

March 31, 2016

Patrick Lizon, Water Quality Program  
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Dear Mr. Lizon,

The Interagency Team (Team) appreciates the opportunity to provide input on *Water Quality Policy (Policy) 1-11*<sup>1</sup>. The *Policy* describes how waterbody segments are assessed to determine attainment with the state's *Water Quality*<sup>2</sup> and *Sediment Management Standards*<sup>3</sup>. The *Water Quality Data Act*<sup>4</sup> requires the *Policy* to provide specifications defining data credibility for inclusion in the water quality assessment (WQA) and establishment of Total Maximum Daily Loads (TMDLs). The WQA results in assigning waterbody segments to categories of impairment to satisfy sections 303(d) and 305(b) of the Clean Water Act (CWA) and to assist in the prioritization of TMDLs. Programmatic actions in TMDLs have been included in stormwater permits, requiring the regulated community to comply.

As a result, it is critical the *Policy* be credible, transparent, technically correct, effective, and consistent with controlling laws. This will provide the public and regulated community with verifiable and reproducible WQA decisions that improve confidence in CWA implementation.

While we understand Ecology is offering a scoping level process to identify areas of Chapter 1 for updates, the Team feels strongly that a comprehensive review and update of both Chapters 1 and 2 is necessary due to the interrelated nature of its content. Therefore, we recommend evaluating the *Policy* in its entirety and request Ecology take the time necessary to do so. The Team welcomes opportunities to work in partnership with Ecology on such an exercise and provide track-changes level feedback to support such an endeavor.

Attachments A and B contain a selection of examples for areas of improvement.

Regards,

The Interagency Team: City of Bellevue, Clark County, King County, Kitsap County, Pierce County, Snohomish County, Thurston County, and the Washington State Department of Transportation

Cc:  
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<sup>1</sup> Washington State Department of Ecology. Water Quality Program Policy 1-11, Chapters 1 and 2. July 2012.

<sup>2</sup> Water Quality Standards for Surface Waters of the State of Washington. Chapter 173-201A WAC. Amended May 9, 2011. Revised January 2012. Publication No. 06-10-091. Water Quality Program. Washington State Department of Ecology. Olympia WA.

<sup>3</sup> Washington State Sediment Management Standards. Chapter 173-204 WAC. Revised February 2013. Publication No. 13-09-055. Toxics Cleanup Program. Washington State Department of Ecology. Olympia. WA.

<sup>4</sup> Washington State Legislature. Water Pollution Control. Water Quality Data Act Policy. RCW 90.48.570 -590. 2004.

## **Attachment A – General Comments on Water Quality Policy 1-11 Chapters 1 & 2**

Revise the terminology, improve technical accuracy and address discrepancy through-out the *Policy*. General issues, examples, reference to sections of the policy and recommendations are below with supporting detail in Attachment B.

### **Issue 1. Lack of specific criteria to determine data credibility**

**Example:** Section 4, Public Participation and Submitting Information.

Ecology's Toxic Cleanup Program developed the *Sediment Cleanup User's Manual II*<sup>5</sup>, which includes requirements for data quality under state *Sediment Management Standards*. Specific water quality data requirements are omitted from the *Policy*. In order to meet the Legislature's intent in the *Water Quality Data Act*, requirements for data quality must be established.

**Recommendation:** Develop methodology, standardized criteria, and technical procedures for conducting water (fresh and marine) investigations under the *Standards*. Once complete: 1) Add reference to this information in the *Policy* and make available on Ecology's external website, and 2) Require Ecology staff to assemble and evaluate all readily available data against this criteria for use in the WQA process and on all TMDL development projects. Further, the Team suggests Ecology develop additional rules, policies, and guidance to fully implement the *Water Quality Data Act*.

### **Issue 2. Widespread use and misuse of terminology critical for consistent application of the *Policy***

**Examples of terminology lacking definition:** representative, criteria/criterion, sufficient data, critical condition period, natural condition, significant human impact, usability determination, verification, validation, non-detect values, QA procedures, QA/QC, best professional judgment, etc.

