

Skagit River General Investigation Preliminary Alternatives

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Project Manager

U.S. Army Corps of Engineers, Seattle District

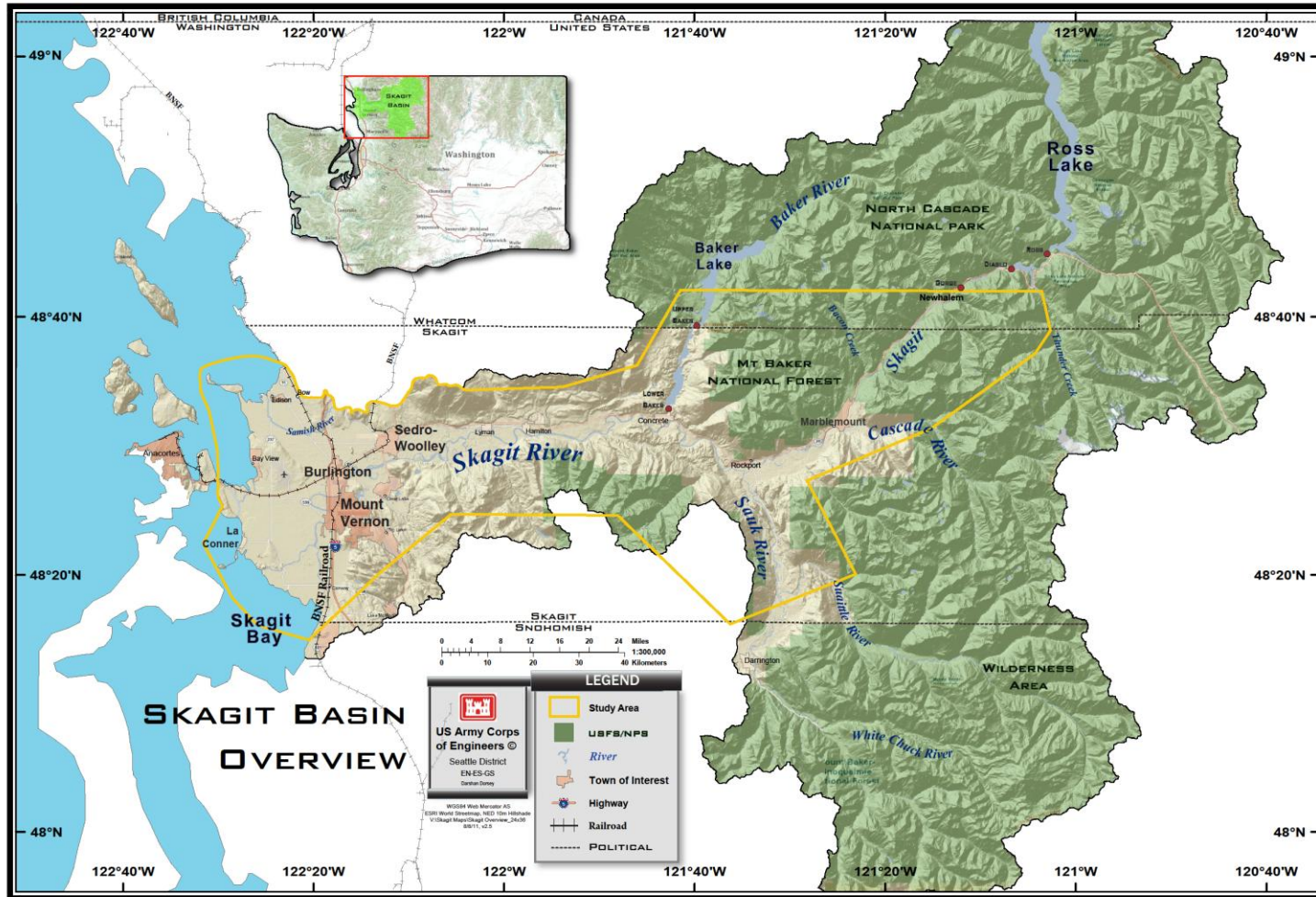
April 16, 2012. Flood Control Zone District Advisory
Committee Meeting.



US Army Corps of Engineers
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Skagit River General Investigation



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 Workshop on Preliminary Alternatives, May 7th.
 - 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

Upper Basin
(Ross/Sauk
River)

