SRRTTF: Comprehensive Plan Implementation Summary Tables (3)
Year Four, 1/1/2020–12/31/2020
Actions Compiled from SRRTTF Comprehensive Plan (approved TBD)

Table 1 – Category A Control Actions

Category (Plan Section)	Control Action	Lead Group	Status 12/31/20
A: Wastewater Treatment (5.1)	5.1.1 Maintain compliance with Idaho Municipal Permits	Permit holders	In compliance with permits Next Steps: Permittees continue to work with regulators on permit compliance and any associated updated requirements
	5.1.2 Maintain compliance with Washington Municipal Permits		
	5.1.3 Maintain compliance with Washington Industrial Permits		
	5.1.4 Maintain compliance with Fish Hatchery/Aquaculture Permits		
A: Remediate Known Contaminated Sites (5.2) ***(see also 6.3 below)***	5.2.1 Maintain remediation remedy for Spokane River Upriver Dam and Donkey Island	Ecology	The remedial actions and monitoring in 2008 and 2010 were completed by Avista under the terms of the consent decree. The last Ecology Periodic Review for this site was completed in 2016. Next Steps: The next 5-year Ecology Periodic Review for the Spokane River Upriver Dam and Donkey Island Site is scheduled for 2021. The periodic review will be based on results from sampling that occurred in fall 2020.
	5.2.2 Maintain protections for General Electric site near Spokane River	Ecology	The last 5-year Ecology Periodic Review for the General Electric Co. Site located at 4323 E. Mission Ave was in 2013. One well measured 0.21 ug/l. Cleanup levels are 500 times larger than current PCB water quality criterion. The latest sample results from May 2019 showed one well, NM-11, had a PCB concentration of 0.27 ug/l and the duplicate sample was 0.17 ug/l. The PCB was Aroclor 1260. The results for wells downgradient of NM-11 are below the site cleanup level of 0.1 ug/l and usually below the detection limits of 0.053 ug/l. Next Steps: Due to staff turnover, the periodic review is now scheduled to be completed in 2021.

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	5.2.3 Maintain protections for the City Parcel	Ecology	The 5-year periodic review clock started in 2019 when the institutional control (environmental covenant requiring industrial land use) was implemented on the Site. The first periodic review, scheduled for 2024, will evaluate compliance with the institutional control that requires industrial land use. No further soil or groundwater sampling will be completed unless additional work is required due to a change in land use. City of Spokane constructed Erie Stormwater facility (which supplements the Union Basin upgrades that were completed in 2014). With the exception of an emergency overflow pipe, this stormwater basin, which contains the City Parcel Site, will now be completely infiltrated.
	5.2.4 Complete PCB groundwater treatment pilot for Kaiser Aluminum	Kaiser Aluminum	Continued pilot testing operations and investigating filter backwash treatment technologies. Next Steps: Evaluate additional filter backwash treatment technologies
	5.2.5 Schedule and Monitoring Program	Nothing specified – Plan references in Section 6.1 broader implementation effectiveness assessment within five years to review all available data to assess: 1) PCB loading to the Spokane River and changes in loading, and 2) Spokane River PCB concentrations and changes in concentrations	
A: Stormwater Controls (5.3)	5.3.1 NPDES Stormwater Permits for MS4s	Permit holders	In compliance with permits
	5.3.2 Implement 3 actions that reduce PCBs in the City of Spokane's Integrated Clean Water Plan	City of Spokane	Cochran Basin: Small infiltration facility built with I03 storage tank project and Monroe St project. Ecology grants have been received for Disc Golf and TJ Meenach infiltration basins as well as funding for piping/conveyance. Funding for the lift station and control facility was applied for in October 2020. Green Infrastructure: City continues to include green infrastructure in its construction projects where applicable and encourage its use on private development. CSOs: As of August 2020, all CSO storage facilities have been built and are operational.
A: Low Impact Development Ordinance (5.4)	Encourage use of LID stormwater practices	Cities and Counties	City of Spokane: Ordinance/incentives still in place and being used.
A: Street Sweeping (5.5)	Continue street sweeping efforts	Cities and Counties	City of Spokane: Strategic street sweeping still being performed.

