that DEQ provide a "user's guide" to collecting continuous data properly to help stakeholders adapt to this methodology change.

Response: DEQ has no immediate plans to eliminate dissolved oxygen grab sampling data for listing purposes. DEQ will continue to utilize the binomial method to assess grab sample dissolved oxygen data. DEQ currently maintains a "user's guide" for collecting continuous dissolved oxygen data and is available upon request.

OFB/OFIC/OWRC #8

Description: Freshwater fecal coliforms - TMDLs

Comment: We support DEQ's goal to gather current and more relevant data to update these historical listings. However, additional communication about how DEQ plans to deal with more complicated assessment units is needed. For example, please explain A) whether assessment units with existing Category 5 E. coli status will simply have the Category 5 fecal coliform listing removed and B) how assessment units with an approved fecal coliform TMDL but a Category 5 status for E. coli will be handled.

Response: Assessment units with Category 5 listings for both E. coli and fecal coliforms will have the Category 5 fecal coliform listing removed and the Category 5 E. coli listing will be retained. Nearly all, if not all of Oregon's freshwater bacteria Total Maximum Daily Loads were written to meet the E. coli criteria, even if the original listing was for fecal coliform. The TMDL group can confirm individual listings upon request.

OFB/OFIC/OWRC #9

Description: Category 2 minimum data requirements

Comment: We support water quality categorizations based on robust data sets. If this proposed change is pursued, we support the increase of minimum sample requirements for a listing other than Category 3. However, we request additional clarification on what constitutes a "conventional pollutant".

Response: DEQ thanks you for your support. Conventional pollutants referenced in the section of the methodology referred to by the commenter are dissolved oxygen and pH.

OFB/OFIC/OWRC #10

Description: Aluminum methodology

Comment: The current 2022 Integrated Report Methodology does not clearly explain the statistical tools that will relate total recoverable aluminum to bioavailable aluminum or the methods by which bioavailable data would be collected. Therefore, the implementation of this change without having a complete field method or bioavailable translator available to the public restricts the public review process. We are unable to properly examine the entire proposed change without this information and cannot support the addition of the aluminum criteria until the information is available.

Response: EPA promulgated aluminum criteria for Oregon which became effective on April 19, 2021, and the aluminum criteria are expressed as total recoverable concentration. DEQ is required to assess water quality based on the currently effective aluminum standard for the Integrated Report. The EPA's aluminum criteria for Oregon are based on EPA's 2018 final Clean Water Act section 304(a) national recommended freshwater aquatic life criteria for aluminum. The criteria magnitude for the aluminum standard is determined using EPA's Aluminum Criteria Calculator. The calculator derives instantaneous aluminum criteria values, which change based on water chemistry, including pH, dissolved organic carbon, and hardness levels. These parameters affect aluminum toxicity because they change aluminum bioavailability (i.e. bioavailability describes whether a chemical form is accessible to an organism). Input parameters (pH, dissolved organic carbon, and hardness) are used in the Aluminum Criteria Calculator to determine the instantaneous criteria values for a given set of water chemistry conditions. Field collection for bioavailable aluminum fraction remains the same as data collection for total recoverable aluminum. The difference is observed in the laboratory method

where total recoverable extraction acidifies the sample to a pH of 2 while the bioavailable method acidifies the sample to a pH of 4.

The promulgated aluminum criteria are expressed as total recoverable aluminum; however, surface waters typically contain naturally occurring suspended solids that contain aluminum in the forms of particulate oxides or clay silicates. Analytical determinations using strong acid digestion result in most or all of the inert nontoxic forms of aluminum present in solid particles being dissolved and the metal being reported as "total or total recoverable" aluminum. In surface waters with elevated suspended solids, the aluminum contributed from the suspended solids may overestimate toxicity under certain conditions when measured using typical strong digestion techniques. Therefore, it still remains unclear if, or how much, of these total aluminum concentrations are bioavailable and contribute to toxicity.

DEQ is not proposing to use a bioavailable translator; it will only use measured bioavailable aluminum for the 2022 Integrated Report assessment. There are currently no statistical tools or other methods to convert field measurements made of "total or total recoverable" aluminum to an equivalent bioavailable concentration. DEQ is proposing to use direct field measurements of bioavailable aluminum for purposes of assessment, if these data are available. An implementation and application procedures document for bioavailable aluminum will be made available to the public.

