

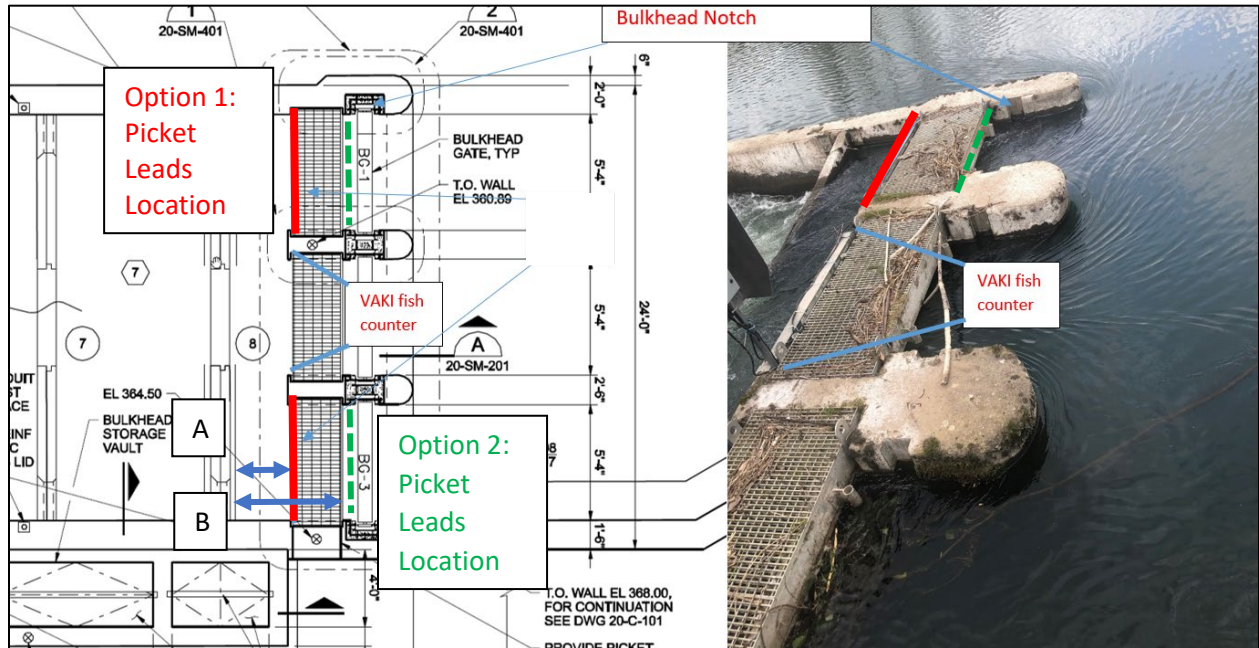
Lebanon Fish Counters

Wednesday, August 18, 2020 2:00 PM

Attendees	Organization
Lance Kruzic	NOAA
Melissa Jundt X	NOAA
Joel Watts X	ODFW
Elise Kelley X	ODFW
Jeff Kinney X	City of Albany
Darren Gallion X	USACE
Christopher Walker	USACE
Artem Kuryachy X	USACE
Melanie Barrett X	USACE
Mehdi Roshani X	USACE
Steve Schlenker X	USACE
Bob Wertheimer X	USACE

