I-5 WILSONVILLE FACILITY PLAN
Boone Bridge Southbound Auxiliary Lane and Seismic Resilience Retrofit Project

Proposed Ramp-to-Ramp Auxiliary Lane to Reduce Congestion, Increase Through-put at SB I-5 Wilsonville/Boone Bridge Bottleneck

PROBLEM

- The one-mile section of I-5 between Wilsonville Road and Highway 551 that crosses the Willamette River over the Boone Bridge is a major regional choke point.
- Daily heavy, peak-hour congestion is becoming longer in duration as traffic volumes on I-5 continue to increase along with population growth.
- Three closely-space highway interchanges within one mile on both ends of the Boone Bridge induce traffic weaving that contributes to safety, mobility and reliability concerns.
- Congestion on the Boone Bridge results in spillback, with traffic backing-up towards the I-205 interchange.
- The Boone Bridge—the only Willamette River crossing for a 28-mile stretch—is seismically vulnerable in the event of a catastrophic earthquake.

SOLUTION

- Add a ramp-to-ramp auxiliary lane from the Wilsonville Road on-ramp across the Boone Bridge south to Charbonneau/Miley Road Exit 282BA and continuing to Aurora/Canby/Hubbard Hwy 551 Exit 282A, with a second I-5 turn-lane added onto Exit 282A.
- Of solutions studied, the proposed plan offers the greatest operational benefits to I-5 with speeds staying above 50 mph and resolves weaving conflicts by providing an additional on/off highway merge lane for safer travel.
- Seismic strengthening of the Boone Bridge allows ODOT to ensure this crucial I-5 bridge remains functional after a catastrophic earthquake.

PROJECT DATA

Metro 2018 RTP No. 11990, Financially Constrained List

Oregon Highway Plan, July 2018

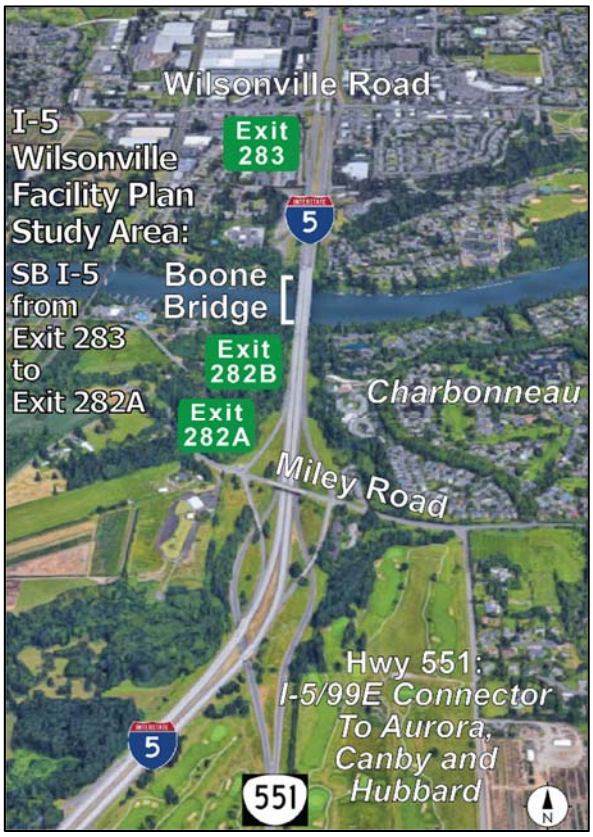
PROJECT COST ESTIMATE

$120 million overall total cost estimate for ramp-to-ramp auxiliary lane, ramp modifications and seismic retrofit

$	3.5M	30% Design/PE
	6.0M	ROW/Permitting
	32.0M	Auxiliary lane construction
	38.5M	On/off-ramp modifications
	40.0M	Seismic retrofit

Traffic congestion "spill-back" from the Boone Bridge on southbound I-5 at Wilsonville can back-up traffic north to the I-205 interchange.

The Boone Bridge section of I-5 carries over 100,000 vehicles per day, with nearly the same traffic volume of the "CRC" Interstate Bridge but with one-third more truck traffic.



