

I-5 Flood Protection

Overview of Alternative Projects

Bart Gernhart, P.E.

Southwest Asst. Regional Administrator



Lynn Peterson, P.E.

Secretary of Transportation



Don Wagner, P.E.

Southwest Regional Administrator



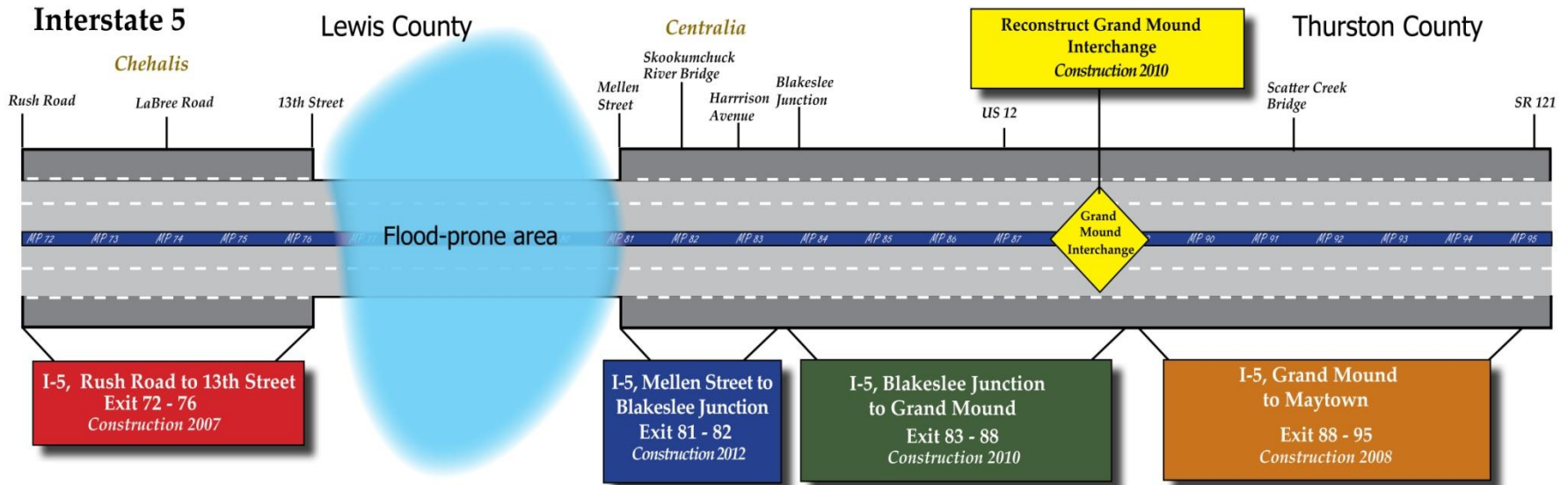
Conceptual Alternatives to Protect I-5

Including protecting Airport

1. Protect I-5 with walls and levees
2. Raise & widen I-5 using fill material
3. Construct I-5 express lanes
4. Construct I-5 temporary by-pass lanes
5. Raise I-5 using a viaduct (long bridge with piers)
6. Relocate I-5 outside flood area

