



Northwest Safety Scanning Tour

April 23-28, 2006

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EXECUTIVE SUMMARY

In recent years an emphasis has been placed on highway safety at the national and state levels. Goals have been set nationally and in the State of Missouri to focus efforts on decreasing the number of fatalities on our highways. In order to meet these goals, it is imperative to look outside the state borders. Traffic Safety expertise exists across the country; among the leaders in safety engineering, enforcement and education are the states of Washington and Oregon.

In April 2006, MoDOT's Traffic Division led a team to these states to learn from them and incorporate new ideas into Missouri's safety efforts. This scanning tour report provides a toolbox of best practices gleaned from a scan of these two states' safety programs.

Scanning Team Composition

The five scan team members offered a range of expertise in traffic operations, safety engineering, data analysis, long-range planning, and local issues. The study benefited from the backgrounds of each team member on the scan. Team members included:

- Brian Chandler, Missouri DOT, Traffic Division
- Dr. Leanna Depue, Missouri DOT, Highway Safety Division
- Capt. Brad Jones, Missouri State Highway Patrol, Traffic Division
- Joe Rickman, Missouri DOT, Springfield District
- Colin McCarthy, Federal Highway Administration, Missouri Division

Key Findings

Missouri has twice as many highway fatalities as either Washington or Oregon, with similar populations and miles traveled to each. It was important for us to find out why.

Seatbelt Use. Washington and Oregon have 94% and 96% compliance rates respectively. In Oregon, the 4% of motorists not wearing seatbelts make up 40% of the traffic fatalities in the state.

Speed Limits and Enforcement. Washington and Oregon aggressively target high-speed drivers, particularly in school zones and work zones. Oregon is the only state west of the Mississippi River with no highways posted above 65 mph.

Roundabouts. Washington is a national leader in roundabout installation, with 89 roundabouts currently in operation. Of particular note, "Partial Multi-lane Roundabouts" at 4-lane road / 2-lane road intersections require two lanes on two sides of the roundabout, but only one lane on the other two sides.

Local Safety Champions. Through safety corridor projects in local communities, training for local engineers, and a myriad of safety-focused advocacy groups, Washington and Oregon have brought the culture of safety to the citizens of their states. Grassroots efforts from local governments and the public have been essential to the sustained safety success in the area.

INTRODUCTION

In recent years an emphasis has been placed on highway safety at the national and state levels. The Federal Highway Administration (FHWA) and the American Association of State Highway and Transportation Officials (AASHTO) have adopted a goal to reduce fatalities on the nation's highways to 1.0 per 100 million vehicle miles traveled by 2008.

In Missouri, the Coalition for Roadway safety has established a goal of 1000 or fewer highway fatalities in the State of Missouri by that same year. In order to meet that goal, the Coalition developed Missouri's Blueprint for Safer Roadways. The Blueprint is a focused document utilizing a partnership approach to outline explicit opportunities to reduce fatalities and serious injuries on our roadways.

To increase safety on Missouri's roads, it was deemed imperative to look outside the state borders. Traffic Safety expertise exists across the country. The Northwest region provides a unique opportunity to learn about another area's efforts.

Technical Transfer Assistance Program

This scanning tour was funded through the Federal Highway Administration's Technical Transfer Assistance Program. Don Neumann, Highway Safety Specialist, provided sponsorship and support for the tour.

Scanning Team Composition

The five scan team members offered a range of expertise in traffic and safety engineering, safety research efforts, human factors, and law enforcement. The scan benefited from the background of each team member. Members included:

- Brian Chandler, Missouri DOT, Traffic Division
- Dr. Leanna Depue, Missouri DOT, Highway Safety Division
- Capt. Brad Jones, Missouri State Highway Patrol, Traffic Division
- Joe Rickman, Missouri DOT, Springfield District
- Colin McCarthy, Federal Highway Administration, Missouri Division

Key Findings

The purpose of this report is to bring ideas from other states back to Missouri safety professionals for discussion and implementation. These innovative practices, if incorporated into Missouri's safety efforts, could greatly impact safety in the state.

