

Lower Tolt River Floodplain Reconnection Project

River restoration and some of its challenges

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The Basins and the Fishes

Chinook, steelhead, coho, pink and chum salmon in the Tolt River

These fish are most challenged by:

- (1) Migratory conditions in the lower Snohomish
- (2) Rearing & Refuge conditions in lower Tolt/Snoqualmie area
- (3) Spawning conditions in the lower Tolt

Snohomish Watershed (WRIA#7)



Project Goals:

- ▶ Restore floodplain connectivity and natural channel-formation processes
- ▶ Maintain existing Tolt River flood protection
- ▶ Enhance County park amenities at project site



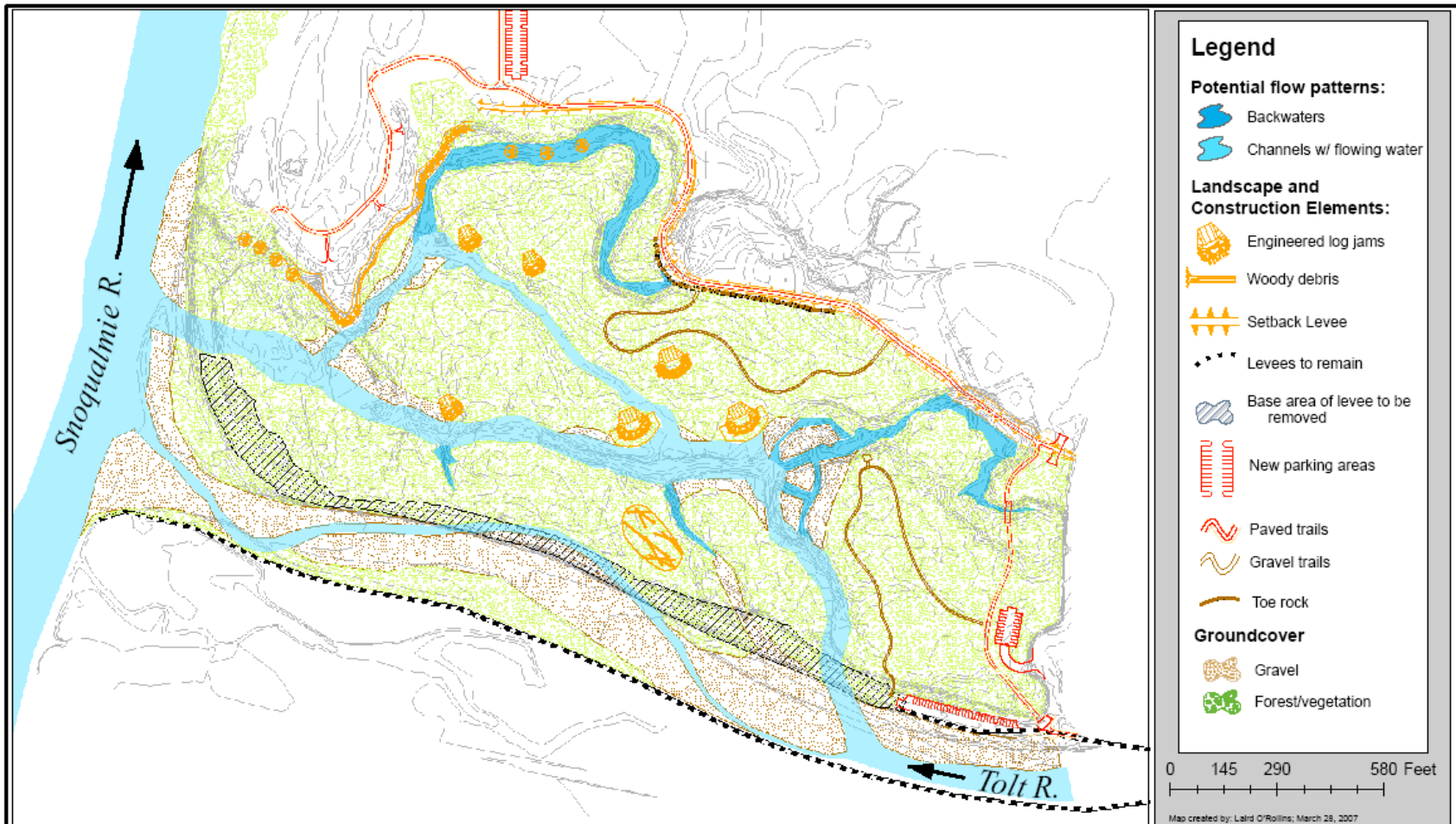
“Social” Challenges

- Chronic severe flooding, especially from Snoqualmie River
- Project in public park where tubing on river is very popular summertime activity
- Prehistoric cultural resources prevalent at project site

