

Richard Devlin
Chair
Oregon

Ted Ferrioli
Oregon

Guy Norman
Washington

Patrick Oshie
Washington



Northwest Power and Conservation Council

Bo Downen
Vice Chair
Montana

Jennifer Anders
Montana

Jim Yost
Idaho

Jeffery C. Allen
Idaho

July 7, 2020

MEMORANDUM

TO: Fish and Wildlife Committee Members

FROM: Mark Fritsch

SUBJECT: Presentation on Lower Snake River Compensation Plan maintenance needs

BACKGROUND:

Presenter: Roy Elicker, Assistant Regional Director USFWS
Mark Robertson, Lower Snake River Compensation Program Actin Project Leader USFWS
Chris Starr, Lower Snake River Compensation Program Facilities and Maintenance Manager USFWS
Chris Donley, Region 1 Interim Regional Director WDFW
Gary Byrne, Assistant Chief of Fisheries IDFG
Gary James, Fisheries Program Manager, CTUIR
Andrew Gibbs, East Region Coordinator, ODFW
Dave Johnson, Fisheries Program Manager, NPT

Summary: Managers and operators of the Lower Snake River Compensation Plan (LSRCP) will provide an overview of their Five Year Asset Management Plan (see attached document) recently completed to address non-recurring maintenance needs and infrastructure fixes to comply with regulations, replace failing equipment, conduct adequate preventative maintenance and ensure mitigation obligations associated with their aging hatcheries (35 – 40 years) can be met.

Background: In 1945 Congress authorized the construction of four dams on the lower Snake River, and funds to build the dams were appropriated in 1954. The

dams were built from 1961 to 1975. In 1972 an assessment was provided to the Army Corps of Engineers that described immediate and anticipated long-term impacts of the four dams, and in 1975 the Army Corps of Engineers used the assessment to produce the Lower Snake River Compensation Plan (LSRCP) for submittal to Congress. A year later the LSRCP was authorized by Congress.

An important part of the LSRCP called for the design and construction of fish hatcheries to compensate for an estimated loss of 48% of the adult steelhead and Chinook salmon returns to the Snake River associated with the construction and operation of the four lower dams. Construction of the first facility was completed in 1980 and the last hatchery was built in 1991. A total of 26 LSRCP facilities (10 hatcheries and 16 satellite facilities) produce approximately 20 million salmon and steelhead juveniles annually. The LSRCP program is the largest producer of spring Chinook and steelhead in the Columbia River Basin.

Several of the Council's Fish and Wildlife Program's artificial propagation projects are tied to the LSRCP program. LSRCP hatcheries rear ESA listed salmon for conservation and recovery for: Johnson Creek Artificial Propagation Enhancement, Grande Ronde Endemic Spring Chinook Supplementation Program, Snake River Sockeye, Snake River Fall Chinook.

The Bonneville Power Administration funds 100% of operation and maintenance costs for the Lower Snake River Compensation Plan. The program is a reimbursable expense direct funded by Bonneville through a Memorandum of Agreement. The plan is administered by the U.S. Fish and Wildlife Service. LSRCP hatcheries are operated by USFWS, Nez Perce Tribe, Washington Department of Fish and Wildlife, Oregon Department of Fish and Wildlife, Idaho Department of Fish and Game in coordination with co-managers Confederated Tribes of the Umatilla Indian Reservation and Shoshone Bannock Tribe.

FIVE YEAR ASSET MANAGEMENT PLAN FOR THE LOWER SNAKE RIVER COMPENSATION PLAN

February 4, 2020

THE FIVE YEAR ASSET MANAGEMENT PLAN

The Lower Snake River Compensation Plan (LSRCP) has initiated a FIVE YEAR ASSET MANAGEMENT PLAN process to provide a 5-year outlook of anticipated infrastructure needs, prioritized based on known and potential future budget allocations. Not only will it be used for identifying maintenance needs; it will be used in the budget planning process. It should be considered a flexible, living document, as new maintenance needs will arise. This document may also be used as a planning tool that can adapt to regulatory constraints and agency procedures, along with facility and program operational characteristics. Simply put, the plan and the process is adaptable.

The current FIVE YEAR ASSET MANAGEMENT PLAN was developed through a multi-layered approach. Maintenance projects are identified from a variety of processes (see MAINTENANCE PROJECT IDENTIFICATION below). Once a complete list is compiled, a prioritization process is initiated to identify what gets done when. This is based on project need and budget availability. Since the LSRCP budgets for FY2020 and FY2021 have been set by BPA, the approximate amount for maintenance funding for each year has been established (\$2.5M – FY2020 and \$2.0M – FY2021). Since the LSRCP budgets for FY2022 thru FY2025 are not yet known, LSRCP used \$5.0M per fiscal year; which is the approximate amount of maintenance funding for FY2018, prior to recent BPA funding reductions.

With a maintenance project list compiled and annual funding estimates determined, the prioritization process could move forward. Projects with a “Human Safety” nexus were prioritized at or near top of the list.

Recommendations were solicited from the facility managers. A draft prioritized list of the top 50 projects was reviewed with USFWS Regional Engineers based on need and schedule.

LSRCP then put together an Asset Management Recommendation Group (AMRG) consisting of one person from each LSRCP Cooperator. This group reviewed and discussed the entire maintenance project list and recommended priorities. They recommended adjustments and a detailed prioritized list for the first two years of the FIVE YEAR ASSET MANAGEMENT PLAN (FY2020 and

FY2021). They recognized the need to keep the plan flexible to react to maintenance emergencies that may arise during the fiscal year. LSRCP intends to convene this group annually to make recommendations for the LSRCP Asset Management Plan.

Out-year maintenance plans (FY2022 thru FY2025) were prioritized based on input from the AMRG, USFWS Engineering, and facility management. These are in place to forecast maintenance demands of the LSRCP program based on needs and anticipated available funding. Things will change if higher priority maintenance needs surface or changes in funding occur.

UNDERSTANDING THE PLAN

Tab Name – FYP-FINAL-12.3.2019 = This is the draft final “FIVE YEAR ASSET MANAGEMENT PLAN”. Contains the Current Year (FY2020) and years (FY2021 thru FY2025). The Asset Management Recommendation Group provided detailed recommendations for FY2020 and FY2021. Estimated Total = \$24.5M.

Tab Name – FYP-BACKLOG-12.3.2019 = This is a list of current unassigned projects. Estimated Total = \$106M.

Tab Name – FYP-SMALL DOLLAR PROJ – 12.3.19 = This is a list of unassigned small dollar projects (less than \$20,000). We anticipate funding most of these thru existing facility O & M budgets, but projects will be evaluated on an individual basis. Estimated Total = \$629K.

MAINTENANCE PROJECT IDENTIFICATION

Maintenance projects are identified from a variety of processes that include:

FACILITY MANAGEMENT IDENTIFICATION AND RECOMMENDATION: The majority of maintenance projects are identified by the facility operators who manage the day to day operations. Regular communication between the LSRCP Operations and Maintenance Coordinator (OMC) and facility managers keep maintenance project needs and status current.

ANNUAL CONDITION ASSESSMENT: An annual facility condition assessment conducted by LSRCP OMC and facility managers.

COMPREHENSIVE CONDITION ASSESSMENT (CCA): A facility condition assessment conducted every five years by USFWS regional Facility Maintenance Coordinator, the LSRCP OMC, and facility managers.

USFWS FACILITY SAFETY INSPECTIONS: Conducted by regional Safety Personnel every five years.

STATE FACILITY SAFETY INSPECTIONS: Conducted by State Safety Personnel every three to five years.

USFWS ENVIRONMENTAL AUDIT: Conducted by USFWS Environmental Compliance Personnel every five years.

FISH PASSAGE COMPLIANCE REVIEW: Terms and Conditions issued by federal regulatory agencies (NOAA & USFWS) to reduce facility and operational effects on threatened or endangered species.

After a project is identified it is classified as “Deferred Maintenance” (DM) or “Capital Improvement” (CI) based on the project’s estimated cost. USFWS classifies projects over (\$500,000) as Capital Improvements and projects under (\$500,000) as Deferred Maintenance.

