

Potential SRRTTF Budget Allocations: Monitoring (three options) and Control Actions

MONITORING to fulfill Comp Plan Element 6.1 (“Implementation Effectiveness Assessment”), which states “In-river concentrations will be assessed via review of long-term river monitoring data to be collected by the Task Force and/or Ecology...The above assessment [review of data] will be conducted five years after the issuance of this Comprehensive Plan.”

- 1. Partial Synoptic Sampling - High Frequency** (top choice by 13 of 16 TTWG respondents)
Scope: Conduct multi-purpose synoptic sample at select locations to address Barker Road to Plantes Ferry Park groundwater contribution and track concentration changes. (Note: Ecology will also perform a central tendency data evaluation in 2019) (This element requires the SRRTTF to generate new additional data for compilation)
Locations - Barker Road, Plantes Ferry Park, and Nine Mile gaging station locations
Sampling Plan - Collect samples at each location four times during a calendar year so that each river flow regime is covered
Frequency - Every other year
Budget - \$50,000 / event (could be conducted twice over four-year period, for total of \$100,000)
- 2. Full Synoptic River Sampling - Low Frequency** (top choice by two of 16 TTWG respondents)
Scope: Repeat initial 2014 full synoptic sampling event conducted by SRRTTF. (This element requires the SRRTTF to generate new additional data for compilation)
Locations - Lake Coeur d’Alene Outlet, Post Falls Dam, Barker Road, Plantes Ferry Park, Greene Street, Spokane, Nine Mile, and Hangman Creek at gaging station locations
Sampling Plan - Collect samples at each location four times during a calendar year so that each river flow regime is covered
Frequency - Once during evaluation period
Budget - \$95,000 / event (once during the evaluation period)
- 3. Limited Synoptic Sampling - Medium Frequency** (top choice of one of 16 TTWG respondents)
Scope: Conduct limited synoptic sampling event at beginning and end of river evaluation segment. (This element requires the SRRTTF to generate new additional data for compilation)
Locations - Lake Coeur d’Alene Outlet, and Nine Mile at gaging station locations
Sampling Plan - Collect samples at each location twice during a calendar year to cover dry weather conditions (August) and wet weather conditions (November)
Frequency - Annually during evaluation period
Budget - \$25,000 / year (two sampling events per year)

Comments on Monitoring Options:

Comment:

- *This reflects my thoughts on the three options presented, however, regarding groundwater contributions in general, I would like to see a shift to investigating potential groundwater sources (starting with mining existing data) to see if the homologs or Aroclors at such sites match the incremental load that’s been observed in the river, rather than spending money on more sampling to fine-tune our understanding of the river contribution.*
- *The load that comes into the river the Trent to Greene reach is mostly the hexa- homolog, with contributions from hepta- and penta- as well. See the link below at Figures 6 and 10. http://srrttf.org/wp-content/uploads/2017/08/HomologSpecificMassBalance_Draft08162017.docx*
- *That signal would be consistent with Aroclor 1254 or 1260 (or a mixture of those), so, if there’s a site or sites in this reach where those Aroclors have been measured in groundwater or other media (or known to have been released) that is something that should be investigated, and the Ecology’s toxics cleanup program should be involved.*
- *Spokane’s stormwater also looks like a mixture of 1254 and 1260, meaning it’s mostly penta-, hexa- and hepta-, (see link below at Figure 17) and a lot of stormwater is discharged to the ground in this region. http://srrttf.org/wp-content/uploads/2017/05/SRRTTF_2016_MonthlyMonitoringReport_05-04-2017_draft.doc*

- *The incremental loads observed in the Greene-Spokane reach were not as consistent between 2014 & 2015 as they were in the Trent to Greene reach discussed above. This relative lack of consistency might make more in-river sampling worthwhile.*
- *The penta- homolog was the biggest contributor in both cases, and there are also some lighter homologs. The 2015 results show mostly a gain of tri-, tetra-, and penta-, which suggests Aroclor 1248. See the link below at Figures 7 and 11. http://srrttf.org/wp-content/uploads/2017/08/HomologSpecificMassBalance_Draft08162017.docx*

Comment: These are choices that we sought guidance from LimnoTech re: # of samples, statistical significance. We did not receive this guidance.

