

I-5 Flood Protection Overview of Alternative Projects

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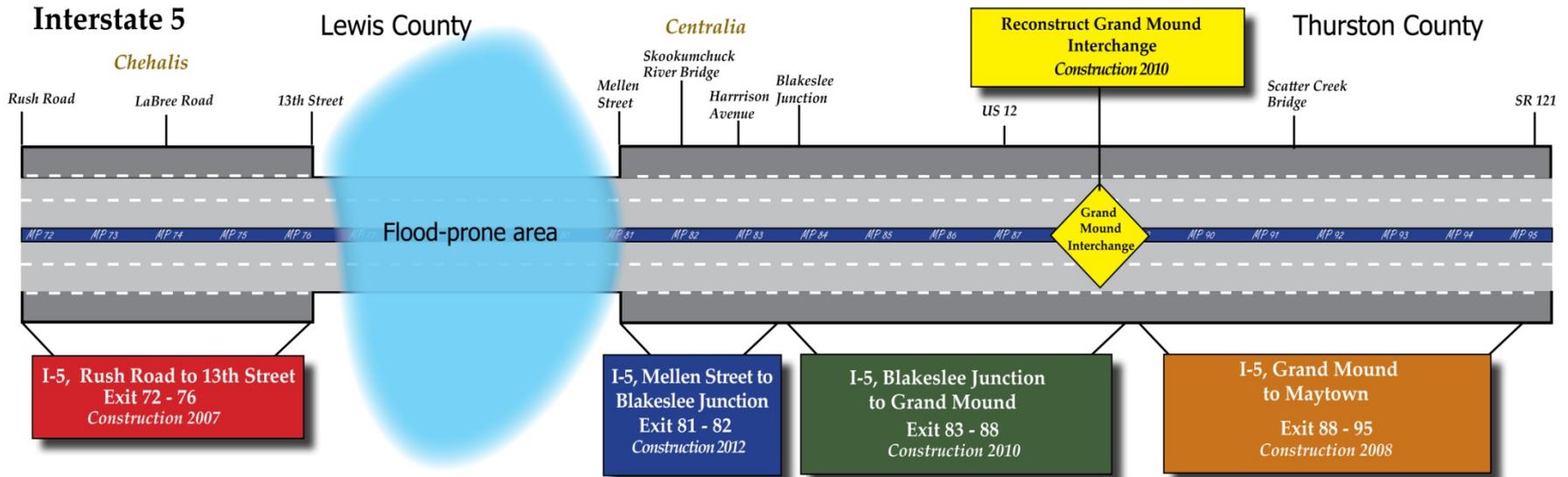
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Overview of I-5 improvements

Funded Projects

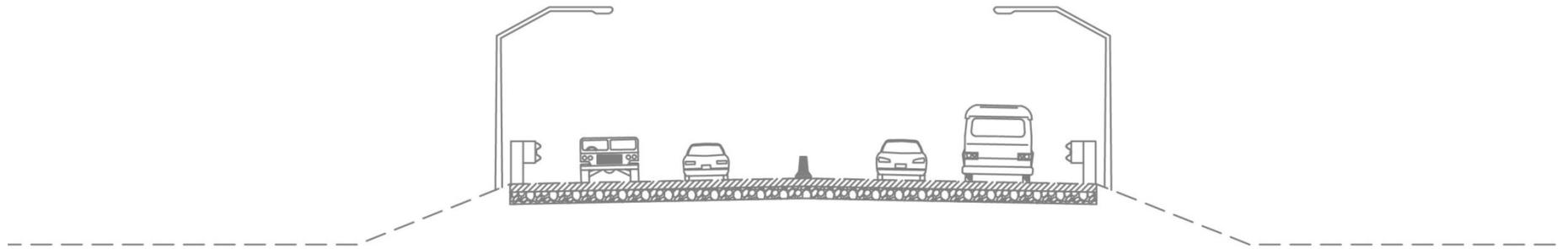


Conceptual Alternatives to Protect I-5

Including protecting Airport

- Raise I-5 using fill material
 - Raise only
 - Raise and widen to six lanes
- Raise I-5 using a viaduct (long bridge with piers)
- Relocate I-5 outside flood area
- Protect I-5 with walls and levees
- Construct I-5 express lanes
- Construct I-5 temporary by-pass lanes