Local
Inputs

Nookachamps

Mount
Vernon

South of Fir
Island

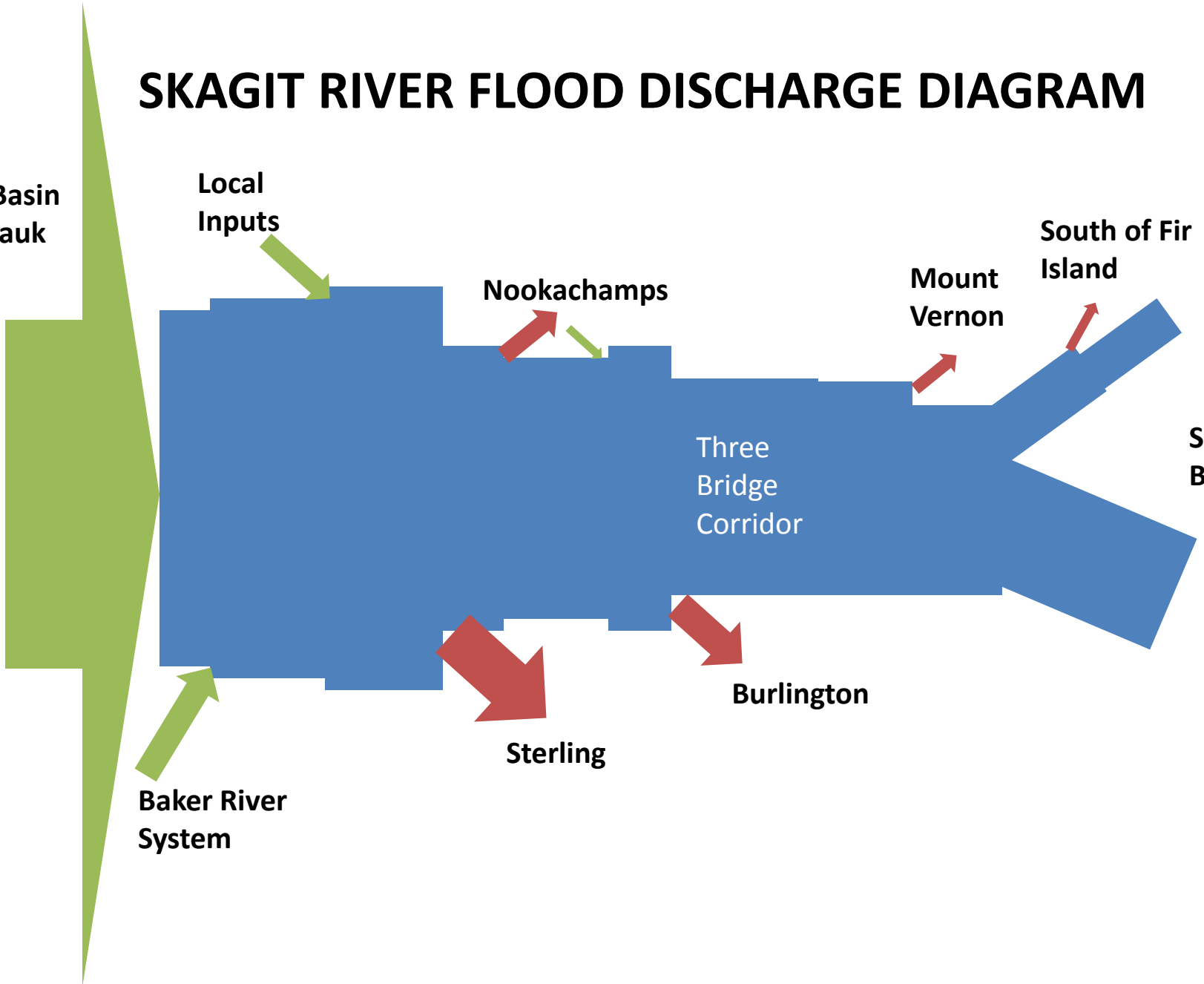
Three
Bridge
Corridor

Skagit
Bay

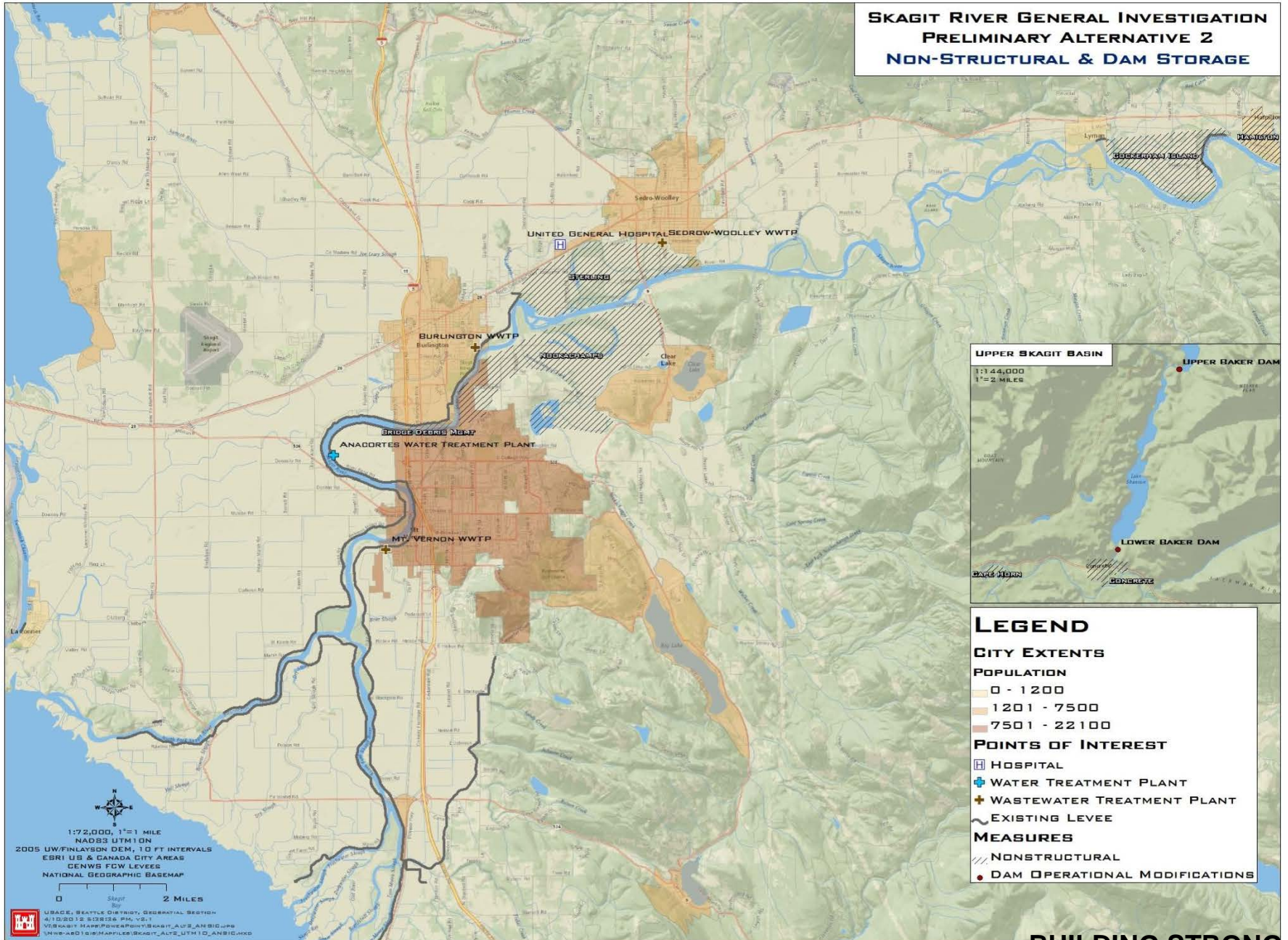
Baker River
System

