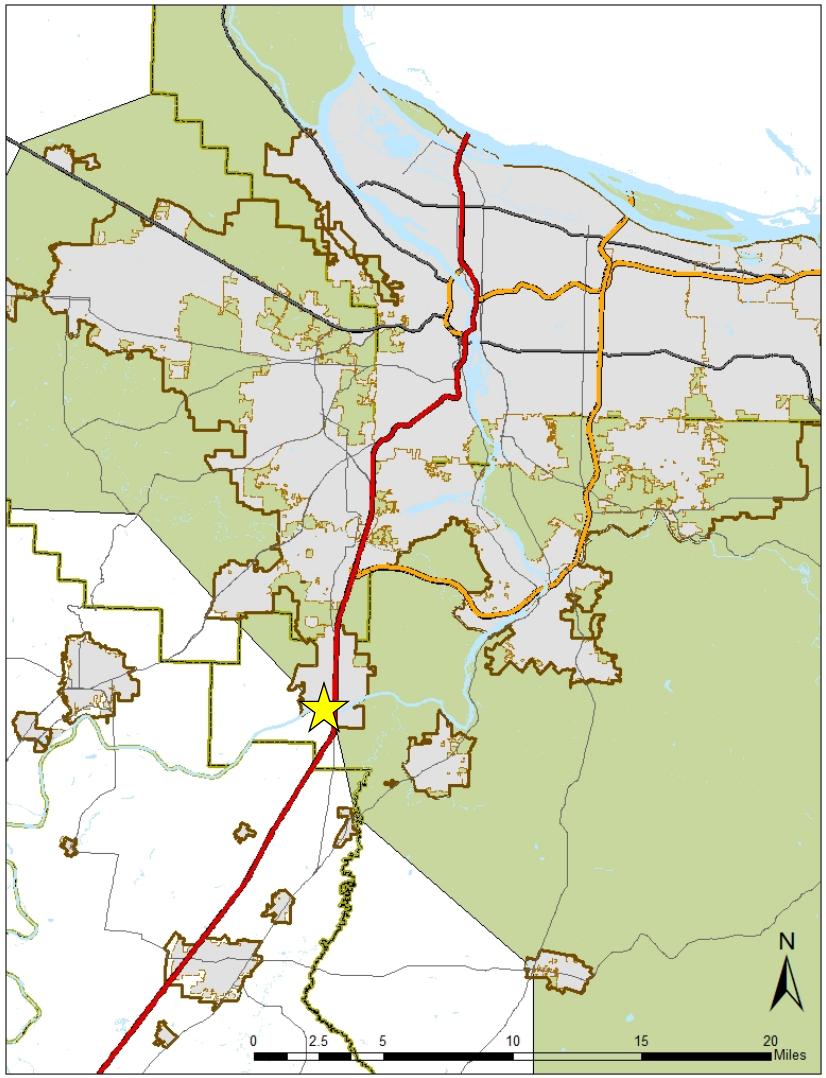

Southbound I-5 Boone Bridge Congestion Study

Opening the bottleneck at the Portland region's southern gateway

Talia Jacobson, ODOT Project Manager

Nancy Kraushaar, PE, Wilsonville Community Development Director

Oregon Department of Transportation

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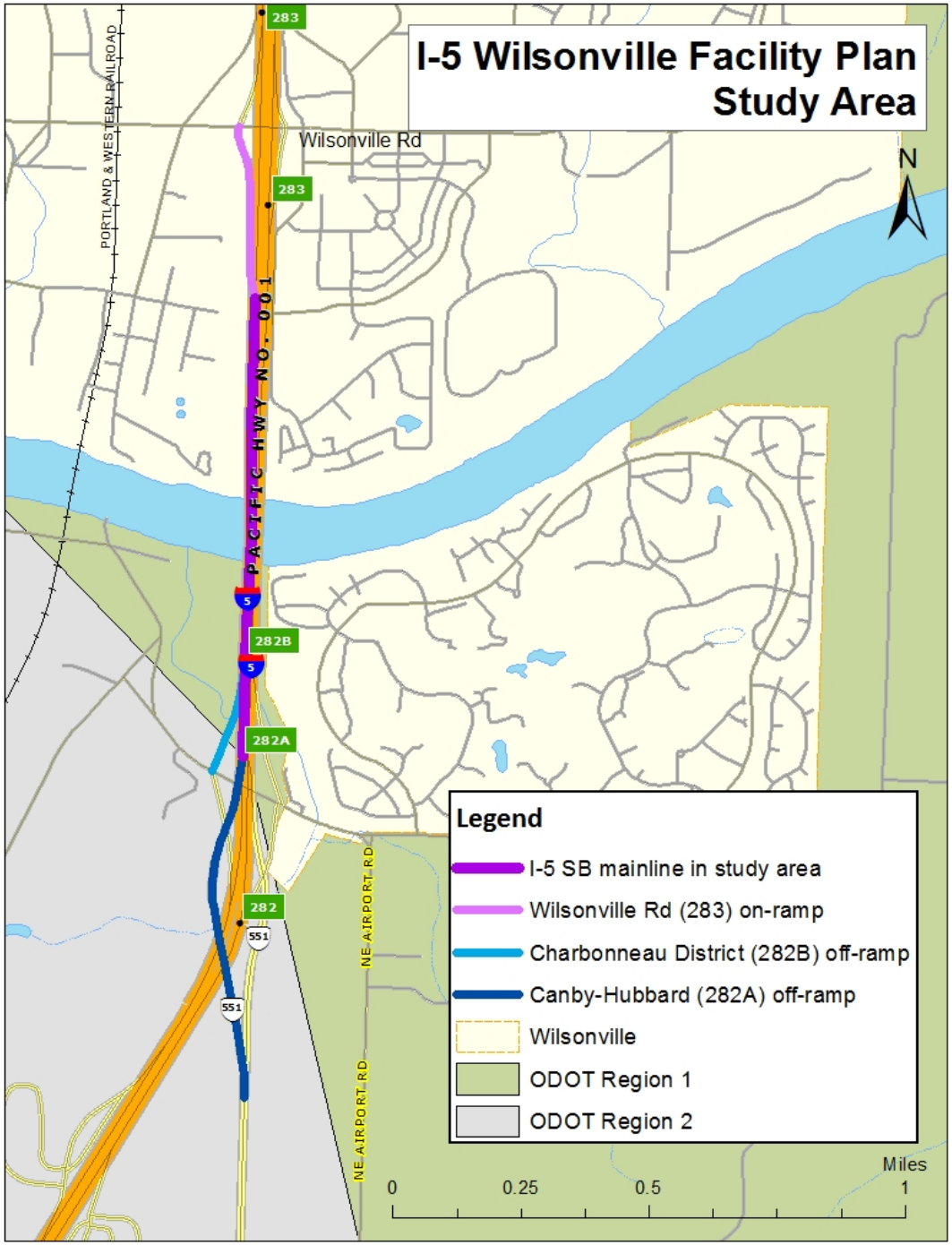
Facility plan purpose