- The Key to Low Fatality Rates
- Enforcement and Engineering Efforts
- Pedestrian and Bicycle Safety
- Corridor Safety Programs
- Local Safety Champions

LOW FATALITY RATES

The first question we asked on the tour to Washington and Oregon was how they keep their fatalities low (nearly half of Missouri's deaths each year) with a similar population and miles traveled on the roads

1. Seatbelt Use

Washington and Oregon have primary seatbelt laws and have 94% and 96% compliance rates respectively. In Oregon, the 4% of motorists not wearing seatbelts make up 40% of the traffic fatalities in the state. Both states have high fines for failure to wear seatbelts with Washington's mandatory fine being \$101 and Oregon's \$94.

2. Low Speed Limits

Oregon is the only state west of the Mississippi River with no highways posted above 65 miles per hour. Coupled with high seat belt usage, the physics of automobile crashes at 65 are simply not as spectacular as those at 70 mph and above.

3. Safety Culture

There is a safety culture in the Northwest that goes beyond those whose job is roadway safety. It is prioritized in all roadway work, on the federal, state, and local levels. Local safety champions have been developed region-wide who affect safety across the area.

SAFETY PROGRAMMING

Target Zero

Washington's Target Zero has a lofty goal: No fatalities by 2030. With technological advancements in automobiles over the next two decades and 4-E efforts by safety advocates, Washington is convinced their goal is attainable.

Problem Identification

In Washington, 20% of safety funding is reserved for proactive measures. Accident Reduction Factors (ARF) and projected crashes are used to quantify project benefits. Additionally, Washington emphasizes looking beyond reported crashes. Crash reports do not comprise the complete picture of safety issues on their roadways.

Highway Safety Grants

- In Washington, the Strategic Highway Safety Plan is used as a tool for grantees. If a grant proposal does not match a proven strategy in the plan, it must have a strong evaluation component.
- Oregon's enforcement funding from the Highway Safety Division emphasize training and equipment above overtime. These efforts increase the efficiency and effectiveness of officers in the field, creating local champions across the state.

ENFORCEMENT INNOVATIONS

Troopers in Trucks

Washington State Patrol recently completed an innovative pilot program where an officer rode as a passenger in a tractor-trailer (similar to Trooper on a Train programs). The trooper in the truck notifies waiting officers of any dangerous violations they observed committed by other motorists. The program was very effective in detecting dangerous traffic violations by both automobile and tractor-trailer drivers and recommended use of the program by other agencies.

Speed Enforcement

The City of Lacey aggressively pursues unsafe driving in school zones. A city ordinance was passed to increase the ticket for speeding in a school zone to \$177. On the day our scan team rode along with the officers, they wrote six speeding tickets in 30 minutes near an elementary school.

In the City of Portland, the neighborhood communities drove legislation to allow photo speed enforcement on roads with high crash experience. Vans are staffed with city police officers near schools and on neighborhood collector streets. As the program gained momentum, higher-class roads with documented safety problems were included.

Work Zone Enforcement

Oregon DOT and Oregon State Police began a program in 2003 to enhance law enforcement efforts in their work zones, particularly in the Portland area. Funding is provided through federal safety grants, and this funding is administered by the DOT. The State Police, county sheriff's offices, and city police departments in the area are involved in the program.

Officer Training Facilities

Driving Simulation. In Oregon, the Clackamas County Sheriff's Department recently purchased a driving simulator for in-service training of deputies and other county employees. Many different scenarios can be used with the system including general driving, pursuit, response to other calls, etc. Four stations are integrated into the system and can be put in the same scenario for teamwork exercises to evaluate driver behavior and officer decision-making. The cost of four driving stations, the instructor's station, and projector was approximately \$350,000.

Indoor Firing Range. Other facilities at the sheriff's training facility included a defensive tactics room, Firearms Training Simulator (FATS) room, and two firing ranges. One range is designated for sheriff's department employees and the other for the general public. The sheriff's department offers weapons training to the general public and rents firearms to the participants. The employee range includes a partial vehicle for firearm training from the vehicle, and also a robot for "moving target" training.

ENGINEERING INNOVATIONS

Ramp Metering

Seattle experienced a 30% decrease in the number of merging collisions (and a significant decrease in rear-end crashes) on freeways with ramp meters installed, in addition to the congestion alleviation.

Activated Signing

Oregon's Interstate 5 south of Eugene has a 45 mph curve with a history of severe crashes. The DOT installed variable message boards overhead at this location to warn drivers of this curve. It gives motorists speed information if they are driving above a threshold speed.

