



## SPRING 2015 INTERESTED PARTIES MEETING SUMMARY

---

May 28, 2015

10:00 a.m. – 3:00 p.m. (See [agenda](#))

Number of attendees: **Approx. 65**

Tukwila Community Center  
Banquet Hall  
12424 42nd Ave South  
Seattle, WA 98168

### OVERVIEW

On May 28, 2015, Washington Department of Ecology and U.S. EPA co-hosted a meeting for interested parties to learn about ongoing work in the Green-Duwamish watershed. Specifically, this meeting provided an opportunity to:

- Hear an overview of what we know about water and sediment quality in the Green-Duwamish watershed, pollutant loading, and why it is a problem.
- Review current efforts underway in the watershed by a variety of organizations.
- Learn about the Pollutant Loading Assessment (PLA) for the Green-Duwamish Watershed being developed by Ecology and EPA, including the Technical Advisory Committee PLA development process and progress to date.
- Share initial questions, comments, and input to Ecology and EPA to help shape the Pollutant Loading Assessment and future water quality improvement actions in the watershed.

### WELCOME AND INTRODUCTIONS

Josh Baldi (Washington Department of Ecology, PLA Steering Committee member) gave introductory remarks, explained the purpose of the meeting, and noted that Ecology and EPA are committed to an inclusive process as part of the development of the PLA. Dan Opalski (U.S. EPA, PLA Steering Committee member) also thanked participants for attending and explained that this process demonstrates the joint interest to protect the cleanup efforts of the Lower Duwamish Waterway while improving overall water quality across the greater watershed.

### STATUS OF THE GREEN-DUWAMISH WATERSHED

Dr. Mahbub Alam (Source Control and Stormwater Engineer, Washington Department of Ecology) presented an overview of what we know about water and sediment quality, pollutant loading, and why it's a problem. View his full [presentation](#).

After the presentation, an attendee asked the following question:

- What percentage of pollution comes from historical loadings versus ongoing sources?
  - Mahbub noted that this information is not available at this time, and part of Ecology and EPA's rationale for developing the PLA is to better answer that question.

### RESTORING THE GREEN-DUWAMISH

A panel presented on current restoration efforts in the watershed, with presentations from:

- [Green-Duwamish Strategy](#), Sarah Ogier, King County
- [Federal Urban Waters Initiative](#), Tracy Stanton, Urban Waters Federal Partnership
- [WRIA 9 Watershed Ecosystem Forum](#), Elissa Ostergaard, King County
- [Lower Duwamish In-waterway Cleanup](#), Elly Hale, U.S. EPA

- [Lower Duwamish Source Control](#), Ron Timm, WA Dept. of Ecology

A Q&A session followed the panel presentations:

- Is there an example of another river that has had success in resolving similar issues of contamination?
  - Several panelists responded, citing several rivers and watersheds. Chesapeake Bay, Anacostia River, and Baltimore Harbor have taken on collaborative cleanup efforts, and Dominguez Channel/Los Angeles Harbor have had similar co-mingling of Clean Water Act/CERCLA cleanup projects. The Delaware River Estuary and San Francisco Bay has also had similar PCB issues, and the Cuyahoga River in Cleveland is an example of successful cleanup. While each watershed is unique, these efforts across the country provide lessons learned for work in the Green-Duwamish.
- Which beneficial uses of the river won't be addressed by the Lower-Duwamish Waterway (LDW) cleanup plan?
  - Elly responded that the LDW cleanup goals are quite stringent and driven by fish consumption. Once the cleanup is complete, however, the river will still not be clean enough for subsistence fishing, and we will continue to rely on fish advisories.
- How can we learn from the multiple watershed planning processes to ensure action is taken?
  - Several responded. The University of Washington's ROSS (Regional Open Space Strategy) is looking at how to coordinate overlapping efforts and be more efficient in achieving action-oriented cleanup. Several efforts across Washington State – Commencement Bay, Bellingham Bay, Port Angeles – provide insights into how agencies and internal teams can work well together in moving beyond planning to actions. A critical part of implementing action is having a technical underpinning to determine when and how to act, so that efforts are not repeated. The PLA will be developed to provide a technical basis for making quality decisions and being efficient with resources.
- Is there a forum to communicate efforts and reduce duplicity in watershed restoration efforts?
  - The Urban Waters Federal Partnership and King County Green-Duwamish Strategy (associated with ROSS) may be good forums for coordination to take place. The WRRA 9 partners also have the benefit of 10-15 years of collaboration in this watershed, and are open and interested in further collaboration.
- How will the Source Control Strategy affect NPDES permits?
  - The LDW Source Control Strategy is a living document and will be continuously revised and refined as our understanding of the watershed increases. NPDES permits are renewed every five years, and Ecology fine-tunes permit requirements every time they are reissued as a part of an adaptive management approach.
- If you look into the future, what headlines would you like to see about the Green-Duwamish in 2040?
  - Several responded. Answers included: Costs of stormwater and floodwater control significantly decreased due to use of best management practices; Record runs of Coho and Chinook salmon in the Green River past Howard Hanson Dam; Source control in Seattle is a model for watershed cleanup.
- How do we include an education and outreach strategy that meaningfully engages the community?
  - Several responded. Creativity and flexibility with funding for education and outreach efforts is needed, as it is hard to leverage federal funding for this piece. A key focus should be education and outreach to local decision-makers – local government is critical to transferring planning into actions, via zoning, comprehensive land use plans, shoreline management plans, etc. Additionally, they provide a connection to the local community – for example, municipal stormwater permits are excelling in social marketing-based public outreach, resulting in behavioral change.

