Work Zone ITS

Work Zone Safety Task Force


SLOW


STOP


LANE
CLOSED
PASS

Low-Tech Work Zone Devices

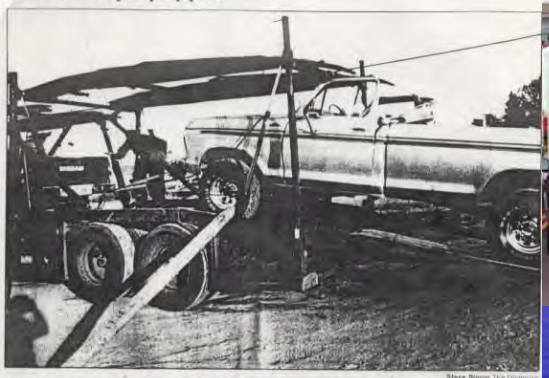
- Portable Changeable Message Signs
- Over height Detection
- Intrusion Alarms
- Portable Signal Systems
- Automated Flagger Assistance Devices


BE
PREPARED
TO STOP


SLOW


CAUTION
BUMP
AHEAD

Trucks' tops popped



Steve Bloom The Olympian

Pickup damaged in Interstate 5 accident in Tumwater is reloaded into an auto carrier Tuesday.

High load rams freeway overpass

By Mark Baumgartner
Olympian staff writer

State officials and a husband-and-wife trucking team say they are confused about why a semi truck carrying automobiles destined for Seattle scraped the bottom of a pedestrian overpass in Tumwater after apparently clearing even shorter heights on Interstate 5 between there and Portland, Ore.

Marion Petersen and her husband Steve were hauling the seven used vehicles to a Seattle auction when the top of their load was sheared Tuesday morning by the bottom of the new pedestrian freeway overpass south of Trosper Road. State troopers measured the Petersen's load after the accident and found it exceeded the legal height limit of 14 feet from top of the load to the road, said Sgt. Charlie Schreck.

The Petersens said this morning that they left Portland without measuring the height of their load.

"We relied on the weigh station at Woodland to tell us if we were over the limit," said Marion Petersen, who lives with her husband in Vancouver, Wash. "We're fully responsible for the load," she said. "But they're supposed to tell us if the load's not safe."

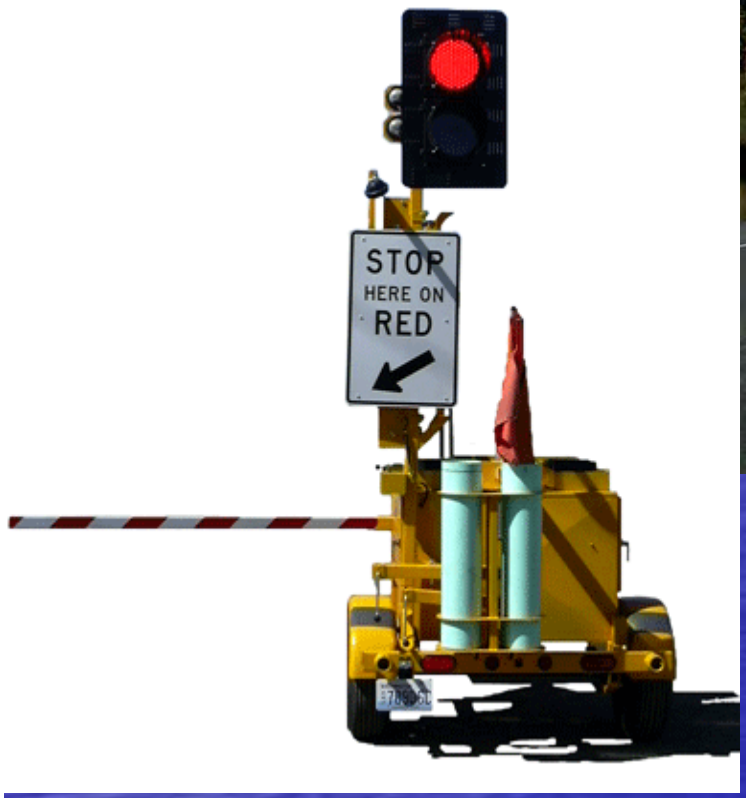
The Petersens said they were baffled about why an overpass with a clearance listed as 14 feet five inches would knock the top off their load when they had passed under numerous other overpasses, some lower than 14 feet high.

