

5

TRANSPORTATION SAFETY AND SECURITY



5.0 Transportation Safety & Security

5.1 Introduction

This chapter addresses two related topics: transportation safety and transportation security. A discussion of each topic is presented in a similar format: (1) in the context of Fixing America's Surface Transportation Act (FAST Act), or the federal level; (2) in the context of the Colorado Department of Transportation (CDOT), or the state level; and (3) in the context of the Pueblo Area Council of Governments Long Range Transportation Plan (PACOG LRTP), or the regional level.

- Safety can be defined as relative freedom from danger, risk, and threat of harm, injury, and loss to personnel and/or property, whether caused deliberately or by accident. In the context of highway transportation, it is typically assessed using crash data to tabulate where highway safety issues are likely to exist and structural condition reporting, which identifies infrastructure needs.
- Security can be defined as the state of being free from danger and threat in a given geographic area such as a nation, state, county, region, or city. This definition can be expanded to include focused preparation for coordinated responses to potential threats and disasters, whether natural or caused by humans.

The maintenance and operation of a safe and secure transportation system is of the utmost importance to all regions, beginning with the primary focus of the protection of human life. As an example, there were 595 fatalities that occurred on Colorado roadways in 2019. Preventing these fatalities is a first priority in Colorado, as it is in every state. Investments that maintain or move the system closer to a “state of good repair,” as highlighted in Chapter 2, “Existing Transportation System,” in this LRTP, make the system safer for all users.

Available funds should be allocated first to maintaining the transportation system at a safe and adequate level before other projects involving modernization, enhancements, or major capital investments are considered. Similarly, increased attention to the wide range of transportation security issues in the Pueblo planning area is an important part of long range planning. Roads, bridges, rail, and airport facilities can profit from a “hardening” of the framework that protects them from harm.

5.2 Transportation System Safety

Highway safety is a critical element of transportation planning and policy. Reducing highway-related fatalities and injuries improves the overall quality of life for all Colorado residents, workers, and visitors. Deaths and injuries resulting from traffic crashes have serious public health, quality of life, and economic consequences. A safer transportation system reduces not only the tragic human costs from the loss of lives or life-altering injuries but also significant economic losses. The economic impacts of highway crashes include medical, insurance, emergency service, legal, lost wages, and personal property damage costs. Improving traffic safety not only is the right thing to do; it is also the smart thing to do.

In order to mitigate deaths and injuries from traffic crashes, PACOG subscribes to the Vision Zero movement in safety targets.¹⁸ The ultimate objective of the movement is to achieve zero deaths on the nation's roadways. Vision Zero recognizes that individuals will make mistakes that could lead to severe injury or death. The philosophy of Vision Zero is that the transportation system should be designed in a way that helps diminish these mistakes, ultimately creating a safer system for all roadway users. This goal is achieved by bringing together the 4 Es of highway safety: engineering, education, enforcement, and emergency medical service.

¹⁸ “Safety Culture and the Zero Deaths Vision,” Federal Highway Administration, U.S. Department of

Transportation, last modified April 30, 2020, <https://safety.fhwa.dot.gov/zerodeaths/>.

The objective of achieving zero deaths on roadways within PACOG will be accomplished by adhering to the philosophy put forth by the Vision Zero movement. Chapter 1, Section 1.3.1, “Planning Category 1: Safety,” in this LRTP sets specific targets to reach zero deaths. In order to reach this objective, PACOG has established the following goal and strategies.

Safety Goal

Improve safety by providing a multimodal transportation system that focuses on the reduction of the frequency and severity of crashes.

