Active Traffic & Safety Management System for Interstate 77 in Virginia

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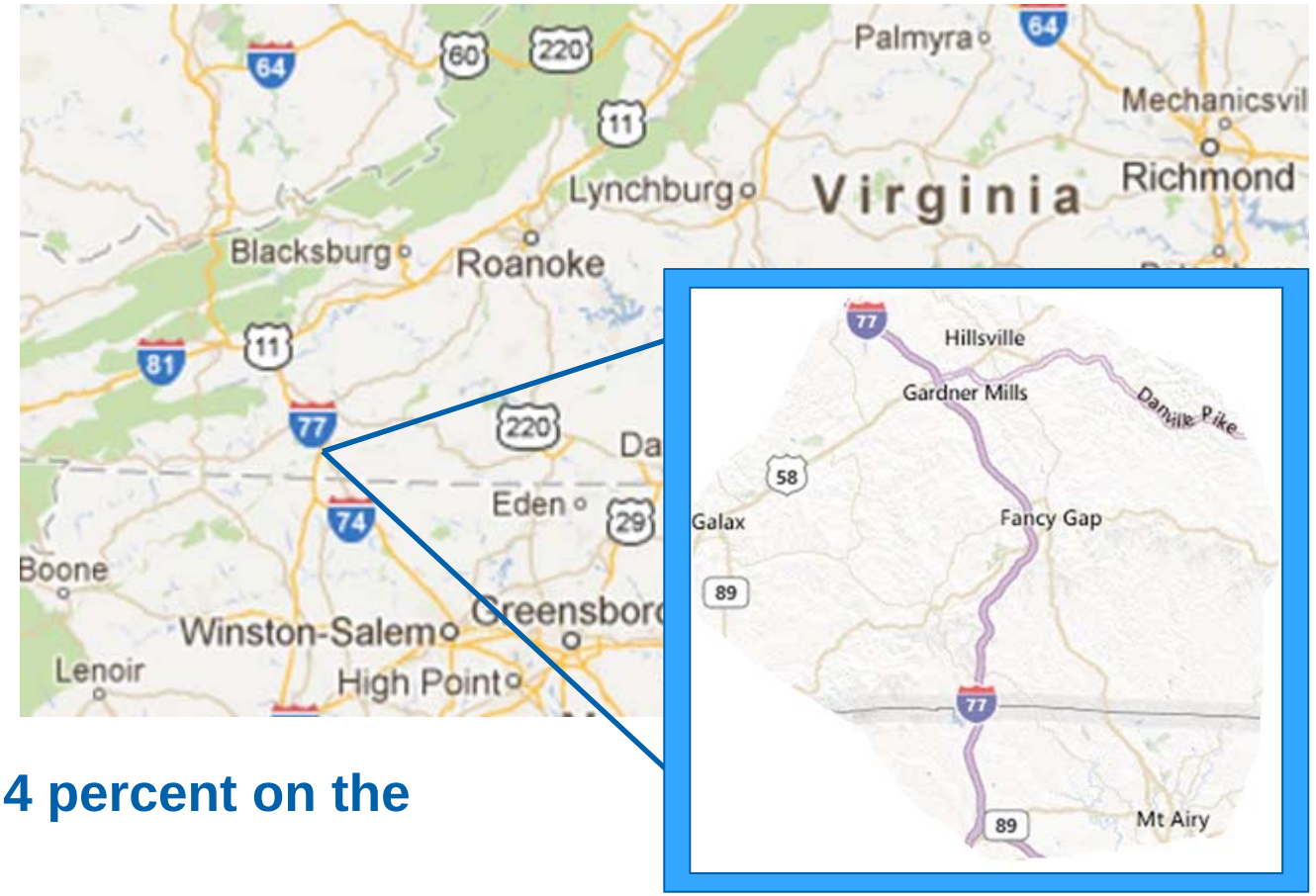
Interstate 77 at Fancy Gap Mountain