Roundabouts

Washington is a national leader in roundabout installation, with 89 roundabouts currently in operation. Of particular note are "Partial Multi-lane Roundabouts" at 4-lane road / 2-lane road intersections, which require two lanes on two sides of the roundabout and one lane on the other two sides.

Incident Response

Washington State DOT and Washington State Patrol developed a multi-agency Incident Response Program in cooperation with local police and fire departments, tow companies, coroners, and other safety partners. Its efforts are designed to reduce the number of secondary collisions and decrease delay on the state's highways. A performance measure of the program is time to clear crashes, with a goal to clear all incidents in less than 90 minutes. A fully developed incident tracking system logs hundreds of incidents in the state, utilizing each region's Traffic Operations Center for response and data collection.

PEDESTRIAN AND BICYCLIST SAFETY

Bus Stop Transitions

In the Seattle area, bus stop transitions are high-risk locations for pedestrians. A number of countermeasures have been tried, including changing bus routes to eliminate the feeling of rush to get to the other bus stop across the street in time.

Portland Safety Efforts

Portland has recently been hailed the "#1 Bicycle City in the Country." As more people use the ped/bike systems in the city, it becomes safer because motorists will be more likely to keep them in mind. About 1/3 of fatalities in the city each year are pedestrians and bicyclists.

Speed Bumps. Portland began a speed bump program on neighborhood collector streets. It was vital to have widespread public support for the program. The City pays 60% of the project, and the neighborhood must come up with the other 40% (typically about \$6000). Nearby businesses and hospitals often pay for some of the neighborhood cost.

Portland Pedestrian Safety Corridors. \$300,000 per year is available to be spent on refuge islands for pedestrians.

Safe Routes to School. An innovation in Portland that has recently caught on is the “Walking School Bus.” An adult volunteer walks to each location to “pick up” students and walk with them to school.

Senior Services. In cooperation with Portland’s transit agency and community senior groups, the City of Portland meets with seniors to educate them about getting around the city as a transit user and pedestrian. Additionally, \$50,000 is used at the senior center for improvements around the center

CORRIDOR TRAFFIC SAFETY PROGRAMS

Safety corridors are segments of roadway identified as high accident areas. A special source of funding was appropriated for enforcement, education, and engineering efforts in those particular areas. In addition, courts were able to enhance fines for traffic violations committed in these areas. It is a short-term project designed to add visibility to an area in need.

Washington

Washington has a detailed program focused on low cost, near term solutions on high-crash corridors statewide (on and off the state system). The program is jointly administered by the DOT and Traffic Safety Commission.

Funding. Education and enforcement efforts are funded by federal safety funds (Section 402), and FHWA incentive funds are used for the engineering countermeasures.

Community Involvement. A vital aspect to the corridor program is community buy-in. During the problem identification process, DOT and WTSC staff visit communities to gauge interest. If there is none, they move to the next community to find commitment. It is truly a grassroots effort. Each group creates their own unique logo for highway signing and educational materials.

Results. Since the inception of the program, corridors have experienced an 11% reduction in injury crashes and a 34% reduction in fatal and disabling injury crashes.

Oregon

At the Oregon DOT, safety corridor projects are designed to be “band-aid” solutions, with knowledge that a more significant project is on the horizon. A comprehensive program guideline document was developed to help locals learn about the program.

Clackamas County partners with local enforcement, local business, and county citizens to improve safety on specially designated corridors in the county. Low cost engineering solutions are coupled with increased enforcement and educational efforts to reduce crashes.

LOCAL SAFETY CHAMPIONS

“Creating local safety champions” was a key phrase we heard again and again on this tour. The Northwest Region recognizes they cannot save their states alone. Grassroots efforts from local governments and the public are essential to the success of safety efforts in the area.

Education

Oregon contracts education efforts of local engineering and enforcement safety partners with the University of Portland. Mojie Takallou travels the state conducting safety engineering workshops and developing local safety champions across the state.

Oregon DOT provides up to \$7 million per year to local jurisdictions for low-cost safety improvements. This is partially funded with Section 163 incentive funds. Relationship building is a vital piece of the local efforts.

