

F&W Program Hatcheries - DRAFT version January 19, 2018

Following is a list of essential maintenance/improvements elements* as identified by 9 of the Programs 14 hatcheries (in 2017) for Fiscal Year 2018, 2019 and 2020. For FY 2018 the listed actions have been taken by the Council and Bonneville. Also listed are outstanding *mission critical elements* from FY 2017. The order of the specific elements were originally prioritized by the managers. Recommended actions for FY 2019 and 2020 are dependent on review (i.e., engineering) and confirmation (e.g., environmental compliance) by Bonneville by the end of March 2018 and 2019, respectively. Also please note shaded cells and the last row of the table that reflects elements that are dependent on further evaluations and discussion (i.e., outstanding *mission critical elements* from FY 2017).

Site - Manager	Essential Element	Estimated Cost by Fiscal Year			Description
		2018	2019	2020	
Sekokini - MFWP	Spring #2 Infiltration Gallery	\$15,000			Implemented - in contracting. Spring 2 infiltration gallery needs maintenance to capture flow that is currently diverted away from the cistern. Large snowpack and runoff this spring have led to even more of the flow being routed past the cistern, reducing flow to the hatchery building.
	French Drain		\$5,000		French drain is needed in front of the isolation building to redirect seepage behind the retaining wall and prevent ice formation in front of the entry way.
	Roof			\$12,000	Metal roof replacement on the original hatchery building (not the expansion building).
	Settle Pond Drain			\$7,000	The concrete outflow structure that controls the elevation of the hatchery's effluent settling pond is crumbling and needs to be replaced.
Lake Roosevelt Resident					
Spokane - STOI	NA				Utilizing BIA O&M funds.
Umatilla**					
Umatilla - ODFW	<u>Mission Critical - Well System</u>	\$20,000	TBD	TBD	<u>Efforts to initiate a comprehensive review of well system is ongoing. All essential needs (listed below) are linked to this review. Determination of path to address needs will be defined by end of calendar year. If emergencies arise, action will be addressed through BOG. Bonneville working with ODFW and CTUIR on urgent electrical issues. \$20,000 allocated to assist in comprehensive review for specialized engineering services. Total cost unknown until a complete evaluation is completed - Well system provides a fraction of the flow the facility was designed for. In the interim and to ensure the production at the hatchery is protected an urgent BOG request, in the first quarter of FY 2018, was approved by the Council and Bonneville to recondition the following 4 wells and correctly size the pumps at \$150,000.</u>

ODFW	Pump #3				Estimate at \$50,000. Efforts to initiate a comprehensive review of well system is ongoing. Pump #3 (rewire) and Well#1/pump#5 (rewire) have never been pulled (26years). <i>See Mission Critical item above.</i>
ODFW	Pump #5, Well #1				Estimate at \$20,000. Efforts to initiate a comprehensive review of well system is ongoing. Pump #3 (rewire) and Well#1/pump#5 (rewire) have never been pulled (26years). <i>See Mission Critical item above.</i>
ODFW	Chillers (4) 50 ton				Estimate at \$194,000. Efforts to initiate a comprehensive review of well system is ongoing. Chillers are 25 years old and walls are thin from sand scour. Chillers need to be replaced. <i>See Mission Critical item above.</i>
ODFW	Submersible Pumps (2), 15 HP				Estimate at \$30,000. Efforts to initiate a comprehensive review of well system is ongoing. Rewire pump. <i>See Mission Critical item above.</i>
ODFW	Production Well , 50 HP Submersible				Estimate at \$20,000. Pump equipment condition is good, but well does not produce what it should. Has been rehabilitated, but no lasting benefit. <i>See Mission Critical item above.</i>
ODFW	Production Well #3, 25 HP Submersible				Estimate at \$25,000. Pump equipment condition is good, but well does not produce what it should. <i>See Mission Critical item above.</i>
ODFW	Production Well #4, 60 HP Submersible				Estimate at \$25,000. Pump equipment condition is good, but well does not produce what it should. Has been rehabilitated, but no lasting benefit. Well is degrading further have lost 150gpm since May. <i>See Mission Critical item above.</i>
Acclimation Sites (#8) - CTUIR	NA				In the near future, the CTUIR annual budgets are sufficient to take care of required O&M as identified in the hatchery assessments.
Kootenai - KTOI	NA				At this time KTOI is utilizing BIA Hatchery Cyclical Maintenance Grant.
Snake River Sockeye Propagation - IDFG**					
Springfield	<u>Mission Critical - Chiller system</u>	\$75,000	\$75,000	TBD	<i>Engineering services contracted to develop design and specifications for chilled water delivery system upgrade at Springfield Hatchery (estimated at \$75,000 for 2018 and possibly 2019. In 2019 determination on use of accord funds being discussed). Estimate based on hatchery assessment report and then includes an estimate on installation.</i>
	Concrete Clarifier		\$109,250		<u>Additional needs are deferred until current assessment is completed.</u> Undersized waste removal system necessitates modifications (estimated at \$109,250) - upsize early rearing trough effluent piping to larger size & increase size of effluent clarifier system.

