Central Lane Metropolitan Planning Organization Transportation Safety Action Plan

TRAVEL IN THE SAFE LANE

CENTRAL LANE MPO

RESOLUTION 2017-02

ADOPTING THE CENTRAL LANE METROPOLITAN PLANNING ORGANIZATION TRANSPORTATION SAFETY ACTION PLAN (TSAP)

WHEREAS, the Lane Council of Governments (LCOG) has been designated by the State of Oregon as the official Metropolitan Planning Organization (MPO) for the Central Lane region; and

WHEREAS, the LCOG Board has delegated responsibility for MPO policy functions to the Metropolitan Policy Committee (MPC), a committee of officials from Eugene, Springfield, Coburg, Lane County, Lane Transit District, and ODOT; and

WHEREAS, the draft TSAP document has been published or otherwise made readily available for public review including in an electronically accessible format on the MPO's website; and

WHEREAS, a public review and comment period has been conducted, and the Metropolitan Policy Committee has approved the public review process; and

WHEREAS, as part of a coordinated planning effort the TSAP recommendations reflect regional priorities for implementation of safety strategies; and

WHEREAS, the primary purpose of the TSAP is to inform regional transportation safety strategies.

NOW, THEREFORE, BE IT RESOLVED:

That the Metropolitan Policy Committee adopts the Central Lane Transportation Safety Action Plan as set forth in Exhibit A, attached to and incorporated within this resolution by reference.

PASSED AND APPROVED THIS 6th DAY OF APRIL, 2017, BY THE METROPOLITAN POLICY COMMITTEE.

ATTEST:

Christine Lundberg, Chair
Metropolitan Policy Committee

Brendalee Wilson, Executive Director
Lane Council of Governments

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Executive Summary

Central Lane Metropolitan Planning Organization envisions a strong culture of safety that prioritizes safety for all people and will support and amplify ongoing regional efforts to move towards a goal of zero serious and fatal crashes on the regional transportation system.

Central Lane Metropolitan Planning Organization's (CLMPO) Regional Safety and Security Plan is the first of its kind for our region. In 2015, the MPO and Lane County began collaborating on an innovative planning process that addresses the growing need to prioritize safety throughout our transportation system. The result of that effort is this The Safe Lane, a safety action Plan that establishes a regional vision and goals that set the groundwork for systematic changes to our transportation system. The plan includes strategies and performance measures to track progress throughout implementation. The Safe Lane is closely aligned with the goals of Oregon Department of Transportation's Transportation Safety Action Plan, and envisions a future culture of safety that prioritizes safety for all people regardless of mode and recognizes the importance of every life traveling on our transportation network. This vision provides a new way of thinking about death and severe injuries on our transportation network, as something preventable rather than inevitable.

The 2005, federal transportation legislation "Safe, Accountable, Flexible, Efficient, Transportation Equity Act (SAFETEA-LU)" both established safety as federal priority and required safety as a separate planning factor. This priority has been maintained through both subsequent transportation bills including "Moving Ahead for Progress in the 21st Century (MAP 21)" and most recently the 2015 "Fixing America's Surface Transportation Act (FAST ACT)". As a Metropolitan Planning Organization (MPO), CLMPO recognizes the importance of meeting the federal requirements of performance based planning and the role of safety within that model. Furthermore, our region has experienced increasing fatal and severe injuries over the past few years and the MPO and its partner jurisdictions have refocused their efforts on transportation safety. There is a strong desire throughout the region to go beyond fulfillment of federal requirements. While vehicle and technology improvements over the last few decades have helped to improve road safety, the numbers from 2015 mark an increase in crashes locally, throughout Oregon, and across the country. The number of traffic deaths in Oregon rose 27% between 2014 and 2015, the largest increase in 50 years. These fatalities and severe crashes deeply impact our families and our broader communities.

As a response to this growing issue, the Secretary of Transportation Anthony Foxx recently said "These numbers are a call to action Everyone with a responsibility for road safety – the federal, State and local governments, law enforcement, vehicle manufacturers, safety advocates and road users – needs to reassess our efforts to combat threats to safety. USDOT will redouble our efforts on safety and we expect our partners to do the same." In October of 2016, US DOT launched a coalition to end road fatalities called 'Road to Zero'- that embraces the vision of zero deaths on our roads. With the understanding that our community deserves and expects safe streets, Central Lane MPO is elevating the

importance of improving safety in our region and is a key partner in these national efforts. The purpose of this plan is to create a regional policy framework that regards traffic crashes as preventable incidents that can be addressed in a systemic way.
This data driven planning process uses a systems approach to examining the key transportation safety and security issues for all modes within the MPO. Based on these data, the planning process created six goals to guide strategies and programs throughout the region to reduce overall fatal and severe crashes.

- Create a culture of safety and shared responsibility,
- Build infrastructure that is safe for all people regardless of mode and ability,
- Create a transportation network that supports livable communities,
- Prepare for advanced technologies,
- Focus on collaboration and cooperation between and within regional agencies,
- Invest in Safety

Introduction

Federal Traffic Safety Summary

Roadway safety is a growing national concern. Motor vehicle deaths are the leading cause of death for Americans between the ages of 3 and 34. In 2014, 32,675 people died and 2.3 million people were severely injured in motor vehicle crashes across the nation. The National Highway Traffic Safety Administration reported the economic and societal impact of motor vehicle crashes totaled $277 billion in 2010.

Nationwide, more traffic fatalities are occurring in rural areas than urban ones. Rural fatalities accounted for 54% of all traffic fatalities in 2013. Rural roadway safety concerns urban dwellers as well because these collisions rates are disproportionate to rural populations. The US Census Bureau indicates that only 19% of the US population lives in rural areas. In 2013, the fatality rate per 100 million vehicles miles traveled was 2.6 times higher in rural areas than in urban areas (1.88 and 0.73, respectively).

The Federal Strategic Highway Safety Plan (SHSP) provides a comprehensive framework for reducing highway fatalities and severe injuries on all public roads. The SHSP is developed by the State Department of Transportation in a cooperative process with Local, State, Federal, Tribal and other public and private sector safety stakeholders. It is a data-driven, multi-year comprehensive plan that establishes statewide goals, objectives, and key emphasis areas and integrates the four Es of highway safety – engineering, education, enforcement and emergency medical services (EMS). The SHSP allows highway safety programs and partners in the State to work together in an effort to align goals, leverage resources and collectively address the State's safety challenges.

The SHSP is a major component and requirement of the Highway Safety Improvement Program (HSIP), which is a core federal-aid program that was originally created in 2005, under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and continued with Fixing America's Surface Transportation (FAST) Act. The HSIP requires all states and MPOs to develop, implement, evaluate and update an SHSP that identifies and analyzes highway safety problems to guide investment decisions toward strategies and countermeasures with the most potential to save lives and prevent injuries.

The FAST Act slightly increased safety funding and created new "jurisdictionally blind" safety program called All Roads Transportation Safety (ARTS) to ensure that HSIP funding would be spent on all public roads – using a data-driving approach. (More information about how this program is administered through the Oregon Department of Transportation is provided in the following section regarding state programs.) The FAST Act also changed the HSIP to concentrate funds towards engineering and infrastructure improvements by not allowing these funds to be used for education and enforcement. The National Highway Safety Administration (NHTSA) provides enforcement and education funding to improve traffic safety, which is administered through the ODOT Transportation Safety Division.

State Traffic Safety Summary

The Oregon Transportation Safety Action Plan (TSAP) serves as the state's SHSP and provides long-term goals, policies and strategies and near-term actions to eliminate deaths or life-changing injuries on Oregon's transportation system by 2035. Historically, transportation-related fatalities in Oregon have trended downwards. Since 2013, however, there has been an annual increase in transportation fatalities in Oregon, with 313 deaths in 2013, 357 deaths in 2014, and 450 deaths in 2015. The economic cost of fatal crashes is estimated to be $842 million for ODOT Region 2 (the area encompassing Lane County and 9 other counties in the northwestern part of the state) which is the highest of any other region in the state.

Historically the Oregon Department of Transportation (ODOT) has spent the Highway Safety Improvement Program (HSIP) funding only on state highways. However, half of the fatalities and severe injuries occur on non-state roadways. In order to address this concern and to comply with the federal requirement that the HSIP funding be spent on all public roads, ODOT has developed a "jurisdictionally blind" safety program, known as the All Roads Transportation Safety (ARTS) Program, to address safety problems on all public roads in Oregon. The objective of the ARTS Program is the same as that of the HSIP – to reduce fatalities and serious injuries on all public roads using a data-driven approach.

While the HSIP identifies funding for infrastructure safety improvements, the National Highway Safety Administration (NHTSA) provides funding for education and enforcement programs to improve traffic safety. These funds are administered locally through ODOT's Transportation Safety Division, which include the following programs: Driver Education; Impaired Driving; Law Enforcement; Motor Cycle Safety and Vehicle Equipment Standards; Occupant Protection; Pedestrian Safety, Safe Routes to School, and Bicycle Safety; Roadway Safety, Safety Corridors, Work-Zone Safety; Safe Communities; and Safe and Courteous Driving.

Central Lane MPO Traffic Safety Summary

In 2014, Lane County had more traffic fatalities than any other county in Oregon. Traffic crashes are the leading cause of death in Lane County and is in the top three major causes of injury related deaths for children (Table 1). There are some key differences in the types of crashes that occur in the urban and rural areas.

Table 1: Leading Cause of Death by Age Group

Leading Causes of Death, by Age Group, Lane County, Oregon 2009-2013						
Rank	**< 1 year old**	**1 to 14**	**15 to 24**	**25 to 44**	**45 to 64**	**65+**
1	Perinatal Conditions (247)	**Accidents (unintentional injuries) (3.01*)**	**Accidents (unintentional injuries) (18.8)**	**Accidents (unintentional injuries) (38.2)**	Malignant neoplasms (202)	Malignant neoplasms (960)
2	Congenital Malformations (68.9)	Malignant Neoplasms (2.63*)	Intentional self-harm (suicide) (9.58)	Intentional self-harm (suicide) (23.5)	Diseases of heart (73.3)	Diseases of heart (895)
3	SIDS (57.4*)	Intentional Self-Harm (suicide) (**)	Malignant neoplasms (2.05*)	Malignant neoplasms (18.2)	**Accidents (unintentional injuries) (48.4)**	Chronic lower respiratory diseases (335)
4	**Accidents (unintentional injuries) (34.4*)**	Assault (Homicide) (**)	Assault (Homicide) (**)	Alcohol-induced deaths (10.5)	Alcohol-induced deaths (44.5)	Alzheimer's disease (270)
Leading Causes of Injury Deaths by Age Group, Lane County2009-2013						
Rank	**< 1 year old**	**1 to 14**	**15 to 24**	**25 to 44**	**45 to 64**	**65+**
1	Unspecified Non-transport accidents (**)	**Motor Vehicle Accidents (**)**	**Motor vehicle Accidents (8.56)**	Accidental Poisoning (23.0)	Accidental Poisoning (19.4)	Falls (119)
2	Accidental Poisoning (**)	Unspecified Non-Transport Accidents (**)	Accidental Poisoning (5.82)	**Motor vehicle Accidents (8.85)**	**Motor vehicle Accidents (12.8)**	Unspecified Non-Transport Accident (19.9)
3	NA	Accidental Drowning (**)	Accidental Drowning (2.05*)	Unspecified Non-Transport Accidents (2.79)	Falls (5.15)	**Motor Vehicle Accidents (14.5)**
* Rate may be statistically unreliable; interpret with caution						
** Rate supressed; statistically unreliable						
Source: Oregon Death Certificates: Center for Health Statistics, Center for Public Health Practice, Public Health Division, Oregon Health Authority. Query Date: 10/07/2015 OPHAT v 2.0						

While rural Lane County roads experience more fatal and severe crashes overall, there are more crashes involving people walking and biking in the MPO boundary. Over the five year

period of 2010-2014, The MPO experienced an average of 9 fatalities and 68 severe injuries on its transportation system. These fatalities and injuries have dramatic impacts on the individuals and families in our communities and efforts can be made to reduce the number of tragedies on the regional transportation system.

This planning framework is focused on reducing the number of severe-injury and fatal traffic collisions in CLMPO. However, other regional transportation safety planning efforts are also underway to reduce severe-injury and fatal collisions in Lane County, including

- The Lane County Transportation Safety Action Plan (shares a framework with this plan),
- The City of Eugene Vision Zero Resolution that sets as official policy that no loss of life or serious injury on Eugene's transportation system is acceptable;
- The Cities of Eugene and Springfield accepted the US Department of Transportation (USDOT) Secretary Foxx's "Mayors' Challenge for Safer People and Safer Streets" to raise the bar for bicyclist and pedestrian safety.
- Lane Transit District's Vision Zero Resolution that adopts a vision of reducing deaths and serious injuries from transportation related crashes to zero.
- Local Transportation System Plans prioritize safety through policy, program, and project design.

Planning Process

This plan was a collaborative effort with Lane County with active participation from all regional transportation safety partners. The planning process shared data collection, analysis, and stakeholder engagement. This work received funding from Oregon Department of Transportation (ODOT) and built upon the 2016 update to ODOT's Transportation Safety Action Plan. This plan is based on an integrated performance based planning approach that provides:

- A data-driven determination of priority safety issues (Emphasis Areas)
- Goals to support a transportation safety culture
- Multidisciplinary safety solutions to reduce fatal and severe-injury collisions through education/encouragement, engineering, enforcement, evaluation, emergency medical service and equity (the Safety E's)

Over several months, Lane County and LCOG staff evaluated countywide crash data with stakeholders across the region. The planning process had a guiding stakeholder advisory group that met three times over the course of 11 months. This planning process relies on input from a diverse group of stakeholders from multiple disciplines including law enforcement, engineering, education and marketing, advocacy, emergency medical service, transportation planning, and public health. Agencies represented include:

- City of Eugene Police Department
- City of Springfield Police Department
- Lane County Sheriff
- City of Eugene Engineering and Public Works
- City of Springfield Development and Public Works
- Lane County Engineering and Public Works
- Oregon Department of Transportation - Region 2
- Safe Routes to Schools - Eugene School District 4J
- Oregon Department of Transportation Driver Education Program
- Mothers Against Drunk Driving (MADD)
- Raise Minimum Driving Age in Oregon
- Lane County Fire Authority
- McKenzie Fire and Rescue
- Eugene and Springfield Fire Department
- Lane County Public Health
- Community advocates

Additionally, there were three focus groups that expanded community outreach to more partner agencies and advocates. The focus groups each addressed one of the emphasis areas –Risky Behaviors, Vulnerable Users, and Infrastructure. While the focus of this plan is to reduce the overall number of severe-injury and fatal collisions in Central Lane MPO, the solution set recognizes that safety is a personal concern to family and friends who have lost a loved one.

Relationship to the Regional Transportation Plan

This Safety Action Plan is a standalone document that functions as a component of the Regional Transportation Plan (RTP). This plan will take on the review and adoption schedule of the RTP. The goals, objectives, and performance measures contained in this plan support the safety policy and objectives set forth in the currently adopted Regional Transportation Plan. Specific policies and objectives of the 2035 RTP that relate to this safety plan include:

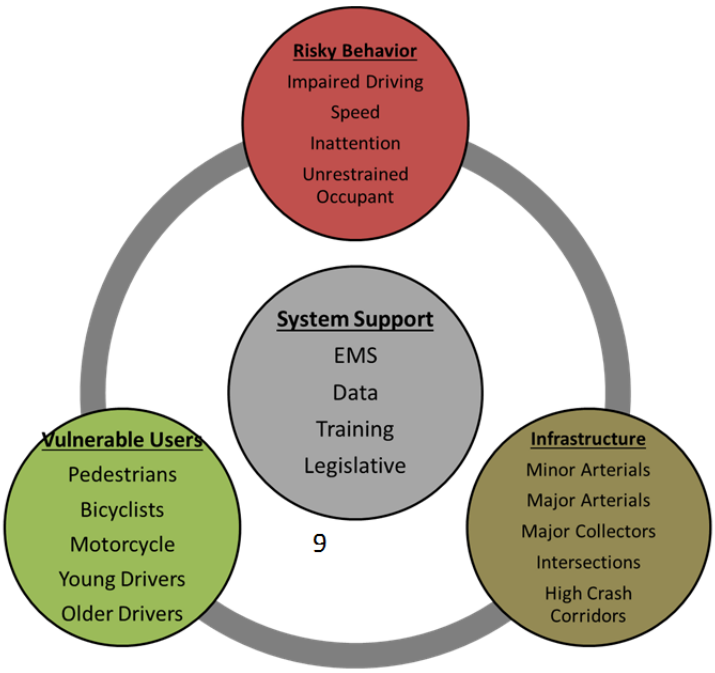
- **Objective #1: Safety**. Improve safety for users of all transportation modes through design, operations, maintenance, improvements, public information, and law enforcement.
- **Transportation Demand Policies** (TDM Policy #1: TDM Program Development)
- **Transportation System Improvement- System Wide Policies** (TSI System-Wide Policy #2: Intermodal Connectivity, TSI System-Wide Policy #4: Neighborhood Livability)

- **Transportation System Improvement- Roadway Policies** (Roadway Policy #1: Mobility and Safety for all Modes)
- **Transportation System Improvement- Bicycle Policies** (TSI Bicycle Policy #1: Bikeway System and Support Facilities, TSI Bicycle Policy #2: Bikeways on Arterials and Collectors, TSI Bicycle Policy #3: Bikeway Connections to New Development, TSI Bicycle Policy #4: Implementation of Priority Bikeway Miles
- **Transportation System Improvement- Pedestrian Policies** (TSI Pedestrian Policy #1: Pedestrian Environment, TSI Pedestrian Policy #2: Continuous and Direct Routes, TSI Pedestrian Policy #3: Sidewalks

The data analysis and public involvement in this plan will provide a foundation for future safety goals and performance measures in upcoming RTP processes.

Emphasis Areas

The emphasis areas in this plan reflect those set forth in the 2016 ODOT Transportation Safety Action Plan; Vulnerable Users, Infrastructure, Risky Behaviors, and Foundational (titled Improved Systems in the ODOT TSAP). The project team and stakeholder group recognized the need to have a consistent framework and language between state and regional planning documents. These emphasis areas were brought to the stakeholder advisory committee to ensure that they met the needs of the region and provided the appropriate framework to understand local issues. Figure 1 shows the types of crashes that are captured in each emphasis area. The figure shows the interrelatedness of these categories, a single crash can include risky behaviors, vulnerable users, and higher risk road categories. More detailed information about the emphasis area development can be found in Defining the Problem section.



- **Vulnerable Users**
  This group includes people walking, biking, or on a motorcycle; and vulnerable ages such as elderly and young drivers. These groups are the most at-risk users of the transportation system. They travel on our transportation network with less physical protection than those traveling in cars or on transit. Elderly drivers are a relatively small percentage of overall crashes, but are more susceptible to severe injuries and fatalities when they are involved in a crash. Young drivers need additional support as they learn to navigate the transportation network. Addressing the needs of vulnerable users it vital to improving overall safety in our region and building a transportation the serves all ages and abilities.

- **Infrastructure**
  Fatal collisions occur most frequently on high-volume, high-speed roadways, such as state highways, arterial and collector roads. The most common causes are speed and roadway departure (on rural roads). There are a number of proven infrastructure improvements that provide opportunities to improve safety on high crash corridors and intersections.

- **Risky Behaviors**
  We know that speeding and driving under the influence of intoxicants (DUII) are the behaviors associated with increased risk for fatal and severe crashes on the transportation system. Excessive speed and DUII are leading contributing factors to fatal collisions in Lane County; these behaviors often occur together and can contribute to roadway departures on rural roads. Regional data on districted driving are limited; but recent studies conducted by AAA indicate that this behavior is common and is a growing issue on our roads.

- **Foundational**
  The foundational emphasis area is a key piece of continued improvement in all aspects of safety. It includes ongoing data collection and reporting, emergency management, the legislative environment, and staff training is important foundational factors that can influence safety on our transportation

Addressing these issues requires a strong coalition between the engineering, enforcement, emergency medical response, and education communities. The planning process revealed the need to coordinate safety efforts, both across disciplines and agencies. There is a strong interest from the broad group of stakeholders to create a focused implementation and coordinating effort across disciplines and agencies on a more regular basis. An inventory of existing engineering, education, enforcement, and emergency medical services and programs is included in Appendix A.

The goals and actions in this plan are multidisciplinary and broadly follow the six Es approach to transportation safety:

1. **Education/Encouragement-** Implemented through governments, transportation options groups, businesses, and advocacy groups, this approach uses marketing, outreach, and education to help transportation system users become more aware of transportation safety issues, their behavior, and their responsibility for contributing to a safety culture. Education strategies continually evolve to gain people's attention and change their behavior.

2. **Enforcement-** Implemented through local and state law enforcement agencies, this approach focuses on new and strategic enforcement techniques to reduce severe and fatal crashes. Enforcement of traffic laws and a visible police presence can deter motorists from unsafe driving behaviors. Better collaboration between enforcement and planning can bring more resources and new ways of understanding the problem. Increased enforcement should be implemented equitably across the community, and use limited resources in the most efficient and effective manner possible.

3. **Engineering**-Implemented through local planners and traffic engineers, this approach designs and builds a transportation system that prioritizes safety for all modes. Engineering addresses roadway infrastructure improvements to prevent crashes or reduce the severity of collisions when they occur. Engineers can ensure safety is a primary consideration in project design and development. Incorporating new street design standards that better address the needs of people walking, biking and taking transit such as National Association of Transportation of City Officials (NACTO) street design guide can provide new engineering solutions.