See High load/back page

Overheight Vehicle Detection

Intrusion Alarms

Portable Signal System



Automated Flagger Assistance Device (AFAD)

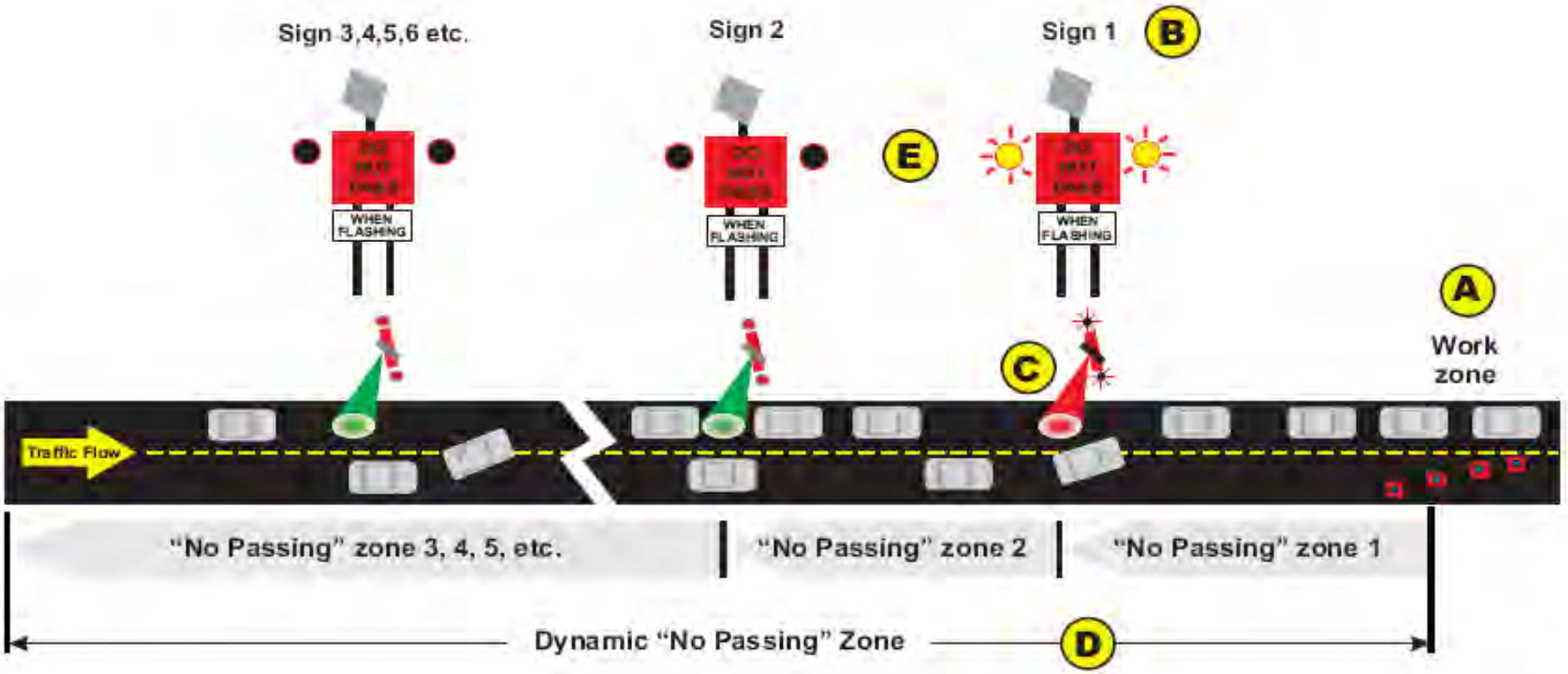
Intelligent Devices

- Portable Highway Advisory Radio
- Smart work zone devices
- Dynamic Lane Merge
- Queue Detection System
- Travel Time Estimation System
- Speed trailers
- Variable Speed Limit
- Work Zone Photo Enforcement

Portable HAR Systems

Smart Work Zone – Portable Traffic Management System

Dynamic Lane Merge System



A Construction work creates a lane restriction on a two lane, one direction roadway.