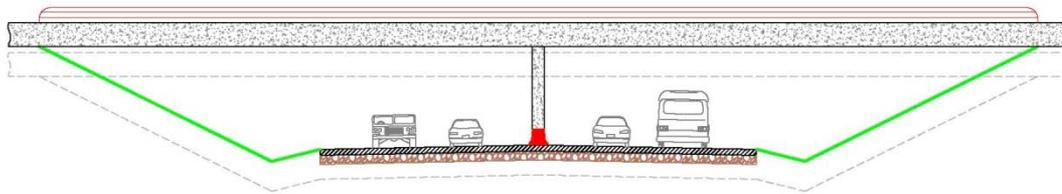
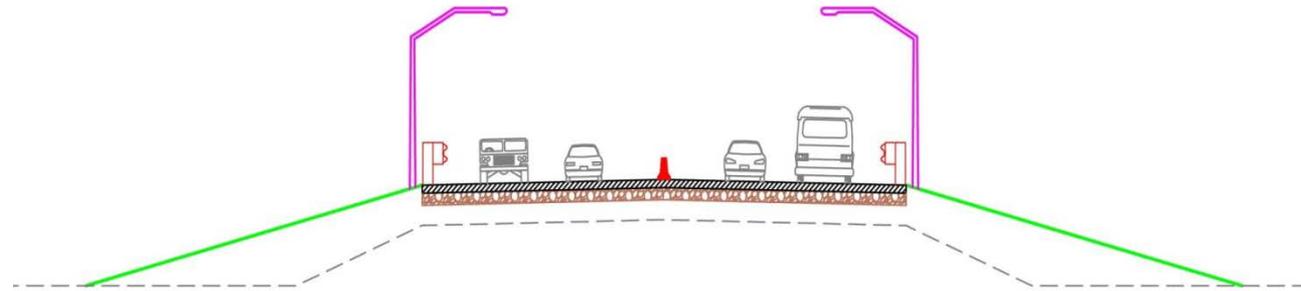
Interstate 5 - existing conditions





