

Lookingglass FH Ladder and Intake Summary – Lessons Learned



Rod Engle – USFWS Lower Snake River Compensation Plan



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Outline

- Project Goals
- Timeline and Permitting
- Importance
- Execution
- Challenges (many)
- Outcome
- Present Situation
- Lessons Learned
- Next Steps



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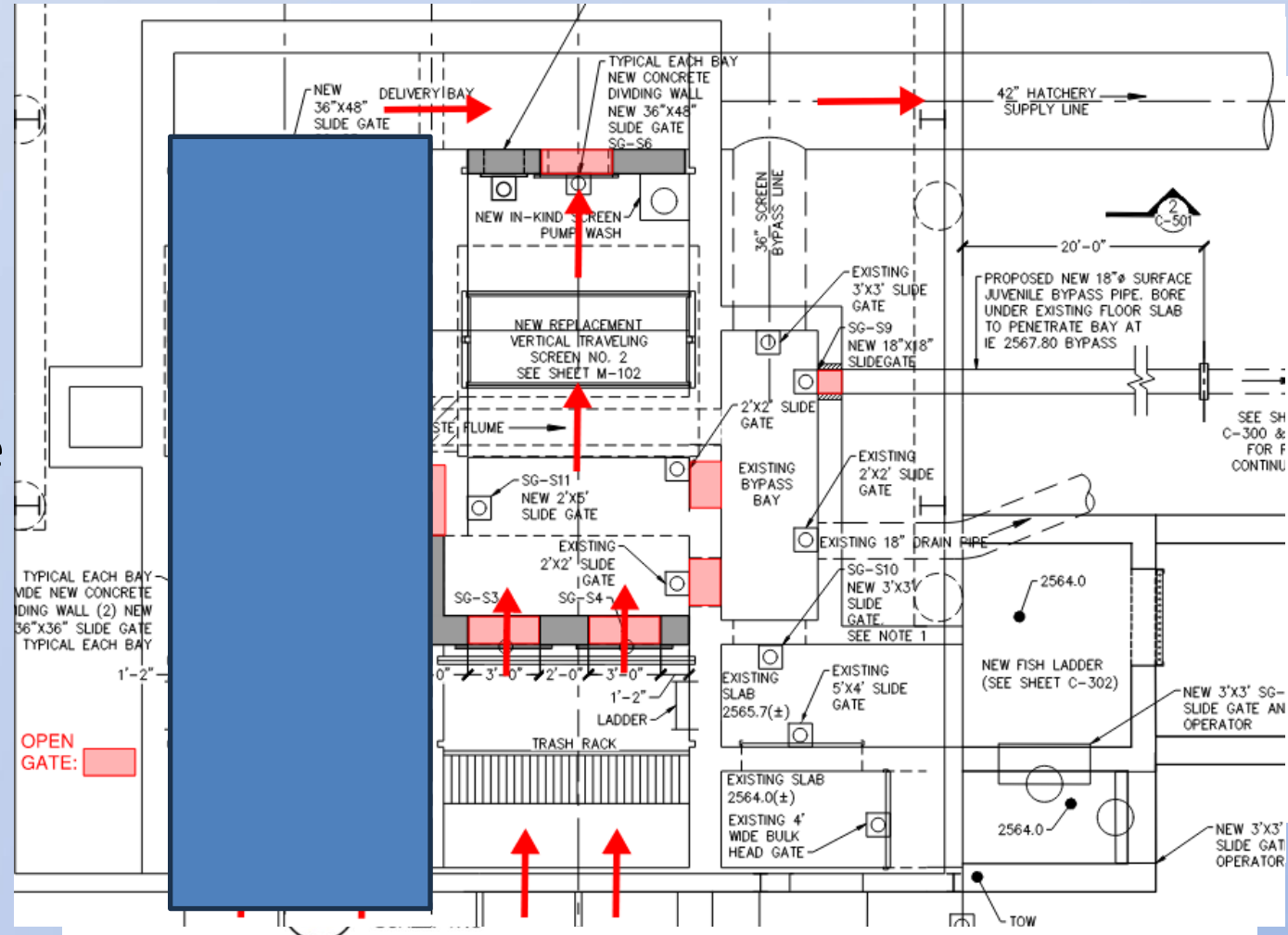


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Project Goals

- Address screen and juvenile bypass deficiencies.
- Modify barrier to adult downstream passage.
- Provide juvenile fish passage upstream.
- Improve passage instream over concrete sill (lower ladder).
- Improve adult trapping and handling.
- Improve isolation to fish screens for maintenance.
- Provide improved access to forebay for management of ice (debris).



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Timeline and Permitting

- Project initially began in 2015.
- Construction Plan – one summer.
 - In-water, May 8 - August 7, 2025
 - All work completed by September 30
 - October 1-30, 2025 for punchlist.
- Permitting
 - NOAA-Fisheries
 - COE
 - Oregon DSL
 - USFWS Biological Opinion
- Estimated cost ~\$5.0 M high end.



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Importance

- NOAA term and condition in LGFH permitting for operations.
- Project scope/size reflective of many other infrastructure needs across LSRCP program, other hatcheries across basin.
 - How do we (collectively) do these types of projects effectively, efficiently?
- Largest \$ project for LSRCP.