B The Dynamic Work Zone Safety System creates a dynamic "No Passing Zone" just in advance of the lane restriction. The traffic sensors, which are non-intrusive, are mounted on the sign structure and used to detect traffic queue lengths. Sign #1 is always activated to warn of the lane restriction.

C When vehicle congestion is detected at Sign #1, the second warning sign is automatically activated. When vehicle congestion is detected at Sign #2, the third warning sign will be activated, and so on.

D The "No Passing Zone" is dynamic. Each "No Passing" sign is automatically activated/deactivated in sequence as changing conditions in vehicle congestion are detected by the traffic sensors.

E Activated signs have flashing lights and display a warning message. Non-activated signs remain blank with the lights turned off.

Anyone attempting to pass the waiting traffic queue and then invading the traffic stream near the taper would be subject to a traffic citation, since the "No Passing Zone" sign is an enforceable regulatory sign.

Queue Detection System

Typical Queue

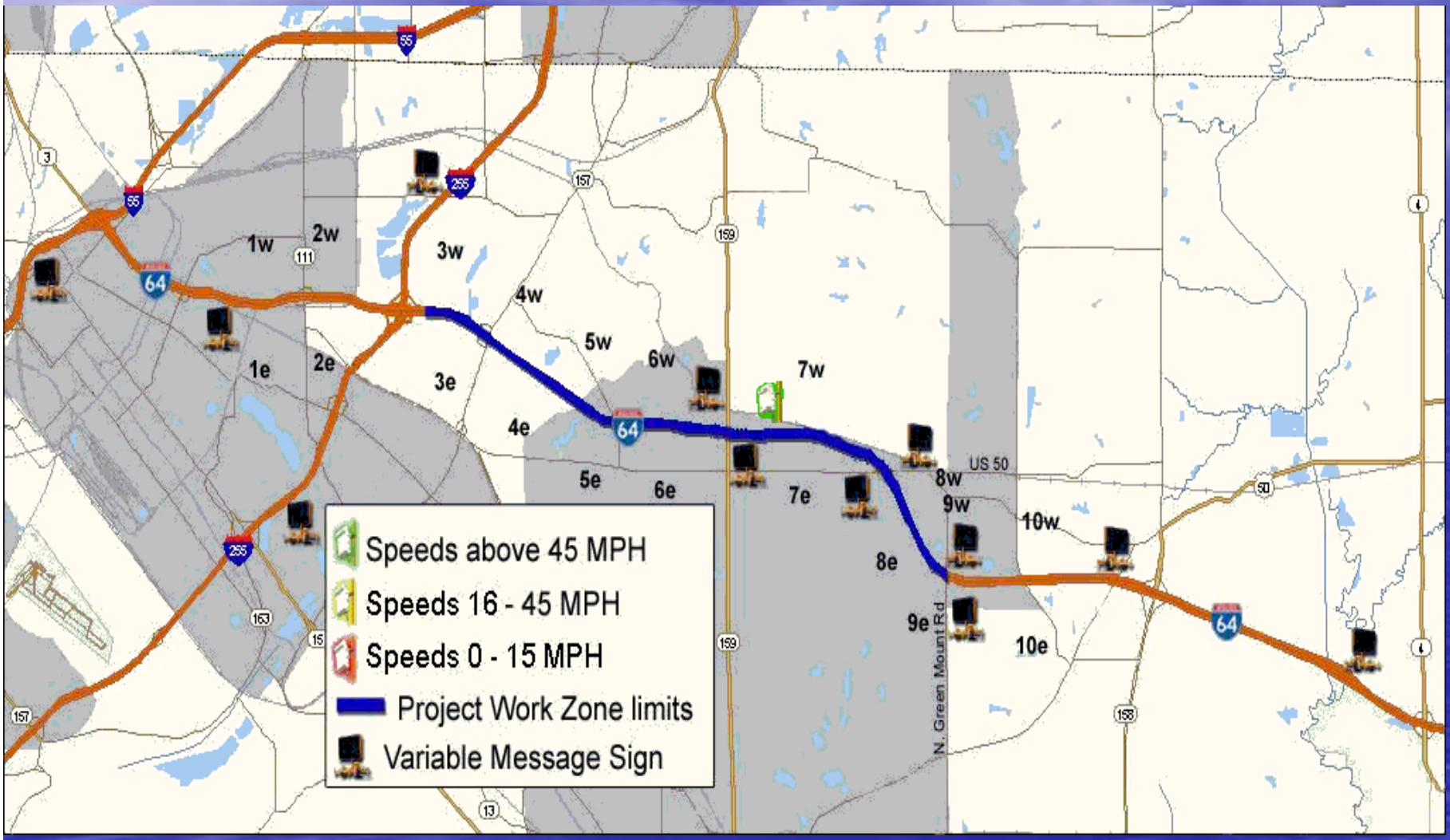
Drivers see this first ...

