

The Dalles-John Day Adult Salmon PIT Alternatives Study

UPDATE FOR FFDRWG – 2/3/2012

THE DALLES EAST FISH LADDER - Alternatives Currently Being Evaluated

- **Weirs 154, 153, 152**

Description

- 154 would be replaced with fiberglass or other nonconductive material
- 153 and 152: overflow weirs with orifices
- Wall thickness would be increased from 8” to 14” to accommodate antenna
- Orifices may need to be located higher on weir wall to avoid interference with steel in floor
- Accomodation for weir overflow section; considerations for placement of antenna at outside walls of fish ladder (steel removal or addition of concrete; “bump” in wall)

Advantages

- Weir 154 is being replaced
- Near exit

Disadvantages

- Vibration effects on antenna with movable weir (154) not desirable for PIT function
- Cross section varies between weirs 153/152 and 154: could affect cost and ease of maintenance
- 4 antennas required per weir (2 overflow, 2 orifice)

- **Weirs 149, 150, 151**

Description

- 2 or 3 weirs in series
- 149, 150 and 151 are overflow weirs wih orifices
- Wall thickness would be increased from 8” to 14” to accommodate antenna
- Orifices may need to be located higher on weir wall to avoid interference with steel in floor
- Accomodation for weir overflow section; considerations for placement of antenna at outside walls of fish ladder (steel removal or addition of concrete; “bump” in wall)

Advantages

- Consistent cross section simplifies design between weirs

- **Counting Station**

Description

- 2 antennas in count station; varying locations (see PSMFC conceptual drawings)
- Potential lengthening of count slot channel/ repositioning or modification of picketed leads and/or modification to counting room and debris removal system

Advantages

- Reduced number of antennas required (2 vs. 4 per weir)
- Ease of access for maintenance

Disadvantages/Concerns

- Requires lengthening count slot

THE DALLES NORTH FISH LADDER - Alternatives Currently Being Evaluated

- **Weirs 121, 122, 123**

Description

- 3 overflow weirs in series, in rock section
- Wall thickness would be increased from 8” to 14” to accommodate antenna

Advantages

- Location in rock section will reduce the need for removal of steel in outside walls and floor and possibly eliminate need for repositioning of orifices
- Consistent cross section simplifies design between weirs

- **Weirs 155, 156, 157**

Description

- 3 slot weirs in upper section of ladder; vertical slot in center and 18” orifice on one side
- Orifices may need to be located higher on weir wall to avoid interference with steel in floor
- Wall thickness would be increased from 8” to 14” to accommodate antenna

Advantages

- Consistent cross section simplifies design between weirs
- Number of antennas required is 2 per weir rather than 4 for overflow weirs
- Count Station (See TDAE)

Disadvantages/Concerns

- Raising orifices off floor not desirable for lamprey , but may be able to effectively ramp
- Must evaluate hydraulic impacts of raising orifices, if necessary

- **Counting Station**

- **Description**

- 2 antennas in count station; varying locations (see PSMFC conceptual drawings)
 - Potential lengthening of count slot channel/ repositioning or modification of picketed leads and/or modification to counting room and debris removal system

- **Advantages**

- Reduced number of antennas required (2 vs. 4 per weir)
 - Ease of access for maintenance

- **Disadvantages/Concerns**

- Requires lengthening count slot

Alternatives Eliminated from Consideration at this time

- TDAE and TDAN: Forebay Extension due to structural and maintenance considerations
- TDAE: Weirs 154, 158 and 159; moving parts on telescoping exit weirs 158 and 159 not conducive to antenna installation
- TDAN: Weirs 122, 123 and exit section (152); eliminate because of separation between weirs, different cross sections