Sterling

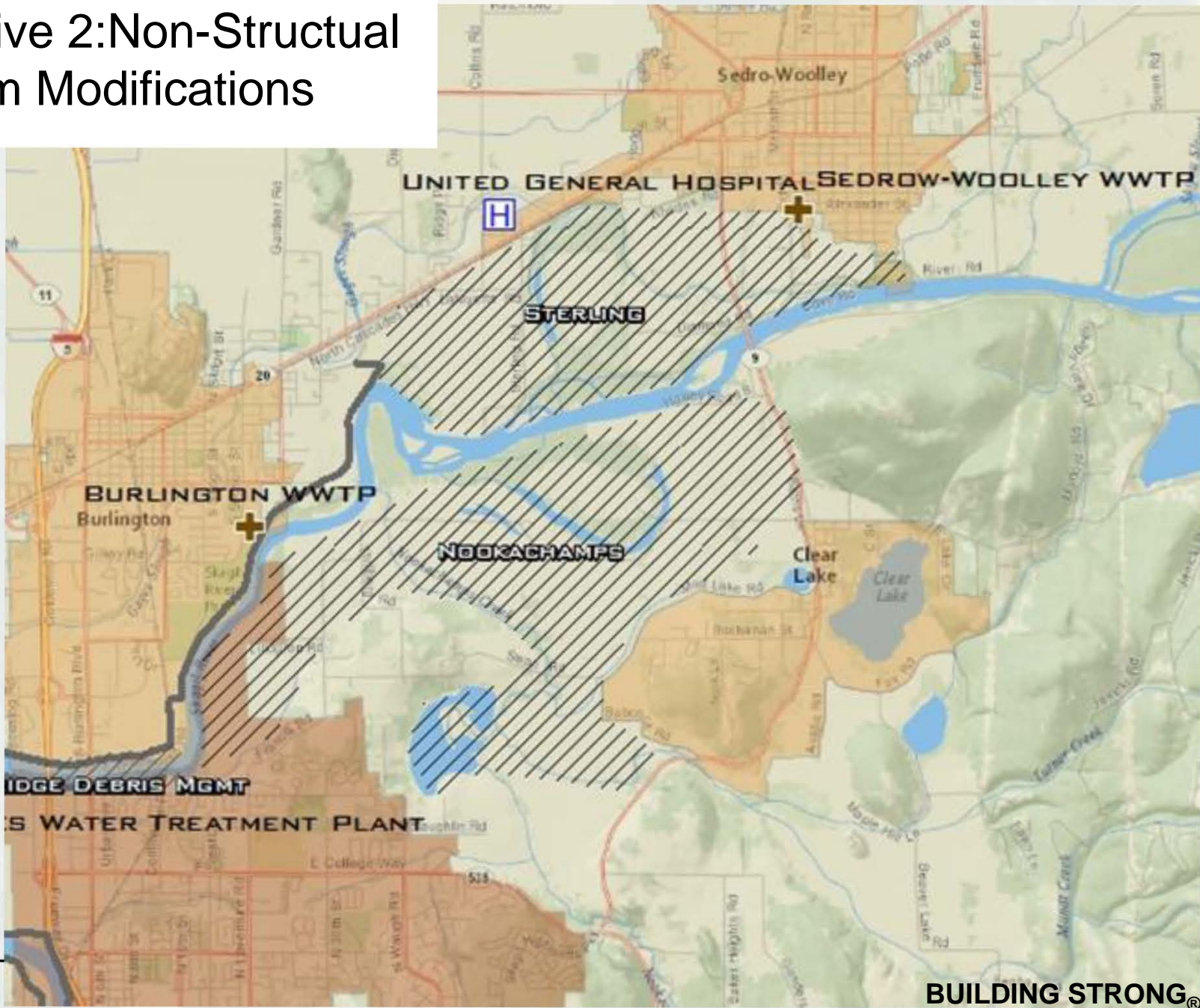
Burlington



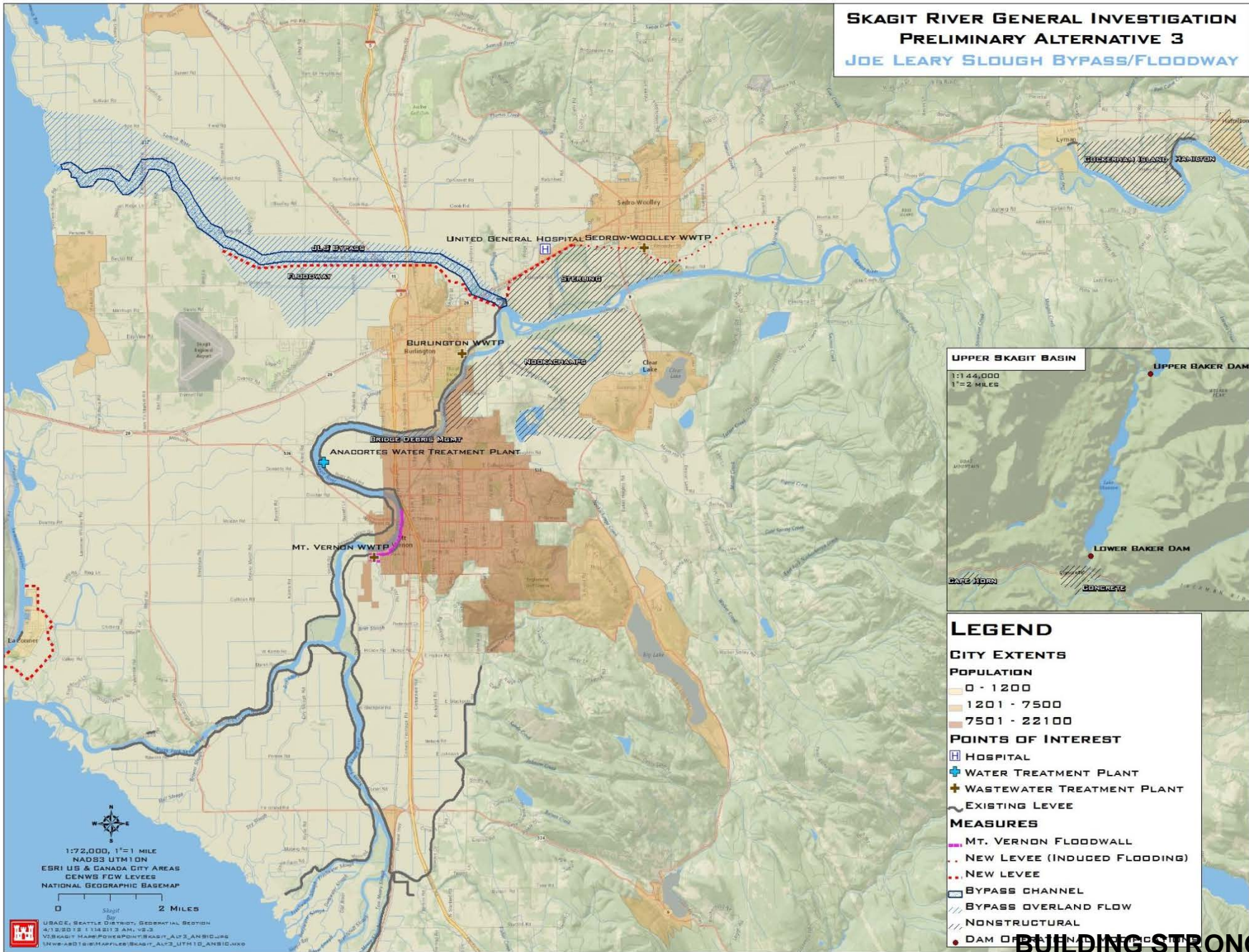
**SKAGIT RIVER GENERAL INVESTIGATION
PRELIMINARY ALTERNATIVE 2
NON-STRUCTURAL & DAM STORAGE**



