

Chapter 12 – Safety & Security

A. Multi-Modal Safety

Public safety is by far the most important element considered in every transportation project. Its significance begins with federal goals and policies, continues with state transportation goals and on to the regional and local planning level. Safety is one of the planning factors in MAP-21 that must guide state and regional transportation planning.

The federal planning factors can be found in Vision and Goals, Chapter 2. According to the Bureau of Transportation Statistics' (BTS) Safety data Action Plan:

“Deaths and injuries are a major cost in transportation. Transportation fatalities rank third as the cause of lost years of life in the U.S. (behind heart disease and cancer). Several travel modes have death counts whose impact exceeds that of AIDS. But the Department of Transportation has not yet responded to this public health threat by developing data programs as capable as those used in the federal medical community.”

The ideal situation is that all elements of the multi-modal transportation system are safe. However, that is not always the case and plans must be made for elimination of physical transportation infrastructure hazards and problems to create a safer travel environment.

“Public safety is by far the most important element considered in every transportation project.”

Safety often is discussed along with security, but the two are different and must be addressed separately because they involve different issues and circumstances.

The simplest distinction between safety and security is that safety problems, crashes, are unpremeditated unfortunate events. As such, they may be caused by driver error or impairment, adverse weather, a temporary hazard in the right-of-way, poor infrastructure, poor vehicle design, inadequate vehicle maintenance, or all of the above. By contrast, security events always connote a negative intention (See Security Section).

1. Approach to Safety

There are two components to efforts toward improving transportation safety: public education, and facility improvement. Federal, state and local agencies engage in efforts addressing both. In the area of education, programs go beyond safe-driver programs to provide information to pedestrians, children traveling to school and workers in traffic zones. Crash data show driver error and the failure of bicyclist and pedestrians to obey the rules of the road are factors in most crashes, so traffic safety education can play a significant role in crash reduction. In addition, children, who are among the most vulnerable pedestrians, can be better protected through increasing their awareness of traffic hazards and safety rules.

Education includes law enforcement. ODOT research indicates a direct relationship between traffic law enforcement and crash rates. Due to funding shortfalls, the Josephine County Sheriff's Department does not respond to crashes within the County's jurisdiction. This may result in an under-reporting of crashes. In addition, the number of state police on the road has fluctuated but generally has remained below national average rates. Gold Hill does not have law enforcement. Jackson County Sheriff's department responds to crashes in Gold Hill. Crash records show that two common infractions have a significant impact on traffic crash rates and severity: red-light running and speeding.

These can be reduced through the consistent enforcement of safety-related traffic laws. While the behavior of system users is critical, the facilities themselves need to be designed, built, maintained and operated in ways that make them safe. In the design and construction area, this means following standards for everything from lane widths and driveway spacing to sign placement and crosswalk location. Operations and maintenance programs look at where crashes occur and why, to determine whether any change on the ground could make accidents less likely. Visibility, for example, is important especially at intersections, to allow motorists a clear view of signs, cyclists, pedestrians, and other cars.

Landscaping, which is used to improve appearances and conditions for neighbors and pedestrians, cannot be allowed to obstruct a clear line of sight when needed for traffic safety purposes.

"During the seven-year period from 2007 through 2013, 5,242 crashes were reported in the Grants Pass Urbanized Area..."

2. Safety

During the seven-year period from 2007 through 2013, 5,242 crashes were reported in the Grants Pass Urbanized Area, according to the ODOT Crash Analysis & Reporting Unit. The majority of these crashes occurred on arterial streets, with approximately 12% occurring on urban minor arterials and 44% occurring on urban principal arterials. Approximately 12% of crashes during this period occurred on urban collectors, 6% on urban local roads, and less than 23% occurred on rural roads. The majority of these crashes (73%) occurred in Grants Pass, while 2% occurred in Rogue River and 1% occurred in Gold Hill. Of these reported crashes, 48% sustained property damage only, 51% involved injuries and 1% of the crashes involved fatalities.

Crash Data – Functional Class

From 2007 through 2013, 1,247 crashes were reported along rural roadways (including the rural portions of Interstate 5) within the MRMPO Planning Area. Crashes on urban roads totaled 3,995, or 76% of the total crashes from 2007 to 2013. Within the Planning Area there were 2,682 injury crashes and 2,509 property damage only crashes. There were a total of 51 crashes involving a fatality from 2007 through 2013.