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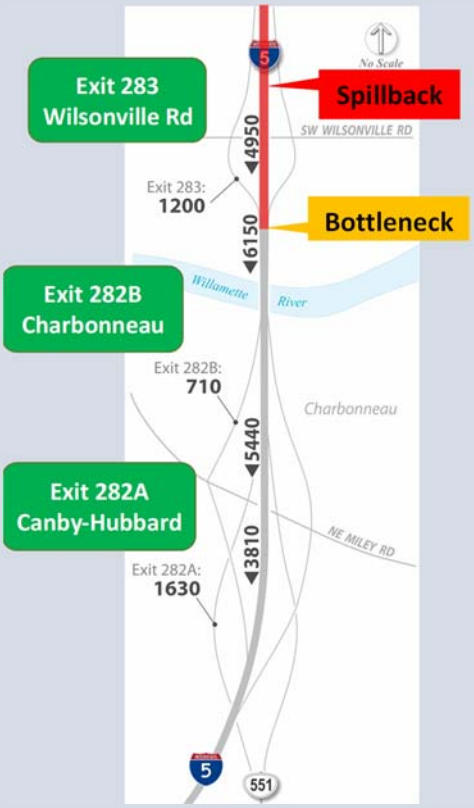
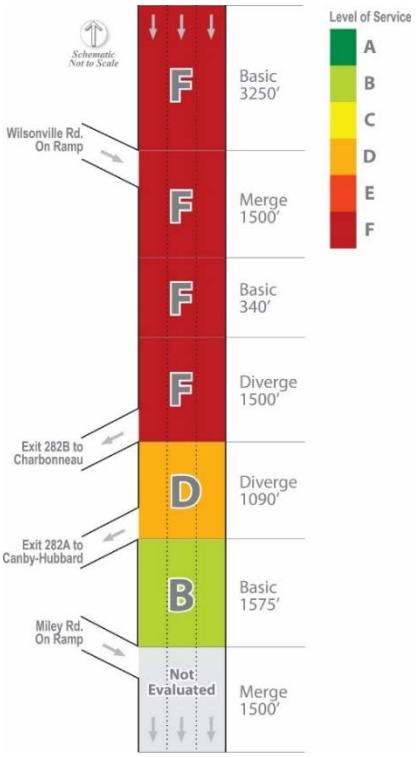
I-5 Boone Bridge area with Three Interchanges within One-Mile Segment of I-5 Slows Traffic

- Heavy traffic volumes with multiple freeway exits in a short distance creates weaving that results in slower traffic and congestion, generating a bottleneck with traffic spillback north towards I-205 interchange.
- Nearly one-third (31%) of I-5 traffic departs freeway at Exits 282A and B.
- 60% of the traffic that enters I-5 from Wilsonville Road departs freeway at next two exits.



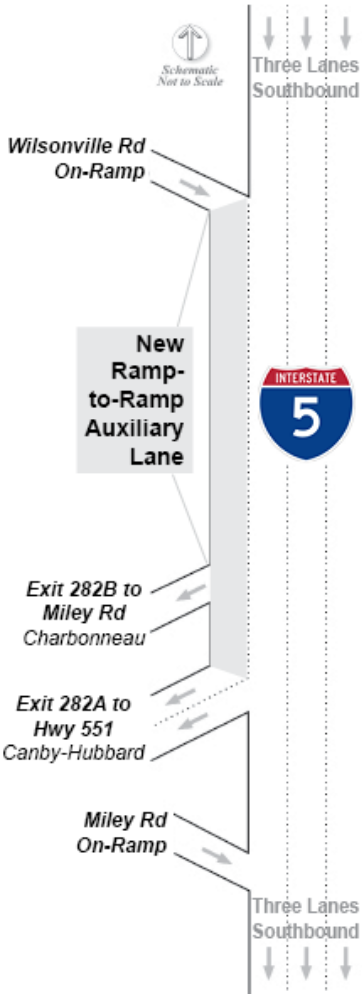
Future Conditions in 2040 Continue to Worsen Without Improvements Being Made Now



- By 2040, I-5 traffic volumes increase 15% or more; current volume-to-capacity ("v/c") ratio of .98 is reaching maximum acceptable congestion.
- I-5 fails to meet performance benchmarks from north of Wilsonville Road through to Exit 282B 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.

Proposed Ramp-to-Ramp Auxiliary Lane Greatly Improves Traffic Flow

- ODOT analyzed three alternative auxiliary ramp-to-ramp lane options; each option improved mobility. The longer the auxiliary lane, the greater the benefits.
- The proposed second exit lane resolves weaving conflicts by allowing I-5 mainline vehicles to take this exit without merging into the ramp-to-ramp lane first, improving safety and traffic flow.



- Project costs and potential environmental impacts come mostly from the Boone Bridge seismic improvements.

Projected 2040 peak-hour performance of I-5 greatly improves with proposed project:

Performance Measures	Baseline (No Build)	Proposed Project
Worst speed observed	22 mph	52 mph
Performance compared to benchmark *	1.09	0.88
Number of vehicles per lane per mile	79.3	35.0
Worst level of service **	F	D

* Maximum v/c ratio of 0.99; values over 1 indicate gridlock traffic conditions.

** Level of service gauge: A is great, F is terrible

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