4. **Evaluation**- Implemented throughout all plan actions to measure and review effectiveness and track progress. Evaluate plans, processes, and systems continuously improve the regional strategies focused on safety.

5. **Emergency Medical Services -** Emergency medical services (EMS) staff understands response times are the key to survival for people involved in crashes. The EMS community can work with traffic management and transportation planning staff to improve response time to crash sites despite traffic delays and obstructions.

6. **Equity**- Implemented by local government as a lens in which we view all of the adopted goals, approaches, and actions to ensure that implementation does not disparately impact or ignore any population of our community.

Vision, Goals and Strategies

The vision statement for CLMPO safety plan is ***Central Lane Metropolitan Planning Organization envisions a strong culture of safety that prioritizes safety for all people and will support and amplify ongoing regional efforts to move towards a goal of zero serious and fatal crashes on the regional transportation system.*** The intent of this vision is to move beyond a culture that accepts death as part of our transportation system to a culture that recognizes that we have the ability and responsibility to prevent these crashes. The MPO will continue to collaborate and support our partner agencies in working towards this common vision. The long term goals for this plan expand on this vision for transportation safety in Central Lane MPO. The following six goals provide concrete ways in which the MPO and its partners can begin to realize this vision for safety in our region.

Goal 1: Create a Culture of Safety and shared responsibility -The culture around transportation needs to evolve so that all road users understand the risk and responsibility they have when traveling on our transportation network. This goal begins with our public partner agencies creating a safety culture that prioritizes saving lives; and continues by expanding beyond the public sector to create recognition among all community members that safety is the priority for all people.

Goal 2: Build infrastructure that is safe for all people regardless of mode and ability - Recognize the role of engineering in building a safer- to make it harder for human error to impact safety outcomes. Plan, design, construct, operate, and maintain transportation systems to reduce fatalities and severe injuries for users of all modes.

Goal 3: Create a transportation network that supports livable communities -Ensure that we are building walkable and bikeable streets that comply with regional livability standards. Support planning, design and implementation of safe systems, enforcement, and emergency response services.

Goal 4: Prepare for advanced technologies -Research and prepare regional policies for future automation of vehicles, signal, and infrastructure technology. Stay up to date on the role of technology in improving safety through vehicle improvements such as vehicle automation and enforcement technologies.

Goal 5: Focus on collaboration and cooperation between and within regional agencies -Create and support a collaborative environment for safety providers and transportation system planners and owners, and public and private stakeholders, including advocacy groups and health providers to work together to reduce crash frequency and severity.

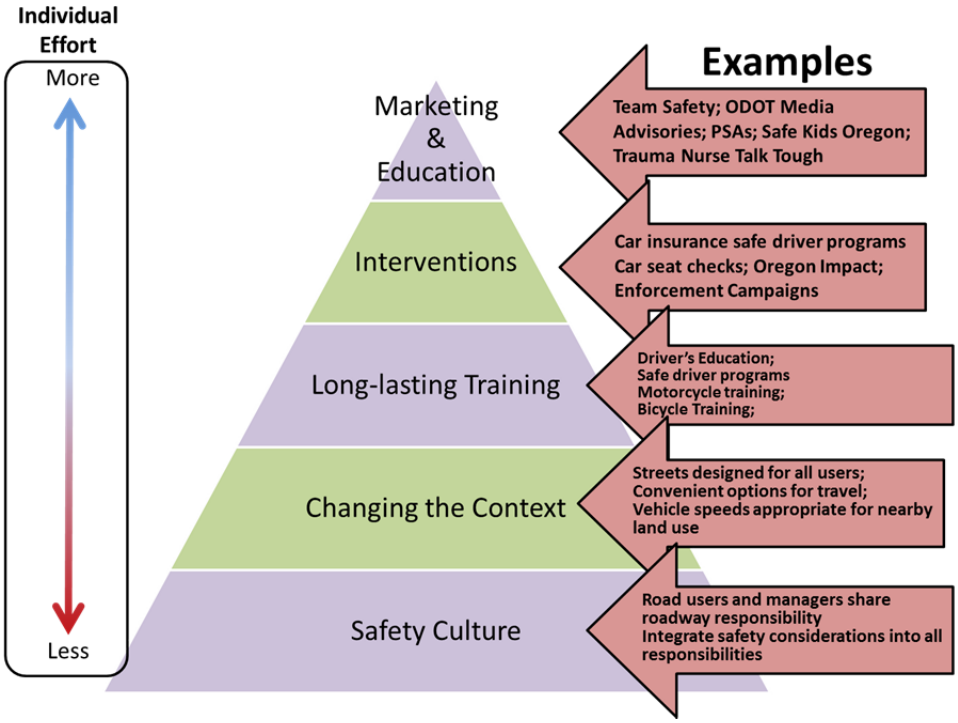
Goal 6: Invest in safety. Invest in our regional transportation dollars in safety projects. Use data to prioritize funding strategically on high crash corridors and to provide safer intersections, pedestrian and bicycle facilities, and lower speeds where possible.

Health Impact Pyramid and Transportation Safety Planning

The public health field has adopted a health impact pyramid to understand what types of interventions, countermeasures, and strategies make the greatest impact on community change. This type of model can also be applied to changes in transportation safety culture. The following pyramid applies the health impact model to the types of interventions, strategies, and countermeasures that are implemented to prevent fatal and severe traffic crashes.

The base of the pyramid consists of categories that make more broad societal changes on transportation safety, such as income and educational attainment and street design. Moving up the pyramid, the interventions become more targeted towards groups or individuals. This includes thing such as enforcement, education, and marketing. These have shown to be effective, but can require more effort because the intervention is at an individual rather than community wide level. All levels of the pyramid are important points of change and express the need to have a multi-pronged approach to creating safety strategies.

Figure 2: Transportation Safety Pyramid



The strategies for this plan are broken into short term strategies and mid-long term strategies. The short term strategies will implemented within the first 5 years of the plan adoption period. The mid-long term strategies will be implemented within 6-10 years. This action plan will be adopted into the next Regional Transportation Plan and will be revised and updated as part of the planning process on a 4 year schedule.

Short Term Strategies (STS) (1-5 years)

- **STS 1** Work with partner agencies to educate community about the importance of following speed limits including outreach campaigns and collaborating with local employers and schools.
- **STS 2** Support additional enforcement staff resources to address traffic safety in an equitable way throughout the region.
- **STS 3** Research the use of technology in enforcement for our region.
- **STS 4** Coordinate workgroup of planners, public health, law enforcement, private businesses, and other partners to create strategies to reduce driving under the influence.
- **STS 5** Work with law enforcement to better understand how distracted driving data are collected and explore opportunities to improve data collection
- **STS 6** Conduct Education campaigns about distracted driving.
- **STS 7** Work with regional agencies to enforce existing law; promote community knowledge of existing crosswalk laws through outreach campaigns.
- **STS 8** Develop and executed targeted campaigns about helmet use, high visibility and protective clothing
- **STS 9** Work with partner agencies to provide protected bicycle facilities and intersection improvements such as improved crossings, buffered bike lanes, cycle tracks, multi-use paths, or low-traffic alternative routes to high-volume and/or high speed roadways.
- **STS 10** Raise public awareness about the safest places to walk and bike in the region
- **STS 11** Raise public awareness about the risks of driving a motorcycle. Continue to track motorcycle related fatalities.
- **STS 12** Conduct targeted outreach to young drivers, promote transportation options to and from school at high schools (expand SRTS to high school)
- **STS 13** Continue support of regional policies and actions that reduce the reliance on driving such as promoting walking, biking, and transit
- **STS 14** Continue to track federal safety performance measures and create and annual state of safety report that is presented to local policy makers.
- **STS 15** Create Lane Safe Communities Program that works cross jurisdictionally to support safety policies and actions throughout the MPO.

- **STS 16** Research and become knowledgeable about the impact of driverless (autonomous and connected) vehicles on safety, mobility, infrastructure, transit.
- **STS 17** Elevate safety to equal importance as mobility in regional transportation policies.
- **STS 18** Collaborate with emergency service providers to better understand barriers and opportunities to improve response times across the region (could include infrastructure needs, data collection and sharing, or grant writing)

Mid to Long Term Strategies (M-LTS) (6-10 years)

- **M-LTS 1** Work with ODOT and local jurisdictions within MPO to address policies related to speed reductions on high crash corridors and refine speed limit change policies. For example, Portland's ODOT approved alternative speed assignment policy that includes the relationship of people walking and biking to auto speed.
- **M-LTS 2** Encourage the use of additional technology, such as speed cameras, to increase public accountability and create a culture of safety.
- **M-LTS 3** Collaborate and build partnerships with Transportation Network companies, cabs, and transit to reduce driving under the influence. Pursue partnerships with local alcohol companies to prevent driving under the influence such as the Respect Your Neighborhood, Respect Yourself campaign.
- **M-LTS 4** Work with regional agencies to develop safer crosswalk design. Incorporate new street design standards that address people walking and biking.
- **M-LTS 5** Integrate safety strategies with Transportation Options work throughout the region including Point2point and Safe Routes to School.
- **M-LTS 6** Invest in more regional bike infrastructure including bike lanes and separated or buffered paths.
- **M-LTS 7** Work with Department of Motor Vehicles (DMV) and school districts to improve driver education for new and young drivers.
- **M-LTS 8** Develop a corridor approach to safety implementation including performance measures for high crash corridors, engineering upgrades, outreach, and enforcement.
- **M-LTS 9** Refine performance measures over time to incorporate changes in infrastructure and technology.
- **M-LTS 10** Incorporate driverless vehicle safety goals into Intelligent Transportation System Plan (ITS) and RTP.

Findings and Associated Strategies

Table 2 shows the findings from the safety planning process and which goals and strategies are planned to address each problem. The findings are organized by emphasis area.

Table 2: Findings and Strategies

Finding/Problem	Goal	Emphasis Area	Short/Mid/Long Term Strategies	E
Excessive speed is a major contributing factor to fatal and sever injuries in the MPO	Safety Culture	Risky Behaviors- Speed	STS-1 M-LTS 1	Education/ Engineering / Equity
Increased enforcement including, automated enforcement has been shown to reduce speeding (see Appendix B)	Safety Culture, Prepare for Advanced Technology	Risky Behaviors- Speed	STS-2 & 3 , M-LTS 2	Enforcement/ Equity
Alcohol and drugs are a major contributing factor to fatal and sever injuries in the MPO	Safety Culture, Prepare for Advanced Technology	Risky Behaviors- Drug and Alcohol	STS 4, M-LTS 3	Education/ Equity
Distracted Driving is occurring in all demographics throughout the region, but infraction data are currently limited	Safety Culture, Focus on collaboration and cooperation	Risky Behaviors- Distracted Driving	STS 5& 6	Education/ Evaluation / Equity
61% percent of fatal and severe traffic crashes involve vulnerable users (pedestrian, bike, young and old drivers)	Safety Culture, Build infrastructure, Invest in Safety, Collaboration	Vulnerable Users- Bike / Ped	STS 7, M-LTS 4	Engineering/ Education/ Equity
Over 50% of pedestrian fatal and severe injuries occur on minor and principle arterials, is primarily an urban issue	Safety culture, Collaboration	Vulnerable Users- Bike / Ped	STS 7, M-LTS 5	Education/ Equity
Compared with motorized transport bicycle travel much riskier, nearly 5 times riskier (on minor arterials)	Safety Culture, Build infrastructure, Invest in Safety, Collaboration	Vulnerable Users- Bike / Ped	STS 8, M-LTS 5	Education/ Equity
Bike lanes offer significant protection, reducing the injury crash rate by 77%	Safety Culture, Build infrastructure, Invest in	Vulnerable Users- Bike / Ped	STS 9 & 10, M-LTS 6	Education/Engineering /Equity

Finding/Problem	Goal	Emphasis Area	Short/Mid/Long Term Strategies	E
	Safety, Collaboration			
Past research confirms riding a motorcycle incredibly risky – 58 times more dangerous compared to driving	Safety Culture, Build infrastructure, Invest in Safety, Collaboration	Vulnerable Users-Motorcycle	STS 11	Education/ Equity
Young drivers over represented in fatal and severe injuries	Safety Culture, Build infrastructure, Invest in Safety, Collaboration	Vulnerable Users-Young Drivers	STS 12, M-LTS 7	Education / Equity
60% of all fatal and sever injuries in the urban area occur on principal and minor arterials	Safety Culture, Build infrastructure, Invest in Safety, Collaboration	Infrastructure	M-LTS 8	Education, Engineering, Enforcement/ Equity
Annual costs of crashes over $300 million a year in Lane County	Safety Culture, Build infrastructure, Invest in Safety, Collaboration	Infrastructure	M-LTS 9	Engineering/ Equity
Increases in vehicle miles travelled (VMT) generally correlate with increases in fatal and severe crashes. With recent VMT increases, the number of traffic deaths in the United States rose 8% between 2014 and 2015, the largest increase in 50 years, with the biggest increases in Oregon (27%).	Safety Culture, Build infrastructure, Invest in Safety, Collaboration	Infrastructure/ fundamental	STS 13	Education/ Engineering/ Equity
Understanding existing conditions is fundamental to making changes to our transportation network	Safety Culture, Build infrastructure, Invest in Safety, Collaboration	Foundational	STS 14, M-LTS 10	Evaluation/ Equity

Finding/Problem	Goal	Emphasis Area	Short/Mid/Long Term Strategies	E
Collaboration and communication among partner agencies is essential to making broad change across our transportation network	Safety Culture, Build infrastructure, Invest in Safety, Collaboration	Foundational	STS 15	Education/ Evaluation/ Equity
Vehicle safety is continuing to improve with the dramatic change in the autonomous and connected industry	Safety Culture, Build infrastructure, Invest in Safety, Collaboration, Prepare for Advanced Technologies	Foundational	STS 16, M-LTS 11	Engineering/ Evaluation/ Equity

Defining the Problem

To understand where the most impact can be made to improve safety conditions, the Central Lane MPO together with Lane County and the stakeholders analyzed historical and current crash data from our region. The benefit of having a data driven process is to explore in detail who was involved in crashes, what factors contributed to the crash, and where on our transportation network the crash occurred. The following chapter gives a broad overview of the data sources, a broader regional data summary and more refined data related to each of the plan emphasis areas. The short and long term plan strategies were designed to directly address the problems as defined in these data.

Data Sources and Limitations

Unless otherwise noted the crash data used in this plan comes from the Oregon Department of Transportation's Crash Analysis and Reporting Unit through the Crash Data System (CDS). These data are compiled by ODOT through a variety of sources including Department of Motor Vehicles (DMV) and law enforcement reports. As with any large data set, there are limitations to the quality of the data. ODOT takes great care to provide accurate and timely data, but due to reporting processes and other factors ODOT crash data does not necessarily represent all crash incidents. ODOT collects legally reportable motor vehicle traffic crashes which include those that result in death, bodily injury, or damage to personal property. The personal property definition has changed over time and the dataset used for this plan includes all of the following categories

- For crashes before 9/1/1997 damages in excess of $500

- For crashes that occurred between 9/1/1997 and 12/31/2003 damages in excess of $1,000
- For crashes that occurred after 1/1/2004 damage to the driver's vehicle is over $1,500; damage to any vehicle is over $1,500 and any vehicle is towed from the scene as a result of said damage; or damage to any one person's property, other than a vehicle involved in the accident, is over $1,500.

In addition to these variations in the thresholds of property damage, the ODOT crash data could be undercounting fatal injury. When ODOT fatal injury counts are compared to data collected by public health officials at the Oregon Health Authority (OHA) there are more deaths due to traffic injuries for years 2007-2014. Table 3 shows the difference in reported fatal injuries demonstrating some underreporting by ODOT data. This inconsistency is likely due to differences in reporting standards, for instance ODOT would not account for a fatal injury if the person involved in the incident died 30 days after the crash occurred, but this death would be included in the vital statistics dataset. Crash incidents for non-motorized users like people walking and bicycling are also potentially underreported. In the case of no injury in an incident the DMV property damage threshold for reporting the incident is $1,500 which makes a non-injury crash involving a person walking or bicycling un-reportable. Therefore it should be noted that the data used in this planning process is likely an underrepresentation of the safety conditions, but is still useful in understanding the issues on our transportation system and the circumstances in which to implement solutions.

Table 3: Fatal Traffic Injury Comparison

Fatal Traffic Injury Comparison - Health and Transportation Data			
Year	Vital Statistics*	ODOT Data^	Percent Under Count
2007	47	43	-9%
2008	37	33	-11%
2009	50	40	-20%
2010	29	27	-7%
2011	35	32	-9%
2012	37	32	-14%
2013	36	33	-8%
2014	50	45	-10%

Sources:
*Oregon Vital Statistics County Data Book Table 21
^Oregon Department of Transportation

Historical Context

The regional understanding of the current state of transportation safety conditions was informed by a review of historical crash information. This planning process also looked at national traffic fatality data because these statewide data contain less detailed information for crashes that occurred before 2002. The long-term trends represented in the national and state data tend to follow similar trends in both the county and MPO crash data; however these smaller geographies represent fewer overall incidents.

Figure 3: Oregon and US Annual Traffic Fatalities (1936- 2014)

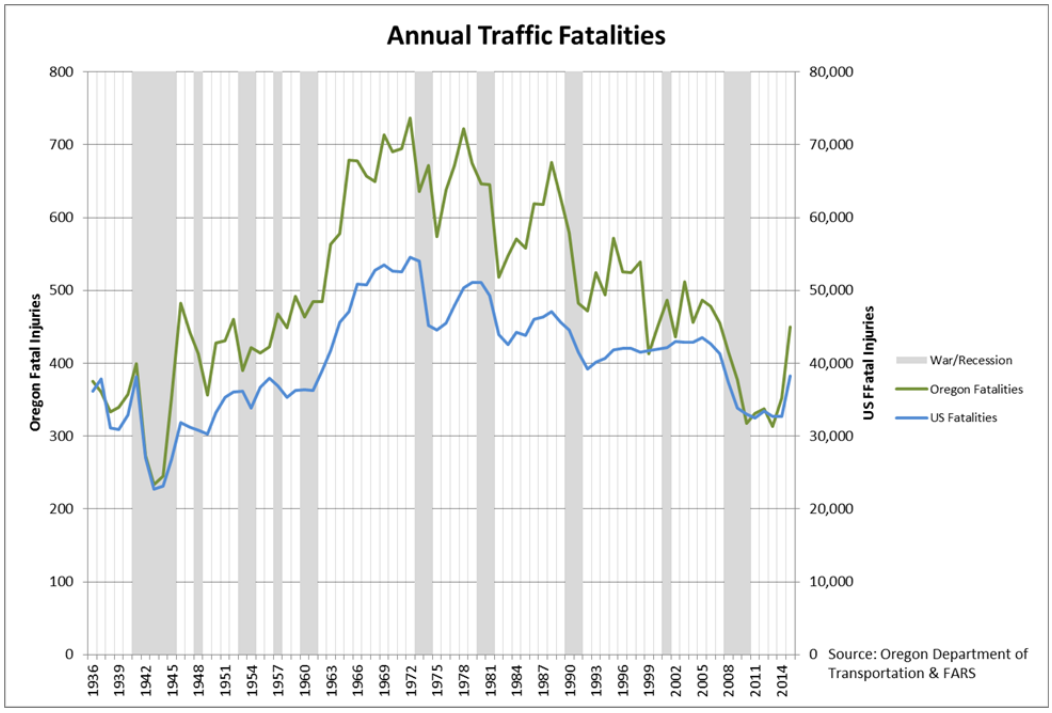
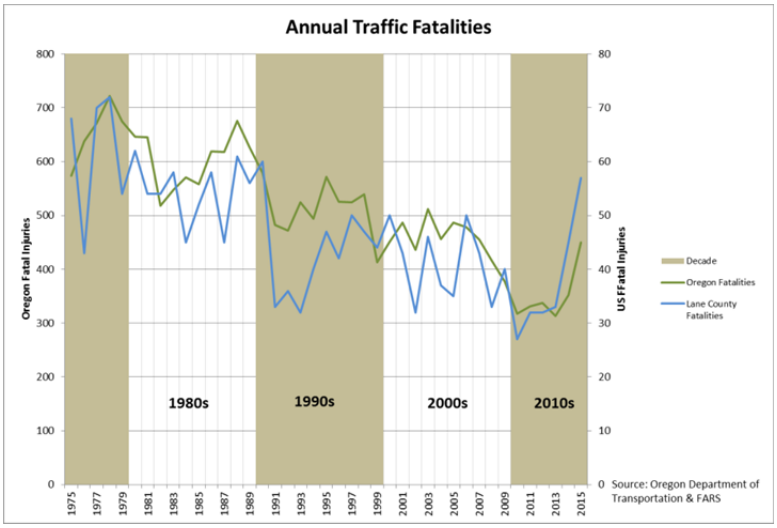


Figure 3 shows annual fatal traffic injuries for the state of Oregon and the United States since reliable record keeping began in the mid-1930s. This picture of traffic fatalities from 1936 to 2014 tells a complicated story of changing road design, vehicle safety standards, economic fluctuations and driver behavior. Determining whether progress has been made depends on the decade selected for comparison.

Figure 4: Annual Traffic Fatalities Oregon and Lane County (1975- 2015)



For example, total number of fatalities increased over time as vehicle miles traveled (VMT) increased. After the peak in the 70s, vehicle technology and seatbelt use slowly began to improve safety outcomes. There was another decrease during the economic recession in 2008 as VMT decreased, followed by a recent upswing in fatalities nationally.

Figure 4 compares the annual traffic deaths from 1975- 2015 for Lane County and Oregon. For Lane County traffic deaths, comparing the last three years (2013-2015) to the 1970s (1975-1979) reveals a reduction of 27% marking some progress overall annual fatalities.

