Category B: Support of Green Chemistry

New Actions

The Task Force will provide additional support to existing Green Chemistry efforts as follows:

- Provide guidance and feedback to Ecology related to current and potential ongoing Green Chemistry efforts
- Contact other parties, including EPA and universities, to provide feedback on existing efforts and/or solicit participation in future Green Chemistry efforts.

Schedule and Monitoring Program

The effectiveness of SRRTTF's implementation of Category B and C Control Actions will be assessed, in part, via annual preparation of an Implementation Review report. This report will compare actions conducted over the prior year to the timelines spelled out in the implementation plan. Specific milestones, timelines and effectiveness metrics are listed below for the Green Chemistry Control Action. The first milestone consists of demonstrated tangible outreach to Ecology, EPA, and/or universities. Initial outreach will be conducted within one year of issuance of Comprehensive Plan, and future schedules assessed as part of the Implementation Review report. The second milestone consists of tangible improvement in Green Chemistry efforts due to SRRTTF actions, to be attained with two years of issuance of the Comprehensive Plan.

Milestones, Timelines and Effectiveness Metrics for Green Chemistry

Milestone	Timeline	Effectiveness Metric
Demonstrated outreach efforts to Ecology, EPA, and/or universities	Within one year of issuance of Comprehensive Plan	Outreach conducted
Accelerated Green Chemistry efforts	Within two years of issuance of Comprehensive Plan	Tangible improvement in Green Chemistry efforts due to SRRTTF actions

Category B: PCB Product Testing Information

New Actions

The Task Force will provide additional support to existing Green Chemistry efforts as follows:

- Provide guidance and feedback to Ecology, including comments on the forthcoming PCB product testing report
- Support development of a centralized clearinghouse containing PCB product testing information.
- Conduct public education on products containing PCBs

Schedule and Monitoring Program

Specific milestones, timelines and effectiveness metrics are listed below for the Control Action PCB Product Testing Information. The first milestone consists of the provision of comments on Ecology's PCB product testing report within three months of issuance of the draft report. The second milestone consists of demonstrated tangible outreach to Ecology, regarding development of a PCB product testing clearinghouse. Initial outreach will be conducted within one year of issuance of Comprehensive Plan, and future schedules assessed as part of the Implementation Review report. The third milestone is development of a clearinghouse within two years of issuance of the Comprehensive Plan. Public education will be evaluated annually, with an expectation of a measurable change in public behavior within five years of issuance of the Comprehensive Plan.

Milestones, Timelines and Effectiveness Metrics for PCB Product Testing Information

Milestone	Timeline	Effectiveness Metric
Provide comments on the PCB product testing report	Within three months of issuance of draft report	Comments provided
Support Ecology efforts towards development of a clearinghouse	Within one year of issuance of Comprehensive Plan	Demonstrated support, reassessed annually
Development of clearinghouse	Within two years of issuance of Comprehensive Plan	Has clearinghouse been developed?
Public education	Ongoing annual assessment	Has outreach been conducted?
Public education	Within five years of issuance of Comprehensive Plan	Measurable change in public behavior

Category B: Waste Disposal Assistance

New Actions

The Task Force will provide additional support to existing Waste Disposal Assistance efforts as follows:

- Provide recommendation to implementing organizations as to how they can better control PCB-containing wastes
- Raise public awareness on how to identify and dispose of PCB-containing items

Schedule and Monitoring Program

Specific milestones, timelines and effectiveness metrics are listed below for the Control Action Waste Disposal Assistance. The first milestone consists of providing specific recommendations to implementing organizations. Initial recommendations will be provided within one year of issuance of the Comprehensive Plan, and the effectiveness of these recommendations and need for continued support will be evaluated annually. The final milestones consist of raised public awareness on how to identify and dispose of PCB-containing items. Initial outreach in this regard will be conducted within one year of issuance of the Comprehensive Plan, and one effectiveness metric will be whether outreach has been conducted. Future schedules for outreach will be assessed as part of the Implementation Review report. The final effectiveness metric will be a measurable change in public behavior in terms of disposal of PCB-containing wastes, to be achieved within five years of issuance of the Comprehensive Plan.