Agenda Topics

South Ladder Design Options 1 & 2 Sketch

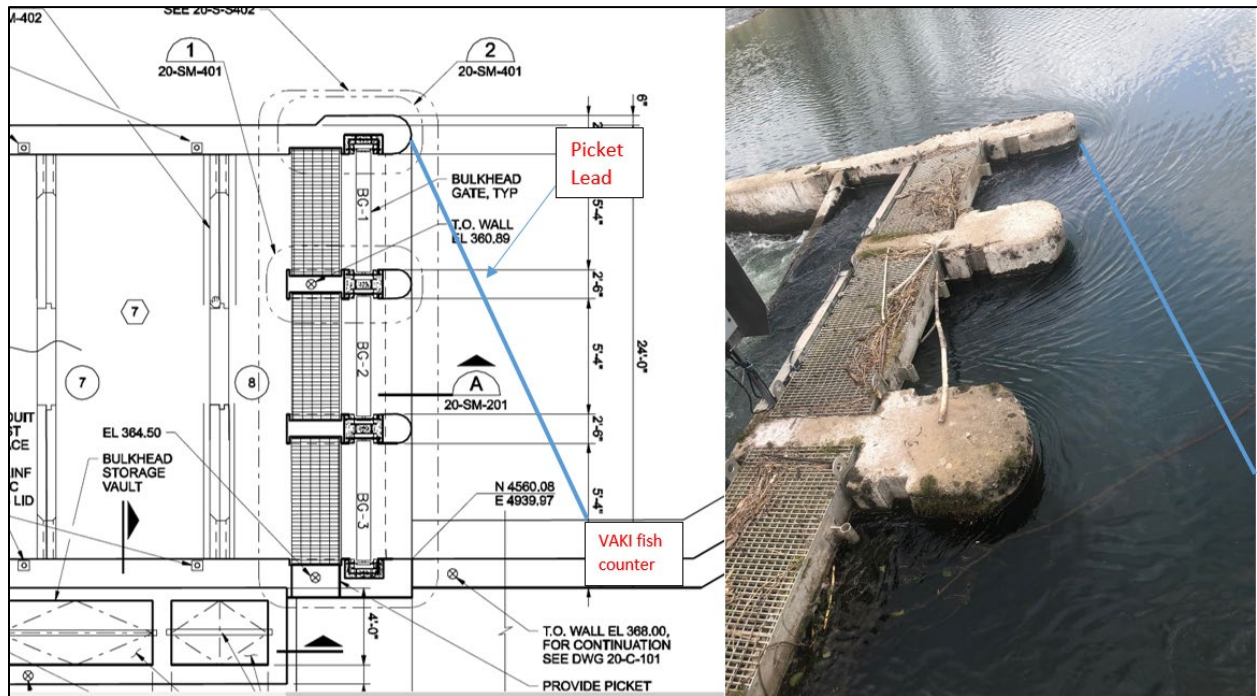


1. Design Options for South Ladder

- a. **Option 1:** Red lines denote the picket leads, installed immediately downstream of the grating. Double-arrow A denotes distance between upstream Weir 8 face and downstream picket lead face, distance of 3'.
 - i. **May be just too close.**

- ii. Fallback may be an issue for Options 1 and Options 2 (Fish makes all the way up, needs to find center channel, hits obstacle and they drop back) this is seen at Bonneville a lot.
- b. **Option 2:** Same as option 1 except picket leads (shown in green dashes for this option) are installed immediately upstream of the grating and immediately downstream of the bulkhead slots. This gap is approximately 9.5". Double-arrow B denotes distance between upstream Weir 8 face and downstream picket lead face, distance of 5' 10". Would require cutting of the vertical pipe holders currently occupying the gap.
- c. Option 3: Vaki Riverwatcher is placed outside of fishway with picket lead acting as a funneling structure for fish passage through the counter and as a passive debris block via river current. Riverwatcher would likely sit on a platform and be attached to the wall face.