FINAL DRAFT 02/12/20

FINAL DRAFT 02 04 2020

3-Dec-19 LSRCP - FIVE YEAR ASSET MANAGEMENT PLAN - DEFERRED MAINTENANCE AND CAPITAL IMPROVEMENTS

FY2020 - CURRENT YEAR ORIGINAL DO NOT ALTER

2020	Lyons Ferry FH	CI	Marmes electric - Phase 2A	Design, Construct	\$660,081	Repair electrical infrastructure and genset
2020	Lyons Ferry FH	CI	Marmes electric - Phase 2B	Design, Construct	\$886,524	
2020	Hagerman FH	DM	Repair electrical infrastructure at (4) residences	Construct	\$80,000	Old / out of code electrical infrastructure
2020	Lookingglass FH	DM	Repair electrical infrastructure at various hatchery buildings	Construct (assess wiring)	\$405,000	Includes panels, transformers, and other components
2020	Irrigon FH	DM	Repair Hatchery bldg fire alarm system, existing does not work	Construct	\$45,000	Consulting with FWS Safety
2020	Lyons Ferry FH	DM	Backflow preventers	Construct	\$70,000	State of Wash code.
2020	McCall FH	DM	Repair select circuits / panels; (3) residences	Construct	\$45,000	To meet electrical code
2020	Dayton Pond SF	CI	Repair undermining at dam	Assess, Alt, Design, Permit	\$100,000	Assess, repair alternatives, initiate design
2020	Irrigon FH	CI	Assessment of all generators - operational condition, expected life	Assess	\$25,000	Get professional assessment to guide future direction (repair / replace?)
2020	Hagerman FH	DM	Install stairs/walkway at Spring 13 (access over lava rock, etc)	Design, Construct	\$30,000	Provide safe access to Spring 13 over lava rock
2020	ODFW Fish Lib	EQ	Replace fish transport tanker, existing tankers from 1982	Purchase	\$150,000	Developing specifications and design for replacement tanker
					\$2,496,605	

FY2021 - YEAR ONE

2021	Sawtooth FH	DM	Weir improvement, fill plunge pool in front of weir	Design, Construct	\$30,000	Originally assigned 2020. Project to encourage fish to move into fish ladder
2021	Dworshak NFH	CI	Replace chiller system	Design, Construct	\$538,000	Limited design and full construction - NEW TO LIST
2021	Dayton Pond SF	CI	Repair undermining at dam	Construct	\$350,000	Dependent on initial assessment and design
2021	Irrigon FH	CI	Replace back-up generators; dependent on assessment (2020)	Design	\$125,000	Dependent upon assessment findings
2021	Clearwater FH	CI	Inspect main pipeline (internal?), assess condition & life expectancy	Assess	\$75,000	Contract with Lyons Ferry pipe inspection
2021	Clearwater FH	CI	Inspect main pipeline (internal?), assess condition & life expectancy	Assess	\$75,000	Contract with Clearwater pipe inspection
2021	Clearwater FH	DM	Replace drum filter for incubation water at hatchery bldg	Purchase	\$50,000	Current drum filter is broken
2021	McCall FH	DM	Install new vat piping and valves, including head tank for incubation	Construct	\$125,000	Some valves and pipes in hatchery bldg have failed
2021	Clearwater FH	DM	Improve & increase number of raceway alarms - STL & CHK	Design, Construct	\$75,000	reduces risk of problems
2021	Lyons Ferry FH	CI	Repair main water headbox	Design	\$90,000	Important to not delay this project
2021	Dayton Pond	CI	Improve intake structure; improve river flow	Final Design, Permit	\$70,000	Preliminary design at 65% stage, completed in FY2019
2021	McCall FH	CI	Replace shade panels on shade structure	Design	\$90,000	CCA & safety concerns; support structure may need minor repair
2021	Hagerman FH	DM	Additional dorm space	Design, Construct	\$125,000	To house seasonal employees
2021	Dworshak NFH	DM	Baffles for CHK raceways	Purchase	\$100,000	Baffles for A-Bank purchased and in place, need to get baffles for Bank B
2021	Powell	DM	Install new, compliant screens at intake (NOAA Compliance)	Construct	\$32,000	New screens to be fabricated.
2021	Sawtooth FH	DM	Traveling screen on settling pond outflow	Design	\$50,000	This outflow water goes directly to adult holding ponds
					\$2,000,000	

FY2022 - YEAR TWO

2022	Irrigon FH	DM	Replace underground raceway valves (3 per raceway)	Construct	\$350,000	Some valves have already failed
2022	Clearwater FH	DM	Repair STL raceway walls and reduce the stress on walls	Construct	\$220,000	Park the traveling bridge, add walkways
2022	Dworshak NFH	DM	Shade cloth	Construct	\$35,000	Good for fish and workers
2022	Irrigon FH	CI	Replace back-up generator Pump Station 1	Construct	\$650,000	Depends on assessment findings
2022	Sawtooth FH	CI	Develop comprehensive well plan for the facility	Design	\$150,000	New, additional wells have been requested, a well plan should guide
2022	Sawtooth FH	DM	Repair / replace fencing around the adult ponds and trap	Construct	\$125,000	Many of the support poles are becoming loose.
2022	Sawtooth FH	DM	Replace (2) broken settling pond valves; (1) tailrace valve	Construct	\$75,000	To make full use of waste ponds, tailrace valve new; to prevent backflow
2022	Wallowa FH	DM	Repair Bridge #2	Construct	\$60,000	Bridge compliance, design complete 2018
2022	Wallowa FH	DM	Repair Weir Bridge	Construct	\$100,000	Bridge compliance, design complete 2018
2022	Lyons Ferry FH	CI	Repair main water headbox	Construct	\$700,000	This project should not be delayed
2022	McCall FH	CI	Replace shade panels on shade structure	Construct	\$420,000	
2022	Wallowa FH	CI	Repair fish ladder at settling pond outlet (NOAA Compliance)	Design	\$150,000	
2022	Lookingglass FH	DM	Repair fire and maintenance water system	Design, Construct	\$300,000	
2022	Sawtooth FH	DM	Automatic security gate	Construct	\$45,000	
2022	South Fork SF	DM	Repair jump structures and dam boards at fish ladder and trap	Construct	\$70,000	
2022	Clearwater FH	DM	Replace hatchery maintenance water line	Construct	\$120,000	
2022	Lyons Ferry FH	DM	Replace roofs all (8) residences, current roofs +35 yrs old	Construct	\$160,000	shingle overlay could we do design/build
2022	Sawtooth FH	DM	Traveling screen on settling pond outflow	Construct	\$200,000	shingle overlay
2022	Irrigon FH	DM	Replace roofs all (6) residences	Construct	\$120,000	
2022	LSRCP	EQ	Replace (2) fish hauling tankers	Purchase	\$450,000	As needed
2022	LSRCP	EQ	PERSONAL PROPERTY REPLACEMENT - TRUCKS & EQUIPMENT	Purchase	\$500,000	
					\$5,000,000	

FY2023 - YEAR THREE

2023	Hagerman FH	DM	Spring 17 pipeline - additional (balance flows to PRAS & raceways)	Construct	\$130,000	limited design, mostly construct
2023	McCall FH	CI	Inspect water intake system, internal pipeline condition	Assess	\$75,000	intake to headbox