- Manage safety and congestion on I-5 and its interchanges
- Comply with statewide plans
- Ensure the public understands and supports potential investments
- Define the project ODOT will propose for the 2018 Regional Transportation Plan



Agenda

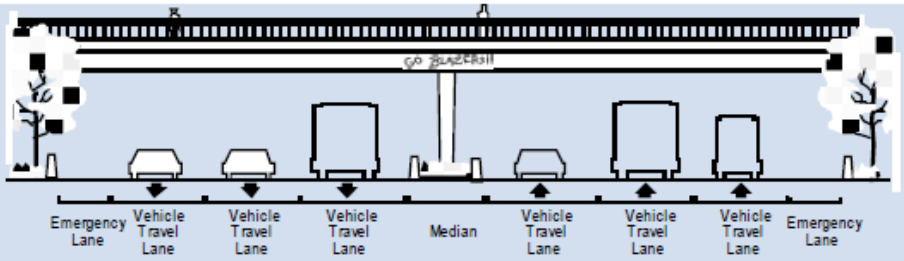
- Policy context
- Existing conditions
- Future forecasts
- Options and how they perform
- Next steps
- Our questions for you:
  - Should we invest in improving I-5's operations in the project area?
  - Does the solution we've recommended seem like the right one?

Policy context

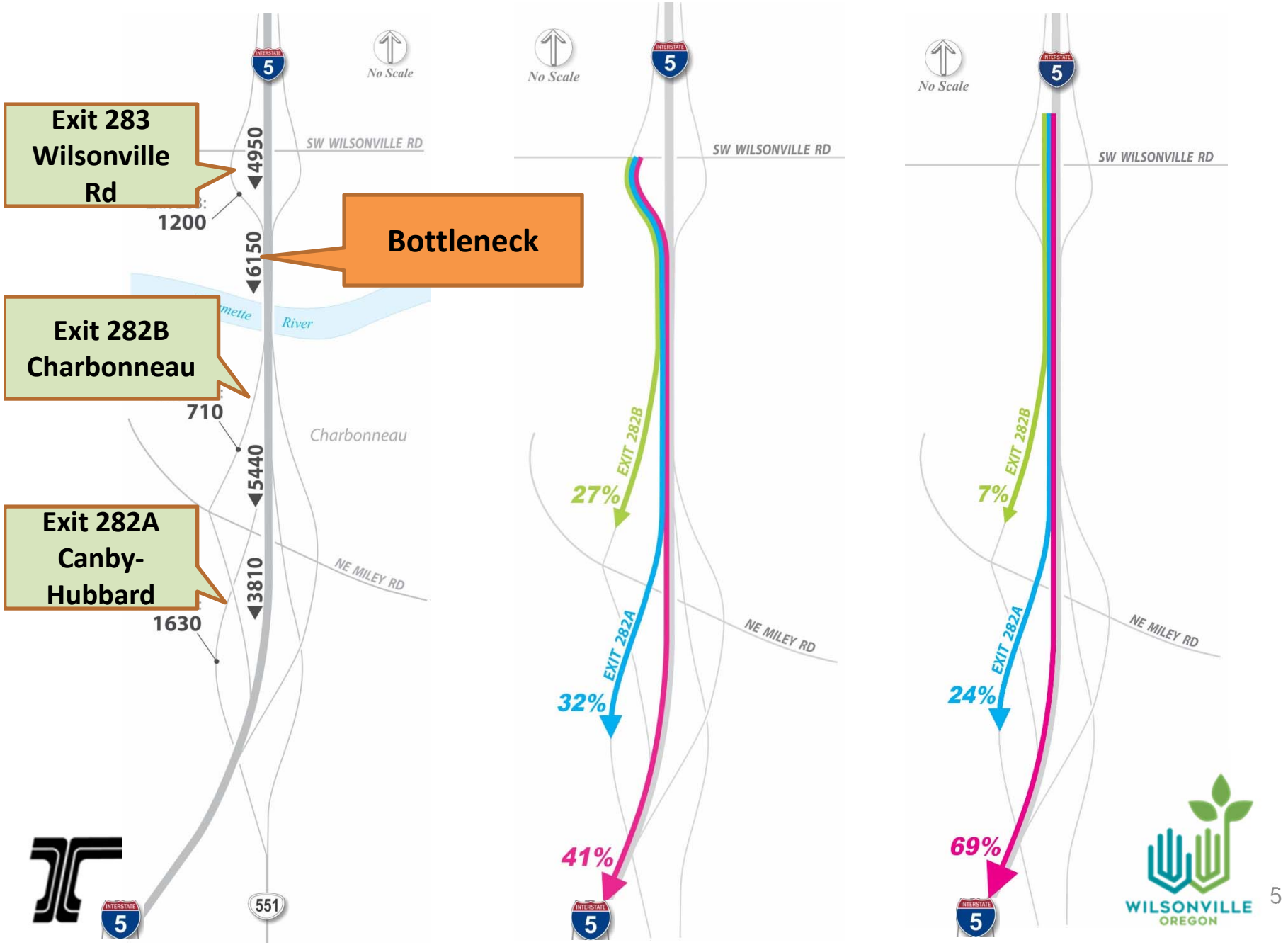
What do federal, state, regional, and local policies direct us to do?