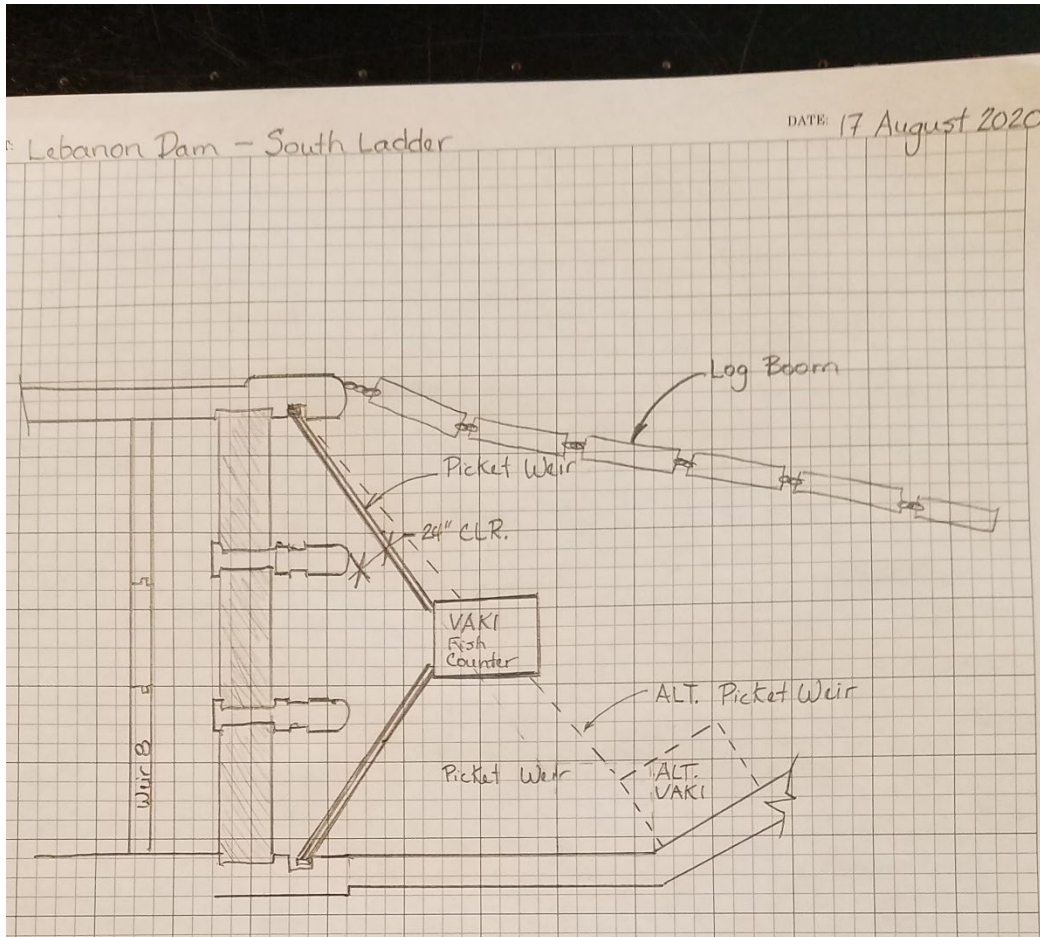
South Ladder Design Option 3 Sketch



- i. May need a column or supports due to length, as there is a lot of load on a 30' stretch
- ii. Would need to be more stout
- iii. Get dimension between lead and the second pier
- iv. Picket lead would also need to be better supported
- v. Need a concrete base for the picket leads
- vi. Would like to have velocities as well
- vii. Picket leads getting plugged will change the hydraulics so boom may be necessary
- viii. How would this be maintained?
- ix. Would debris actually get carried away given the flow dynamics of the structure?
- x. Could move the fish counter up a bit and leverage a better angle as a result.

- d. Option 4: Bulkhead notches used to secure picket weir with Riverwatcher sitting on top of an anchored platform.

South Ladder Design Option 4 Sketch



- a. Log boom would be pretty important in any alternative.
- b. Preferred guidance approach, funneling is standard. Better flow conditions as well, but the alternate form is also acceptable in Joel's opinion.
- c. Mehdi comments on this asking for depth; says we need an investigation on the substrate to support on the column. Could be more difficult.
- d. Joel approves using existing concrete structure as part of the support system
- e. 24' from pier nose to Vaki when mounted on the wall.
- f. More upstream would have lower velocity and would help with the cleaning
- g. Are there less stout picket leads that wouldn't require post and concrete foundations? More flexible options? Would this be alright if we have to remove the counter seasonally?

2. Design Options for North Ladder

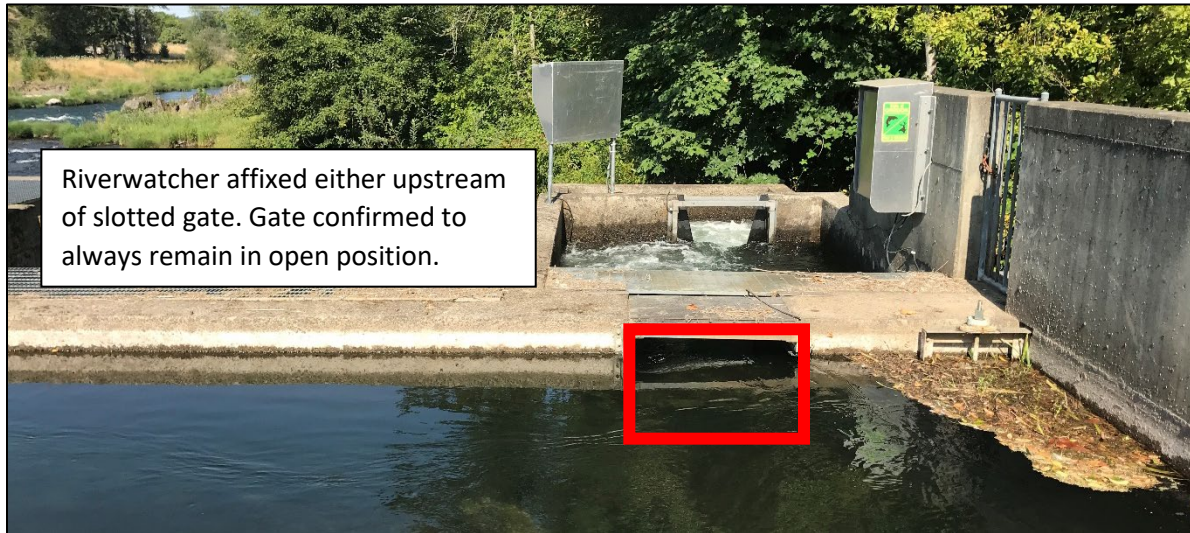


Figure 4 Example of typical VAKI install(Left). "Funnel" and crowder box (circled) could potentially be mounted on the North Bank Ladder(right).

3. Picket Leads/Weir Details

- a. 3/4" OD aluminum tube with 1 3/8" spacing

4. Questions, Comments, Concerns:

- a. Discussion regarding costs and schedule impact from switching to Construction from Supply W/ Install
 - i. Artem made it known that cost would likely double and the schedule would be impacted
 - ii. Supply Construction Hybrid: Artem will investigate with Tammy regarding funds, and investigate with CECT/ENC regarding schedule impacts
- b. Are there 8' foot tall temporary picket leads out there? Any drawings/pictures?
Resistance Boards weir in Alaska used a cable running on the river bottom for install.