FINAL DRAFT 02 04 2020

2023	Clearwater FH	DM	Repair all vat room water supply valves	Construct	\$130,000		Construct	
2023	Dayton Pond SF	CI	Improve intake structure; improve river flow	Construct	\$500,000		Construct	Could continue dredging at a cost of about \$15,000 per year ??
2023	Magic Valley FH	DM	Replace bulk feed storage	Construct	\$50,000		Construct	
2023	Irrigon FH	CI	Replace back-up generator Pump Station 2	Construct	\$650,000		Construct	Depends on assessment findings
2023	Wallowa FH	CI	Repair fish ladder at settling pond outlet (NOAA Compliance)	Construct	\$847,000		Construct	
2023	Lookinglass FH	CI	Repair and epoxy coat raceways	Construct	\$500,000		Design	Limited design
2023	Magic Valley	CI	Preliminary engineering, alternatives analysis for new fish rear units	Design	\$250,000		Construct	Replace current raceways / traveling bridge
2023	Clearwater FH	DM	Increase employee dorm space	Construct	\$135,000		Construct	Portable bunkhouse
2023	Clearwater FH	DM	Replace vat room cleaning valves	Construct	\$135,000		Construct	Both
2023	Lookinglass FH	CI	New intake screens, new fish ladder (NOAA Compliance)	Final design, permits	\$180,000		Construct	Replace metal roofs
2023	Sawtooth FH	DM	Construct Well 3A - based on new comprehensive well plan (2022)	Construct	\$220,000		Construct	
2023	Sawtooth FH	DM	Epoxy paint raceways (do half in 2023, half in 2024)	Construct	\$75,000		Design	
2023	Lookinglass FH	DM	Replace roofs original 3 houses	Construct	\$105,000		Construct	
2023	Lyons Ferry FH	CI	Replace adult chute, sorter, and controls	Design	\$100,000		Construct	
2023	Magic Valley FH	DM	Epoxy paint inside vats	Construct	\$120,000		Construct	
2023	Lookinglass FH	DM	Replace (4) roll up doors on equipment bldg	Construct	\$48,000		Design, Construct	
2023	Hagerman FH	DM	Rehab chiller system	Construct	\$175,000		Construct	Design complete 2019
2023	Little Sheep SF	DM	Improve fish ladder at intake (NOAA Compliance)	Construct	\$75,000		Construct	As needed
2023	LSRCP	EQ	PERSONNAL PROPERTY REPLACEMENT - TRUCKS & EQUIPMENT	Purchase	\$500,000		Purchase	
\$5,000,000								
FY2024 - YEAR FOUR								
2024	McCall FH	DM	Outside rearing ponds - minor repair, epoxy paint	Construct	\$160,000		Construct	
2024	Red River SF	DM	Improve water intake screens, weir panels (NOAA Compliance)	Construct	\$60,000		Construct	design work done in 2019
2024	Lookinglass FH	CI	Chillers repair / replacement	Design	\$110,000		Design	
2024	Hagerman FH	DM	Replace select valves (hatchery staff to confirm the need) Phase 1	Construct	\$75,000		Construct	
2024	Wallowa FH	DM	Update half of the incubation facilities	Construct	\$50,000		Design, Construct	
2024	Hagerman FH	CI	Replace (2) houses	Construct	\$600,000		Construct	
2024	Sawtooth FH	DM	Epoxy paint raceways (do half in 2023, half in 2024)	Construct	\$75,000		Construct	
2024	Lookinglass FH	CI	New intake screens, new fish ladder (NOAA Compliance)	Construct	\$2,700,000		Construct	Both, completely done at one time
2024	Lyons Ferry FH	CI	Replace adult chute, sorter, and controls	Construct	\$450,000		Construct	
2024	Dworschak NFH	DM	Epoxy paint CHK raceways	Construct	\$120,000		Construct	
2024	Sawtooth FH	DM	Improve Well 5A to get more water (based on well plan)	Construct	\$100,000		Construct	
2024	LSRCP	EQ	PERSONNAL PROPERTY REPLACEMENT - TRUCKS & EQUIPMENT	Purchase	\$500,000		Purchase	As needed
\$5,000,000								
FY2025 - YEAR FIVE								
2025	Lyons Ferry FH	DM	Replace north and south side fire and maintenance water lines	Design, Construct	\$340,000		Design, Construct	Minimal design
2025	Irrigon FH	DM	Replace residence siding (6)	Construct	\$240,000		Construct	
2025	Powell SF	DM	All support bldgs - minor repair, new siding, roofs, pint	Construct	\$92,000		CONSTRUCT	As needed
2025	Big Canyon, OR SF	DM	Repair entrance bridge	CONSTRUCT	\$225,000		CONSTRUCT	
2025	Hagerman FH	DM	Replace select valves (hatchery staff to confirm the need) Phase 2	CONSTRUCT	\$75,000		CONSTRUCT	
2025	Wallowa FH	DM	Update half of the incubation facilities	Design, Construct	\$50,000		Design, Construct	
2025	Hagerman FH	CI	Replace (2) houses	Construct	\$600,000		Construct	
2025	McCall	DM	Dredge settling pond	Construct	\$70,000		Design	Prelim engineering, alternatives
2025	Tucannon FH	CI	Improve intake, fish ladder, screens, weir (NOAA Compliance)	Design	\$250,000		Construct	
2025	Clearwater FH	DM	Epoxy paint STL raceways	Construct	\$120,000		Construct	
2025	Imnaha SF	CI	Repair intake screen (NOAA Compliance) - design complete FY2019	Construct	\$650,000		Construct	
2025	Tucannon FH	DM	Replace roof residence #2 and replace roof on intake bldg	Construct	\$90,000		Construct	
2025	McCall FH	DM	Inside Vats - Minor repairs and epoxy paint	Construct	\$125,000		Construct	
2025	Lyons Ferry FH	DM	Residences and visitor center irrigation system	Construct	\$190,000		Construct	
2025	McCall FH	DM	Repair (6) bathrooms - visitor center, hatchery bldg, dorm/office	Construct	\$90,000		Design, Construct	Keep critters out of spring water to the hatchery
2025	Hagerman FH	DM	Improve Spring 17 collection structure	Construct	\$150,000		Construct	
2025	Clearwater FH	DM	Feed storage bldg	Construct	\$143,000		Construct	
2025	Lookinglass FH	DM	New heaters and insulation for equipment bldg	Construct	\$80,000		Construct	
2025	McCall FH	DM	Office / dorm building - new roof	Construct	\$90,000		Construct	Metal roof
2025	Lyons Ferry FH	DM	New siding all (8) residences	Construct	\$320,000		Construct	
2025	Irrigon FH	DM	Replace flooring in all (6) residences	Construct	\$60,000		Construct	
2025	LSRCP	EQ	Replace (2) fish hauling tankers	Purchase	\$450,000		Purchase	
2025	LSRCP	EQ	PERSONNAL PROPERTY REPLACEMENT - TRUCKS & EQUIPMENT	Purchase	\$500,000		Purchase	As needed
\$5,000,000								

FINAL DRAFT 02-04-2020

3-Dec-19

LSRCP - FIVE YEAR ASSET MANAGEMENT PLAN - DEFERRED MAINTENANCE AND CAPITAL IMPROVEMENTS

DEFERRED MAINTENANCE - UNASSIGNED BACKLOG (NOT PRIORITIZED) ORIGINAL DO NOT ALTER

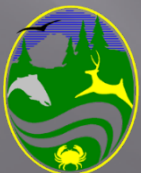
TBD	Clearwater FH	DM	Office / dorm building - new roof	\$150,000
TBD	Clearwater FH	DM	Replace siding on all support bldgs	\$150,000
TBD	Dayton Pond SF	DM	Improve intake fish screens and fry by-pass (NOAA Compliance)	\$80,000
TBD	South Fork SF	DM	Holding ponds 1 & 2 - minor repair, epoxy paint	\$120,000
TBD	Lyons Ferry FH	DM	Paint all painted surfaces of support bldgs	\$200,000
TBD	Magic Valley FH	DM	Replace flooring in residences (after 2022)	\$40,000
TBD	McCall FH	DM	Office / dorm bldg - new paint all inside and outside	\$100,000
TBD	Clearwater FH	DM	Install isolation valve and chinook raceway water valve	\$200,000
TBD	Clearwater FH	DM	Repair / replace residence fencing	\$140,000
TBD	Sawtooth FH	DM	Re-model residence bathrooms (6) residences	\$240,000
TBD	Sawtooth FH	DM	Install back-up generator for houses and dorm	\$125,000
TBD	Tucannon FH	DM	Replace siding on both residences	\$80,000
TBD	Wallowa FH	DM	Replace metal roofs (3) residences (check)	\$105,000
TBD	Big Canyon OR SF	DM	Repair asphalt	\$75,000
TBD	Big Canyon OR SF	DM	Construct a new tempering well (conduct feasibility study)	\$220,000
TBD	Up Crooked R SF	DM	Demo all fish rearing infrastructure on site for property transfer	\$125,000
TBD	Lookingglass FH	DM	Replace domestic generator	\$190,000
TBD	Lookingglass FH	DM	Construct canopy at equipment bldg	\$75,000
TBD	McCall FH	DM	Repair bad asphalt (after 2024)	\$60,000
TBD	McCall FH	DM	Replace all windows; hatchery bldgs and residences	\$175,000
TBD	McCall FH	DM	Replace back-up generator (after 2025)	\$75,000
TBD	Sawtooth FH	DM	Chip seal asphalt (after 2022)	\$250,000
TBD	Sawtooth FH	DM	Construct spawn room wall	\$100,000
TBD	South Fork SF	DM	New back-up generator	\$75,000
TBD	McCall FH	DM	Additional office space	\$125,000
TBD	Magic Valley	DM	Replace hatchery bldg roof	\$300,000
TBD	Clearwater FH	DM	Replace hatchery bldg roof	\$300,000
TBD	Lyons Ferry FH	DM	Main pipeline replacement - Preliminary engineering, alternatives	\$250,000
TBD	Clearwater FH	DM	Main pipeline replacement - Preliminary engineering, alternatives	\$250,000
				\$4,375,000