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Execution

- Wickam Pipeline and Construction contractor.
- KPFF engineering design and construction oversight.
- ODFW/CTUIR/NPT working on fish aspects.
- USFWS LSRCP = Customer, coordination and project budget.
- USFWS Infrastructure Management Division (IMD) – Engineering/project contracting oversight.
- Joint Administrative Operations (JAO)-contracting with IMD.



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Challenges

- Maintaining of fish on-station through construction.
 - Every action discussed, extended work.
- Flows delaying in-water work for several weeks
- Tensions, trust and communication issues.
- Large project scope for small contractor.
- Relaxed fish protections and salvage coordination.
- Rotating leadership, communication and faces.
- Stakeholder communication needs.
- Extension of in-water work, construction issues, collapsing timeline.
 - Potential fines
 - Extension of project to 2 years was contemplated
- Permit extensions, need for improved coordination.
- Improved project management needed.
- Design issues
 - Grip struts, instream columns, fish trap/handling.
- Corrective changes could not be efficiently implemented. Process confusion.
- External factors impacting project.



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Challenges

- Reduced workforce in 2025 for feds
 - NOAA, USFWS, LSRCP (Starr retirement)
- Government shutdown
 - JAO unable to address/process project needs.
 - IMD furloughed workforce over shutdown.
- Construction
 - Qualified workforce needs (ironworkers)
 - Local workforce, remote site, contractor needs.
 - Lax focus on fish impacts
- Fish passage monitoring, fish issues.
- Decision to drop some work to meet IWW timelines.
- Communication/Coordination.



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Outcome

Project Goals

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Outcome

- Screens not fish or debris tight, juvenile bypass not operational during low flows. Operations not sorted.
- Modified, temporary solution. Needs follow up.
- Ladder operational and passing/catching fish.
- Dropped downstream sill work due to issues with meeting IWW timeline and other project needs.
- Improved trapping but debris loads and access/operations/daily use needs to be sorted.
- Can isolate screen chambers effectively, ability to direct water use.
- No ice this year but spray system working, tied into well water.



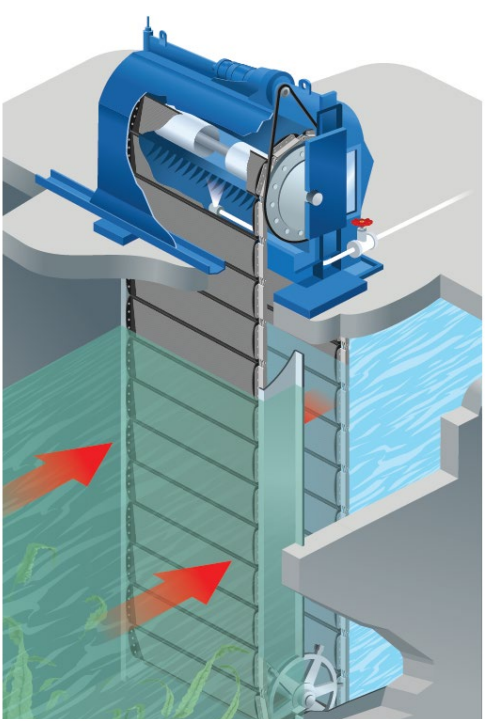
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Screens and Debris/Fish



Submerged screen surfaces are perpendicular to the intake flow, with screen mesh openings sized according to customer requirements and site conditions.



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Modified Barrier to Adult Downstream Passage