#### **Examples of misuse of terminology:**

- Section 6, Assessment Methodology: The terms "replicate sample" and "field replicate sample" need to be defined in conformance with Ecology's Quality Management Plan<sup>5</sup> and used consistently.
- Section 6, Assessment Methodology, first paragraph: "Generally numeric and narrative data will be used for assessment purposes depending on the parameter. Modeled data that meet QA procedures will be allowed when the status of water quality is being determined in relation to natural conditions."

In the context of the above excerpt, "modeled data" is a contradiction in terms. Models generate outputs rather than actual measured, sampled, or observed data. As such, we believe modeled data is an inappropriate use of information for listing purposes.

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<sup>5</sup> Washington State Department of Ecology. Sediment Cleanup User's Manual II. Publication No. 12-09-057. March 2015.

**Recommendation:** Evaluate the use of terminology throughout the *Policy* to eliminate vague and incorrect descriptions. Ensure terminology aligns with legal and scientifically accepted definitions, in conformance with *Ecology's Quality Management Plan*<sup>6</sup> requirements and associated glossary. Include definitions in the *Policy*.

**Issue 3. Widespread use of best professional judgment or determinations on a case-by-case basis reduces consistency and predictability for stakeholders.**

**Example:** Section 7, Natural Conditions. “The designation of a waterbody as impaired or as exceeding a water quality criterion for these two parameters (DO and pH) due to natural conditions requires a systematic review of available data and the application of best professional judgment of Ecology staff.”

**Recommendation:** Institute use of standardized processes, improve consistency in decision-making and repeatability of listing decisions by reducing reliance on subjectivity.

**Issue 4. Use of conflicting statements**

**Example:** Section 7, Other Assessment Consideration, Natural Conditions, second paragraph. “A determination regarding natural conditions will require information and data to validate the condition, with no presumption either way.” This section contains several references to presumptions that contradict this statement, such as “Pristine wilderness areas or other areas with no significant human impact will be assumed to represent natural conditions.”

**Recommendation:** Review and address conflicting statements in Chapters 1 and 2.

**Issue 5. Bias toward Category 5 listings**

**Example:** Section 5, Categories; Section 6, Assessment Methodology; Section 7, Other Assessment Considerations; and Section 8, Specific Submittal and Basis for Assessment Decisions. Information necessary to qualify a waterbody for Category 5 listing (for many if not all pollutants) are dramatically inequitable to information necessary for other categories. This creates a bias towards impaired listings and in the absence of a de-listing process, results in an ever expanding Category 5 list.

**Recommendation:** Develop uniform, scientifically-defensible, and objective listing processes that evaluates information equitability within and amongst categories.

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<sup>6</sup> Washington State Department of Ecology. Quality Management Plan. Publication No. 15-030303. December 2015 – Version 4.

## **Issue 6. The *Policy* allows use of laboratories lacking accreditation and non-standardized methods**

**Example:** Section 4, Public Participation and Submitting Information.

“Use of laboratories not accredited by Ecology must be approved by Ecology prior to the start of monitoring. The monitoring entity must seek and obtain a waiver to the Executive Policy 1-22 requirement. A list of laboratories and the methods for which they are accredited can be found at [www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html](http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html). Executive Policy 1-22 does not apply to data obtained in the field or to benthic analyses.”

For states with approved NPDES programs, sample test procedures must conform to 40 CFR 136. Allowing use of non-accredited laboratories and alternative methods outside of rigor and performance criteria established in 40 CFR 136 creates potential inconsistency in WQA decision-making if the approval process for using alternative test methods does not meet or exceed applicable requirements of 40 CFR 136.4 through 136.6.

**Recommendation:** Require and verify adequate documentation exists for the use of data generated by methods other than those listed in 40 CFR 136. This is necessary so data users can determine that the method was formally approved for use by Ecology prior to sampling and the lab was accredited by Ecology to perform that method for a given parameter during the time of analysis.