Milestones, Timelines and Effectiveness Metrics for Waste Disposal Assistance

Milestone	Timeline	Effectiveness Metric
Recommendations to implementing organizations	Within one year of issuance of Comprehensive Plan	Recommendations provided, reassessed annually
Raised public awareness on how to identify and dispose of PCB-containing items	Ongoing annual assessment	Has outreach been conducted?
Raised awareness on how to identify and dispose of PCB-containing items	Within five years of issuance of Comprehensive Plan	Measurable change in public behavior

Category B: Regulatory Rulemaking

New Actions

Paint manufacturers providing road paint to transportation agencies are currently required to use pigments compliant with a strictly-controlled "color box". These color box requirements can only be met through the use of PCB-containing diarylide pigments. The Task Force will seek to attain State/federal level changes to color box requirements for road paints, allowing the use of PCB-free (or essentially PCB-free) pigments in these paints.

Schedule and Monitoring Program

Specific milestones, timelines and effectiveness metrics are listed below for the Control Action Regulatory Rulemaking. The first milestone consists of continuing the existing ongoing dialogue with EPA and legislators regarding reform of TSCA and FDA's food packaging regulations. The effectiveness of this dialog and need for continued dialogue will be evaluated annually in the Implementation Review report. The remaining milestones relate to State/Federal-level changes to color box requirements for road paints. The first milestone consists of outreach to governmental agencies and paint manufactures, and will be conducted within one year of issuance of the Comprehensive Plan. The effectiveness of this outreach recommendations and feasibility of getting changes enacted will be evaluated annually. The long-term goal, with a timeline of ten years, is to have the color box requirement changed to allow the use of PCB-free pigments.

Milestones, Timelines and Effectiveness Metrics for Regulatory Rulemaking

Milestone	Timeline	Effectiveness Metric
Dialogue/letters with EPA and legislators on TSCA reform	Ongoing annual assessment	Dialogue continuing to be conducted
State/Federal-level changes to color box requirements for road paints	Within one year of issuance of Comprehensive Plan	Has outreach been conducted?
State/Federal-level changes to color box requirements for road paints	Within ten years of issuance of Comprehensive Plan	Evidence of changed regulations

Category B: Compliance with PCB Regulations

New Actions

Ecology's Environmental Assessment Program (Ecology, 2016b) is currently undertaking a study that will provide information on atmospheric transport of PCBs. The Task Force will review results of this study when it becomes available to assess the need for regulatory control of oil burning.

Schedule and Monitoring Program

Specific milestones, timelines and effectiveness metrics are listed below for the Control Action Compliance with PCB Regulations. The first milestone consists of maintaining existing activity in terms of providing comments on recurring regulatory issues. Comments will be provided on an ongoing as-needed basis, and assessed as part of the Implementation Review report. The second milestone consists of review of the Ecology atmospheric transport study, and a determination made regarding the need for more regulatory control of oil burning. Should oil burning be identified as a significant contributor of PCBs, the final milestone consists of a measurable change in regulatory control over this practice.

Milestones, Timelines and Effectiveness Metrics for Compliance with PCB Regulations

Milestone	Timeline	Effectiveness Metric
Comments on recurring regulatory issues	Ongoing annual assessment	Recommendations provided, reassessed annually
Review of Ecology atmospheric transport study	Within one year of issuance of study	Determination of need for more regulatory control of oil burning
Changes in oil burning control (if appropriate)	Within five years of issuance of Comprehensive Plan	Measurable change in regulatory control

Category B: Emerging End of Pipe Stormwater Technologies

Existing Actions:

