

Chapter 12 – Safety and Security

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 rounds out at the regional and local planning levels. Safety is one of the planning factors in [Infrastructure Investment and Jobs Act \(IIJA\)](#) also known as Bipartisan Infrastructure Law (BIL) that must guide state and regional transportation planning. The BIL provides around \$550 billion over a 5-year period (FY 2022 through 2026) in new Federal investment in infrastructure, including roads, bridges, and mass transit; water infrastructure; resilience; and broadband. The BIL directs \$350.8 billion of Federal investments to highway programs, including a total of \$303.5 billion in contract authority through FY 2026 and nearly \$47.3 billion in advance appropriations from the General Fund.

The BIL is estimated to deliver \$13 Billion over Fixing America’s Surface Transportation (FAST) Act levels directly into improving roadway safety. [According to US DOT](#), Oregon, over five years, will receive approximately \$26 million for highway safety traffic programs, which help states to improve driver behavior and reduce deaths and injuries from motor vehicle-related crashes. On an average annual basis, this represents about a 29% increase over FAST Act levels.

Local and tribal governments in Oregon are eligible to apply for \$6 billion in funding for a new Safe Streets for All program which will provide funding directly to tribes and local governments to support their efforts to advance “vision zero” plans and other improvements to reduce crashes and fatalities, especially for cyclists and pedestrians. In addition, Oregon can expect to receive approximately \$31.5 million over five years in funding to augment their commercial motor vehicle (CMV) safety efforts through the Federal Motor Carrier Safety Administration’s Motor Carrier Safety Assistance Program (MCSAP) formula grant to reduce CMV crashes. Oregon will be able to apply for funds to modernize data collection systems to collect near real time data on all reported crashes, including fatal ones, to enhance safety and to allow the Department to understand and address trends as they are identified.

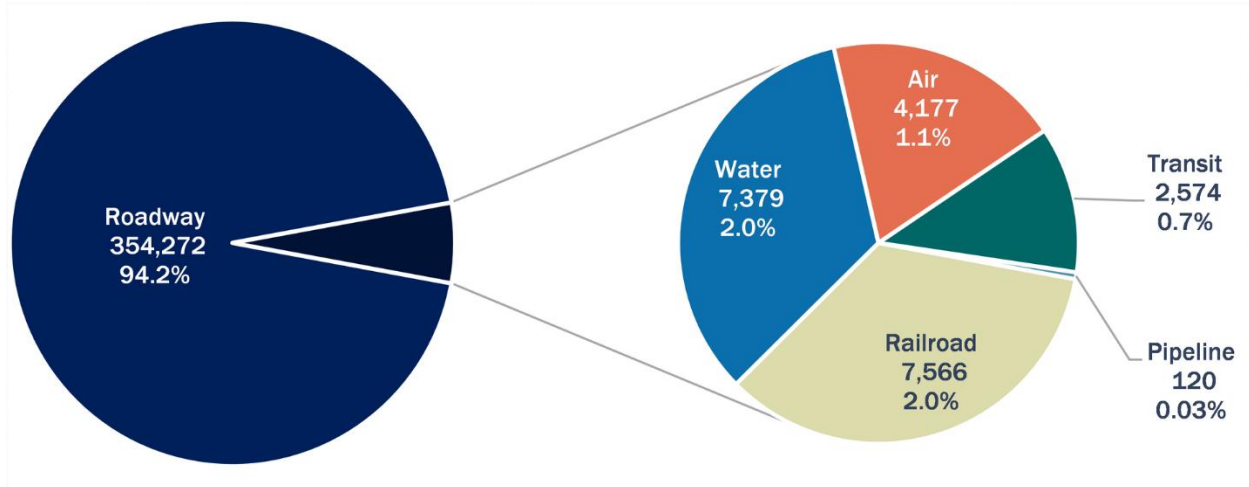
On top of that, FHWA administers the performance-based [Highway Safety Improvement Program](#) (HSIP) with the goal of reducing traffic fatalities and serious injuries on all public roads. The HSIP requires that each State develop a [Strategic Highway Safety Plan](#) (SHSP). The SHSP is a data-driven, multi-year, statewide-coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roads. Many States, including Oregon, are committed to zero deaths visions through their SHSPs. According to [ODOT Transportation Safety Action Plan \(TSAP\)](#), also serves as the State of Oregon’s Strategic Highway Safety Plan, the TSAP lays the foundation to consider and prioritize safety for all modes and users of our transportation system to eliminate all deaths and life-changing injuries on Oregon’s transportation system by 2035.

