General Investigation Presentation Outline

- Overview
- Purpose
- Corps Planning Process
- Alternative Development
- Comparison Criteria
- Next Steps
General Investigation
Overview

• Phases
  – Reconnaissance
  – Feasibility
  – Pre-Construction Engineering and Design
  – Construction
  – Operation and Maintenance

• Goal
  – Reduce flood damages and risks to life safety over the 50 year project life
General Investigation

Purpose

• Evaluate Flood Problems in the Basin
• Formulate, Evaluate, and Screen Solutions
• Recommend a Plan to Address Problems
  – Technically Viable
  – Economically Sound
  – Supported by local jurisdictions
• Integrated Feasibility Report/EIS
  – Alternative Formulation Process
  – NEPA Evaluation of Alternatives
General Investigation

USACE Planning Process

• SMART Planning
  – Reset, February 2012 Memo
  – Skagit GI transitioned in August 2012

• Six-step planning process:
  1. Identify problems & opportunities
  2. Inventory & forecast conditions
  3. Formulated alternative plans
  4. Evaluate alternative plans
  5. Compare alternative plans
  6. Select a plan
General Investigation
USACE Planning Process

• Phases and Milestones
  – Scoping
    • Alternatives Milestone
  – Alternative Evaluation & Analysis
    • Tentatively Selected Plan (TSP) Milestone
  – Feasibility-Level Analysis
    • Agency Decision Milestone
    • Final Report Milestone
  – Chief’s Report
    • Chief’s Report Milestone
General Investigation
Basin Flooding

• 1% ACE
  – 100-yr Flood
  – 225,400 cfs at Concrete Gauge
  – Approximately 45’ at Concrete Gauge

• 4% ACE
  – 25-yr Flood
  – 165,300 cfs at Concrete Gauge
  – Approximately 42’ at Concrete Gauge
  – Approximate level of lower basin protection

• Recent Floods (Concrete Gauge)
  – 2003 (10/21)
    • 42.21’
    • 166,000 cfs
  – 1995 (11/29)
    • 41.57’
    • 160,000 cfs
  – 1990 (11/10)
    • 40.20’
    • 149,000
General Investigation
Alternative Development

- Management Measures
- Preliminary Array of Alternatives
- Final Array of Alternatives
  - No Action
  - Swinomish Bypass
  - Joe Leary Slough Bypass
  - Comprehensive Urban Levee Improvement

- Measures in Common Amongst Alternatives
  - Baker Project Dam Storage
  - Site-specific floodwalls/levees, e.g. SWWWTP
  - Non-structural, e.g. Flood Warning, Gauges, Real Estate
General Investigation
Baker Project Dam Storage

- Existing Hard Storage
  - 74,000 Acre Feet at Upper Baker on 11/15

- Additional Hard Storage Opportunity
  - FERC License 2008 107 (a) & 107 (b)
  - 74,000 AF at Upper Baker on 10/15
  - Up to 29,000 AF at Lower Baker on 10/1

- Annualized Cost
- Annualized Benefit
General Investigation
Alternative Comparison Criteria

• Life Safety Risk Reduction
  – All three action alternatives provide equal level

• Economic Damage Reduction
  – All three action alternatives designed for 1% ACE protection to urban areas

• Least Impacts to Agricultural Resources
• Least Impacts to Environmental Resources
• Construction and O&M Costs
• Acceptability to Sponsor and Public
General Investigation
Alternative Comparison

• No Action Alternative
  – Future Without Project Condition
  – Does not reduce risks to life safety
  – Does not reduce economic damages
  – Least construction costs
  – No transfer of risk
  – Required by NEPA
    • Baseline to compare action alternatives against
General Investigation
Alternative Comparison

• Comprehensive Urban Levee Improvement
  – Requires approx. 3 miles of new levee
  – Improvements of approx. 8 miles of existing levee
    • Raising and Widening
  – Requires the least amount of construction materials
  – Least amount of real estate acquisition
  – Lowest impact to agricultural lands
General Investigation
Alternative Comparison

• Joe Leary Slough Bypass
  – Diverts RB upstream of Burlington to Padilla Bay
  – Approx. 2,000 ft wide, 9 mi long, 18 mi new levee
  – 4% chance of being used any given year
  – Mechanical and fuse-plug gate inlet at Sterling
  – Most impact to agricultural land
  – Highest cost compared to other alternatives
  – Major crossings: I-5, SR-20/11, BNSF, Pipelines
General Investigation
Alternative Comparison

- **Swinomish Bypass**
  - Diverts RB d/s of Burlington to Swinomish Slough
  - Approx. 2,000 ft wide, 7 mi long, 14 mi new levee
  - Spill continues at Sterling
  - 4% chance of being used any given year
  - Mechanical and fuse-gate inlet at Riverbend
  - Less impact to Agricultural land than JLS
  - Less cost of construction than JLS
  - Major Crossings: SR-536, Pipeline
General Investigation Timeline

- Fall 2013 Alternative Analysis
- Fall/Winter 2013: Tentatively Select Plan
- Winter/Spring 2014: Public Review
  - NEPA Formal Comment Period (45 days)
- Spring/Summer 2014: Agency Decision Milestone
- Fall 2014: Submit Final Draft Integrated FR/EIS
  - Feasibility-Level Design
- Spring 2015: Chief’s Report
  - Congressional Project Authorization