The Lands Council has begun an innovative mycology project which uses a native species of fungi, called white rot fungi, to break down persistent PCBs from stormwater. Because PCBs are chemically similar to the wood that these fungi naturally eat, the fungi can break down these chemicals without experiencing toxic effects. White rot fungi have been shown to break down PCBs under laboratory conditions, and The Lands Council is seeking to test this utility on a much larger scale in the field in order to identify the potential for WRF to be used to prevent PCBs from entering the Spokane River. If successful, this novel method could have broad implications for cost-effective cleanup at contaminated sites. The Lands Council currently has a contract with the City of Spokane for an initial mycoremediation experiment, which is looking at 'fungal treatment' of vactor waste on a small scale. This experiment is ongoing, with results expected in early spring of 2017.

5.12.2 New Actions:

The existing experiment could be considered Phase 1 of a larger study. Specific activities to be conducted in upcoming phases will depend upon results of Phase 1. The Task Force will review Phase 1 findings and identify and/or support additional phases of research projects that meet Task Force goals. The specific nature of this support will be determined after Phase 1, and could include identification of grant opportunities, support to the Lands Council of pursuit of these grant opportunities, and/or direct funding.

5.12.3 Schedule and Monitoring Program

Specific milestones, timelines and effectiveness metrics are listed below for the Control Action Emerging End of Pipe Stormwater Technologies. The first milestone consists of the SRTTF reviewing the Phase 1 results of the Lands Council works and providing feedback on next steps. The second milestone consists of identification of the appropriate level of Phase 2 support, and provision of that support. Both of these milestones will be accomplished within one year of completion of the Phase 1 report.

Milestones, Timelines and Effectiveness Metrics for Emerging End of Pipe Stormwater Technologies

Milestone	Timeline	Effectiveness Metric
Assessment of Phase 1 results	Within one year of completion of Phase 1 report	Feedback provided
Phase 2 support	Within one year of completion of Phase 1 report	Level of support defined and provided

Category C: Building Demolition and Renovation Control

Actions

The specific actions to be implemented by the SRRTTF relative to Building Demolition and Renovation Control are:

1. Adapt the SFEP document to make it suitable for use as a guidance document for Spokane-area building contractors
2. Work with relevant local government agencies responsible for permitting to ensure that the guidance document be distributed as part of all building permits related to building demolition and renovation

Schedule and Monitoring Program

Specific milestones, timelines and effectiveness metrics are listed below for the Control Action Building Demolition and Renovation Control. The first milestone consists of adaptation of the SFEP report, which will be completed within one year of issuance of the Comprehensive Plan. The second milestone consists of coordination with local governments to have the guidance document routinely distributed with relevant permits, to be completed within two years of issuance of the Comprehensive Plan. The final milestone is a demonstrated change in contractor behavior in response to the guidance provided, to be attained within five years of issuance of the Comprehensive Plan.

Milestones, Timelines and Effectiveness Metrics for Building Demolition and Renovation Control

Milestone	Timeline	Effectiveness Metric
Adaptation of SFEP report	Within one year of issuance of Comprehensive Plan	Guidance document produced
Distribution of guidance document	Within two years of issuance of Comprehensive Plan	Guidance document routinely distributed with permits
Utilization of guidance document	Within five years of issuance of Comprehensive Plan	Measurable change in contractor behavior

Category C: Identification of Sites of Concern for Contaminated Groundwater

Actions

The Task Force will implement the following three-step process to identify of sites of concern for contaminated groundwater:

1. Mine existing data
2. Consult with TCP
3. Determine next action (e.g. targeted monitoring)

Mine existing data

Initial activities will consist of compiling and reviewing available data to assess the potential significance of new groundwater sites to contributing PCBs to the Spokane River. Separate activities will be conducted for each of the three categories of sites described immediately above.