However, compared to the 1980s, 1990s or 2000s the last three years show varied progress with changes in fatalities of -17%, +4%, and +10% respectively. Table 4 summarizes these varied changes.

Table 4: Lane County change in Traffic Fatalities

Lane County Traffic Death Change Compared to 2013-2015	
Period of Comparison	Percent Change
1975-1979	-27%
1980-1989	-17%
1990-1999	4%
2000-2009	10%

Regional Conditions - Fatal and Severe Injuries

Travel within Lane County is interconnected. In addition to the urban areas of Eugene and Springfield, the smaller cities surrounding the major urban area of Eugene-Springfield are significant origins and destinations of trips. Within the MPO, residents often work in one city and live in the other making their typical travel interjurisdictional. The geographic boundaries for Lane County and the Central Lane MPO are shown below in Figure6. In 2015, the county was home to 363,000 residents and the MPO has about 255,000 residents. During the years 2007-2014 there were 1,069 fatal and severe injuries on roads within Lane County. About half of these were on roads inside the CLMPO boundary while the other half were on roads outside the MPO boundary.

Figure 5: Lane County and Central Lane MPO boundaries

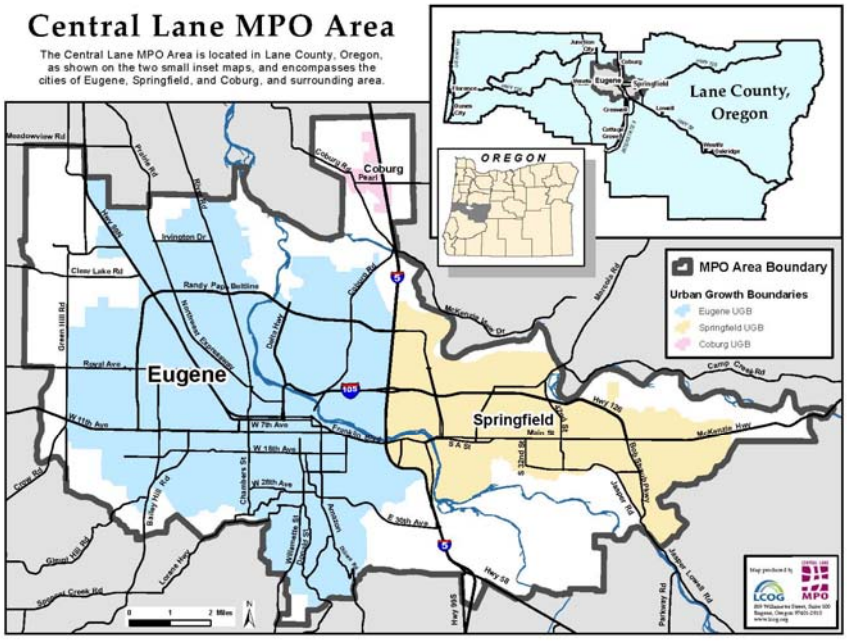
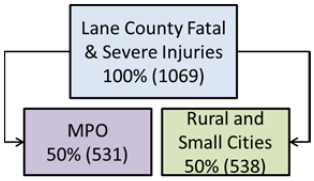


Figure 6: Distribution of crashes between MPO and Rural/ Smaller jurisdictions



The crash data between 2007 and 2014 showed a total of 24,787 crashes occurred in Lane County (including the MPO area). Of those, 240 involved fatalities (0.01%), 829 involved severe injuries (0.03%), and 23,718 minor injury and/or property damage only (96%).

Over this seven-year period, Lane County averaged 34 fatal crashes per year. Disaggregating these crashes resulted in the following findings:

- Most fatalities are occurring in rural Lane County (2.4 times higher than the fatality rate in the urban/MPO area). Between 2007 and 2014, 168 people died in rural Lane County; during that same time period, 72 people died in the urban/MPO area.
- Most severe-injury collisions are happening in the urban/MPO area. Between 2007 and 2014, there were 433 severe-injury collisions in the urban/MPO area, compared to 396 in rural Lane County.

This is consistent with national trends, which show that crash rates tend to increase with urban densities due to more frequent interactions between vehicles, but crash severity and therefore casualty rates tend to be higher in rural areas due to higher traffic speeds.

Economic Costs of Crashes

In addition to the tragic loss of life these crashes bring to our communities, there is a significant economic burden that we bear as a society. Methodologies for calculating the economic costs associated with roadway crashes are well established. Using costs per crash values from the Oregon Department of Transportation (ODOT), crash costs are estimated for Lane County and CLMPO urban area. Between 2002 and 2014 the average annual costs associated with traffic crashes total $289 million for Lane County. For years 2009-2014, the cost of crashes for the CLMPO are also estimated at $173 million in 2014 dollars, compared to $155 million in costs associated with congestion.

In May of 2015, the Federal Highways Administration (FHWA) released a report analyzing the costs of roadway crashes for the United States, determining the total economic impact at $242 billion per year[1]. These costs include lost productivity, medical costs, legal and court costs, emergency service costs (EMS), insurance administration costs, congestion costs, property damage, and workplace losses. A similar study done for the Portland Metro region estimated the costs associated with crashes totaled $958 million a year.[2]

In Lane County, over the last 13 years, 485 people have been killed on the roads, 1,461 severely injured, and 25,755 suffered a moderate or minor injury. These crash data come from the ODOT crash data file and have been summarized below in Table 5. The costs of crashes by injury severity to quantify the costs associated with crashes that occur in Lane County residents during the analysis period.

[1] The Economic and Societal Impact Of Motor Vehicle Crashes 2010(Revised) - http://www-nrd.nhtsa.dot.gov/pubs/812013.pdf

[2] http://www.oregonmetro.gov/news/crashes-cost-more-than-congestion

Table 5: Crash Outcomes in Lane County (2002-2014)

Crash Outcomes in Lane County (2002-2014)			
Injury Severity	**CLMPO**	**Non-CLMPO**	**Lane County**
Fatal	157	328	485
Severity A Injury	733	728	1,461
Severity B Injury	5,120	3,167	8,287
Severity C Injury	13,841	3,627	17,468
Property Damage	21,678	6,892	28,570

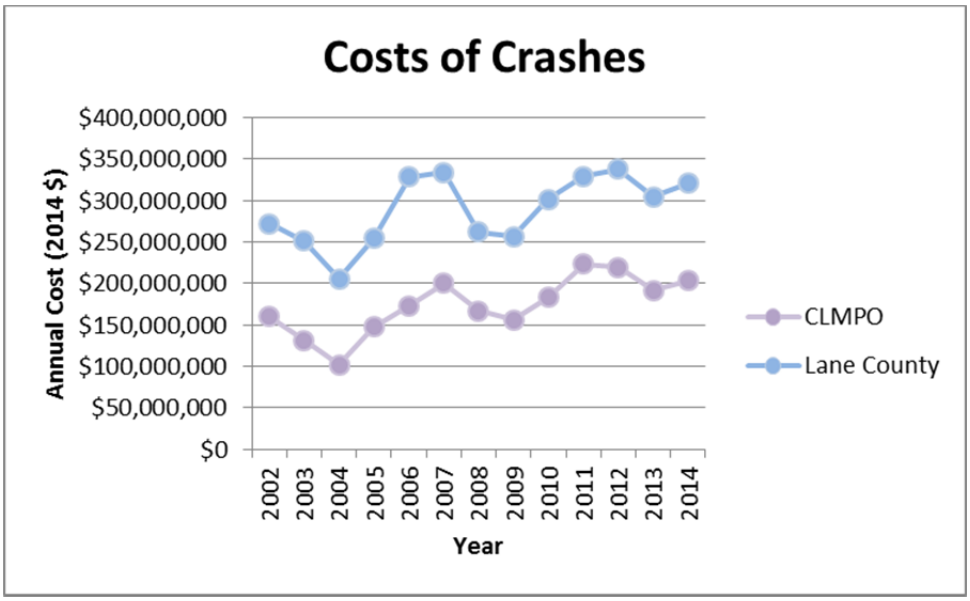
For this plan, the cost of crashes was estimated using the FHWA and ODOT methodology that includes property damage, medical costs, and lost productivity. There are additional costs that could be included, such as quality of life costs, congestion costs, or Value of a Statistical Life (VSL); for the purposes of this analysis these costs have not been calculated. The costs used in this report come from the ODOT and are divided into three categories based on the severity of the injury. These costs are further divided by the type of road where the crash occurred, either interstate or non-interstate (other). All costs have been adjusted for inflation and are in 2014 dollars.

Table 6: Economic Costs per Crash by Severity and Road Type for Lane County

Comprehensive Economic Value* per Crash	
Type	Cost (2014 $)
Property Damage Only (PDO)	
All	$17,100
Moderate (Injury B) and Minor (Injury C) Injury	
Interstate	$55,746
Other	$54,606
Fatal and Severe (Injury A) Injury	
Interstate	$969,000
Other	$957,600
Source: FHWA's Technical Advisory "Motor Vehicle Accident Costs, T 7570.2, October 31, 1994 updated to 2014 dollars	
* Costs include Property Damage, medical costs, and lost productivity	

Using the costs per crash information described for the crashes in Lane County, there was an average annual cost of $289 million for crashes in Lane County over the last 13 years. For the CLMPO the average annual cost of crashes totals $173 million per year. These costs for both areas are detailed for all years in Figure 8.

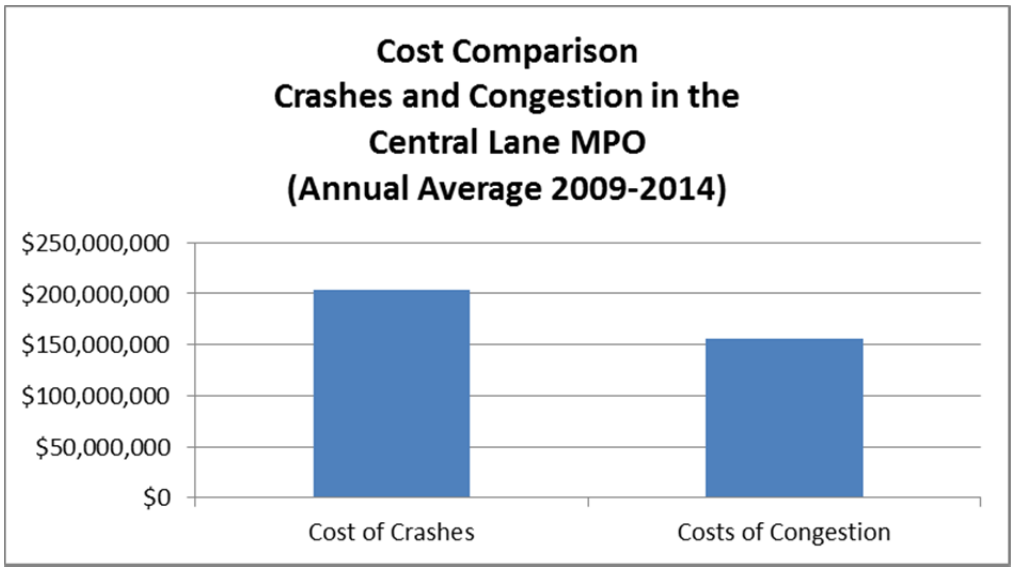
Figure 7: Cost of Crashes per Year (2002-2014)



Cost Comparison of Crashes and Congestion within Central Lane MPO

Transportation planners often look at the cost of congestion to their communities to help make decisions about future investments. Using the same cost per crash values as above, crash cost estimates are compared with costs of congestion from TTI's Urban Mobility Report for 2014 in Figure 9. The average cost of crashes in the CLMPO area for year 2009-2014 amount to $173 million compared to $155 million attributed to congestion.

Figure 8: Cost of Crashes Compared to Cost of Congestion



Safety related improvements that reduce crashes on the regional transportation system could have a significant economic impact, even greater than efforts to relieve congestion. Strategies that combine transportation options and safety outreach, such as promoting walking, biking, and transit would have a multi-pronged impact to both safety and congestion. Additionally, reducing overall healthcare spending is a policy goal for both state and national policy makers and decreasing fatal and injuries resulting from traffic collisions could be a significant contribution to meeting this goal. Lost productivity associated with these costs affects the entire economy as well by taking people out of the workforce either permanently in the case of a fatal injury (in certain case this includes severe injuries) or temporarily when workers suffer an injury. Reducing traffic collisions can save households money and improve the overall productivity of the local economy.

Table 7: Economic Costs per Capita of Crashes

Year	Lane County Population	Annual Costs	Average Cost for Household of Four People*
2009	347,690	$256,955,316	$2,956
2010	351,715	$301,642,860	$3,431
2011	353,155	$329,270,304	$3,729
2012	354,200	$338,069,736	$3,818
2013	356,125	$304,549,746	$3,421
2014	358,805	$321,041,784	$3,579
Average	**353,615**	**$308,588,291**	**$3,489**
*Calculated by multiplying per capita costs by four			

Emphasis Area Overview

Emphasis Areas (EA) provide a strategic framework for understanding current conditions and establishing countermeasure strategies for mitigating these conditions. For instance impaired driving involved injuries represent about a third of all fatal and severe injuries in Lane County and strategies to address that issue focus more on law enforcement and education. Whereas pedestrian and bicycle involved crashes represent 24% of injuries in the urban area and will require more engineering strategies such as infrastructure investment like sidewalks and improved crossing technology. Splitting the larger issue of traffic safety into these categories highlights the diversity of the traffic safety problem and helps to refine the range of likely solutions for each issue.

The process used to select EAs was directed by data and evidence to the extent possible. MAP-21 requirements also dictate that data-driven processes are used to establish EAs. Therefore EAs were selected using quantitative criteria with support from the ODOT TSAP framework and the Stakeholder Advisory Team (SAT). EAs are not mutually exclusive and injuries represented in one category can also be present in another. For instance speed

involved injuries can be included in the Speed EA and the also in the Impaired Driving Category if alcohol or drugs were also involved in the collision.

Emphasis Areas

The primary goal of an emphasis area is to help stakeholders, community members, and local decision makers better understand the safety conditions of our transportation network. The following section describes the safety data as it relates to the Vulnerable Users, Infrastructure, and Risky Behavior emphasis areas. Table 8 shows the frequency of fatal and severe injuries in each plan emphasis area.

Table 8: Fatal and Severe Injuries by Emphasis Area (2007-2014)

Frequency (2007-2014)					
CLMPO			Non-CLMPO		
Emphasis Area	Fatal & Severe Injuries	Percentage of Total (610)	Emphasis Area	Fatal & Severe Injuries	Percentage of Total (587)
Risky Behaviors			**Risky Behaviors**		
Impaired Driving	118	19%	Impaired Driving	187	30%
Speed Involved	79	13%	Speed Involved	242	39%
Unrestrained Occupants	30	5%	Unrestrained Occupants	80	13%
Inattention	27	4%	Inattention	23	4%
Vulnerable Users			**Vulnerable Users**		
Pedestrian	87	14%	Pedestrian	25	4%
Bicycle	57	9%	Bicycle	12	2%
Motorcycle	81	13%	Motorcycle	94	15%
Young Drivers (15-21)	31	5%	Young Drivers (15-21)	49	8%
Infrastructure			**Infrastructure**		
Minor Arterials	227	37%	Major Collectors	217	35%
Principle Arterials - Other	169	28%	Principle Arterials - Other	214	35%
Intersections	288	47%	Intersections	113	18%
Foundational			**Foundational**		
EMS, Data, Training, Leg.	NA		EMS, Data, Training	NA	

Each emphasis area is described below with key facts about the greatest risks for fatal and severe-injury collisions.

Vulnerable Users- Who Is the Most at Risk?

Airbags, seatbelt technology and other and automobile improvements have increased the safety of vehicles for passengers and drivers. However, unprotected users (those operating outside vehicles like people walking or riding bicycles or motorcycles) are more likely to suffer death or severe injury. Older drivers and younger drivers are also at greater risks in collisions; both because they are experiencing diminishing or underdeveloped driving skills, and because of their more fragile frames. Figure 9 shows the percentage of fatal and severe-injury collisions involving each of these roadway users. In Lane County as a whole, 45% of all fatal and severe injuries involve vulnerable users. In the non-urban streets in Lane county 38% of crashes involve vulnerable users with people driving motorcycles at the greatest risk. Older drivers are the second most-at-risk vulnerable user in the rural area. This may be related to the availability and response rates of emergency medical services in rural areas. In the MPO area, the most vulnerable users are people walking.

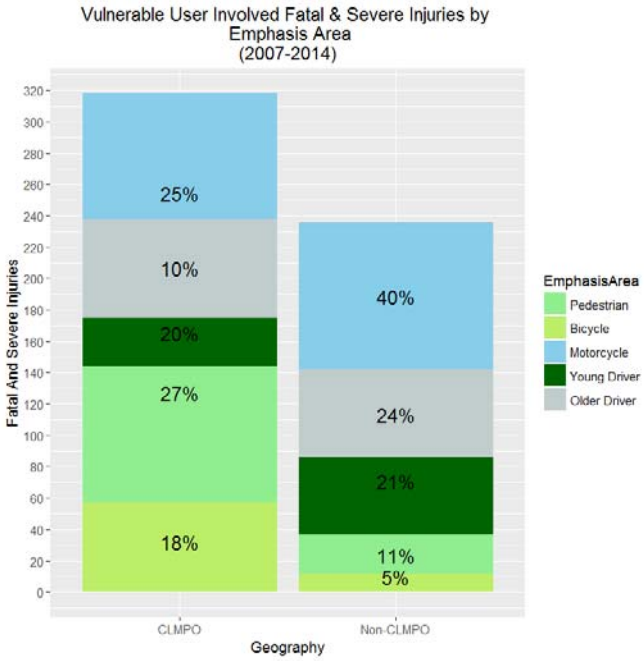


Figure 9: Vulnerable User Involved Fatal and Severe Injuries Outcomes

Over 50% of pedestrian fatalities occur on minor and principal arterials. The location of the crash can help determine if design issues are appropriate to prevent future pedestrian deaths and severe injuries. Figure 10 shows the pedestrian involved crashes on minor and principle arterials and where on the facility the crash occurred. The majority of these incidents did not take place at an intersection. Most frequently, the vehicle failed to yield the right-of-way to the pedestrian, which accounted for 30% of the crashes. Most (28%) of the pedestrian fatalities and severe-injuries resulted from collisions within the roadway, but outside of an intersection. These data do not readily indicate whether separate travel space (sidewalk or roadway shoulder) was available to the pedestrian or whether the pedestrian was trying to cross the street. Better data would help determine the appropriate solutions. Based on the type of facility these roads are, these data could indicate that there are large distances between crossings and people are choosing to cross midblock in unmarked crosswalks.

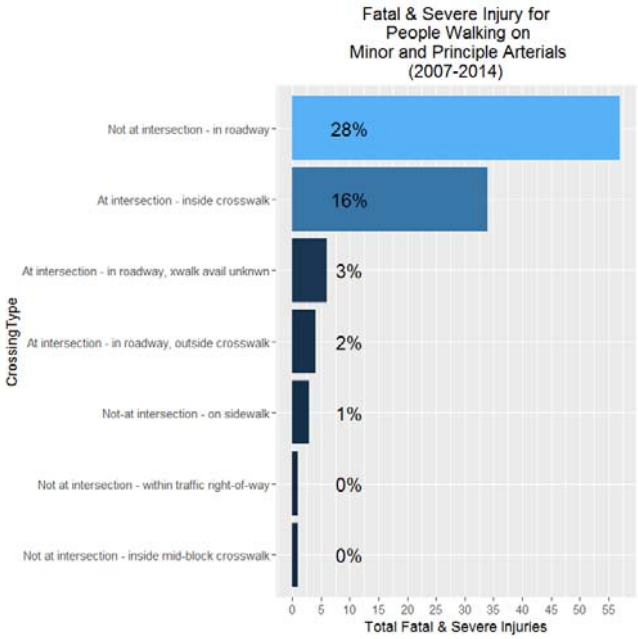
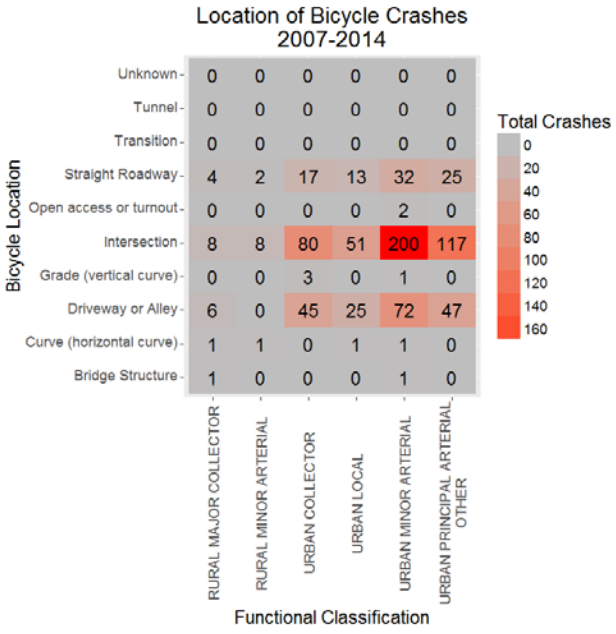


Figure 10: Location of Fatal and Severe Injuries for People Walking

For people bicycling, 65% of crashes occur on minor, major, and principle arterials. Intersections and driveways are common conflict points between people bicycling and people driving. While bicycling crashes do occur in rural areas, this is a larger issue in the urban area, where more people are cycling for commuting purposes. Figure 11 shows the location of bicycle crashes based on facility type and location along that facility.