Raise I-5 with fill material

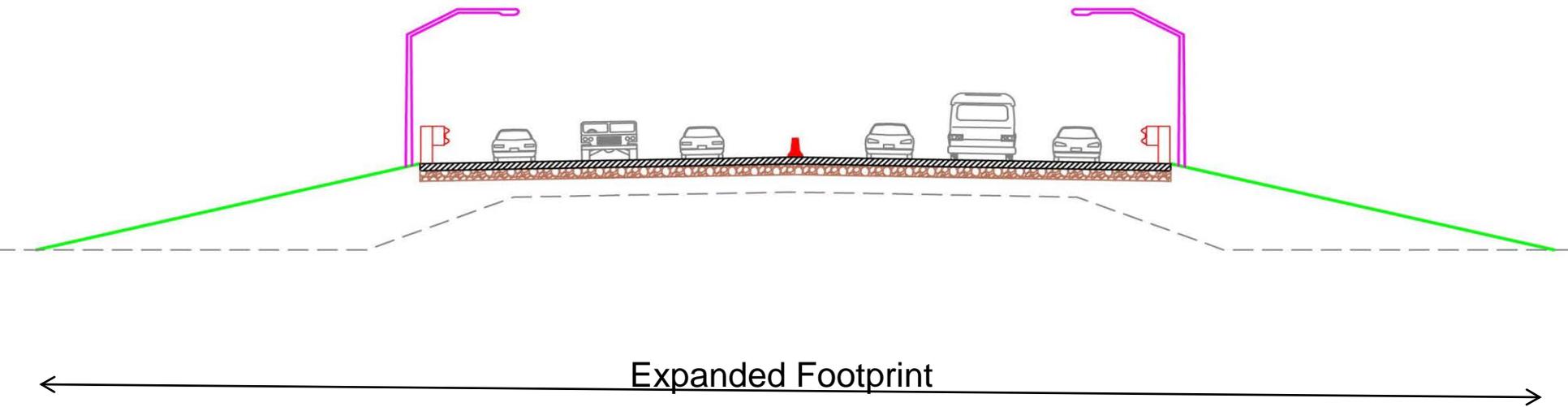
Cost Range: \$350 - \$450 Million



Raise and Widen I-5 using fill material

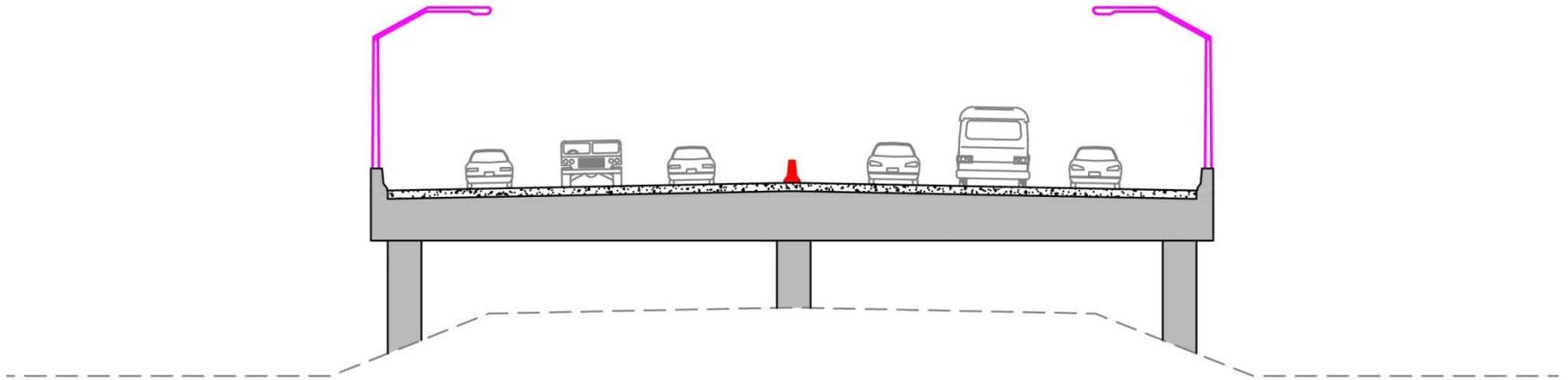
Using Fill Material

- Requires reconstruction of all pavement, stormwater systems, etc.
- Requires reconstruction of all interchanges
- Cost range: \$450 to \$550 million