	Early rearing trough effluent piping			\$195,000	Additional needs are deferred until current assessment is completed. Undersized waste removal system necessitates removal of only 1 cleaning standpipe at a time. Modification by increasing the diameter of tough effluent piping (estimated at \$195,000). This in conjunction with increasing the size of effluent clarifier system will allow 500 gpm influent rate. This will also allow inside vat cleaning to be more efficient and will enhance bio-security in the early rearing building and eliminate the multiple removal of sludge from the clarifier on an annual basis. Estimate reflects estimate of modify troughs with large diameter piping and not replacement of troughs.
Eagle	2 Fiberglass Transportation Tanks (250 gallon)	\$16,500			Fiberglass transport tank for hauling sockeye adults from the RFLC trap to Eagle or in some years from Lower Granite Dam to Eagle are at the end of their life expectancy. These tanks have been rebuilt and re-fiberglassed a number of times and continue to leak water. Water is also damaging the internal wooden framework as water is trapped within fiberglassed shell. Price quotes to replace this tank have been requested from JetCo at an estimated cost of \$8,250 each.
	Well #3: VFD Unit	\$11,500			Due to the age of this critical unit, replacement is necessary.
	Well #1: 50 Hp submersible pump		\$9,000		Pump is 5 years old, due to be replaced and refurbished for backup.
	Well #1 & #2 Degassing Tower Water Level Sensor.		\$120,000		Aeration column needs minor modification to improve flow through dispersion plate. This unit has failed in cold damp winter conditions and is bypassed for this reason. <i>(Discussions with an electrician to move this unit into the Well #2 building have been initiated, but no cost estimate at this time)</i>
	Chiller (100 TON)			\$84,500	Adult holding chiller needs to be replaced, old R-22 refrigerant filled chiller. Conversion needed to Freon or replace with new unit, whichever is deemed appropriate.
Colville - CCT	Chiller (15 TON APPROX)				Accord Funded @ \$42,000 in 2018. Leaks Freon, needs to be replaced
	Aluminum Troughs (14), 21' X 2.75'		\$74,200		Inside rearing troughs are corroding and pinhole leaks observed, need to be replaced
	Aluminum Troughs (6), 16' X 1.3'			\$15,000	Inside rearing troughs are corroding and pinhole leaks observed, need to be replaced
Nez Perce Tribal Hatchery - NPT**					