Table 8: Location of Bicycle Crashes on Roadway



Fatalities and severe injuries for people riding motorcycles are most common on rural high speed facilities. In rural Lane County, between 2007 and 2013, there were 223 collisions involving motorcycles; of those, 82 resulted in a fatality or severe-injury of the person riding the motorcycle. Past research confirms riding a motorcycle is 58 times more dangerous compared to driving. Helmets were worn in 91% of the fatal and severe injuries.

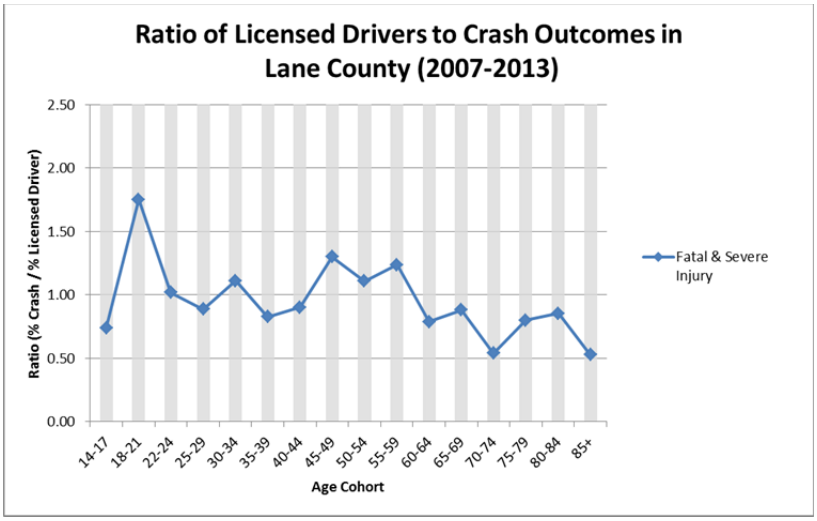
Young drivers for this plan are defined as ages 15-24. The Lane County population within this age group with a current driver's license: was 62% in 2010; and 58% in 2014. There is some indication that young people are delaying obtaining licenses due to the costs of vehicles ownership and operation. Although a majority of young road users obey the law and drive carefully, individual young drivers can make errors that can have serious consequences. For example, the majority of speeding fatalities in rural Lane County involved 18- to 20-year-olds. The ratio of licensed drivers to crash outcomes can be found in Figure 12. Older drivers (age 65 and older) are underrepresented in these data, but are

still considered a vulnerable user to due to risk of more serious outcomes when they are involved in crashes.

Infrastructure- Where Are the Greatest Risks Located?

When examining where fatal and severe-injury collisions occur on our roadways, it is clear that most happen on high-volume and high-speed roadways (arterials and collectors, rather than local streets) where local access to properties is allowed (versus interstates and freeways). Classifications are meant to characterize the function of that facility. There are slight differences between the ways in which each jurisdiction classifies their network. For the purposes of this plan federal functional classes were used.

Figure 11: Ratio of Licensed Drivers to Crash Outcomes (2007-2013)



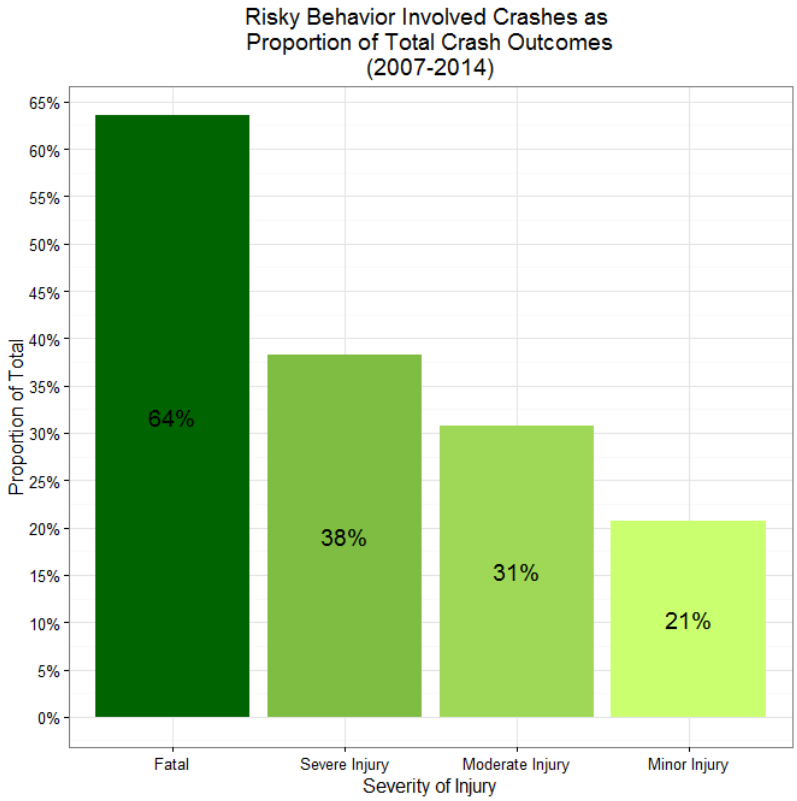
- Interstate-Highest classification designed and constructed with mobility and long-distance travel in mind. Direction lanes, separated by barrier, and ramp-only access.
- Other Freeway/Expressway -Directional travel lanes usually separated by a physical barrier, and access and egress points are limited to on- and off-ramp locations or a very limited number of at-grade intersections. Like Interstates, these roadways are designed and constructed to maximize their mobility function, and abutting land uses are not directly served by them.
- Principal Arterial -Provides a high degree of mobility through urban and rural areas, and abutting land uses can be served directly.
- Minor Arterial - Provides moderate-length trips and offers connectivity to the higher arterial system, providing intracommunity continuity.
- Collector - Gathers traffic from local road and connects to the arterial network.
- Local - Provides direct access to abutting land, and are not intended for long-distance travel.

In the MPO area, 65% of all fatal and severe injuries occur on Principle and Minor Arterial facilities and in the non MPO rural area, 65% of fatal and severe injuries occur on Principle Arterials and Major Collectors. Major and Minor arterials typically have a higher crash rate than the urban average and these facilities are more dangerous for people walking and riding bicycles.

What Creates the Most Risk?

As noted previously, most fatal and severe-injury collisions are driver error. There is a difference between driver performance (what the driver can do) and driver behavior (what the driver does). Driver performance relates to the driver's knowledge, skill, perceptual and cognitive abilities. Errors of this nature are mostly attributable to inexperienced young drivers or older drivers with diminishing abilities. The infrastructure emphasis area focuses on what the driver does in error perhaps even in spite of what they know is wrong. The majority of road users exhibit behavior where they make errors without intention and occasionally break the rules, possibly because they do not know the law or interpret it in their own way. These may include road users who are inattentive because they are distracted, who do not look around them or do not react adequately to the situation. There may also be road users who drive over the speed limit or a little too fast for the conditions.

Figure 12: Risky Behavior Involved Crashes as Proportion of Total Crashes (2007-2014)

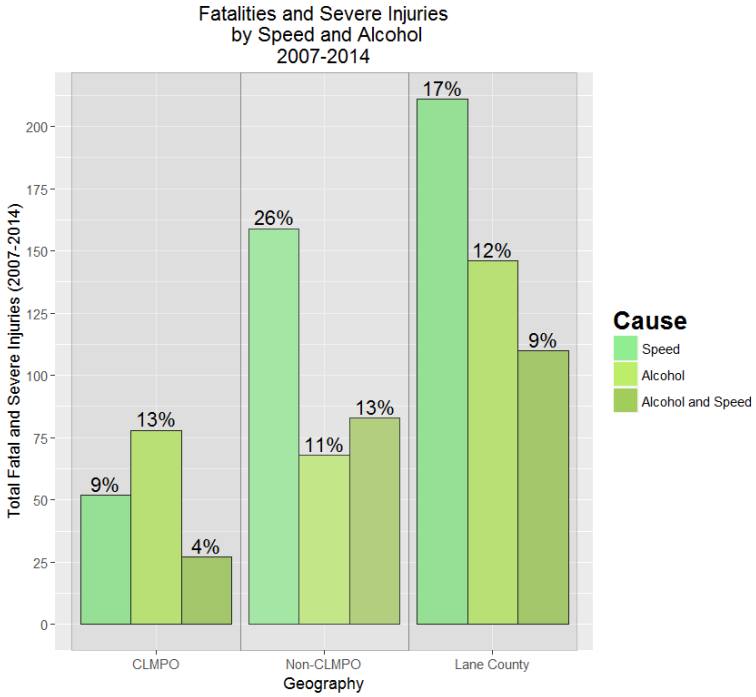


Another group is the dangerous drivers who expose themselves and others to unnecessary risk, such as distracted driving, driving under the influence and speeding. Risky Behaviors are involved in 35% of the fatal and severe-injury collisions in CLMPO and 65% in Lane County. The figure below shows the severity outcome of risky behaviors.

The most risky behaviors that result in fatal and severe-injury collisions are speeding and DUII. Figure 14 shows the breakdown of speed and alcohol involved crashes by

jurisdiction. These behaviors typically go hand and hand and create a dangerous combination.

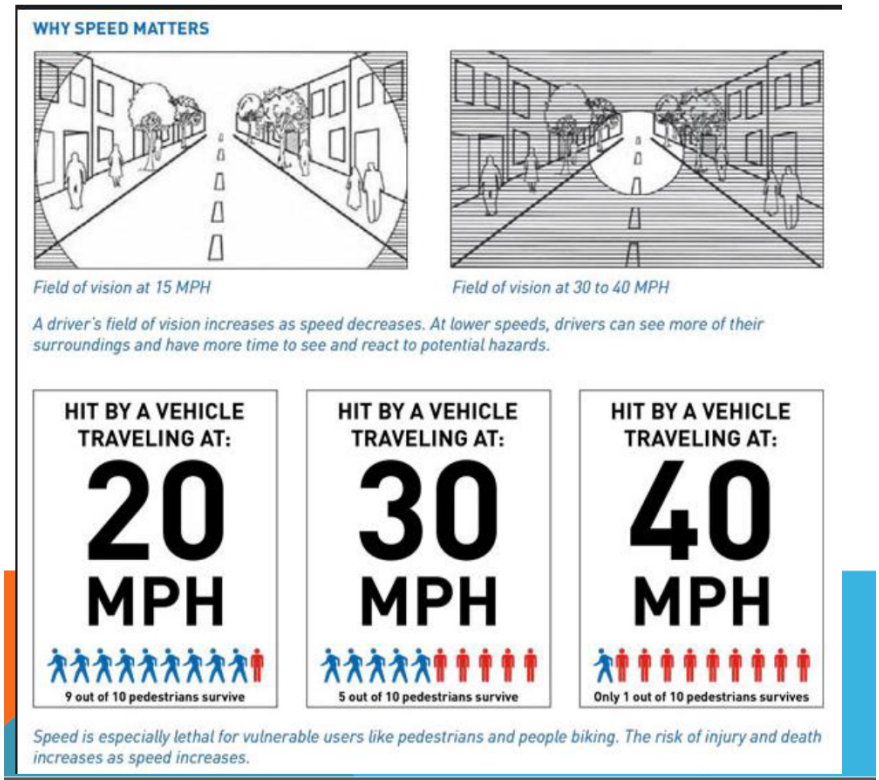
Figure 13: Speed and Alcohol involved Fatalities and Severe Injuries



Speeding was the leading cause of fatal and severe-injury collisions in rural Lane County. While impaired driving is the leading cause of fatal and severe-injury collisions is the urban MPO area, there number of fatal and severe-injury collisions involving DUII was higher in rural Lane County. Based on the available data, inattention appears to be an insignificant contributing factor; however, other information suggests this is a growing concern and that this behavior is under-represented in the data. These concerns are detailed below.

Driving Too Fast

Between 2007 and 2014, there were a total of 1,887 speed related crashes in CLMPO; of those, 79 resulted in fatalities and severe injuries. Speed involved fatal and severe crashes are more prominent in rural areas, 242 fatal and severe crashes occurred in rural Lane County during the same time frame.



"Speeding too fast for conditions" is the leading cause attributed to fatal and severe-injury collisions, not only in rural Lane County, but statewide and nationwide. In 2014, there were 9,262 traffic fatalities from speeding-related crashes across the country.

The National Highway Traffic Safety Administration considers a crash to be speeding-

related if the driver was charged with a speeding-related offense or if an officer indicated that racing, driving too fast for conditions, or exceeding the posted speed limit was a contributing factor in the crash. Posted speed limits apply under ideal driving conditions. Drivers may need to slow down in conditions such as heavy rain, a construction zone, or a congested roadway. Law enforcement refers to this as "sped too fast for conditions."

Speed is a factor in many crashes because of the physical forces at work. Driving even a few miles over the speed limit increases the chances of losing control of the vehicle. It increases braking distance, reduces the effectiveness of safety devices, and dramatically increases the severity of injuries if there is a crash. Breaking (or stopping) distance is dependent on human perception and reaction time, in addition to vehicle reaction time and braking capability.

The Insurance Institute for Highway Safety reports that crash severity is directly related to speed. If speed increases by 50%, the energy release in a crash more than doubles. This increased force is what causes severe injuries and fatalities.

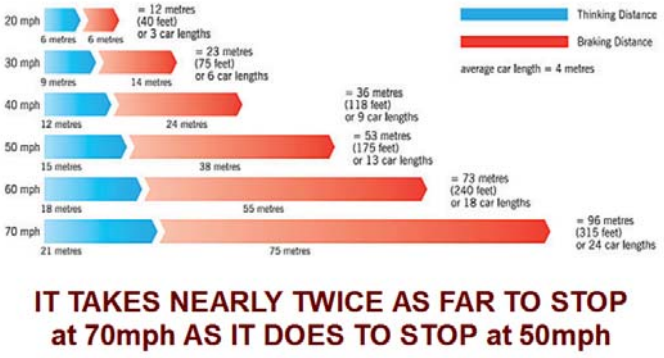


Figure 14: Breaking and Stopping Distances

Despite opposition from safety advocates, the Oregon Legislature approved House Bill 3402 and 4047 to increase speeds from 65 to 70 mph (and from 60 to 65 mph for trucks) on several interstates and state highways (but excluded the Portland metro area and the I-5 corridor), effective March 1, 2016. With this speed increase, rural highways will generally have the highest legal speed limits in Oregon. In response to subsequent traffic fatalities, the speed increases were delayed on some rural highways.

The above Oregon law designates speeds in the absence of posted speed limits. Designated and posted speed limits are not the final word in Oregon, for all travel on public streets and highways is subject to the Basic Rule. The Rule states that a motorist must drive at a speed that is reasonable and prudent at all times by considering other traffic, road and weather conditions, dangers at intersections and any other conditions that affect safety and speed. The Basic Rule does not allow motorists to drive faster than the posted speed or designated speed. Instead, the Rule expects drivers to be responsible for their own actions.

ODOT has authority over posted speeds. This means cities and counties wishing to lower the posted speed limit on roads in their communities and even under their jurisdiction must first obtain approval from ODOT. The process can be time consuming and the lack of local authority is a source of frustration for many communities; on the other hand, most engineers favor consistency in traffic laws and standards across the state, for the benefit of drivers traveling through political boundaries.

The principal factor used in establishing speed zones is the "85th percentile speed," which is the speed at or below which 85% of the vehicles are traveling. The process involves collecting speed data on a given roadway and assigning a speed limit. This methodology can be problematic because facility design can generate high speed drivers and it does not take into account other users of the roadway such as people walking or biking. Proponents of the methodology say "most motorists drive in a reasonable and prudent manner, selecting their driving speeds so as to arrive at their designation safely" (ODOT Speed Zone Manual). Both sides agree that enforcement is needed to implement the posted speed and that roadway design influences speeds more than a sign.

Portland Bureau of Transportation and ODOT have recently implemented an alternate methodology that would take into account other users of non-arterial streets that are not designated freight routes and that have posted speeds greater than 25 mph. The established speed would be based on the degree of separation between people driving, biking and walking. Three categories of speed designations

- 40 mph maximum unless streets have a center median barrier and clear zone, and people walking and biking are physically protected;
- 30 mph maximum on streets with busy intersections experiencing high crashes, on streets with sidewalks or shoulders next to travel lanes, and on streets with bike lanes next to motor vehicle lanes;
- 20 mph maximum on shared space roads (driving, biking and walking) that do not meet school, business or neighborhood greenways statute for 20 mph.

Citizen attitudes often tend to reflect an acceptance of speeding as a social norm, despite its inherent dangers and the fact that it is the cause of thousands of crashes each year. According to AAA's 2014 Traffic Safety Culture Index, 46.1 percent of drivers say they have driven 15 mph over the speed limit on a freeway in the past month, and more than 20 percent say it is acceptable to do so. Slightly fewer drivers (43.5 percent) have gone 10 mph over the limit on a residential street in the past month, but 90.2 percent of drivers surveyed say they disapprove of speeding on a residential street. The irony is studies show speeding does not save much time. Driving 65 miles per hour instead of 55 miles per hour for 25 miles saves only 4 minutes and 20 seconds.

Intoxicated Driving (DUI/DUII)

Instead of "DUI" (driving under the influence), Oregon uses the term "DUII" (driving under the influence of intoxicants.) DUII offenses include "physical or mental facilities are adversely affected to a noticeable or perceptible degree" as the result of ingesting alcohol, drugs, or a combination of the two. Drivers are considered to be alcohol-impaired when their blood alcohol concentrations (BACs) are .08 grams per deciliter or higher. Fatalities involving a driver with a BAC of .08 or higher is considered to be an alcohol-impaired-driving fatality.

In CLMPO area, there were a total of 1066 crashes between 2007 and 2014 that involved impaired driving; 102 of those resulted in fatality or severe-injury. The data shows that impaired driving crashes occur through the week, with Saturday and Sunday early mornings being the most common days and times. Enforcement staff indicates that major holidays and Super Bowl Sunday have the highest DUII ratings. ODOT data indicates that the highest percentages of alcohol-impaired drivers involved in fatal crashes among all age groups in 2013 were drivers 21 to 24 years old (33%), followed by drivers 25 to 34 years old (29%) and 35 to 44 years old (24%).

Inattention

Inattention is the act of driving while engaged in other activities—such as looking after children, texting, talking on the phone or to a passenger, watching videos, eating, or reading. These activities take the driver's attention away from the road. While many people anecdotally report that inattention and distracted driving is on the rise, it's difficult to assess due to incomplete or unreliable data sources. Crash data used for other emphasis areas is less useful for inattention because cell phone use is included in these data primarily on a self-reported basis and are therefore likely underrepresented in these data. The ODOT crash data shows cell phone use in only 0.63% of all crashes. Regionally, 4% of crashes are attributed to inattention –see Table 8.

Table 9: Risky Behavior Fatal and Severe Injury Frequencies (2007-2014)

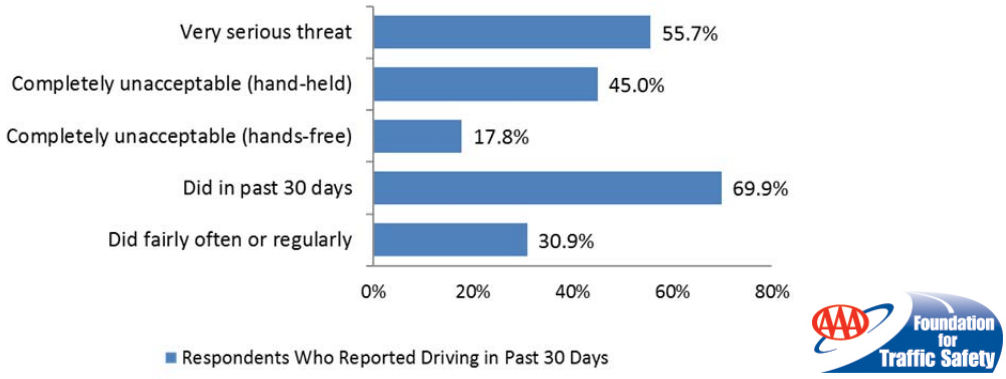
Frequency (2007-2014)				
	CLMPO		Non-CLMPO	
Emphasis Area	Fatal & Severe Injuries	Percentage of Total (610)	Fatal & Severe Injuries	Percentage of Total (587)
Risky Behaviors				
Impaired Driving	118	19%	187	30%
Speed Involved	79	13%	242	39%
Unrestrained Occupants	30	5%	80	13%
Inattention	27	4%	23	4%

Unless the officer can observe the person was using a cell phone, it is typically self-reported whether cell phone use was a cause. Although cell phone use is often the root cause of other violations, such as failure to signal or maintain lane, those violations are easier to prove and become the focus of the citation. This would explain why this problem is not represented in the crash data.

Based on other research, it does appear that inattention is a significant problem and is likely growing as mobile devices become widespread. Research published in the American Journal of Public Health (2010) demonstrated that the percentage of traffic related fatalities associated with distracted driving is growing as is cell phone subscriptions.

In a 2015 AAA Teenage Distracted Driving Study, cell phone use was report as being involved in 35% of roadway departure crashes and 18% of rear-end crashes. In these crashes, drivers had their eyes off the road for only 4.1 seconds on average. The study notes that passengers are often a more significant distraction to teens than anything else. In a similar report, American Driving Survey, AAA reported that 55.7% of respondents thought cell phone use while driving was a serious threat, yet 69.9% participated in this activity in the last 30 days and 30.9% fairly often or regularly used a cell phone while driving.