CAPITAL IMPROVEMENTS - UNASSIGNED BACKLOG (NOT PRIORITIZED)

TBD	Magic Valley FH	CI	Replace raceways, traveling bridge	\$6,000,000
TBD	Tucannon FH	CI	Compliant intake, fish ladder, screens, weir (NOAA Compliance)	\$5,000,000
TBD	Lookingglass FH	CI	Repair chiller system	\$600,000
TBD	Lyons Ferry FH	CI	Construct new rearing lakes to improve rearing opportunities	\$5,500,000
TBD	Lyons Ferry FH	CI	Replace main hatchery water supply pipeline (over 2 miles)	\$30,000,000
TBD	Lyons Ferry FH	CI	Repair asphalt - design complete FY2019	\$1,900,000
TBD	Clearwater FH	CI	Replace main hatchery water supply pipeline (over 2 miles)	\$35,000,000
TBD	Sawtooth FH	CI	Repair weir, fish ladder & fish trap (NOAA Compliance)	\$4,000,000
TBD	East Fork Salmon	CI	Repair exclusion barrier, fish ladder, trap (NOAA Compliance)	\$3,100,000
TBD	Red River SF	CI	Repair exclusion barrier, fish ladder, trap (NOAA Compliance)	\$1,500,000
TBD	Clearwater FH	CI	Repair asphalt	\$1,400,000
TBD	Hagerman FH	CI	Repair asphalt	\$1,800,000
TBD	Magic Valley FH	CI	Repair asphalt	\$1,800,000
TBD	Irrigon FH	CI	Repair asphalt	\$2,500,000
TBD	Curl Lake SF	CI	Repair intake (NOAA Compliance) - design complete FY2019	\$400,000
TBD	South Fork SF	CI	Repair intake (NOAA Compliance) - design complete FY2019	\$450,000
TBD	LSRCP	CI	Upgrade all facility visitor center displays, etc	\$600,000
				\$101,550,000

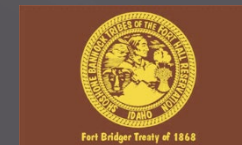
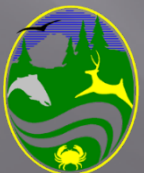
LOWER SNAKE RIVER COMPENSATION PLAN

PRESENTED TO THE NORTHWEST
POWER AND CONSERVATION COUNCIL
JULY 14, 2020

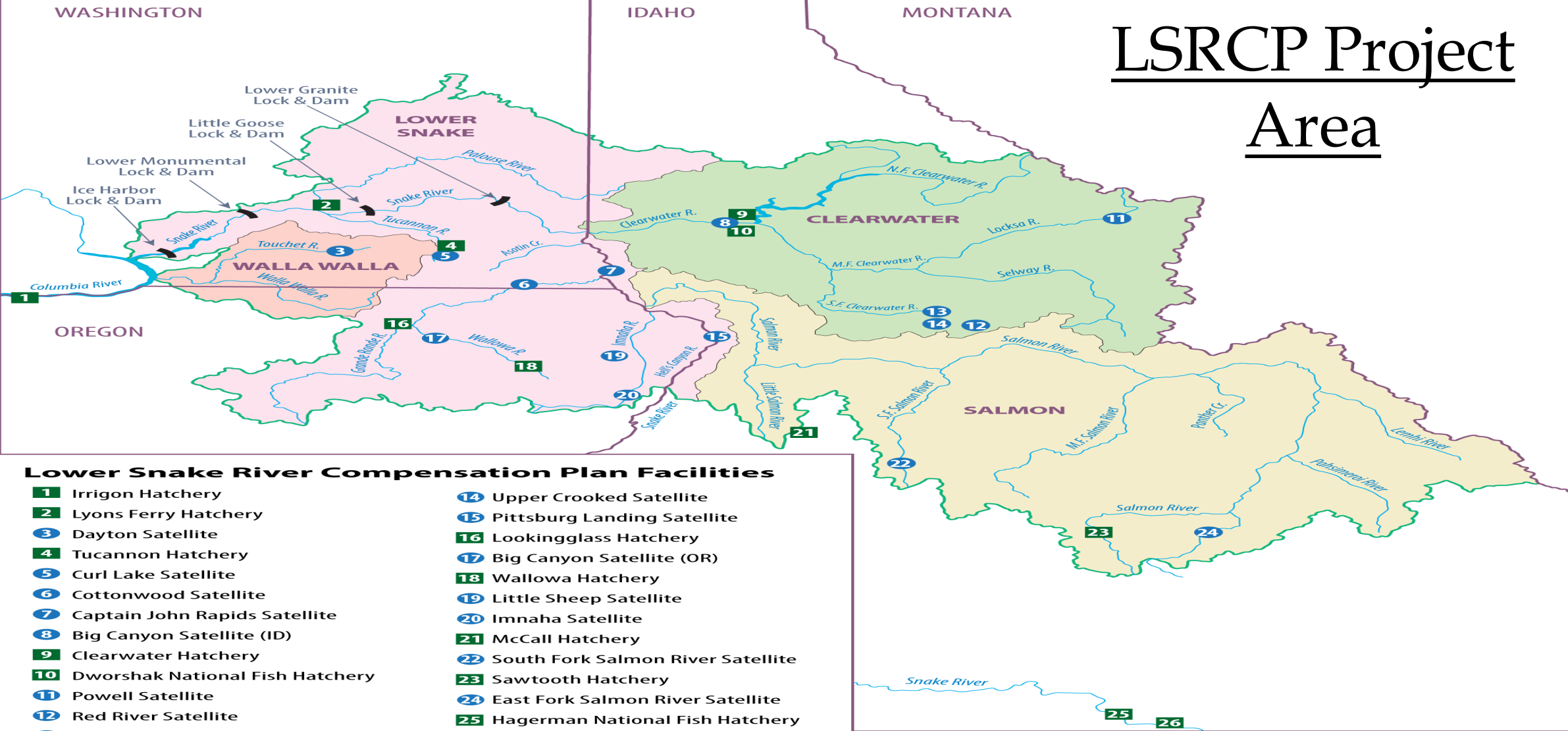


LOWER SNAKE RIVER COMPENSATION PLAN

- INTRODUCTIONS
- OVERVIEW
- LSRCRP HISTORICAL/PROJECTED BUDGET
- 5-YEAR ASSET MANAGEMENT PLAN
- PARTNERS' PANEL



LSRCP Project Area



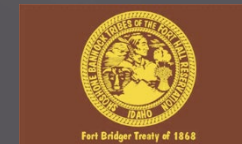
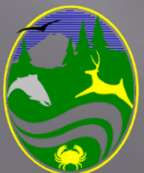
Lower Snake River Compensation Plan Facilities

- | | |
|---|---|
| 1 Irrigon Hatchery | 14 Upper Crooked Satellite |
| 2 Lyons Ferry Hatchery | 15 Pittsburg Landing Satellite |
| 3 Dayton Satellite | 16 Lookingglass Hatchery |
| 4 Tucannon Hatchery | 17 Big Canyon Satellite (OR) |
| 5 Curl Lake Satellite | 18 Wallowa Hatchery |
| 6 Cottonwood Satellite | 19 Little Sheep Satellite |
| 7 Captain John Rapids Satellite | 20 Imnaha Satellite |
| 8 Big Canyon Satellite (ID) | 21 McCall Hatchery |
| 9 Clearwater Hatchery | 22 South Fork Salmon River Satellite |
| 10 Dworshak National Fish Hatchery | 23 Sawtooth Hatchery |
| 11 Powell Satellite | 24 East Fork Salmon River Satellite |
| 12 Red River Satellite | 25 Hagerman National Fish Hatchery |
| 13 Lower Crooked River Satellite | 26 Magic Valley Hatchery |