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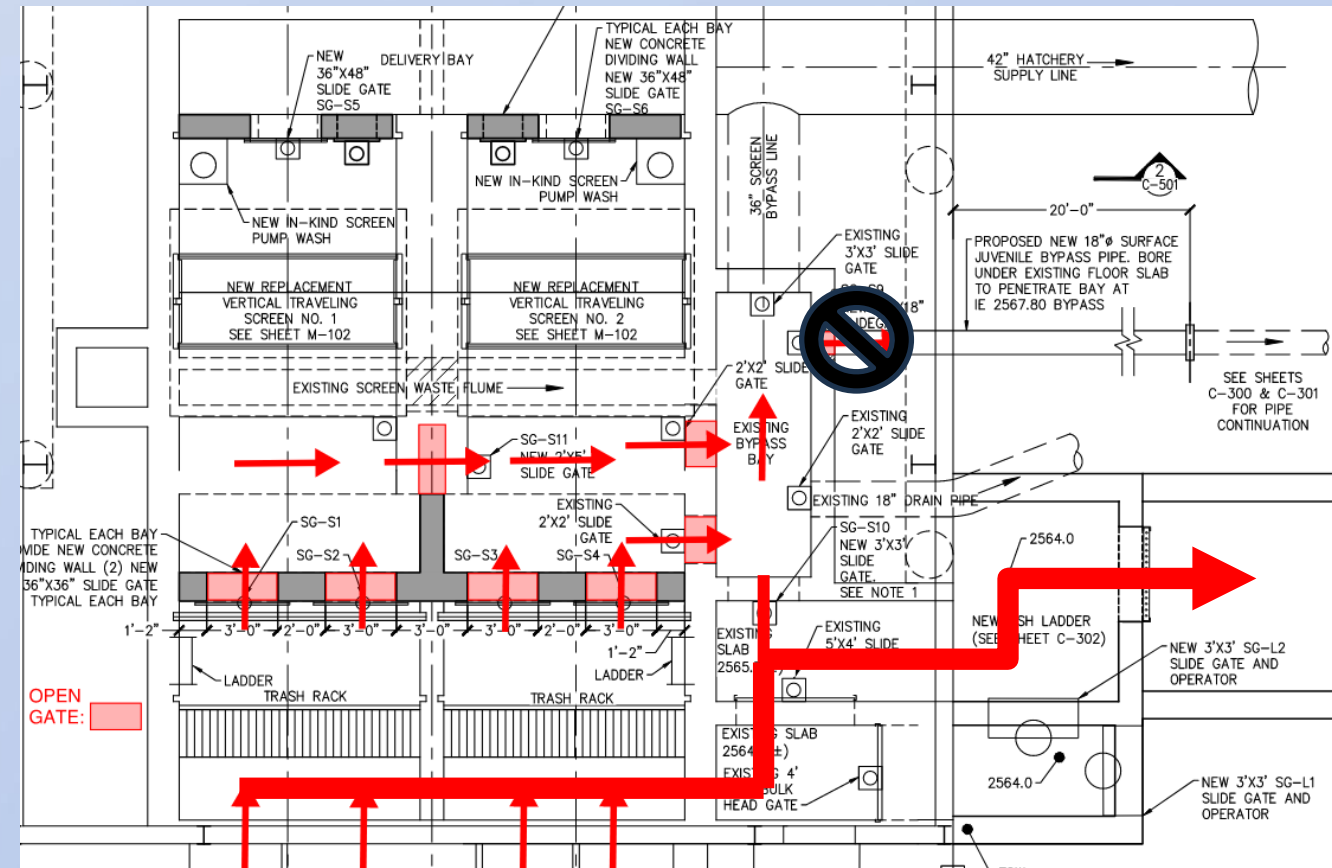
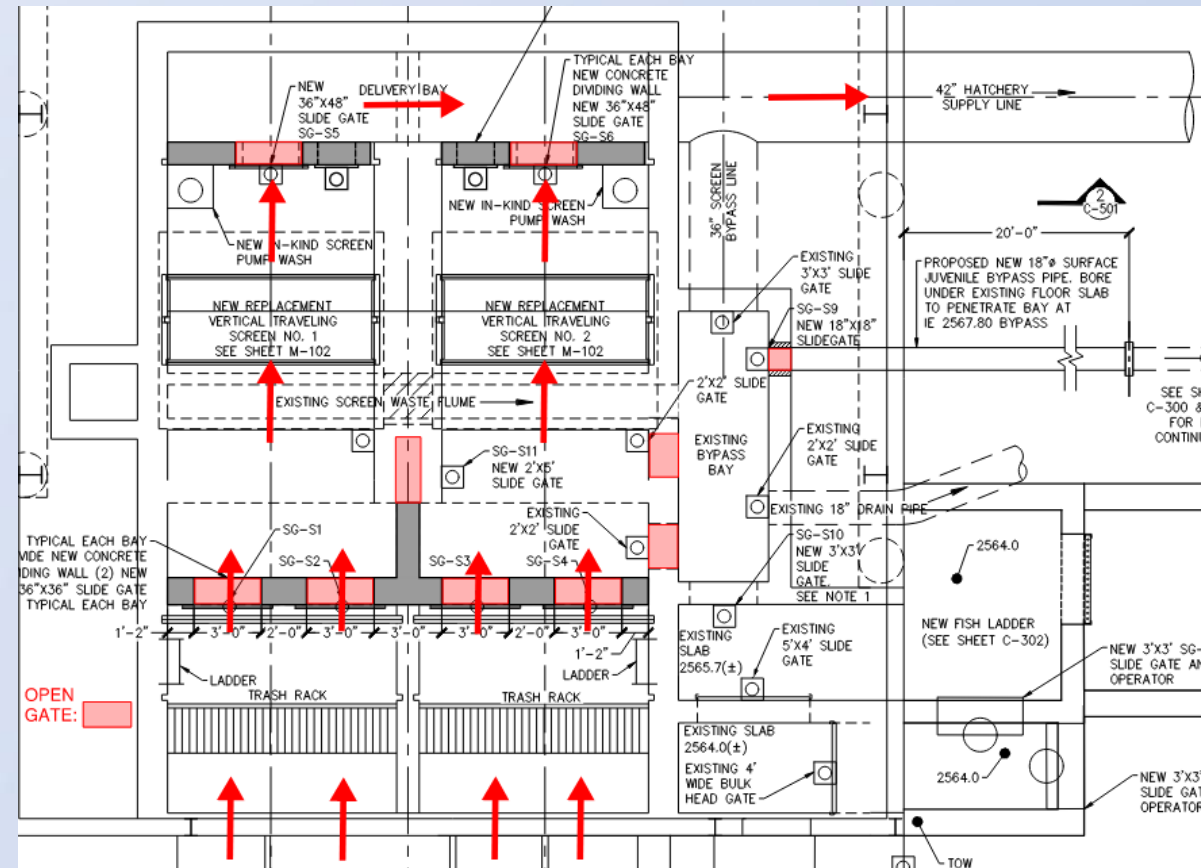
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Hatchery Flow