- How can we get the regional, state, national level agencies who have different priorities to understand local, community-level planning for the watershed?
  - Josh Baldi responded that Ecology and EPA are working hard to speak with one voice, one goal, and one vision. They are looking forward to interested parties getting involved and refining this vision and goal. Dan Opalski agreed, adding that EPA would like to embed their priorities and decision-making into priorities at the local level. If you think specific priorities are being missed, EPA welcomes that feedback.
- As we move efforts into the upper watershed (Kent, Auburn, Tukwila), there are equity and social justice issues that are not being addressed. How do we ensure that the people who are impacted most by the pollution have a seat at the table?
  - Several responded. The more we can use the PLA to reduce and control pollution across the watershed, the better we can address social justice. Moreover, health and equity are a concern in most of the current efforts presented by the panelists. For example, King County has mapped determinants of equity, and considers social justice in making recommendations for cleanup.

## **AN INTRODUCTION TO THE POLLUTANT LOADING ASSESSMENT (PLA)**

Rachel McCrea (Lead Water Quality Planner for the Lower Duwamish, Washington Department of Ecology) presented background on the role of the PLA within the broader management strategy for the watershed, key policy questions being considered, the Technical Advisory Committee (TAC) process and its progress to date, and timeline for development. View her full [presentation](#).

A Q&A session followed her presentation:

- Are you planning to use data from other sources, or rely on independent sampling?
  - Rachel responded that Ecology and EPA are not planning to conduct project-specific sampling at this time. They intend to leverage existing data collection efforts as much as possible in an effort to be synergistic, although data gaps will need to be addressed.
- Why are industry and regulated parties not represented on the TAC? Where/when will they be represented?
  - Rachel replied that Ecology and EPA considered whether or not to invite industries and businesses to participate on the TAC, but decided that was not the correct forum. These Interested Parties meetings are the vehicle to receive input from industry. We welcome your feedback if you have process concerns.
- Why are some heavy metals not included in the [proposed parameters list](#)?
  - Mahbub walked through the proposed parameters list. He explained that the TAC used a matrix to evaluate which toxics to include on the proposed list – the ones included on the candidate parameters list emerged as most critical.
- What is an example of how we could reduce diffuse sources of toxics across the watershed?
  - Rachel and Mahbub explained that if the goal is to reduce phthalates at the source, one option is to pass state legislation prohibiting their use; this is something Governor Inslee has been very interested in. Ecology has also developed chemical action plans in an effort to determine effective pollutant reduction strategies. For example, for PCBs – a key toxic on the proposed parameters list – one recommended action was to ban their use in paints and caulk, and there is a bill to fund their removal from CFLs in school districts. Another option is to manage toxics at the location of discharge, though treatment systems are limited. Phthalates in particular are difficult to manage as they are ubiquitous and accumulate.
- Imported products are not regulated for many toxics.
  - Rachel replied that this a concern for Ecology as well.

- Will the PLA be used for a future TMDL? Has Ecology determined an approach for implementation?
  - Rachel responded that the PLA is part of an interim strategy for addressing water and sediment quality impairments. She noted that Ecology and EPA do not yet know how many impairments will be addressed through the Lower Duwamish Waterway cleanup efforts. As the cleanup proceeds and its outcomes unfold, Ecology and EPA are positioning to proceed with further management approaches if they are needed, and the PLA will assist in determining which approaches would be most effective. The PLA tool may help form the basis of a TMDL in the future.