OVERVIEW

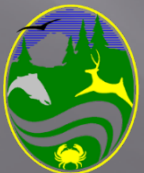
- **AUTHORIZED IN 1976 TO MITIGATE FOR 4 LOWER SNAKE RIVER DAMS**
 - **ICE HARBOR**
 - **LOWER MONUMENTAL**
 - **LITTLE GOOSE**
 - **LOWER GRANITE**
- **26 HATCHERY FACILITIES; CONSTRUCTED BY THE COE DURING 1980'S; OWNED BY THE USFWS.**
- **DIRECT FUNDING AGREEMENT WITH BPA FOR OPERATIONS & MAINTENANCE**
- **HATCHERY FACILITIES OPERATED/MANAGED BY OR, ID, WA, NPT, CTUIR, SBT**



OVERVIEW



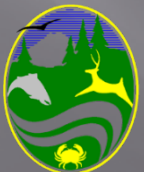
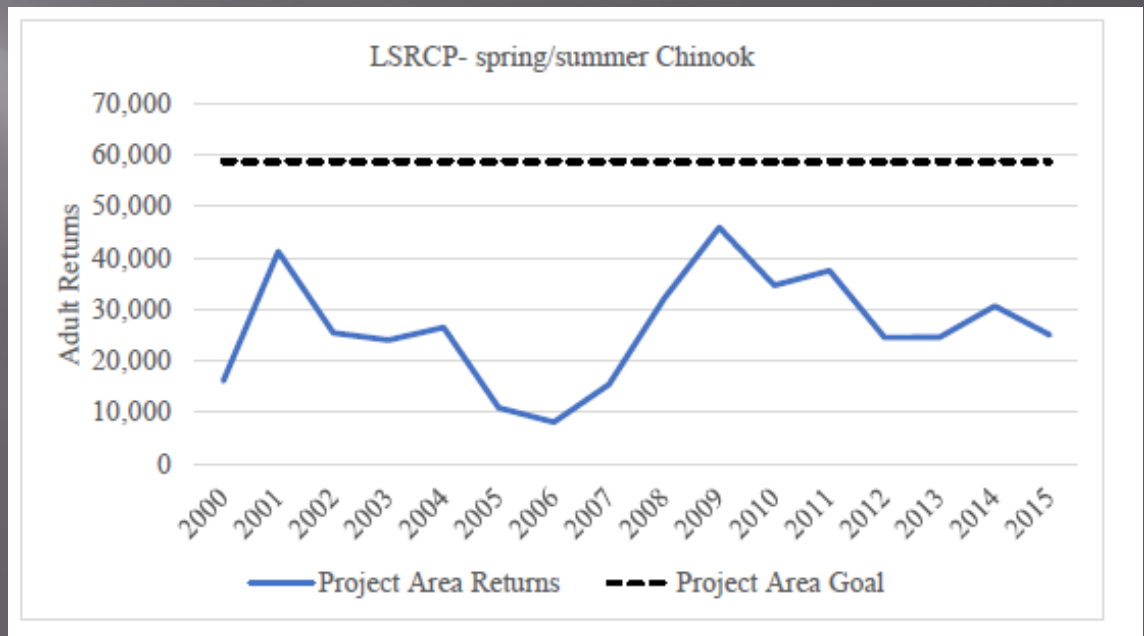
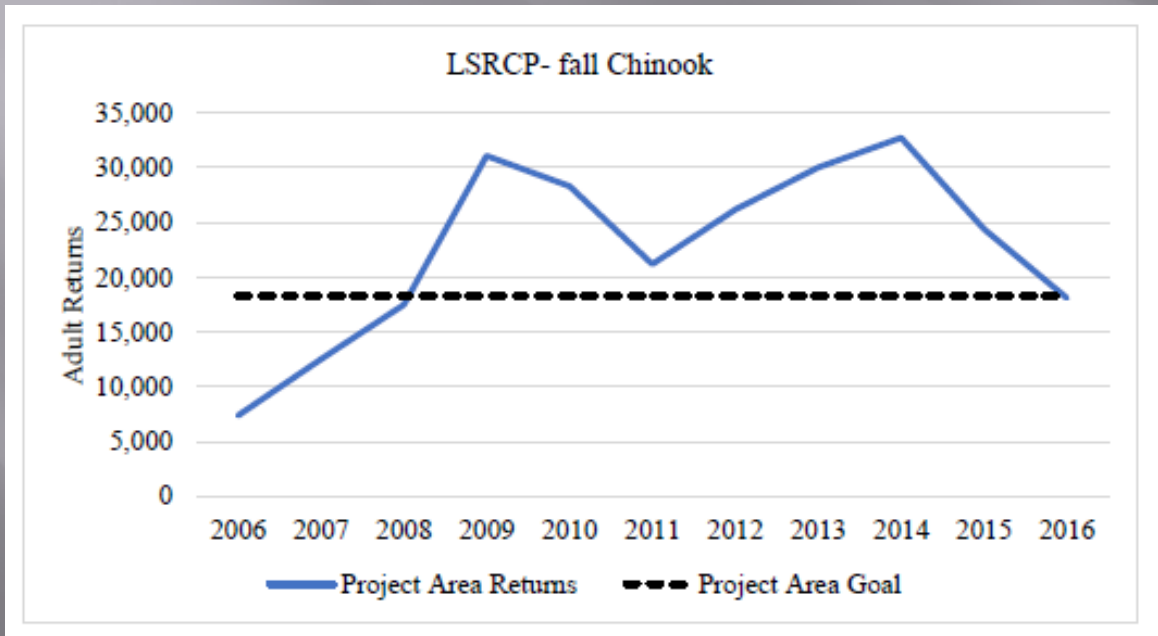
- **FEDERAL MITIGATION RESPONSIBILITY**
 - **ADULT RETURNS TO/ABOVE PROJECT AREA**
 - **18,300 FALL CHINOOK SALMON**
 - **58,700 SP/SU CHINOOK SALMON**
 - **55,100 STEELHEAD**
 - **86,000 LBS. RAINBOW TROUT**
- **PRODUCE +/- 20M ANADROMOUS SMOLTS**



OVERVIEW



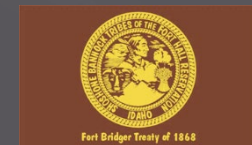
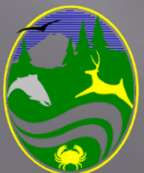
- **VARYING LEVELS OF MITIGATION SUCCESS**
 - **TOTAL ADULT PRODUCTION NEVER REALIZED**



OVERVIEW

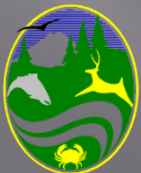
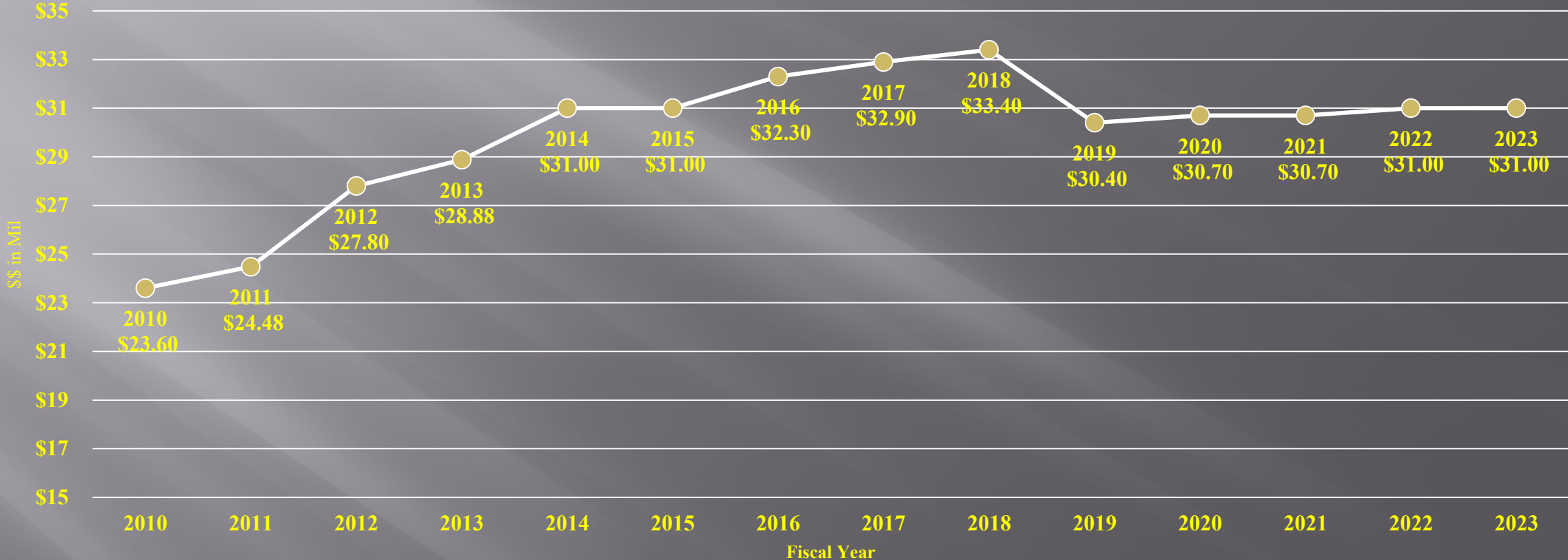