JBP Flow



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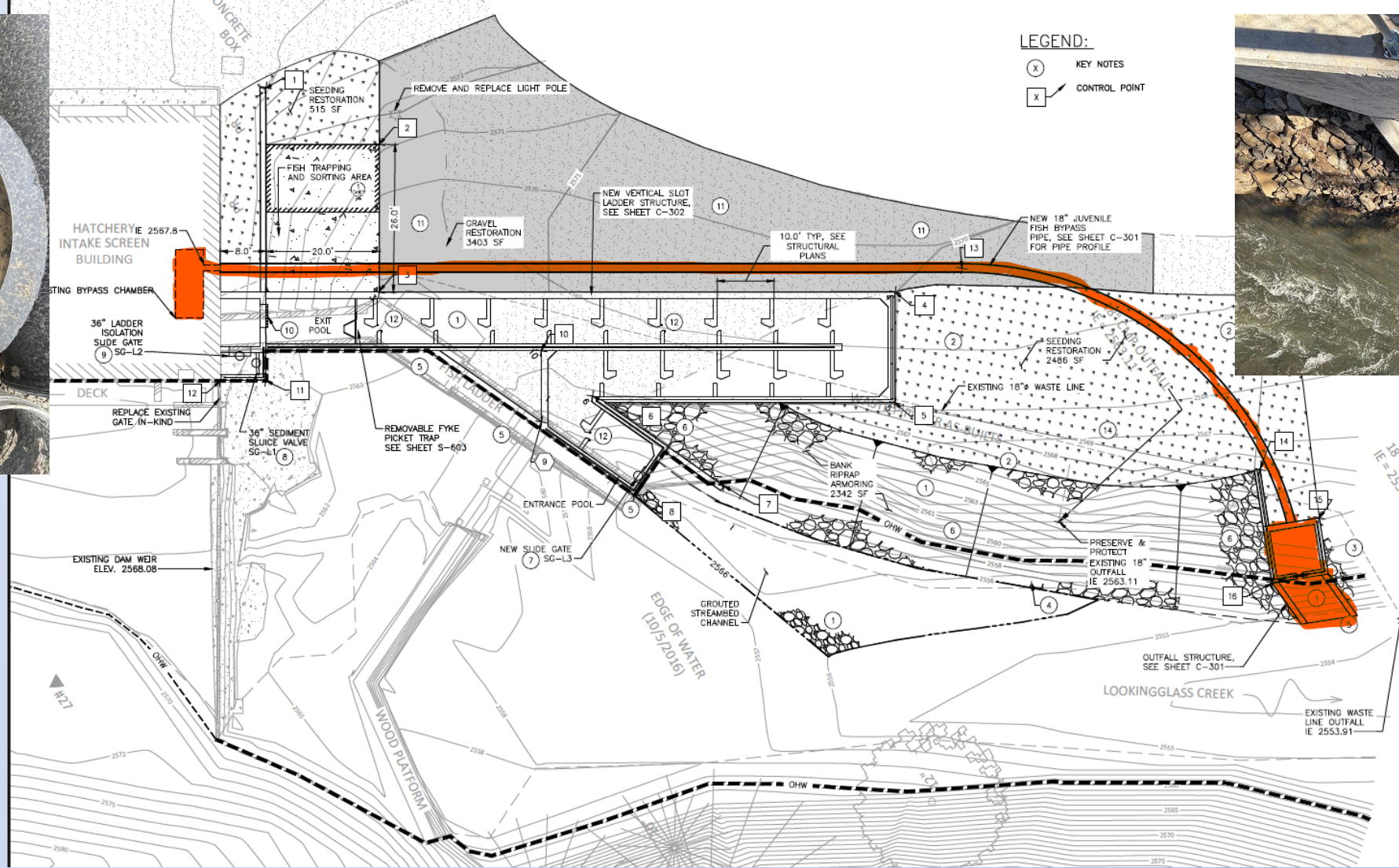
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JBP Not Operational During Low Flows



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LOOKINGGLASS FISH HATCHERY WATER RIGHTS

Certificate	Priority	Use	GPM	CFS
33995	1961	Fishway	13,464	30.00
60452	1984	Domestic Well – TW-1	399	0.89
60453	1985	Tempering Well	1,795	4.00
60454	1985	Domestic Well – TW-3	673	1.50
61446	1979	Main Hatchery Intake	18,849	42.00

Figure 2-1: Lookingglass Hatchery Water Rights

Month	GPM	CFS	Hatchery Use
January	12500	27.85	raceways and troughs
February	12500	27.85	raceways and troughs
March	12500	27.85	raceways and troughs
April	12500	27.85	raceways and troughs
May	11450	25.51	raceways and circulars
June	11450	25.51	raceways and circulars
July	11450	25.51	raceways and circulars
August	11450	25.51	raceways and circulars
September	11000	24.51	raceways
October	11000	24.51	raceways
November	11000	24.51	raceways
December	11000	24.51	raceways