- Manage I-5 to provide safe, efficient, higher speed operations for longer-distance trips
- Design interstate solutions for six through-lanes, plus ramp-to-ramp lanes and interchanges
- Address peak period congestion
- Improve freight reliability and prioritize freight needs on the freeways
- Easy freight access to I-5 for Wilsonville businesses
- Mitigate freeway impacts to local arterial system (Council Goal)

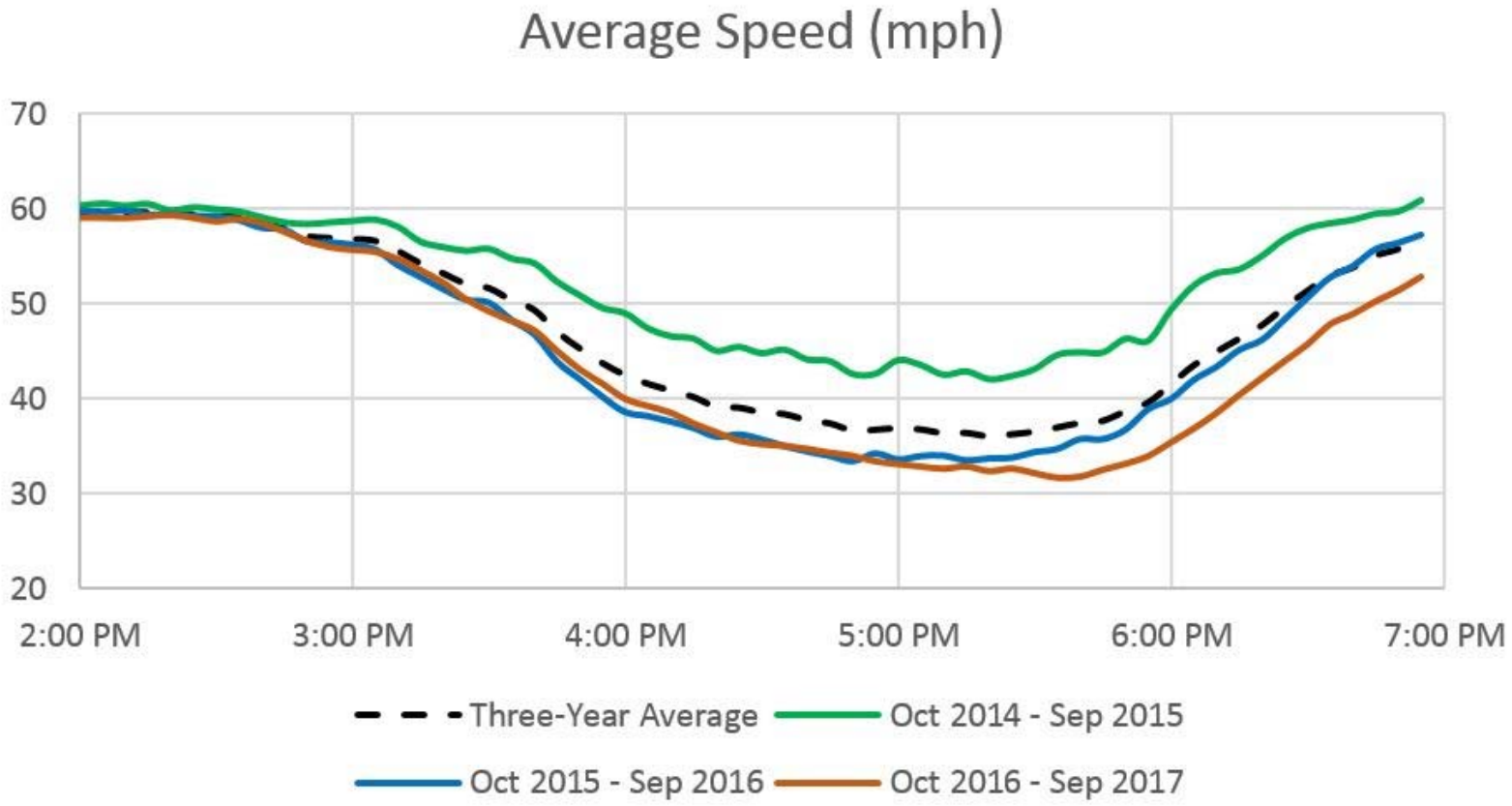
THROUGHWAYS

Interstate/ regional	**Throughway** (Freeway)	Principal arterial		6 through lanes (plus auxiliary lanes) with grade separated interchanges

Existing conditions: PM peak hour volumes, origins, & destinations