Safety Advocacy Groups

Highway Safety Issues Group. Washington DOT has a statewide group that meets to evaluate collision trends, find gaps in the state’s safety program, and complete Benefit/Cost ratio analyses of projects.

County Safety Commission. Clackamas County, Oregon, has a commission comprised of county citizens (including one high school student) who push safety innovation for the area. The commission takes an annual field trip with county staff to discuss locations in the county. Their perspective is invaluable to the safety staff.

Oregon Highway Safety Engineering Committee (HSEC). This group includes member of the DOT and FHWA, and its focus is on funding for safety projects and solicitation of projects in problem areas.

City District Coalitions. Portland has 95 recognized neighborhood associations split into seven districts. Each district coalition is a non-profit organization (partially funded by the city) with an office in the area. The neighborhood associations promote safety locally in their area.

APPENDIX A: SCAN TOUR AGENDA**Sunday, April 23**

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| 2:00 PM (Central Time) | Depart from St. Louis |
| 4:30 PM (Pacific Time) | Arrive in Seattle |
| 6:00 PM | Dinner
Dan Burden, Director of Walkable Communities |

Monday, April 24**Seattle, Washington**

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|-----------------|--|
| 9:00 AM | Introductions
Overview of State and Regional Responsibilities |
| 9:30 AM | Multi-disciplinary approach to High Accident Location Analysis |
| 10:00 AM | Joint Operating Policy Statement with State Patrol |
| 10:45 AM | Seattle's Traffic Management Center Tour |
| 11:15 AM | Highway Safety Corridor Program |
| 11:45 AM | Shoulder and Centerline Rumble Strips |
| 12:00 PM | Lunch |
| 1:00 PM | Field Check – Roundabouts in University Place, Tacoma, Olympia |
| 5:00 PM | Dinner in Olympia |

Tuesday, April 25**Olympia, Washington**

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|-----------------|--|
| 7:00AM | Lacey, Washington - School Zone enforcement ride-along |
| 8:15 AM | Roundabout Tour in Lacey |
| 9:15 AM | Topical Discussions (Incident Management, Median Crossovers, etc.) |
| 10:30 AM | Washington's Strategic Highway Safety Plan |
| 11:30 AM | Corridor Safety Program |

12:30 PM Lunch / Traffic Records System
1:30 PM Data Uses
2:00 PM Head to Oregon

Wednesday, April 26

Salem, Oregon

8:00 AM Introductions
Overview of Region and State responsibilities

8:45 AM Local Safety Presentation – Mojie Takallou, University of Portland

9:30 AM Highway Safety Office – Troy Costales
Problem identification
Relationship with DOT
Non-traditional partners
Organizational structure
Oregon State Police – Capt. Gregg

11:00 AM Safety engineering locations in Salem – Doug Bish
Pedestrian facilities, bike paths, etc.

12:00 PM Lunch – Downtown Salem

1:00 PM More safety engineering locations in Salem – Doug Bish

2:00 PM Topical Discussions and Research Projects
Dynamic speeds for active curve warning – Doug Bish
Traffic Safety Corridors – Doug Bish / Anne Holder
Variable speed limits – Doug Bish
High accident location analysis – Doug Bish
SPIS (Safety Priority Index System) – Doug Bish
High Risk Rural Roads

5:00 PM Dinner at Caruso's in Salem – Troy Costales

7:00 PM Travel to Portland

Thursday, April 27

Portland, Oregon

- 8:00 AM** Introductions
- 8:15 AM** Safe Communities – Mark Lear
Traffic Calming
Mapping
- 10:00 AM** Research Topics – Chris Monsere, Portland State University
- 11:30 AM** Lunch – Downtown Portland
- 12:30 PM** Travel to Clackamas County
- 2:00 PM** County Issues – Joe Marek
Traffic Safety Corridors
Incident Response
- 4:00 PM** Clackamas Driving Simulator, Firing Range
- 6:00 PM** Dinner at Multomah Falls

Friday, April 28

- 11:00 AM (Pacific Time)** Depart from Portland
- 2:15 PM (Mountain Time)** Arrive in Denver
- 3:40 PM (Mountain Time)** Depart from Denver
- 6:40 PM (Central Time)** Arrive in St. Louis
- 9:00 PM (Central Time)** Arrive in Jefferson City

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