Table 12.1

Crashes - MRMPO Planning Area by Functional Class 2007 to 2013											
Years	2007	2008	2009	2010	2011	2012	2013	Totals	% of Total		
Rural Local	18	15	20	13	29	15	15	125	2%		
Rural Major Collector	43	46	37	59	63	53	45	346	7%		
Rural Minor Arterial	45	34	34	31	37	44	54	279	5%		
Rural Minor Collector	5	5	5	2	3	4	7	31	1%		
Rural Principal Arterial - Interstate	72	60	51	53	62	65	76	439	8%		
Rural Principal Arterial - Other	6	3	5	2	4	3	4	27	0.5%		
Urban Collector	94	76	83	85	116	125	76	655	12%		
Urban Local	38	40	34	33	54	46	47	292	6%		
Urban Minor Arterial	90	90	67	68	105	102	105	627	12%		
Urban Principal Arterial - Interstate	22	15	14	13	15	9	12	100	2%		
Urban Principal Arterial - Other	325	304	307	305	376	350	353	2320	44%		
Urban Principal Arterial - Other Freeways and Exp	0	0	1	0	0	0	0	1	0.02%		
Totals	758	688	658	664	864	816	794	5242	100%		

**MRMPO Crashes by Roadway Type
2007 to 2013**

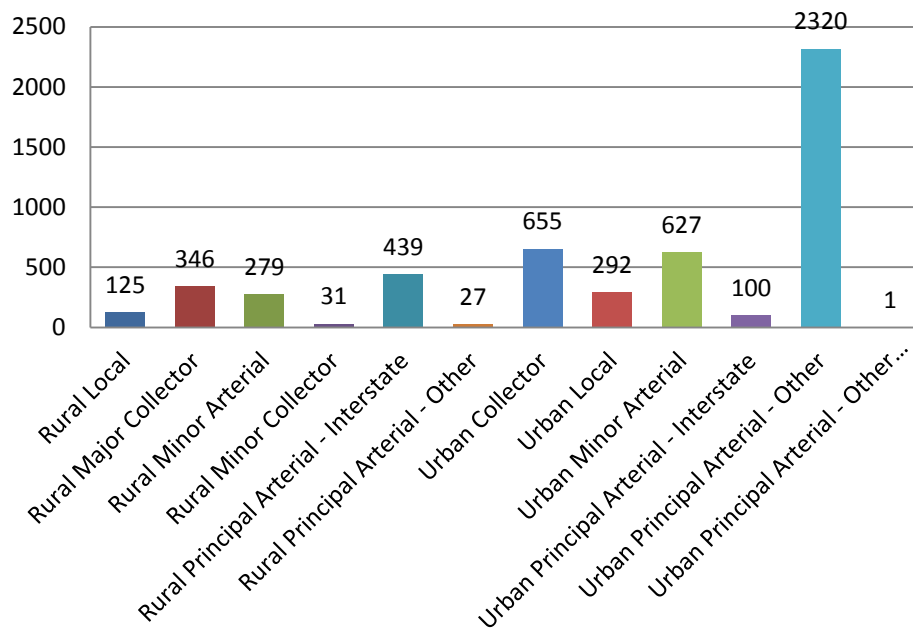


Figure 12.1

Crashes by Jurisdiction

From 2007 to 2013, there were 3,846 crashes in Grants Pass, 110 crashes in Rogue River, 34 crashes in Gold Hill and 1,252 crashes in the rural areas of the MRMPO.