- **RELATIVE IMPORTANCE OF LSRCP PRODUCTION**
 - **LARGEST HATCHERY INFRASTRUCTURE SYSTEM IN THE PACIFIC NORTHWEST**
 - **\$512M PROPERTY REPLACEMENT COST; MOST NEARLY 40 YEARS OLD**
 - **LSRCP RELEASES APPROX. 20M SMOLTS IN SNAKE RIVER REGION**
 - **LSRCP = 58% OF SNAKE RIVER BASIN PRODUCTION**
 - **LSRCP = 20% OF TOTAL COLUMBIA RIVER BASIN PRODUCTION ABOVE BONNEVILLE**



LSRCP BUDGET

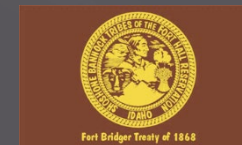
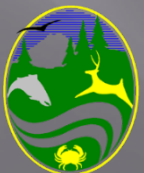
LSRCP FY10 - FY23
Historic/Projected Funding



5 YEAR ASSET MANAGEMENT PLAN

OVERVIEW

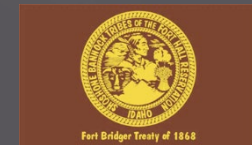
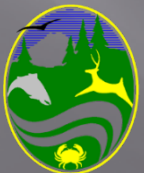
- **SYSTEMATIC & COMPREHENSIVE APPROACH TO ASSET MANAGEMENT**
- **PRIORITIZES MAINTENANCE, IMPROVEMENTS, AND EQUIP REPLACEMENT**
- **INCLUDES ALL LSRCF FACILITIES AND PROGRAMS**
- **BASED ON NEEDS AND AVAILABLE FUNDING**
- **FLEXIBLE TO ACCOMMODATE NEWLY IDENTIFIED NEEDS**
- **ENSURE INFRASTRUCTURE REMAINS SAFE AND EFFICIENT TO REDUCE THE RISK OF PROGRAM FAILURE**



5-YEAR ASSET MANAGEMENT PLAN

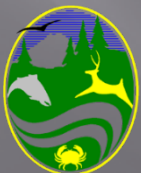
- HOW DOES IT WORK?

- NEEDS IDENTIFIED THROUGH A VARIETY OF PROCESSES INCLUDING REGULAR CONDITION ASSESSMENTS AND SAFETY INSPECTIONS
- COST ESTIMATES ARE DEVELOPED AND NEEDS ARE PRIORITIZED BY FWS PERSONNEL AND LSRCP PARTNERS.



5-YEAR ASSET MANAGEMENT PLAN

3-Dec-19 LSRCP - FIVE YEAR ASSET MANAGEMENT PLAN - DEFERRED MAINTENACE AND CAPITAL IMPROVEMENTS					
FY2020 - CURRENT YEAR					ORIGINAL DO NOT ALTER
FY	FACILITY	PROJECT NAME	PROJECT TYPE	COST EST	NOTES
2020	Lyons Ferry FH	Marmes electric - Phase 2B	Design, Construct	\$886,524	Continuation of emergency fix Old / out of code electrical infrastructure
2020	Hagerman FH	Repair electrical infrastructure at (4) residences	Construct	\$80,000	
2020	Dayton Pond SF	Repair undermining at dam	Assess, Alt, Design, Permit	\$100,000	Assess, repair alternatives, initiate design
2020	ODFW Fish Lib	Replace fish transport tanker, existing tankers from 1982	Purchase	\$150,000	Developing specifications and design for replacement tanker
FY2021 - YEAR ONE					
2021	Dworshak NFH	Replace chiller system	Design, Construct	\$538,000	Limited design and full construction - NEW TO LIST
2021	Dayton Pond SF	Repair undermining at dam	Construct	\$350,000	Dependent on initial assessment and design
2021	Clearwater FH	Inspect maine pipeline (internal?), assess condition & life expectancy	Assess	\$75,000	Contract with Lyons Ferry pipe inspection - both same time
2021	Clearwater FH	Replace drum filter for incubation water at hatchery bldg	Purchase	\$50,000	Current drum filter is broken
2021	Powell	Install new, compliant screens at intake (NOAA Compliance)	Construct	\$32,000	New screens to be fabricated.



WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

LYONS FERRY HATCHERY

MARMES PUMP STATION FAILURE

- SWITCH GEAR MELTDOWN ELIMINATED ABILITY TO RUN PUMPS AND FULLY WATER UP THE FACILITY. REPAIR COSTS GREATER THAN \$4.25 MILLION

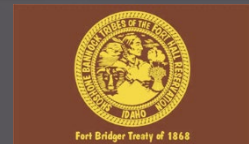
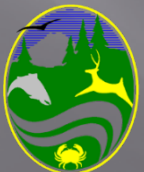


PIPELINE FAILURE

- BASKETBALL SIZED HOLE IN THE WATER DELIVERY PIPELINE
- REPAIR COSTS \$800,000

WHAT IS AT STAKE?

- UP TO 4.5 MILLION ESA LISTED FALL CHINOOK
- 225,000 ESA LISTED SPRING CHINOOK
- 200,000 ESA LISTED SUMMER STEELHEAD



IDAHO DEPARTMENT OF FISH AND GAME

CRITICAL REPAIRS TO DATE IN 2020

McCALL FISH HATCHERY INCUBATION LINE FAILURE

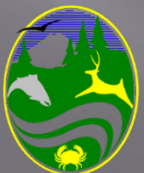
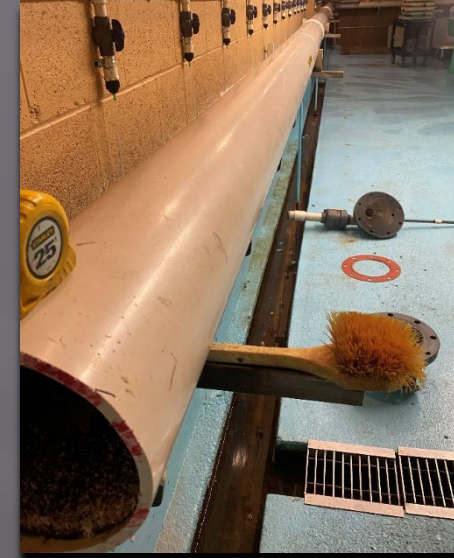
- LINE SUPPLIES WATER TO INCUBATORS THAT HOLD 90% OF HATCHERY PRODUCTION (\$44K)

McCALL FISH HATCHERY INTAKE VALVE FAILURE

- REDUCED ABILITY TO MANIPULATE HATCHERY WATER TEMPERATURES PROMOTES DISEASE AND PARASITES (\$24K)

MAGIC VALLEY FISH HATCHERY PIPELINE LEAK

- LEAK DISCOVERED WINTER 2020, REPAIRED FOLLOWING SPRING RELEASE OF ALL SMOLTS (\$80K)