- Mile markers 0-15
- Built in late 60s and early 70s
- Approximately 1,000 feet of elevation drop down Fancy Gap Mountain over 11 horizontal curves



- Average grade of 4 percent on the mountain
- Area subject to dense fog and severe cross winds

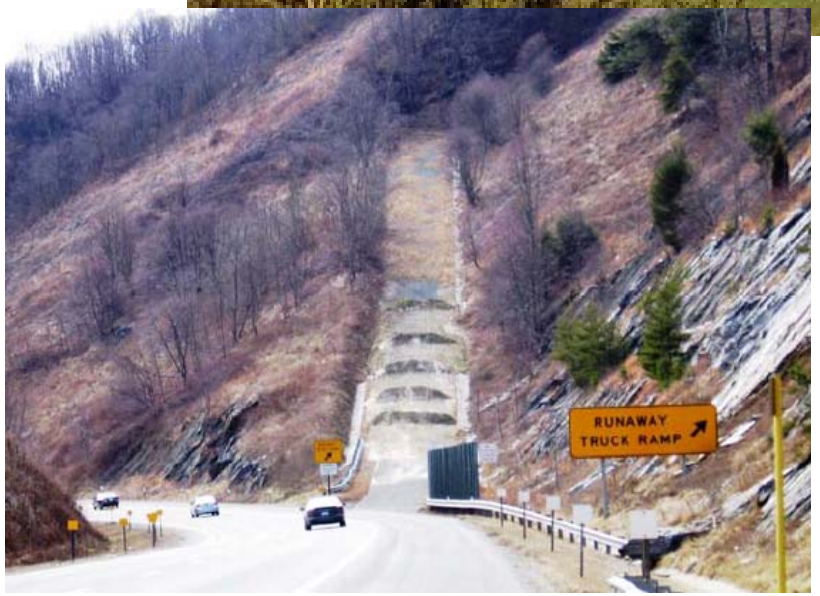
Interstate 77 at Fancy Gap Mountain

Traffic Volume

- 35,000 AADT
- Daily volumes in June, July and August are higher than Monthly averages

