

Priest River Cold Water Augmentation Concept



Idaho Department of Fish & Game
Merritt Horsmon – Panhandle Region



Why consider cold water improvements in the first place?

IDFG mission (Idaho Code Title 36): All wildlife, including all wild animals, wild birds, and fish, within the state of Idaho, is hereby declared to be the property of the state of Idaho. It shall be preserved, protected, perpetuated, and managed...continued supplies of such wildlife for hunting, fishing and trapping.

Priest River is water quality impaired due to high summer water temperatures

The “4 C’s” required
for bull trout,
westslope cutthroat
trout and other cold
water fishes:

- ✓ Connected
- ✓ Clean
- ✓ Complex
- Cold

*Priest River consistently
provides 3 of 4*



Consistent with missions of IDFG, DEQ, and Lakes Commission

Cold water improvements will:



➤ Protect native fish



➤ Improve water quality



➤ Make fishing better

Process

We are here

Feasibility

- Engineering Alt. Analysis - Completed 12/2019
 - Economic feasibility/Constructability
 - Public input
- Limnology/Biology – 06/2021

Design and
review

If studies demonstrate a project is feasible, will result in desired objectives for the River, & will not negatively affect the Lake:

Go to final design
Information sharing
Public comment solicitation

Funding &
permitting

- **Only if all of the above are acceptable**
- Regulatory agency formal review

Alternatives Assessment

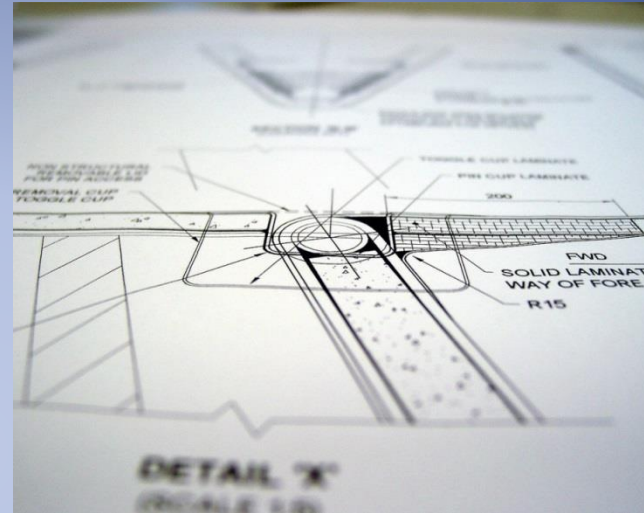
McMillen Jacobs Associates

Any alternatives must maintain:

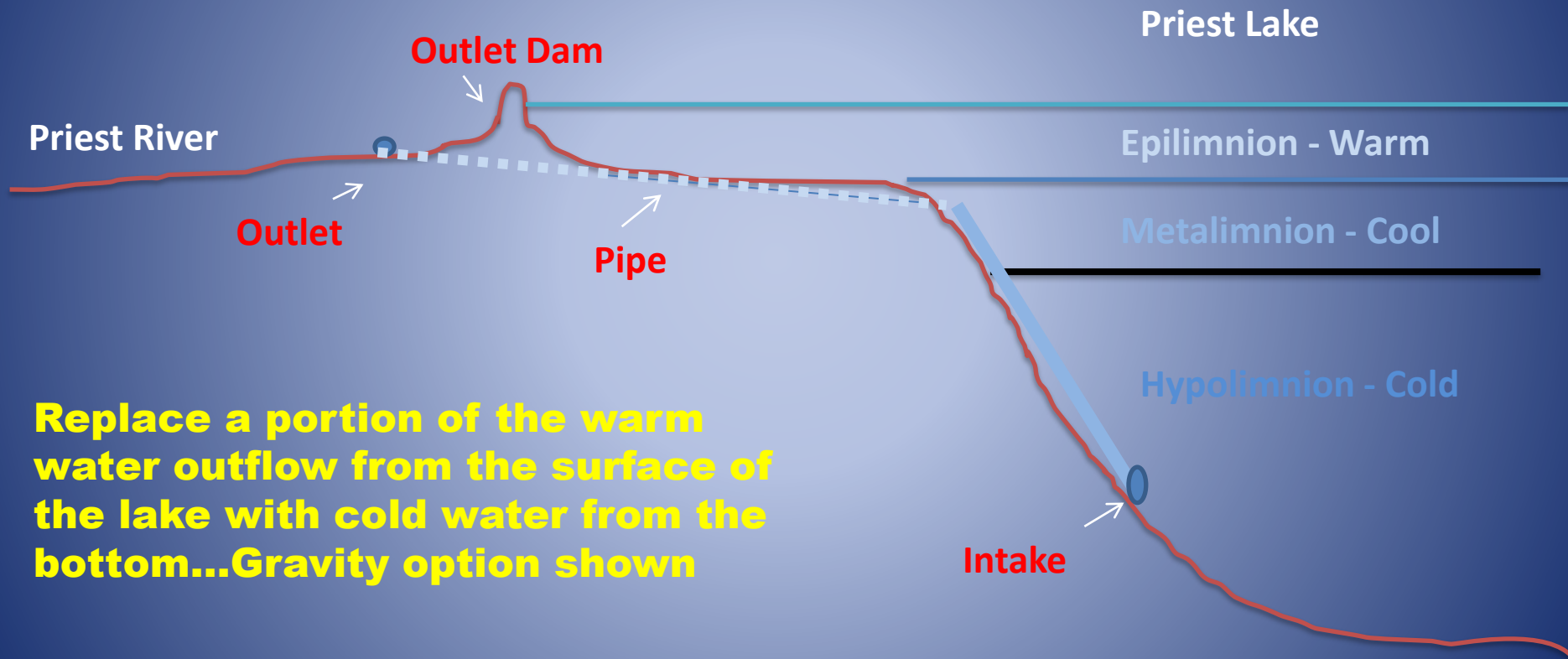
- ✓ Statutory lake level
- ✓ Existing public uses
- Aquatic species protection
- Water Quality