## **Issue 7. Lack of standard methodology describing how non-detect information should be used**

**Example:** Section 6, Assessment Methodology, Use of Non-Detect Samples.

“In these situations, a non-detect sample may, or may not show compliance with water quality standards. For calculating a geometric mean using non-detect samples, where zero cannot be used, a value should be chosen so as not to bias the geometric mean high or low.”

The *Policy* does not provide specific details, or reference to standard procedures for the use of non-detect data. Omitting reference to, or inclusion of, standard procedures for use of non-detect data results in inconsistent evaluation of data and decision-making during the WQA.

**Recommendation:** Provide reference to, or include, standard procedures applied to non-detect data such that Ecology staff are consistently evaluating data, and data submittals contain comparable information.

**Issue 8. All information used to prepare the list must be readily available to the public**

**Example:** Section 1, Introduction and Background, last paragraph.

“The draft results of all five water quality assessment categories will be made available for public review and submitted to EPA...” Without (1) a transparent and complete description of listing methodology, (2) a description and access to all data used to conduct the WQA, and (3) a rationale for any decision, stakeholders are unable to verify and reproduce the draft list.

**Recommendation:** Make available the complete dataset (e.g., numeric and narrative information from sources other than EIM) and methodologies used to prepare the list. Additionally, identify all instances where best professional judgment is applied or evaluations are made on a case-by-case basis, the rationale for such determinations, and the person making the decision. This information is necessary to ensure the list is reproducible.

**Issue 9. The *Policy* describes listing processes, but fails to establish parameter-specific delisting procedures.**

**Example:** Section 5. Categories; Section 6, Assessment Methodology; Section 7, Other Assessment Considerations; and Section 8, Specific Submittal and Basis for Assessment Decisions. The lack of parameter-specific de-listing procedures promotes inconsistent decision-making and discourages programs and monitoring supportive of de-listing.

**Recommendation:** Develop transparent, predictable, and credible parameter-specific de-listing methods that are protective of designated uses and consistent with *Standards*. Efforts could initially focus on those parameters with the greatest stream miles/acres of impaired waters (temperature, bacteria, dissolved oxygen, pH).

*Note: California established policy 2004-0063 to define the listing and de-listing policy. The policy contains explicit methodology and transparent statistical methods to support de-listing decisions.*

## **Attachment B - Water Quality Policy 1-11 Chapter 1 – Areas for Improvement**

The following feedbacks are organized according to Chapter 1 of the *Policy*, with examples referencing applicable sections of policy.

### **Purpose and Application Sections**

**Issue 1. The *Water Quality Data Act* requires Ecology to assemble and evaluate all existing and readily available water quality-related data and information to ensure that the data meets the state's requirements for data quality prior to use in the WQA. However, the *Policy* doesn't clearly specify Ecology's requirements and methodology for preparing the list.**

**Example:** "This *Policy* describes how waterbody segments will generally be assessed to determine attainment with *Standards*. This *Policy* also provides specification for data submittal and data quality necessary for inclusion in the assessment. This *Policy*, in combination with the guidance documents referenced herein, constitute the *Listing Methodology*. This *Policy* applies to Department of Ecology staff when conducting assessment. It is also intended as guidance for all parties submitting data for the assessment process or developing data collection programs for use in future assessments.

**Recommendation:** Modify the *Policy* to clarify that Ecology is required to use this *Policy* to assemble and evaluate all data and information used in the WQA. We recommend only referencing current Agency documents required in the evaluation process.

### **Section 2. Waterbody Segments and GIS Layers**

**Issue 1. Ecology maintains a valuable Geographical Information Systems (GIS) waterbody layer containing the *Standards*, but it lacks consistency with *Table 602* in *Standards* and is not promoted as a definitive tool for determining where *Standards* apply.**

**Example:** Section 2. The *Standards* differ by waterbody type and location. The GIS *Standards* layer is the best tool for deciphering spatial application of *Standards*. As such, stakeholders rely upon this to design monitoring programs, analyze data, and determine regulatory compliance. Where discrepancies with *Table 602* in 173-201A exist, local programs suffer.