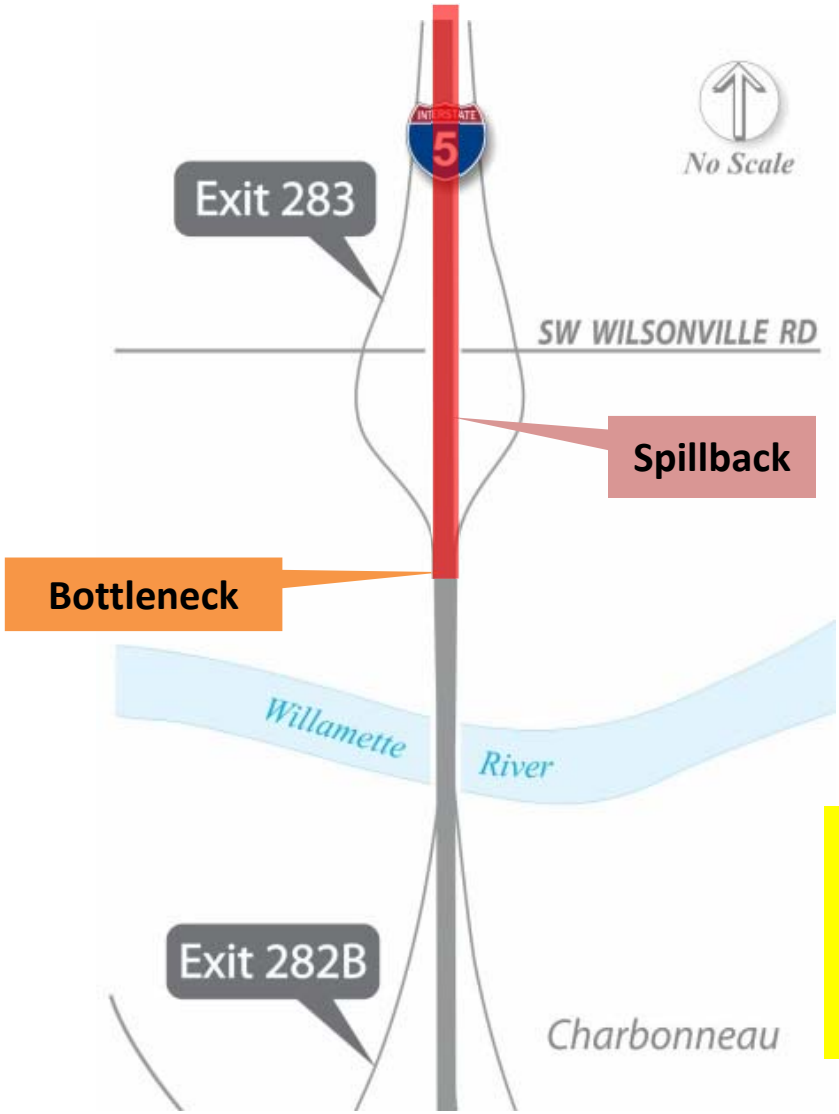


Average PM speeds have been dropping



- 2015 – the worst PM average speeds were in the low 40 mph range
- 2017 – the worst were in the low 30 mph range
- Today, speeds can start dropping before 3 pm and not fully recover until after 7 pm

Impacts of bottlenecks: congestion, poor operations



- **Spillback** in the half-mile upstream of Exit 283 bottleneck
- **Bottleneck** - Failing to meet ODOT benchmarks
- Volume-to-capacity ("v/c" ratio = .98 compared to .99 target for max. acceptable congestion
- LOS E through project area

Benchmarks are used to measure how congested conditions are and how efficiently vehicles can move through a road or intersection