OFB/OFIC/OWRC #11

Description: 2 Step Process

Comment: It is impossible to fully understand how the changes to the Methodology can impact the actual listings in the Integrated Report until we see the revised Methodology applied to the data, and see the Integrated Report. In the prior update, there were a number of policy decisions made between the release of the Methodology and the publication of the Integrated Report for public review. When we attempted to comment on these policy decisions – which were not obvious in the prior Methodology, we were told that our comments concerned the Methodology and would not be accepted for public comment. Put plainly, that approach was arbitrary, unfair, and did not support a robust public process. While we appreciate the release of the Methodology for review and comment prior to release of the draft Integrated Report, ODEQ should continue to accept comments on the Methodology as part of the Integrated Report comment period, particularly as it relates to issues that concern the application of the Methodology, such as the delineation of the assessment units and whether or not they are accurately constituted.

Response: The 2-step process is established in statute (ORS 468B.039) and ensures that methodologies are determined in a transparent, objective, and open forum based on sound science prior to conducting an assessment. In addition to the statutory requirements for step 1 of the process, which include soliciting scientific and public comment on its methodologies for assessing water quality standards and includes an opportunity for comment before the Environmental Quality Commission, DEQ has employed many other strategies to illustrate, inform and solicit feedback on its methodologies. These strategies include interactive webinars, advisory workgroups (for the 2020 Integrated Report

Improvement process), white papers, illustrative examples with sample set data, maps, and DEQ has made staff available for one-on-one discussions. Comments on the assessment methodologies received outside of the comment period are considered in the next Integrated Report cycle. DEQ welcomes ongoing feedback on which of these strategies are most effective at achieving our common objective of clearly communicating processes, proposed revisions to methodologies and illustrating how they relate to water quality data and assessment conclusions.

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15. Comments from: Oregon Water Resources Congress

OWRC #1

Description: Irrigation infrastructure - watershed assessment units

Comment: We request DEQ revise the methodology to ensure that irrigation district infrastructure (canals and other constructed water delivery systems) is not included in the assessment process or erroneously lumped into the watershed assessment units.

Response: Irrigation infrastructure varies widely, including both natural and human-made channels and falls under Oregon's definition of waters of the state, which has a broad statutory definition in Oregon Statutes (ORS 468B.005) "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction. The water quality within irrigation canals (which have a connection to natural surface waters) affects water quality in downstream waterbodies and the aquatic life therein. DEQ assesses waterbodies based on designated beneficial uses. Beneficial uses were designated on a basin scale in state rules OAR-340-041 Tables 101A-330A.

OWRC #2

Description: Irrigation infrastructure - waters of the state

Comment: Similarly, water delivery infrastructure should not be included on a map of impaired waterways. District infrastructure and other constructed waterways are not waters of the state and do not include beneficial uses that can lead to an impairment determination.

Response: Irrigation infrastructure varies widely, including both natural and human-made channels and falls under Oregon's definition of waters of the state, which has a broad statutory definition in Oregon Statutes (ORS 468B.005) "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction. The water quality within irrigation canals that have a connection to natural surface waters, affects water quality in downstream waterbodies and the aquatic life therein. DEQ assesses waterbodies based on designated beneficial uses. Beneficial uses were designated at the basin scale in state rules OAR-340-041 Tables 101A-330A. The applicable uses may warrant further review based on new information, but this is evaluated through a separate Water Quality Standards update, which is outside the scope of the Integrated Report process. DEQ encourages the commenter to submit comments and questions related to designated uses to the Water Quality Standards program.

OWRC #3

Description: Watershed Units - single conclusion

Comment: Commenter is concerned the proposed methodology still wraps all data analysis into a single conclusion for the entire watershed assessment unit, continuing the issues from the 2018/2020 Integrated Report where an impairment at one monitoring site or waterway results in an entire watershed assessment unit being listed as impaired, even when the data and/or hydrologic system do not support that conclusion. Mapping an entire watershed assessment unit as impaired could create significant liability for districts, water users, and other landowners within it. Even if the entire watershed assessment unit is hydrologically connected, it is a significant stretch to state an impairment found at one or two monitoring sites implies impairment throughout the entire HUC-12 sub-watershed. Commenter suggests breaking watershed assessment units into smaller assessment units based on hydrologically separate drainage systems.

Response: EPA reporting requirements are that DEQ must report assessment conclusions at the assessment unit level. For smaller order streams (Strahler Stream Order 4 or less), this means that assessment conclusions are reported at the watershed unit scale, or HUC-12 level which is the smallest watershed scale delineation available in Oregon. The water quality assessment; however, will be conducted at the monitoring station level. Decisions to list waterbodies will be based on waterbody specific data and information. Consequently, watershed assessment units identified as impaired indicate that one or more waterbodies within the assessment unit (HUC-12) are impaired based on the data that were assessed. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, DEQ will display the specific streams and monitoring locations within a watershed unit where data and information suggest a water quality impairment.