Alternative 2: Non-Structural and Dam Modifications



**SKAGIT RIVER GENERAL INVESTIGATION
PRELIMINARY ALTERNATIVE 3
JOE LEARY SLOUGH BYPASS/FLOODWAY**

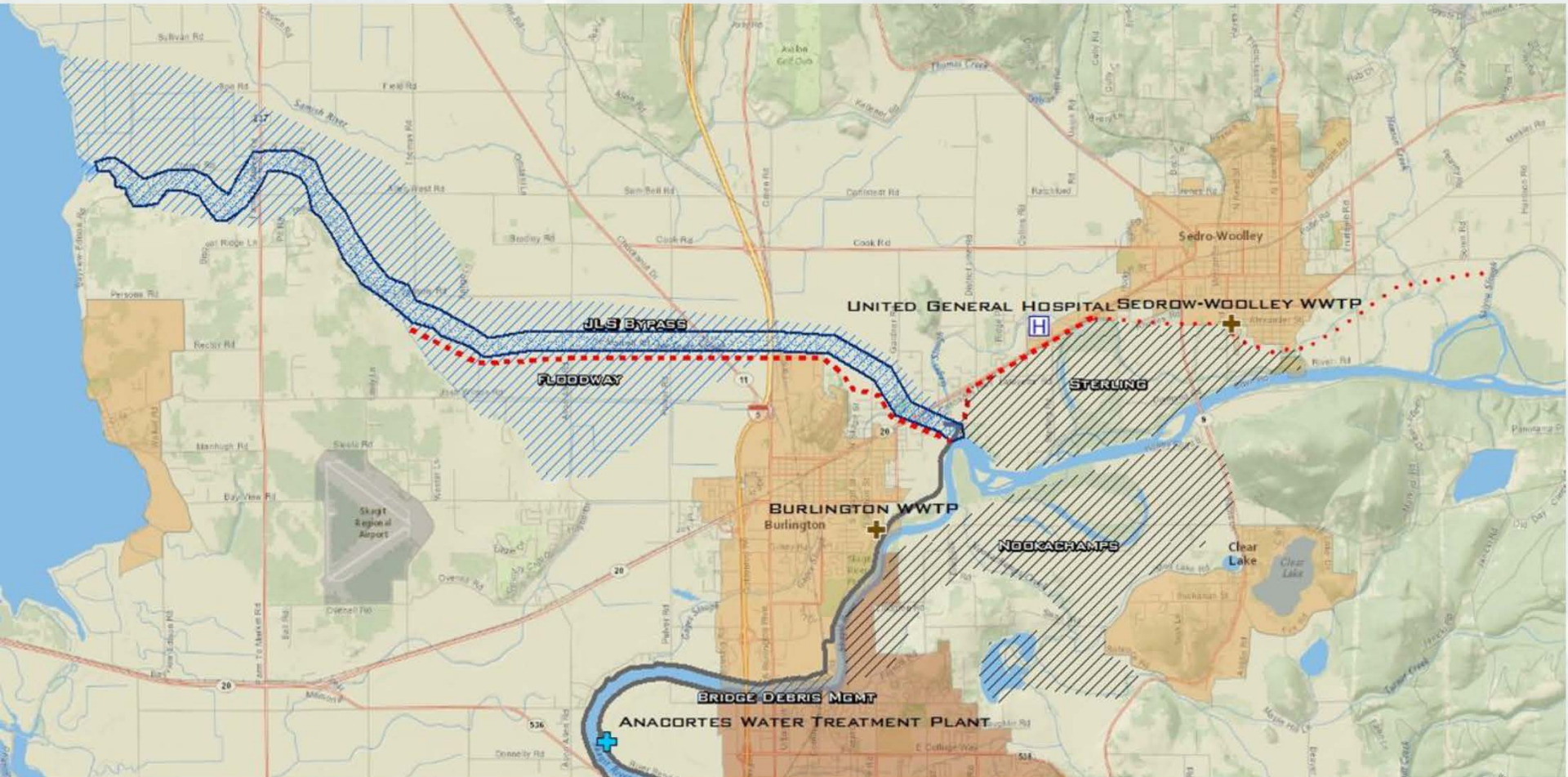


- LEGEND**
- CITY EXTENTS**
POPULATION
 0 - 1200
 1201 - 7500
 7501 - 22100
- POINTS OF INTEREST**
 [H] HOSPITAL
 [W] WATER TREATMENT PLANT
 [W] WASTEWATER TREATMENT PLANT
 [L] EXISTING LEVEE
- MEASURES**
 [M] MT. VERNON FLOODWALL
 [D] NEW LEVEE (INDUCED FLOODING)
 [D] NEW LEVEE
 [B] BYPASS CHANNEL
 [O] BYPASS OVERLAND FLOW
 [N] NONSTRUCTURAL
 [D] DAM OR OTHER STRUCTURAL MEASURE