Major Project Components

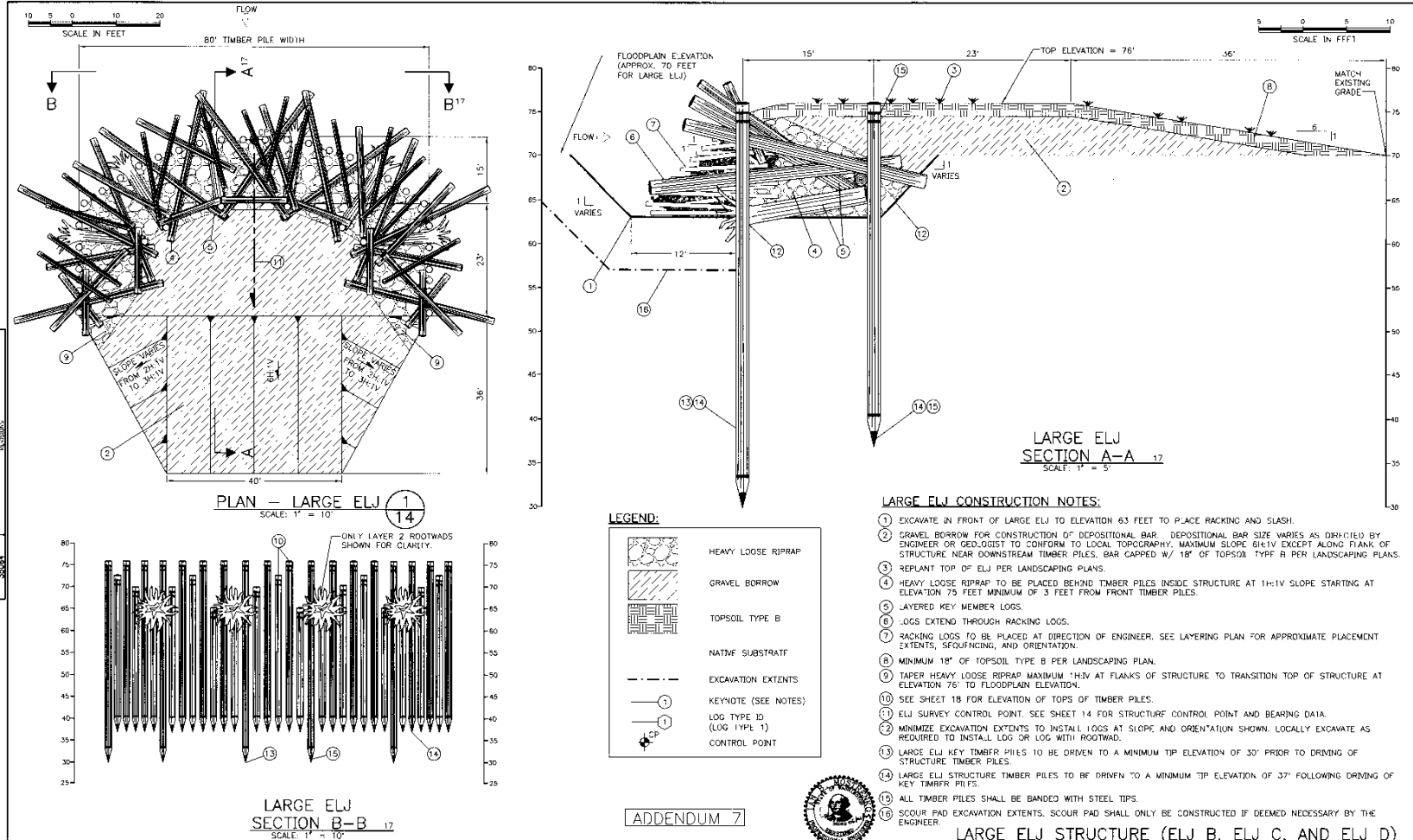


Concept of future Floodplain Restoration

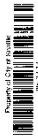


Potential Future Channel Configuration
Lower Tolt River Floodplain Reconnection Project

Engineered Log Jams (ELJ's)



DATE: 11/11/2008
 DRAWN BY: J. HERRERA
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 PROJECT: PHASE II - LOWER TOLT RIVER FLOODPLAIN RECONSTRUCTION PROJECT



<p>King County Department of Natural Resources and Parks Water and Land Resources Division Capital Project Section Surface Water - Engineering and Ecological Services Unit Theresa Jennings, Director</p>	<p>HERRERA ENGINEERS 2200 South Avenue Suite 1100 Seattle, Washington 98131-1800 206-441-8000 206-441-9108 FAX www.herrera.com</p>	<p>APPROVED FOR ADVERTISING FRED PODESTA DEPARTMENT OF EXECUTIVE ADMINISTRATION SEATTLE, WASHINGTON 20</p>	<p>NAME OR INITIALS AND DATE: DESIGNED: [] CHECKED: [] DRAWN: [] CHECKED: []</p>	<p>INITIALS AND DATE: REVIEWED: [] DESIGNED: [] CHECKED: [] EXTENDED: [] REVISION AS B.B.T.</p>	<p>City of Seattle Chuck Clarke, Director</p>	<p>PHASE II - LOWER TOLT RIVER FLOODPLAIN RECONSTRUCTION PROJECT</p>	<p>PROJECT NO: C105083 SHEET NO: 17/40 DATE: 785-37 SHEET 17 OF 41</p>



07.14.2009 16:30



07.24.2009 15:58





08.20.2009 16:40

Pilot Outlet Channel



Old Levee Removal





First minor flood event 10/26/09



New Deformable Inlet Channels



New Setback Levee



Project Lessons—Gov't relations:

- ▶ Create a communications plan at the outset of the project and diligently respect it—it keeps you current with stakeholders and it will save you years of money.
- ▶ DON'T wait for formal communications opportunities—create them.
- ▶ Be TRANSPARENT and ask the same of partners and stakeholders