Table 12.2

Crashes by Jurisdiction 2007 to 2013									
Years	2007	2008	2009	2010	2011	2012	2013	Totals	% of Total
Grants Pass	539	509	507	480	634	602	575	3846	73%
Rogue River	12	10	11	18	21	18	20	110	2%
Gold Hill	6	9	3	3	2	6	5	34	1%
Rural Areas	201	160	137	163	207	190	194	1252	24%
Totals	758	688	658	664	864	816	794	5242	100%

Crashes Types

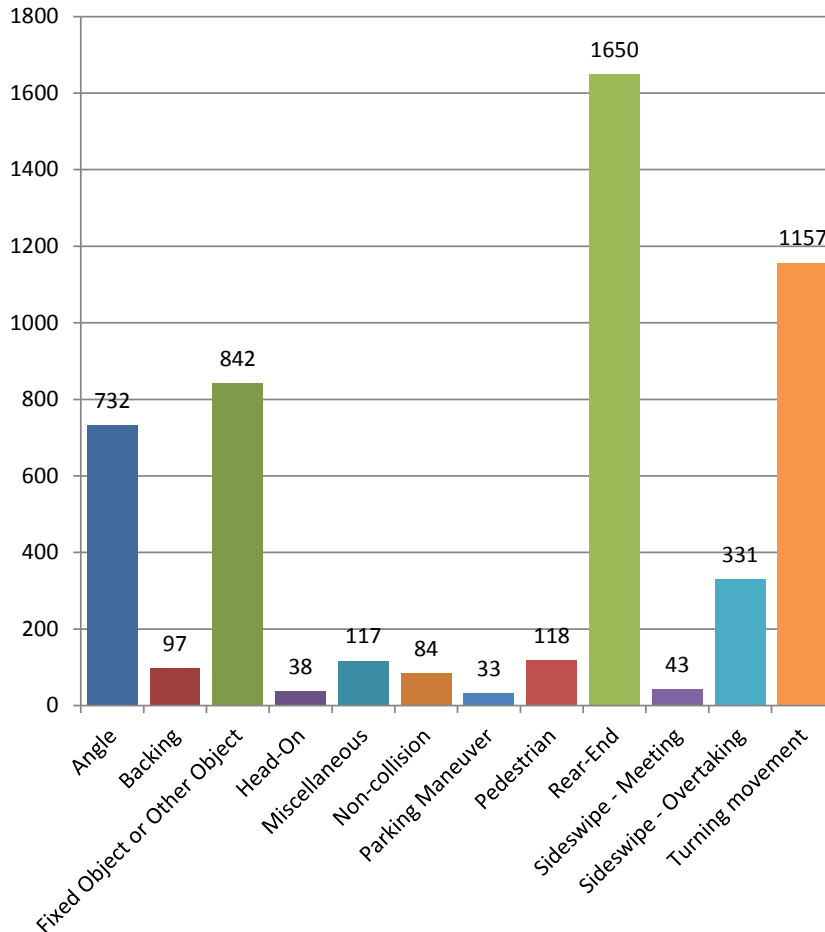
The number of traffic incidents within the Planning Area ranged from 658 to 864 crashes per year, with a low of 658 crashes in 2009 and a high of 864 crashes in 2011. The most common type of crash was rear-end, which comprised 31% (1,650 crashes) of all crashes over the 7-year period. Turning crashes made up 22% (1,157 crashes) of the crash total.

Table 12.3

Crash Types 2007 to 2013									
Years	2007	2008	2009	2010	2011	2012	2013	Totals	% of Total
Angle	128	106	85	72	103	122	116	732	14%
Backing	20	10	11	12	18	11	15	97	2%
Fixed Object or Other Object	121	92	115	100	141	128	145	842	16%
Head-On	10	4	5	1	6	6	6	38	1%
Miscellaneous	13	17	14	17	22	15	19	117	2%
Non-collision	11	17	12	8	15	8	13	84	2%
Parking Maneuver	3	8	2	4	4	8	4	33	1%
Pedestrian	12	14	19	17	18	22	16	118	2%
Rear-End	226	218	190	234	291	238	253	1650	31%
Sideswipe - Meeting	2	5	9	3	9	6	9	43	1%
Sideswipe - Overtaking	45	42	44	42	55	50	53	331	6%
Turning movement	167	155	152	154	182	202	145	1157	22%
Totals	758	688	658	664	864	816	794	5242	100%

Figure 12.2

MRMPO Crash Types 2007 to 2013



Crashes Data – City & Counties

During the 2007 - 2013 period, the majority of the crashes occurred within the City of Grants Pass (73%); 24% occurred in unincorporated areas of Josephine and Jackson Counties within the Planning Area, 1% in Gold Hill and 2% occurred within Rogue River.