## **SMALL GROUP DISCUSSION AND REPORT-OUT**

Meeting participants broke out into small groups for table-top discussions led by project staff. Small groups discussed the following questions; answers shared with the large group are summarized below. For a full transcript of small group discussion notes, see Appendix D:

1. **PLA use and development:** Please list the benefits you envision the PLA will bring to your jurisdiction, business or organization, as well as any concerns you have regarding development and use of the PLA.

Small groups shared the following benefits of the PLA:

- The PLA will help make informed decisions on how to prioritize and spend money on clean-up efforts.
- The model will combine the technical expertise of agencies to analyze data.

They also shared several concerns and questions:

- Industrial stakeholders are not involved as much as they should be, and small industries have constraints in participating and providing feedback.
- Continued fish tissue monitoring should be included in the QAPP, to determine the effectiveness of pollution reduction.
- Ensuring cleanup funding is spent efficiently
- Quality of data used in the model
- Uncertainties in outcomes of the model
- How will the model deal with natural background sources?
- What level of spatial resolution will the model produce?

2. **Parameters selection and data collection:** Please discuss your comments or concerns regarding the proposed candidate parameters list. What are your thoughts on data collection efforts for these parameters?

Small groups shared the following comments and concerns about the proposed parameters:

- **Dioxins/Furans (2,3,7,8 TCDD):** Dioxins are not very detectable in water – could there be a proxy?
- **cPAHs:** Why are we focusing on the carcinogenic? It would be helpful to look at HPAHs and LPAHs.
- **Arsenic:** It is difficult to separate out anthropogenic vs. natural sources.
- **Phthalates:** There is not enough data right now to make them a priority for modeling.
- **Mercury:** It is difficult to separate out anthropogenic vs. natural sources, and there is not enough data right now to make them a priority for modeling.
- **Additional parameters:** One group suggested that sulfur be added to the parameter list, based on the presence of coal mines in the upper watershed. Another group was interested in adding temperature as a parameter.

- **Other considerations:** The model should incorporate new data on these toxic levels and not rely heavily on past data. It should also consider the water quality effects of toxic mixing and chemical interactions, not just one chemical at a time.
3. **Future water quality management:** Are there any specific water quality management practices or source reduction strategies you would like to see developed along with the PLA?

Small groups shared the following ideas for management practices and source reduction strategies:

- Allocate cleanup resources based on model outputs
- Develop more effective stormwater management, customized at the street scale
- Collaborate on regional stormwater treatment
- Implement changes to land use zoning, riparian buffer widths, etc.
- Implement control measures to building demolition in order address runoff of lead, mercury, PCBs, etc.
- Expand the NPDES permitting program
- Develop agricultural best management practices for fertilizer application
- Reduce pollutants in products, e.g., caulk and paint
- Continue collecting monitoring data at cleanup sites for incorporation into the model
- Provide technical assistance on best management practices for businesses and industry stakeholders
- Provide education and outreach for the public and K-12 on watershed health and protection

## NEXT STEPS

Joan Nolan (Cedar and Green Water Quality Improvement Lead, Washington Department of Ecology) presented an overview of next steps in the PLA development process and opportunities to stay informed and provide feedback. She noted that the feedback collected from interested parties at the meeting will be reviewed by Ecology and EPA to inform the Quality Assurance Project Plan (QAAP). It will also be used to inform strategy and decision-making moving forward. View her full [presentation](#).

Joan shared opportunities to stay involved:

- Participate in Interested Parties meetings. The next Interested Parties meeting is expected to be held in early 2016.
- Attend and observe TAC meetings, which are open to the public. The next TAC meeting will be 9 a.m. – 12 p.m. on Thursday, June 18 at the Tukwila Community Center (Meeting Room A).
- Review TAC meeting summaries, archived on [Ecology's PLA website](#).
- Receive Ecology's regular email updates on TAC meeting discussions via the project listserv.

She concluded by welcoming additional input and questions, which should be sent to Joan Nolan or Laurie Mann.

Joan Nolan  
Cedar and Green Water Quality Improvement Lead  
Department of Ecology NWRO Water Quality Program  
(425) 649-4425  
[jnol461@ecy.wa.gov](mailto:jnol461@ecy.wa.gov)

Laurie Mann  
Environmental Engineer  
Environmental Protection Agency  
(206) 553-1583  
[mann.laurie@epa.gov](mailto:mann.laurie@epa.gov)

## **APPENDIX A: MEETING NOTIFICATIONS**

To notify interested parties and the general public about this meeting, Ecology sent an email invitation to a listserv of approximately 500 recipients. The text of the email invitation is copied below. Supplemental to this, a meeting notice was also posted on [Ecology's Public Involvement Calendar](#).