Safety Strategies

- Preserve the existing transportation systems to ensure safe, convenient, and efficient transportation.
- Maintain the performance of the Colorado state transportation system at a high level to ensure the safety of all users, including transportation operators, passengers, shippers, bicyclists, and pedestrians.
- Continue to improve system safety by instituting and supporting safety programs to attain Vision Zero status with respect to fatalities and life-altering injuries.
- Promote the identification of specific emphasis areas to improve transportation safety through a statewide evaluation of safety problems and multi-stakeholder input.
- Continue to develop comprehensive, coordinated, and communicative safety strategies that focus on engineering, education, enforcement, and emergency medical services for all emphasis areas.
- Promote the development of improved and new transportation system design, engineering, and operating technologies to increase system safety.
- Promote safe and convenient travel facilities for at-risk users.
- Provide a continuing program of public information and education to promote safety awareness and the implementation of safety practices.
- Cooperate with other agencies to ensure prompt response to crashes on the

transportation system and timely resolution of threats to human and environmental health and safety, such as hazardous waste sites, encountered when improving transportation facilities.

5.2.1 Federal Guidance

The MAP-21 transportation bill was enacted in 2012. The safety related planning requirements were addressed largely to state departments of transportation. MAP-21 retained the Highway Safety Improvement Program (HSIP) as one of the core efforts intended to reduce injuries and fatalities on all public roads, pathways, and trails. MAP-21 provided a new emphasis on enhanced data collection and performance. The combination of the renewed HSIP and the deeper emphasis on data laid the framework for more effective spending of safety dollars on projects that make roads safer for all users. The FAST Act was enacted in 2015 and replaced Map-21. As with the MAP-21, the safety-related planning requirements were addressed largely to state departments of transportation. The FAST Act continues the focus on Metropolitan Planning Organizations (MPOs) developing regional goals and objectives. PACOG has met these federal requirements by developing the goals and objectives listed in this LRTP in Chapter 1, Section 1.3.1.

The work conducted by PACOG thus folds into safety investment and strategies at the state level led by CDOT, which in turn follows federal FAST Act guidance. The means by which the state supports national safety goals, such as maintaining road performance, improving system safety, and providing better education and outreach, are echoed by PACOG. For example, improving system safety on I-25 and U.S. Highway 50 along their entire extent is important to not only PACOG but also the state and the nation.

5.2.2 Colorado Transportation Safety Statistics

The State of Colorado maintains comprehensive records on fatalities by transportation mode in Colorado. **Table 5.1** tabulates fatalities by five travel modes: (1) driver, (2) passenger, (3) motorcycle, (4) pedestrian, and (5) bicycle for the most recent years available. **Table 5.2** tabulates the percentages of fatalities by the same modes.

And finally, **Figure 5.1** graphs the number of

fatalities by these five modes. In the five-year interval of 2014–2018, Colorado fatalities for the five transportation modes have remained generally static. Auto driver leads the categories, averaging 48 percent of the total share of fatalities for 2014–2018. Auto passengers and motorcyclists average 18 percent of the total. Pedestrians and bicyclists average close to 14 percent and 3 percent, respectively, of transportation related fatalities in the state.

Table 5.1: Fatalities by Travel Mode in Colorado (2014–2018)

| Year | Travel Mode | | | | |
|------|-------------|-----------|------------|------------|---------|
| | Driver | Passenger | Motorcycle | Pedestrian | Bicycle |
| 2014 | 227 | 92 | 94 | 65 | 10 |
| 2015 | 263 | 101 | 105 | 64 | 14 |
| 2016 | 276 | 107 | 125 | 84 | 16 |
| 2017 | 320 | 117 | 103 | 92 | 16 |
| 2018 | 297 | 120 | 103 | 90 | 22 |

Source: Data provided by CDOT, Crash Data Request response received May 15, 2020, <https://www.codot.gov/safety/traffic-safety/crash-data-management/crash-data>.

Table 5.2: Fatality Percentages by Travel Mode in Colorado (2014–2018)

| Year | Travel Mode | | | | | Total (%) |
|------|-------------|---------------|----------------|----------------|-------------|-----------|
| | Driver (%) | Passenger (%) | Motorcycle (%) | Pedestrian (%) | Bicycle (%) | |
| 2014 | 47 | 19 | 19 | 13 | 2 | 100 |
| 2015 | 48 | 18 | 19 | 12 | 3 | 100 |
| 2016 | 45 | 18 | 21 | 14 | 3 | 100 |
| 2017 | 49 | 18 | 16 | 14 | 2 | 100 |
| 2018 | 47 | 19 | 17 | 14 | 3 | 100 |

Source: Data provided by CDOT, Crash Data Request response received May 15, 2020, <https://www.codot.gov/safety/traffic-safety/crash-data-management/crash-data>.