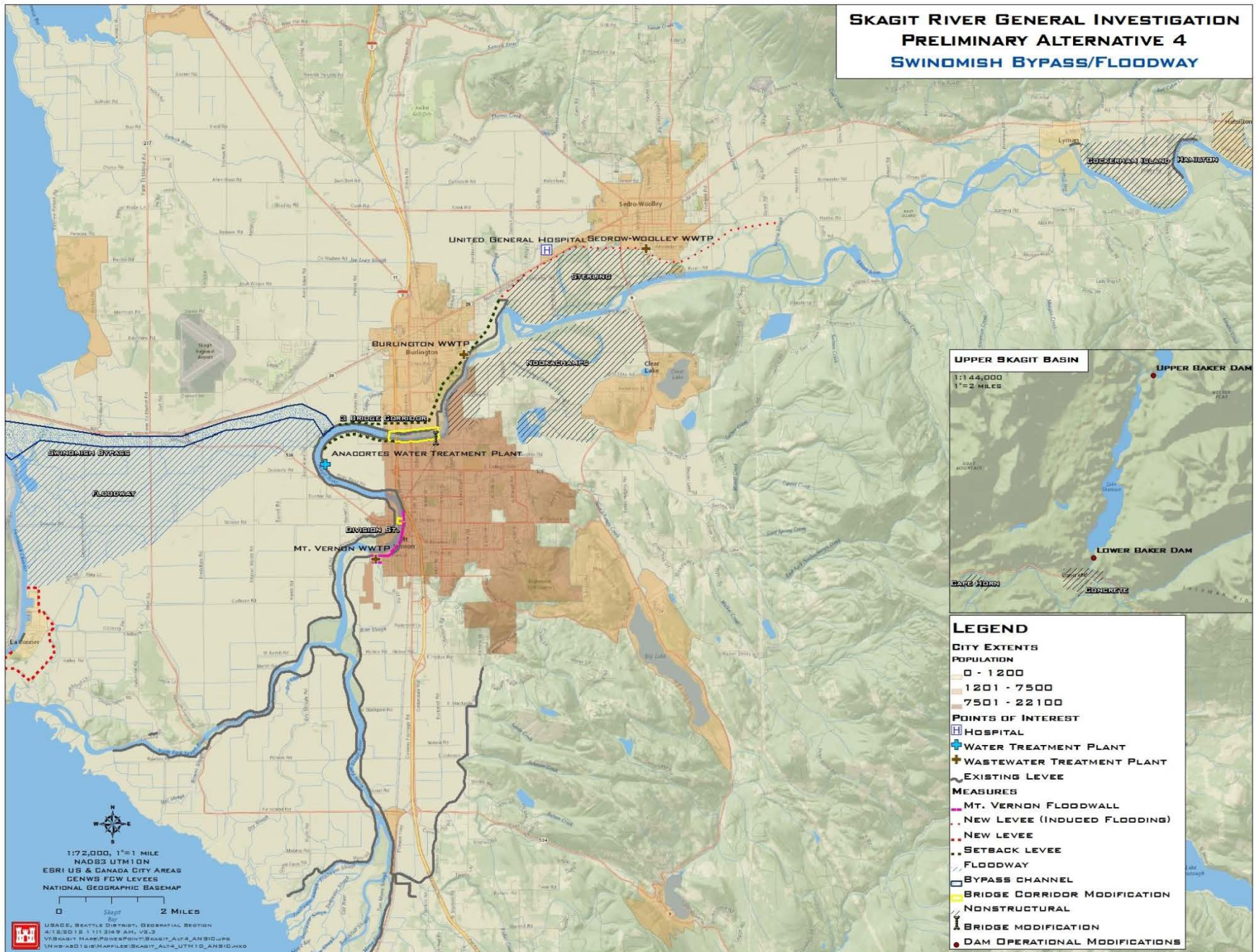
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Preliminary Alternative 3: Joe Leary Slough Bypass or Floodway



SKAGIT RIVER GENERAL INVESTIGATION PRELIMINARY ALTERNATIVE 4 SWINOMISH BYPASS/FLOODWAY

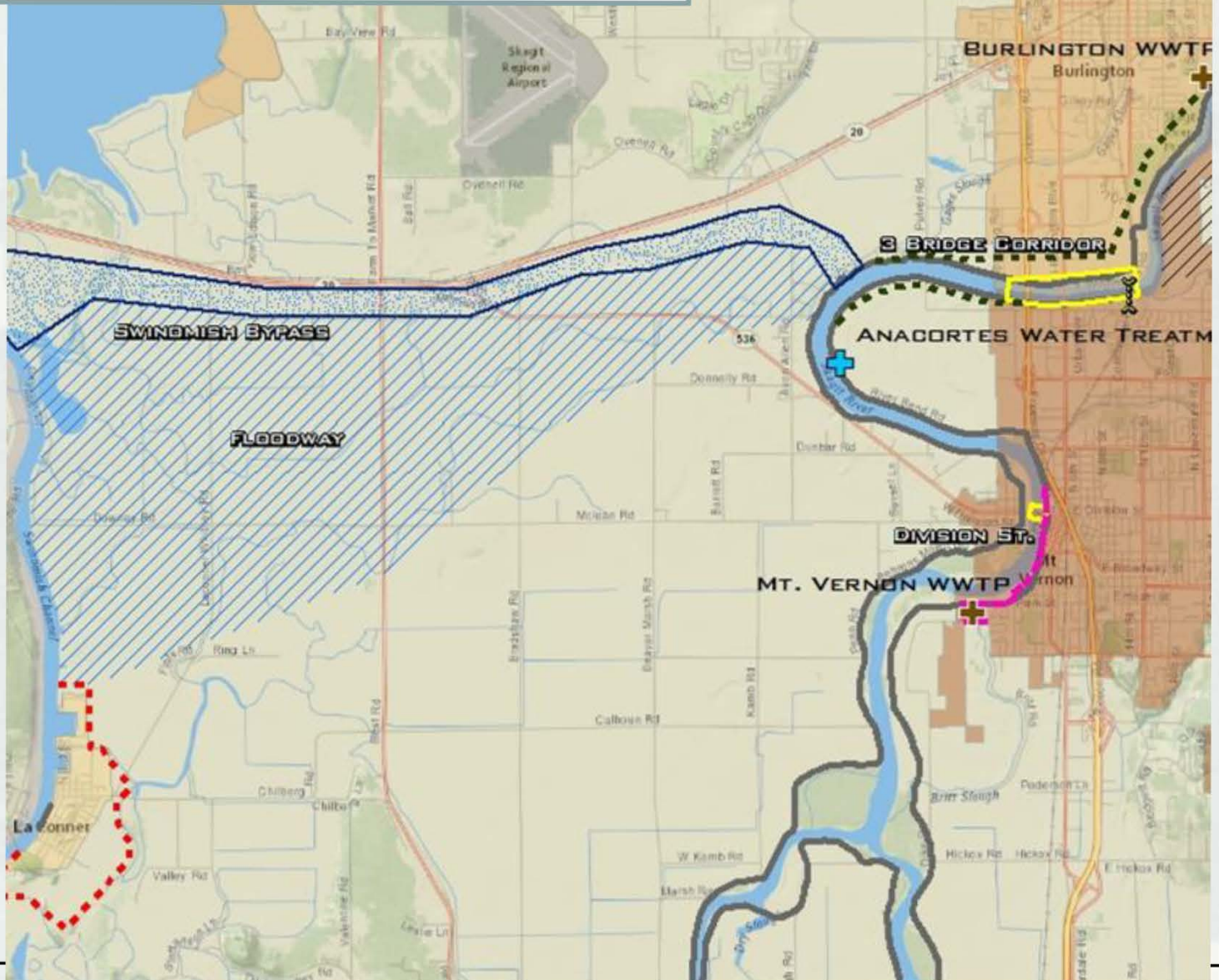


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 - NEW LEVEE
 - SETBACK LEVEE
 - FLOODWAY
 - BYPASS CHANNEL
 - BRIDGE CORRIDOR MODIFICATION
 - NONSTRUCTURAL
 - BRIDGE MODIFICATION
 - DAM OPERATIONAL MODIFICATIONS