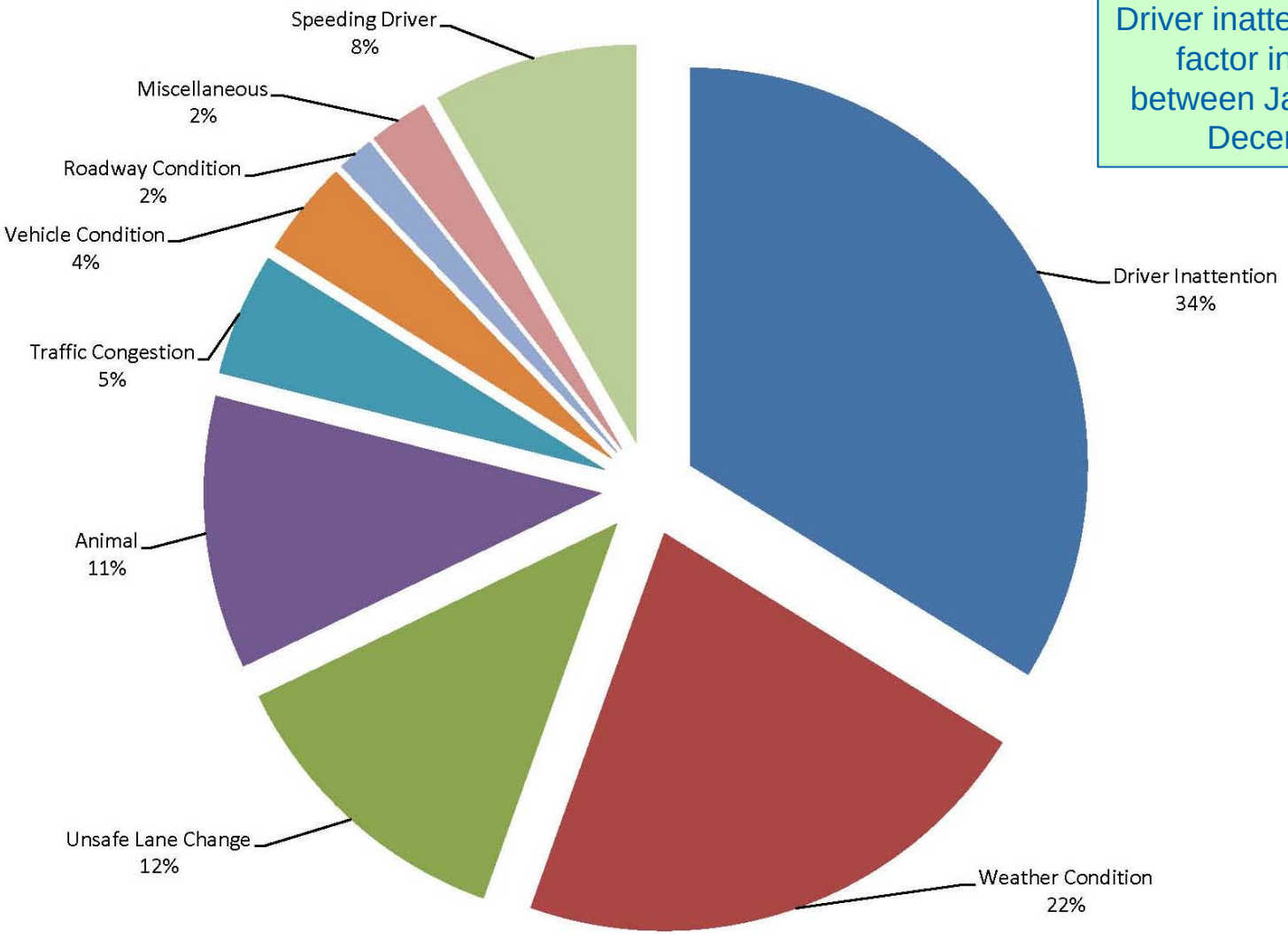
Truck facilities

- Northbound truck climbing lane between mile markers 1.1 and 7.4
- 2 truck runaway ramps



What Contributes to Crashes on Interstate 77?

Driver inattention was the top factor in 541 crashes between January 2010 and December 2014.



I-77 Fancy Gap Mountain
Significant Incidents

Date of Crash	Vehicles	Fatalities	Injured	Direction
March 31, 2013	96	3	25	Southbound
Nov. 16, 2011	75	2	16	Southbound
Oct. 27, 2006	30	0	10	Southbound
Sept. 25, 2005	50	0	25	Both
Jan. 21, 2005	20	0	5	Both
May 21, 2001	40-50	0	12	Southbound
Jan. 18, 2000	60	2	N/A	Southbound
Oct. 5, 1998	46	0	10	Northbound
Feb. 14, 1997	65	0	11	Southbound

March 31, 2013 Incident Summary

96	• Total Vehicles Involved
17	• Separate Crashes
15	• Vehicles on Escape Ramp
3	• Fatalities
10 hrs/ 42 min	• Incident Duration
167 feet	• Shortest Visibility

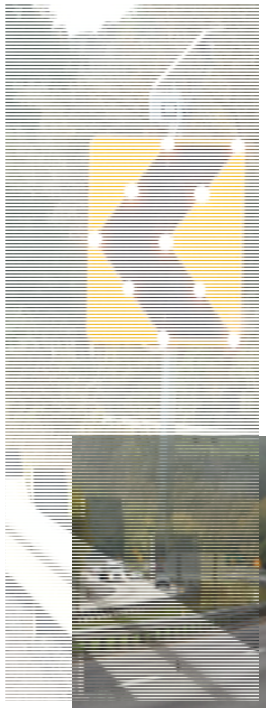
Improving Safety

Challenges

- Foggy conditions reported on the mountain about a third of the year which makes closing the interstate not possible
- No electric power or communications network
- No viable alternative route for interstate traffic or commercial vehicles
- Unfamiliar drivers with terrain and weather patterns on this section of I-77