Project Lessons—Talking to the public:

Example:

Community concern that Tolt River hydraulically holds the Snoqualmie River against the west side of the valley by “pushing” the water over. “Won’t removing Tolt levee just cause the Snoqualmie to meander through downtown Carnation?!”

Two ways of giving the same answer...

1. The alluvial fan deposition at the confluence is prohibitive to lateral channel avulsion, and not hydraulic interaction between the two rivers...
2. The sand and gravel that is settled out at the mouth of the Tolt where it slows down, causes the Snoqualmie to go around that mound, more than the force of the water hitting the Snoqualmie river as it naturally seems like.

People get alienated and frustrated by technical jargon. When they don't understand something, insecurities are heightened—trust and listening DISAPPEAR!

Compass & Gyroscope...

- Use the right people for the project—don't be afraid to mix the experts from agencies and consultants.
- Allow data & science to inform decisions, BUT not make THEM—every major decision about how to design a project or policy expresses a priority within (usually) a very complex balance of objectives.
 - ⇒ The January 2009 logjam story...

Pick Up Sticks...



Other Valuable Lessons Learned

- Do needed modeling to assure design certainty.
- Value-engineer the heck out of your project before final design (give yourself enough time to run the constructability evaluation methodically).
- Stay persistent—complex habitat projects (especially those near communities) take longer than you think they should.
- Ask hard questions about your project's technical and fiscal merit—this can assure eventual public support.
- Learn from doing! *Get monitoring data that will answer the key questions that improve future work.*