Figure 2-2: Lookingglass Fish Hatchery Historic Water Use

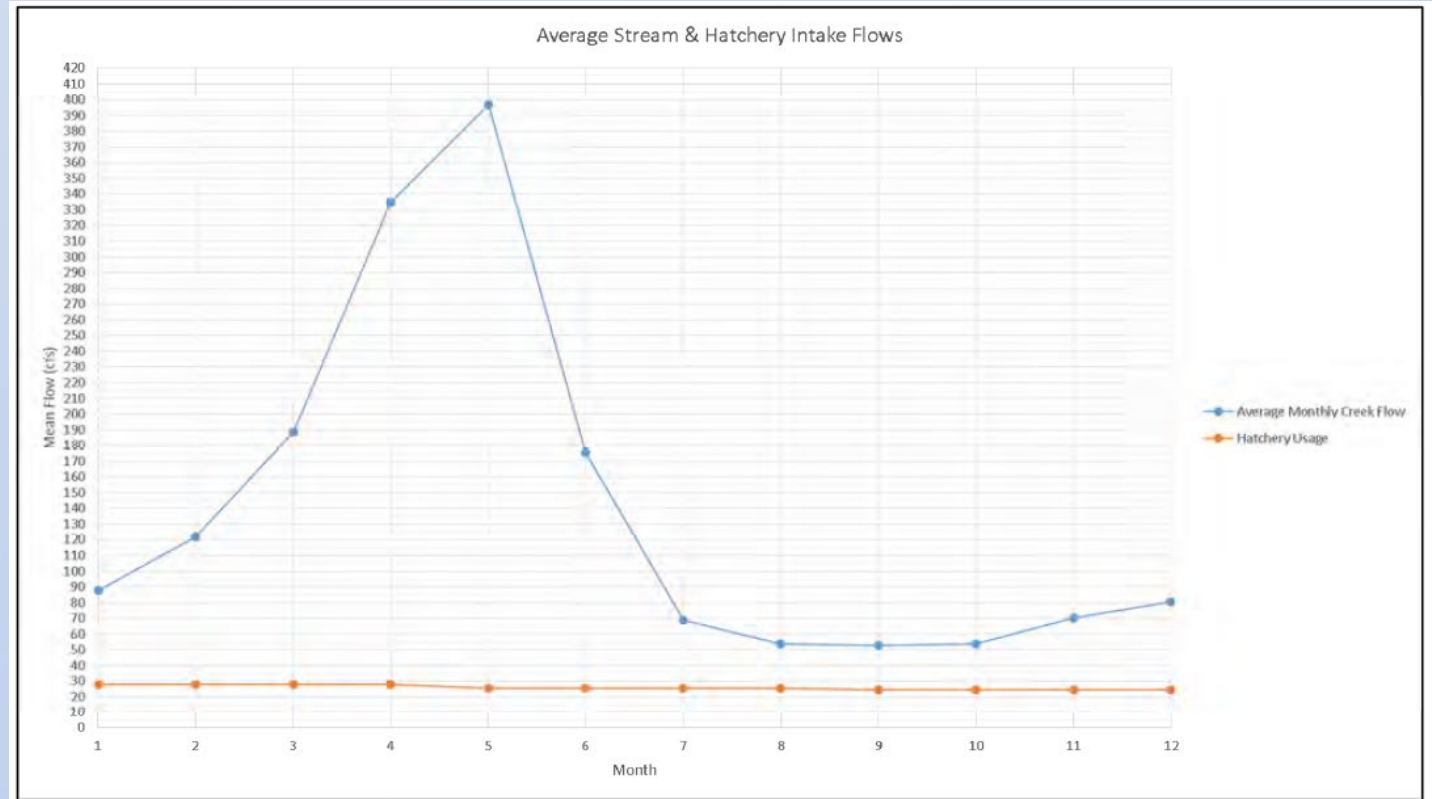


Figure 2-3: Average Lookingglass Creek Flows

Stream Flow	Hatchery Intake (CFS)	Spill Over Dam Weir (CFS)	Ladder Flow (CFS)	Total Creek Flow (CFS)
Low Water (95% Exceedance)	25	12 (3" ACROSS 30')	12	50



