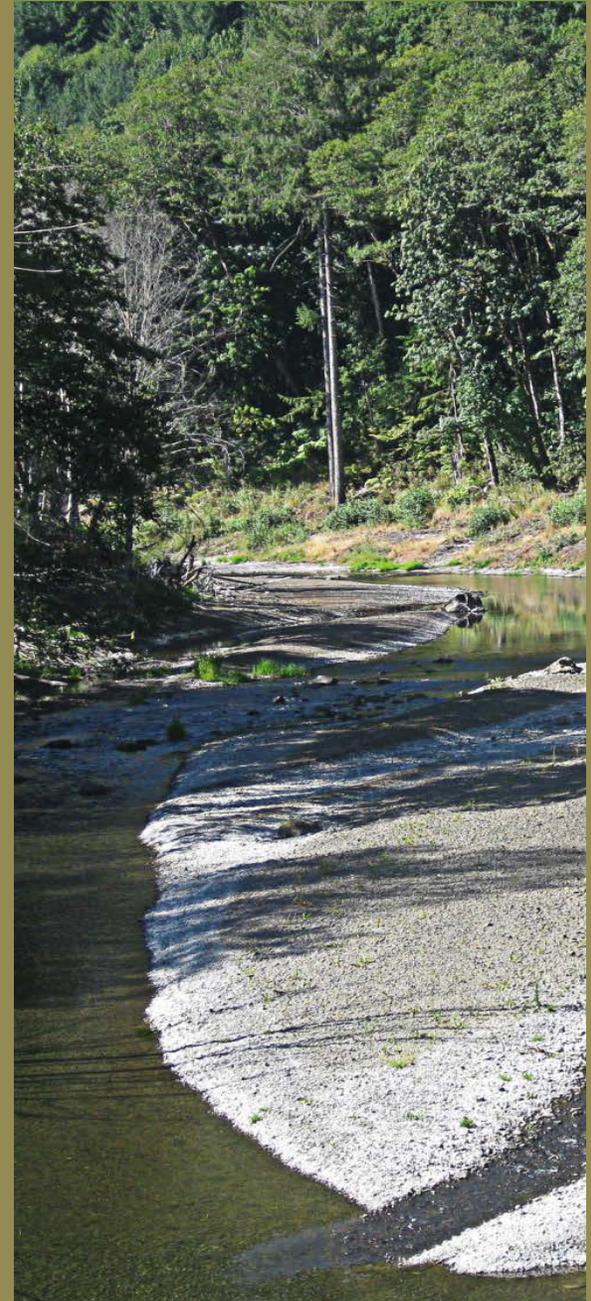


Chehalis Basin Strategy: Reducing Flood Damage and Enhancing Aquatic Species Alternatives Analysis