Figure 15: AAA Foundation for Traffic Safety Survey Results on Cell Phone Use and Driving

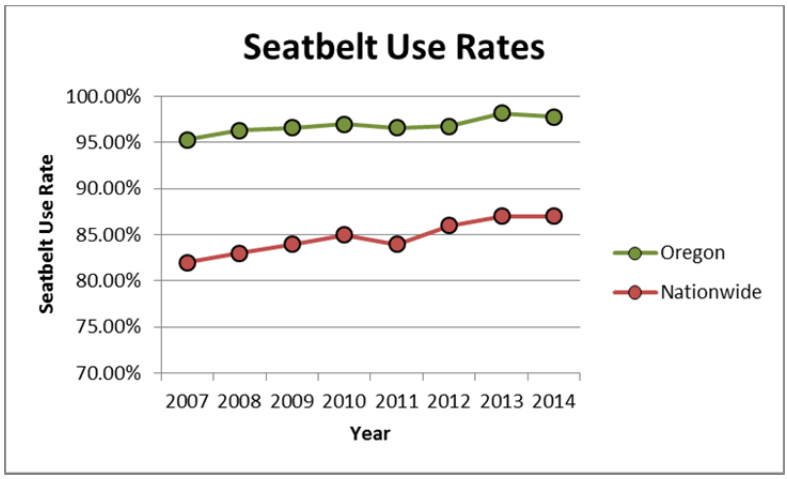


Unrestrained occupants

Unrestrained Occupants are vehicle occupants that are not wearing a seat belt or proper child restraint. Without proper occupant restrain the likelihood that crashes end in fatal or severe injuries increases dramatically. In general, seatbelt use in Oregon is higher than the national average and is now near 100%. This is partly due to increases in vehicle technology that make it difficult to opt out of using seatbelts. Improper seatbelt and child restraint use represent 9% of the fatal and severe injuries in Lane County. Between 2007-2014, there was only one severe injury involving a child not properly wearing a child

restraint system correctly. All instances of occupants not wearing seatbelts also involve impaired driving or speed.

Figure 16: Seatbelt Use Rates in Oregon and US (2007-2014)



Implementation and Evaluation

The partnership created through this planning process between Lane County and Central Lane MPO has created the foundation for future collaboration and implementation. In order to ensure that the strategies in this plan are carried out throughout the region, Lane County and Lane Council of Governments has created a Safe Communities Program. The initial funding for the program has been provided to this region through ODOT's "Safe Communities" program that provides funding and technical support from the National Safety Transportation Safety Administration (NHTSA). In Oregon, Baker, Clackamas, Grant, Harvey, Jackson, Malheur, Umatilla and Union Counties have Safe Communities programs supported by ODOT with grants, technical assistance, training, and data support. ODOT's 2013 report of funding allocation shows counties with these programs receiving the bulk of resources (e.g. 26% of the safety funding was used on statewide assistance compared to 20% directly to Clackamas County). Many of these communities have been able to hire safety coordinators with initial funding from NHTSA to develop and implement safety programs and plans.

The following objectives and tasks are proposed for the Lane County Safe Communities Program.

1. Establish effective communication and collaboration methods for planning, enforcement, education, public health, and emergency response staff throughout the region
    - Create a Safety Advisory Committee to serve as an advisory committee to the Safe Community program. (likely subcommittee of the Lane Act)
    - Provide annual updates to both Lane Act and the Metropolitan Policy Committee on the state of safety in Lane County
    - Create regional website for Safe Communities Program outreach and education materials
2. Facilitate priority action item implementation for all regional safety plans including, Central Lane MPO's Safety Plan, Lane County's Safety Action Plan, Eugene's Vision

Zero Action Plan, Lane Transit District's Vision Zero Resolution, and Springfield's Mayors Challenge, Regional Safe Routes to School Strategic Plan.
    - Work closely with all partner agencies to fully understand each jurisdiction's implementation goals and opportunities. Attend staff meetings and participate in advisory committees when possible.
    - Work with local enforcement agencies to increase education and outreach opportunities.
3. Develop a sustainable funding sources for the Safe Community Program by October 2018
    - Research and pursue grant opportunities to create a sustainable funding source for the program.
    - Provide grant writing support to partner jurisdictions to pursue funds for increased enforcement and other safety programs.
4. Establish regional safety reporting standards and complete and annual "State of Safety Report" for Lane County
    - Collect and post online the annual data for regional performance measures (Central Lane MPO Safety Plan and Lane County Plan) and report to policy makers yearly.
    - Focus regional Education and Enforcement efforts on preventing drug and alcohol involved crashes, distracted driving, and speed.
5. Work with district attorney's office and Enforcement Agencies to increase capacity for more intensive investigation into the DUII and crash cases that are referred to that office to increase the positive disposition of DUII cases and crash cases to 90% within one year.

In addition to the work performed under the Safe Communities Program, the Central Lane MPO will continue to incorporate the goals and strategies of safety into future regional planning efforts such as the Regional Transportation Plan, Intelligent Transportation System Plan, and the Regional Transportation Options Plan.

In order to understand the state of safety in the MPO area, a set of performance measures informed by Federal and State performance measures will be tracked over time. These performance measures will help to refine strategies and goals going forward to ensure that safety issues remain a priority in the region. The primary performance measures the MPO collects and will continue to monitor are the National Highway Traffic Safety Administration's core safety measures.

1) Number of roadway facilities
2) Number of roadway severe injuries
3) Roadway fatalities per vehicle miles traveled
4) Roadway severe injuries per vehicles miles traveled
5) Combined non-motorized fatalities and non-motorized severe injuries

Within those categories, MPO will also monitor the performance measures of

6) Speed involved severe and fatal crashes
7) Driving Under the Influence of Intoxicants (DUII) involved severe and fatal crashes
8) Severe and Fatal Crashes by Road Classification
9) People walking involved severe and fatal crashes
10) People bicycling involved severe and fatal crashes

Target setting is a requirement for these performance measures and is necessary to understand if implementation strategies are effective in reducing fatal and severe crashes. At this time, targets have not been set. The MPO will work with ODOT and FHWA over the next year to set targets that are appropriate for our region.

The performance measures will continue to be tracked on the MPO's data portal website (http://thempo.org/899/NHTSA-Core-Safety-Measures and http://thempo.org/892/VMT-Crash-Rates) and are subject to refinements or changes as FHWA and ODOT provide more guidance. The MPO intends to set targets for these performance measures in collaboration with ODOT and FHWA.

Glossary

All Roads Transportation Safety (ARTS) Program: Historically the Oregon Department of Transportation (ODOT) has spent the Highway Safety Improvement Program (HSIP) funding only on state highways. However, half of the fatalities and severe injuries occur on non-state roadways. In order to address this concern and to comply with the federal requirement that the HSIP funding be spent on all public roads, ODOT has developed a "jurisdictionally blind" safety program, known as the All Roads Transportation Safety (ARTS) Program, to address safety problems on all public roads in Oregon. The objective of the ARTS Program is the same as that of the HSIP – to reduce fatalities and severe injuries on all public roads using a data-driven approach.

Blood Alcohol Content (BAC): Commonly used as a metric of alcohol intoxication for legal or medical purposes.

Driving Under the Influence of Intoxicants (DUII): Oregon uses this term instead of DUI (driving under the influence), which generally involves a BAC of 0.08% or more. Individuals convicted of a DUII are required to obtain a treatment completion certificate issued by the Oregon Health Authority. Penalties range between jail time (48 hours to 5 years), fines ($1,000 to $10,000), and license suspension (1 year to permanently).

Emphasis Areas: A strategic framework for developing and implementing the Transportation Safety Action Plan (TSAP). The emphasis areas were developed using the results of crash analysis and input from stakeholders. The three emphasis areas identified for the Lane County TSAP are comparable to Oregon's TSAP and shared with the Central Lane Metropolitan Planning Organization's (MPO) Transportation Safety and Security Plan, as follows: Vulnerable Users, Infrastructure, and Risky Behaviors. All three plans address broader issues in a similar manner: the Lane County TSAP identifies Foundational Actions; the MPO identifies a Foundational Emphasis Area; and ODOT identifies an Improved Systems Emphasis Area.

Fatal Analysis Reporting System (FARS): A nationwide census of annual data regarding fatal injuries suffered in motor vehicle traffic crashes.

Federal Highway Administration (FHWA): An agency within the U.S. Department of Transportation that specializes in highway transportation.

Fixing America's Surface Transportation (FAST) Act: Replaced the Moving Ahead for Progress in the 21st Century Act (Map-21).

Highway Safety Improvement Program (HSIP): A core federal-aid program under the Fixing America's Surface Transportation (FAST) Act that went into effect in December, 2015. The primary goal of the HSIP is to achieve a significant reduction in traffic fatalities

and severe injuries on all public roads, including non-state owned roads and tribal roads. The HSIP requires a data-driven and strategic approach to improving highways safety on all public roads that focuses on performance. The HSIP funds are primarily intended for infrastructure improvement projects. The FAST Act slightly increased the HSIP funding and disallowed use of the funds for educational and enforcement activities. (Non-infrastructure safety, such as education and enforcement programs, is administered by the ODOT Transportation Safety Division, funded by the National Highway Safety Administration and Federal Highway Administration.)

Intelligent Transportation System (ITS): Applications relating to different modes of transport and traffic management to enable users to be better informed and make safer, more coordinated, and 'smarter' use of transport networks.

Metropolitan Planning Organization (MPO): Designated by the governor to coordinate transportation planning in an urbanized area of the state. MPOs exist in the Portland, Salem, Eugene-Springfield, and Medford areas.

Oregon Department of Transportation (ODOT): A department of the state government of the U.S. state of Oregon responsible for transportation. It was first established in 1969.

Severe Injury: Synonymous with Code 2 and Incapacitating; a non-fatal injury which prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred. Examples include broken bones, severe bleeding, and unconsciousness.

Appendix A: Institutional Capacity Inventory

The following is an inventory of existing transportation safety programs and services available within Lane County. These programs and services indicate the institutional capacity to implement strategies for emphasis areas. These existing resources could be opportunities for leveraging improvements in transportation safety. This information is organized into the following safety-strategy categories: Equity, Encouragement, and Evaluation; Education; Enforcement and Emergency Services; and Engineering.

Equity, Encouragement, and Evaluation
These activities occur in the education, enforcement, emergency services, and engineering communities; however, the combination of these activities is best represented by the many **existing leadership entities in the region**. The following bodies primarily provide educational services and programs, but they are called out separately from the "education" category because – as bodies – they have the potential capacity for advocacy on all of safety E's and for specific populations and modes.

- **Governor's Advisory Committee: Oregon Transportation Safety Committee (OTSC):** This committee to advises ODOT and the Oregon Transportation Commission on transportation safety issues. Part of the committee's charge is to work with ODOT to develop the Transportation Safety Action Plan. The committee consists of five members appointed by the Governor on the recommendation of the commission. The term of office is four years.

- **Governor's Advisory Committee on Motorcycle Safety:** The committee focuses on rider education, drinking and riding, road hazards unique to motorcyclists, motorist awareness of motorcycles, sharing the road and other safety issues. The committee advises the Governor and the Governor's Highway Safety Representative on safety for motorcyclists in Oregon. The committee works closely with ODOT to find solutions to engineering related safety issues that affect motorcyclists.

- **Governor's Advisory Committee on Driving Under the Influence of Intoxicants (DUII):** This committee represents the Legislative Assembly and public and private organizations involved in DUI countermeasures, victims of drunk drivers, and the general public. Its mission is as follows: "Heighten public awareness of the seriousness of the drunk-driving problem. Persuade communities to attack the drunk-driving problem in a more organized and systematic manner, including plans to eliminate bottlenecks in the arrest, trial and sentencing process that impair the effectiveness of many drunk driving laws. Generate public support for increased enforcement of state and local drunk-driving laws. Educate the public as to the dangers of driving while under the influence and its effects on life and property."

- **Mayors' Challenge for Safer People, Safer Streets:** In January of 2014 Transportation Secretary Anthony Foxx and the US Department of Transportation challenged all mayors and city leaders in the nation to accept the "Challenge for Safer People, Safer Streets." The cities of Springfield and Eugene are participating in the Mayors' Challenge.

- **League of Oregon Cities Transportation Committee:** This committee reviews policy decisions and recommends legislative positions and strategies related to streets and roads, traffic safety, public transportation, and rail.

- **Safe Communities Programs:** This is a coalition of government and private sector staff with an interest in safety. The group takes a big picture approach to injury prevention, and combines the various parties interested in injury prevention into a single, effective group. These groups emphasize using data and analysis to guide collaborative efforts in the non-profit, business, health, and government sectors of the economy. In Oregon, Baker, Clackamas, Grant, Harney, Jackson, Malheur, Umatilla, Union Counties, plus the City of Portland take this approach to varying levels of effort. ODOT supports these groups with grants large and small, technical assistance, training, and data support.

- **Greater Eugene Area Riders (GEARS):** This advocacy committee promotes and encourages bicycle riding for transportation and recreation. It works to create a physical and cultural environment in the greater Eugene area in which riding a bicycle is safe, easy, and enjoyable. GEARs partners with the City of Eugene, Lane County Municipal Court and Eugene Springfield Safe Routes to School to offer classes for all bike riders.

- **Oregon Bicycle and Pedestrian Advisory Committee:** This is an eight-member committee, appointed by the governor, that acts as a liaison between the public and ODOT. They advise ODOT in the regulation of bicycle and pedestrian traffic and the establishment of bikeways and walkways. The committee meets quarterly in various locations around the state to listen to the views and concerns of interested citizens, local officials and ODOT Region staff.

- **Eugene Active Transportation Advisory Committee (ATC):** The purpose of the ATC is (1) to advise the City of Eugene staff and community organizations and partners on implementation of Eugene's Pedestrian and Bicycle Strategic Plan, (2) to represent community and constituent interests in transportation planning decisions, and (3) to provide feedback to staff on projects relating to walking and

bicycling. Eugene City staff will consider recommendations from the BPAC along with input from other members of the public during decision making.

- **Springfield Bicycle and Pedestrian Advisory Committee (BPAC):** BPAC was established to provide input on bicycle and pedestrian policies, infrastructure, programs, education, and enforcement. The committee advises the Springfield City Council and city staff on matters relating to pedestrian and bicycle planning.

- **Bicycle Transportation Alliance (BTA):** This is a non-profit membership organization working to promote bicycling and improve bicycling conditions in Oregon. Since 1990, the BTA has worked in partnership with citizens, businesses, community groups, government agencies, and elected officials to create communities where people can meet their daily transportation needs on a bike.

- **Safe Kids West Oregon:** PeaceHealth Sacred Heart Medical Center at RiverBend is spearheading the effort to create a Safe Kids West Oregon group which will focus on reducing unintentional, preventable injury and death in children ages 0 to 19 through awareness, education, public policy, and distribution of safety devices to low-income families.

- **Alliance for Healthy Families:** This is a group of organizations based in Lane County, Oregon working to promote healthy children and families through education, access to healthy food and improved opportunities for physical activity. Some of their work specifically focuses on bicycle and pedestrian safety education in partnership with Eugene-Springfield Safe Routes to School.

- **Eugene Vision Zero:** The Eugene City Council adopted a Vision Zero policy which sets as official policy Vision Zero's goal of zero fatalities or serious injuries on the transportation system. The city will be convening a Vision Zero Task Force that will be charged with developing a Vision Zero Action Plan that will be brought back to the city council for approval.

- **Springfield Mayor's Challenge, Safer People, Safer Streets:** Springfield and other local agency staff have completed the assessment for the Springfield Mayor's Challenge and have developed a work plan.

- **Lane County Public Health's Prevention Program:** Staff works with local agencies to identify mutual objectives and opportunities to collaboratively promote bicycle

and pedestrian activities, reduce injury crashes and fatalities, integrate health considerations into transportation decisions, and improve emergency medical systems.

- **Lane Council of Government's Data Portal:** Traffic serious injury and fatality data, bike counts, etc.

Education

Education occurs in the engineering, enforcement, and emergency service communities; however, the following are specific programs and services regarding transportation education. Educational activities such as police as school resources are included in the enforcement community category. Also, as noted in the previous category, existing boards, commissions, and other groups provide educational services and programs.

- **Oregon Impact:** Oregon Impact provides educational experiences to end impaired and distracted driving. With an emphasis on teen drivers and those that ride with them, Oregon Impact works with middle schools, high schools & colleges in Oregon and SW Washington, and attends multiple community events each year to open conversations and encourage good choices. Oregon Impact provides prevention and education tools, as well as, child passenger safety information and resources.

- **Safe Kids Oregon/ Program – Oregon Child Development Coalition:** Safe Kids Oregon is the state affiliate of Safe Kids Worldwide, the first international organization dedicated solely to the prevention of unintentional childhood injury. Launched in 1995, Safe Kids Oregon focuses on one specific problem: more children ages 14 and under die from unintentional injuries (motor vehicle crashes, fires, drowning and other injuries) than from any other cause. Starting in 2014, Safe Kids Oregon will be working on child unintentional injury prevention efforts for ages 0 to 19.

- **Trauma Nurses Talk Tough (TNTT) – Legacy Emanuel Medical Center:** TNTT programs empower people of all ages to take control of the risks in their lives by teaching them simple ways of changing their behavior. These engaging, dynamic programs serve 56,000 people each year in Oregon alone. This program is provided at several locations throughout Lane County: Cottage Grove Community Hospital, McKenzie Willamette Hospital, and Eugene Fire and EMS. Some of the programs include: court-ordered classes for drivers charged with DUII, unsafe driving and other risky behaviors; resources for parent to teach teens safe, responsible driving habits; and school presentations to reduce unnecessary injury and death by teaching young people how avoid to control the risk in their lives.

- **Mothers Against Drunk Driving (MADD) -- Eugene Chapter:** MADD was incorporated "To aid the victims of crimes performed by individuals driving under the influence of alcohol or drugs, to aid the families of such victims and to increase public awareness of the problem of drinking and drugged driving." MADD focuses efforts on: drunk driving, underage drinking, and victim services.

- **Oregon State University: Team Oregon – Motorcycle Safety:** This is a program committed to robust community involvement and providing the education and services needed to help people lead safe, healthy lives. OSU partners with ODOT, which provides direction, funding, and support for the program and activities. Additional funding comes from student tuitions, motorcycle endorsement and renewal fees, and grants. The program provides statewide training, education and outreach for riders of all levels of experience and riding ability.

- **Impaired Driving – ODOT Transportation Safety Division:** This program works to reduce drunk and drugged driving through: public information program; victim memorial sign program; law enforcement; information and education programs for targeted audiences; judicial training; community mini-grants; law enforcement training; purchase of specialty law enforcement equipment; staffs the Governor's Advisory Committee on DUII; and provides funding and support for the Oregon Drug Evaluation Program.

ODOT Transportation Safety Division – Educational Programs and Services

- **Driver Education, ODOT Transportation Safety Division:** There are various locations throughout Lane County that provide driver education courses approved by ODOT: Bethel School District, Junction City School District, Lane County Driving School, , and Oregon Driver Training Institute. The Driver Education Program helps teens between the ages of 15-17 learn life-long habits and skills that have been proven to reduce driver risk. Schools that meet approved program requirements can receive reimbursement. The program coordinates efforts to improve driver education thereby reducing fatal and injury crashes in first time drivers through: coordination of driver education course content; certification of public and private driver education providers; public information, education programs and resources; oversight of student driver training fund for public school reimbursement; and coordination of train-the-trainer curriculum development.

- **Distracted Driving, Safe and Courteous Driving – ODOT Transportation Safety Division:** This includes special programs to address the most significant causes of

crashes. It dedicates resources to encouraging people to not drive drowsy, or not to follow too closely. In addition to these established transportation safety issues, there are several issues referred to as emerging, like distracted driving – either due to new technology, or increasing recognition of the problem due to changes in the state of driving in Oregon.

- **Bicycle and Pedestrian Programs, ODOT Transportation Safety Division:** These programs provide support to local governments, governmental and non-governmental organizations and private citizens, in planning, designing and constructing pedestrian and bicycle facilities. It focuses efforts on: policies and programs, information and technical assistance. It makes available several publications to educate the public: The Bicyclist's Survival Guide; Oregon Bicyclist Manual; and Do the Safety Step (Survival Guide for Pedestrians).

- **Point2Point & Safe Routes to School (SRTS):** These programs are funded by the Metropolitan Planning Organization (MPO) and ODOT, and operated by Lane Transit District (LTD). Point2Point provides numerous programs and services, such as: Transportation Options, Walk and Bike to School Day, Be Seen Be Safe, and the Business Commute Challenge. SRTS programs are in the Eugene 4J, Bethel and Springfield School Districts. SRTS coordinators lead numerous activities, events, and programs that enhance transportation safety for children (i.e. Bike Safety Education, Pedestrian Safety Education, Kidical Mass group rides, neighborhood association meetings, bicycle parking, bicycle and pedestrian safety trainings.)

- **Springfield Transportation Safety Education:** The City identifies what it can do with the community to continuously improve safety and develop and distribute educational materials and videos that include information about Roundabouts, Pedestrian Hybrid Beacon Crossings, Rapid Flashing Beacon Crossings, and Flashing Yellow Arrows. The materials include recommendations for people walking, biking, and driving.

- **Every 15 Minutes (Someone Dies in a Traffic Collision):** This is curriculum for teens about drinking or texting while driving. It has been implemented throughout various schools in several states. The Lane County Sheriff's office has implemented the program in schools in the Lane region.

Emergency Services & Enforcement

Emergency services and enforcement include police, fire, Emergency Medical Services (EMS) and medical care facilities. These highly trained personnel respond to transportation-related incidents, manage the scene, and accept the responsibility of saving lives. Enforcement has a significant role in encouraging good travel behavior, reducing the

need for emergency response. Enforcement is a necessary tool to encourage compliance of existing laws and remind travelers of the proper ways to use the system. The enforcement and emergency services community is also a significant educator.

- **Blue River and Upper McKenzie Fire:** No online information provided.

