SRRTTF: Comprehensive Plan Implementation Summary Tables (3)

Year Four~~Three~~, 1/1/2020~~19~~–12/31/2020~~19~~

Actions Compiled from SRRTTF Comprehensive Plan (approved ~~February 26, 2020~~TBD)

Table 1 – Category A Control Actions

Category (Plan Section)	Control Action	Lead Group	Status 12/31/2020~~19~~
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.~~The next 5-year Ecology Periodic Review for the Spokane River Upriver Dam and Donkey Island Site is scheduled for 2021~~
	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:~~ Next Steps: Due to staff turnover, the periodic review is now scheduled to be completed in 2021.~~The periodic review will be completed in 2020.~~

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Category	Control Action	Lead Group	Status 12/31/2019
	5.2.3 Maintain protections for the City Parcel	Ecology	~~Periodic Ecology Reviews for the City Parcel Site have not yet begun. The 5-year clock will likely start when the City of Spokane successfully implements the required institutional controls (environmental covenant) for the portions of the Site they own.~~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.

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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 12/31/20~~19~~20
A: Purchasing Standards (5.6)	Implement State and local purchasing and procurement policies	State agencies, Cities and Counties. TSCA Work Group (WG)	Letter 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	~~The Task Force co-hosted with Ecology and Northwest Green Chemistry an informational workshop to address inadvertent PCBs in inks and pigments and the downstream products that are manufactured using those inks and pigments. Invited participants included: SRRTTF members, pigment and ink manufacturers, industries that utilize pigments and inks, downstream suppliers of paper and packaging, industry organizations, nongovernmental organizations, recyclers, procurement experts and regulators. The intended outcomes of the workshop were to:~~ ~~1. Educate Task Force members on the pigment and ink supply chain, and how PCBs move from manufacture of pigments and inks to the environment~~ ~~2. Address technology innovation and alternatives to known inks and pigments that contain PCBs – what are the possibilities and what are the obstacles?~~ ~~3. Explore technical and regulatory options, pilot or demonstration projects, and other solutions, promoting innovation.~~ ~~The objectives of the workshop were to bring all interested parties together to brainstorm solutions to reduce the level of inadvertent PCBs in these products:~~ ~~• Identify best practices and existing alternatives.~~ ~~• Identify barriers and constraints to alternatives.~~ ~~• Develop other technical, regulatory or policy opportunities.~~ ~~• Develop relationships and encourage innovative partnerships.~~ ~~• Determine measures for implementation.~~ ~~▪~~

Category	Control Action	Lead Group	Status 12/31/20~~19~~20
B: PCB Product Testing (5.8) (Short Term Action)	5.8.2 Provide comments on the PCB product testing report	Full Task Force	~~The Task Force approved the pigments and inadvertent polychlorinated biphenyls (iPCBs) presentation and report given by Dr. Amelia Nestler with Northwest Green Chemistry (NWGC) on June 26, 2019. The project addressed inadvertently generated PCBs (iPCBs) that are released into waterways, with a focus on iPCBs from pigments used in newsprint, and in paper and paperboard packaging materials.~~ Pending: Ecology conducted Fish Hatchery products study and report.

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	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 work group supported the preparation of white paper to learn more about the production of titanium dioxide (TiO_2) and its potential to produce inadvertent PCBs (iPCBs). The Task Force approved the TiO_2 white paper on February 27, 2019 and supported the recommendation to~~ ~~1)Test pigmentary and ultrafine TiO_2 to characterize the amount and types of iPCBs associated with TiO_2~~ ~~2) Consider future evaluation of consumer and industrial products containing TiO_2.~~ ~~Next Steps:~~ Technically this task is complete as Ecology houses a database that includes information on iPCBs in consumer products. The Green Chemistry ~~Workgroup~~ and TSCA/iPCB work groups continues to coordinate efforts to integrating multiple product testing efforts and provide guidance on future product testing.
	5.8.2 Provide public education on PCB containing products	Education and Outreach (E&O) WG	Complete:2020~~19~~ 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 chemicals. The campaign ran from April 27 – June 21, 2020.~~April 22 - June 2, 2019~~. Radio ads: ~~Rock 94.5 - reached 63,200~~ ~~Coyote Country 99.9 – reached 68,800~~ ~~Local News, 920 AM and 100.7 FM, Channel 4 local news, sports live – reached 31,000~~ Total reached 127,000 listeners~~163,000~~ ~~Radio ads are great if you are wanting to raise awareness~~ I Heart Digital~~Social~~ 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~~Pandora reached 31,194~~ ~~Facebook/Instagram reached 189,890~~ More people looked at the Waste Directory in 2020 than in 2019 and ~~,~~the new Spokane/Kootenai Waste and Recycle Directory was launched.~~?~~~~The reach on Pandora was not as good as the reach on the radio. However, Pandora did a better job of getting people to the Waste Directory.~~ ~~PCB Billing Insert: We created a PCB billing insert that was sent out in utility billings.~~ ~~CDA (last week of July) = 19,000 post cards~~ ~~Liberty Lake Sewer and Water (August 9) 896 online, 2,917 hard copies = 3,813 total~~ ~~Spokane County (August 6-7) 15,000 e bills, 47,300 hard copies = 62,300 total~~ ~~Hayden Idaho PCB insert was placed into the August 30 Nickle's Worth~~
Category	Control Action	Lead Group	Status 12/31/20~~19~~20
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 fish advisory and handout was developed in July 2019 by Spokane Regional Health District.~~ Next Steps: Continue Got Waste Wednesdays with Spokane River Forum and developing Spring 202~~0~~1 Campaign proposal and~~, working on updating the PCB flyer with Spokane Regional Health District communications team~~, further refinements to PCB Free website and other outreach activities.