Supporting the HSIP is the [Safety Performance Management](#) (Safety PM), a part of the overall [Transportation Performance Management](#) program. FHWA defines Safety PM as a strategic approach that uses system information to make investment and policy decision to achieve national performance goals. At the state level, ODOT maintains data on crashes on all public roads, and produces an annual evaluation of the Oregon Traffic Safety Performance Plan. It contains data by type and region. Additional statewide information is available on the web at www.oregon.gov/ODOT/TS.

The Roadway Safety Problem

The United States Department of Transportation (U.S. DOT or the Department) mission is to ensure America has the safest transportation system in the world. Almost 95 percent of the Nation's transportation deaths occur on its streets, roads, and highways, and they are on the rise. The rate of roadway fatalities per 100 million vehicle miles traveled has not substantially improved over the last ten years and increased significantly in 2020. An estimated 38,680 people died in motor vehicle crashes in 2020, of which an estimated 6,236 were people walking. In the first six months of 2021 an estimated 20,160 people died in motor vehicle crashes, up 18.4 percent over 2020. That is the largest number of projected fatalities for January through June since 2006. Since 2015, the annual number of fatalities has exceeded 35,000, with millions more injured – sometimes permanently – each year. Traffic crashes are a leading cause of death for teenagers in America, and disproportionately impact people who are Black, American Indian, and live in rural communities.¹

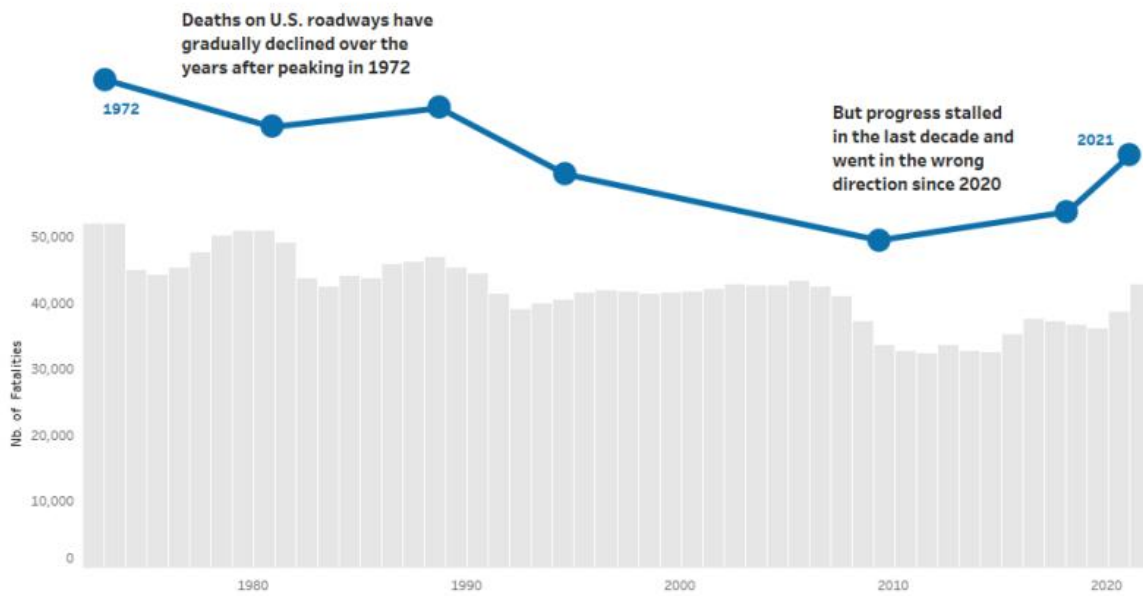
Figure 12-1 - Road Fatality From 2011-2020



* Source: Bureau of Transportation Statistics

¹ [National Roadway Safety Strategy](#)

Figure 12-2 – Road Fatalities Overtime



* Source: *Early Estimates of Motor Vehicle Traffic Fatalities and Fatality Rate by Sub-Categories in 2021*, National Highway Traffic Safety Administration, DOT HS 813 298, May 2022.