- **Central Lane 9-1-1:** This is the communications gateway for regional emergency services. They connect citizens with the public safety services they need. They calmly guide callers through crisis, obtain and relay vital information, and provide radio support to fire, police and emergency medical responders. Central Lane Communications is part of the Eugene Police Department's Technical Services Division.

- **Coburg Fire:** Provides Fire and Emergency Medical Services in Coburg

- **Coburg Police Department, Patrol Division:** The Coburg Police Department is comprised of a Chief of Police, two full time patrol officers and one police records clerk. The patrol function is the first line of service to the citizens of Coburg. The Coburg Police Department patrols and responds to all calls for service within the City of Coburg. Patrol officers are responsible for a variety of functions within the police department including; city patrol, emergency response to 911 calls, traffic enforcement and accident investigation, criminal investigations, service of search and arrest warrants, crime prevention, community education and animal control.

- **City of Cottage Grove, School Resource Officer:** These officers serve as a liaison between the Police Department, the school district, and the citizens of Cottage Grove. They are not "campus police," but rather "police on campus" who promote a positive image through interaction with students, parents, teachers and administrators. The intent of the program is to establish a positive problem-solving partnership by working very closely with school officials, students and citizens. Cottage Grove Police Department currently has one Police Officer, Officer Taylor Smith, assigned as the SRO for Cottage Grove High School, Lincoln Middle School, and is available to assist elementary grade levels at schools within the city.

- **City of Cottage Grove Police Department, Child Car Seat Inspection and Installation Program:** This program helps parents and caregivers learn how to safely install the child seats in their own vehicles.

- **City of Creswell, Public Safety:** The City of Creswell contracts with the Lane County Sheriff's Department for law enforcement services. This provides the City with access to services typically available only to larger agencies.

- **Dexter Rural Fire protection District:** This is a rural department with a paid Chief/EMT, paid Captain/EMT and a part-time paid training chief. They have 15 highly dedicated volunteers and 3 resident/sleepers that live at the station and provide emergency response. The district covers 13 miles of Oregon Highway 58, a 15 mile stretch of the Willamette River, 16 miles of Southern Pacific Railroad, and 2 large lakes; Dexter and Lookout Point. Dexter Rural Fire District protects 3500 people living in an area of 21 square miles.

- **Dunes City, Public Safety:** Dunes City's primary public service needs are provided by the Lane County Sheriff's Department, Oregon State Police, Siuslaw Valley Fire & Rescue and Western Lane Ambulance District. Dunes City does not have a municipal police department. Dunes City is a member of the West Lane Emergency Operations Group and participates in monthly emergency radio system checks and other emergency planning activities to assist its residents.

- **City of Eugene: Community Emergency Response Team:** The City of Eugene sponsors CERT training to citizens within the Eugene/Springfield metropolitan area. CERT trains citizens to be prepared to respond to emergency situations within their communities. Trained CERT members are able to give critical support to first responders, provide immediate assistance to victims, and organize spontaneous volunteers at a disaster site. CERT members may also help with non-emergency projects that improve the safety of a community.

- **City of Eugene, Citizen Radar Program:** Volunteers monitor vehicle speeds using department-issued radar unit. The volunteer documents the vehicle description and license plate number if speeds exceed 10 mph or more over the speed limit. A letter is then sent to the registered owners. The letters are of escalating urgency regarding vehicle speed and location. The third letter includes reference to a possible visit by a traffic enforcement officer.

- **Eugene Police Department, Traffic Enforcement Unit:** This unit currently comprises six officers and a sergeant. Their primary duty is enforcing traffic laws within the city of Eugene, including focused enforcement in response to neighborhood speeding complaints. In addition to radar speed patrol and other standard traffic enforcement duties, this unit also engages in focused patrols and public education campaigns such as saturation patrols for red light runners, seat belt safety blitzes and crosswalk pedestrian safety operations. They also provide traffic control at civic functions, sporting events, parades and for visiting dignitaries, and provide other traffic-related community services. Additionally, motorcycle officers can respond to patrol calls for service as needed; their mobility allows them to respond quickly to high-priority calls and as backup to other officers.

- **Eugene Police Department, Major Collision Investigation Team (MCI):** MCI is an ad hoc team comprising several officers and a sergeant who are specifically and extensively trained to investigate motor vehicle collisions. These officers all have full-time assignments in the patrol or investigations division, but are on call to respond to major vehicle collisions. MCI is activated to reconstruct serious collisions, such as when there has been a fatality or life-threatening injury, or when a DUII collision causes serious injuries. The team is also activated to investigate crash scenes when a police pursuit or a collision involving a city vehicle generates any significant injury or damage, and sometimes in other circumstances in which investigating officers require technical assistance.

- **City of Eugene Police Department, School Resource Team:** In partnership with Bethel and 4J School districts, the Eugene Police Department places School Resource Officers (SROs) in the local high schools to maintain a presence in the school community. By placing officers in the schools, this community policing program provides for a more positive influence on the community's students. Our officers strive to be positive role models in the schools, to mentor young adults, and to help them make positive choices toward their future. Each SRO is assigned to a specific high school and its respective feeder schools as part of their daily duties. Their individual offices are located inside each high school and are staffed Monday through Friday.

- **City of Eugene Police Department, Eugene Safety Town:** Safety Town is a two week comprehensive educational program that introduces pre-Kindergarten children to safety awareness. The Safety Town program covers topics such as pedestrian safety, traffic safety, bicycle safety, gun safety, water safety, fire safety, personal safety, poison prevention, water safety, school safety and much, much more! A certified school teacher provides most of the instruction and is supplemented by community experts and police department staff.

- **City of Eugene Police Department, Safety Public Service Announcements (PSA):** Series of PSA videos on preventing crashes, aimed at following too closely, driving while distracted, running yellow lights, and driving while intoxicated; a specific example is the video "Every Corner is a Crosswalk."

- **Eugene/Springfield Fire, Emergency Medical Services:** The population served includes not only the City of Eugene, but five fire protection contract districts and a large portion of rural Lane County (a total of approximately 440 square miles). Eugene's emergency medical response deployment includes: 12 paramedic engine companies; three 24-hour ambulances plus a fourth peak activity ambulance and a fifth overload ambulance that can be up-staffed with a crew assigned to a fire suppression company. Rural/Metro has two additional intermediate life support 24-hour ambulances for non-emergent and inter-facility transports. Paramedic engine

companies are housed in neighborhood fire stations. Because there are more of these than there are staffed ambulances, there is a good chance that a fire engine will arrive at a medical emergency before an ambulance does. In the great majority of cases, the arrival of definitive medical care to the patient is more critical than the arrival of a vehicle to subsequently transport the patient to the hospital.

- **Eugene/Springfield Fire, Operations:** This division is responsible for the Department's line personnel. Line personnel work a 24/48 schedule (24 hours on-duty, 48 hours off-duty). Each shift includes two Battalion Chiefs and approximately 50 personnel composed of Captains, Engineers and Firefighters. All line personnel are cross-trained as Emergency Medical Technicians and respond from the cities' 11 fire stations. In addition to providing fire suppression, rescue, and emergency medical services, Shift Operations performs high-rise operations, wildland firefighting and wildland/urban interface coverage.

- **City of Florence Police Department, Patrol:** The Florence Police Department has 23 positions authorized that consist of a Police Chief, a Lieutenant, two Sergeants, an Executive Assistant, one Detective, 9 Police Officers, 1 Corrections Officer and 7 Communications Officers. We currently have 1.46 sworn police officers per 1000 population. Patrol services are provided 24 hours a day, 7 days a week, 52 weeks a year. The Florence Police Department provides supplemental policing services to the Confederated Tribes Three Rivers Casino and Hatch Tract. Additionally the Florence Police Department also maintains the Florence Municipal Jail and provides police services as needed for the Florence Municipal Court.

- **Goshen Rural Fire Protection:** Goshen Fire District is a primarily volunteer based organization providing fire suppression, EMS, rescue and hazardous materials response for a 17- square mile area outside the city of Eugene. Goshen Fire also protects a stretch of Interstate 5 from the border of Eugene to Creswell. Goshen Fire District encompasses a large number of commercial occupancies as well as Lane Community College. We are proud to provide a high quality level of service for the patrons of our community.

- **Harrisburg Fire and Rescue:** The Harrisburg Fire Department serves an area of approximately 86 square miles. This area stretches from the Harrisburg Bridge to Mt. Tom, and 6 miles both North and South of Harrisburg. Highway 99E, Interstate 5, two rail lines, and the Willamette River pass through our District. The Department responds to over 400 calls each year, and handles situations involving fire protection, vehicle accidents, hazardous materials and more commonly, medical emergencies for the residents in the area in which it serves.

- **Junction City Fire and Rescue:** The Junction City Fire Department is made up of approx. 30 dedicated staff and community volunteers committed to protecting the lives and property of the citizens of Junction City and its surrounding areas.

- **Junction City Police Department: Patrol Team:** The Junction City Police Department's primary function is to provide 24 hour uniformed police services to the community. The primary focus of the Patrol Services Team is to handle emergency and non-emergency calls for service. The Patrol Team is also dedicated to its many other duties including traffic enforcement, community policing, and municipal code abatement.

- **Junction City Police Department: Dispatch Center:** The Junction City Police Dispatching Team provides public safety dispatch services 24 hours a day, 7 days a week. Our agency is considered a secondary PSAP (Public Safety Answering Point). This means that when someone calls 9-1-1, the call is answered by the Central Lane 9-1-1 Center in Eugene and then forwarded to our agency for dispatching of the appropriate police or fire services. Dispatching is handled by one of two radio console positions. Our Dispatchers provide communications support for the Junction City Police Department, Coburg Police Department, Junction City Rural Fire Department and the Union Pacific Railroad Police.

- **Lake Creek Rural Fire and Protection District:** No online information provided.

- **Lane County Sherriff's Office:** The Lane County Sheriff's Office provides correctional services; patrol of urban, suburban and rural areas (including timberlands, waterways, and coastal dune areas); criminal investigations, maintains evidence and property storage, has an extensive criminal justice Records section, operation of a 24/7 Dispatch Center; court security; emergency management, and search and rescue functions. Lane County covers over 4,600 square miles, staff over 200 people, along with many volunteers, support these services and utilize land, marine, air and other assets to maximize our response capability.

- **Lane Fire Authority:** Lane Fire Authority (LFA) is the product of an Intergovernmental Agreement (IGA) between two fire districts, Lane Rural Fire/Rescue and Lane County Fire District #1. The service area incorporates 276 square miles west, northwest, and southwest of Eugene, Oregon. They operate 14 stations, 3 of which have career staffing 24/7. (Includes the following communities: Alderwood, Butler, Noti, Walton, Elmira, Veneta, Crow, Franklin, Alvadore, Irving, Central Road, Spender Creek, For Hollow, and Lorane Hwy)

- **Lorane Rural Fire and Protection District:** The Lorane Volunteer Fire and Emergency Group was founded in June, 1973, serving the community surrounding the small town of Lorane.

- **Lowell Rural Fire Protection District:** The district serves a 23 square mile area that includes the City of Lowell and the rural communities of Fall Creek and Unity. The district boundaries surround Fall Creek Reservoir and include the northern shoreline of Dexter Reservoir. The district provides structural and wildland fire suppression, EMS first response at the ALS level, vehicle extrication, water rescue, low to high angle rescue and HazMat first response. District personnel provide fire and EMS safety public education programs for all ages and provide fire and life safety commercial inspection and plans review.

- **McKenzie Fire and Rescue:** The McKenzie Fire & Rescue Fire District protects 45 miles of Oregon's McKenzie River between Springfield and Blue River. Our crew of over 50 volunteers is proud of our mission: to prevent, protect, and preserve life and property from loss by fire, accident, sudden illness, or disaster in the community; further, to enhance the quality of life and to minimize suffering wherever possible.

- **Mohawk Valley Fire:** The Mohawk Valley Fire District covers an area of 26.5 square miles, containing over 3,500 residents. The district maintains 5 stations with 13 pieces of apparatus. Staff consists of 3 paid members supplemented by volunteers, residents and interns.

- **City of Oakridge Police Department:** Oakridge Police Department is comprised of a Chief, a Deputy Chief, three (3) full time officers, five (5) fully trained reserve officers, four and a half (4.5) dispatchers, and Cadets. We also have a K-9 Officer that works with the school, on patrol and mutual aid to other agencies.

- **Oakridge Fire Department:** Oakridge Emergency Services Department operates out of a single fire station and is comprised of a Fire Chief, three (3) full time Firefighter/Paramedics, and around 50 volunteers. Oakridge Emergency Services Department provides fire and paramedic services to the citizens of Oakridge.

- **ODOT: Incident Response Vehicles:** Incident response vehicles are equipped with flat tire repair gear, gasoline, jumper cables, water, traffic control devices, portable dynamic message signs, and other essentials for assisting motorists and responding to incidents. Vehicles are equipped with automated vehicle locators. Interstate 5 is the priority for ODOT incident responders in the region; however, they respond to incidents on OR 34 (Corvallis-Lebanon Highway), OR 99E (Albany-Junction City Highway), and other locations as needed.

- **Pleasant Hill Fire and Rescue:** The Pleasant Hill Fire District is a primarily volunteer agency providing fire protection and EMS/Rescue service to the patrons of both Pleasant Hill and Jasper. The District operates primarily on the dedicated help of 25 volunteer firefighters and EMT's. These dedicated individuals help to provide emergency services to 26 sq miles of homes, businesses, commercial/industrial operations and farming/agricultural.

- **Santa Clara Fire Volunteer Association:** The Santa Clara Fire District provides Fire & EMS Services to 6 square miles of area in and just outside of the City of Eugene. The District operates two fire stations, both on River Road, which have a total of four fire engines, two rescues, three staff vehicles, and one antique fire engine that was used by the early firefighters of our district.

- **Siuslaw Valley Fire and Rescue Siuslaw:** Valley Fire and Rescue is an all hazards response fire department. The District covers 120 square miles extending north to Sea lion Caves, South to the Douglas county line and East to mile post nine on highway 126. It includes the City of Florence and Dunes City, and the surrounding unincorporated areas and serves a permanent population of 17,000 residents. SVFR has six stations and responds out of six. The have the following personnel: 1-Fire Chief; 2-Division Chiefs; 2-Administrative Staff; 3-Fulltime Firefighters; and 40-Volunteer Firefighters.

- **South Lane County Fire District (SLCF & R)**: SLCF&R proudly serves both residents and visitors in Creswell, Cottage Grove and rural South Lane County. SLCF&R provides fire protection, rescue, emergency medical services, fire prevention and code enforcement services. SLCF&R is located just south of the Eugene/Springfield area of western Oregon, along the I-5 corridor. The areas previously served by the Cottage Grove Fire Department, the Creswell Rural Fire Department, and the South Lane Rural Fire Department, were merged into the South Lane County Fire and Rescue district in 2003.

- **City of Springfield Police Department: School Resource Officers:** The department has embarked on a new relationship with the School District, assigning an officer to each of the two high schools with the responsibility for providing enforcement, counseling and classroom instruction.

- **City of Springfield Police Department: Traffic & Major Accident Investigation Team Traffic Team:** The team consists of four officers whose highest priority is traffic safety. The unit patrols on motorcycles for maneuvering through congested traffic. School zones, locations of frequent traffic accidents and traffic related issues reported by citizens are given top attention. Major Accident Investigation Team (MAIT): this is responsible for the investigation of major traffic accidents. Its

members are specially trained in accident investigation and assisting in the prosecution of vehicle assault and homicide. Drug Recognition Expert: Drug Recognition Experts are specially trained Police Officers that are called to perform drug evaluations on persons suspected of operating a vehicle, or otherwise being under the influence of controlled substances. DRE's conduct a nationally standardized 12 step evaluation process to determine the category of drug(s) the person is under the influence of. Springfield Police has two certified DRE's: Officers Matt Bohman & Tom Speldrich.

- **City of Springfield Radar Trailer:** The City has a radar trailer that displays the speed of the approaching vehicle. The use of this trailer has shown to significantly reduce the speed of vehicle traffic. Many drivers do not realize how fast they drive on residential streets. The radar trailer is a tool that helps educate the public.

- **State Fire Marshall Emergency Response Unit: Incident Management Teams (IMT):** IMT provide comprehensive incident command to manage ongoing emergency operations. IMTs provide incident management expertise in logistics, finance, planning, public information, operations, safety, and community issues. The teams respond with resources mobilized by the Governor for a conflagration or other emergency that has overwhelmed the control and resources of local emergency responders. IMTs enhance effective coordination among responding agencies during fires, floods, earthquakes, structural collapse, tsunamis, the spilling of hazardous materials, and other natural or human-caused incidents.

- **State Police: Patrol Division:** This division provides a uniform presence and law enforcement services throughout the state, with a primary responsibility for crash reduction, crime reduction, and other transportation safety issues; as well as to respond to emergency calls-for-service on Oregon's state and interstate highways. The Department of State Police was created in 1931 to serve as a rural patrol and to assist local city police and sheriffs' departments. Some of the agency's specialized programs and services include, but are not limited to: transportation safety; major crime investigations; drug investigation; state emergency response coordination; state Fire Marshal Service; coordination of federal grants for public safety issues; medical examiner services; Special Weapons and Tactics (SWAT), and serves as the point of contact to the National Office of Homeland Security.

- **State Police Command Center and Dispatch:** The Northern Command Center (NCC) is located at the State of Oregon Armed Forces Reserve Center/Emergency Coordination Facility in Salem. The NCC supports State Police activities across 22 counties (Clatsop, Columbia, Tillamook, Washington, Yamhill, Polk, Lincoln, Benton,

Multnomah, Clackamas, Marion, Linn, Lane, Hood River, Wasco, Jefferson, Deschutes, Sherman, Gilliam, Wheeler, Klamath and Crook).

- **State Police: Drug Detection Canine Program**
  The Drug Detection Canine program plays an important supporting role in helping detect illegal drugs and other evidence on our highways and in local communities. OSP currently has five dogs with specially trained patrol troopers strategically placed around the state.

- **State Police: DUII Program**
  The Oregon State Police DUII Program is dedicated to keeping Department members currently trained in Standardized Field Sobriety Tests to the standards established by the National Highway Traffic Safety Administration (NHTSA), and to keep them up to date on current case law related to DUII enforcement. The DUII Program continues to improve the detection, apprehension and prosecution of impaired drivers encountered by Oregon State Police troopers while on patrol. The ultimate goal of the DUII Program is to increase DUII deterrence, and decrease crashes, deaths and injuries related to impaired driving.

- **State Police: Traffic Incident Management**
  This program seeks three objectives: responder safety; safe, quick clearance of the roadway; and prompt, reliable, and interoperable communications. This is achieved by promoting a shared understanding of TIM goals among responders from different groups—law enforcement, fire and rescue, emergency medical services, the U.S. Department of Transportation, towing and recovery, and dispatch.

- **City of Veneta: Law Enforcement**
  Veneta contracts with the Lane County Sheriff's Office for police protection.

- **City of Westfir: Law Enforcement**
  Maintaining a dedicated police department is prohibitively expensive for the City of Westfir; therefore the City of Oakridge Police Department, Lane County Sheriff, and Oregon State Police coordinate efforts to keep Westfir safe and provide emergency services.

- **Westfir Volunteer Fire Department**
  No online information provided.

- **Western Lane Ambulance**

Since 1976, Western Lane Ambulance District has provided Emergency Medical Services to the Citizens and visitors of Western Lane County – an area encompassing approximately 1000 square miles of cities, towns, forests, beaches, sand dunes and other interesting and sometimes challenging terrain. Paramedics can perform Advanced Life Support, Advanced Cardiac Life Support, Pre-Hospital Trauma Life Support and Pediatric Advanced Life Support. Additionally they provide a number of educational programs for the local community such as Community CPR and first aid programs, available to all individuals and groups of Western Lane County Residents. In addition to CPR and first aid classes, Western Lane Ambulance District offers a community SAFEKIDS program which entails car seat clinics, water safety, bike helmet programs, etc. They also provide outreach to our senior citizen groups and present courses such as Heart Attack React, Stroke Prevention and Intervention, Diabetes Awareness, High Blood Pressure Clinics, etc.

Engineering

Engineering includes the planning, design, construction, and overall management of the transportation system and related infrastructure. Engineering directly influences how travelers move throughout the system, establishing a complete, connected and comfortable network that can eliminate modal conflicts between users.

- **Coburg Public Works**
  Public Works provides essential services in the areas of streets, water, wastewater, parks, code enforcement, and management of public spaces. The city's engineer is a consulting firm: Branch Engineering.

- **Creswell Public Works**
  Public Works is responsible for maintaining the City's water, sewer, stormwater, streets, and streetlights. In addition, Public Works maintains all City buildings, and public parks.

- **Dunes City Road Maintenance**
  When Dunes City qualified as providing essential city services, funds became available for road maintenance from the state. A program of graveling, grading, and oiling was instituted and the funds divided on a per capita basis.

- **Eugene Public Works Traffic Calming Program**
  Traffic calming techniques are used to address a variety of quality of life and traffic operations concerns. The City of Eugene uses a number of different techniques and devices to calm traffic and improve traffic flow throughout the street system. Residents can request traffic calming measures in their neighborhood; including: speed humps, raised intersections, raised crosswalks, speed table, traffic circle, chicanes, angled crosswalk, crossing islands/refuges, chokers, curb extensions.

- **Eugene Public Works Traffic Safety Devices**
  Information is made available online about traffic safety devices and street markings for bicycles and pedestrians; including: sharrows, bike traffic signals, bike boxes, green bike lanes, buffered bike lanes, back-in diagonal parking, (Rectangular Rapid Flash Beacon RFFB) and pedestrian activated red lights.

