North Santiam FY19 RM&E Planning Table - 4/26/18

	1. Planned or Ongoing Actions/Issues	2. Decision needed	3. Current information (Draft, RM&E will revise)	4. Information Gap (Draft, RM&E will revise)	FY19 concept paper notes
	North Santiam				
1	Interim operation of Detroit Dam for temperature targets	Determine temperature targets for operation of Detroit Dam BEFORE wild fish are reintroduced above the dam	River temperatures, Chinook PSM, adult Chinook and summer steelhead pHOS and collection rates at Minto available for several years prior to 2017. New temperature targets were implemented in 2017 with a goal of providing cooler temperatures to reduce PSM. Previous data documents that 1) PSM can be high in hot summers; 2) cool temperatures slow or stop adult Chinook upstream migration. Migration delays could increase PSM if adults hold in high densities in the lower river below Minto AFF. pHOS could increase if upstream migration results in fewer adult collected at Minto AFF.	Changes in river temperatures, Chinook PSM, Chinook and steelhead pHOS, and collection rates at Minto with the 2017 targets implemented compared to pre-2017	USACE Revise APH-18-03 if needed
2	Operation of temperature control tower	Determine temperature targets for operation of Detroit Dam AFTER wild fish are reintroduced above the dam	NOT needed in FY19	NOT needed in FY19	NA
3	Interim actions to manage TDG before fish passage improved at Detroit Dam	What alternatives can be used to effectively manage TDG below Big Cliff Dam? What standard(s) should be applied to compare the alternatives? Should	Multiple years of TDG data below Big Cliff one mile below at Niagara and downstream of Minto Dam, as summarized in Corps annual water quality reports and by USGS online. High TDG events (>120% saturation) occurring frequently and can last several days. Foster TDG study would indicate that the surface	Summary of available information on TDG, Chinook habitat availability below Big Cliff and Minto dams. Evaluation of operational alternatives to reduce TDG.	USACE Revise FMWQ-18-04-SYS if needed

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		structural improvements be made considering plans to bypass fish around the Minto to Big Cliff reach once downstream passage is improved?	levels of TDG we see at Niagara would result in depth-compensated TDG in the gravels that could harm redds. Spawning and rearing habitat capacity estimates are available for this reach, as well as above Detroit and below Minto dams. Spawning surveys of Chinook have been completed in at least 2 years, but survey quality/comparability was limited by hydraulic conditions.	Present summary to managers to determine if sufficient to support management decisions. If not, clarify information gaps and update this table and concept FMWQ-18-04-SYS	
4	Manage TDG AFTER fish passage improved at Detroit Dam	Determine if action should be taken to reduce TDG after fish passage is improved at DET Dam. Consider if fish will be placed into the reach between Minto and BC dams, and consider if TDG should be reduced during the conservation season, flood season, or both.	NOT needed in FY19	NOT needed in FY19	NA

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5	Release of adult wild fish in the North Santiam BEFORE fish passage is improved at Detroit Dam	Where and how many wild fish collected at Minto AFF should be released in each reach to maximize productivity potential?	Chinook adults collected at Minto, and outplanted, since 2002. Chinook spawner abundance and PSM below Minto Dam since 2002, and above Minto Dam since 2012. Spawning surveys above Minto Dam were limited by hydraulic conditions (high velicity and depths), impacting the quality/comparability of the surveys. Spawner effectiveness and CRR for brood years 2009 and 2010 for the full cohort. Current habitat capacity above and below dams. Historic and recent hydrology and dam operations; including surface spill patterns and downstream water temperatures. Downstream fish passage efficiency through existing routes.	Comprehensive evaluation of production (actual and potential) below Minto, above Minto, and above Detroit using existing data, considering habitat conditions, fish passage and temperature conditions, production and other information. Use this evaluation to 1) support decisions on outplanting before DET passage is improved, and 2) to determine critical uncertainties to refine interim passage management.	NMFS ODFW prepare new concept
6	Reintroduce wild spring Chinook salmon above Detroit Dam AFTER fish passage is improved	When, where, and how (and how many) wild and hatchery fish are to be released above Detroit dam as fish passage conditions are improved? What metrics and criteria will be used to determine status and inform reintroduction actions?	Chinook adults collected at Minto, and outplanted, since 2002. Chinook spawner abundance and PSM below Minto Dam since 2002, and above Minto Dam since 2012. Spawning surveys above Minto Dam were limited by hydraulic conditions (high velocity and depths), impacting the quality/comparability of the surveys. Spawner effectiveness and CRR for brood years 2009 and 2010 for the full cohort. Current habitat capacity above and below dams.	This will be refined with input RM&E team and the Reintroduction Plan as developed. Potential data types: adult return abundance, spawning surveys, genetic pedigree, PSM.	

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7	Evaluate post-effectiveness of Minto AFF for adult Chinook and steelhead	Since completion in 2012, is the Minto AFF performing adequately? What standard(s) will be applied to determine adequacy of AFF performance? (collection efficiency? PSM?)	Estimated number of adult Chinook and steelhead passing Bennett Dam and subsequently collected at Minto Dam, 2012 to 2017. Chinook spawner abundance and pHOS below Minto Dam, 2012 to 2015. Steelhead spawner abundance, 2016 and some previous years. Existing data does not indicate issues with collection efficiency or adult survival (PSM is consistently low since 2012 for adult spring Chinook released above Detroit).	Evaluation of Minto AFF collection efficiency of adult Chinook salmon, summer steelhead, and winter steelhead since new trap operations began in 2012. Evaluation of adult Chinook PSM after collection at Minto AFF and outplanted since 2012. RM&E doesn't recommend additional work at this time.	RM&E Team doesn't recommend a concept paper be developed at this time
8	Downstream fish passage design - conveyance method to below dam	What downstream fish passage conveyance methods should be designed to meet performance criteria - trap and haul, piped-bypass, other?	Regional information on survival and injury rates of different fish species and size classes is available for a range of juvenile passage conveyance methods, however very little information is available for high head dams. Recent information is available on survival of juvenile salmonids in a bypass pipe at a high head dam (Green Peter). This information may support drafting design criteria. New information suggesting copepod infections in Willamette reservoirs may result in poor survival of fish collected and hauled downstream.	Design criteria for design of a high head bypass system (High-head bypass PDT drafting?). Stress and mortality rates of juvenile Chinook infected with copepods experiencing different downstream fish passage conveyance methods. Methods to reduce disease or other forms of stress experienced prior to collection and downstream passage conveyance (including copepod infections). [DOES COPEPOD CONCEPT COVER THIS?]	Review revised copepod concept paper and determine if this info need is addressed

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9	Downstream passage design - forebay guidance to FSS	Should guide nets or exclusion structures be installed and used to improve spring Chinook collection efficiency? If so, how should they be configured relative to the FSS and the dam?	Collection efficiency (CE) of surface collectors and SFO's for salmonids, indicating CE increases as the "effective forebay" area decreases. However, very limited information is available for juvenile Chinook CE specifically from large reservoirs below spawning grounds.	Evaluate guidance or exclusion of juvenile Chinook in large Willamette reservoirs (CGR, DET, and or LOP). Apply information to inform placement of guidance or exclusion structures for improving CGR and DET downstream fish passage designs. PDT – Concept?	Corps to check with PDT on info need. Corps will prepare concept if warranted
10	Remove or modify revetments	See systemwide table			