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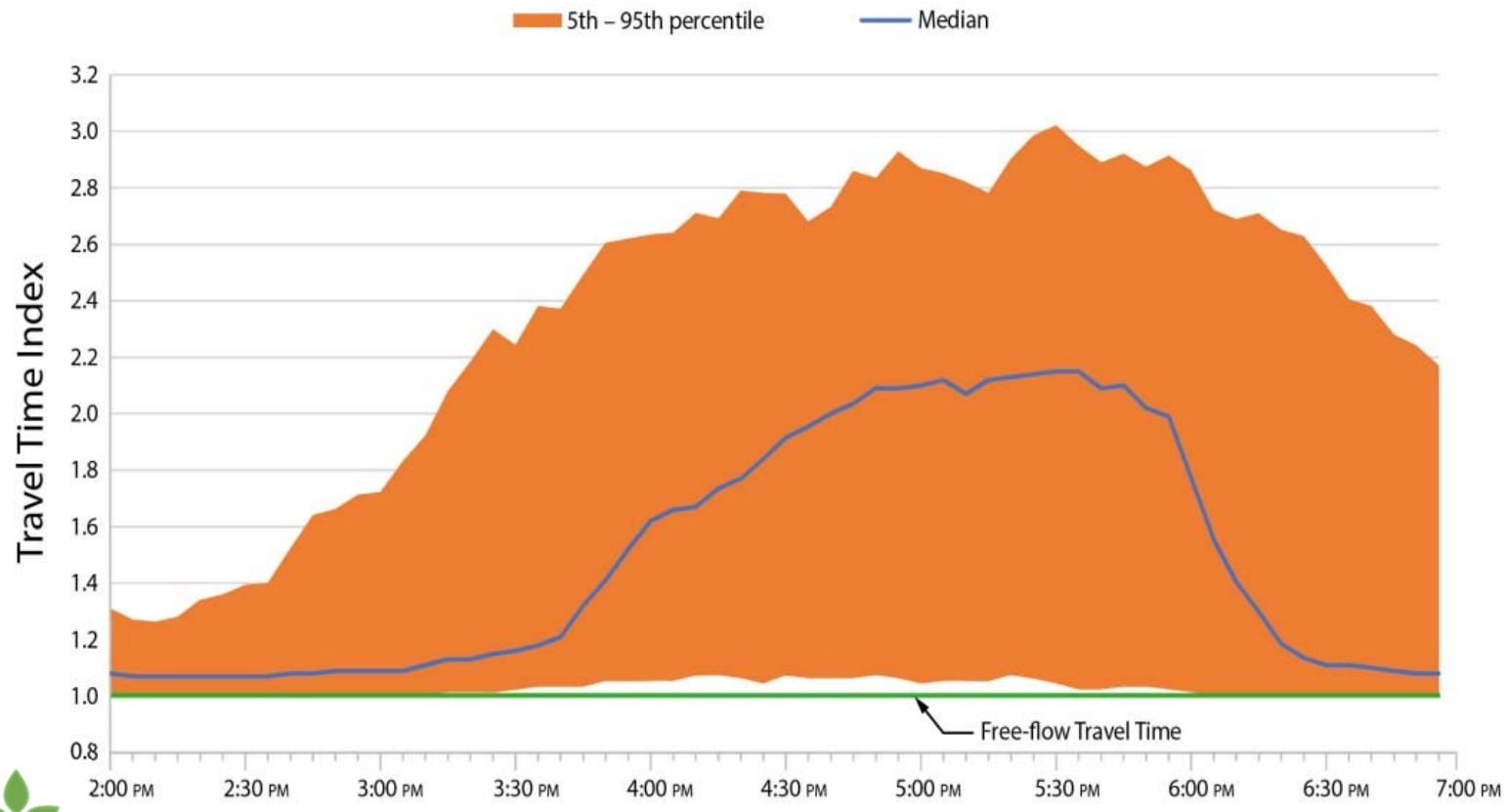
Impacts of bottleneck: unreliable travel times

To arrive on time 95% of the time, a driver in the PM peak must plan for this segment to take three times longer than it does in free-flow conditions (when there is no traffic congestion)



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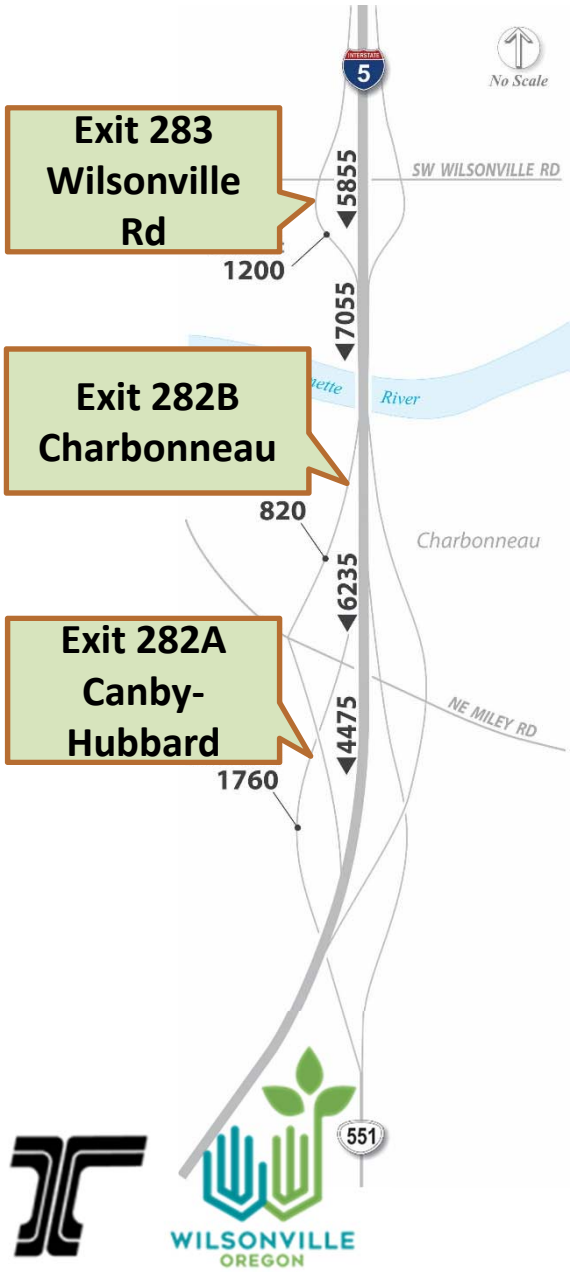
Future conditions in 2040 (if we do nothing)