Travel Time Estimation System

Arizona Route 68 License Plate reader used to measure travel time

Illinois DOT I-55 Bridge Construction
Real Time Work Zone Traffic control system

8 Portable traffic sensors
- 17 remotely controlled DMS
- 4 Portable camera systems
- All systems linked to central base



Illinois DOT – I64 Add Lane Project – Travel Management System

Speed Display Trailer – used on WSDOT WSP Pilot project

Speed Management and Enforcement

Variable speed limits

Automated enforcement

Additional ITS/Safety Enhancements

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Photo Enforcement Vehicle

Citation

ILLINOIS STATE POLICE
Sangamon County

Notice of Infraction

Mail Date: 06/10/05

REGISTERED OWNER INFORMATION

S013883011

Diane Vander Kooy
500 Iles Park Place Suite 100
Springfield, IL 627032982

Your vehicle was photographed violating Section 11-605.1 of the Illinois Vehicle Code on the date and time listed below. Under Illinois State law, the vehicle operator is liable for the violation recorded using an automated traffic enforcement system. The penalties for and consequences of a traffic violation recorded by an automated traffic control system are the same as for any similar violations of the Illinois Vehicle Code. The basis for the citation is the photographic images recorded by the automated traffic control system.

On the back of this notice you will find detailed information and instructions regarding payment and ticket adjudication.

VIOLATION INFORMATION

Ticket Number:	S013883011
Issue Date:	12/14/04
Issue Time:	10:30 AM
Violation Code:	T119
Description:	Speed Photo Radar
Location:	Test Location
Vehicle Tag:	IL 0173
Vehicle Make:	4DR
Vehicle Speed:	63mph
Posted Speed:	35mph
First available court date:	January 20, 2005

Your answer to this notice of infraction must be received by the payment due date listed below.

Failure to pay the fine or otherwise answer in the manner and time required is an admission of liability. This will result in additional penalties and the loss of your right to a hearing. In addition, your home state may place a hold on the renewal of your vehicle registration.

Detach and return this portion with your payment in the envelope provided.
or you may pay your ticket through the Internet at http://www.isp.state.il.us

Ticket Number: S013883011 **Vehicle Tag:** IL 0173 **Mail Date:** 06/10/05

Payment Due Date: 07/10/05
Initial Fine Amount Due: $375.00

You can view full color version of the image below at
http://www.public.cite-web.com
Citation Number: 01388301 Pin Number: 273857565