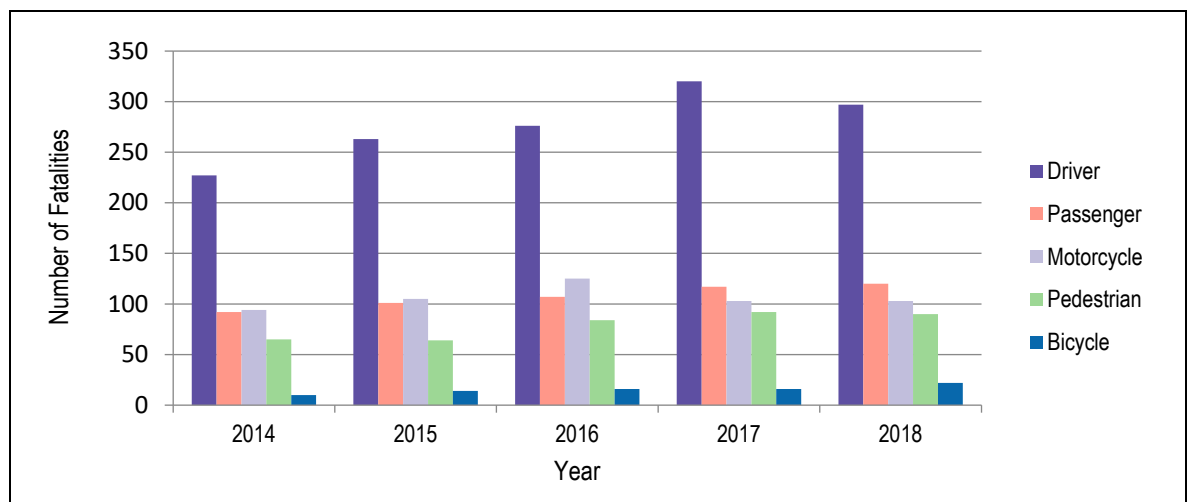


Figure 5.1 Fatalities by Travel Mode in Colorado (2014–2018)

Source: Data provided by CDOT, Crash Data Request response received May 15, 2020, <https://www.codot.gov/safety/traffic-safety/crash-data-management/crash-data>.

5.2.3 Safety Statistics in the Pueblo Region

Safety statistics in Pueblo County are presented using the 2014–2018 county level crash data and are analyzed by the:

- Type of crash.
- Roadway functional classification of the crash.
- Intersection related component of the crash.
- Time of day of the crash.

Type of Crash

CDOT provided comprehensive data on the number and type of vehicle accidents in Pueblo County for the five-year interval from 2014 to 2018. Summaries are shown in **Table 5.3**. During the five-year interval, fatal crashes in the

county ranged from 12 to 34 annually. Crashes with injuries ranged from 905 to 1,133 per year during the same period. Crashes with Property Damage Only (PDO) ranged from 2,642 to 2,775 per year. **Figure 5.2** graphs the same data. All categories of crashes experienced an increase over the five-year span. PDO crashes were the most likely to occur, followed next by crashes with injuries and lastly by crashes with fatalities.

Alcohol and/or drugs are often correlated with fatal crashes. **Table 5.4** shows the number of fatal crashes for each recent year, the number of resulting fatalities, and the number of fatalities where alcohol and/or drugs were a factor. Between 33% and 44% of crashes with fatalities in Pueblo County between 2014 and 2018 involved alcohol and/or drugs.

Table 5.3: Crash by Severity in Pueblo County (2014–2018)

| Year | Severity of Crash | | |
|------|-------------------|-------------|-------|
| | Fatal | Injury Only | PDO |
| 2014 | 18 | 905 | 2,677 |
| 2015 | 12 | 1089 | 2,642 |
| 2016 | 18 | 1066 | 2,677 |
| 2017 | 33 | 1045 | 2,682 |
| 2018 | 34 | 1133 | 2,775 |

Source: Data provided by CDOT, Crash Data Request response received May 15, 2020, <https://www.codot.gov/safety/traffic-safety/crash-data-management/crash-data>.