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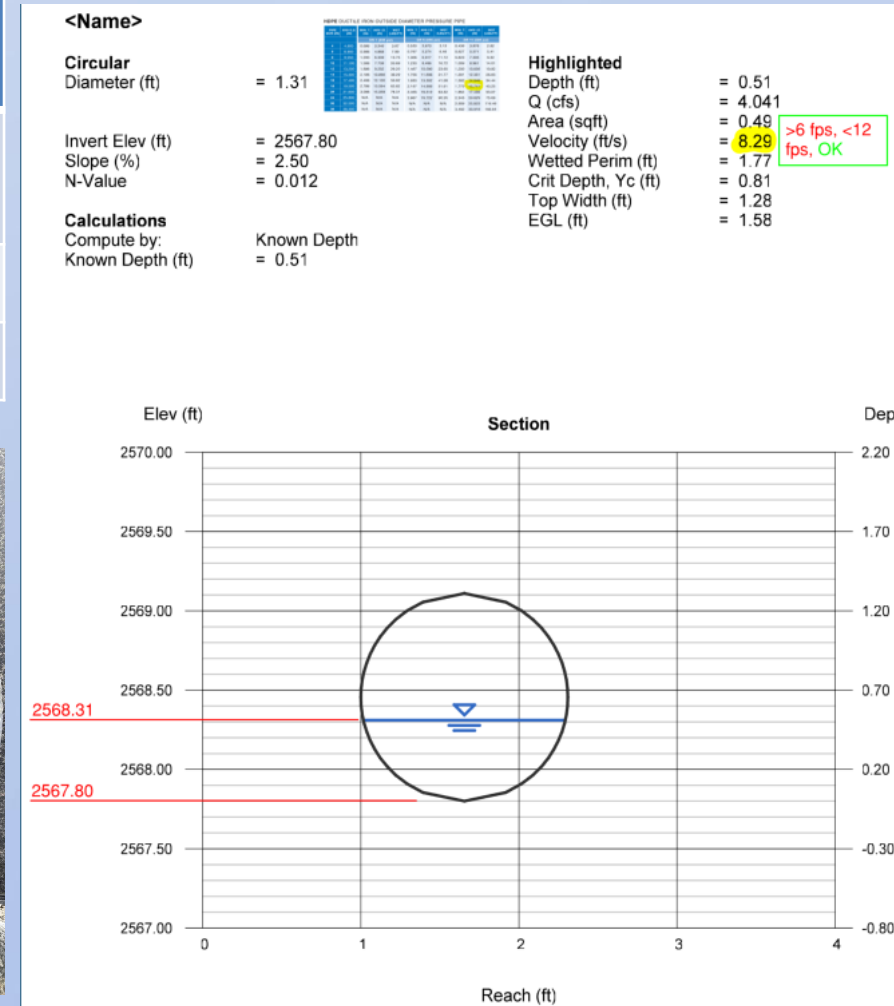
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Scenario	Hatchery Supply	Concrete Sill (3 inches)	Ladder Flow	Juvenile Bypass	Lookingglass Creek Total
95% Exceedance	25	7	18	1.9	52
Likely 2026	35	0	17	0	52
Explore 2026	↔	↑	↓	↑	<52



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Lessons Learned

- Having fish on-station during intake work added several degrees of difficulty.
 - LSRCPO will advocate for moving fish off-station during large-scale projects in the future.
- Experienced contractors for specialized work.
 - DOI Policy drives procurement methods.
- LSRCP large construction projects need a committed, thorough review in design stages with all involved.
 - Confirm design – (eg. grip strut, concrete, pillar opening).
 - Confirm data used – (hatchery water use data).
 - Doing this will reduce expenses and real-time issues to overcome.
- Large projects need experienced staff participation and leadership commitment (internally/externally).
- USFWS needs to improve real-time project changes, tracking and approval process.
 - Gate valves, PIT conduit and arrays, trap door, trap shed, etc.



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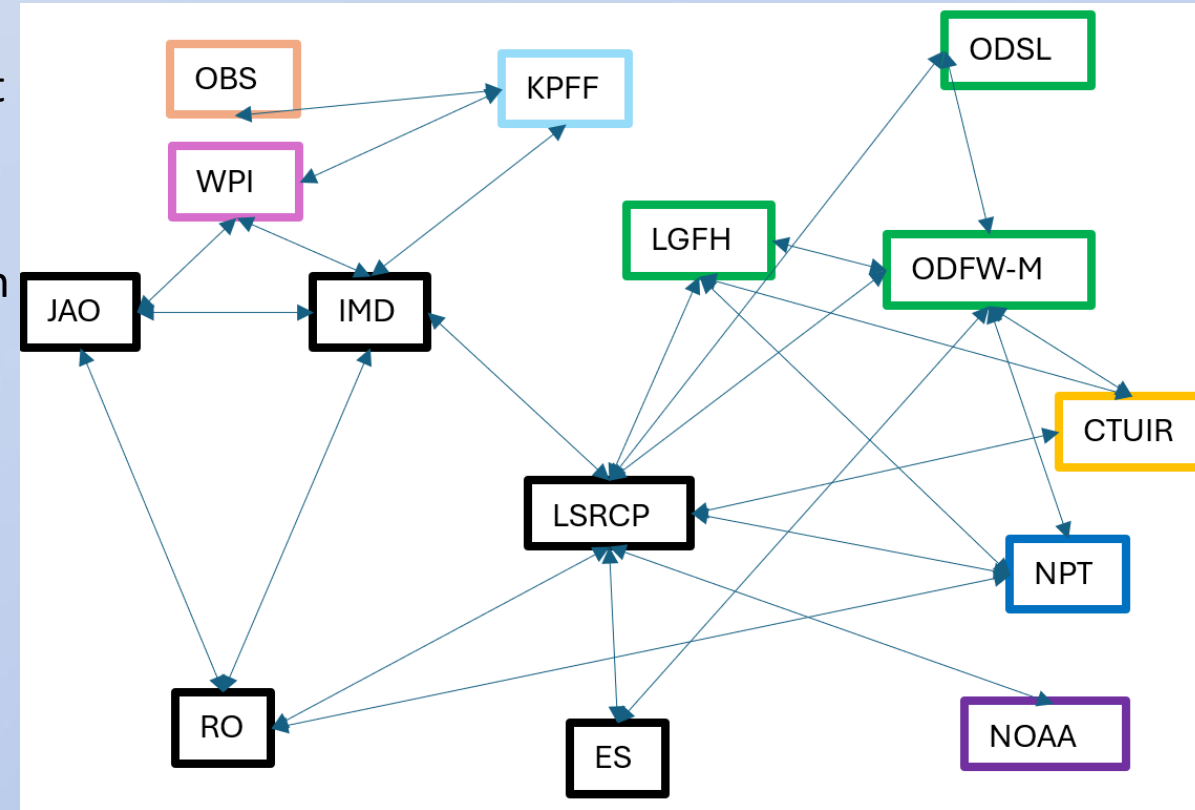