### **EMAIL INVITATION**

We invite you to attend a meeting on May 28, 2015 for interested parties to learn about ongoing work in the Green-Duwamish watershed. This event is co-hosted by the Washington State Department of Ecology and the U.S. Environmental Protection Agency.

This meeting will provide an opportunity to:

- Hear an overview of what we know about water and sediment quality in the Green-Duwamish watershed, pollutant loading, and why it is a problem
- Review current efforts underway in the watershed by a variety of organizations
- Learn about the Pollutant Loading Assessment (PLA) for the Green-Duwamish Watershed being developed by Ecology and EPA, including the Technical Advisory Committee PLA development process and progress to date
- Share your initial questions, comments, and input to Ecology and EPA that will help shape the PLA and future water quality improvement actions in the watershed

#### **Meeting details**

May 28, 2015

10:00 a.m. to 3:00 p.m.

Tukwila Community Center, Banquet Hall

[12424 42nd Ave S, Seattle, WA 98168](http://12424 42nd Ave S, Seattle, WA 98168)

#### **Please RSVP**

We hope you can join us! If you plan on attending, please RSVP and send any questions about the meeting to [PLA@GreenDuwamishWatershed.info](mailto:PLA@GreenDuwamishWatershed.info)

#### **Background**

Ecology and EPA are developing a Pollutant Loading Assessment (PLA) modeling tool to help people understand what is polluting the Green-Duwamish River and where that pollution comes from. This tool, combined with future monitoring data, will provide information to support cleanup and water quality decision-making in the Green-Duwamish watershed. Visit Ecology's website for more information about the project: <http://www.ecy.wa.gov/geographic/GreenDuwamish/pla.html>

Sincerely,  
Joan Nolan  
Washington State Department of Ecology, Water Quality Program

## APPENDIX B: MEETING PARTICIPANTS

Name	Organization
1. Erika Morgan	Black Diamond City Council
2. Brian Anderson	Boeing
3. Pete Rude	City of Seattle
4. Tyler Patterson	City of Tacoma
5. Derek Speck	City of Tukwila
6. Jim Haggerton	City of Tukwila (Mayor)
7. James Rasmussen	DRCC/TAG
8. Sarah Ogier	King County
9. Shannon Ashurst	Integral Consulting Inc.
10. Elizabeth Loudon	Ecoss
11. Jeff Stern	King County
12. Ben Starr	Integral Consulting Inc.
13. Blair Scott	King County
14. Barry Gall	FEMA
15. Allison Geiselbrecht	Floyd Snider
16. Dan Baker	Geo Engineers
17. Rick Moore	Geo Engineers
18. Roger McGinnis	Hart Crowser
19. Jessica Saavedra	KC Conservation Distr.
20. William Blakney	King County
21. Tracy Williams	Murphy Armstrong & Felton
22. Rebecca Hoff	NOAA
23. Sean Wilson	Nucor
24. Rhonda Kaetzel	PHSICC
25. Ikuna Masterson	ROSS
26. Scott Johnson	Scott Johnson Law PLLC
27. Kevin Buckley	Seattle Public Utilities
28. Roger Gresh	Shannon & Wilson
29. Sara Kelly	Summit Law Group
30. Greg Volkhardt	Tacoma Water
31. Bruce Cleland	TetraTech
32. Sam Bowerman	The Intelligence Group
33. Dennis Robertson	Tukwila & WRIA 9
34. Tracy Stanton	Urban Waters Partnership
35. Alex Horner-Devine	UW Civil & Env. Eng.
36. Lindy Rathbone	WA State DNR
37. Larry Fisher	WDFW
38. Scott Tobiason	Windward Environmental
39. Warren Hansen	Windward Environmental

Name	Organization
40. Elissa Ostergaard	WRIA 9
41. Brandon Iwasaki	WSDOT
42. Jenifer Hill	WSDOT