NPTH	<u>Mission Critical - river water filtration system</u>		TBD	TBD	Additional evaluation needed - Relationship of this high priority item, in association to the Snake River Basin Steelhead Kelt Reconditioning Facility Master Plan (Project #2007-401-00). Kelt decision anticipated in 2018.
	<u>Mission Critical - heat exchanger</u>		TBD	TBD	Additional evaluation needed, TBD - Relationship of this high priority item, in association to the Snake River Basin Steelhead Kelt Reconditioning Facility Master Plan (Project #2007-401-00). Kelt decision anticipated in 2018.
	UV Disinfection System		\$92,000		Treatment effectiveness is affected by fine sediment. Estimated @ \$92,000. Link to mission critical element (surface water filtration element)
Yoosa Creek	<u>Mission Critical - Yoosa Creek Intake Bypass Flow</u>		TBD	TBD	The dam structure that impounds water for the intake leaks significantly enough to reduce intake flow. NPT are evaluating the cost benefit of this need as part of hatchery evaluation, TBD.
Lukes Gulch	Paint 20' diameter Aluminum Circular Tanks (16)		\$20,000		Paint is worn through on interior surfaces and faded.

Grande Ronde Supplementation

Lostine - NPT	Alarm System, Flow Detection	\$8,315			Has been partially damaged by erosion. Needs to be repaired.
Catherine Creek - CTUIR	NA				In the near term, the CTUIR annual budgets are sufficient to take care required O&M as identified in the hatchery assessments.
Upper Grande Ronde - CTUIR	NA				In the near term, the CTUIR annual budgets are sufficient to take care of required O&M as identified in the hatchery assessments.

Fall Chinook Acclimation Facilities - NPT***

Pittsburg	Water Supply and Drain Hoses		\$27,750		Hoses are getting brittle. Estimate @ \$27,750
	Feed Storage Building			\$5,625	Estimated at \$5,625
	Resident 1, Camp Trailer			\$25,500	21 years old, due for replacement. Estimated @ \$25,500
Big Canyon	Flexible Hoses for Water Supply/Drains		\$27,250		Hoses are getting brittle. Estimated @ \$27,250
	Residence 1, Park Model Trailer			\$25,500	19 years old, due for replacement. Estimated @ \$25,500
Captain John Rapids	Alarm System, Low Water Level and No Flow Detection		\$20,000		Estimated @ \$20,000
	Electrical System Improvements			\$5,000	Generator currently feeds through main breaker, no power to pumps if breaker fails. Estimated @ \$5,000
	Supplemental Oxygen System			\$10,000	Estimated @ \$10,000

Lake Roosevelt Resident**

Sherman - WDFW	<u>Lake Water Pumps</u>	\$30,000			Move pumps and extend to deeper water to maintain flow during reservoir drawdown. Total costs includes pumps, piping, and ancillary equipment. Subject to engineering and permitting before purchase of equipment.
WDFW	<u>Mission Critical - Net Pens</u>		TBD	TBD	<i>Additional evaluation needed, TBD. Reservoir drawdown causing early release of fish and the effect on program goals, current location does not function during reservoir drawdown.</i>
Kalispel** - KT	<u>Mission Critical - Alarm system</u>				<i>Additional evaluation needed, TBD - Estimated cost @ \$50,000. Original System is non-functional and no longer supported. Activities at the hatchery are dependent on a future review. This item may be funded as part of the ongoing cold-water conversion program upgrades. This program has phased out of LMB and raising triploid trout for put-and-take.</i>
Total		\$176,315	\$228,200	\$118,500	
Variation Expected (+35%) with cost confirmation and installation costs.		\$238,025	\$308,070	\$159,975	
Outstanding mission critical and essential elements that are dependent on further evaluations and discussions.			\$351,250	\$241,125	Totals do not include costs associated with Umatilla, NPTH (heat exchanger, filter and Yoosa Creek Intake Bypass) and Sherman (net pens). In addition, does not include Variance.

* Essential Maintenance/Improvements --These items are considered essential for the facility to continue to perform the mission that was originally identified as the purpose for the facility relative to the relevant BPA Program, but the need is less immediate than mission critical elements.

** Hatcheries facilities that have unresolved Mission Critical Elements that need to be addressed

*** BPA and LSRCP staff are currently working on determining project overlap, items listed under these facilities will be addressed once that exercise is complete.