- **Eugene Public Works Operations and Maintenance**
  Operations and Maintenance includes the following programs and services:
  - Traffic sign, signal and striping maintenance and operations.
  - Maintaining centerline miles of dedicated rights of way, in street bike lanes, and off street paths.
  - Sidewalk, curbs, access ramp and gutter inspection, maintenance and repair.
  - Maintaining clear and passable thoroughfares, by sweeping, leaf pick-up, and snow and ice removal programs.

- **Florence Public Works: Hazardous Sidewalk Program**
  Hazardous sidewalk conditions can be reported to Public Works. A sidewalk inspection will be performed within 5 working days of a complaint and the property owner will be notified and given 60 days to repair the sidewalk. If the complaint is based upon someone having tripped and fallen, the property owner will be given 20 working days to begin the repairs.

- **City of Florence Public Works: Streetlight Program**
  The City encourages the public to report a streetlight if it has burned out. The utility district will perform follow-up.

- **City of Florence Public Works: Storm Related Issues Program**
  Damage from fallen trees and power lines to the City and Central Lincoln PUD can be reported; this includes debris, downed power lines and blocked storm drains on all streets.

- **City of Florence Public Works: Street Division**
  The Public Works Department's Street Division manages nearly 88 lane miles of streets. The Street Division's long term goal is to provide and maintain a high quality and efficient multi-modal transportation system that recognizes that every citizen should be able to travel on our streets and to have a variety of transportation choices.

- **Lane County: Road Maintenance Division**

The Road Maintenance Division is responsible for the maintenance and upkeep of the County transportation system as well as for some state highways and city streets under contract with Lane County. The majority of equipment and employees are based at the Delta Complex, with satellite shops located near Cottage Grove, Dexter, Veneta, and Florence. The Bridge Projects Crew and Vegetation Crew are headquartered at Delta and work throughout the County. Efforts include:

- Bridge Inspections and Maintenance
- Culvert Inspection and Maintenance
- Driveway Permits
- Pavement Management
- Roadside Ditch and Drainage Maintenance
- Roadside Vegetation Management
- Storm Response
- Winter Sanding and Snow Plowing
- Leaf pick-up on streets with curbs (Springfield, Sanata Clara/River Rd.)
- Roadway Event Permits

- **Lane County: Traffic Engineering and Safety**
  Services include:
  - Striping and signing plans
  - Signalized traffic intersections
  - School crossings
  - Bicycle and pedestrian paths and crossings
  - Perform average daily traffic counts, special traffic counts for road projects and speed studies.
  - Perform fatal crash investigations and maintain the Traffic Crash Record system
  - Work with citizens who request information or who have concerns about speed zones, traffic control at intersections, street signs, deer signs, and guardrails
  - Maintain county owned electrical signals and street lights

- **Oakridge Public Works**
  The Oakridge Community Service Department is responsible for the generation, treatment and distribution of potable water, the collection and treatment of wastewater, street and road maintenance and drainage, public building maintenance, Park and open space maintenance, levee maintenance and repair and the operation and maintenance of an emergency fire system at the industrial park.

- **ODOT Traffic -- Roadway Engineering**
  ODOT provides roadway engineering specifications for sidewalks, ramps, bike lanes, crosswalks, and pedestrian railings (on ODOT facilities which include high level roadway classifications such as interstates, state-owned highway, and principle arterials.

- **Roadway Safety -- ODOT Transportation Safety Division**
  This program works with the ODOT Traffic-Roadway Division, local and regional governments, as well as private contractors who build and maintain roads to ensure that all roads are engineered to meet the highest safety standards. The program also provides recommendations for systematic improvements in high crash risk locations. This division provides: performance plans and annual evaluation; public education materials; legislation reviews; regional transportation safety newsletter; safety programs; Safety Action Plan; and provides links to transportation safety partnerships.

- **Safety Corridors -- ODOT Transportation Safety Division**
  Safety corridors are stretches of state highways where fatal and serious injury traffic crash rates are higher than the statewide average for similar types of roadways. To reduce the number of these incidents, the stretch of the road is designated as a "safety corridor" and becomes subject to heightened enforcement and double fines for traffic infractions. Drivers may also be asked to turn on headlights during the day, reduce speed and refrain from passing.

- **Springfield: Design Standards and Procedures Manual**
  In all cities the public right-of-way and public easements are special areas created for public transportation and for placement of storm and sanitary sewer systems and other utilities such as telephone, water and gas. All physical aspects of public infrastructure within the right-of-way and easements should be designed for public safety, efficient operation, and cost effective maintenance. This document contains design standards and procedures that are meant to establish, clarify and assist both City staff and private engineers in creating safe, efficient, and cost-effective street, drainage and sanitary sewer projects for the City of Springfield. These standards and procedures will apply to both new construction and reconstruction, except where design standards cannot be properly applied because of unique situations.

- **Springfield: Street Maintenance**
  The city preserves the integrity of streets to minimize hazards to motorists and pedestrians. Activities include sweeping, grading, flushing, pothole patching, annual crack sealing, slurry sealing, and ice and snow removal. Sidewalk repair service is also provided, including upgrading corners to provide wheelchair ramps.

- **Springfield Traffic Control**
  Traffic control maintenance and construction activities provide control devices that are visible, informative, and effective in promoting traffic safety among all modes of transportation to comply with State and National Standards. Traffic signals owned by the City and Oregon Department of Transportation are timed for safety and efficiency.

Construction and maintenance of traffic signs, traffic signals and pavement markings are the primary activities of the Operations Division's Traffic Control Maintenance and Construction program.

- **Veneta Public Works**
  The public works crew consists of seven employees. This handful of employees have the enormous task of maintaining the City's water and sewer systems, including five wells and a sewer treatment facility, operating the Veneta Community Pool, maintaining City parks, providing animal control and generally keeping the City up and running. The City does not currently employ an in-house engineering staff. Engineering services are provided by contract with a local firm of consulting engineers. The city provides street preservation projects, such as slurry seal work (cleaning, filling cracks, and coating the surface). The city council is considering a transportation utility fee. An economic development committee is looking at how to make Veneta a safer and vibrant place by upgrading existing infrastructure and a developing walkable downtown. The city is pursuing state funding (2018 – 2021 STIP & ConnectOregon) for pedestrian improvement projects.

Appendix B: Background on Automated Speed Enforcement

Speeding is a leading contributing factor to serious and fatal crashes. Automated speed enforcement (ASE) can be an effective method for reducing speed related crashes. The goal of ASE is to complement traditional enforcement tools and change speeding behavior over time. This document provides an overview of the implementation of automated speed enforcement internationally and in the United States and some of the barriers and tradeoffs of implementation in Lane County.

Use

In the United States, Speed cameras have been used in 15 States and the District of Columbia. A full list of current automated speed enforcement programs in the US can be found in Attachment A. ASE is also widely used internationally in over 75 countries including the United Kingdom, Austria, and Australia. These systems combine photography and Doppler/radar speed data collection to determine vehicle speeds. The first is a fixed camera that measures speed at a specific point and takes a photo of the vehicle. The second type is a mobile camera/radar that is deployed at variable points either mounted in police vehicles or mounted on a roadside. Finally, the speed over distance method takes two speed measurements over a specified distance and location. Typically, these systems are signed and include public outreach and education surrounding the speed enforcement. The goal of these systems and the related outreach is to change driver behavior over time and reduce overall speeding infractions.

Effectiveness

In general the current research indicates that ASE is an effective tool in reducing speeds and the number of serious or fatal crashes. The National Highway Traffic Safety Administration found that that photo radar systems can reduce crashes in the range of 20-25 percent. In some cases, these reductions have a spillover effect that continued along the corridor beyond the enforcement sites. A summary of these spillover effects found in selected literature can be found in Attachment B. Many jurisdictions will implement these systems as a pilot program. Some of these pilot studies found that speeds returned to pre-camera levels in 2-8 weeks once the pilot was complete. This return to speeding patterns indicates that permanent ASE systems may have better overall success for long term behavior change than mobile ASE systems.

Issues and Barriers

Despite the research that shows effectiveness, Automated Speed Enforcement can be a contentious issue. Some concerns related to implementation of ASE include the question of speed traps, increased impact on other roads, infringement on civil liberties, and questions about the increase in revenue from these tickets. Under Oregon law, permanent ASE systems are currently not allowed outside of the Portland Metro area.

Currently, state law allows photo radar systems to be operated in mobile vans for no more than four hours in one location with a uniformed police officer present. This results in inconsistent enforcement that doesn't reap the benefit of increased efficiency through technology. This type of enforcement has also been shown to have a decay effect in which travelers quickly return to speeding once the targeted enforcement ends.

Resistance to more permanent speed enforcement is widespread. Enforcement agencies often have concerns about a loss of personal contact with speeders , the public relations issues that come from speeding infractions sent through the mail, and the relationship and cost of using private companies to manage the technology . Some citizens find the use of cameras to be an infringement on civil liberties and have concerns about the use of the fines as a means to fund local enforcement. Before ASE could be adopted local, the region would need to come to terms with these issues and determine that the benefits of speed reduction outweigh these potential barriers.

States using speed cameras

Source: Insurance Institute for Highway Safety
(http://www.iihs.org/iihs/topics/laws/automated_enforcement/enforcementtable)
February 2016 — Number of individual communities with programs: 140 (In addition to the listed local jurisdictions, Illinois, Maryland, Oregon and Washington use speed cameras statewide in work zones.)

- **Alabama (2 jurisdictions)**
- **Arizona (12 jurisdictions)**
- **Colorado (3 jurisdictions)**
- **District of Columbia**
- **Illinois (2 jurisdictions)**
- **Iowa (8 jurisdictions)**
- **Louisiana (6 jurisdictions)**
- **Maryland (45 jurisdictions)**
- **Missouri (9 jurisdictions)**
- **New Mexico (3 jurisdictions)**
- **New York (1 jurisdiction- New York City)**
- **Ohio (12 jurisdictions)**
- **Oregon (4 jurisdictions, Portland metro area and statewide works zones)**
- **Tennessee (14 jurisdictions)**
- **Texas (1 jurisdictions)**
- **Washington (14 jurisdictions)**

Summary of Automated Speed Enforcement Device Studies

Citation	**Device Tested**	Country	Road Types Tested	Duration of Effect	Spillover effects
Greg Chen et al. 2000 *Speed and safety effect of photo radar enforcement on a highway corridor in British Columbia*	Permanent Speed Cameras	Canada	Highway	2 years	Yes along entire corridor
Richard A. Retting et al. 2008 *Evaluation of automated speed enforcement on Loop 101 freeway in Scottsdale, Arizona*	Permanent Speed Cameras	USA	Major Highway/ Principal Arterial	9 months	Yes, further down the highway
Ellen De Pauw et al. 2014	Permanent	Belgium	Highway	10-18	No, cars speed

Behavioural effects of fixed speed cameras on motorways: Overall improved speed compliance or kangaroo jumps?	Speed Cameras			months	up after the camera
Andrew P. Jones et al. 2007 *The effects of mobile speed camera introduction on road traffic crashes and casualties in a rural county of England*	Mobile Speed Cameras	England	Highways, minor arterials, minor collectors	4 years	Yes, further along the corridor
Alena Hoye 2014 *Safety effects of section control – An empirical Bayes evaluation*	Permanent Speed Cameras	Norway	Highways, major arterials	2-3 years	Unclear
Alfonso Montella et al. 2015 *Point-to-point speed enforcement systems: Speed limits design criteria and analysis of drivers' compliance*	Permanent Speed Cameras	Italy	Unclear	5 years	Unclear
Neil Thorpe, Lee Fawcett 2012 *Linking road casualty and clinical data to assess the effectiveness of mobile safety enforcement cameras: a before and after study*	Mobile Speed Cameras	England	Highways	3 years	Unclear
Richard Retting, Charles Farmer 2002 *Evaluation of speed camera enforcement in the District of Columbia*	Permanent Speed Cameras	USA	Major arterials, minor arterials, higways	1.5 years	Yes, on surface streets throughout the city

Appendix C: Disparity in Transportation Safety Outcomes

Motor vehicle crashes continue to be one of the leading causes of death and disability in the United States. Population based crash rates allow for comparisons across modes and geographies by using population as the denominator to assess population burden but does not allow for evaluation of risk. Using bicycle miles traveled estimates from the Central Lane MPO Bicycle Counting Program, exposure-based bicycle crash rates are created and compared to motorized vehicle crash rates. Findings demonstrate that people riding bicycles face an increased risk compared to people using motorized transport. These findings are consistent with past research that used exposure based crash rates to compare risk among different modes. These conclusions should add urgency to addressing the safety improvements in non-motorized infrastructure.

Background

Motor vehicle crashes continue to be one of the leading causes of death and disability in the United States. While population based crash rates allow for comparisons across modes and geographies to assess the burden upon the population, they do not evaluate risk. Vehicle miles traveled are typically used to normalize traffic crashes to better understand risk by allowing for exposure based rates. Similar rate calculations are rare for bicycle crash analysis due to limited bicycle traffic volume data. This work summarizes the methods used to calculate bicycle miles traveled and subsequent bike crash rates in the Eugene-Springfield, Oregon region.

A facility demand model using negative binomial regression specification is used to estimate bicycle miles traveled in the Eugene-Springfield, Oregon region. These bike miles traveled estimates are then used to calculate exposure based bicycle crash rates for three injury severity levels. Bicycle crash rates are then compared to motorized vehicle crash rates using a similar exposure based rate calculation.

Results

Comparison of exposure based crash rates for bicycle and motorized transport reveal significant differences with bicycle crash rates many times higher than motorized transport rates. These differences exist across all injury severity levels. Comparison of crash rates for different street designs show differences as well, intuitively revealing streets with higher vehicle speeds and higher vehicle volumes have higher crash rates for bikes and vehicles alike. Bike lanes seem to offer significant protection for people who ride bikes, though crash rates on these facilities are still higher than most facility combinations for motor vehicles.

On average 10% of the fatal and severe injuries in the Eugene-Springfield metro area involve people riding bicycles. Due to this relatively low share of overall crash outcomes,

bicycle safety measures may not be prioritized by local decision makers. Assessing safety for people riding bicycles using an exposure based crash rate highlights the unequal burden placed on bicyclists compared to motorized transport. These outcomes should add urgency in addressing deficiencies in non-motorized infrastructure.

CLMPO Crash Data Summary

Crash data presented below is collected, cleaned, and disseminated by the Oregon Department of Transportation (ODOT) through their Crash Data System (CDS). The below information summarizes traffic crash conditions for bicycle crashes and motorized vehicle crashes. Data available for this research includes crashes from 2007 to 2013. However, since exposure estimates used in bicycle crash rate calculations are based on 2013-2015 a subset of crash data for years 2011- 2013 will be used. To assure year to year fluctuations in crashes do not bias the crash data used, annual average crashes will be used for years 2012 to 2015. In order to give the reader a sense of how these averages compare to somewhat longer term comparisons are presented in **Table 1** showing the annual average for all available data (2007-2013) and the selected data (2012-2014). Going forward only the subset of data will be used for analysis.

Table 1

Central Lane MPO Motorized and Bicycle Crashes							
Total All Years (2007-2014)				Total All Years (2012-2014)			
Mode	Fatalities	Severe Injuries	All Injuries	Mode	Fatalities	Severe Injuries	All Injuries
Bike	8	49	716	Bike	2	15	281
Motorized	48	407	13,252	Motorized	17	164	5,275
Average Annual (2007-2014)				Average Annual (2012-2014)			
Mode	Fatalities	Severe Injuries	All Injuries	Mode	Fatalities	Severe Injuries	All Injuries
Bike	1.1	7.0	102.3	Bike	0.7	5.0	93.7
Motorized	6.9	58.1	1893.1	Motorized	5.7	54.7	1758.3

CLMPO Bicycle Crashes

Table 2 below shows the bicycle crash outcomes for the selected years by functional classification and bicycle facility type. Descriptions of the functional classifications and bicycle facilities can be found in **Figures 1 and 2** below. For the purposed of this research and included in the description in T**able 2,** bicycle routes include both bicycle boulevard designations and streets with shared lane markings. The justification for this can be found in the bicycle miles traveled methodology.

Table 2

Central Lane MPO Bicycle Crash Outcomes by Functional Classification and Bicycle Facility Type (2012-2014)						
Fatal Injuries from Bicycle Crashes						
	Path	**Local**	**Collector**	**MinorArt**	**MajorArt**	**Total**
No Bike Facility	0	0	0	1	1	2
Bike Route	0	0	0	0	0	0
Bike Lane	0	0	0	0	0	0
Off-street Path	0	0	0	0	0	0
Total	0	0	0	1	1	2
Severe Injuries from Bicycle Crashes						
	Path	**Local**	**Collector**	**MinorArt**	**MajorArt**	**Total**
No Bike Facility	0	2	0	2	2	6
Bike Route	0	0	0	0	0	0
Bike Lane	0	0	2	3	4	9
Off-street Path	0	0	0	0	0	0
Total	0	2	2	5	6	15
Injuries from Bicycle Crashes						
	Path	**Local**	**Collector**	**MinorArt**	**MajorArt**	**Total**
No Bike Facility	0	52	22	23	17	114
Bike Route	0	4	3	1	0	8
Bike Lane	0	1	31	72	52	156
Off-street Path	3	0	0	0	0	3
Total	3	57	56	96	69	281

Figure 1

Facility Type	Description
Shared Lane Marking (Sharrow)	A shared lane marking is a pavement marking symbol that indicates an appropriate bicycle positioning in a roadway used by motor vehicles and bicycles and to indicate to motorist to share roadway space with bicyclists. Shared lane markings may be placed at the edge of the travel lane or at the center of the travel lane, depending on factors like on-street parking, width of travel lane, or posted speed.
Bike Boulevard (Neighborhood Greenways)	A bike boulevard is a street segment, or series of contiguous street segments, that has been modified to accommodate through bicycle traffic and minimize through motor traffic. Oftentimes, but not necessarily, traffic calming features are utilized.
Bike Lane	A bike lane is a portion of roadway that has been designated for preferential or exclusive use by bicyclists by pavement markings and, if used, signs. It is intended for one-way travel, usually in the same direction as the adjacent traffic lane, unless designed as a contra-flow lane.

Figure 2

Functional System	Services Provided
Arterial	Provides the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control.
Collector	Provides a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials.
Local	Consists of all roads not defined as arterials or collectors; primarily provides access to land with little or no through movement.
Source:http://www.fhwa.dot.gov/environment/publications/flexibility/	

Table 4

Central Lane MPO Bicycle Crash Outcomes by Functional Classification and Bicycle Facility Type Annual Average (2012-2014)						
Fatal Injuries from Bicycle Crashes						
	Path	**Local**	**Collector**	**MinorArt**	**MajorArt**	**Total**
No Bike Facility	0.00	0.00	0.00	0.33	0.33	0.67
Bike Route	0.00	0.00	0.00	0.00	0.00	0.00
Bike Lane	0.00	0.00	0.00	0.00	0.00	0.00
Off-street Path	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.33	0.33	0.67
Severe Injuries from Bicycle Crashes						
	Path	**Local**	**Collector**	**MinorArt**	**MajorArt**	**Total**
No Bike Facility	0.00	0.67	0.00	0.67	0.67	2.00
Bike Route	0.00	0.00	0.00	0.00	0.00	0.00
Bike Lane	0.00	0.00	0.67	1.00	1.33	3.00
Off-street Path	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.67	0.67	1.67	2.00	5.00
Injuries from Bicycle Crashes						
	Path	**Local**	**Collector**	**MinorArt**	**MajorArt**	**Total**
No Bike Facility	0.00	17.33	7.33	7.67	5.67	38.00
Bike Route	0.00	1.33	1.00	0.33	0.00	2.67
Bike Lane	0.00	0.33	10.33	24.00	17.33	52.00
Off-street Path	1.00	0.00	0.00	0.00	0.00	1.00
Total	1.00	19.00	18.67	32.00	23.00	93.67

Eugene-Springfield FAUB Vehicle Crashes

Table 5 below shows the vehicle crash outcomes for the selected years by functional classification and vehicle type. Vehicle crashes include passenger vehicles, freight, farm, buses, and motorcycles. Passenger vehicle involved crashes make up the largest proportion of the motor vehicle crashes with motorcycle involved crashes representing the second largest proportion of crashes. Crashes are presented by functional classification including the sub-classifications. These sub-classifications are aggregated below for the VMT estimates. Crashes within the Federal Aid Urban Boundary (FAUB) are used because of the geography at which VMT estimates are calculated. ODOT estimates VMT for the FAUB which is a slightly different boundary than the MPO.