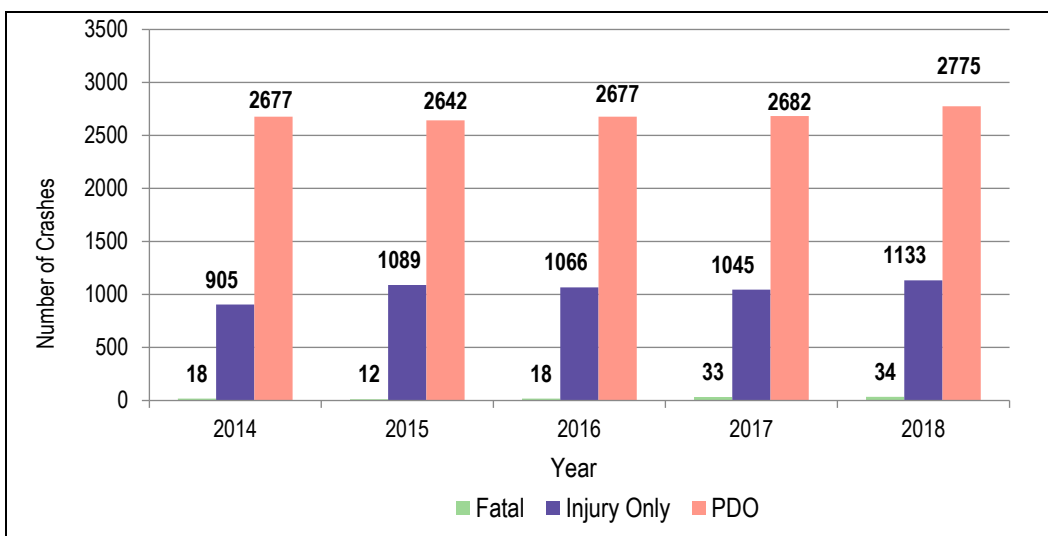


Figure 5.2: Crash by Severity in Pueblo County (2014–2018)

Source: Data provided by CDOT, Crash Data Request response received May 15, 2020, <https://www.codot.gov/safety/traffic-safety/crash-data-management/crash-data>.

Table 5.4: Alcohol/Drugs Involved in Fatal Crashes in Pueblo County (2014–2018)

| Year | Fatal Crashes | Deaths | Alcohol/Drugs Involved | % Alcohol/Drug Involved |
|------|---------------|--------|------------------------|-------------------------|
| 2014 | 18 | 19 | 8 | 44% |
| 2015 | 12 | 12 | 4 | 33% |
| 2016 | 18 | 20 | 6 | 33% |
| 2017 | 33 | 34 | 11 | 33% |
| 2018 | 34 | 36 | 15 | 44% |

Source: Data provided by CDOT, Crash Data Request response received May 15, 2020, <https://www.codot.gov/safety/traffic-safety/crash-data-management/crash-data>.

Roadway Functional Classification of the Crash

The crash data provided to PACOG allowed tabulation of the types of location where crashes occurred during the five-year interval 2014–2018. These five years are summarized in **Table 5.5**, **Table 5.6**, and **Table 5.7**. **Table 5.5** provides annual totals of crash occurrence by type of roadway for years 2014–2018, whereas **Table 5.6** presents the percentages calculated for the same data. **Table 5.7** presents crash percentages by type of location and severity and incorporates intersection vs. non-intersection differences.

Table 5.5 echoes the trend in the state as a whole that PDO crashes are the most prevalent, followed next by crashes with injuries and lastly by those with fatalities. Looking at the data in

percentage format, as shown in **Table 5.6**, allows additional information to emerge:

- Fatalities are most likely to occur on state highways (43 percent), followed next by interstates (28 percent), and lastly by city streets (27 percent).
- For injury-only crashes, almost half (48 percent) occur on city streets. State highways follow with 37 percent and interstates with 13 percent of the total.
- PDO crashes are also most likely to occur on city streets (53 percent), again with state highways (31 percent) and interstates (13 percent) following.