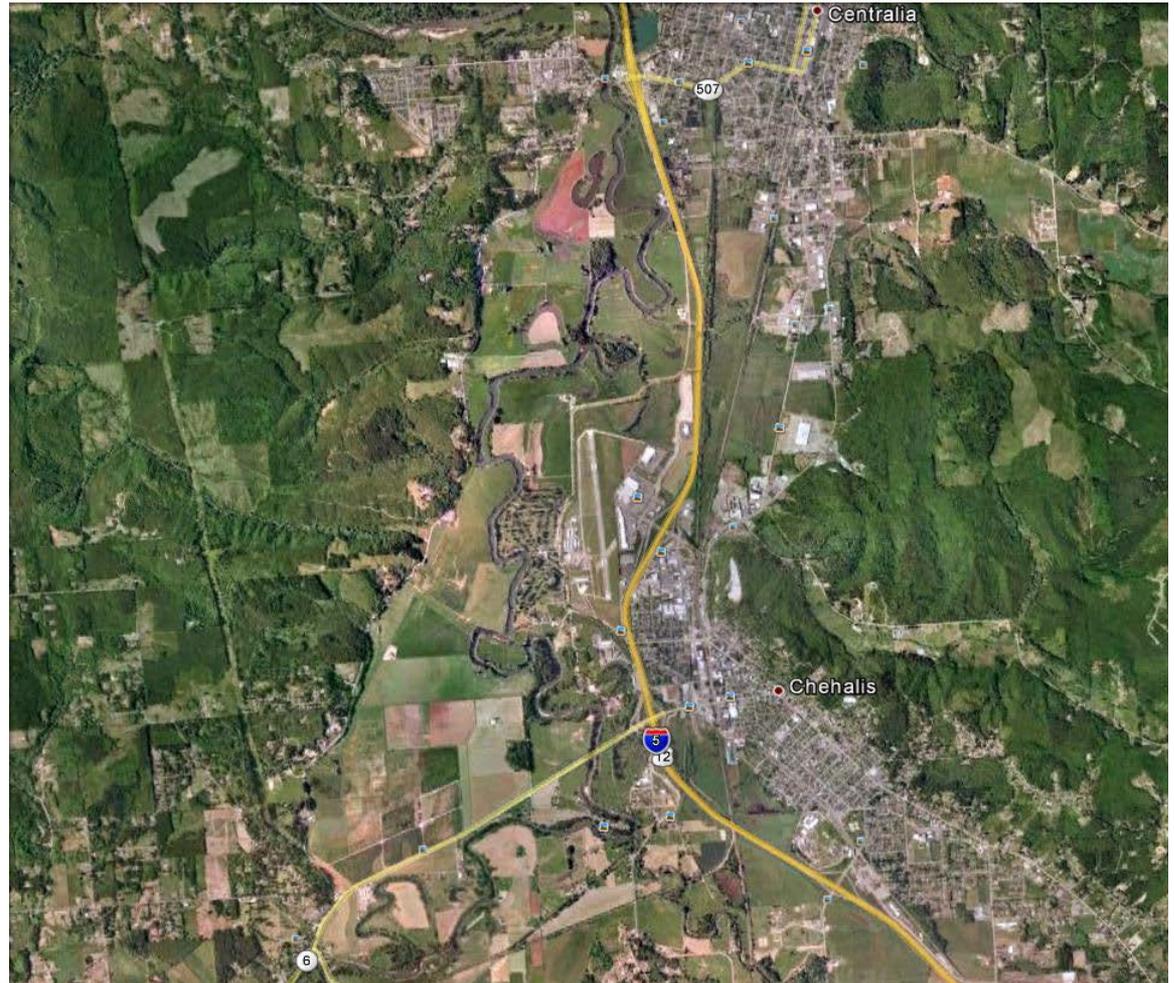
Raise I-5 Using a Viaduct

- Project Cost: > \$1.5 Billion
- Requires reconstructing all interchanges
- Need to add six lanes at this time