*Economic Evaluation Technical Workgroup
Meeting*

May 7 2014

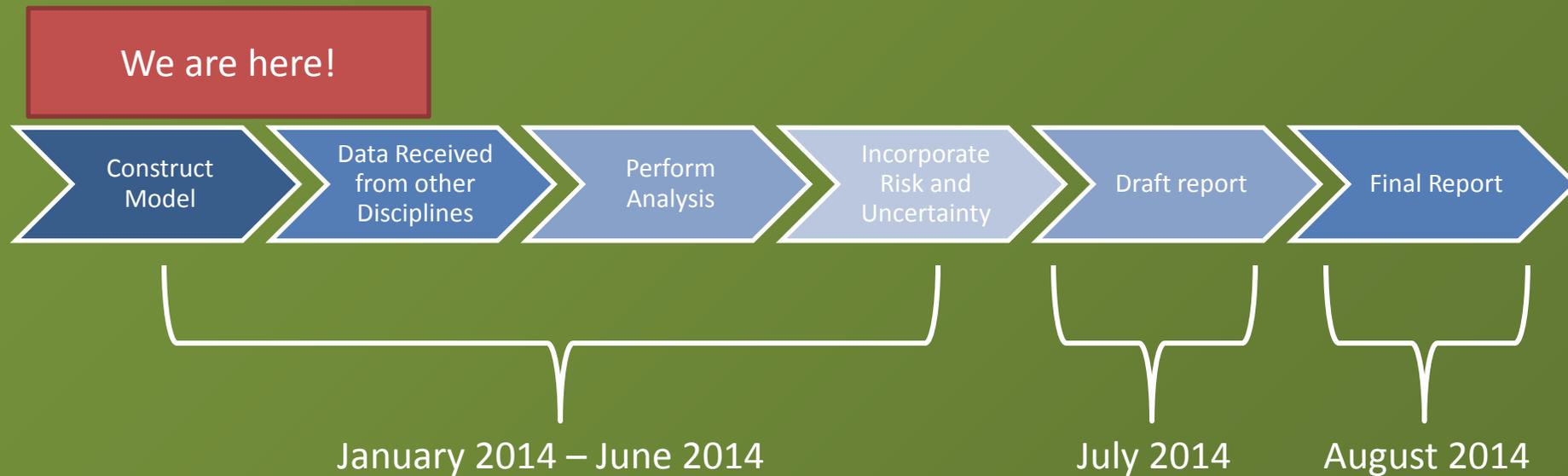
*Presented by:
Anne Falcon, Managing Director, EES Consulting, Inc.*



Session Objectives

- Economic Evaluation Status
- Economic Analysis Overview
- How information will be used

Analysis of Alternatives Project Timeline



Summary of Selected Methods

Study Period

- 100 years

Baseline Includes

- Current Conditions
- Currently Funded projects

Perspectives Presented

- Basin-wide
- State
- Federal

Incorporate Risk and Uncertainty

- Deterministic, Stochastic, or Discussion

Alternatives Evaluated

- Baseline
- Flood Retention Dam
- Multi Purpose Dam
 - Multi Purpose Dam with Hydro
- WSDOT Alternatives
- Small Flood Projects
- Aquatic Species Enhancement Plan (ASEP)
- Combinations of the above

ECONOMIC EVALUATION

ENVIRONMENTAL IMPACT

NON-ENVIRONMENTAL IMPACT

Quantitative

- ✓ Environmental Use
- ✓ Fisheries Production
- ✓ Sport Fishing
- ✓ Environmental Non-Use

Qualitative

- ✓ Other Fish
- ✓ Non-Fish

Quantitative

- ✓ Structure
- ✓ Content
- ✓ Inventory
- ✓ Business Interruption
- ✓ Transportation
- ✓ Clean-Up Costs
- ✓ Agricultural Impact
- ✓ Public Assistance
- ✓ Emergency Aid
- ✓ Economic Impacts
- ✓ Hydropower

Qualitative

- ✓ Social
- ✓ Cultural
- ✓ Health and Safety
- ✓ Water Rights
- ✓ "Cloud" Values
- ✓ Intangible

Data Input from Teams

H&H

Flood depth grids for Alternatives
(2, 10, 20, 100 and 500 year
events)