The locational information of crashes shows overall that fatalities have occurred most often on higher classification / higher speed roadway facilities.

Table 5.5: Crashes by Type of Roadway and Severity (2014–2018)

| Type of Roadway | Severity of Crash | | |
|-----------------|-------------------|-------------|--------|
| | Fatal | Injury Only | PDO |
| Interstate | 32 | 698 | 1,752 |
| State Highway | 49 | 1,914 | 4,146 |
| City Street | 32 | 2,484 | 7,125 |
| County Road | 2 | 121 | 382 |
| Frontage Road | 1 | 15 | 45 |
| Total | 116 | 5,232 | 13,450 |

Source: Data provided by CDOT, Crash Data Request response received May 15, 2020, <https://www.codot.gov/safety/traffic-safety/crash-data-management/crash-data>.

Table 5.6: Crash Percentages by Type of Roadway and Severity (2014–2018)

| Type of Roadway | Severity of Crash | | |
|-----------------|-------------------|-----------------|---------|
| | Fatal (%) | Injury Only (%) | PDO (%) |
| Interstate | 28 | 13 | 13 |
| State Highway | 43 | 37 | 31 |
| City Street | 27 | 48 | 53 |
| County Road | 2 | 2 | 3 |
| Frontage Road | 1 | 0 | 0 |
| Total | 100 | 100 | 100 |

Source: Data provided by CDOT, Crash Data Request response received May 15, 2020,
<https://www.codot.gov/safety/traffic-safety/crash-data-management/crash-data>.

Intersection-Related Component of the Crash

The crash data may also be tabulated to determine whether the crash occurred at an intersection or a non-intersection location. Five years of data were tabulated for this summary and shown in percentage format in **Table 5.7**. In this table, the category “All Other” includes the subcategories “In Alley,” “Parking Lot,” “Roundabout,” and “Unknown.”

The data shows the following:

- Intersections contribute to the occurrence of fatal crashes in 27 percent of instances over the five-year period. Fatalities are far more likely to occur in non-intersection locations (71 percent).
- The reverse is true for crashes with injuries only: Crashes with injuries only are more

likely to occur at intersections (55 percent) and are less likely to occur at non-intersections (39 percent).

- PDO events are split between intersection (43 percent) and non-intersection (48 percent) locations. Driveway access is the highest contributor from the balance of the road types present when PDO crashes take place.

In summary, fatal crashes are more than twice as likely to occur on the travel lane (non-intersection) than at or near an intersection. Crashes with injuries only are more likely to take place at an intersection, though the travel lane still contributes strongly to the total, and PDO crashes are equally spread at intersection and non-intersection locations with driveway access playing a significant role.

Table 5.7: Crash Percentages by Type of Location and Severity (2014–2018)

| Type of Crash Location | Severity of Crash | | |
|---|-------------------|------------|---------|
| | Fatal (%) | Injury (%) | PDO (%) |
| At Intersection or Intersection Related | 27 | 55 | 43 |
| Non-Intersection | 71 | 39 | 48 |
| At Driveway Access | 1 | 4 | 6 |
| Ramp | 2 | 1 | 2 |
| All Other | 0 | 1 | 1 |
| Total | 100 | 100 | 100 |

Source: Data provided by CDOT, Crash Data Request response received May 15, 2020,
<https://www.codot.gov/safety/traffic-safety/crash-data-management/crash-data>.

Time of Day of Crashes by Severity

An analysis of the data that shows the time of day during which crashes occurred in Pueblo County provides further insights. Again, all five years were tabulated and summaries in both percentage and graphic form are presented below. **Table 5.8** divides the crashes into 24 time periods, each representing the hour in a 24-hour day during which the crash occurred. Each hour category contains all crashes that occurred during any part of that hour.