Amount Paid: $

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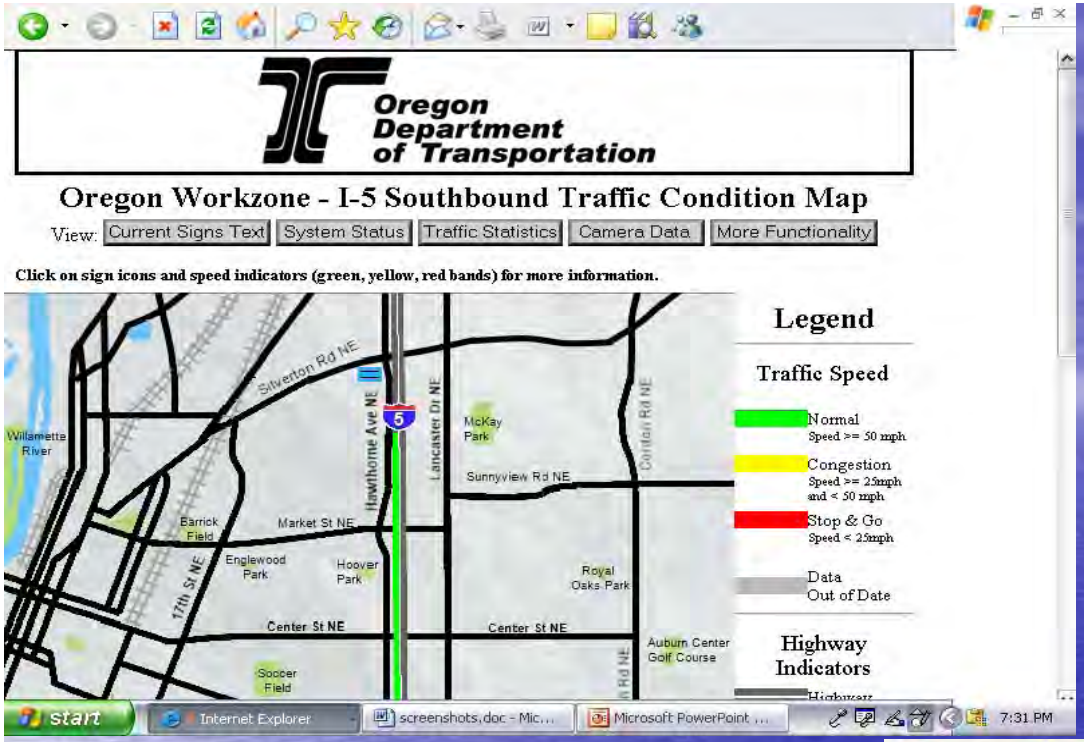
Cost for Service

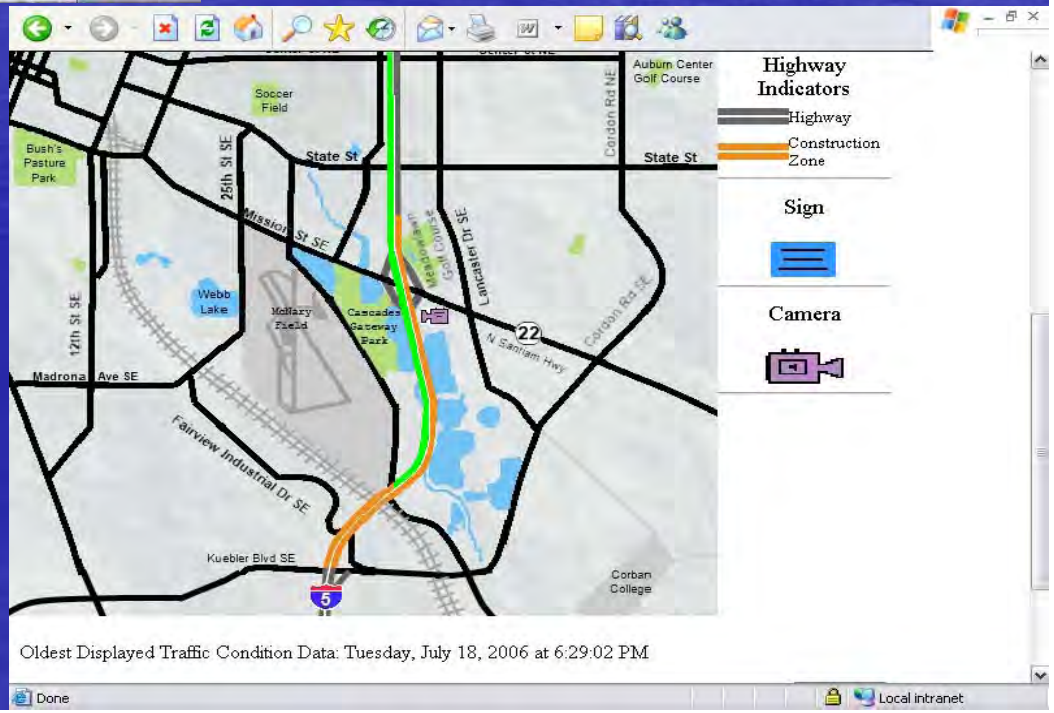
- **$2,950/ month/van**
  - Vans
  - Equipment
  - Maintenance Service
  - Upgrades
  - Training
- **$15/ticket issued**
  - Processing violation
  - Certified Mailing
  - Court Packets