Comment: Consider adding fish tissue sampling back into option #1 unless the Task Force accepts Ecology's 10-yr fish sampling data as acceptable.

Comment: All these items are in the category of future activities. the comp plan states the assessment should be done five years after development of the plan.. This monitoring is more appropriate for next biennium.

CONTROL ACTIONS – Placed in order of ranking from the survey

a) Analyze existing data to identify potential relationships between homologs/congeners in the water column and homologs/congeners in fish tissue at Plantes Ferry Park

Scope: Per LimnoTech scope, perform a screening level analysis with existing data to assess if fish tissue PCB concentrations are at a level generally consistent with observed water column concentrations.

Budget - \$2,000 (quoted)

Comprehensive Plan Element 6.3.1 Key Data Gaps

Comment: Low cost, high value information. This should be done ASAP.

b) Study groundwater upgradient of Kaiser at Industrial Park.

Scope: Utilize existing Kaiser groundwater data to develop a plan to determine the location of suspected sources within Industrial Park in collaborate with the Toxics Control Program which may involve the drilling and sampling of monitoring wells.

Budget - \$150,000 (estimate)

Comp Plan Element 5.14 Category C Identification of Sites of Concern for Contaminated Groundwater

Comment: I would like to see this testing limited to existing wells only. I believe it to be beyond the scope of the task force to drill new ground water monitoring wells.

Comment: Source ID

c) Perform a PCB mass balance assessment in the Spokane River in the Plantes Ferry Park/Upriver Dam/Greene Street reaches.

Scope: Collect dry weather flow data and surface water samples from these three locations to better determine the impacts of the gaining and losing reaches in the area. The addition of Upriver Dam location data will provide the opportunity to assess the impact of groundwater in the Upriver Dam to Greene Street gaining reach, where a contaminated groundwater site is located. (This work could also provide monitoring data based upon the option selected)

Budget - \$50,000 (estimated)

Comp Plan Element 5.14 Category C Identification of Sites of Concern for Contaminated Groundwater

Comment: Source ID

Comment: The incremental loads observed in the Greene to Spokane reach were not as consistent between 2014 and 2015 as they were in the Trent to Greene reach discussed above. This relative lack of consistency might make more in-river sampling worthwhile.

d) Conduct a PMF analysis utilizing available PCB data.

Scope: Have Dr. Rodenburg at Rutgers perform a watershed scale PMF analysis using available analytical data including river data, discharger monitoring data, and groundwater data. Purpose would be to try and identify any PMF factors that would help in the identification of specific source types such as Aroclors (legacy) or inadvertently produced PCBs.

Budget - \$50,000 to \$75,000 (estimated)

Comprehensive Plan Element 5.14 Category C Identification of Sites of Concern for Contaminated Groundwater

Comment: not specifically 5.14 C Might be 6.3, which is future studies for ID gaps

e) Develop outreach materials and/or update Spokane River toxics guide.

Scope: Develop various education and outreach materials to increase business and public awareness on how to 1) identify and dispose of PCB-containing items, and/or 2) adjust purchasing practices to select products with lower PCB content. Options include an information package and checklist for use by agencies that make site visits to businesses on PCB issues and management; public education and outreach materials on PCB waste disposal and selecting products with lower PCB content; updating the Spokane River toxics guide; adapting the San Francisco Estuary Project (SFEP) document to make it suitable for use as a guidance document for Spokane-area building contractors on how to reduce PCB load during demolition and remodeling. (Third party preparation of materials)

Budget - \$25,000

Comprehensive Plan Elements 5.8.2 Conduct public education on products containing PCBs; 5.9.2 Waste Disposal Assistance; 5.13 Building Demolition and Renovation Control; and 5.15.2 Actions That Require Development of New Work Plans

Comment: See my comment about other control actions.

Comment We support ongoing education/outreach.

Comment: Spokane River Story Map

f) Study to Understand Relationship Between Fish Tissue / Water Column / Sediment.