Figure 5.3 communicates the findings in graphic format. Crashes with fatal outcomes occur throughout the 24-hour period with a peak of 11 percent between 11 pm and midnight. Injury (10 percent) and PDO (8 percent) events, however, peak between 3 and 4 pm.

Table 5.8: Time of Day of Crashes (2014-2018)

| Hour | Severity | | |
|------|-----------|------------|---------|
| | Fatal (%) | Injury (%) | PDO (%) |
| 0000 | 6 | 2 | 2 |
| 0100 | 3 | 1 | 2 |
| 0200 | 3 | 1 | 2 |
| 0300 | 1 | 1 | 1 |
| 0400 | 2 | 1 | 1 |
| 0500 | 0 | 1 | 2 |
| 0600 | 5 | 2 | 3 |
| 0700 | 3 | 5 | 6 |
| 0800 | 3 | 4 | 5 |
| 0900 | 5 | 4 | 4 |
| 1000 | 1 | 4 | 5 |
| 1100 | 3 | 6 | 6 |
| 1200 | 5 | 7 | 6 |
| 1300 | 7 | 6 | 6 |
| 1400 | 3 | 7 | 7 |
| 1500 | 3 | 10 | 8 |
| 1600 | 5 | 8 | 7 |
| 1700 | 3 | 9 | 7 |
| 1800 | 9 | 5 | 6 |
| 1900 | 6 | 4 | 4 |
| 2000 | 3 | 4 | 3 |
| 2100 | 5 | 3 | 3 |
| 2200 | 13 | 3 | 3 |
| 2300 | 3 | 2 | 2 |

Source: Data provided by CDOT, Crash Data Request response received May 15, 2020, <https://www.codot.gov/safety/traffic-safety/crash-data-management/crash-data>.

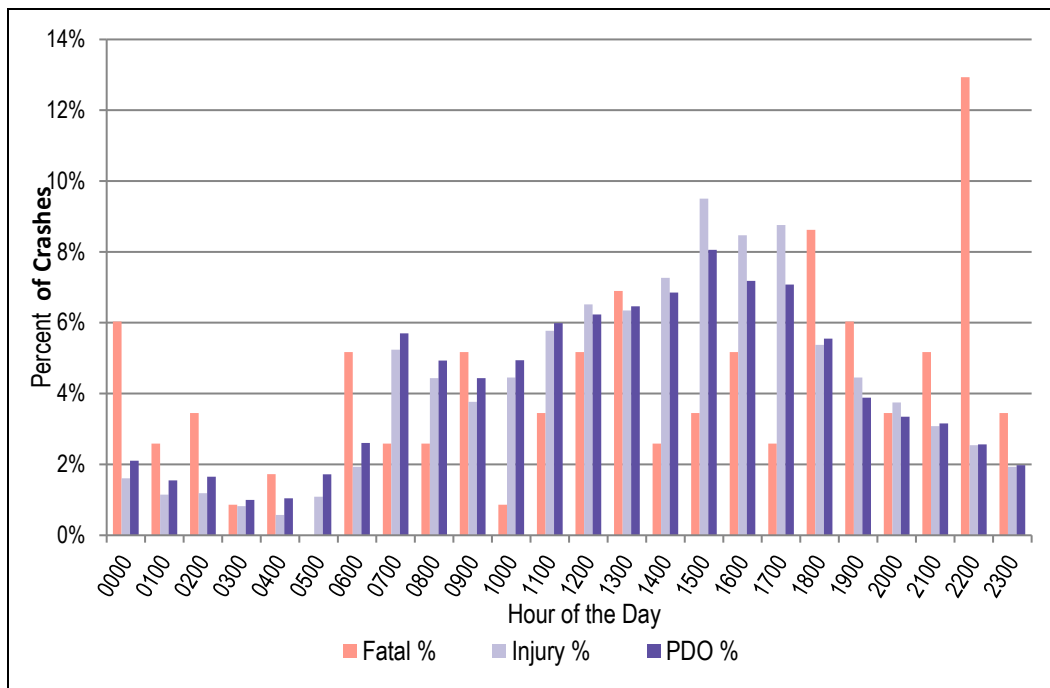


Figure 5.3: Time of Day of Crashes in Pueblo County (2014–2018)

Source: Data provided by CDOT, Crash Data Request response received May 15, 2020, <https://www.codot.gov/safety/traffic-safety/crash-data-management/crash-data>.