Overview of I-5 improvements

Funded Projects

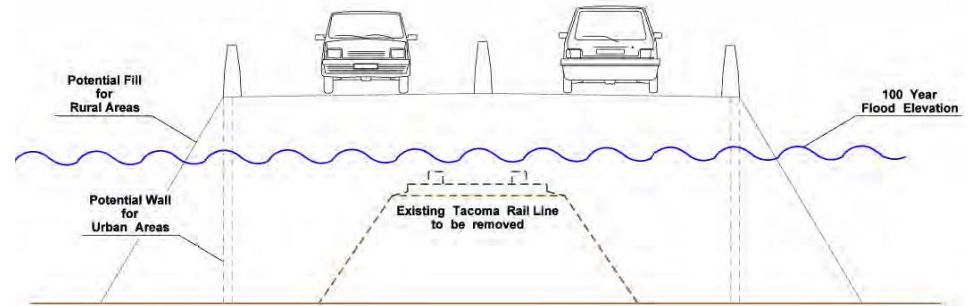


Alt. 3 Express Lanes in Twin Cities



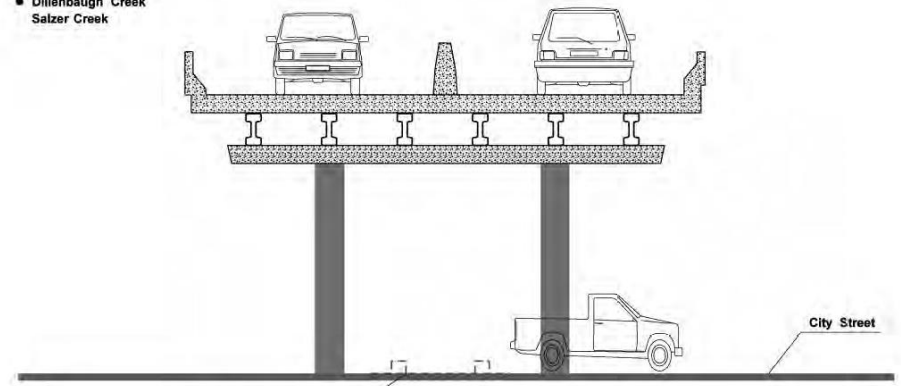
Alt. 3 Express Lanes

Roadway on fill &
bridge cross sections



TYPICAL BRIDGE SECTION
OVER CITY STREETS &
CREEKS

- Main Street
West Street
Prindle Street
- Dillenbaugh Creek
Salzer Creek



Alt. 3 Express Lanes in Twin Cities



Alt. 4 Temporary Bypass in Twin Cities



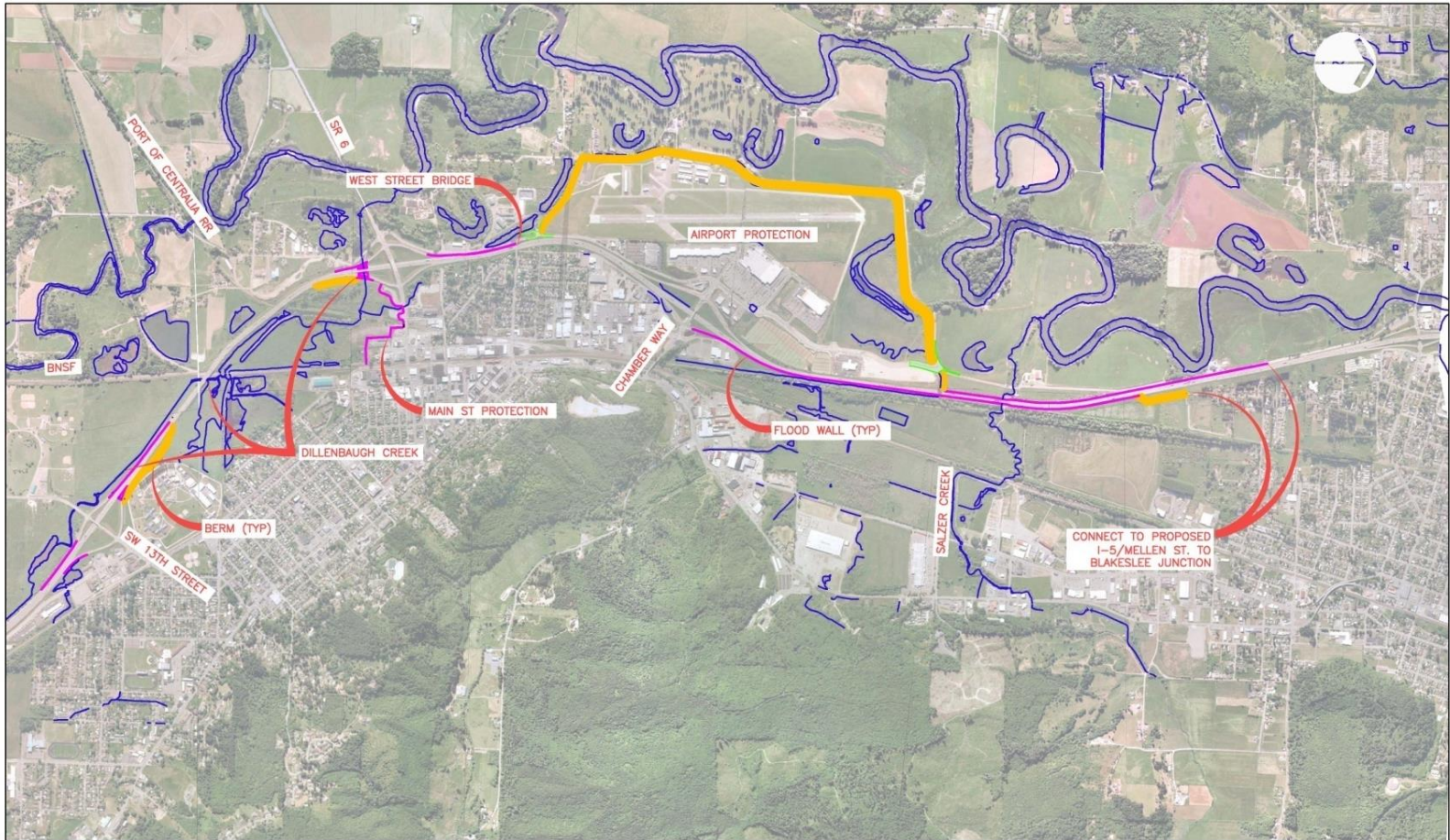
Alt. 5 I-5 Viaduct



Alt. 6 Relocate I-5 Outside Flood Plain



Alt 1. Protect I-5 with flood walls and levees