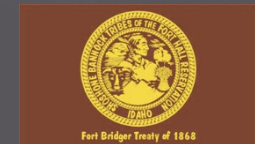
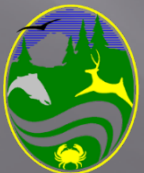
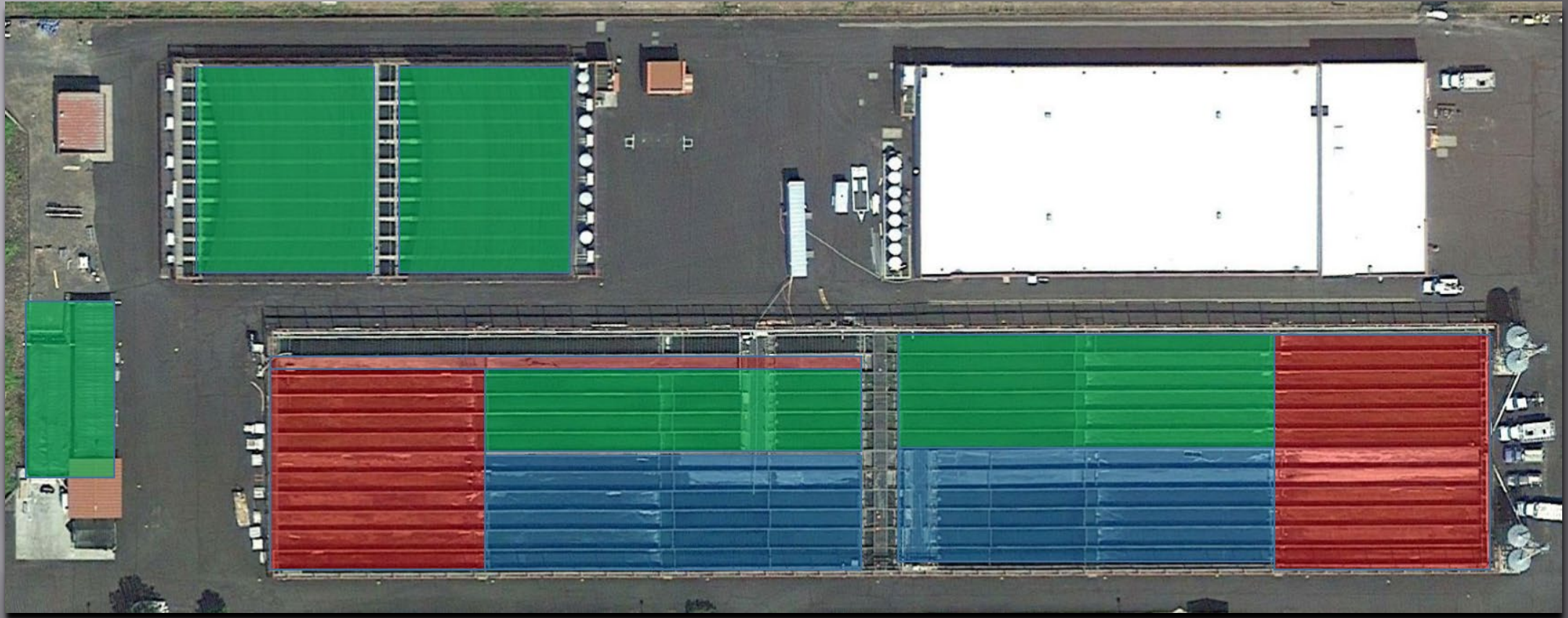
IDAHO DEPARTMENT OF FISH AND GAME

CLEARWATER FISH HATCHERY RACEWAYS (EST. \$35M)

GREEN = CHINOOK

BLUE = STEELHEAD

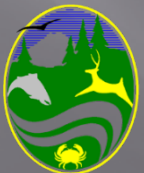
RED = EMPTY



CONFEDERATED TRIBES OF THE UMATILLA RESERVATION

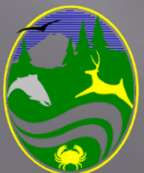
LOOKINGGLASS HATCHERY EXAMPLE - FISH PASSAGE IMPACTS

- **LOOKINGGLASS HATCHERY IS CRITICAL TO SALMON RESTORATION IN LOOKINGGLASS CREEK AND THE OPERATION OF BPA/COUNCIL SATELLITE FACILITIES IN UPPER GRANDE RONDE AND CATHERINE CR. OPERATED BY CTUIR AND LOSTINE RIVER FACILITY OPERATED BY NPT**
- **ADULT FISH PASSAGE CRITERIA NOT MET - EXISTING LADDER AND WEIR STRUCTURES CAN BLOCK FISH FROM ESCAPING ABOVE HATCHERY TO SPAWN AND CONCENTRATE FISH IN MARGINAL HABITAT**
- **JUVENILE FISH PASSAGE CRITERIA NOT MET - INADEQUATE FISH SCREENS AT HATCHERY INTAKE STRUCTURE IMPACTS 3 ESA SPECIES**
- **IMPROVED ADULT AND JUVENILE PASSAGE DESIGNS ARE COMPLETED BUT THERE IS NO FUNDING AVAILABLE FOR CONSTRUCTION (APPROX. \$3.4M)**



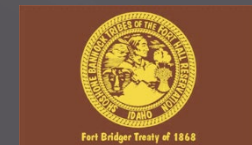
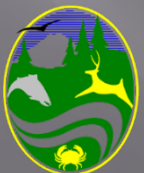
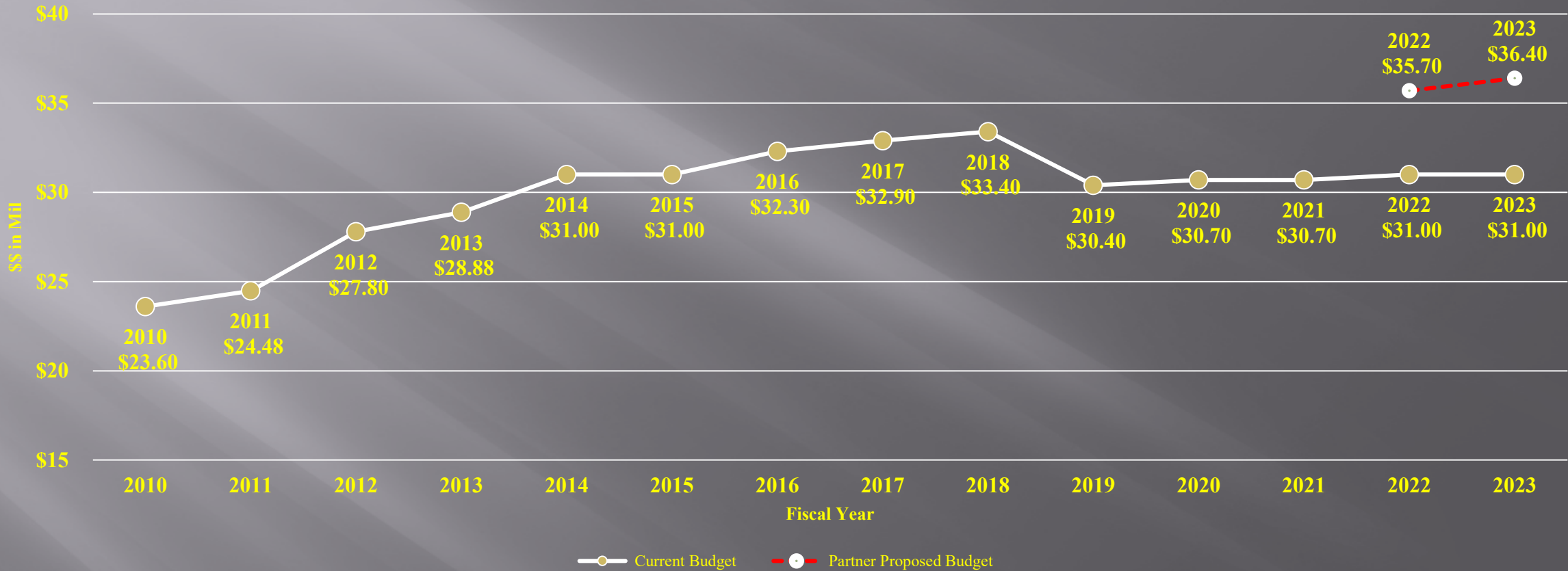
OREGON DEPARTMENT OF FISH AND WILDLIFE

- ICE DAMAGE TO LOOKINGGLASS HATCHERY ROOF (\$700K)
- SEVERE FLOODING AT NORTHEAST OREGON ACCLIMATION FACILITIES (\$20K PER EVENT)
- IRRIGON HATCHERY WINDSTORM DAMAGE (EST. \$125K)



BUDGET – PARTNER REQUESTS

LSRCP FY10 - FY23
History/Projected Funding

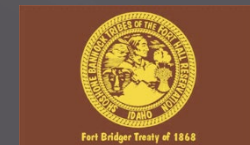
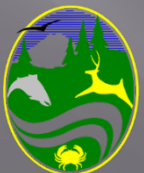


THE PRELIMINARY 2022-23 RATE CASE IPR HAS ALLOCATED A BUDGET FOR LSRCRP OF \$31 MILLION. LSRCRP PARTNERS HAVE IDENTIFIED A BUDGET NEED OF ~\$36 MILLION.