Federal Urbanized Area Boundary Vehicle Crash Outcomes by Functional Classification and Vehicle Type (2012-2014)								
Vehicle Fatalities								
Functional Classification	**Freight/Farm**	**Motor Cycle**	**Other Bus**	**Other**	**Passenger Vehicle**	**School Bus**	**Unknown**	**Total**
Urban Local	0	2	0	0	0	0	0	2
Urban Collector	0	0	0	0	0	0	0	0
Urban Minor Arterial	0	0	0	0	4	0	0	4
Urban Principle Arterial - Interstate	0	0	0	0	1	0	0	1
Urban Principle Arterial - Other	0	2	0	0	6	0	0	8
Urban Principle Arterial - Other Freeways and Expressways	0	0	0	0	2	0	0	2
Total	0	4	0	0	13	0	0	17
Vehicle Severe Injuries								
Functional Classification	**Freight/Farm**	**Motor Cycle**	**Other Bus**	**Other**	**Passenger Vehicle**	**School Bus**	**Unknown**	**Total**
Urban Local	0	1	0	0	8	0	0	9
Urban Collector	0	7	0	0	13	0	0	20
Urban Minor Arterial	0	12	0	0	47	0	0	59
Urban Principle Arterial - Interstate	1	0	0	0	8	0	0	9
Urban Principle Arterial - Other	0	8	0	0	33	0	0	41
Urban Principle Arterial - Other Freeways and Expressways	0	8	0	0	18	0	0	26
Total	1	36	0	0	127	0	0	164
Vehicle Total Injuries								
Functional Classification	**Freight/Farm**	**Motor Cycle**	**Other Bus**	**Other**	**Passenger Vehicle**	**School Bus**	**Unknown**	**Total**
Urban Local	1	11	1	0	208	1	0	222
Urban Collector	0	26	1	1	512	2	0	542
Urban Minor Arterial	2	45	10	0	1,905	4	1	1,967
Urban Principle Arterial - Interstate	3	5	0	0	271	1	0	280
Urban Principle Arterial - Other	6	38	3	1	1,612	1	0	1,661
Urban Principle Arterial - Other Freeways and Expressways	3	18	0	0	581	0	1	603
Total	15	143	15	2	5,089	9	2	5,275

Bicycle Miles Traveled Estimates

Bicycle miles estimates are derived from an estimation process that uses a facility demand model approach that relies on relationships between daily bicycle traffic counts and spatial-temporal conditions to estimate bicycle traffic for areas of the network where no count data was collected. A negative binomial regression specification was employed for this process which yields an estimate and also margins of error within a specified confidence interval, in this case 95%. BMT estimates by functional classification and bicycle facility type are presented below alongside their margins of error in **Table 6**. These estimates represent annual bicycle miles traveled for an average year between 2012 and 2014 with 2013 climate conditions. **Table 7** describes the proportion of total BMT by functional classification and bicycle facility type.

Table 6

Annual Bicycle Miles Traveled by Functional Classification and Bicycle Facility Type (2012-2014)						
Bike Facility Type	**Path**	**Local**	**Collector**	**MinorArt**	**MajorArt**	**Total**
No Bike Facility	0	2,1885,765 20%/-32%	951,920 23%/-39%	200,750 27%/-56%	4,380 25%/-50%	23,042,815 20%/-33%
Bike Route	0	1,176,030 19%/-30%	189,800 17%/-26%	10,220 33%/-115%	0	1,376,050 19%/-30%
Bike Lane	0	1,631,550 22%/-36%	1,904,935 27%/-53%	2,743,340 20%/-33%	0	6,279,825 23%/-39%
Off-street Path	8,015,765 16%/-19%	0	0	0	0	8,015,765 16%/-19%
Total	8,015,765 16%/-19%	2,4693,345 20%/-33%	3,046,655 25%/-46%	2,954,310 21%/-34%	4,380 25%/-50%	38,714,455 20%/-31%

Table 7

Proportion of Total Bicycle Miles Traveled by Functional Classification and Bicycle Facility Type						
Average Estimate						
Bike Facility Type	**Path**	**Local**	**Collector**	**MinorArt**	**MajorArt**	**Total**
No Bike Facility	0.0%	56.5%	2.5%	0.5%	0.01%	60%
Bike Route	0.0%	3.0%	0.5%	0.0%	0.00%	4%
Bike Lane	0.0%	4.2%	4.9%	7.1%	0.00%	16%
Off-street Path	20.7%	0.0%	0.0%	0.0%	0.00%	21%
Total	20.7%	63.8%	7.9%	7.6%	0.01%	100%

It should be noted that the only streets with a major arterial functional classification to be assigned bicycle volumes were those that allow bicycle travel. Therefore major arterials

only include unrestricted access surface streets like River Road and segments of Highway 99 West in Eugene or Main Street in Springfield and not major arterials like sections of Delta Highway.

Vehicle Miles Traveled Estimates

Vehicle miles traveled (VMT)estimates are developed by the Oregon Department of Transportation as required by the Federal Highway Administration (FHWA) for the Highway Performance Monitoring System (HPMS). ODOT creates estimates for each federal aid urban boundary (FAUB) by functional classification. VMT estimates for the Eugene-Springfield FAUB are presented below in **Table 8** for years 2007-2014.

Table 8

Vehicle Miles Traveled for Eugene-Springfield Federal Urbanized Area Boundary								
Functional Classification	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Principle Arterials	8.9	8.5	9.0	8.7	8.7	8.5	8.5	8.4
Minor Arterials	4.0	3.8	3.8	3.9	4.1	4.0	4.0	4.0
Collectors	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.8
Local	1.6	1.4	1.5	1.6	1.5	1.5	1.6	1.6
Total (Hundreds of Millions)	16.3	15.5	16.0	15.8	15.8	15.5	15.6	15.7

It necessary to note that for VMT estimates shown in **Table 8** the major arterials include all sub-classifications of major arterials including restricted access facilities like expressways and freeways as well as interstate segments within the urban area and unrestricted facilities designated as major arterials. For the purposes of this research and **Table 7** above, all urban major arterials are grouped together and include the formal federal classifications: principle arterial other freeways and expressways, principle arterial other, and principle arterial interstate.

Crash Rate Creation and Comparison

Using travel exposure estimates from the CLMPO's Regional Bicycle Counting Program and VMT estimates from ODOT's Traffic Counting Program, bicycle and motorized vehicle crashes rates are calculated and presented below. Exposure based traffic crash rates are calculated by dividing the number of crashes times 100 million by the travel measure. A standard way to normalize a crash rate is to calculate the rate in terms of 100 million miles traveled so that method is applied in this research and is described in **Figure 3.** This calculation is performed for each crash injury severity type including fatal, severe injuries, and total injuries.

Figure 3

$$Rate = \frac{Crash \times 100{,}000{,}000}{Miles\ Traveled}$$

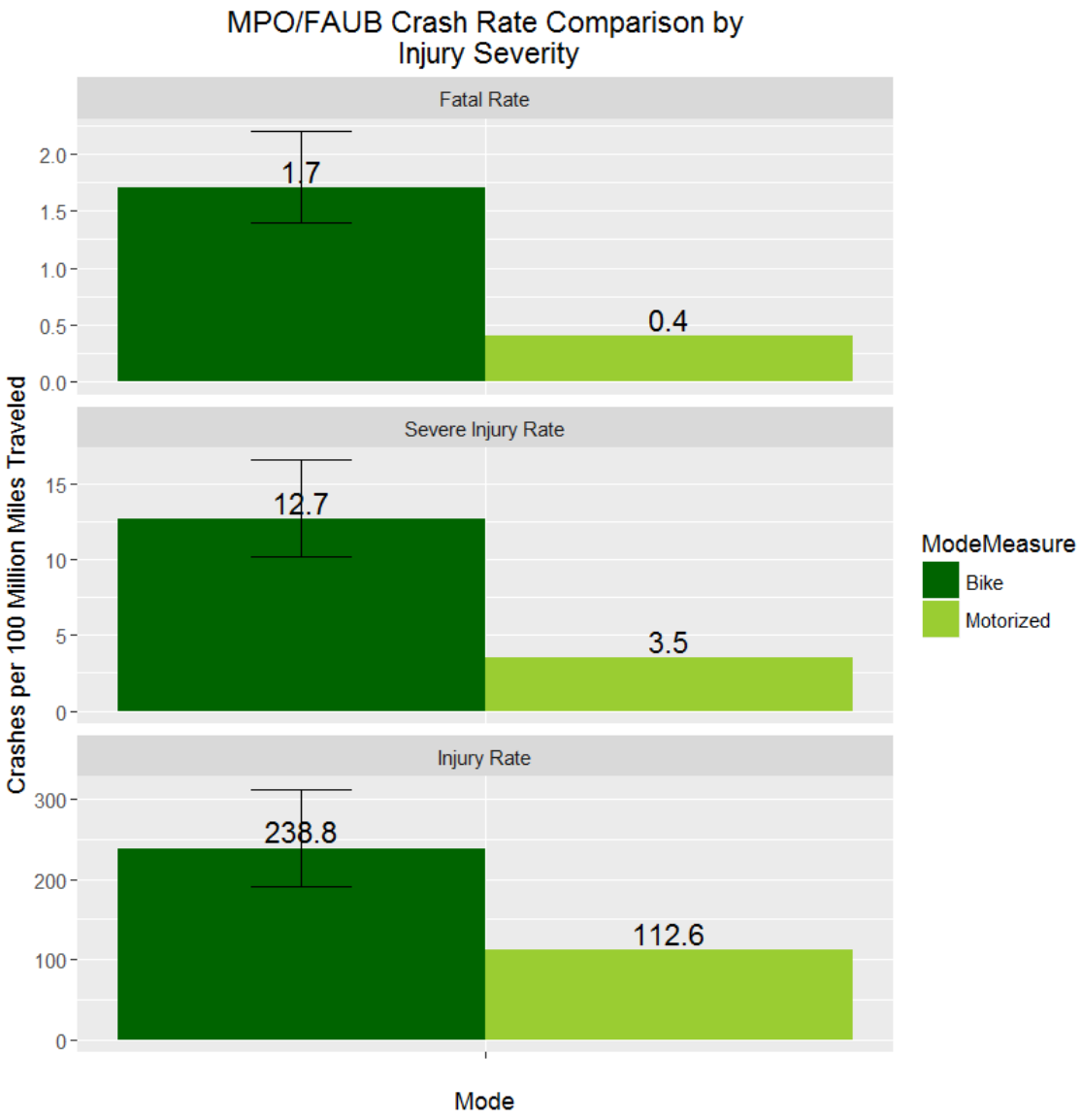
This calculation is performed for each crash injury severity type including fatal, severe injuries, and total injuries. These injury severities are defined by ODOT (ODOT 2014) and NHTSA and are described in more detail in **Table 9**.

Table 9

Fatal is used for participants who die as a result of injuries sustained in the crash. For the purposes of motor vehicle traffic crash classification, the death must occur within thirty days (24-hour periods) from the time of the crash
Severe Injury is used for participants who suffer incapacitating injuries. An incapacitating (severe or major) injury is a non-fatal injury which "prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred". Examples of incapacitating injuries include broken bones, severe bleeding, unconsciousness, etc.
Injury is used for participants who suffer non-incapacitating (moderate) injuries. A non-incapacitating injury not severe, but is "evident to observers at the scene of the accident in which the injury occurred". Examples of non-incapacitating injury include lumps, bruises, abrasions, swelling, minor bleeding, etc. This category also includes Code 4 is used for participants who report injury, but no injuries are apparent. Examples of possible/minor injury include momentary lapse of consciousness, laint of pain, etc.

Crash Rate Comparison - MPO/FAUB

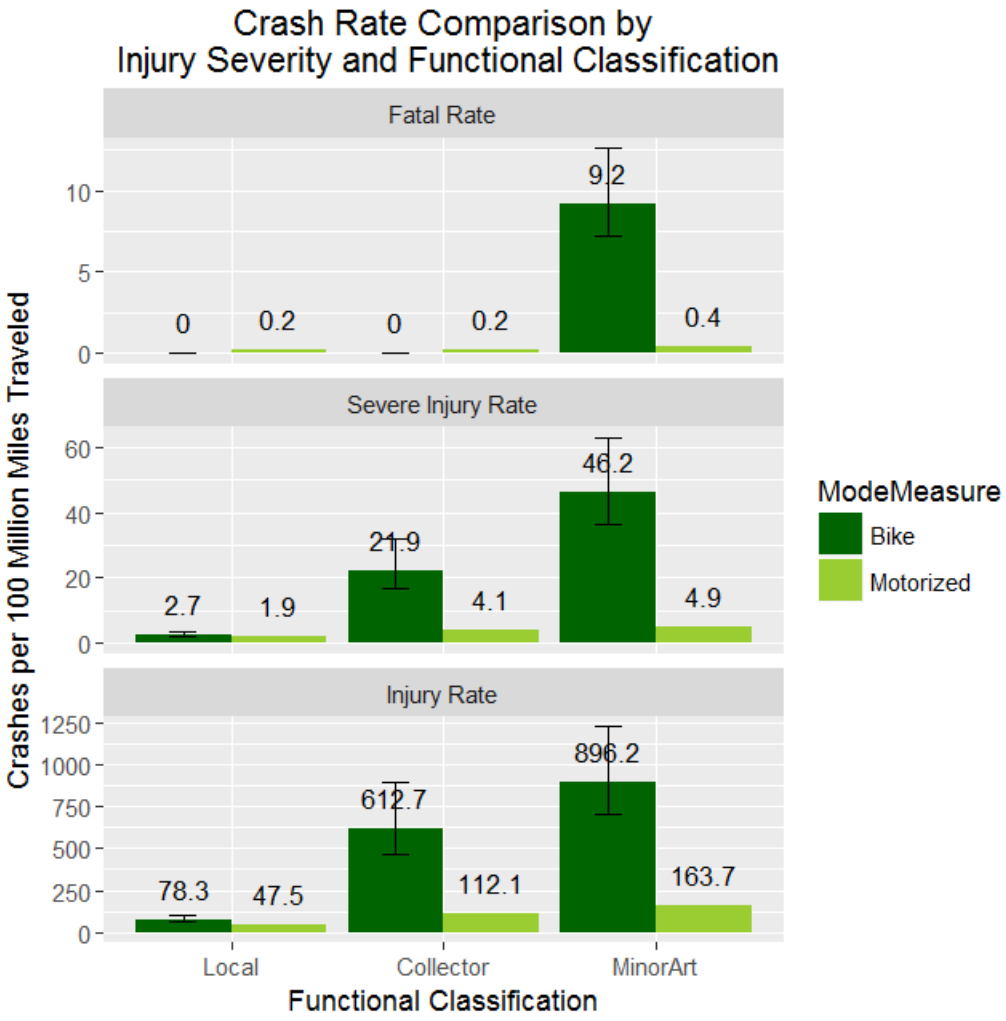
This section compares bicycle and vehicle crash rates for fatal, severe injury, and total injury crashes. The MPO and FAUB geographies are nearly concurrent, with bicycle crashes calculated for the MPO boundary and the vehicle crash rates for the FAUB area. Error bars are presented in the crash rate comparisons and are based on the upper and lower bound BMT estimates. **Figure 4** shows that the fatal crash rate for people riding bicycles is 1.7 fatalities per 100 million bicycle miles traveled compared to 0.4 fatalities per 100 million vehicle miles traveled for drivers and passengers of motor vehicles. The severe injury crash rate for people riding a bicycle is 12.8 severe injuries per 100 million BMT while the motor vehicle severe injury crash rate is 3.5. The total injury crash rate is also presented and includes both severe injuries and all other injuries. The results in **Figure 4** show that the crash rate for people riding a bicycle is higher than that for motorized transport even considering the potential over or under estimate of bicycle BMT (shown above in **Table 6**).



Crash Rate Comparison - Functional Classification

This section compares crash rates for bicycle and motorized transport by functional classification for three injury severity levels. These results are presented below in **Figure 6**. Minor arterials have the highest crash rates for people riding a bicycle for each level of injury severity. Fatal and injury crash rates are also highest on minor arterials for drivers and passengers of motorized vehicles though while collectors have higher severe injury rates. Local streets have the lowest crash rates for all injury severity levels and for both modes. In fact bicycle severe injury rates are slightly lower than motorized vehicle severe injury rates Comparisons for major arterial facilities are not shown due to less confidence in BMT estimates for those facility types.

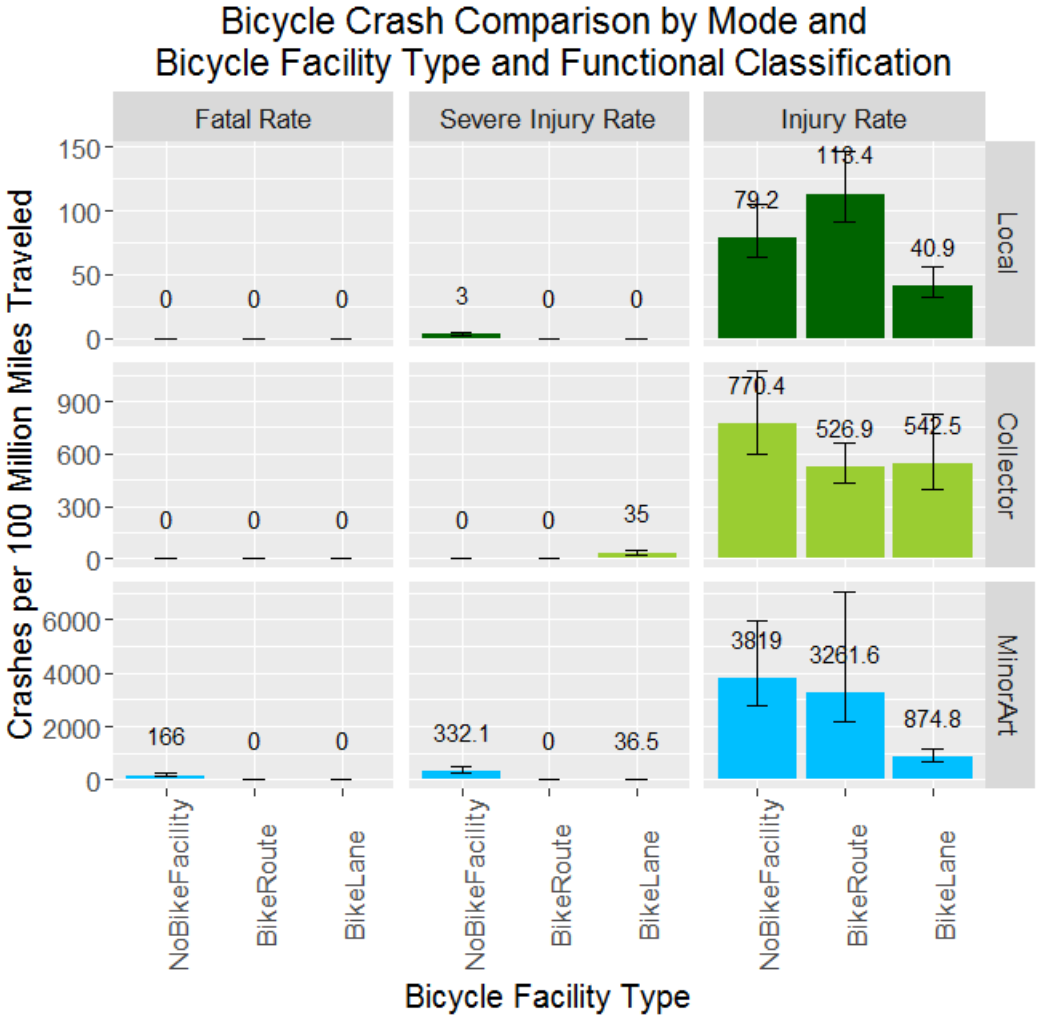
Figure 6



Crash Rate Comparison - Functional Classification and Bicycle Facility Type

Figure 7 below describes crash rates for people riding bicycles only by functional classification and bicycle facility type. For bicycle fatal crash rates, minor arterials without bicycle lanes have a higher crash rate than facilities without this design treatment. Since there were no fatal bicycle crashes on local or collector streets the fatal crash rates are zero for these facilities. For severe injuries and total injuries, streets without bicycle lanes have a higher crash rate than those with a bicycle lane. Streets with a bike route designation also tend to have lower crash rates except for local streets where facilities with a bike route are slightly higher than facilities with no bicycle facility.

Figure 7



The findings reported above demonstrates that for the Central Lane MPO area crash rates for people riding a bicycle are higher than for people using motorized transportation at almost every level. At the region wide level, bicycle fatal crash rates are over eight times higher compared to motorized vehicle crash rates. Severe injury rates for people riding bicycles are over two times higher compared to motorized vehicle crash rates. Crash rate comparison by functional classification demonstrate that of the street typologies examined, minor arterials exhibit the highest crash rates for both people riding bicycle and people using motorized transport. For people riding bicycles, crash rates on facilities with bicycle facilities including bicycle routes and bicycle lanes, have lower crash rates than those without any treatment. Additionally, except for local streets with bicycle lanes, all functional classifications no matter the bicycle facility treatment have higher bicycle crash rates compared to motorized vehicle crash rates. Ranges are given for bicycle crash rates

based on the upper and lower bound estimates of BMT, the crash rate calculation denominator. Even within these ranges bicycle crash rates are typically higher than motorized vehicle crash rates.

Previous research examining exposure based crash rates for different modes found similar findings to those presented above. Beck et al. (2006) used National Household Travel Survey information to measure travel by mode in order to calculate crash rates and found that fatal crash rates for people riding bicycles is more than double the rate compared to the passenger vehicle crash rate. For severe injuries, the bicycle crash rate was nearly double that of passenger vehicle crash rates. The researcher also found that that motorcycle crash rates for fatal and severe injuries were 59 and 12 times higher respectively, compared to passenger vehicle crash rates. This outcome is important to note since the information presented in the report above compares bicycle crash rates to motorized vehicle crashes, the latter of which include motor cycles. If motorcycles were removed from the motorized vehicle crashes the difference between bicycle crash rates and motorized vehicle crash rates would be even greater.

Teschke et al. (2013) applied an exposure based traffic crash methodology using data from British Columbia, Canada and found similar differences between crash rates for people who ride bikes and motor vehicles. Their research concluded that the bicycle fatal crash rate was over two and a half times the motorized vehicle fatal crash rate and the bicycle injury rate was over three and a half times the motorized vehicle crash rate.

The results for each mode's crash rates presented above are similar in their magnitude compared to some of the past research. Quantifying the differences in risk associated with these modes should be important when considering the raw numbers of crash outcomes. For the years 2007-2013, nine percent of the CLMPO fatal and severe injuries were people riding bicycles. This number alone may not convey the discrepancy of risk associated with riding a bicycle so exposure based crash rates hopefully demonstrate a fuller picture for planners, engineers and decision makers.

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