Previous Improvements

- Rumble strips
- Delineator signs
- Wider pavement markings
- Chevrons
- Enhanced signs



Previous Initiatives

- 11 weather/visibility detection stations
- Signs
- Five electronic message boards
- Safety service patrol on I-77 (May 2012)

Current Initiative

- Safety improvement project
- Mile markers 0-15
- Contract Awarded by CTB in Feb. 2014
- $7.5 million contract

Purpose:

To reduce the severity and frequency of crashes during reduced visibility conditions.

What will be installed?

- Variable speed limit signs
- Electronic message signs
- Additional traffic cameras
- Additional weather and visibility detection stations

Milestones

July 2011 to December 2014

Power and communications infrastructure installed

February 2014

Contract awarded for new traffic safety system

Spring 2015

24 new traffic cameras available on 511 Virginia

Summer 2015

Installation of 76 new signs underway

Fall 2015

New variable speed limit system operational

How will the system work?

Fog on the road

Weather Station

Strategically placed weather detection station determines sight distance.

Traffic Operation Center

When sight distance falls to 600 feet or less

Speed limit reduced

Drivers slow down

Variable Speed Limits

Lower visibility leads to lower speed limits allowing drivers more time to stop.

The lowest speed limit that would be posted is 30mph.

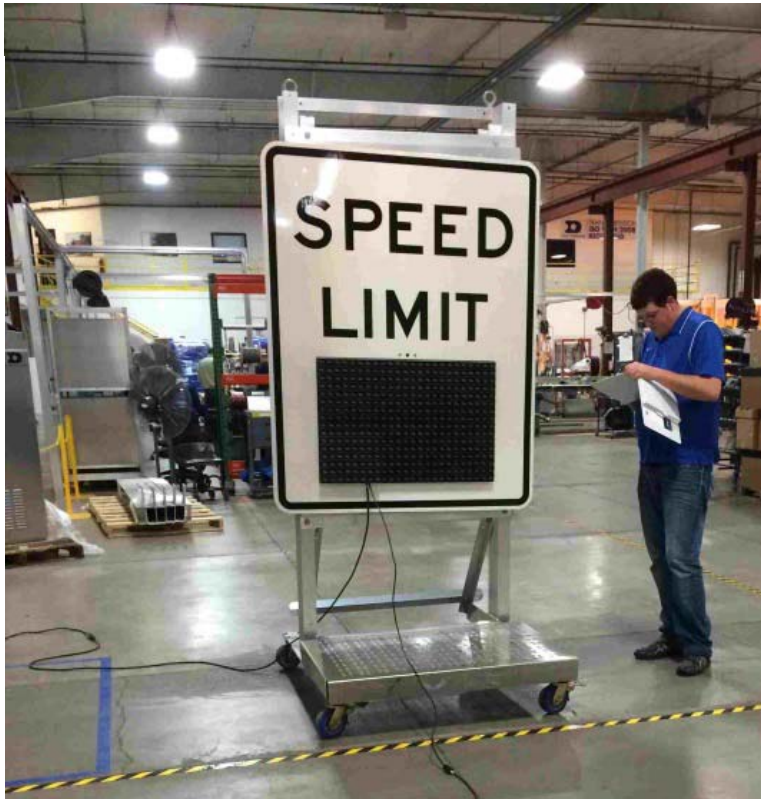
System Components

Signs

A total of 76 signs of various types will be put in place in support of the traffic safety system.

