

Step 1 – Identify species and life stages in need of upstream passage. Provide swim speed data, run timing and behavioral passage traits for each species.

Step 2 - If only adult salmon need passage, design facility according to NMFS Design manual, chapters 3 and 4

If weaker swimming species or life stages require upstream passage, is there an overlap with the upstream passage season for adult salmon?

If yes, and if feasible use a stream simulation design that mimics typical conditions in the stream. FSOC decides on and insert limitations for stream simulation design (for example, max stream slope, max project drop, max/min flow, minimum depth, channel type, sediment transport capacity, others). Or, design an engineered fishway with 6" jumps between fishway pools, and provide fishway entrances capable of operating between 6"-18" of hydraulic head. When adult salmon do not require passage operate the fishway entrance at 6" head. When adult salmon require passage, operate the fishway entrance between 12" and 18" of head. If there is a overlap in run timing between adult salmon and other NMF, provide dual fishway entrances capable of operating at the hydraulic head ranges previously indicated.

If no, design a fishway using state standards (6" max jumps in OR, 9" max jumps in WA, xx?" jumps in ID, MT).

If species and life stages targeted for upstream passage do not pass by jumping, consider best fishway style between:

- Stream simulation
- Vertical slot
- Ice Harbor fishway, or others with orifice and overflow weir
- Roughened chute

For the selected fishway styles, assure that the fishway design provides a submerged flow path between fishway pools with velocity within the burst swimming capability of the weakest swimming species. Fishway entrance design should follow fishway entrance design criteria listed above.