The crisis on the Nation’s roadway serves as a reminder of the safety challenge that the whole country faces. To further USDOT vision of zero deaths and demonstrate progress, the Department set an intermediate, ambitious target in the USDOT Fiscal Year 2022-2026 Strategic Plan to reduce 66% of motor vehicle-related fatalities by 2040. FHWA strategic Plan addresses the safety issue along with others and aligns its priorities and goals to follow USDOT vision and goals.

FHWA Strategic Plan

This means a road system that is designed to protect its users, through implementing life-saving programs and infrastructure safety solutions. The [FHWA Strategic Plan for FY 2022-2026](#) outlines the aligned goals and objectives between US DOT and FHWA and reflects the priorities of the agency and safety is on top of the list among other goals.

According to the Strategic Plan the United States has one of the highest traffic fatality rates in the industrialized world, double the rate in Canada and quadruple that in Europe. All FHWA programs are ultimately focused on significantly reducing deaths and serious injuries on America's roadways.

Roadway fatalities in the United States had declined consistently for 30 years since 1975, but that decline stalled over the last decade. In 2020, roadway fatalities increased by 7.2 percent from the previous year, while vehicle miles traveled decreased across the board. Fatalities among pedestrians and bicyclists have been increasing even faster than the overall fatalities among all road users. While less than 20 percent of Americans live in rural communities, almost 50 percent of roadway fatalities across the country are happening on rural roads.

As the first step in working toward the long-term goal of zero roadway fatalities, the U.S. DOT released its [National Roadway Safety Strategy \(NRSS\)](#) in January 2022. The NRSS adopts the Safe System approach and outlines key actions to significantly reduce serious injuries and deaths on America's highways, roads, and streets. FHWA and other modal agencies are committed to supporting the NRSS and will collaborate with other agencies to implement NRSS key actions.

Figure 12-1 shows the safety strategies that were adapted by both US DOT & FHWA in their Strategic Plan for FY 2022-2026.

Figure 12-3 - US DOT & FHWA Safety Strategies

U.S. DOT STRATEGIC OBJECTIVE:
SAFETY

FHWA STRATEGIES



Safe Design:

Design and build transportation infrastructure and systems to improve safety outcomes.

- **(SDO1)** Advance roadway safety through interdisciplinary development and deployment of regulatory and policy tools across FHWA programs and initiatives, such as the Safe System approach.
- **(SDO2)** Conduct and coordinate Federal research to advance safety designs and accelerate use of innovations that mitigate fatality and serious injury crashes for all road users, including those served by Federal Land Management Agencies.

Safe System:

Strengthen the use of informed data-driven decision-making and apply comprehensive approaches such as the Safe System approach and safety management systems for all modes.

- **(SSO1)** Facilitate improvements in safety data collection, quality, analysis, integration, and management and expand FHWA's capacity for collecting non-motorized travel risk exposure data.
- **(SSO2)** Provide stewardship and oversight to stakeholders on safety activities and initiatives and on management of discretionary grants.

Safe Public:

Protect urban and rural communities and travelers, including vulnerable populations, from health and safety risks.

- **(SPO1)** Encourage stakeholders to develop and implement data-driven, equitable safety management programs.
- **(SPO2)** Expand the use of effective speed management practices in areas where drivers commonly interact with pedestrians and bicycles, including in high-visitation areas on Federal lands, such as National Parks.

Safe Workers:

Improve the health, safety, and well-being of transportation workers and first responders.

- **(SWO1)** Support worker safety training, provide technical assistance, and work across Federal programs to evaluate and promote strategies to improve safety for workers in transportation occupations such as construction, freight, and traffic incident management.

Critical Infrastructure Cybersecurity:

Strengthen transportation system resilience to protect it from disruption from cyber and other attacks.

- **(SCY1)** Employ cross-functional, agency-wide expertise to integrate cybersecurity and resiliency considerations into all FHWA programs.