Table 2 – Control Actions Coordinated by SRRTTF

Category	Control Action	Lead Group	Status 12/31/2020
A: Purchasing Standards (5.6)	Implement State and local purchasing and procurement policies	State agencies, Cities and Counties. TSCA Work Group (WG)	In April 2018 a letter was sent to WA and ID state and local agencies encouraging them to use non-chlorinated road paints. Spokane, Spokane County, Liberty Lake and Post Falls to use non-diarylide yellow paint.
B: Support of Green Chemistry Alternatives (5.7)	5.7.2 Provide guidance & feedback to Ecology on Green Chemistry efforts 5.7.2 Assist Ecology in contacting other parties about existing or future Green Chemistry efforts	Green Chemistry WG with support from TSCA WG	In June 2020 the TF approved the Road Paint White Paper written by Northwest Green Chemistry. They looked at paint products that were non-diarylide yellow and found out they were already being utilized by WSDOT. WSDOT modified their specifications that they would no longer use these diarylide yellow paints for road striping and gave preference to manufacturers that do not use them. See also activities described for 5.8.2.

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B: PCB Product Testing (5.8) (Short Term Action)	5.8.2 Provide comments on the PCB product testing report	Full Task Force	Lauren Heine (Northwest Green Chemistry) and Doug Krapas (IEP) presented the "Recycling of Paper Products Containing PCBs in Inks and Pigments" via Zoom for the Organization for Economic Co-operation and Development (OECD) meeting in Paris, France in February and delegates from 120 different countries participated. They were one of 8 case studies discussed and it was the only one from the US. Promotion of alternative products was discussed. NWGC developed a report based on case studies and it was published on the OECD website. Pending: Ecology conducted Fish Hatchery products study and report. Next Steps: The Fish Hatchery Products report, as understood by the Task Force, has not yet been finalized. Action will be taken once a final report has been provided.
	5.8.2 Provide input to Ecology in support of its efforts towards development of a clearinghouse	Green Chemistry WG and Ecology, with support from other agencies	The Green Chemistry and TSCA/iPCB work groups continue to coordinate efforts to integrate multiple product testing efforts and provide guidance on future product testing, including coordination with Titanium Dioxide Stewardship Council on preparing QAPP and testing for Ti02 in pigments. Gonzaga University helped determine if there is sufficient data available to warrant the development of a PCBs in products database and connected with entities interested in working together to achieve common goals. The SRRTTF decided not to pursue the development of a database at this time.
	5.8.2 Provide public education on PCB containing products	Education and Outreach (E&O) WG	Complete: 2020 Spring Media Campaign: Goal of the PCB media campaign was to engage and educate the public about high PCB levels in the Spokane River, and appropriate ways to discard toxic household chemicals, including those that may contain PCBs. The campaign ran from April 27 – June 21, 2020 Radio ads: 127,000 listeners were reached and a total of 509 ads were played: 168 KCDA 176 KKZY 165 KISC I-Heart Digital Media: There were 482,705 impressions and 3,249 clicks involving web display, web pre-roll video, mobile app display and Facebook video & topic ads. More people looked at the Waste Directory in 2020 than in 2019 and the new Spokane/Kootenai Waste and Recycle Directory was launched. Next Steps: The Education and Outreach workgroup looks forward to working with the Spokane River Forum and developing additional pre-roll videos for the 2021 Spring PCB campaign.