OWRC #4

Description: Watershed Unit - Data

Comment: Many of the waterways listed under the watershed assessment unit methodology lack sufficient water quality data collected on that specific waterway to warrant being included as impaired or are based on outdated data. Listing waterways based on data collected from hydrologically unconnected sites just because the drainages happen to be within the same HUC-12 watershed is not sound use of data and does not provide a scientifically or legally defensible conclusion of impairment for the unconnected waterway.

Response: For the 2022 Integrated Report, DEQ will add additional detail to watershed units identified as impaired by displaying the specific waterbodies and monitoring locations within the assessment unit where water quality exceedances occur. Assessment of watershed units by monitoring location in the 2022 Integrated Report, and the associated map layer, will identify impaired waterbodies within the watershed assessment units. This is the result of a continuous improvement process based on comments DEQ received on its 2018/2020 Integrated Report. DEQ would encourage the commenter to submit any recent data collected on waterways that they believe should not be impaired. The assessment that was performed for the 2018/2020 Integrated Report reflected the most current 10-year period of record, and many of the historic 303(d) listings were either updated or removed based on new data.

OWRC #5

Description: Watershed Units - mapping layer

Comment: Commenter requests DEQ detail and include in the 2022 Integrated Report methodology the Department's proposed process of determining and mapping which waterways in a watershed assessment unit are impaired, and which are not.

Response: DEQ's interactive mapping tool is a visual display of Integrated Report conclusions, not a methodology for assessment; therefore, DEQ will not be including instructions in its 2022 Assessment Methodology. Impaired streams in watershed assessment units will be displayed at both the waterbody and monitoring station level. The new map layer will be made available with DEQ's response to comments, and a set of instructions for interpreting impairments within watershed units will also be posted on its website.

OWRC #6

Description: Watershed Units - delisting

Comment: The commenter appreciates the proposed methodology includes delisting water bodies that are not impaired but have concerns about the lack of updated data

related to historical listings and more complex WAUs. Additional information is needed about the "period of record" for delisting and how the Department plans to address these more complicated situations and ensure processes are based on current and scientifically sound data.

Response: For the 2022 Integrated Report, DEQ will add local information in watershed units by displaying the specific streams and monitoring locations within a watershed unit where water quality impairments occur. DEQ will be posting a set of instructions for interpreting impairments within watershed units on its website. DEQ encourages interested parties to collect and submit new data to reevaluate "historical listings" in future listing cycles.

The delisting methodology for a waterbody is contained in Section 3.3.5 of the Assessment Methodology beginning on page 18. See https://www.oregon.gov/deq/wq/Documents/ir2022AssessMethod2022DF.pdf. The period of record will be defined for each assessment cycle and generally reflects the most recent five years of data. The period of record needed to delist a waterbody would be consistent with the time period used in the assessment.

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16. Comments from: Portland Water Bureau

PWB #1

Description: Bull Run Reservoir #2

Comment: The Portland Water Bureau requests that DEQ allow a pathway for the Bull Run Reservoir 2 ("Reservoir 2") to be held only to drinking water regulations, using 'water only' criterion, for the beneficial use of drinking water. The Bull Run Watershed is closed to public access, including fishing and any other forms of recreation, under federal administrative order, Portland City Charter and Portland City Code. In addition, fish in Reservoir 2 are completely isolated from the stream below and above Reservoir 2 due to dams that obstruct fish passage. Thus, no human consumption of fish from Reservoir 2 is possible. DEQ allows for application of the 'organism only' criterion for when fishing is a designated use but drinking water is not, but does not provide for an analogous pathway when drinking water is designated but fishing is not.

Response: DEQ conducts its assessment based on the beneficial uses contained in Oregon Administrative Riles Chapter 340, Division 41. This process does not result in changes to the water quality standards; that process occurs through separate revisions to the water quality standards regulation. To change the uses that are designated, the Portland Water Bureau would have to work with DEQ's water quality Standards program to change the designated use through a water quality standard change and rulemaking process.

17. Comments from: Santiam Water Control District

SWCD #1

Description: Watershed Units - extrapolation

Comment: Multiple commenters commented that DEQ should not be using impairment data from other waterbodies within the HUC12 assessment unit to designate a waterbody as impaired. Decisions to list waterbodies as impaired must be based on water body specific data and cannot be done on a watershed wide scale.

