



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

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201 South Jackson Street
Seattle, WA 98104-3855

April 15, 2020

Bo Li
Washington Department of Ecology
Northwest Regional Office
3790 160th Ave. SE
Bellevue, WA 98008-5452

RE: King County Comments on Green/Duwamish Pollutant Loading Assessment Quality Assurance Project Plan

Dear Ms Li:

Thank you for the opportunity to comment as Technical Advisory Committee members on the Pollutant Loading Assessment (PLA) Quality Assurance Project Plan (QAPP).

While the County understands Ecology's need to have laid out a robust methodology to guide implementation of this complex project, for several reasons, we are not sure documenting the modeling scope under a QAPP is the correct fit. A QAPP is typically a way to ensure that an investigation is addressing the study questions and the methodology employed will result in the necessary information being acquired to address those questions at the robustness targeted. This product is more of a scope of work needed to implement a project. As such it suffers from trying to present the scope in the rigid format of a QAPP.

While there are certain aspects of this scope that benefit from the rigors of taking a study question through the QAPP process, a separate document focusing on addressing those specific study questions would be a more targeted product that could provide a focused benefit to this project. Still, an overall detailed scope of work is needed not only for Ecology to manage the project but for stakeholders to understand and provide informed input to the project. We hope that Ecology considers separating this document into two more appropriate documents to facilitate getting more valuable input from the TAC.

In addition, King County has the following comments on the materials:

- Two objectives of the PLA in Section 4.2.1 (i.e., to improve the effectiveness of the sediment remedial action; and address CWA water, sediment, and tissue quality impairments in the Green/Duwamish River watershed, including the LDW) are not actually being addressed by this QAPP. We recommend these be removed or clarified.

- In Section 4.2, the modeling objectives only focus on the watershed model; no objectives are presented for the receiving waterbody model. Objectives for both models are needed to address the overall PLA objectives. Without seeing both models' objectives, it is difficult to determine if the project would adequately address the PLA objectives. We request another subsection in section 4 (4.2.3) be added to address receiving waterbody objectives. Once developed, please send these objectives to the TAC for review. Conversely, if that was the intent, please clarify in the document that currently only the watershed model portion is developed at this time and state that the other modeling sections will be revised at the appropriate times. Furthermore, we found the objectives are scattered throughout the document, making it difficult to determine what the principle objectives are that the project is focusing development on and which are secondary and used to help make project decisions moving forward.
- A QAPP explicitly describes how specific goals are proposed to be met. However, in sections 6.4 and 14, that is not apparent. There are no performance criteria or targets listed, but rather a more general listing of comparison to measurements and spatial resolution of patterns seen. While these are useful in determining how the model is best applied, it is hard to determine if the model will achieve its objectives. This also suggests the QAPP format to determine how well one addresses specific questions is not the appropriate format for this document. Is there a format more related to model development where exploring applications of the model is expressed?
- Based on Section 3.2.3, total PCBs are being modeled; we agree with this approach because data would be limited if PLA only modeled select PCB congeners. The QAPP indicates the use the physico-chemical properties from a selected group of homologs for the models. It is unclear how the partition coefficient representing a particular homolog group will be selected. Will a partition coefficient for a specific congener in each homolog group be used or a weighted partition coefficient for each homolog group be used? We recommend a weighted approach is used, and it be weighted similar to the weighted total PCB method used in the LDW FWM. It is not clear how Ecology is proposing to do this key factor to bioaccumulation. There is also concern that including only the higher chlorinated homologs will miss significant areal differences seen to date in body burdens due primarily to lower chlorinated congeners.
- Using low flow instream water concentrations as the default groundwater input concentrations will overestimate actual groundwater concentrations and create significant issues meeting stated objectives. Because the bed sediments have contaminate concentrations (albeit low), they contribute to the water concentrations through partitioning and could drive baseflow concentrations. We recommend this data gap be verified by collecting some congener data from groundwater wells in rural areas

to help address this and to collect congener data in upstream reach bedded sediments to get accurate concentrations for input to the water from sediment.

- It is not clear how Ecology is proposing to separate atmospheric contributions from the other non-point sources. It appears that the model will be adjusted to atmospheric deposition changes by adjusting the washoff. However, this also affects all other nonpoint inputs also driven by washoff which we do not believe should be adjusted by such a spatial factor.
- As we have stated before, we still think the questions Ecology is asking the modeling to do as part of this methodology needs further refinement. Only by clarifying exactly what questions the modeling is being developed to answer, and keeping that focus as narrow as possible, can a model be developed that can be expected to produce results within acceptable quality and accuracy. In our experience, a complex model is best focused on a few objectives if it is expected to produce acceptable output for the stated objectives. With an increase in modeling objectives, and thus complexity and the assumptions needed, we inevitably lose accuracy in with the modeling outputs. The result tends to be a model that does everything relatively poorly.

A version of the draft document with detailed comments is attached for your consideration. Thank you again for the opportunity to participate in the PLA Technical Advisory Committee (TAC). We think it is vital to include all the affected parties throughout this process in order to develop a viable and useful modeling effort that can inform the important decisions concerning water quality impairments that will need to be made in the watershed. If you have any questions, please contact me at 206-477-5479 or my fellow TAC member Blair Scott at 206-477-4877. Thank you for your consideration of our comments.

Sincerely

Jeff Stern

Jeff Stern

Sediment Management Program Manager

PLA Technical Advisory Committee

Cc: Rachel McCrea, Ecology
Laurie Mann, EPA
Blair Scott, King County

Attachment