I-5 Variable Speed Limits and Lane Control

Washington State

TSM&O Category: Active Traffic Management

Problem: Growth in travel in congested freeway corridors exceeds transportation agencies ability to provide sufficient roadway capacity.

Solution: Variable speed limit and lane control signs dynamically adapt to changing highway conditions to smooth traffic flow, manage demand and reduce congestion-related crashes.

Project Description: The project covers a 7-mile long section of I-5 northbound in Seattle and was activated August 10, 2010.

• 15 overhead gantries, spaced approximately ½ mile apart through the 7-mile project area.
• Gantries display dynamic speed limits, lane closures, merge arrows, warning information and variable messages.
• Speed adjustments are automated and based on measured changes from imbedded sensors.
• Lane control changes are human-initiated, but software automates the process of updating the signage and messages.
• Variable speed limits sign show a minimum of 40 mph, even if traffic is moving slower.
• Project has potential to improve congestion and safety

Results:
• Positive public perception of the project.
• Well-covered on local news.
• A project performance report expected to be released within the next couple of months.

Cost: $23.8 million for preliminary engineering and construction costs.

What’s in it for me?
• Lane control and speed harmonization may reduce fatality and injury crashes by 30 percent
• Speed harmonization effects may increase roadway capacities by approximately 5 percent.
• Information displayed on roadway gantries can reduce corridor travel times up to 20 percent

Project Team: Washington State DOT

Quote: “Paying attention and responding to the signs makes the road safer for drivers and emergency responders. We are seeing drivers move out of the closed lanes, and that creates a safer buffer.”
- Washington State Patrol Capt. Steve Burns

Multimedia:
Smarter Highways Video Simulation
I-5 Smarter Highways in Use with Disabled Semi-trailer
WSDOT Blog: Smarter Highways

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Keywords: active traffic management, variable speed limits, congestion, safety, capacity

Source: Washington State Department of Transportation

I-5 Smarter Highways: Preliminary Collision Data

Source: Washington State Department of Transportation