Oregon DOT – Travel Time Monitoring Project

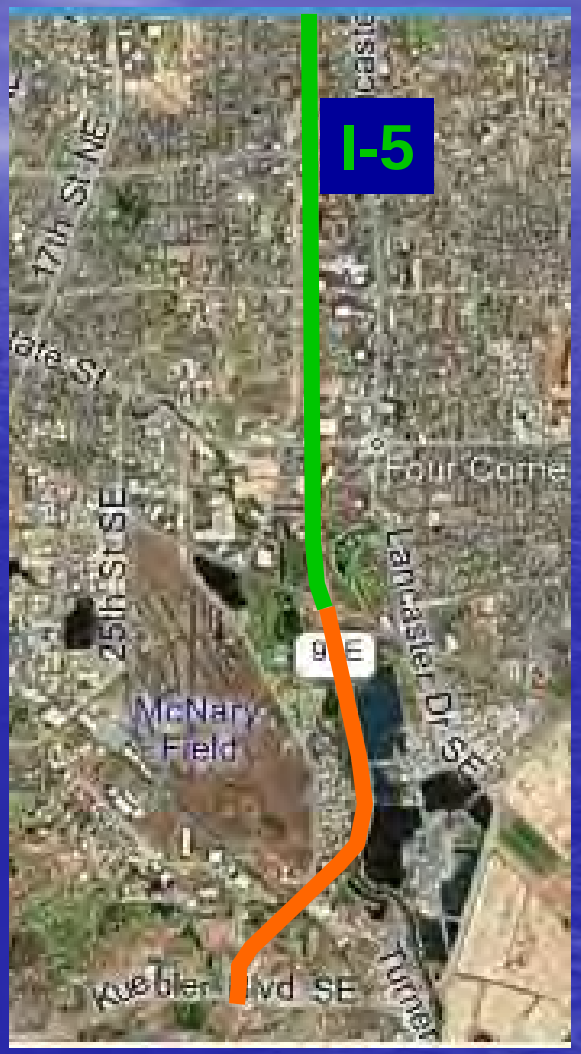
Project Goals

- Monitor travel time through the Work zone using side-fired sensors and AVI transponders
- Measure delay through the work zone
- Measure traffic volumes, speed, roadway occupancy and patterns
- Estimate corridor travel time and provide this information to drivers



Project Location

- Work Zone – I-5 between Highway 22 and Kuebler Boulevard
- Monitoring – South Bound I-5 from Silverton Road to Kuebler Boulevard



Video Trailer

WSDOT ITS Application Top 3 Priorities

•Dynamic Lane Merge System - The system is intended to improve work zone capacity and reduce crashes, (studies show minimal improvement) but it's greatest value may be the merge control or direction it provides drivers approaching the lane closure.

•Queue Detection System - a portable device that utilizes a microwave detector that is able to detect changes in traffic flow, and send out an alarm to advance signs to warn motorists if a backup is forming.

•Work Zone Traffic Management - this concept can employ several technologies and is slowly starting to move ahead on some projects, but requires some detailed advance planning and design. A practical example might be to combine temporary work zone ITS with permanent ITS managed through the region TMC.

Questions?