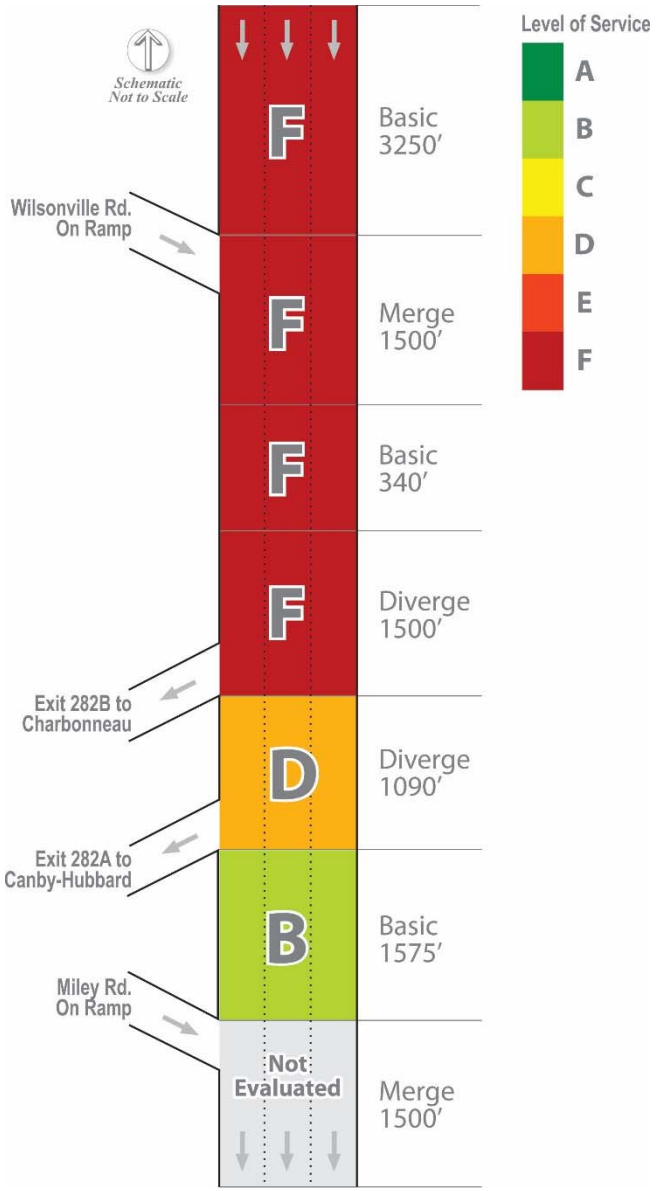


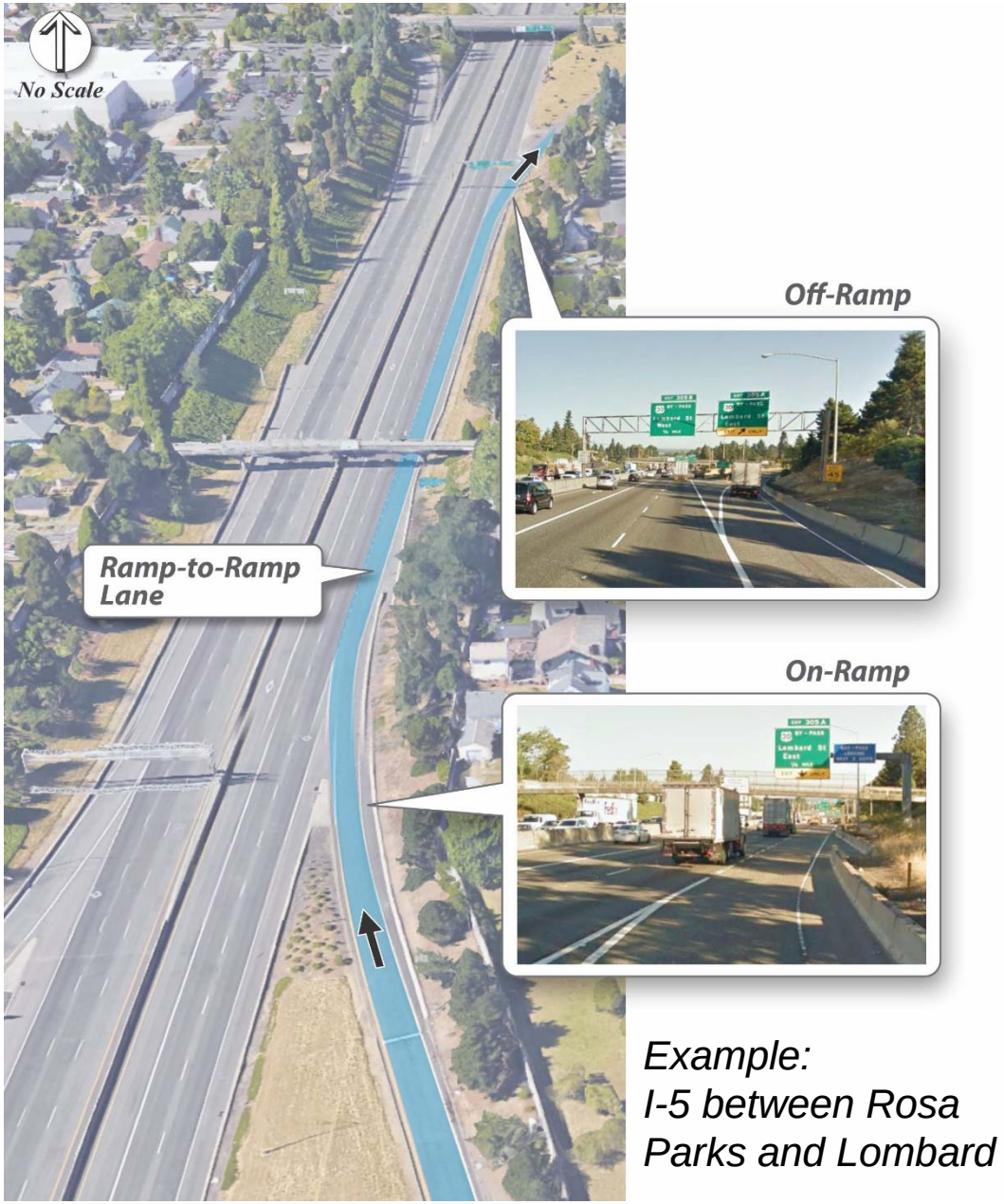
I-5 traffic volumes increase 15% (or more)

I-5 fails to meet performance benchmarks from N of Wilsonville Rd through to Charbonneau off-ramp

Reliability and safety expected to worsen