Alt 1. Protect I-5 with flood walls and levees

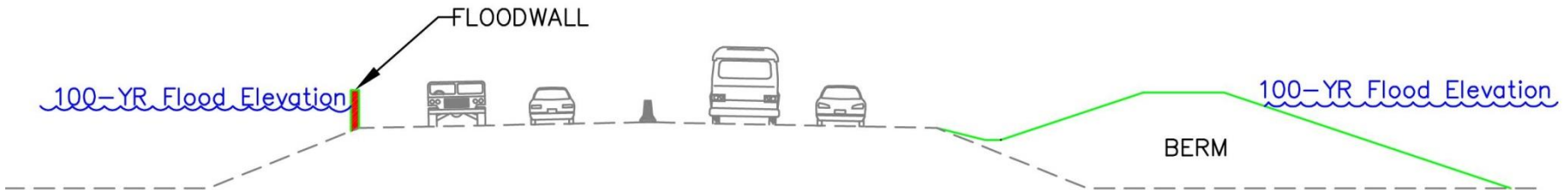
Approach

- Design Concept for Walls

- Install at edge of pavement
- Use to avoid impacts

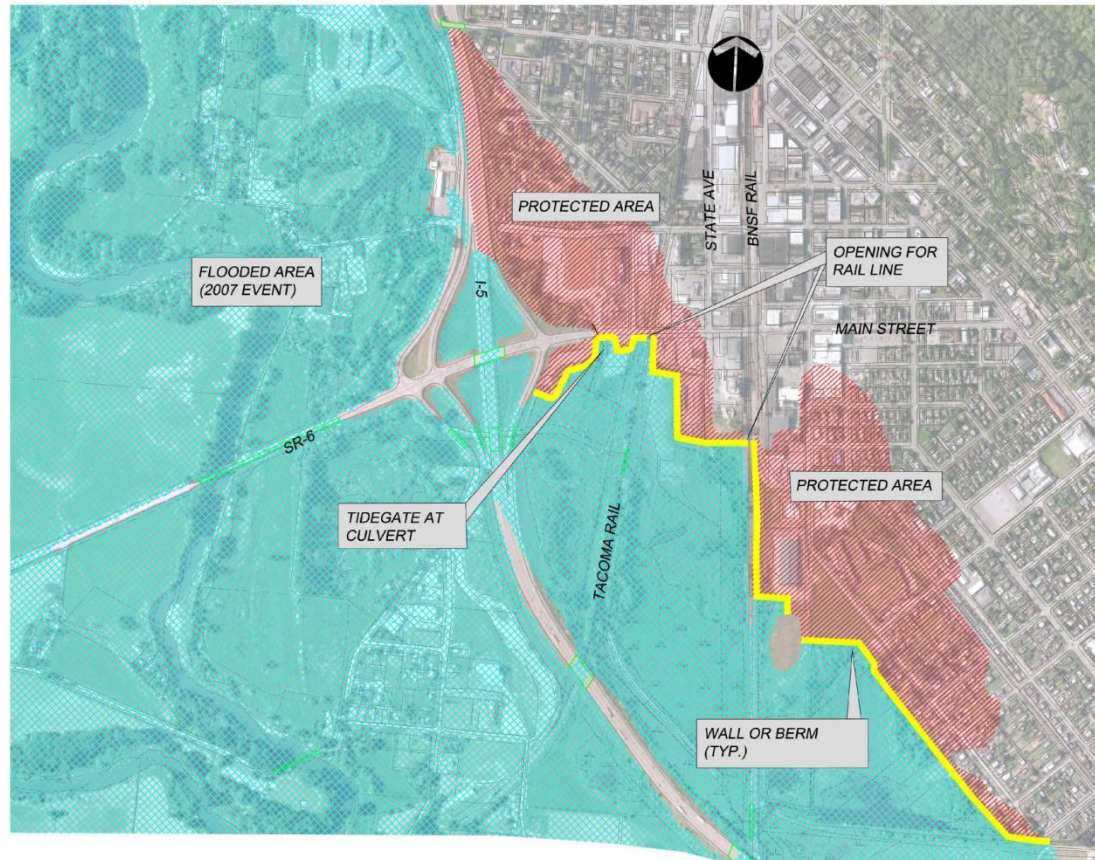
- Design Concept for Berms

- Use where adjacent ground is not too high
- Use to develop stormwater treatment areas



Alt 1. Protect I-5 with flood walls and levees

Wall or levee south of Main Street



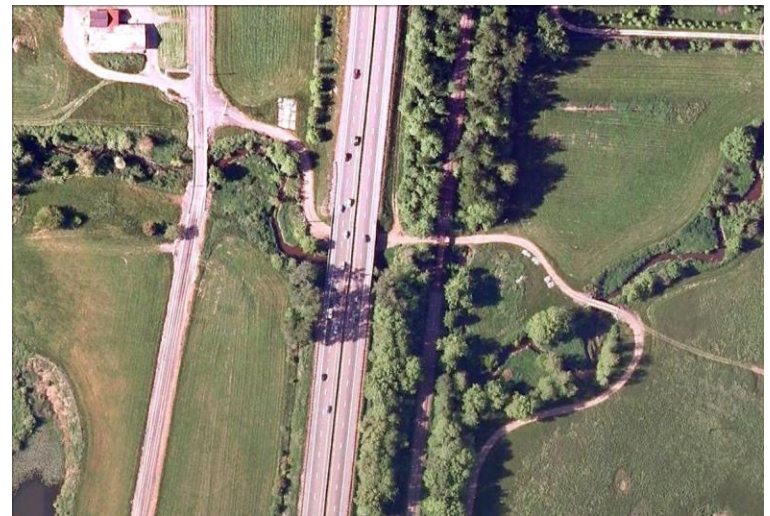
Alt 1. Protect I-5 with flood walls and levees

Options Evaluated for Specific Areas

- Dillenbaugh Creek Options
 - Attach Walls to Bridge
 - Install Culvert Under Bridge
 - Raise Bridges
 - Realign Dillenbaugh Creek
 - Selected Culvert Option for Cost Estimate
-
- Salzer Creek Options
 - Attach Walls to Bridge
 - Install Culvert Under Bridge
 - Raise Bridges
 - Selected Culvert Option for Cost Estimate



I-5 crossing of Dillenbaugh Creek



I-5 Crossing of Salzer Creek

Alt. 1- Challenges of existing bridges



Alt 1. Protect I-5 with flood walls and levees

Mitigation concepts



Alt. 1- Magnitude of climate change impacts requires reassessment of alternatives