### PROJECT STAFF

Name	Organization
43. Alex White	Ecology
44. Bo Li	Ecology
45. Dale Norton	Ecology
46. Dave Garland	Ecology
47. Joan Nolan	Ecology
48. Josh Baldi	Ecology
49. Mahbub Alam	Ecology
50. Marieke Rack	Ecology
51. Rachel McCrea	Ecology
52. Raman Iyer	Ecology
53. Rick Thomas	Ecology
54. Robert Warren	Ecology
55. Robert Wright	Ecology
56. Ron Timm	Ecology
57. Becky Chu	EPA
58. Ben Cope	EPA
59. Dan Opalski	EPA
60. David Croxton	EPA
61. Ellen Hale	EPA
62. Laurie Mann	EPA
63. Marty Jacobson	EPA
64. Rick Albright	EPA

## APPENDIX C: SMALL GROUP DISCUSSION PARTICIPANTS

Group 1		
	Name	Organization
<b>Table Captain</b>	Laurie Mann	EPA
<b>Notetaker</b>	Elizabeth Loudon	ECOSS
<b>Participant 1</b>	Bill Blakney	King County
<b>Participant 2</b>	Tracy Williams	Murphy Armstrong & Felton
<b>Participant 3</b>	Jim Haggerton	City of Tukwila
<b>Participant 4</b>	Elizabeth Loudon	ECOSS

Group 4		
	Name	Organization
<b>Table Captain</b>	Rick Thomas	Ecology
<b>Notetaker</b>	Rick Thomas	Ecology
<b>Participant 1</b>	Becky Chu	EPA
<b>Participant 2</b>	Sam Bowerman	Intelligence Group
<b>Participant 3</b>	Rick Moore	Geo Engineers
<b>Participant 4</b>	Elly Hale	EPA
<b>Participant 5</b>	Erika Morgan	City of Black Diamond
<b>Participant 6</b>	Pete Rude	SPU
<b>Participant 7</b>	Shannon Ashurst	Integral

Group 2		
	Name	Organization
<b>Table Captain</b>	Marieke Rack	Ecology
<b>Notetaker</b>	Marieke Rack	Ecology
<b>Participant 1</b>	Scott Tobaison	Windward
<b>Participant 2</b>	Kevin Buckley	SPU
<b>Participant 3</b>	Bruce Cleland	TetraTech
<b>Participant 4</b>	Warren Hansen	Windward
<b>Participant 5</b>	Sean Wilson	Nucor Steel
<b>Participant 6</b>	Marty Jacobsen	EPA
<b>Participant 7</b>	Dave Croxton	EPA

Group 5		
	Name	Organization
<b>Table Captain</b>	Dale Norton	Ecology
<b>Notetaker</b>	Dale Norton	Ecology
<b>Participant 1</b>	Barry Gold	FEMA
<b>Participant 2</b>	Dennis Robertson	City of Tukwila
<b>Participant 3</b>	Tyler Patterson	City of Tukwila
<b>Participant 4</b>	Ben Starr	Integral Consulting

Group 3		
	Name	Organization
<b>Table Captain</b>	Bo Li	Ecology
<b>Notetaker</b>	Blair Scott	King County
<b>Participant 1</b>	Bob Wright	Ecology
<b>Participant 2</b>	Jeff Stern	King County
<b>Participant 3</b>	Brian Anderson	Boeing
<b>Participant 4</b>	Blair Scott	King County

Group 6		
	Name	Organization
<b>Table Captain</b>	Dave Garland	Ecology
<b>Notetaker</b>	Dave Garland	Ecology
<b>Participant 1</b>	Elissa Ostergaard	KC - WRIA 9
<b>Participant 2</b>	Rebecca Hoff	NOAA
<b>Participant 3</b>	Roger McGinnis	Hart-Crowser
<b>Participant 4</b>	Brandon Iwasaki	WSDOT
<b>Participant 5</b>	Rhonda Kaetzel	Public Health (KC)

## APPENDIX D: SMALL GROUP DISCUSSION TRANSCRIPTS

**1. PLA use and development:** Please discuss the benefits you envision the PLA will bring to your jurisdiction, business or organization, as well as any concerns you have regarding development and use of the PLA.