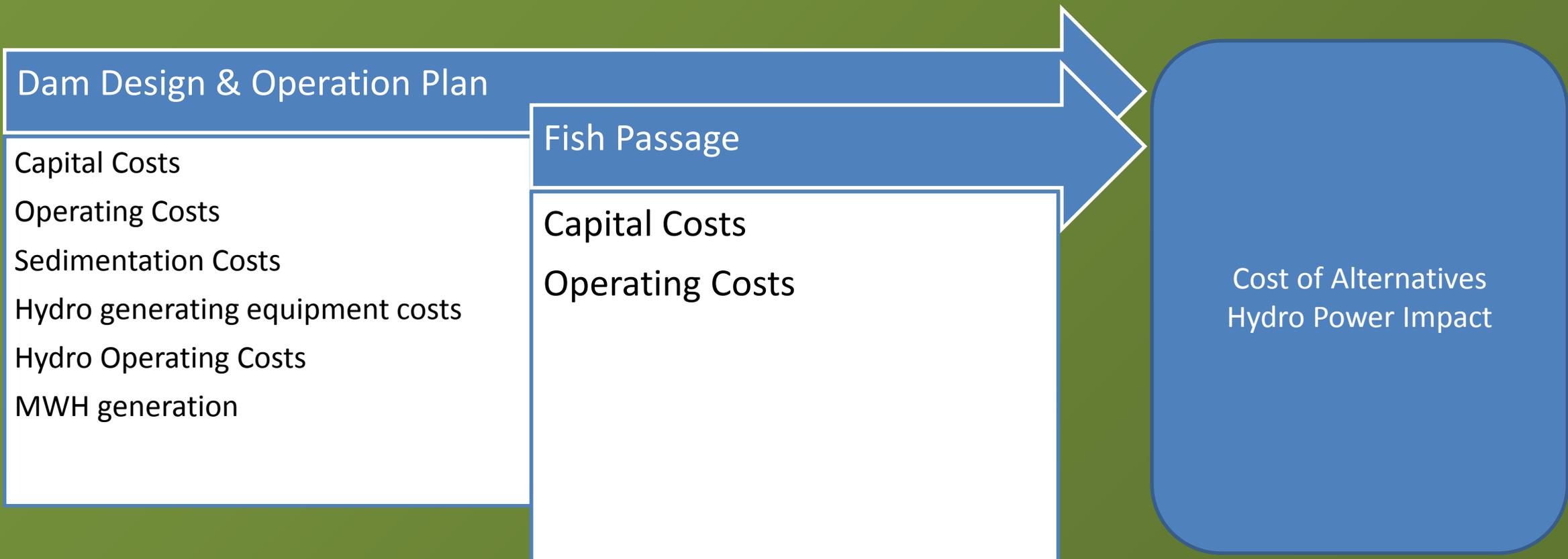
Length of closure of I-5, HW6,
HW12

Structure Survey

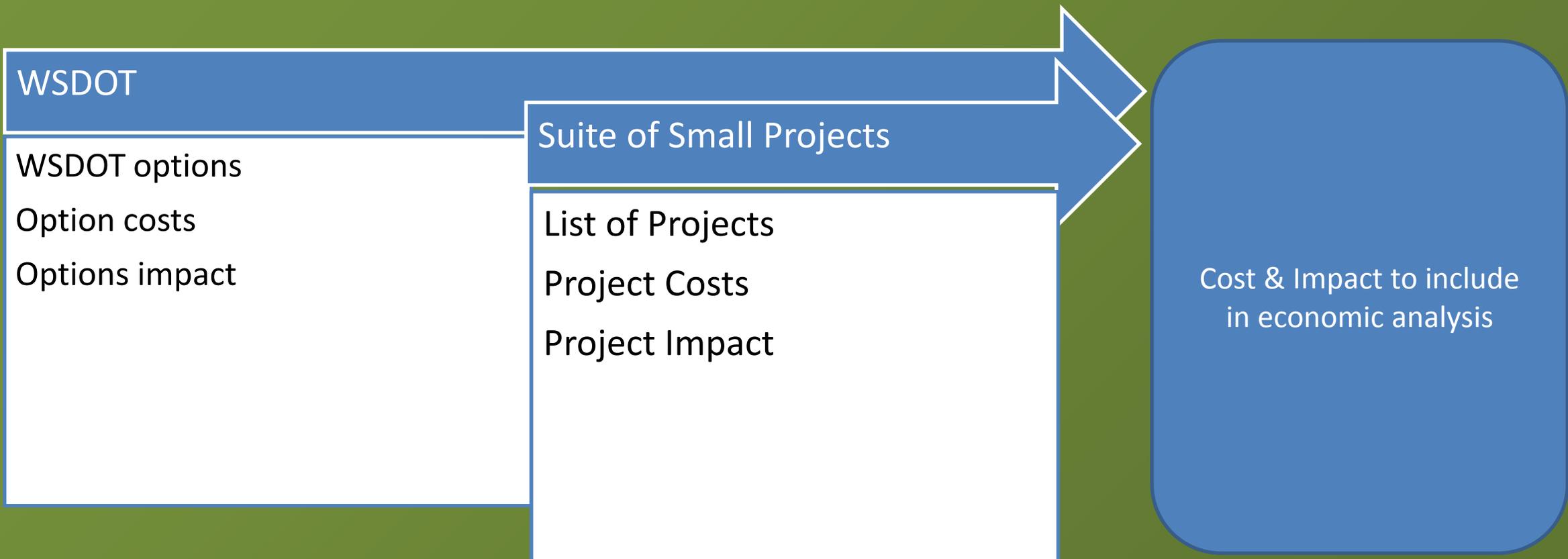
Number of Structures
Number of structures by flooding
First Floor Elevation
Value of valuable properties
Assessed Value (structure & land)
Square Footage of buildings (roofline)