Of crashes occurring within the urbanized area, 48% were property damage only and 51% incurred injury. There were fifty-one fatal accidents. The majority of crashes within urbanized areas were the result of rear-end collisions (31%) or turning movements (22%).

Table 12.4

Crash Severity 2007 to 2013									
Years	2007	2008	2009	2010	2011	2012	2013	Totals	% of Total
Fatalities	9	6	11	8	7	6	4	51	1%
Non-Fatal Injury	397	328	347	325	453	421	411	2682	51%
Property Damage Only	352	354	300	331	404	389	379	2509	48%
Totals	758	688	658	664	864	816	794	5242	100%

Crashes occurring for the years 2012 and 2013 are shown on Map 12-1.

Safety Priority Index System

ODOT has developed a safety priority index system (SPIS) to identify hazardous locations along state highways. This rating system considers not only the number of crashes at a particular intersection, but the rate of crashes based on the overall volume of traffic going through that intersection. Crash rates help paint a more complete picture of the safety conditions of a segment than the number of crashes. Rates account for the traffic volumes traveling along a specific segment of roadway, whereas crash numbers do not account for traffic levels.

The ODOT SPIS is considered when making decisions regarding expenditure of state funds for highway improvements. The highway locations with SPIS scores that are in the highest 10 percent of all SPIS scores are evaluated for potential safety improvements. The following locations in the Planning Area were among the top 10% of SPIS groups in the 2014 SPIS report, covering years 2011 - 2013:

Table 12.5

Intersection	SPIS Score	Percent
SE M St & SE 8 th St	75.82	95
SE M St & Redwood Hwy	70.53	95
NW D St & NW 5 th St	65.79	95
NW D St & NW 4 th St	55.91	90
Hubbard Lane & SW Ravenwood	47.52	90
SE M St & 9 th St	47.32	90
Hubbard Lane & SW Clementine	46.31	90

3. RTP Safety Projects

Virtually all the road projects listed in the RTP have a safety element. One of the most common types of improvement, urban upgrade, makes roads safer for motorists as well as bicyclists and pedestrians by adding sidewalks and bicycle lanes that are separate from motor traffic. For motor vehicle drivers also benefit from having marked lanes for non-motorized modes, marked crosswalks and signals. Options for the MRMPO planning include:

- Using published sources, continue to develop tables, charts and maps of transportation crashes and incident data by mode.

- As resources and source agency databases allow, create Geographic Information Systems (GIS) –related database files and maps of accident and incident data by mode.
- Coordinate with appropriate lead agencies, with the primary focus being on highway and pedestrian safety improvements accidents since those constitute the highest number of accidents, but also focusing on transit safety needs.
- Continue Intelligent Transportation Systems planning and project programming, particularly with a view to investments that will enhance safety.
- Continue reviewing with MRMPO committees and the public project evaluation matrix and other specific funding program scoring matrices to ensure that safety projects receive appropriate weighting and priority in plans and programs.
- Help jurisdictions identify additional transportation funding sources that are specifically targeted at safety projects to supplement the limited funds from conventional transportation sources.

B. Multi-Modal Security

The federal government in 1998, called for states and MPOs to address transportation security issues. In 2005, a new transportation act strengthened the requirement, which has been extended to the current MAP-21. The transportation acts require long-range regional transportation plans to consider security distinct from transportation safety. Furthermore, in 2002 Transportation Security Administration (TSA) was created with extensive requirements for operational and capital improvements relating to security. While the public’s eye has been on passenger aviation, TSA’s mission relates to all modes.

The federal government anticipates that over the next several years, security considerations will result in changes in how transportation is planned, designed, implemented and operated.

Transportation goals, planning processes, databases, analytical tools, decision-making considerations, and organizational structures will change due to security concerns.

Transportation will be on the front line in responding to security risks. The response to security concerns will be cross-jurisdictional and functional lines and be among the most complex and important challenges to transportation professionals. While it may be too early to begin changing our long-range infrastructure network plans in response to security risks, there will be changes in spending priorities in the near term and most probably over a longer period of time.”