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Lessons Learned

- Staff turnover and shutdown negatively affected this project through knowledge and delivery. Future projects need to adjust accordingly.
- LSRCP is currently short staffed, platooning duties and roles with existing and future projects.
- Similar complex projects need good project management
 - Designated roles, right knowledge, right experience.
- Project oversight is both physical and electronic, should be regular/repeated occurrence by all participants.
- Overall project management meeting, then sub-group meetings and transparent follow-up communication to ensure the project meets goals, timelines, and needs.



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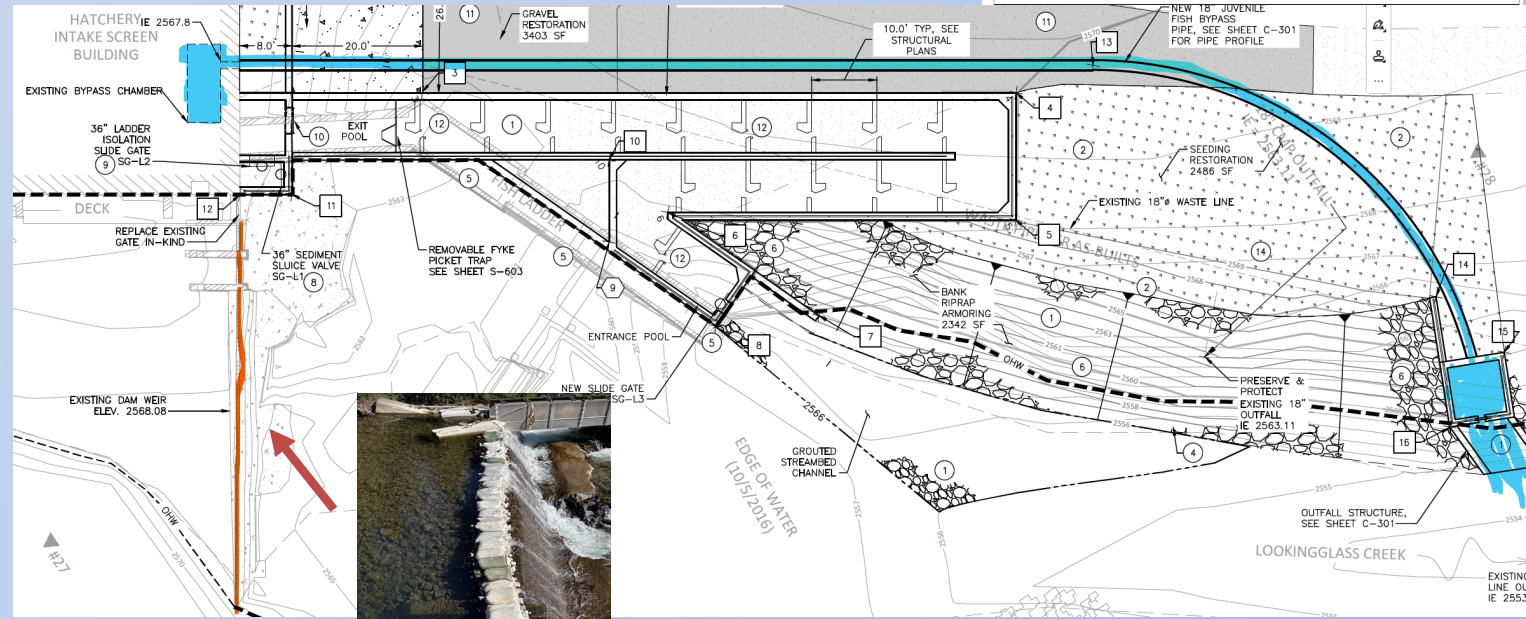
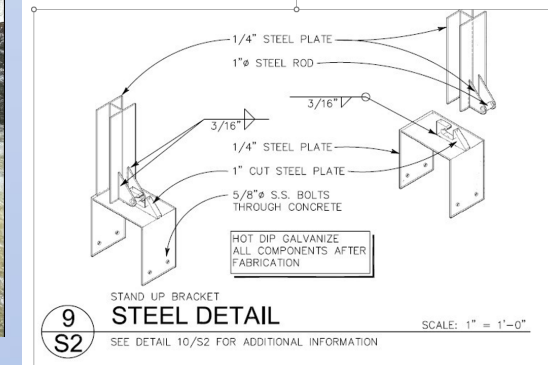
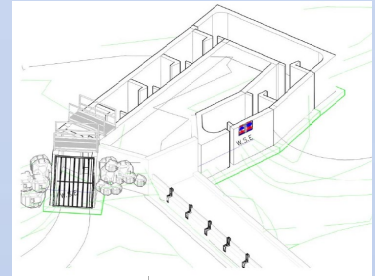
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Next Steps