Scope: SRRTTF's Spokane River data shows fairly consistent geometric mean PCB concentrations at Plantess Ferry Park and Greene Street, however, fish tissue data is markedly different at those locations. In an attempt to understand the cause of this difference, data collection in the Mission Park area would be undertaken. Water column sampling at Greene Street annually during four river flow regimes each year for three years. Sediment survey in the Mission Park area once during the same three-year period. With input from WDFW, sample fish tissue (three species), in the three years of age range, once at the end of three-year period

Budget - \$100,000 (estimate)

Comprehensive Plan Element 6.3 Studies to Address Data Gaps

Comment: I am concerned that more elaborate work on bioaccumulation could become a distraction from the goal of reducing PCB sources. To the extent that better understanding bioaccumulation and human exposure helps prioritize source reduction efforts (e.g., targeting the sources and pathways of PCB homologs that we see in fish), this knowledge is valuable, but its value needs to be assessed with that goal in mind.

Comment: We support the concept of evaluating fate and transport of PCBs in the SR system, but need to discuss further with our consultant and the task force.

- g) Perform a PCB mass balance assessment in the River in the Spokane gage to Nine Mile gage segment.**
Scope: Collect dry weather flow data and surface water samples from these two locations to better determine the impact of the gaining reach in the area. Groundwater flow into this reach of the river has not yet been evaluated for PCB contribution. (This work could also provide monitoring data based upon the option selected.)

Budget - \$50,000 (estimated)

Comp Plan Element 5.14 Category C Identification of Sites of Concern for Contaminated Groundwater

Comment: Not source control or source ID

- h) Educate local governments about PCB related Low Impact Development (LID).**

Scope: Prepare educational materials for and make presentations to local governments concerning the benefits of LID related to PCB with an emphasis on the City of Spokane's experience. (Third party preparation of materials)

Budget - \$5,000 (estimated)

Comprehensive Plan Element 5.4 Low Impact Development

Comment: Already doing

Comment: This is already being done. Current codes require on-site management of storm water...to protect water quality.

- i) Green Chemistry Advancement.**

Scope: In coordination with Ecology's HWTRP, prepare a presentation/proposal to Greener Solutions Program at UC Berkeley, develop a syllabus, and pursue funding for the Program's efforts. Engage with WSU (CEREO?) with an eye toward WSU starting Greener Solutions Program. (Third party prep of materials)

Budget - \$10,000 (estimated)

Comprehensive Plan Element 5.7.2 Support of Green Chemistry Alternatives

Comment: In the comp plan, this was identified as having an "unknown" magnitude. I suggest we focus on actions that have a high "magnitude of pathway" to be most effective at reducing sources.

- j) Conduct product testing.**

Scope: Identify consumer products (dyes, etc.) to be tested for PCB utilizing input from previous Ecology testing data and others, such as the Spokane Solid Waste Directory.

Budget - \$35,000 (estimated)

Comprehensive Plan Element 5.8 PCB Product Testing

Comment: testing is low priority, need to do something with info we already have. Maybe tie in with outreach materials/toxics guide

Comment: The TSCA SWAT team is currently working on a pilot project to test low/no PCB alternatives to road striping paints. This project would be a collaborative

- k) Survey Schools and Public Buildings.**

Scope: Meet with Spokane Public Schools to educate them on PCB issues with respect to their presence in building materials. Offer third party sampling and testing services for a building demolition project (Linwood Elementary) to support the development of BMPs for the demolition and management of building materials.

Budget - \$20,000 to \$25,000 (estimated)

Comprehensive Plan Elements 5.9.2 Waste Disposal Assistance; 5.13 Building Demo & Renovation Control; & 6.2.2 Survey Schools & Public Buildings

Comments: Is there a connection to the river?

Comment: This action also has "low" magnitude of pathway in comp plan.

General Comments:

I would prefer to see a more targeted (and less expensive) outreach effort, which would be targeted toward utility inspectors and/or construction companies. Utility inspectors could potentially do what is currently being done in Tacoma and Seattle, to identify sources of PCBs to stormwater. Construction companies would be in the business of remodeling or demolishing pre-1980 buildings that are likely to have PCBs in their building materials. If we can get them to be more careful (as they already should be with asbestos and lead paint) maybe we can move the needle a bit.

<https://www.epa.gov/pcbs/steps-safe-pcb-abatement-activities>