	Benefits	Concerns
<b>Group 1 Table Captain: Laurie Mann</b>	<ul style="list-style-type: none"> <li>• Help inform decisions—how much \$ to spend on clean-up—which level of clean-up</li> <li>• Provide technical expertise, which is imperative for a successful restoration of the River</li> <li>• Help focus / prioritize the appropriate pollution prevention strategies.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of public awareness</li> <li>• Industrial clients not at the table. Because of small business constraints (e.g. resources and reluctance to be overly “visible” in a regulatory arena) outreach will be challenging.</li> <li>• \$ should be well spent on clean-up vis-à-vis ongoing pollution</li> <li>• Toxic info overload</li> </ul>
<b>Group 2 Table Captain: Marieke Rack</b>	<ul style="list-style-type: none"> <li>• Identify the tools.</li> <li>• Sets the goals.</li> <li>• Gives everyone the same data sets.</li> <li>• Doing pollutant work in upper watershed.</li> <li>• Smaller communities’ tools.</li> <li>• Parsing upper and lower issues.</li> <li>• Coordination.</li> <li>• Lays out options - enables prioritizations and comparisons.</li> <li>• Breaks silos for prioritization.</li> <li>• Should be a great tool.</li> <li>• Post remedy clean up monitoring.</li> <li>• BMP - spur research into control options.</li> </ul>	<ul style="list-style-type: none"> <li>• Seattle one of the largest dischargers. Source control is diffuse. How do we get businesses on board? How does SPU get help? We're the "purveyor." Need tools. This will lead to TMDL, people will have to pay more.</li> <li>• Concerns about data. What data is used? How will we be represented? Industrial permits have a rolling target.</li> <li>• Went to SCWG - what tools to address weird sources, individuals?</li> <li>• How to measure effectiveness? Important to think this through in advance.</li> <li>• Resources - how do we leverage monitoring resources?</li> <li>• How adaptive is the model?</li> <li>• Criteria for PCBs when there are such diffuse sources.</li> </ul>
<b>Group 3 Table Captain: Bo Li</b>	<ul style="list-style-type: none"> <li>• Long term management actions and funding for jurisdiction.</li> <li>• Priorities for actions!</li> <li>• Focus resources on the sources.</li> <li>• Best bang for buck.</li> </ul>	<ul style="list-style-type: none"> <li>• Accuracy- very complex watershed!</li> <li>• It may not give us all the answers.</li> <li>• Lack of data.</li> <li>• Level of detail.</li> </ul>
<b>Group 4 Table Captain: Rick Thomas</b>	<ul style="list-style-type: none"> <li>• Bring people together - transparent process. Data compilation - one place *use data correctly.</li> <li>• Add sulfur due to coal.</li> <li>• Changing watershed - need to adapt PLA process to account for it. (Moving target - land use decisions).</li> <li>• CAP - empower them.</li> <li>• How sensitive is the model discharge by discharge?</li> <li>• What is the prioritization of management decision based on model output?</li> </ul>	<ul style="list-style-type: none"> <li>• Hydro studies - where it come from? Where it goes? Water balanced - Black Diamond.</li> <li>• How long will the calibration remain valid with change in watershed?</li> <li>• Better description of the study. Question on how to give input - MTCA implementation questions.</li> <li>• Dueling models - PLA vs. CERCLA models</li> </ul>

	Benefits	Concerns
<b>Group 5 Table Captain: Dale Norton</b>	<ul style="list-style-type: none"> <li>• City of Tukwila - protect and enhance water quality.</li> <li>• Make decisions what actions to implement.</li> <li>• Help inform ordinances related to stormwater management - operational practices, ordinances.</li> <li>• FEMA (national insurance program) - impacts on ESA species, implications for compliance.</li> <li>• Model for other areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Source of data for upper river (City of Tukwila), where would background (have not been contacted yet).</li> <li>• Time frame for conducting analysis. How to involve industry, impacts to them, they need to understand how they will be effected.</li> <li>• Will jurisdictions implement actions consistently?</li> <li>• What level of spatial resolution will the model have?</li> <li>• Can you identify meaningful management actions?</li> <li>• Level of uncertainty in results.</li> </ul>
<b>Group 6 Table Captain: Dave Garland</b>	<ul style="list-style-type: none"> <li>• PLA will help point to land uses and sites that may be of concern in terms of pollution generation.</li> </ul>	<ul style="list-style-type: none"> <li>• Recontamination; once model is built, further action may not follow. What about expressing intent to follow up in PLA reports?</li> <li>• Concerned fish tissue monitoring will stop once models are complete. Need to ensure monitoring continues in monitoring QAPP.</li> <li>• Variability of parameter values. Will there be something like Monte Carlo simulation used to estimate and consider parameter variability?</li> <li>• How will you treat nondetect data?</li> <li>• Should collect new data, not restrict ourselves in this project to only using existing data.</li> <li>• Public outreach is important - talking about involvement such as booths at festivals informing public of what is going on with PLA. Even things like storm drain labels can inform public of where things are draining and could be a preventative measure.</li> <li>• Outfall specific modeling - especially interferences that might be made from modeling regarding individual outfalls</li> </ul>

**2. Parameters selection and data collection:** Please discuss your comments or concerns regarding the proposed candidate parameters list. What are your thoughts on data collection efforts for these parameters?