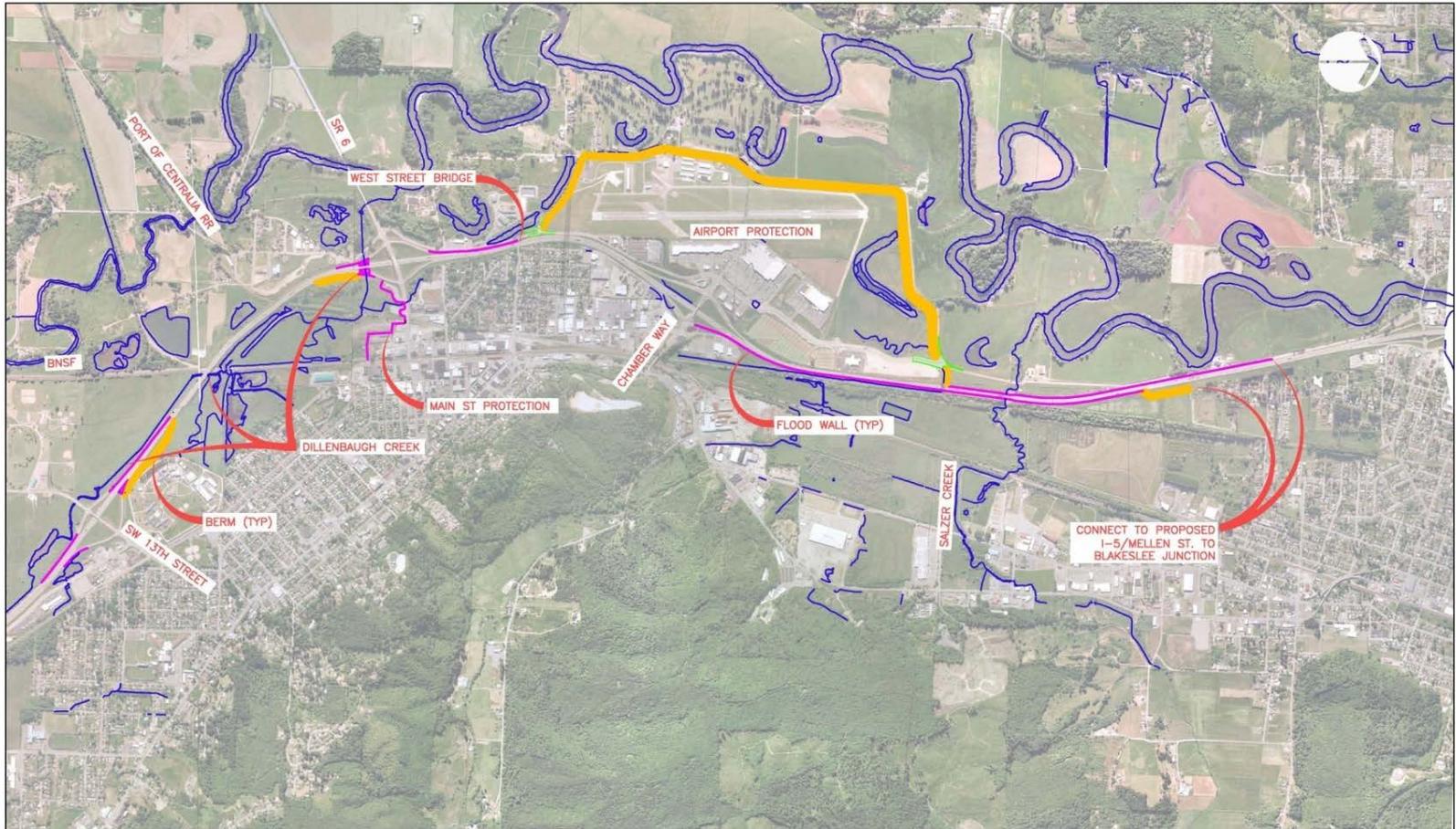


Relocate I-5 outside flood plain

Project Cost: >\$2Billion



Protect I-5 with walls and levees



Protect I-5 with walls and levees

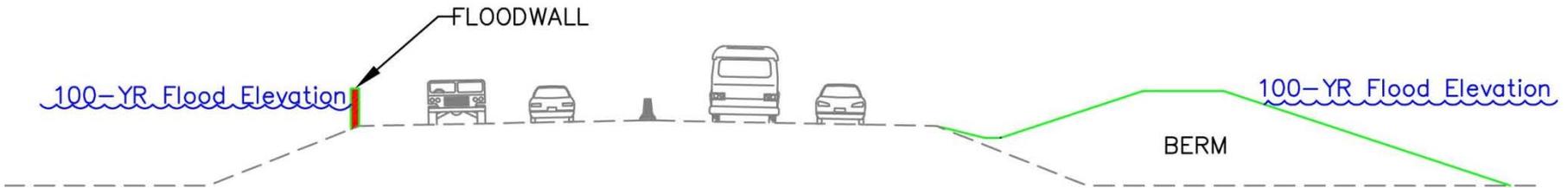
Approach

- Design Concept for Walls

- Install at edge of pavement
- Use to avoid impacts

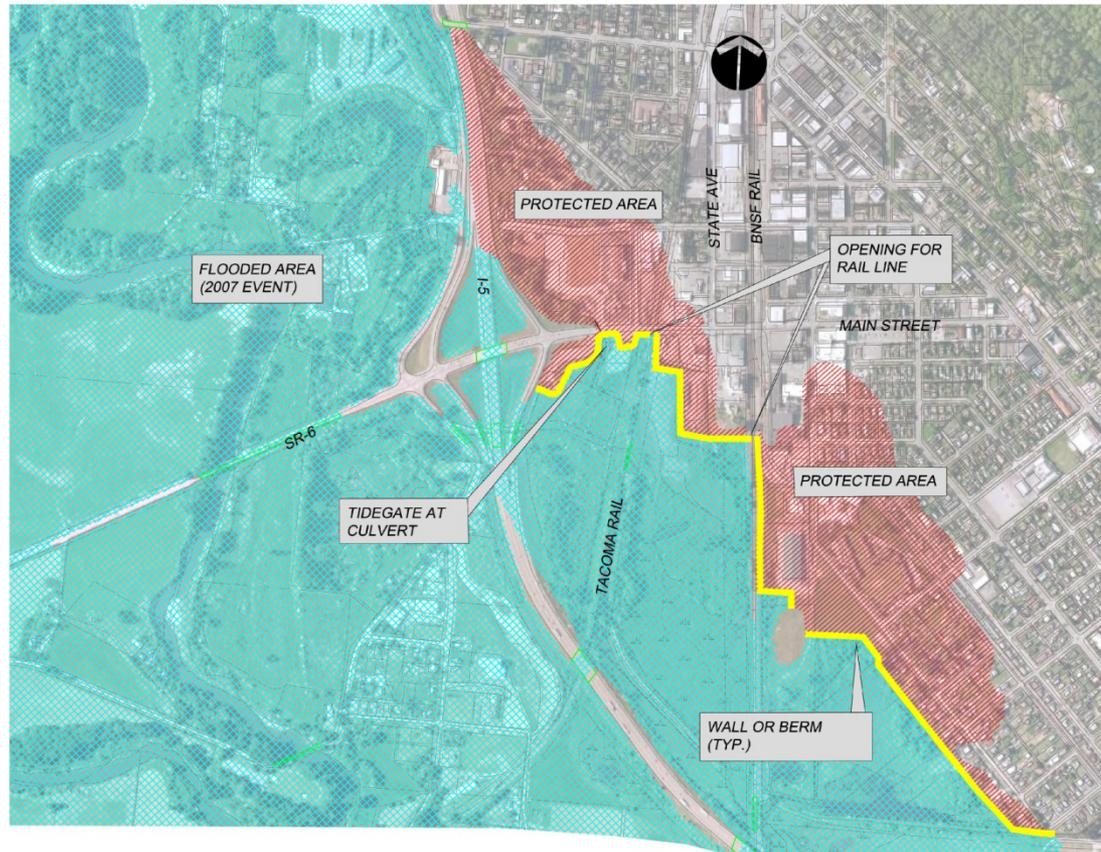
- Design Concept for Berms

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



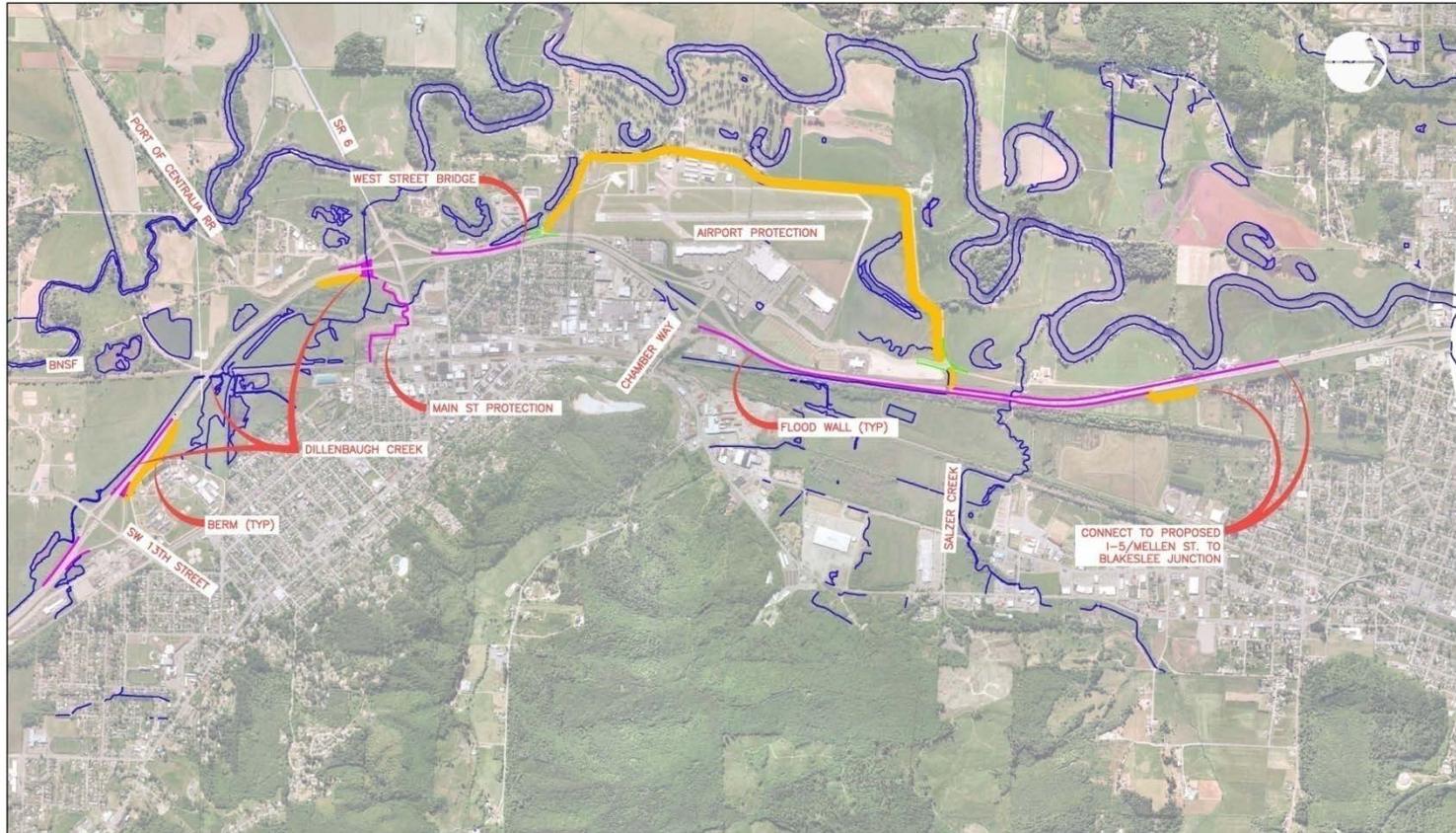
Protect I-5 with walls and levees

Wall or levee south of Main Street



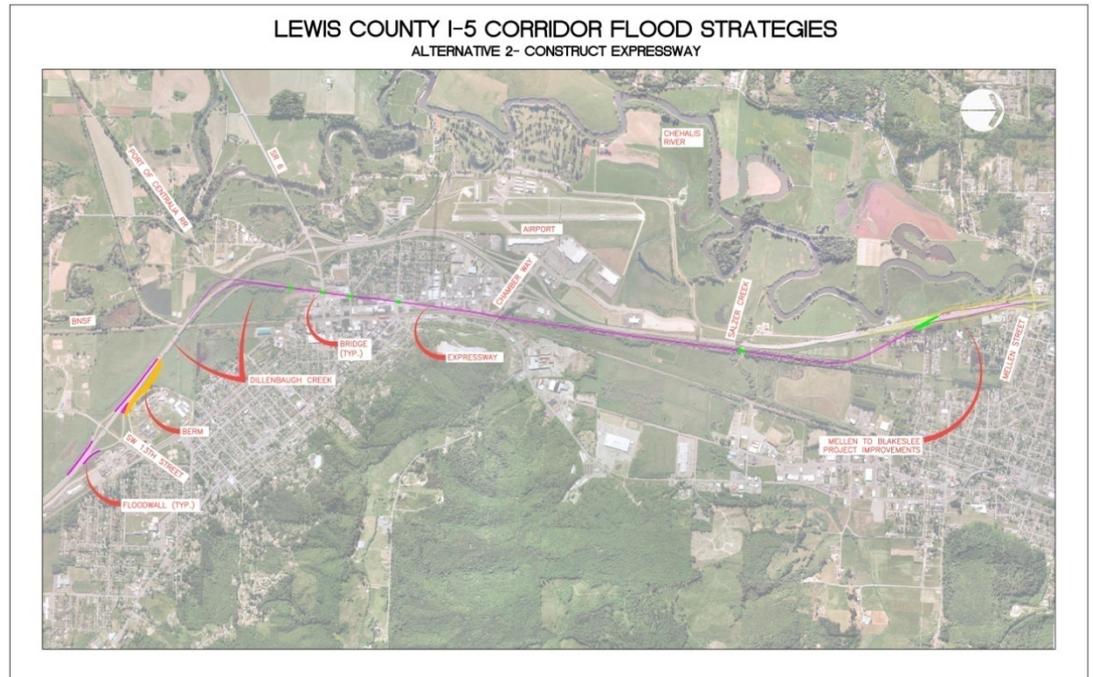
Protect I-5 with walls and levees

- Project Cost: \$80 - \$100 Million