With respect to the potential source up-gradient of Kaiser, existing data have largely been mined to the extent necessary to define that a source exists and that its magnitude is potentially of concern. Recent evaluations of hydrogeological and groundwater quality information collected by Kaiser show that there likely is an up-gradient source of PCBs via venting groundwater within the gaining portion of the river from approximately the Pentzer WWTP to Kaiser monitoring well MW-15 (approximately 1.1. miles). This conclusion is based on available PCB homolog data collected from Kaiser monitoring wells, which show a difference between the PCB homolog patterns between the Kaiser plume monitoring well data and up-gradient and cross-gradient monitoring well data collected outside these areas (LimnoTech, 2016f).

With respect to the suspected source downstream of the Trent Avenue Bridge, data mining activities will consist of more detailed homolog-specific mass balance assessments to estimate the magnitude of the load. The mass balance assessments conducted to date at this site have only considered river concentration data and stream flow to determine that a net loading of penta- through hepta- chloro PCB homologs occurs. The specific magnitude of this potential loading source was not assessed further due to the confounding effects of groundwater exchange mechanisms which are more complex than assumed in the original mass balance assessment. Data mining activities conducted under the Comprehensive Plan will consist of:

- Estimating groundwater gains and losses for the stream reach from available hydrogeologic data
- Conducting a mass balance analysis for 2014 and 2015 synoptic survey data, using the gross gaining and losing flow estimates, to update the prior analyses which only considered net groundwater flow.
- Calculate estimated loading rate and congener distribution of the potential source.
- Review existing TCP site information to identify potential contributing sites.

With respect to other TCP sites, data mining activities will consist of estimating the potential magnitude of loading from the 23 TCP sites with confirmed releases of PCBs identified by Marti and Maggi (2015). This will be done by:

- Calculating the amount of area potentially containing PCB concentrations at cleanup target concentration.
- Reviewing existing hydrogeologic information to estimate groundwater seepage rates for each site.
- Merging areal extent, seepage rate and concentration estimates to calculate a potential loading contribution for each site

Package information for and consult with TCP

The results of the above data mining activities will be documented in a technical report, and shared with Ecology TCP staff. The Task Force will schedule a meeting (or meetings) with TCP to present and discuss results. Findings will be compared to those obtained by TCP (e.g. TCP will be conducting a separate assessment of the magnitude of the loading up-gradient of the Kaiser site). Result of the meeting(s) will feed directly in to the next step, determining subsequent actions.

Determine next action

Based on the above findings and discussions, the Task Force will work with TCP to determine appropriate next steps, and the party (or parties) responsible for conducting them. Depending on findings from the data mining, next steps could include:

- Determining that certain sites are contributing to the impairment of the river, and identifying potential remediation actions
- Targeted monitoring to better define the contribution of sites determined to be potentially important
- Exclusion of certain sites that are determined to be insignificant contributors to the impairment of the river

Schedule and Monitoring Program

Specific milestones, timelines and effectiveness metrics are listed below for the Control Action Identification of Sites of Concern for Contaminated Groundwater. The first milestone consists of data mining activities, which will generate an assessment document within one year of issuance of the Comprehensive Plan. The second milestone consists of coordination with TCP, which will result in a consensus plan for future action within two years of issuance of the Comprehensive Plan. The final milestone will be a determination of whether each site under consideration is a sufficient enough contributor of PCBs to the Spokane River to merit remediation activities, and initiation of remedial activities on sites determined to be significant. This final milestone will be accomplished within five years of issuance of the Comprehensive Plan.

Milestones, Timelines and Effectiveness Metrics for Identification of Sites of Concern for Contaminated Groundwater

Milestone	Timeline	Effectiveness Metric
Initial data mining	Within one year of issuance of Comprehensive Plan	Assessment document produced
TCP coordination	Within two years of issuance of Comprehensive Plan	Study plan adopted
Identification, remediation (as appropriate)	Within five years of issuance of Comprehensive Plan	Conclusive identification of significance of sites. Initiation of remedial activities on sites determined to be significant.