**Recommendation:** Compare *Table 602* in *Standards* with the GIS layer for consistency. Improve consistency and approve the GIS layer as a tool for stakeholder use in regulatory decision-making.

## **Section 4. Public Participation and Submitting Information**

### **Issue 1. The allowed use of data greater than 10 years of age is inconsistent with the *Water Quality Data Act*, *EPA guidance*<sup>7</sup> for Assessments, and the *Policy* itself.**

**Example:** Sections 4, 5, 6, and 8. The *Policy* indicates that data older than 10 years of age will not be used for current assessments, so we question how the allowed use of data greater than 10 years of age to carry listings forward is deemed consistent with the *Policy* itself or *Water Quality Data Act* where Quality Assurance documentation is lacking. Further, counter to *EPA guidance*, we find the *Policy* lacks a description of the decision logic used to determine the temporal extent the data represents.

**Recommendation:** Examine *Policy* conformance with the *Water Quality Data Act*, *EPA guidance*, and itself. Reconsider the appropriateness of using of "old" data, and describe the decision logic used to determine the temporal extent representative of current conditions. Review listings based upon data greater than 10 years of age used to produce the listing. During each assessment, place listings supported by "old" and/or non-representative data into a new category for determining conformance to *Policy* conditions and consideration for new study.

### **Issue 2. Slow process for assessing data**

**Example:** Sections 1, 4, 5, 6, 7, and 8. Listing and de-listing processes lag so far behind current conditions that private and public entities either relying upon it for prioritization or planning of work, or using it to determine levels of infrastructure and compliance related investment are basing their decisions on potentially false and non-current conditions.

**Recommendation:** Consider a process that is sped up to more accurately reflect current conditions. Consider more frequent assessments for parameters that may change more frequently, such as bacteria, and less frequent for parameters that are slower to change, such as sediment.

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<sup>7</sup> EPA. (2005, July). *EPA Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act*.

## Section 5. Categories

**Issue 1. Current categories are not suited for placement of listings based upon data greater than 10 years of age. See section 4, issue #1 for support of category expansion.**

**Example:** See Section 4, issue #1.

**Recommendation:** Add a new category for old and/or non-representative data. Data in this category would be reviewed for conformance to the *Policy* and to determine if new study is necessary.

**Issue 2. The use of Category 4b is ambiguous and roles for approval between Ecology and EPA are not clear.**

**Example:** Sections 5 and 8. Stakeholders are unsure of and confused by opportunities to utilize Category 4b to promote proactive clean-ups.

**Recommendation:** Clarify the role of the EPA in approval of Category 4b submissions and demystify Category 4b processes so that local organizations are encouraged to commit to clean-up projects as a way to avoid TMDLs.

## Section 6. Assessment Methodology

**Issue 1. Assessment methods for temperature, dissolved oxygen, bacteria, and pH rely upon a straight percentage of samples not to exceed the criteria, which can result in listing a waterbody as impaired when there a low chance and not listing as impaired when there is a high chance. Listing decisions based upon rudimentary statistical methods cause unnecessary errors in decision making, resulting in TMDLs and regulatory burden.**

**Example:** Section 8. A waterbody can be placed in Category 5 listings for bacteria when one sample over a minimum of 5 within a season exceeds the criteria. Using probability analysis, this corresponds to only a 60 percent chance of true impairment.

**Example:** Section 8. A waterbody can be placed in Category 5 for dissolved oxygen using single sample data when a minimum of three excursions exist from all data considered. The *Policy* allows and accepts data up to 10 years of age for assessments. Assuming monthly sampling, it's possible to place a waterbody in Category 5 when 3 excursions exist over 120 sample events. In this case, using there is less than a one percent chance of true impairment.

**Recommendation:** Use advanced statistics/probability of impairment for the assessment to generate high confidence in listing and de-listing decisions, prevent segments from toggling on and off the list, and focus sparse public resources where they are needed most.