I-5 Express Lanes

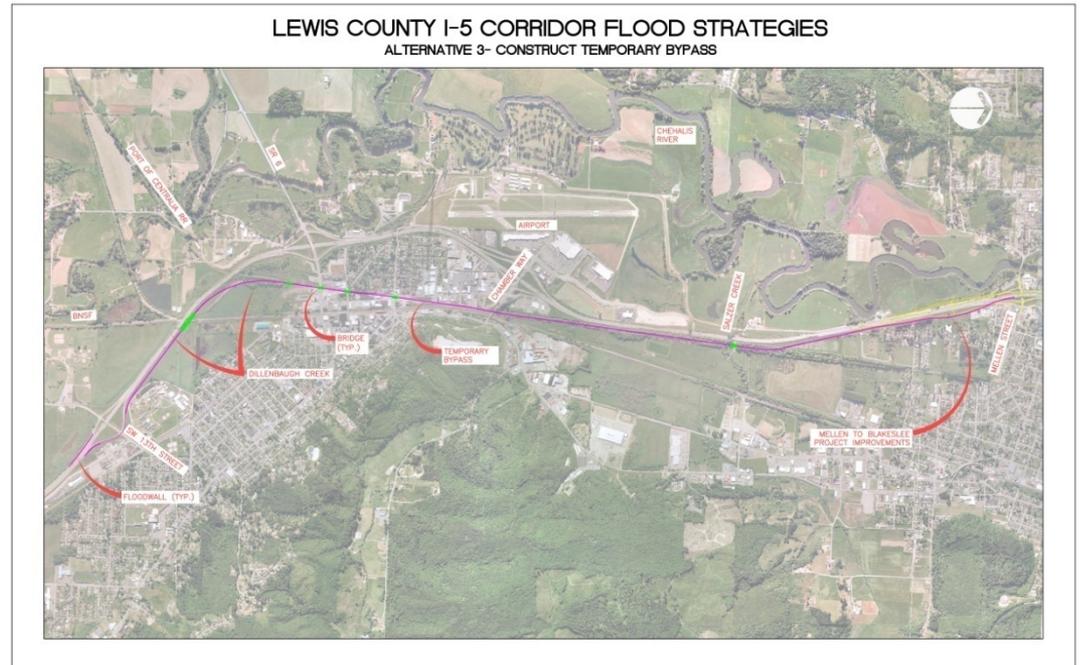
- Built on Tacoma Rail Line
- Built above flood plain
- One lane in each direction
- Used 24/7
- No local access



Concept on hold pending outcome of
City/County study of railroad

I-5 Temporary By-Pass Lanes

- Built on Tacoma Rail Line
- Built above flood plain
- One lane in each direction
- Only used when I-5 is overtopped
- No local access



Concept on hold pending outcome of
City/County study of railroad

Conceptual Alternatives to Protect I-5

Including protecting Airport

- | | |
|------------------------------------|-----------------|
| ▪ Raise I-5 using a viaduct | Concept dropped |