Structure Inventory
Structure Value
Content Value
Business Interruption
Population displaced
Agricultural Acres flooded
Debris Generated
Transportation impacts
Damage to essential
facilities

Data Input from Teams



Data Input from Teams



Data Input from Teams

Aquatics Species Enhancement Plan

Salmon Population forecasts

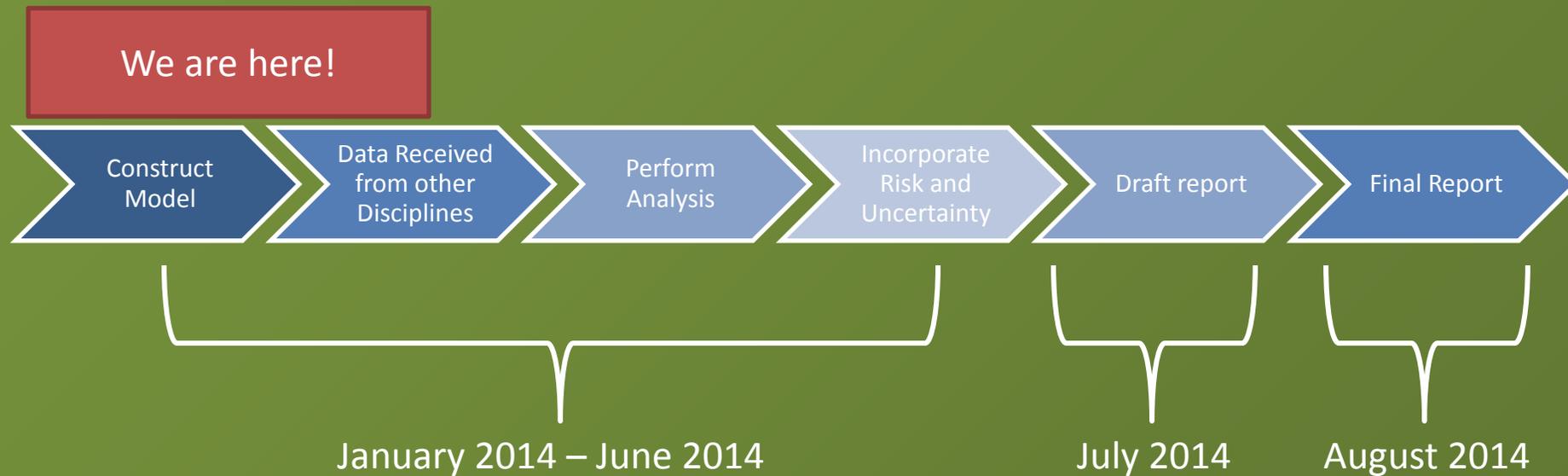
Habitat Suitability Measures

Other Fish and Non-Fish Qualitative Performance Measures

Environmental Restoration Costs

Salmon Species Populations
Commercial Fisheries Impacts
Sport Fisheries Impacts
Habitat Impacts
Costs of Restoration Actions

Analysis of Alternatives Project Timeline



Questions