Category	Control Action	Lead Group	Status 12/31/2020
B: Waste Disposal Assistance (5.9)	5.9.2 Provide recommendation to organizations on how to better control PCB waste 5.9.2 Raise public awareness on how to identify and dispose of PCB containing items	E&O WG	The WA Department of Health updated the Spokane River fish advisory in 2019, and from this the Spokane Regional Health District developed river signage, public information brochures, and updated its web page. Next Steps: Continue Got Waste Wednesdays with Spokane River Forum, developing Spring 2021 Campaign proposal, and further refinements to PCB Free website and other outreach activities.
B: Regulatory Rulemaking (5.10)	5.10.2 Seek to attain State/federal level changes to color box requirements for road paints	TSCA WG	The OECD presentation on Recycling of Paper Products Containing PCBs in the Inks and Pigments occurred in early February. The Yellow Road Paint White Paper was finished in June. The TiO2 QAPP, prepared by Titanium Dioxide Stewardship Council was finalized in February and the study of looking at raw materials using method 1668 to determine the presence of iPCBS involved four facilities who participated in the sampling. The results will be known after analysis at SGS AXYS in early 2021. Next Steps: Continue efforts to encourage other organizations to adopt non-chlorinated road paints.
B: Compliance with PCB Regulations (5.11) (Short term action)	5.11.2 Review Ecology's atmospheric deposition study results	Technical Track WG	Action completed
	5.11.2 Support agencies on regulatory revisions that are driven by Ecology's atmospheric deposition study	TSCA WG or full Task Force as appropriate	No additional action planned at this time; will revisit if/when related agency regulatory revisions are proposed.
B: Emerging End of Pipe Stormwater Technologies (5.12) (Short term action)	5.12.2 Review of Phase 1 results	Technical Track WG	Phase 1 – Lands Council Study using City of Spokane vactor waste to test fungal treatment on breaking down persistent PCBs. Action completed in 2018. Findings resulted in statistical decrease in PCB congeners, particularly those containing ortho-chlorines. Overall PCB levels did not significantly decrease, possibly indicating high number congeners broke down into lower number congeners. Potential next steps were also identified.
	5.12.2 Support Phase 2 if Phase 1 results warrant	Technical Track WG	Phase 2 - In 2020 A draft report was prepared by Sanda Thang and Alyssa Toney which investigated the change in microorganism consortium and microorganism diversity during bioremediation of PCBs. The diversity index indicated a decrease over a six-month period of remediation in diversity for the previously remediated soil. Additionally, none of the identified genera were the same between the samples. This and the presence of Corynebacterium, related to Rhodococcus, which contains a species that is a known PCB degrader, indicate a possible change in the composition of bacteria throughout the remediation process although further testing is necessary. Next Steps: Additional work may be pursued in the future,once results are shared with the Task Force.

Category	Control Action	Lead Group	Status 12/31/2020
C: Building Demolition & Renovation Control (5.13)	5.13.1 Adapt SFEP document for use as guidance for Spokane-area bldg. contractors 5.13.1 Work with local gov. agencies to ensure document distributed as part of all permits	Building & Demolition WG	Complete: Brochure and flier completed and distributed within the basin
C: Identify Sites of Concern for Contaminated Groundwater (5.14)	Mine existing data to assess the potential new groundwater sites contributing to PCBs	Groundwater PCB Upgradient WG	Complete: Initial Technical Memo approved by Task Force on October 24, 2018. In 2020 the SRRTTF provided data and support for a study TetraTech conducted under contract to EPA on groundwater wells upgradient of Kaiser. Results from this study are expected in 2021.
	Consult with Ecology TCP staff	Groundwater PCB Upgradient WG	TCP staff fully briefed on status and findings
	Determine next action	Groundwater PCB Upgradient WG	Determine any follow up actions based upon TetraTech report findings in 2021 Next Steps: Evaluate additional potential groundwater contributions as determined in hot spots evaluations that are ongoing (e.g. groundwater contributions in the Mission Reach).
Studies to Address Data Gaps (6.3)	Characterizing sediment sources	~~SRRTTF and Fish Sampling WG~~TTWG	~~The Technical Track and Fish Work Groups developed recommendations regarding a long-term plan to address the SRRTTF's objective of demonstrating progress toward achievement of the applicable water quality criteria for PCBs in the Spokane River. The plan consists of monitoring the PCB content of one-year old rainbow trout, along with water column PCB concentrations measured using semipermeable membrane devices (SPMDs). Monitoring is recommended to occur every other year, with fish being collected once per sampling year and water column being sampled three times per sampling year. The budget is on the order of $189,000 to cover the first year of monitoring. The scope for long-term monitoring was approved at the April 22, 2020 TF meeting and the QAPP was finalized in August.~~ ~~Next Steps: Based on findings from 2020 monitoring, refine long-term monitoring plan and seek funding to support it for next several years.~~

Commented [LDW1]: This work is for measuring PCBs in fish and in water column, not sediment. SPMDs measure water column concentration.

	How PCBs contribute to fish tissue contamination – source identification	TTWG and Fish Sampling WG	The Technical Track and Fish Work Groups developed recommendations regarding a long-term plan to address the SRRTTF's objective of demonstrating progress toward achievement of the applicable water quality criteria for PCBs in the Spokane River. The plan consists of monitoring the PCB content of one-year old rainbow trout, along with water column PCB concentrations measured using semipermeable membrane devices (SPMDs). Monitoring is recommended to occur every other year, with fish being collected once per sampling year and water column being sampled three times per sampling year. The budget is on the order of $189,000 to cover the first year of monitoring. The scope for long term monitoring was approved at the April 22, 2020 TF meeting and the QAPP was finalized in August. WDFW completed the Red Band Trout fish collection in the river. They prepared the collected fish according to standard operating procedures for fish handling and sent the fish to SGS AXYs for analysis. The QAPP was finalized in October Next Steps: Based on findings from 2020 monitoring, refine long-term monitoring plan and seek funding to support it for next several years. . ~~Next Steps: See discussion of long-term monitoring strategy above.~~