There is a wide range of such incidents that could cause varying levels of disruption to the transportation system. One report recommending a national research and development strategy for improving surface transportation security presented a wide ranging list of possible threat scenarios. The list originated in a U.S. Department of Transportation vulnerability assessment of the U.S. transportation system. The nature of the threats was characterized primarily as being a

physical, biological, chemical or cyber attack. The types of responses would clearly be different depending on the nature of the attack.

The magnitude and scope of an incident will clearly be an important determinant for gauging the appropriate public safety/emergency response. And most studies of sudden disruptions to the transportation network, either from natural or man-made causes, have concluded that the redundancies in a metropolitan area’s transportation system provides a rerouting capability that allows the flow of people and vehicles around disrupted network links. For instance, in the MRMPO area, parallel routes offer that redundancy.

1. Definitions

The simplest distinction between safety and security is that safety problems, accidents – are just that – unpremeditated unfortunate events. As such, they may be caused by driver error or impairment, adverse weather, a temporary hazard in the right-of-way, poor infrastructure or vehicle design, or all of the above.

By contrast, security events always connote a negative intention, whether the perpetrator is a disgruntled single individual, a member of a gang, or a member of a political organization, that is, a terrorist. In number, terrorist attacks on transportation systems are few, with the vast majority of security breaches being perpetrated by non-political actors. But terrorist events, when they do occur, can be much more dramatic, harm many more people, and require much more to address.

“The simplest distinction between safety and security is that safety problems, accidents – are just that – unpremeditated unfortunate events.”

Table 12.6 below provides a description of various types of security problems that can arise in any transportation system.

Table 12.6

Event	Description
<u>Aggravated Assault</u>	An unlawful attack by 1 person upon another for the purpose of inflicting severe or aggravated bodily injury. This type of assault usually is accompanied by the use of a weapon or by means likely to produce death or great bodily harm.
<u>Arson</u>	To unlawfully and intentionally damage, or attempt to damage, any real or personal property by fire or incendiary device.

<u>Burglary</u>	The unlawful entry of a structure to commit a felony or a theft. This includes offenses known locally as burglary (any degree), unlawful entry with intent to commit a larceny or felony, breaking and entering with intent to commit a larceny, housebreaking, safe cracking and all attempts at these offenses.
<u>Larceny/Theft</u>	The unlawful taking, carrying, leading or riding away of property from the possession or constructive possession of another. This includes pocket picking, purse snatching, shoplifting, thefts from motor vehicles, thefts of motor vehicle parts and accessories, theft of bicycles, theft from buildings, theft from coin operated devices or machines, and all other theft not specifically classified.
<u>Trespass</u>	To unlawfully enter land, a dwelling or other real property.
<u>Vandalism</u>	The willful or malicious destruction, injury, disfigurement or defacement of any public or private property, real or personal, without consent of the owner or person having custody or control by cutting, tearing, breaking, marking, painting, drawing, covering with filth, or any other such means as may be specified by local law.
<u>Terrorism</u>	The willful or malicious destruction, injury, disfigurement or defacement of any public or private property [etc. as above] by domestic or foreign nationals for the purpose of making a political impact.

2. An Approach to Security

FHWA guidance offers one approach to handling potential security or disaster incidents. The plan offers six options for action.

Prevention: This has several components, ranging from the actual stopping of an attack before it occurs, to providing improved facility designs that prevent large scale destruction. Surveillance, monitoring, and sensing technologies will likely play an important role in the prevention phase of an incident.

Response: A range of responses is offered.

Mitigation: Reducing the harmful impact of an attack as it occurs and immediately after. This entails identifying the most effective routing for emergency vehicles, evacuations and effective communication systems among emergency response teams and for general public information.

Monitoring: Recognizing that an incident is underway, characterizing it, and monitoring developments. Clearly, surveillance, monitoring, and sensing technologies would be critical to this phase of incident response, as would public information.

Recovery: Facilitating rapid reconstruction of services after an incident. Depending on the degree of damage to the community and/or transportation system, regaining some

level of normalcy will require bringing the transportation system back to adequate levels of operation.

Investigation: Determining what happened in an attack, how it happened, and who was responsible. This is primarily a security/police activity that reconstructs the incident and determines causality and responsibility.