40% more drivers will want to get on I-5 at Wilsonville Rd than will be able to get through ramp meter





Example:
I-5 between Rosa Parks and Lombard

What is a Ramp to Ramp Lane?

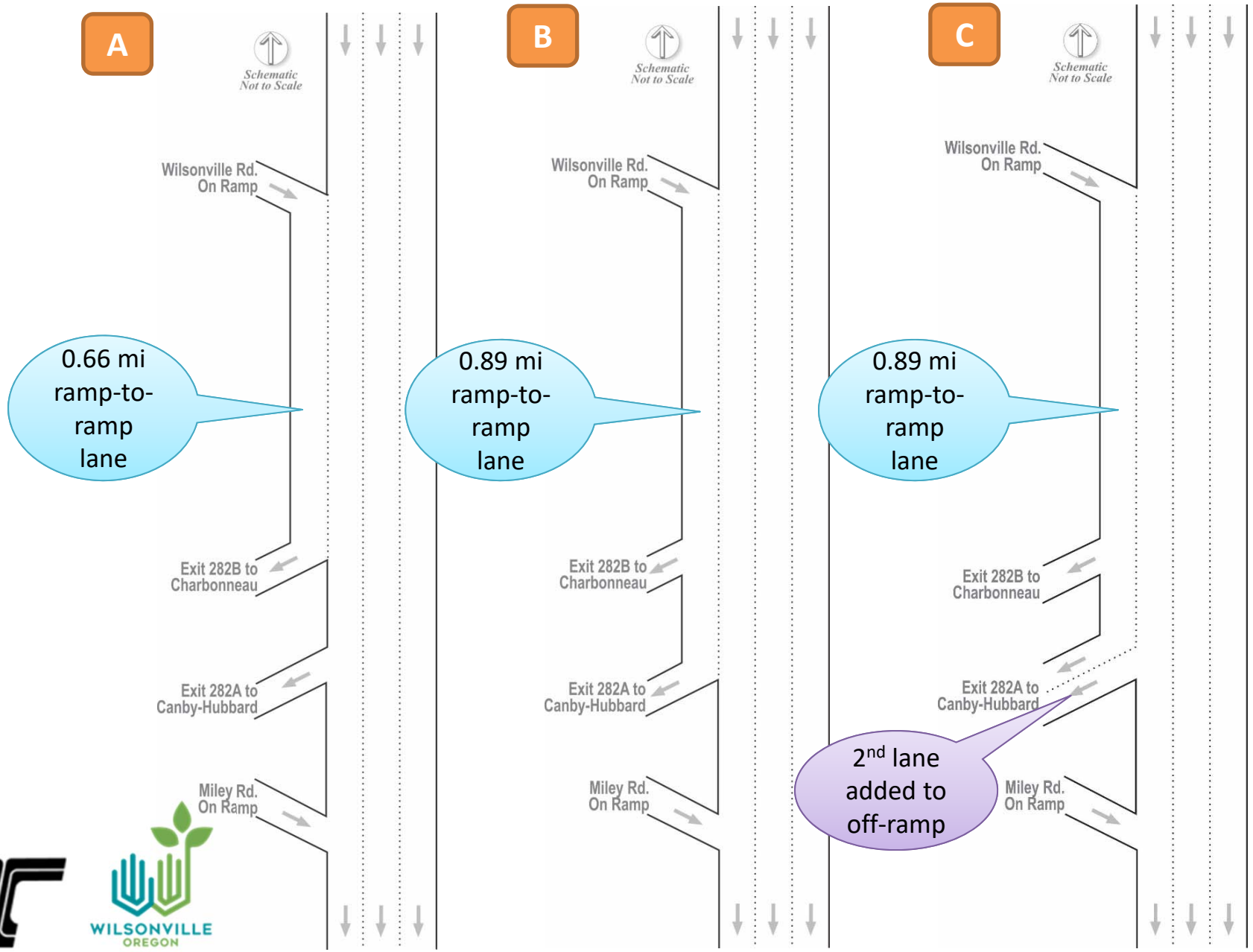
A travel lane that typically begins at a freeway on-ramp and ends at a subsequent, tightly spaced off-ramp (with an "exit only" sign).