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Studies to Address Data Gaps continued (6.3)	PCB Mass Balance and Congeners/ homologue patterns	PCB Mass Balance WG	The Task Force approved the PCB Mass Balance Synoptic Survey Presentation and Final Report on February 27, 2019 Next Steps: Tech Track work group address the higher total PCB hits upriver of the dam and talk about volatilization. The work group is also considering ways to sample during high flow events to identify potential hot spot areas.
	Database Management	Data Management WG	Spokane County continues working with CDM Smith to update the database. Next Steps: Spokane County IT to develop a web app interface

	Positive Matrix Factorization (PMF) analysis	PMF Analysis WG	The Task Force approved the PMF phase 2A scope of work regarding fingerprinting of PCB sources in the treated effluent of wastewater treatment plants in the Spokane River basin at the April TF meeting and a report was given by Dr. Lisa Rodenburg at the December TF meeting Next Steps. An additional scope of work for analysis of wastewater influent data and some additional effluent data was approved at the October TF meeting. A scope of holistic analysis of all PMF work done is being considered and the work for the Phase 2B analysis is expected to be complete by June 30, 2021.
	Data Synthesis Workshop	Tech Track WG	The Task Force held the Data Synthesis Workshop on May 30 and 31, 2019 in Spokane, WA. It was an opportunity for Task Force members and associated entities to become more familiar with the Spokane River PCB data collected by the Task Force and WA Department of Ecology, and analyses of those data by the Task Force's Technical Advisor. Task Force members had the opportunity to discuss results and collaboratively chart next steps. The workshop was intended to provide a clearer understanding of what can (and cannot) be concluded from the available data to support Task Force objectives. Outcomes also included recommendations regarding monitoring and other activities to be supported in 2019 and beyond that are specifically targeted to help in finding and reducing PCBs in the Spokane River watershed. In subsequent meetings in 2019 and 2020, the Task Force approved a group of actions to scope out options for long-term monitoring along with initial actions on targeted studies and investigations. Ongoing and Next Steps: Conduct approved actions and future actions as identified by the Tech Track work group based on findings and recommendations for long-term monitoring and targeted investigations.

Table 3 – Additional Potential Control Actions

Category	Control Action	Lead Group	Status 12/31/2020
Additional Control Actions (6.2)	6.2.1 Education on Septic Disposal	TBD	Nothing has been completed on this control action
	6.2.2 Survey Schools and Public Buildings	TBD	TBD
	6.2.3 Accelerated School Construction	TBD	TBD
	6.2.4 Emerging Wastewater Technology	TBD	TBD
	6.2.5 Survey of Local Electrical Equipment	Avista and other utilities	Since 2016, Avista has completed its transformer change out program within the Spokane River Watershed. All detectable PCBs have been removed (EPA method 8082) from the distribution infrastructure within the Spokane River Watershed. Avista currently performs regularly scheduled surveys and maintains a database of all transformers within its' service territory as part of its normal operation and maintenance.
	6.2.6 Leak Detection/prevention in Electrical Equipment	TBD	TBD
	6.2.7 Regulation of Waste Disposal	TBD	TBD
	6.2.8 Stormwater Source Tracing	TBD	TBD

Category	Control Action	Lead Group	Status 12/31/2020
Additional Control Actions continued (6.2)	6.2.9 Removal of Carp from Lake Spokane	Avista	Avista initiated a carp removal pilot study as part of its investigation into methods of addressing non-point sources of phosphorus. The objective is to improve dissolved oxygen levels in Lake Spokane in accordance with the Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load (Ecology 2010) and Avista's Lake Spokane Dissolved Oxygen Water Quality Attainment Plan (Avista and Golder 2012). In 2020 partnered with WDFW to extend the sampling days to 18 days. A total of 6,159.8 Kg of carp (1,227 individuals). This equates to approximately 32.7 Kg of Total Phosphorus removed from Lake Spokane. Next Steps: Avista will continue to partner with WDFW to collect Carp in 2021.
	6.2.10 PCB Identification during Inspections	TBD	TBD
	6.2.11 Compliance with PCB Regulations	TBD	TBD