Institutional Learning: Conducting a self-assessment of organizational actions before, during, and after an incident. This element provides a feedback to the prevention element in that by understanding what went wrong or right in response to an incident, steps can be taken to prevent possible new threats.

3. MRMPO Area Security Planning

Within the planning area, some specific strategies have been developed. They are discussed below in the context of national security planning initiatives.

Intelligent Transportation System (ITS) Program – In the past decade or so, a new federal transportation program focusing on information technology to address problems has been developed. This Intelligent Transportation Systems program can make a major contribution toward transportation security. It can assist in all four phases of security: planning, preparedness, response and recovery. However, planners must consider that because of ITS installations' dependence on computers and electrical power, they are also more vulnerable to security threats than are many other transportation elements.

Freight – Special security planning efforts focus on freight movements. The Federal Motor Carrier Safety Administration reviews security measures with motor carriers and shippers that may be the target of terrorist attack. Its mission is to increase the level of awareness of hazardous materials carriers to terrorist threats. The FMCSA field staff provide information in the form of recommendations and suggestions.



Transit – By law, 1 percent of urbanized funds / formula funds for transit are to be used for safety and security. More funding has been assigned over the past decade. The focus has been on intercity bus systems.

Activities have focused on protecting the driver; monitoring and communicating with over-the-road buses; implementing and operating passenger and baggage screening programs; assessing critical security needs and vulnerabilities; and training transportation personnel to recognize and respond to criminal attacks and terrorist threats, as well as in evacuation procedures. Because the security threat to bus operations is not limited to intercity services, all public transportation companies are required to have security plans. Josephine Community Transit with assistance from MRMPO, will prepare a security plan for its facilities and activities.

Emergency Planning - Another aspect of providing for secure transportation has to do with the subject of “emergency planning.” While transportation security is directly related to preventing attacks that are intended to harm people and damage facilities, harm modes of travel, and harm important transportation infrastructure, emergency planning is intended to respond to unforeseen natural events and disasters. A security incident is one that directly pertains to acts of terror resulting in regional, local, or specific location attacks on people, sites, facilities, or transportation infrastructure; whereas emergency response planning efforts address preparedness and response and recovery to natural disasters such as earthquakes, floods, hurricanes, violent weather, fires, and similar incidents. There are several agencies that coordinate on security and safety matters for the purpose of homeland security. The term “homeland security” refers to domestic governmental actions designed to prevent, detect, respond to, and recover from acts of terrorism, and also respond to natural disasters. Homeland security represents a concerted, national effort to protect the homeland by all levels of government at the Federal, State, and local levels, for the sole purpose of protecting the United States from internal and external hazards.

“Security planning efforts in the planning area are directed and managed by the emergency responders – police, fire, medical – representing all of the MRMPO jurisdictions.”

4. MRMPO Planning

Security planning efforts in the planning area are directed and managed by the emergency responders – police, fire, medical – representing all of the MRMPO jurisdictions.

The MRMPO will coordinate with the agencies on producing and maintaining emergency response plans. In areas involving transportation, public works staffs collaborate and assist the responders in both planning and incident response.

The RTP’s principal role is in identifying projects that assist responder efforts, most specifically in the area of Intelligent Transportation System (ITS) planning. The MRMPO will be developing an ITS plan in consultation with emergency responder representatives. As such, the MRMPO will provide a forum for agencies and the public to examine issues and identify needs and solutions.

Future contributions of the MRMPO are likely to focus in two areas: prevention and mitigation. Prevention planning can include: funding new strategies/technologies/projects that can help prevent events; providing a forum for security/safety agencies to coordinate surveillance and prevention strategies; finding funds for security-enhancing systems; continuing to coordinate with security officials in development of prevention strategies.

Other activities for the MRMPO could include:

- Using published sources, create annual tables of transportation security incident data by mode.
- Analyze the available databases for policy and program directions and review conclusions with appropriate lead agencies.
- Regularly review with the Technical Advisory Committee the MTIP scoring matrix and other specific funding program scoring matrices to ensure that security projects receive appropriate weighting and priority in the MTIP.
- Regularly review the Tier 1 and Tier 2 project development process for the Regional Transportation Plan (RTP) to ensure that security receives adequate priority in the development of the long range project list.

Map 12-1 – Crashes