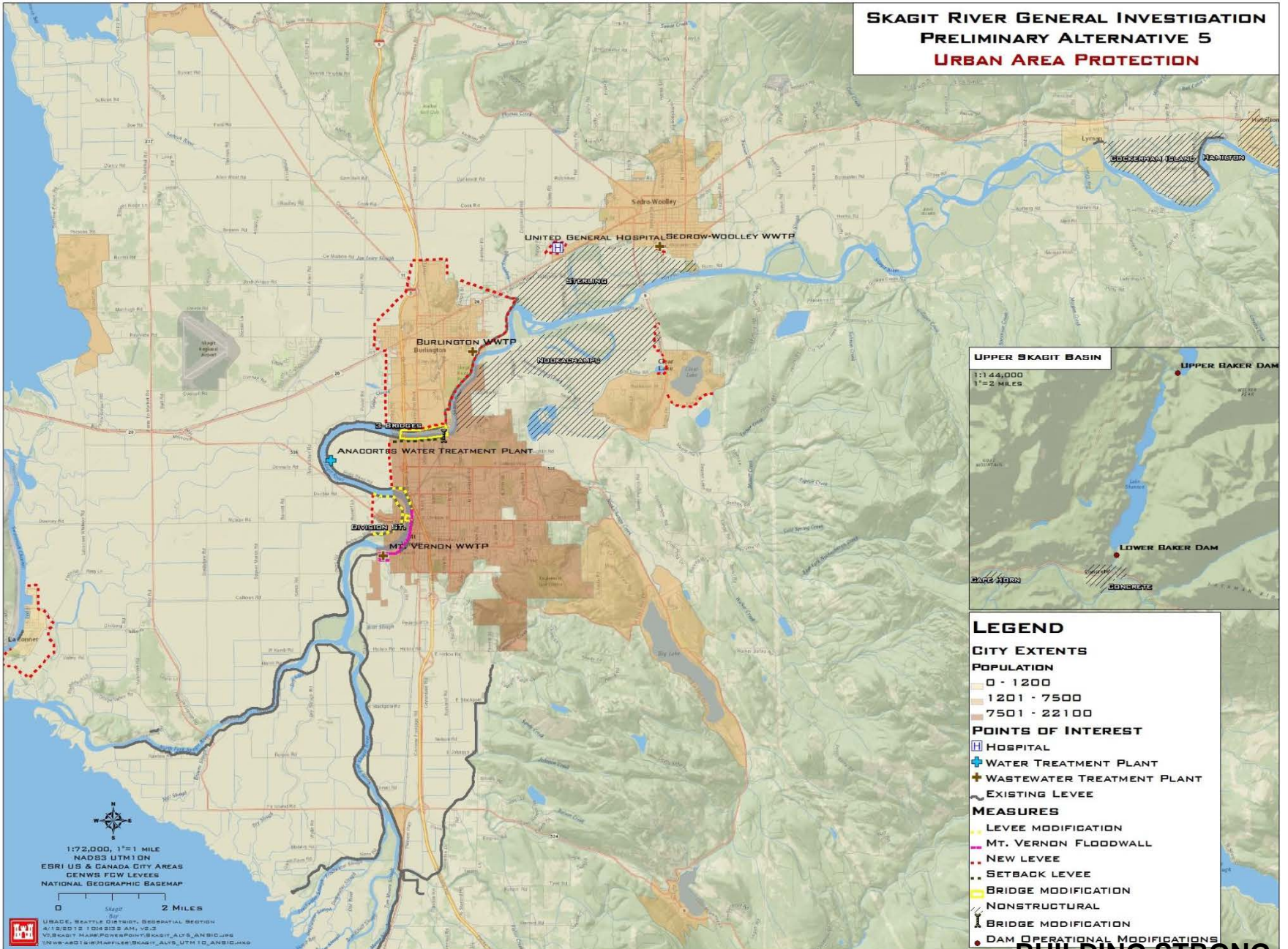
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Preliminary Alternative 4: Swinomish Bypass or Floodway



