**DRAFT Yolo Bypass Salmonid Habitat Restoration and Fish Passage Evaluation Criteria**

**Effectiveness: how well an alternative would alleviate problems and achieve opportunities**

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| **Project Objective** | **Performance Measure** | **Method to Measure Performance** |
| Increase access to floodplain habitat | Measure connectivity and potential to entrain winter-run chinook onto floodplain | Entrainment model |
| Measure connectivity and potential to entrain spring-run chinook onto floodplain | Entrainment model |
| Increase seasonal floodplain fisheries rearing habitat | Percent increase in winter-run chinook escapement | Juvenile floodplain production model |
| Percent increase in spring-run chinook escapement | Juvenile floodplain production model |
| Increase area of floodplain habitat | Inundation area (area inundated at least 14 days in 50% of years) | TUFLOW model |
| Increase duration of flooded habitat | Wetted acre-days when fish are likely present | TUFLOW model |
| Increase food production as part of ecosystem approach | Increase in food production | Foodweb tool |
| Adult fish passage | Days with depth barrier to adult volitional passage | Fish passage tool |
| Days with velocity barrier to adult volitional passage | Fish passage tool |
| Operational range for adult fish passage | Fish passage tool |
| Percent of season that meets adult fish passage criteria | Fish passage tool |
| Fish passage facilities incorporate open channel flow | Qualitative assessment of number of fish passage facilities to provide passage and complexity of operations between passage facilities |
| Juvenile fish passage | Potential for juvenile stranding or predation risk | Qualitative assessment of need for complex mechanized operation |

**Completeness: whether an alternative would account for all investments or other actions necessary to realize the planned effects**

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| **Category** | **Performance Measure** | **Method to Measure Performance** |
| Completeness | Addresses all four focus fish | Qualitative assessment |
| Long-term stability of facilities | Qualitative assessment of maintenance requirements |

**Acceptability: the viability of an alternative with respect to acceptance by other Federal, State, and local entities and compatibility with existing laws**

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| **Acceptability Issue** | **Performance Measure** | **Method to Measure Performance** |
| Agricultural impacts | Inundation effects on agricultural production | Bypass Production Model |
| Inundation effects on winter maintenance activities (increased wetted acre-days) | TUFLOW model |
| Recreation impacts | Inundation of recreational areas that could impact hunting activities | TUFLOW model |
| Waterfowl impacts | Available foraging habitat | TUFLOW model |
| Inundation of areas that reduces waterfowl food production | TUFLOW model |
| Impacts to road access for bird viewing in refuge | TUFLOW model |
| Impacts to refuge drainage |  |
| Education impacts | Inundation of areas used for educational outreach | TUFLOW model |
| Biological impacts | Impacts from construction (benefits addressed under “effectiveness” criterion) | Qualitative assessment |
| Cultural impacts | Potential to encounter unexpected resources | Qualitative assessment |
| Flood impacts | Potential to affect flood management or operations and maintenance | TUFLOW model and qualitative assessment (for O&M) |
| Water supply impacts | Potential to affect agricultural or municipal water supplies | Qualitative assessment |
| Potential to affect groundwater resources | TUFLOW model |
| Potential to affect Delta diversions or a future WaterFix facility | CalSim |
| Compatibility with other related efforts | Potential to affect future options or costs for other flood and restoration planning efforts | Qualitative assessment |

**Efficiency: how well an alternative would deliver economic benefits relative to project costs**

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| **Category** | **Performance Measure** | **Method to Measure Performance** |
| Cost effectiveness | Relative benefits and costs | Rough cost estimates compared to benefits |