FSOC Fish Passage Training Outline

September 13-16, 2010
Howard Johnson Hotel – 9 North 9th Street
Yakima, WA
Vineyard C Room

September 13 - Course Intro and Road Crossing Designs

12:30 - 1:00 PM – Course Introduction – Bryan Nordlund (NMFS)

Safe, Timely and Efficient Upstream Fish Passage
Passage Impediments and Barriers
Objectives of Passage Instruction
Take-Home Introductory Message
Fish Passage Definitions (handout)

1:00 - 5:00 PM – Culvert and Bridge Designs – Bob Barnard (WDFW)

(Break from 3:00 – 3:15)

Background
Cover the basics
Design
Methods
Outline design/project policies and procedures
Outline Criteria
Project Assessment
Project Review
Monitoring and O&M

Dinner on Your Own

September 14 - Upstream Passage Systems at Dams

8:00 - 9:30 AM: Upstream Passage (Nordlund)

Tools, Calculations and Biomechanics
Hydrology and Fish Passage Design Flows
Basic Hydraulics (Continuity Equation, Velocity Head, Weir equation, Orifice equation)
Fish Passage Math (Conversions, Significant Figures and Matching Units)

9:30 - 9:45 AM: Break

9:45 - 11:00 AM: Upstream Passage (Nordlund)

Fish Passage Physics and Biomechanical Ability (Cruising, sustained and burst speed)
Integrating Biomechanical Ability into Fishway Designs
Example: Calculating fish jump height
Conceptual Design Development - Site Data Requirements
30%, 60%, 90% and 100% Design Review

11:00 - 12:30 PM: Upstream Passage – Fishway Types (Jeff Brown - NMFS)

Types of Fish Ladders and appropriate application

12:30 - 1:30 PM: Lunch Break (on your own)

September 14 - Upstream Passage Systems at Dams (continued)

1:30 - 3:00 PM: Upstream Passage – Fishway Component Design (Melissa Jundt - NMFS)
Entrance and Entrance Pools
Auxiliary Water Systems
Transport Channels

3:00 - 3:15 PM: Break

3:15 - 5:00 PM: Upstream Passage – Component Designs (continued)
Counting Stations and Windows
Fishway Exit Section
Fishway Exit Sediment and Debris Management
Coarse Trash Rack

5:30 - 6:30 PM: No-Host Social (Plum Room)

6:30 - 9:00 PM: Dinner Buffet (Plum Room- Included with Registration)

September 15 - Juvenile Fish Screen and Bypass Designs

8:00 - 9:30 AM: Juvenile Fish Screen and Bypass Design (Larry Swenson – NMFS)
Purpose of screening
History of fish screening

9:30 - 9:45 AM: Break

9:45 - 12:00 Noon: Juvenile Fish Screen and Bypass Design (Swenson)
Guiding principles forming foundation of screening criteria
Fish biology and behavior as applied to screening

Noon - 1:00 PM: Lunch Break (on your own)

1:00 - 3:00 PM: Juvenile Fish Screen and Bypass Design (Larry Swenson – NMFS)
Screen types (descriptions, criteria elements, benefits, disadvantages and appropriate uses)
Screen Design (hydraulics, materials, sediment and debris management, cleaning systems)

3:00 - 3:15 PM: Break

3:15 - 4:30 PM: Juvenile Fish Screen and Bypass Design (Larry Swenson – NMFS)
Bypass Design
Monitoring, evaluations and O&M

4:30 – 5:00 PM: Field Trip Overview (Pat Schille – WDFW)

September 16 – Site Visits

8:30 AM Departure from Hotel (Transportation Provided)
4:00 PM Return to Hotel
Box Lunch Provided (Included with Registration)