* Source: FHWA Strategic Plan (2022-2026)

National Roadway Safety Strategy (NRSS):

The United States Department of Transportation [National Roadway Safety Strategy \(NRSS\)](#) outlines the Department's comprehensive approach to significantly reducing serious injuries and deaths on the Nation's highways, roads, and streets. This is the first step in working toward an ambitious long-term goal of reaching zero roadway fatalities. Safety is U.S. DOT's top priority, and the NRSS represents a department-wide approach to working with stakeholders across the country to achieve this goal.

The NRSS sets a vision and goal for the safety of the Nation's roadways, adopts the Safe System Approach principles to guide our safety actions, and identifies critical and significant actions the Department will take now in pursuit of five core objectives:

- Safer People,
- Safer Roads,
- Safer Vehicles,
- Safer Speeds, and
- Post-Crash Care

This document highlights new priority actions that target our most significant and urgent problems, and are, therefore, expected to have the most substantial impact. It also highlights notable changes to existing practices and approaches.

The NRSS is a collaborative effort between the Office of the Secretary of Transportation and the Operating Administrations (OAs) whose roles and responsibilities include roadway safety:

- Federal Highway Administration (FHWA)
- Federal Motor Carrier Safety Administration (FMCSA)
- Federal Railroad Administration (FRA)
- Federal Transit Administration (FTA)
- National Highway Traffic Safety Administration (NHTSA)
- Pipeline and Hazardous Materials Safety Administration (PHMSA)

As mentioned prior, the [Bipartisan Infrastructure Law](#) (BIL or the Infrastructure Investment and Jobs Act) is a generational investment in America's transportation network, and supports the funding, program, and policy provisions described in the NRSS safety actions.

Learn more about the National Roadway Safety Strategy by visiting [National Roadway Safety Strategy | US Department of Transportation](#).

Multi-Modal Safety

The federal planning factors can be found in Safety Data Action Plan prepared by the Bureau of Transportation Statistics' (BTS) stating that:

"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.

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 problem crashes are unpremeditated unfortunate events. As such, they may be caused by driver error, driver 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).

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. The Josephine County Sherriff's Department is not able to respond to all crashes within the County's jurisdiction due to funding shortfalls. This certainly results 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: failure to obey traffic controls and failure to obey posted speed signs. 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.

Crash Data

The Crash Analysis & Reporting Unit at ODOT provides motor vehicle crash data through database creation, maintenance and quality assurance, information and reports, and limited database access. Ten years of crash data is maintained at all times. Vehicle crashes include those coded for city streets, county roads and state highways. The following is a link to their crash data site.

<https://www.oregon.gov/odot/Data/Pages/Crash.aspx>

Multi-Modal Security

The federal government in 1998, called for states and MPOs to address transportation security issues. The new transportation act strengthened the requirement, which has been extended to the current IJJA Law. The transportation acts require long-range regional transportation plans to consider security distinctly from transportation safety. Furthermore, in 2002 the 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.

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.

"The simplest distinction between safety and security is that safety accidents are just that: unpremeditated, unfortunate events."

Definitions

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

Table 12-1 below provides a description of various types of security problems that can arise in any transportation system.

Table 12-1 – Security Concerns for Transportation Systems

Event	Description
Aggravated Assault	An unlawful attack by a person upon another for the purpose of inflicting severe or aggravated bodily injury. This type of assault usually is accompanied by use of a weapon or other means likely to cause death or great bodily harm.
Arson	To unlawfully and intentionally damage, or attempt to damage, any real or personal property by fire or incendiary device.
Burglary	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.
Larceny/Theft	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.
Trespass	To unlawfully enter land, a dwelling or other real property.
Vandalism	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.
Terrorism	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.

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 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.

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, one 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 has adopted Public Transportation Agency Safety Plans (PTASP) in 2020 and it was funded by ODOT PTD.

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, 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.

MRMPO Planning

Security planning efforts in the planning area are directed and managed by the emergency responders: police, fire, and medical - representing all 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. A regional ITS plan was developed in 2016 that includes the MRMPO. As such, the MRMPO will provide a forum for agencies and the public to examine issues and identify needs and solutions.

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

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 TIP scoring matrix and other specific funding program scoring matrices to ensure that security projects receive appropriate weighting and priority in the TIP.
- Regularly review the Tier 1 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.