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B: Regulatory Rulemaking (5.10)	5.10.2 Seek to attain State/federal level changes to color box requirements for road paints	TSCA WG	~~See information above on iPCB Workshop.~~ 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 TiO_2 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: The white paper for the yellow road paint project is under development. Developing a QAPP for the TiO2 project looking at raw materials using method 1668 to determine the presence of iPCBs. Working on Organization for Economic Cooperation and Development (OECD) application submission.~~
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	~~This topic was discussed at the May 2019 Data Synthesis Workshop. Follow up actions are being considered for the future.~~ No additional action planned at this time.
B: Emerging End of Pipe Stormwater Technologies (5.12) (Short term action)	5.12.2 Review of Phase 1 results	Technical Track WG	~~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.~~ Next Steps: None identified
	5.12.2 Support Phase 2 if Phase 1 results warrant	Technical Track WG	In process: ~~SRRTTF decided 1/24/18 to allocate $15,000 in support of Phase 2, a study to advance work on developing a process where fungi can be successfully used to break down PCB's in vactor waste and contaminated sites. Phase 2 work has shown some promise in breaking down PCBs in vactor waste, based on draft 2019 results.~~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: This task has been completed although additional work may be pursued in the future.
Category	Control Action	Lead Group	Status 12/31/20~~19~~20

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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: Technical Memo approved by Task Force on October 24, 2018~~TetraTech did a draft report on groundwater wells upgradient of Kaiser. Next Steps~~:~~ ~~Determine future work scope after reviewing 2019 sampling efforts (river/sediment/periphyton)~~
	Consult with Ecology TCP staff	Groundwater PCB Upgradient WG	TCP staff fully briefed on status and findings
	Determine next action	Groundwater PCB Upgradient WG	Potential next steps identified but no recommendations until 2018 sampling effort results available and evaluated
Studies to Address Data Gaps (6.3)	Characterizing sediment sources	SRRTTF and Fish Sampling WG	~~Waiting on synoptic data and biofilm study results, and congener fingerprinting, and integrating this information.~~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.~~Incorporate 2018 and 2019 data findings into recommended approaches for long-term monitoring~~

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	How PCBs contribute to fish tissue contamination – source identification	Fish Sampling WG	~~Waiting on synoptic data and biofilm study results, and congener fingerprinting, and integrating this information~~ 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: See discussion of long-term monitoring strategy above. ~~Washington Department of Fish and Wildlife is working on an approach for sampling. In early 2020 they will have a recommendation for the work group which will then be brought to the Task Force.~~ ~~Work on developing QAPP elements could occur before workshop.~~

Category	Control Action	Lead Group	Status 12/31/20~~19~~20
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	~~The Task Force approved the Database Pilot Final Report and User Guide on February 27, 2019.~~ ~~Next Steps:~~ Spokane County continues w~~W~~orking with CDM Smith to update the database Next Steps: ~~and~~ Spokane County IT to develop a~~the~~ web app interface
	Positive Matrix Factorization (PMF) analysis	PMF Analysis WG	~~The Task Force approved the PMF Blank Study Phase 1 Final Report on June 26, 2019.~~ The Task Force approved the PMF phase 2~~a~~A 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. An additional scope of work for analysis of waste-water influent data and some additional effluent data was approved at the October TF meeting. A scope of holistic analysis of all PMF work done was approved at the Dec. TF meeting and the work for the Phase 2B~~b~~ analysis is expected to be complete by June 30, 2021.

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	~~Data Synthesis Workshop~~	~~Tech Track WG~~	~~The Task Force held the Data Synthesis Workshop on May 30 and 31 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 October 2019, 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.~~ ~~Next Steps: Conduct actions approved in October 2019 and then based on findings and recommendations, outline and approve additional actions in spring 2020 for long-term monitoring and targeted investigations.~~

Table 3 – Additional Potential Control Actions

Category	Control Action	Lead Group	Status 12/31/20~~19~~
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~~19~~
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