Response: Impairments in watershed assessment units reflect that one or more waterbodies within a HUC-12 or sub-watershed are impaired. It does not mean that all of the waterbodies within the watershed are impaired. For the 2022 Integrated Report, impairments in watershed units will be displayed at both the waterbody and monitoring station level.

SWCD #2

Description: Irrigation infrastructure - should separate from natural waterways

Comment: DEQ should separate irrigation infrastructure from natural waterways in watershed assessment units because of the significant differences between irrigation ditches and natural waterbodies. DEQ should subdivide 2020 Assessment Units in order to distinguish and identify each individually.

Response: Irrigation infrastructure varies widely, including both natural and human-made channels and falls under Oregon's definition of waters of the state, which has a broad statutory definition in Oregon Statutes (ORS 468B.005) "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction. The water quality within irrigation canals (which have a connection to natural surface waters) affects water quality in downstream waterbodies and the aquatic life therein. DEQ assesses waterbodies based on the designated beneficial uses. Beneficial uses were designated on a basin scale in state rules OAR-340-041 Tables 101A-330A.

SWCD #3

Description: Monitoring data

Comment: Monitoring results are based on available data since 2002, not data strategically sampled at monitoring locations to confirm whether assessment unit waterbodies share impairment.

Response: DEQ is required to assess all readily available data for the Integrated Report based on EPA regulations. For the 2022 Integrated Report, DEQ will be assessing data for the period of record January 1, 2016, through December 31, 2020. Data submitted to DEQ for its assessment may be part of a routine monitoring program or collected for a variety of purposes (i.e. cleanup, baseline monitoring, restoration effectiveness, etc.) and will be reviewed for context in the Integrated Report assessment. DEQ will validate that data submitted through the data call meet data quality objectives and of high quality to be used for water body assessment.

SWCD #4

Description: Watershed units - homogeneous water quality

Comment: DEQ failed to create homogeneous assessment units as described in its methodology.

Response: Organizing assessment units by watershed is a useful method for analyzing and tracking impairments of water quality based on existing watershed delineations (HUC-12). According to EPA, it is unnecessary and likely undesirable to delineate every small tributary. States need only to create as many assessment units as necessary to accurately map and display assessment information. Due to the extensive number of stream reaches in Oregon (> 2 million), Oregon grouped smaller order streams (Strahler Stream Order 4 or less) into watershed units.

DEQ further evaluated the assessment units during its 2022, assessment methodology development. Rather than continue to split watershed units into repeatedly smaller pieces and perpetuate changing segmentation, DEQ created an additional map layer that identifies which waterbodies within a watershed assessment unit have been identified as impaired. In addition, DEQ's proposal to identify impairments at the monitoring station level will provide additional context about how localized an impairment may be.

SWCD #5

Description: Beneficial uses

Comment: DEQ has not confirmed that beneficial uses triggering impairment of an entire 2020 Assessment Unit are actually beneficial uses within the entire 2020 Assessment Unit.

Response: Beneficial uses are written as rule in Oregon Administrative Riles Chapter 340, Division 41. The designation of beneficial uses is outside the scope of the Integrated Report. If the commenter believes the beneficial uses are inaccurately applied, the commenter can contact DEQ's water quality standards program to request a review these designations.

SWCD #6

Description: Regulatory actions and requirements

Comment: There are negative impacts from the assessment unit methodology on regulated entities.

Response: A watershed unit identified as impaired in the Integrated Report indicate that a waterbody or waterbodies within the watershed unit are impaired based on data that were assessed, not that the entire watershed is impaired. DEQ's new GIS map layer will identify which waterbodies within a watershed assessment unit have been identified as impaired and DEQ will provide guidance for utilizing this map tool. The assessment methodology does not, unto itself, specify or determine regulatory actions or consequences. When an assessment unit is identified as impaired, evaluation of the existing data occurs prior to any regulatory action.

SWCD #7

Description: NHD - SWCD

Comment: The NHD information contains numerous errors concerning Santiam Water Control District Facilities, including incorrect flow information.

Response: The National Hydrography Dataset is the federal and state standard and represents the water drainage network of the United States with features such as rivers, streams, canals, lakes, ponds, coastline, dams, and stream gages. The NHD is developed and maintained by a partnership between the USGS and EPA, not DEQ. The dataset intended to "develop nationally-consistent geospatial datasets for the Nation" and provide agencies and organizations a common baseline for mapping aquatic resources. Unfortunately, the NHD does contain errors. Using the current system, a user can report suspected errors to the NHD Markup App at https://edits.nationalmap.gov/markup-app. This tool allows users to suggest edits, or "markups," to the NHD, Watershed Boundary Dataset (WBD), and NHDPlus (High Resolution). Anyone can suggest corrections and improvements to the data. Suggested edits are reviewed by the USGS and the NHD state stewards before they are approved for incorporation into the NHD or WBD datasets. DEQ will be using an updated version of the NHD for the 2022 Integrated Report.

