Skagit River General Investigation Preliminary Alternatives

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US Army Corps of Engineers

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Skagit River General Investigation

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Problem

- Problem: The Skagit River Basin is subject to rain floods and related snowmelt runoff flooding that typically occur from October – March. This flooding results in damages to infrastructure; residential, commercial and industrial structures; agricultural areas; and is a threat to life safety. Existing flood control systems, including locally owned levees and flood control storage in non-Federal hydropower projects, provides a limited level of flood risk management to developed areas that is not acceptable to the local communities in the Basin.

Opportunity and Objectives

- Opportunity: Reduce flood risk and life/safety risk in the Skagit River Basin from overland flow resulting from October – March rain floods and related snowmelt floods.

  Objective: Reduce flood damages in the Skagit River Basin over the 50 year project life.

  Objective: Reduce threat to life safety in the Skagit River Basin over the 50 year project life.

Study Schedule

- Upcoming milestones
  - Public Outreach on Preliminary Alternatives, April-May 2012
  - Public Outreach on Final Alternatives and Tentatively Selected Plan, March 2013
- Future Milestones
  - Public Outreach on Recommended Plan, March 2014
  - Formal Public Comment Period on draft Integrated Feasibility Report and Environmental Impact Statement per NEPA requirements, January 2015

Measures and Alternatives

- **Measures are strategies that decrease flood risk for a specific location. Alone, they cannot address basin-wide flooding problems.**
  - Levees/floodwalls
  - Operational modifications Upper and Lower Baker Dams
  - Bypasses
  - Non-structural
  - Bridge modification
- **Alternatives are groupings of measures that can address basin wide flooding problems.**

Alternatives Formulation Process

- **Preliminary alternatives are conceptual designs.**
- **The Alternatives Formulation Process is an dynamic process.**
  - **Over the next year, the study team will refine the alternatives based on considerations of:**
    - **Hydraulic analysis**
    - **Economic analysis**
    - **Environmental analysis**
    - **Federal, state, and local laws**
    - **Public input**
    - **Local, state and federal agency input**
- **The preliminary alternatives presented today are likely to change as they are refined through the alternative formulation process.**

Alternatives Formulation Process: Evaluation Criteria

- Completeness
- Effectiveness
- Efficiency
- Acceptability

Preliminary Alternative 1: No Action

- Per USACE planning guidance, the No Action Alternative was evaluated.
- The No Action Alternative will not achieve the study objectives and will not be brought forward for further consideration as the recommended plan.

SKAGIT RIVER FLOOD DISCHARGE DIAGRAM

Skagit River General Investigation
Preliminary Alternative 2
Non-Structural & Dam Storage
Cockreham Island
Hamilton
Sterling
Nookachamps
United General Hospital
Burlington WWTP
Anacortes Water Treatment Plant
Mount Vernon WWTP
Upper Skagit Basin
1:76,000
1" = 1.2 Miles
Upper Baker Dam
Lower Baker Dam
Cape Horn
Concrete
Legend
City Extents
Population
0 - 1200
1201 - 7500
7501 - 22100
Points of Interest
Hospital
Water Treatment Plant
Waste Water Treatment Plant
Existing Levee
Measures
Dam Operational Modifications
Nonstructural

Alternative 2:Non-Structual and Dam Modifications

Skagit River General Investigation
Preliminary Alternative 3
Joe Leary Slough Bypass/Floodway
Cockreham Island
Hamilton
Sterling
Nookachamps
Burlington WWTP
Three Bridge Corridor
Anacortes Water Treatment Plant
Mount Vernon WWTP
Upper Skagit Basin
1:76,000
1" = 1.2 Miles
Upper Baker Dam
Lower Baker Dam
Cape Horn
Concrete
Legend
City Extents
Population
0 - 1200
1201 - 7500
7501 - 22100
Points of Interest
Hospital
Water Treatment Plant
Waste Water Treatment Plant
Existing Levee
Measures
Dam Operational Modifications
New Levee
New Levee (Induced Flooding)
Mt. Vernon Floodwall
Bypass Channel
Bypass Overland Flow
Nonstructural

Preliminary Alternative 3: Joe Leary Slough Bypass or Floodway

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Skagit River General Investigation
Preliminary Alternative 4
Swinomish Bypass/Floodway
Hamilton
Cockreham Island
Sterling
Nookachamps
BNSF Bridge
Division St Bridge
Upper Skagit Basin
Upper Baker Dam
Lower Baker Dam
Cape Horn
Concrete
Legend
City Extents
Population
0 - 1200
1201 - 7500
7501 - 22100
Points of Interest
Hospital
Water Treatment Plant
Waste Water Treatment Plant
Existing Levee
Measures
Dam Operational Modifications
Setback Levee
New Levee
New Levee (Induced Flooding)
Mt. Vernon Floodwall
Bypass Channel
Bypass Overland Flow
Nonstructural

Preliminary Alternative 4: Swinomish Bypass or Floodway

Skagit River General Investigation
Preliminary Alternative 5
Urban Area Protection
Cockreham Island
Hamilton
Sterling
Nookachamps
Burlington WWTP
Anacortes Water Treatment Plant
Mount Vernon WWTP
Upper Skagit Basin
1:76,000
1" = 1 Mile
Upper Baker Dam
Lower Baker Dam
Cape Horn
Concrete
Legend
City Extents
Population
0 - 1200
1201 - 7500
7501 - 22100
Points of Interest
Hospital
Water Treatment Plant
Waste Water Treatment Plant
Existing Levee
Measures
Dam Operational Modifications
Setback Levee
New Levee
Levee Modification
Mt. Vernon Floodwall
Nonstructural

Preliminary Alternative 5: Urban Area Protection

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Skagit River General Investigation
Preliminary Alternative 6
System-wide Levee Setbacks
Hamilton
Cockreham Island
Sterling
Nookachamps
Burlington WWTP
Three Bridge Corridor
BNSF Bridge
Division St Bridge
Mount Vernon WWTP
Upper Skagit Basin
1:76,000
1" = 1.2 Miles
Upper Baker Dam
Lower Baker Dam
Cape Horn
Concrete
Legend
City Extents
Population
0 - 1200
1201 - 7500
7501 - 22100
Points of Interest
Hospital
Water Treatment Plant
Waste Water Treatment Plant
Existing Levee
Measures
Dam Operational Modifications
Bridge Mods
Setback Levee
New Levee
New Levee (Induced Flooding)
Mount Vernon Floodwall
Bypass Channel
Nonstructural

Preliminary Alternative 6: System-wide Levee Setbacks

Preliminary Alternative 6: System-wide Levee Setbacks

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Comments?

- Please fill out a comment card.
- Contact:

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