**Issue 2. The rationale for the application of narrative criteria and its relationship to anti-degradation is not clear, contributing to ambiguous and inconsistent listing decisions.**

**Example:** Section 8. Category 5 bioassessment listings occur through the application of the narrative criteria and anti-degradation, without Ecology having been provided or producing documentation of environmental alteration related to deleterious chemical or physical alterations. .

**Recommendation:** Clearly describe methods for application of the narrative criteria and its relationship to the anti-degradation policy. Describe what constitutes documentation of environmental alterations related to deleterious chemical or physical alterations and include methods for the information's use.

### **Section 7. Other Assessment Considerations**

**Issue 1. Determinations of natural conditions lack transparency and predictability which results in inconsistent decision-making.**

**Example:** Sections 4, 6, 7, and 8. The *Policy* does not define "significant human impact", identify the information used to determine if natural conditions are causing impairment, or describe how significant human impact is determined through a systematic review of available data.

**Recommendation:** Define what constitutes "significant human impact," identify the information used to determine whether natural conditions are the cause of impairment, and describe the methods used to arrive at a decision.

**Issue 2. Assessments within a TMDL boundary lack completeness, predictability, transparency and consistency with *Standards* and *Policy*.**

**Example:** Sections 5, 7, and 8. As a result of the issues, recent efforts by Ecology and stakeholders to assess waterbody segments for compliance with bacteria *Standards* within TMDL boundaries have been developed in a manner inconsistent with *Policy*.

**Example:** Sections 5, 7, and 8. The *Policy* could be construed to mean that the segment cannot contain detectable concentrations of the pollutant(s) of concern, which is unreasonable. Moreover, we do not consider it appropriate to deter any delisting until 100% of the water body segments in the TMDL meet WQS. Delisting provides evidence of water quality improvement success that stakeholders need to maintain public support for continued funding of water quality programs.

**Recommendation:** We urge a revision of the *Policy* to develop credible, predictable, and transparent, parameter-specific listing and de-listing methods using advanced statistics that are consistent with *Standards* for waters within TMDL boundaries. This includes gaining clarity that waterbody segments are de-listed as soon as they meet *Standards*, regardless of whether complete TMDL implementation has occurred.

## Section 8. Specific Submittal and Basis for Assessment Decisions

**Issue 1. Climactic periods, critical conditions and/or seasons are not adequately defined and terminology is not consistent within the *Policy* or with *Standards*. Further, methods used to determine specific climactic periods, critical conditions and/or seasons are not well described. This causes inconsistent application of months assigned to these periods for analysis during the assessment and the inability for stakeholders to adequately design monitoring programs and analyze data in a fashion consistent with the state to inform planning.**

**Example:** Section 8. Stakeholders routinely analyze their data to determine whether waterbodies are meeting standards to plan for restoration, protection or even municipal stormwater permit TMDL related targeted source identification and elimination requirements. When stakeholders are not assured of the correct months to assign to climactic periods, critical conditions or seasons, their analysis and decision making can suffer.

**Recommendation:** Reduce discrepancy, define critical periods, develop and apply consistent methods and improve consistency with *Standards*.

**Issue 2. Overly protective Category 5 determinations and overly burdensome and ambiguous Category 1 requirements which produce scenarios where it is likely that Categories 4a or 5 listings for Dissolved Oxygen, pH and Temperature would never be removed from the list. This is related to Issue #1 under section 6 above.**

**Example:** Sections 8d – Dissolved oxygen, 8e-pH, and 8g-Temperature. For these parameters, a waterbody will be placed in Category 5 when (1) a minimum of three excursions exist from all data considered and (2) at least 10 percent of values in a given year do not meet the criterion. Continuous monitoring data is required to achieve Category 1 for each of these parameters. To achieve Category 1 for Temperature, the *Policy* states that sequential data from at least two years must demonstrate consistent compliance with the numeric criteria or established natural conditions. It is unclear whether this means two years consecutively. Further, requiring continuous monitoring for two years, meeting Ecology guidance<sup>7</sup> for continuous temperature monitoring, is not consistent with *Standards* and is overly burdensome and protective as compared with the use of three single grab sample measurements "over all data considered - i.e., 10 years to establish a Category 5 listing.