Example:
I-5 between Rosa Parks and Lombard

Benefits of a Ramp to Ramp Lane

- Separate ramp merging from through traffic, giving drivers more room to speed up and slow down
- Require less weaving and merging, reducing congestion in all lanes
- Reduce bottleneck congestion
- Can reduce overall crashes in a merge-diverge area by more than 20%

Build alternatives: SB ramp-to-ramp lane over the Boone Bridge



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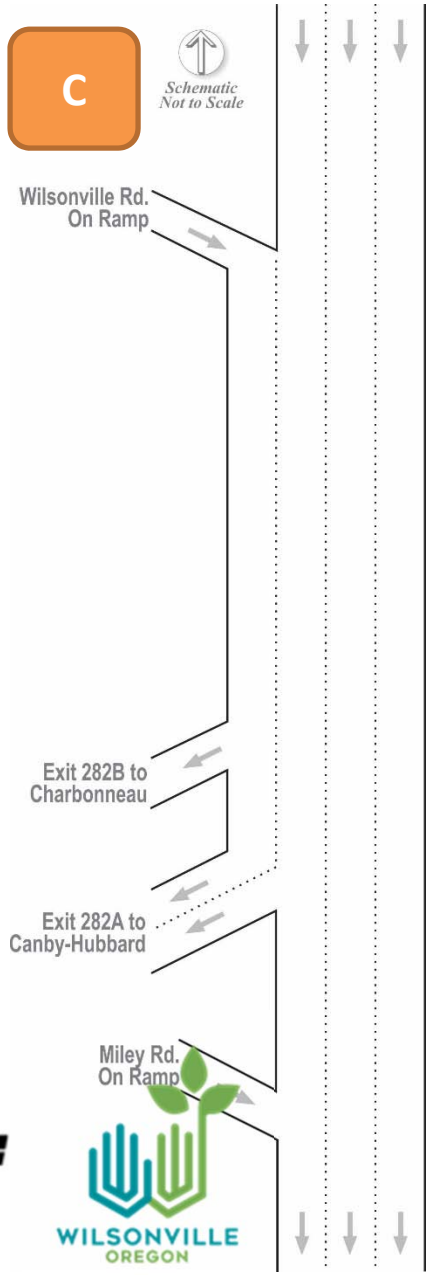
How do the alternatives perform?

Performance measures (2040 PM peak hour)	Baseline (No Build)	Option A	Option B	Option C
Worst speed observed	22 mph	45 mph	44 mph	52 mph
Performance compared to state benchmark (maximum v/c ratio of 0.99)	1.09	0.95	0.89	0.88
Number of vehicles per lane per mile	79.3	40.2	36.7	35.0
Worst level of service observed (A is great, F is terrible)	F	E	E	D

Key findings:

- All three options improve operations
- The longer the ramp-to-ramp lane, the greater the benefits
- The alternatives with less congestion offer greater reliability improvements
- Adding a second exit lane in Option C resolves weaving conflicts
- Project costs and potential for environmental impacts mostly come from making the Boone Bridge wider and more stable (the same in all options)

Recommended solution: C



Reasons for recommendation
Offers greatest operational benefits to I-5 (speeds stay above 50)
Resolves weaving conflicts in study area
Offers greatest safety benefits
Improves reliability
Allows for uncertainty about future increases in traffic volume
Reduces I-5 congestion impacts to Wilsonville Rd & on-ramp
Minimal cost differences between options (<10%)
Environmental impacts likely to be similar for all three options

Planning process

www.ci.Wilsonville.or.us/908/Southbound-I-5-Boone-Bridge-Auxiliary-La

Current technical analysis:

Would adding a ramp-to-ramp lane allow for a faster ramp meter rate?

Public & stakeholder involvement

January – May 2018

Image source: https://cyclotram.blogspot.com/2008/11/boone-bridge.html

- Technical advisory committee
- 1 in-person + 1 online open house
- News releases
- 5 stakeholder group visits
- Public hearings at Planning Commission & City Council
- Presentations to Washington & Clackamas Co coordinating committees
- Presentations to TPAC & OFAC
- 45-day public comment

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Discussion:

Should we invest in improving I-5's operations in the project area?

Does the solution we've recommended seem like the right one?

Please comment through our on-line survey – available on the project web site