Proposed Parameters	Group 1 Table Captain: Laurie Mann	Group 2 Table Captain: Marieke Rack	Group 3 Table Captain: Bo Li	Group 4 Table Captain: Rick Thomas	Group 5 Table Captain: Dale Norton	Group 6 Table Captain: Dave Garland
PCBs		Achievability - low RALs, cleanup levels. How do we get there? How, what, and with what method? The data we've collected. Air core vs. congeners - how it was sampled? Want to interact with the modelers. Transport – over or below treatment? Are there surrogates?	Should be addressed.		Yes	
cPAHs			Should be addressed.		Yes	Why are we focused on only carcinogenic ones? It will be difficult to compare with LPAHs and HPAHs which are typically used in sediment sampling. Parameters should be selected with a view towards sampling results for "source fingerprinting."
Dioxins/ Furans (2, 3, 7, 8 TCDD)					Data needs	May be worthwhile to analyze for 17 compounds - wouldn't increase cost that much. 2, 3, 7, 8 TCDD typically non-detectable
Arsenic		Proposed structure for arsenic - fresh water, no marine standards. How are WA proposed standards rolled in?	What are we going to do with naturally occurring arsenic?		How to separate natural from anthropogenic sources?	
Phthalates (Bis-2EH phthalate)			Phthalates should not be on the list. Too many unknowns.			
Copper		New BLMs are coming. Not just standards on the book. Use best available science. Aquatic toxicity concern regarding copper & zinc.			Yes	Suggest dropping, as actions are being taken to reduce it; however, it is still big concerns for fish.

Proposed Parameters	Group 1 Table Captain: Laurie Mann	Group 2 Table Captain: Marieke Rack	Group 3 Table Captain: Bo Li	Group 4 Table Captain: Rick Thomas	Group 5 Table Captain: Dale Norton	Group 6 Table Captain: Dave Garland
Zinc		(For copper as well) Toxicity concerns. Data history is poor. Up to date science is used. Are the parameters not included?			Yes	Suggest dropping, as actions are being taken to reduce it; however, it is still big concerns for fish.
Mercury			These impairments are only in the lakes. How would the modeling address this?		How to separate natural from anthropogenic sources?	
Other comments	<ul style="list-style-type: none"> <li>Collecting new data is a good idea; the project can't be based on 10 year old data</li> <li>Looking at one chemical at a time for water quality standards doesn't address possible combined or synergistic effects.</li> </ul>	<ul style="list-style-type: none"> <li>SPU, King County, Ecology – phantom transport – <ul style="list-style-type: none"> <li>Catch basin solids in SHERLOCK database</li> <li>Upstream from treatment.</li> <li>Upstream from other factors.</li> </ul> </li> <li>Understand the linkage between what is it representing?</li> <li>TOC 303ds - only selected parameters with standards.</li> <li>CTAC studies on olfactory affects by Society for Environmental Toxicity Conference</li> </ul>	Should we be looking at other metals?	<ul style="list-style-type: none"> <li>Sulfur should be considered on the parameter list</li> </ul>	<ul style="list-style-type: none"> <li>Jurisdiction would like to be contacted about data.</li> <li>Temperature concerns? How it impacts toxics</li> </ul>	<ul style="list-style-type: none"> <li>What about looking for other metals such as Ni?</li> <li>PBDEs - recent statewide advisory on PBDEs - should look for in the PLA studies.</li> <li>Concerns about parameters that have toxic impacts on fish. Nutrients &amp; temperature, what about organic carbon? Various forms of PAHs may have been different effects on fish - PLA should have fish biologists involved in decision-making so parameters important to fish are captured.</li> </ul>

**3. Future water quality management:** Are there any specific water quality management practices or source reduction strategies you would like to see developed along with the PLA?