- FLAT LINE IS NOT FLAT LINE – INFLATIONARY COSTS & LABOR COSTS ARE INCREASING**
- ESSENTIALLY NO FUNDING IN RATE CASE ALLOCATION TO ADDRESS NON-ROUTINE MAINTENANCE NEEDS**

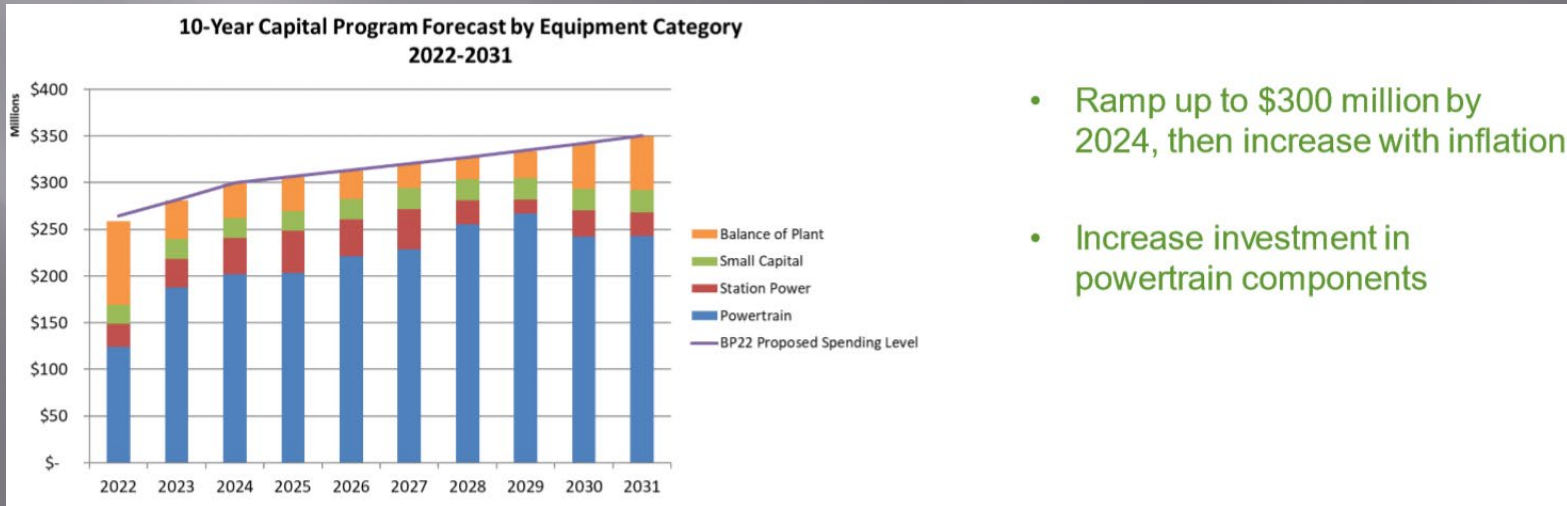
NO IDENTIFIED FUNDING STREAM FOR LONGER TERM CAPITAL INFRASTRUCTURE FIXES OR EMERGENCY FAILURES

- PROBLEM WITH WHO'S RESPONSIBLE**
- COMMITMENT BY USVOR PARTIES TO FIND A SOLUTION**
- CONGRESSIONAL REQUESTS BY LSRCRP PARTNERS**



IDENTIFYING FUNDING FOR MAINTAINING CRITICAL INFRASTRUCTURE IS CONSISTENT WITH BEST MANAGEMENT PRACTICES AND RECOMMENDATIONS

- NPCC 2014 FISH AND WILDLIFE PROGRAM HIGHEST PRIORITY
- NPCC 2018 ASSET MNGT STRATEGIC PLAN
- AA FCRPS ASSET MANAGEMENT COMMITMENT
- BPA 2018-2023 STRATEGIC PLAN



- Ramp up to \$300 million by 2024, then increase with inflation
- Increase investment in powertrain components

FCRPS Asset Management Commitment

Vision
 The FCRPS agencies will strive to sustain the efficiency, affordability and reliability of the System's long-term value through business processes that reflect industry best-practices in asset management. These processes include all aspects of planning, resourcing, and approving work, while informing strategies for operations, maintenance, and reinvestments of FCRPS assets.

Background
 The U.S. Bureau of Reclamation, U.S. Army Corps of Engineers, and Bonneville Power Administration act together through a strong three-agency alliance as responsible stewards of the Federal Columbia River Power System (FCRPS). The FCRPS is comprised of billions of dollars in assets and provides great economic and social benefits for the Pacific Northwest and beyond.

Mission
 The FCRPS exists to deliver benefits to power, irrigation, navigation, and other customers and key stakeholders. We owe it to those customers and stakeholders to proactively implement and utilize industry leading asset management practices. This will enable us to provide those products and services with the highest regard to safety, environment, reliability, reputation, and cost.

Asset Management Values

Customers

- Embrace the FCRPS' role as a service provider to a broad range of customers and stakeholders. Cultivate a culture of commitment as federal partners to deliver demonstrated value to those customers.
- Establish ourselves as competent and transparent providers of the services expected by our customers and stakeholders while being good stewards of the public's assets.

People

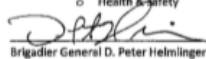
- Value safety above all else – every process and action first identifies risks and preventative measures to protect our greatest asset, our employees.
- Ensure that roles and responsibilities of our organizations are clear, meaningful, valuable and rewarding.
- Enable staff to exercise leadership and appropriate levels of decision-making.
- Invest in employee training and development to effectively accomplish their function.

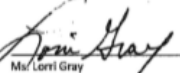
Process/Information

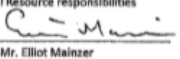
- Balance cost, performance, and risk through a consistent and credible decision-making process. Key stakeholders understand and have confidence in its integrity.
- Manage and utilize information and knowledge to enable informed decisions and effective work execution.
- Leverage innovative solutions and industry best practices to continuously improve achievement of FCRPS objectives.

Plant

- Operate, maintain, and invest in our facilities to optimize their value to customers and stakeholders over the long-term that is consistent with the financial health and stability of the FCRPS.
- Identify the business value of each facility, asset, and component and align performance expectations with that value, including all areas listed below:
 - o Generation & Capacity
 - o Cost
 - o Risk tolerance
 - o Health & safety
 - o Environmental responsibilities
 - o Legislative risks/requirements
 - o Regulatory requirements
 - o Cultural Resource responsibilities


 Brigadier General D. Peter Helminger
 Commander, Northwestern Division
 U.S. Army Corps of Engineers


 Ms. Lorri Gray
 Regional Director, Pacific Northwest Region
 U.S. Bureau of Reclamation


 Mr. Elliot Mainzer
 Administrator
 Bonneville Power Administration

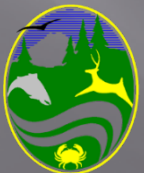
REMINDER

- HATCHERIES REQUIRE THE SAME COMMITMENT TO MAINTAIN AS DO THE DAMS
- HATCHERIES ARE PART AND PARCEL TO THE HYDROSYSTEM AND THEY ARE THE ONLY MITIGATION ACTION THAT PROVIDES FISH FOR HARVEST
- THE TRIBES AND STATES CONSIDER IT CRITICALLY IMPORTANT THAT THIS MITIGATION RESPONSIBILITY (PROMISE) OF THE HYDROSYSTEM IS MET



LSRCP PARTNERS:

- WE NEED THE COUNCIL'S SUPPORT IN OBTAINING ADEQUATE FUNDING FOR NON-ROUTINE MAINTENANCE OF LSRCP FACILITIES BEGINNING WITH 2022-23
- WE NEED THE COUNCIL'S SUPPORT FOR IMPLEMENTING A SYSTEMATIC & LONG TERM APPROACH TO ADDRESS NEEDS OF FACILITIES CONSTRUCTED TO MITIGATE FOR THE HYDROSYSTEM
 - FUNDING
 - RESPONSIBILITY



QUESTIONS?