Alt. 2 Raise and Widen I-5



Alt. 2 Raise and Widen I-5



Side by Side Project Comparisons

Table 7: Side-by-side Project Comparison of Alternatives

Alternative	Impacts to Buildings**				Protect Airport & SW Chehalis	Ability to Meet Future I-5 Capacity Needs	Cost of Alternative (A)	Cost of Future I-5 Widening After Alternative is Constructed (B)	Total Cost of Alternative Plus Cost to Meet Future I-5 Capacity Needs (C) A + B = C
	100-year Flood Event		2007 Flood Event						
	Positive	Negative	Positive	Negative					
1. I-5 Walls and Levees, Raise Airport Levee, New Chehalis Levee	510	140	1030	140	Y	Future widening required. Allows for widening.	\$80 to 100 Million	\$225 to 330 Million	\$305 to 430 Million
2. I-5 Raise and Widen Only	430	240	840	300	N*	Provides widening of I-5.	\$450 to 550 Million	\$0	\$450 to 550 Million
3. I-5 Express Lanes	390	180	890	170	N*	Provides capacity, future widening unnecessary.	\$120 to 150 Million****	\$0	\$120 to 150 Million
4. I-5 Temporary Bypass	400	150	900	170	N*	Future widening required. Allows for widening.	\$70 to 90 Million****	\$250 to 350 Million	\$320 to 440 Million
5. I-5 Viaduct	***	***	***	***	N*	Replaces I-5 with new facility with sufficient capacity.	Greater than \$1.5 Billion	\$0	Greater than \$1.5 Billion
6. I-5 Relocation	***	***	***	***	N*	Replaces I-5 with new facility with sufficient capacity.	Greater than \$2 Billion	\$0	Greater than \$2 Billion

* Chehalis - Centralia Airport Levee or new SW Chehalis Levee could be added to this alternative or constructed as an independent project.

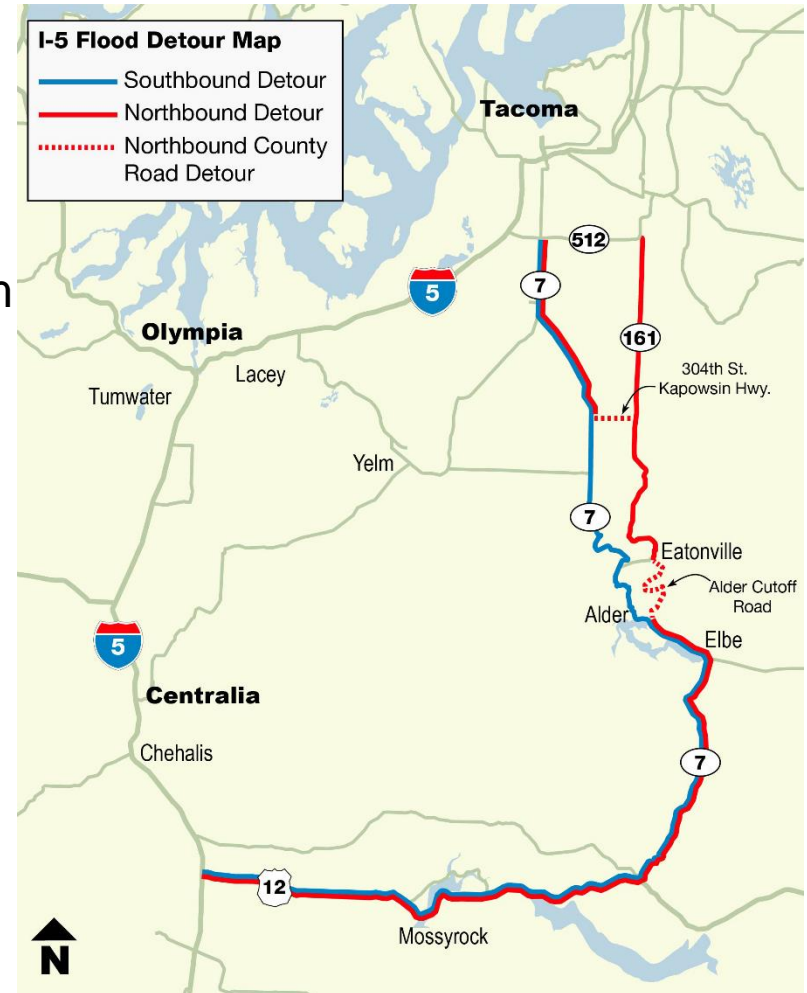
** The positive or negative 'Impacts to Buildings' indicates the total predicted number of buildings experiencing decreased (positive) or increased (negative) flood elevations resulting from the alternative.

*** 'Impacts to Buildings' analysis was not conducted as this Alternative was deemed not viable for further analysis.

**** Estimates do not include the costs to acquire the Tacoma Rail Right of Way

Flood Detour for Freight via US 12 & SR 7

- I-5 Closed for 20 miles @ Exits 68 & 88
- Freight and local access only
- Freight prioritized via on-line permit system
- Not operational until day 2 of closure
- National Guard to monitor detour
- 50 trucks/hr/direction
- 25% of I-5 freight volume



Questions And Discussion