Signs

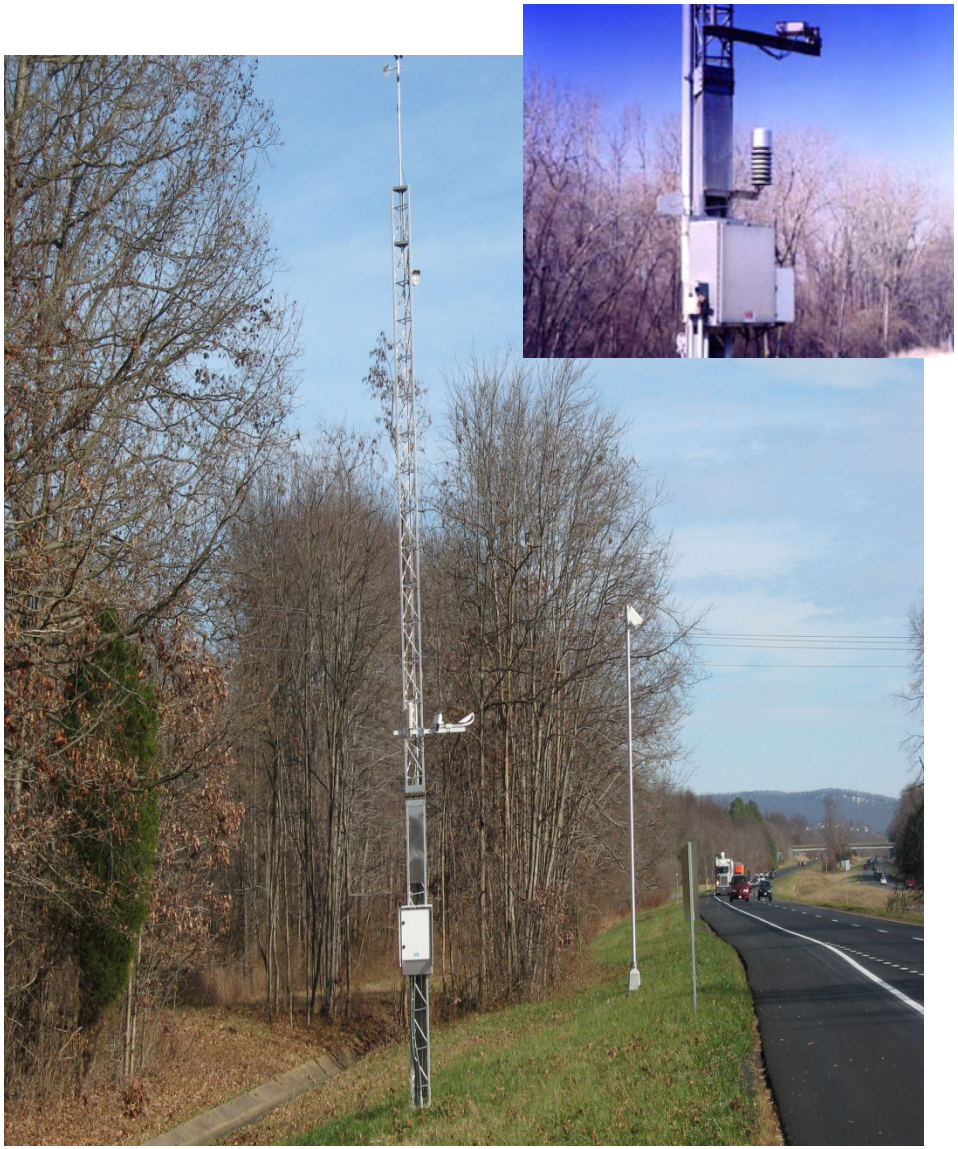
The signage includes regular signs, electronic message boards and variable speed limit signs.



Corridor Entry Signage

Weather Stations

- Three new stations
- 11 existing stations
- Similar technology as used at airports



Cameras

- **24 new traffic cameras installed**
- **Will help VDOT to monitor traffic and weather conditions**
- **Can be viewed on the 511Virginia.org website**

Key Points

- VDOT has taken steps to improve safety for travelers, but conditions will still occur that create hazards for drivers.
- We have installed additional technology to communicate to the public, but we still need drivers to change their behavior and drive to those conditions.
- This is a new application of this technology in Virginia and in the nation, and VDOT will adapt and evolve as we move forward.

Questions?