Small Group	Discussion notes
<b>Group 1</b>  <b>Table Captain:</b> <b>Laurie Mann</b>	<ul style="list-style-type: none"> <li>• Green River Valley—economic driver-development is critical to economic functioning.</li> <li>• Need technical assistance to businesses. Encourage businesses to share successes &amp; failures.</li> <li>• Outreach to public and kids is critical.</li> <li>• Pollution prevention—reduction at the source.</li> </ul>
<b>Group 2</b>  <b>Table Captain:</b> <b>Marieke Rack</b>	<ul style="list-style-type: none"> <li>• Anti-fouling paints - BANS (phase outs). Copper bottom paints. Industry specific efforts BAN.</li> <li>• Greater global atmospheric versus local atmospheric deposition. Control what we can. T</li> <li>• True source control.</li> <li>• Regional background levels - for the Duwamish-Green water and sediment (air isn't included). Air quality - only regional.</li> <li>• Source control can be 100% effective.</li> <li>• Industry representation at the table - NU CORE. Regulated parties. Get more invitations. MIC. Mailers with ISGP.</li> </ul>
<b>Group 3</b>  <b>Table Captain:</b> <b>Bo Li</b>	<ul style="list-style-type: none"> <li>• Regional/municipal stormwater treatment.</li> <li>• Reducing contaminants in products.</li> <li>• Looking at the sedimentation on restoration sites "data gaps".</li> <li>• Stormwater treatment effectiveness.</li> </ul>
<b>Group 4</b>  <b>Table Captain:</b> <b>Rick Thomas</b>	
<b>Group 5</b>  <b>Table Captain:</b> <b>Dale Norton</b>	<ul style="list-style-type: none"> <li>• Stormwater management practices- effectiveness of street sweeping types, staff resources allocations (where to put sweeps and vacuums?), implication and justification for rates.</li> <li>• National flood insurance programs (land use, ESA concerns, buffers).</li> </ul>
<b>Group 6</b>  <b>Table Captain:</b> <b>Dave Garland</b>	<ul style="list-style-type: none"> <li>• Carefully controlling demolition should help keep many contaminants out of water such as Pb, Hg, PCBs, and many others.</li> <li>• Monitoring done under NPDES permits could be expanded to include contaminants of concern (COCs).</li> <li>• We should also be concerned with BMPs in agricultural areas. Fertilizer and other chemical applications could be contributing pollution problems.</li> <li>• Infiltration of all road runoff stormwater should be considered since road runoff consists of some toxic contaminants.</li> </ul>

## APPENDIX E: COMMENT FORM SUBMISSIONS

Comment forms were distributed at the May 28, 2015 PLA meeting in Tukwila. A total of four comment forms were submitted after the meeting. The answers on those forms are compiled below by question. If a commenter did not answer a question, less than four answers are shown for that question. Questions and answers recorded here are verbatim from the comment forms.

### ***What is most important to you about the Green-Duwamish Pollutant Loading Assessment?***

1. Prioritization of upstream sources, gaining support by communities for source control, and making sure there is funding for implementing the source control actions.
2. How the data outputs are used. Understanding that data collection limitations will result in skewed results (i.e. if there are very few sources with PAH data, they will appear to be major sources).
3. The table exercise was enjoyable and interesting.

### ***Do you have any concerns about the Green-Duwamish Pollutant Loading Assessment?***

1. Lost opportunity for other contaminants. Expense – try to be efficient with everyone's time. Outreach to lower/middle Green businesses, residents – how? When? How to engage them?
2. Not so far.
3. One concern is: how do the agencies engage the business community in their process?

### ***Was the interested parties meeting helpful for you?***

1. Yes – very nice to hear interviews from panel and Rachel was great at explaining the PLA.
2. Yes, I think you all did a good job on laying out the goals of the group and how you plan to proceed.
3. Yes, it was a good initial meeting.
4. The PLA presentation

### ***How could interested parties meetings be improved in the future?***

1. Make sure table captains listen & repeat, but not feel like they have to respond to every comment.
2. Reach out to business/industry more to help expand their role in shaping the data collection methods and scope required for model success.
3. I think it would have been better to lead with the PLA presentation. The King County presentation were interesting, but it was not clear their role in the PLA.

### ***How often would you like to hear from us about the Pollutant Loading Assessment?***

1. Emails with materials being developed
2. Quarterly

### ***How would you prefer to receive information about the Pollutant Loading Assessment?***

1. Email, public meetings
2. Email, public meetings

### ***Additional comments:***

1. Parameter comments:
  - a. Metals – dissolved for sure, possibly in addition to total, if needed.
  - b. Temperature?
  - c. DOC – dissolved organic carbon
  - d. PAHs – identify enough that likely sources can be deduced.
  - e. Coordinate with NOAA (Nat Scholz, Jen McIntyre) on toxics linked to abnormal salmon development – brain and cardiac.
2. I think it's very important for industry to be part of this process. There needs to be an outreach effort to reach industry sooner rather than later. ECOSS has a great network it can utilize to reach people. Working with ECOSS (and other similar organizations) would be beneficial to this process.