Corrective actions contract(s) – i.e. Fix It Projects... will be listed doubly as contracting needs but likelihood would be completed by ODFW if under \$10K

- Walkway to juvenile bypass chamber stop logs (ODFW)
- Gate to access sluice gate (completed!).
- Log boom to improve debris management issues (ODFW)
- Pulling of handrails and grip struts in some area to access ladder and implement stop logs in summer. (ODFW)
- Frame/winch for pulling the fyke/grizzly and moving baskets of fish from trap to shed. (ODFW)
- Sill plate to increase height of water to address and use juvenile bypass in low water of summer. (assist by ODFW Fish Passage)
- Slide gate opening instead of pickets (assist by ODFW fish passage).
- Extension of debris removal chute to outside of intake (IMD assist with KPFF).



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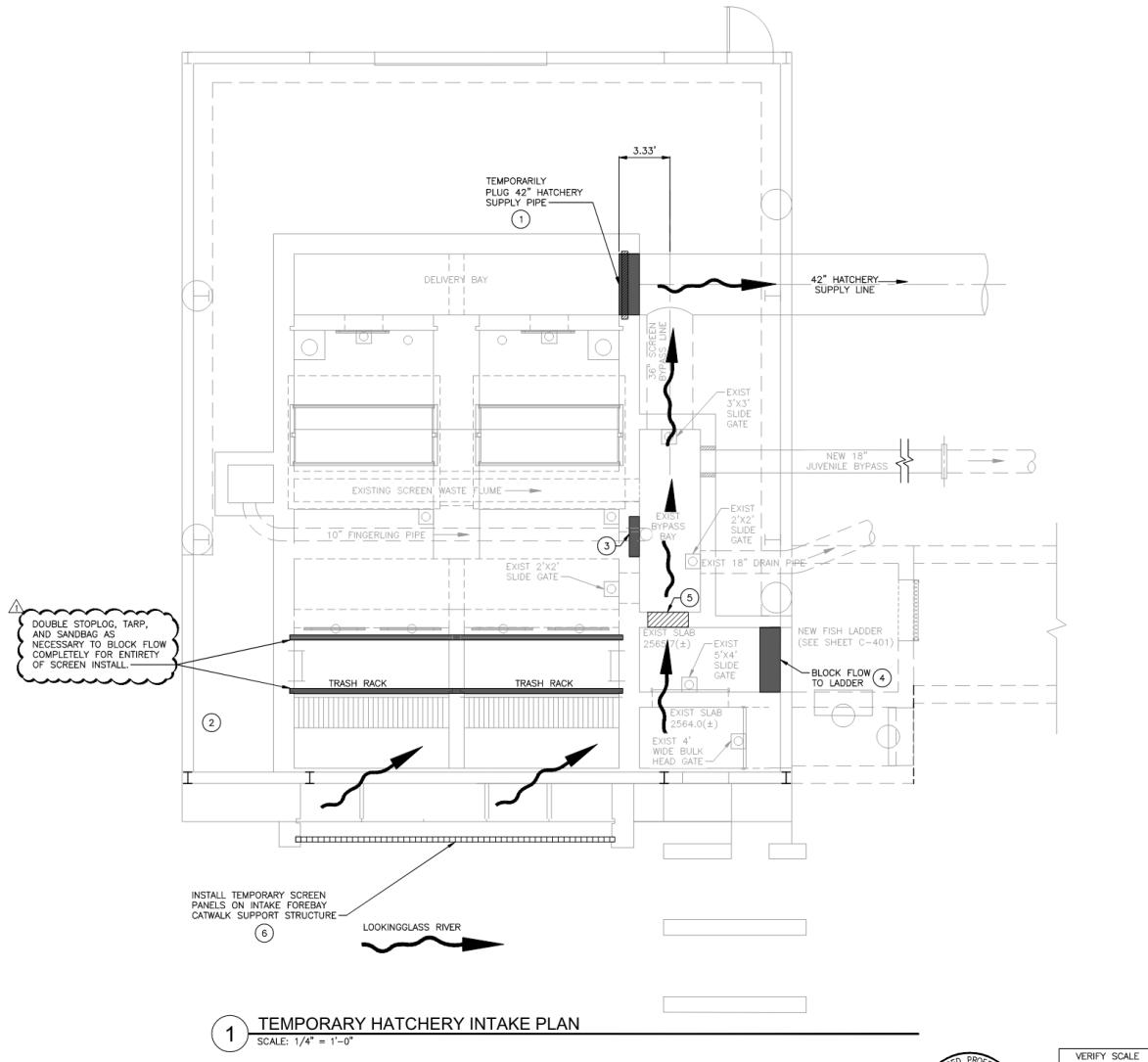
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Questions?



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