Initial Evaluation Criteria

- | | |
|-------------------------------|--------------|
| ✓ Cost | ✓ Screening |
| ✓ Installation & Construction | ✓ Aesthetics |
| ✓ Operations & maintenance | ✓ Navigation |
| ✓ Sizing | ✓ Safety |



Hypolimnetic Withdrawal - Schematic



Concerns

Navigation and Aesthetics



“Our most substantial comment relates to alternatives 1 and 2, the gravity and siphon options with a pipe laid down the upper channel. Given the impacts to navigation and aesthetics under these alternatives, we believe an above-ground pipe would be unfeasible. “

3/15/19 e-mail from IDFG to McMillen Jacobs re: DRAFT Alternatives Analysis report

Would this Affect lake level?

NO



Outflow volume would be unchanged, and Priest Lake would remain at the level it is currently maintained, as per Idaho water right in State Code

Conclusions from alternatives Assessment

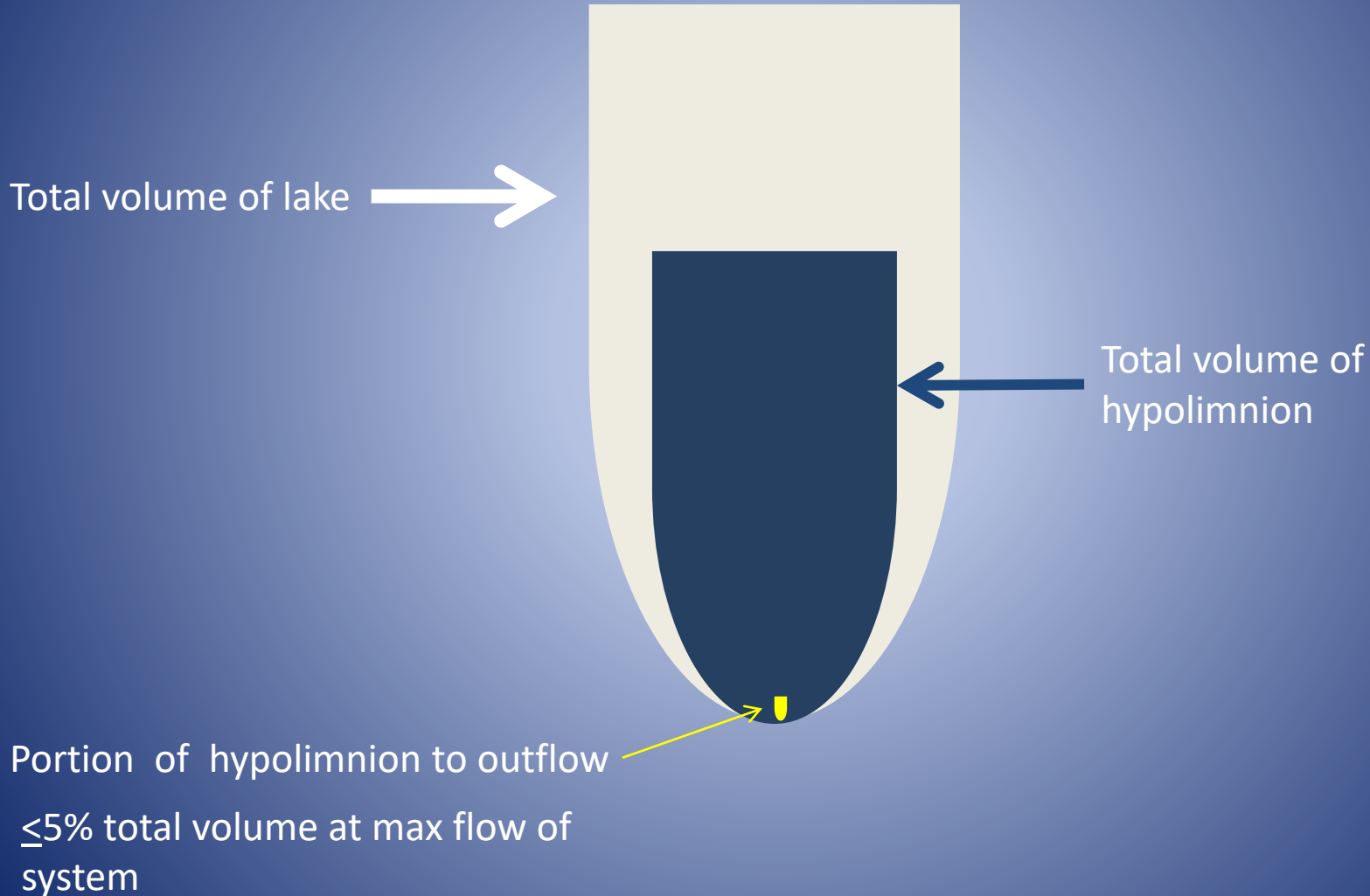
- A 105 cfs gravity feed system (Alternative 1B) was identified as the best design fit based on constructability, installation cost, O&M costs, feasibility, simplicity, and the ability to accomplish goal of cooling the river.
- Provides the most cold water for the amount of installation and maintenance cost
- Addresses concerns about aesthetics and navigability; will not affect lake level.

Concerns and Questions

- A number of Priest Lake property owners have expressed opposition to hypolimnetic withdrawal, citing concerns about the following:
 - Fears that lake water quality will change
 - Fears that lake water will warm
 - Concern about disruption of lake stratification
 - Concern about hypolimnion water quality