SWCD #8

Description: Methodology impacts

Comment: The 2022 Methodology may cause delay of SWCD's existing water conservation plans. The District is planning to pipe certain District Facilities through a public process involving relevant state agencies, including DEQ. Piping projects facilitate water conservation and efficiency and improve water quality. However, the improper listing of SWCD Facilities as "impaired" may cause delays in permitting and funding. The listing of the District Facilities infers that ditches and canals are part of a natural stream system with fish and aquatic use, rather than a screened and completely artificial system which may impact a natural stream. For example, future piping of SWCD's Coates Lateral is categorized as a "Drought Mitigation Project" in the SWCD DCP. The Drought Mitigation Project will support water conservation efforts. In the Draft Report, the same waterbody (Coates Reach Codes: 17090007006442 and 17090007006476) is proposed for listing due to Temperature- Year Round, Dissolved Oxygen- Spawning, Dissolved Oxygen- Year Round, E. coli. SWCD risks challenges to a Coates Lateral piping project if DEQ does not remove the "impairment" designation for fish and aquatic life.

Response: For the 2022 Integrated Report, DEQ will add local assessment information in watershed units by displaying the specific streams and monitoring locations within a watershed unit where water quality impairment occurs. The assessment unit being referred to is OR_WS_170900070204_02_104412, or the HUC12 Name: Lower Mill Creek watershed unit. Impairments have been identified on Pringle Creek for dissolved oxygen (year-round and spawning) and temperature (year-round), and an E. coli impairment was identified on the Perrin Lateral. Both waterbodies are contained within the Lower Mill Creek watershed assessment unit.

In the preparation of the Integrated Report, DEQ assesses data against current applicable water quality standards and designated uses. If the commenter believes that the designated uses are improperly designated or believes that an interpretation of the outcomes of the Integrated Report are resulting in barriers to positive environmental outcomes, such as water conservation efforts, please contact us so that we may be of assistance. For questions about Standards, please contact debra.sturdevant@deq.state.or.us. For questions about the Integrated Report, please contact becky.anthony@deq.state.or.us.

Please refer to the response to comment on Use Attainability Analyses below.

SWCD #9

Description: Use Attainability Analyses - SWCD facilities

Comment: DEQ should conduct a Use Attainability Analysis/Assessment (UAAs) of SWCD facilities.

Response: DEQ has developed an Internal Management Directive for conducting a Use Attainability Analysis. To initiate a UAA process, the applicant should send a letter of request to the regional water quality manager and the manager of the water quality

standards program. The applicant must justify a UAA through one or more of six factors: (1) Naturally occurring pollutant concentrations prevent attainment of the use; (2) natural, ephemeral intermittent or low flow conditions or water levels prevent the attainment of the use…(3) human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; (4) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use…(5) physical conditions related to the natural features of the waterbody….preclude attainment of the use; or (6) controls more stringent than those required by sections 301(b) and 306 of the CWA would result in substantial and widespread economic and social impact. In determining whether to pursue a change to the designated use, DEQ may consider if the process will lead to an overall environmental improvement. Any UAA is also subject to EPA approval, and any proposed changes require a public hearing and comment period. DEQ would prioritize any UAA process during its water quality standards triennial review process.

SWCD #10

Description: NHD correction process

Comment: DEQ should create a system for correcting and updating DEQ's NHD data.

Response: The NHD is developed and maintained by a partnership between the USGS and EPA, not DEQ. The dataset intended to "develop nationally-consistent geospatial datasets for the Nation" and provides agencies and organizations a common baseline for mapping aquatic resources. Unfortunately, the NHD does contain errors. Using the current system, a user can report suspected errors to the NHD Markup App at https://edits.nationalmap.gov/markup-app. This tool allows users to suggest edits, or "markups," to the NHD, Watershed Boundary Dataset (WBD), and NHDPlus HR. Anyone can suggest corrections and improvements to the data. Suggested edits are reviewed by the USGS and the NHD state stewards before they are approved for incorporation into the NHD or WBD datasets. DEQ will be using an updated version of the NHD for the 2022 Integrated Report.