**SKAGIT RIVER GENERAL INVESTIGATION
PRELIMINARY ALTERNATIVE 5
URBAN AREA PROTECTION**

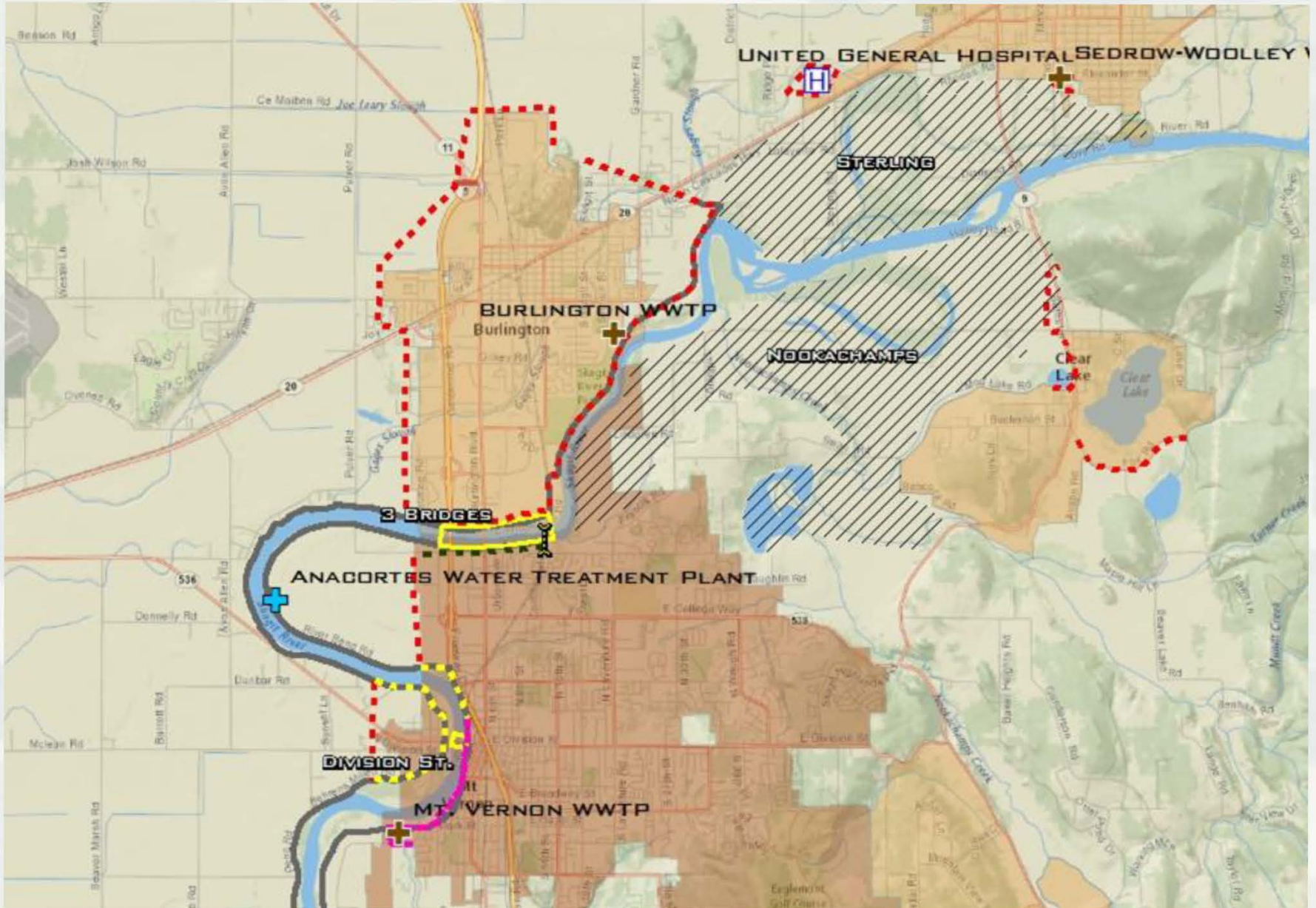


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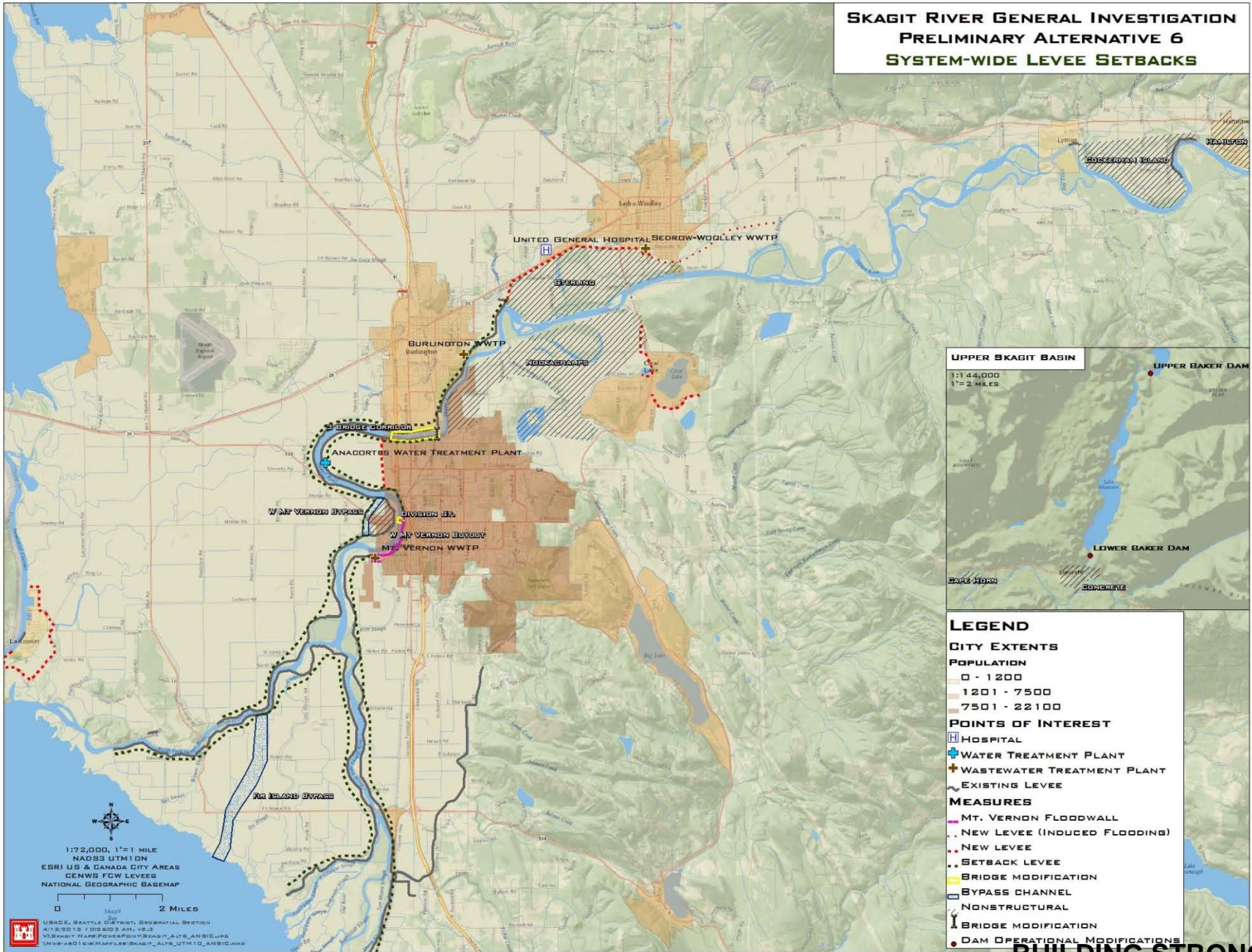
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Preliminary Alternative 5: Urban Area Protection