**Recommendation:** Due to the diurnal cycle of Dissolved Oxygen, pH and Temperature, we believe that continuous monitoring data sets should be used for Category 5. However, given the costly nature of continuous monitoring, at a minimum the data volumes, ages and methods of analysis used to inform Category 1 and 5 determinations should be equivalent and based upon scientifically sound minimum sample numbers and practice. Datasets that contain excursions from single sample events should be placed in Category 2 and be flagged for further study.

## **8a. Bacteria**

**Issue 1. Procedures for determination of salinity and therefore the application of fresh or marine bacteria *Standards* lack completeness and approval.**

**Example: Section 8.** Significant emphasis is placed on protection of shellfish. Monitoring locations near shellfish beds can be tidally influenced which requires determining whether marine or fresh water bacteria *Standards* apply. This can't be done without approved salinity determination procedures.

**Recommendation:** Finalize procedures for determining salinity and either publish in the *Policy* or reference procedure.

## **8.b. Bioassessment**

**Issue 1. Please reference the Interagency Team's July 31, 2015 letter to EPA for a comprehensive set of issues and recommendations.**

## **8.f. Total Phosphorus in Lakes**

**Issue 1: The state does not place enough emphasis on developing TMDL's for Lakes based upon the WQA. This results in lack of funding to address credible impairments.**

**Example:** Section 8. According to the 2012 WQA, there are 81 statewide lakes in Category 5 for water and only 12 in Category 4a.

**Recommendation:** Utilize the WQA to develop lake based TMDLs or Straight to Implementation Projects where appropriate.

**Issue 2: The *Policy* lacks clear guidance or methods to support development of lake specific studies which establish phosphorus criteria.**

**Example:** The lack of guidance or methods reduces local stakeholders ability to assist in the state in developing lake specific criterion.

**Recommendation:** Develop clear and complete guidance or model studies such that local organizations can use to develop lake specific criterion development studies.

## **8.i. Toxic Substances**

**Issue 1: Fish tissue listings are inappropriate and inconsistent with *Standards* and the *Administrative Procedures Act*<sup>8</sup>.**

**Example: Section 8.** Fish tissue listings are not clearly adopted through *Standards* and are based upon water quality criteria expressed as chemical concentrations in water, but based upon information and assumptions about how those chemicals move from water into edible tissue. These assumptions combined with obvious movement of resident fish make these listings on waterbody segments particularly subjective and problematic relative to TMDL development and successful application of best management practices.

**Recommendation:** Adopt fish tissue concentration "water quality criteria" through rule-making and/or adopt a means for establishing narrative criteria based on tissue concentrations prior to use in the WQA.

## **Section 9. Prioritizing TMDLs**

**Issue 1: Section lacks the detail necessary to promote transparency and understanding of TMDL prioritization.**

**Example:** The lack of clearly described and consistently implemented TMDL prioritization processes impacts stakeholders by limiting early engagement, knowledge of problem areas, and a collaborative approach towards achievement of *Standards*.

**Recommendation:** Establish an explicit and transparent TMDL prioritization process, and make it publically available through the *Policy*. The process should result in early engagement and involvement with stakeholders in TMDL prioritization. To achieve this, it may be instructive to review *Appendix E* of the *Water Quality Program Permit Writer's Manual*<sup>8</sup> *Part 1* or other documents as appropriate to reference in the *Policy*.

## **Section 10. Abbreviations, Acronyms, Definitions**

**Issue 1: Section needs to be inclusive of, but not limited to, those terms identified in Attachment A, item 1 or others as identified.**

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<sup>8</sup> Washington State Department of Ecology. Water Quality Program Permit Writer's Manual, Publication No. 92-109. 2015.