 - Fears that system will stagnate the Outlet and cause HAB's
 - Priest River will not be cooled by hypolimnetic water
 - Effects on Mysis shrimp

Would the Limnology of the Lake be Affected?

Very unlikely



Limnological Study Goal

- Identify and assess the limnological and ecological risks to Priest Lake and Priest River associated with hypolimnetic withdrawal to cool the upper Priest River during critical periods.



The following will be investigated to meet the above goal:

- Identify and assess the limnological risks of withdrawing up to 105 cfs of hypolimnetic water from June through October on Priest Lake, including risk associated with reducing the surface water flow through Outlet Bay,
- Identify and assess any risks of replacing 45-105 cfs of surface water with the same amount of hypolimnetic water on the water quality of the Priest River,
- Develop a long-term monitoring plan designed to evaluate the potential impacts of operating a hypolimnetic withdrawal system on Priest Lake, and
- Summarize the results of the investigation in a report.

Process to date:

- Three highly qualified companies submitted bids to do the limnology assessment (March)
- Chose Advanced Eco-Solutions Inc. out of Newman Lake, WA (April)
- Work began in May and will be completed in late spring 2021



Process- Key Points

- Has not moved from a concept to a proposal
- No funding or final designs are in place for construction
- Alternatives Analysis and preliminary geomorphology study completed
- Limnology Assessment occurring – results by summer of 2021

Thank You

Questions??

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