| ▪ Relocate I-5 outside flood plain | Concept dropped |
| ▪ I-5 Express lanes | Concept on hold |
| ▪ I-5 Temporary by-pass lanes | Concept on hold |



Conceptual Alternatives to Protect I-5

Including protecting Airport

- Raise I-5 using fill material \$350 to \$450 million
- Raise and widen I-5 to six lanes using fill material \$450 to \$550 million
- Protect I-5 with walls and levees \$80 to \$100 million



Conceptual Alternatives to Protect I-5

Including protecting Airport

Presently refining only the “Protect I-5 with walls and levees” concept

Includes one design with dam and one design without dam options

Focusing on several areas

- Airport Levee – avoidance of airspace encroachment
- Chehalis Avenue Levee – stormwater runoff
- Dillenbaugh & Salzar Creek Bridges

Protect I-5 with 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

Cost of flooding closures on State highways

UW TRAC Office working on cost of closures of I-5, SR 6, US 12 based on various flood events



Protect I-5 with walls & levees – Initial data

Initial data of structures – 100 year event

Change in WSE # of Structures

$D < -2.0$	55
$-2.0 < D < -1.0$	10
$-1.0 < D < -0.5$	8
$-0.5 < D < -0.05$	165
$-0.05 < D < 0.05$	571
$0.05 < D < 0.5$	571
$0.5 < D < 1.0$	33
$1.0 < D < 2.0$	0
$2.0 < D$	0

Questions And Discussion