**SKAGIT RIVER GENERAL INVESTIGATION
PRELIMINARY ALTERNATIVE 6
SYSTEM-WIDE LEVEL SETBACKS**



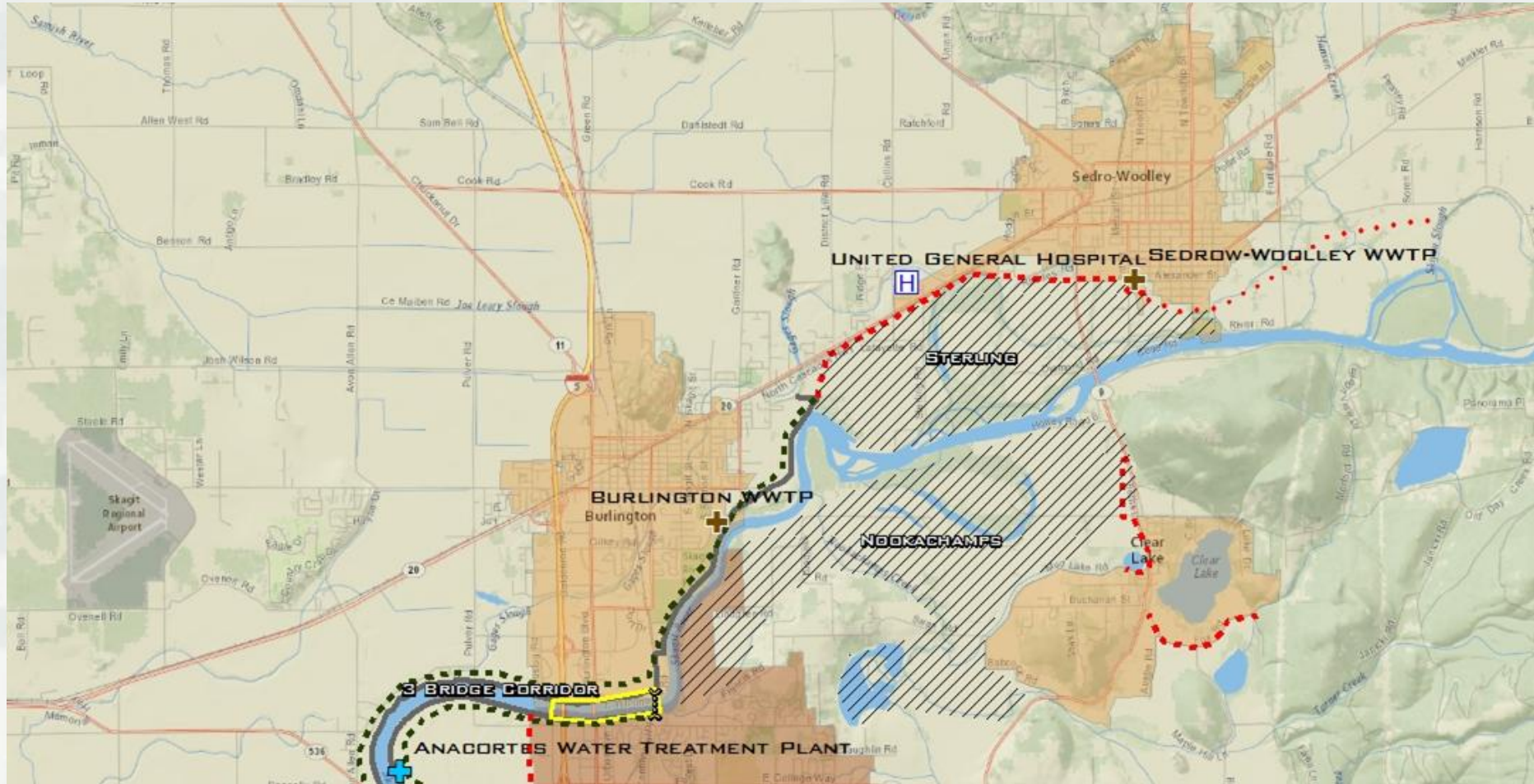
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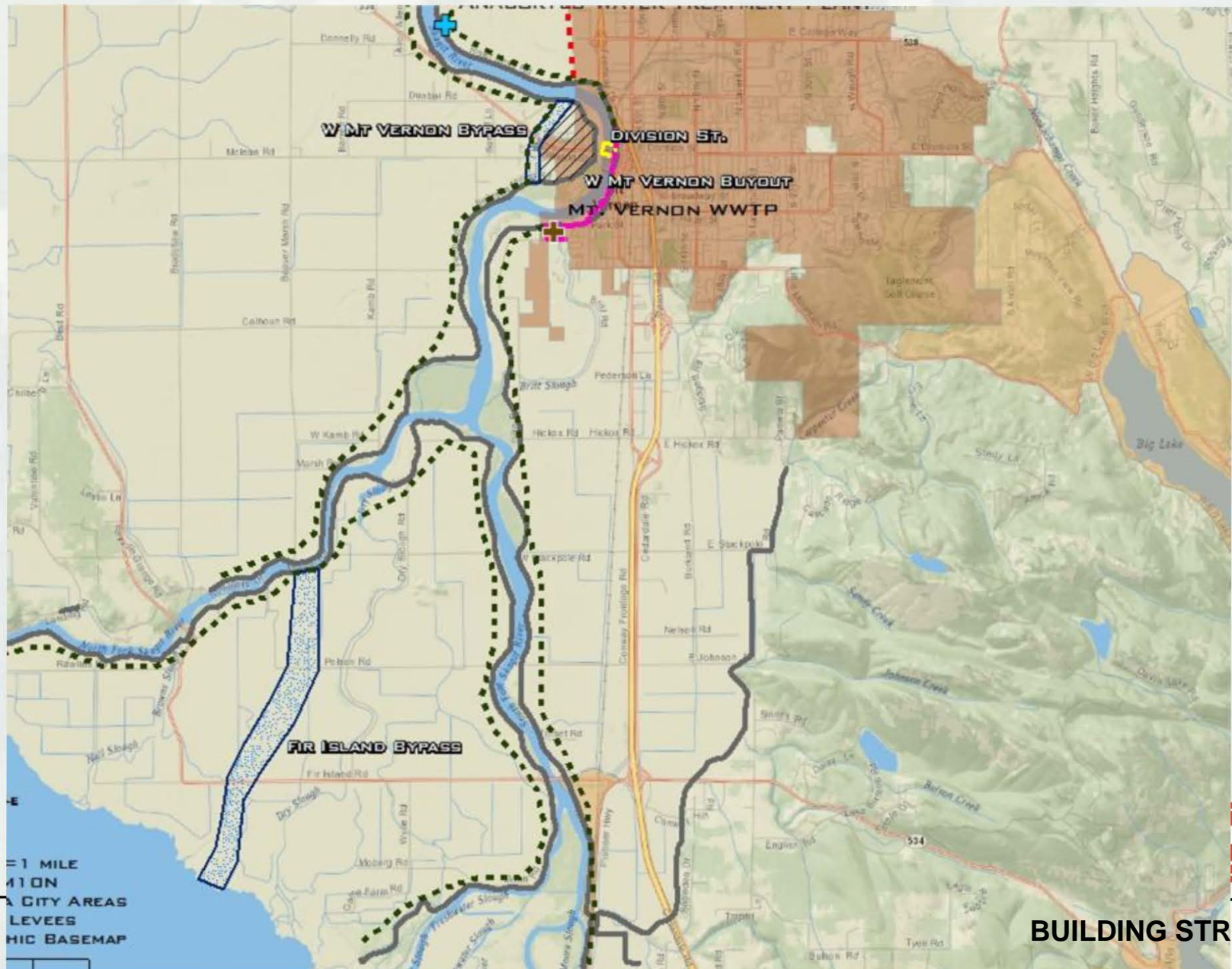
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Preliminary Alternative 6: System-wide Levee Setbacks



Preliminary Alternative 6: System-wide Levee Setbacks



Comments?

- Please fill out a comment card.
- Contact:
Dan Johnson, USACE
Daniel.E.Johnson@USACE.army.mil
(206) 764-3423
- Reminder: Public Workshop
May 7, 2012. 4:00 p.m. – 6:00 p.m.
Skagit County Administrative Building
Commissioner's Hearing Room
1800 Continental Place
Mount Vernon, WA 98273