5.2.4 Summary

Crash data for Pueblo County provided by CDOT highlights existing conditions that inform safety issues and provide valuable information on potential transportation issues to address. All types of crashes—fatal, injury, and PDO—increased in number between 2014 and 2018 in Pueblo County; and drugs and/or alcohol are a factor in 33–44 percent of the fatal crashes. This trend points to the need for education and/or stronger penalties aimed at reducing these events. In general, crashes take place at both intersection and non-intersection locations, but fatal crashes are associated with higher speed facilities, pointing to a need to focus on any known locations on I-25 and U.S. Highway 50 for investment in safety to save lives. And finally, the time of day of crashes provides some guidance on where to invest. The overnight period is a problem area for fatal crashes. The ~~pm~~ PM peak is a problem area for all three categories of crashes. It is possible that a renewed focus on the dangers of alcohol/drugs and driving, improved intersection safety, and education on both

common courtesy and acknowledging fatigue at the end of the working day could address some of the temporal aspects of crashes in the county.

5.3 Security

Since September 11, 2001, there has been growing awareness of the need for emergency preparedness and attention to Homeland Security issues. Title 23 in the Code of Federal Regulations, Section 450.324(h), states: “The metropolitan transportation plan should include appropriate emergency relief and disaster preparedness plans and strategies and policies that support homeland security as appropriate and safeguard the personal security of all motorized and non-motorized users.” The context of transportation security as a planning factor is also linked to the U.S. Department of Homeland Security and the 2006 implementation of the National Incident Management System (NIMS). The NIMS was issued in 2004 to provide a comprehensive and consistent national approach to all-hazard incident management at all jurisdictional levels

and across functional disciplines. Full compliance with the NIMS certification process was required by September 2006. Since 2007, NIMS compliance has been a condition for jurisdictions to receive federal preparedness funding assistance.

From a transportation planning perspective, security is an emerging area of concern, and each MPO will have different security priorities. The transportation plan should address safety in the following ways:

- Define the role of the MPO and public transportation operators in promoting security, which may be, in part, defined elsewhere in state or local legislation related to emergency management responsibilities.
- Identify critical facilities and transportation system elements and the risk to assets such as highways, transit systems, and freight rail lines critical to national defense and/or economic security and infrastructure intricately related to potential high-value security targets.
- Identify appropriate security goals and strategies.
- Identify projects and strategies that will increase the security of transportation system users in the LRTP and the Transportation Improvement Program (TIP).

PACOG understands that the focus of the multi-jurisdiction security planning efforts is to minimize the direct or indirect disruptions caused either by natural or human actions. These disruptions can occur in any season of the year and cover a limited or a wide-ranging area in the Pueblo MPO region. Examples of the types of events are:

- Natural events: Tornado, blizzard, flood, wildfire, and pandemic.
- Human-caused events: Hazardous material incident, power outage, act of terrorism, and civil disturbance.

The events that require a security response share common traits: they are often unexpected, they jeopardize lives, and they place a strain on emergency personnel who may not be available due to a high demand for their services.

5.3.1 Security Goals – National

The U.S. Department of Transportation (USDOT) maintains several objectives for national security:

- Develop/obtain expert transportation sector intelligence.
- Build preparedness for emergencies affecting the transportation sector.
- Plan for effective response to emergencies affecting the transportation sector.

PACOG addresses security issues by cataloging available emergency management resources and documenting actions that the area has already undertaken, at both the state and local levels.

5.3.2 Security Goals – State of Colorado

State of Colorado Emergency Operations Plan

The purpose of the Colorado State Emergency Operations Plan (SEOP) is to identify the roles, responsibilities, and actions of state government in disasters.¹⁹ Emergency operation plans address the ability to direct, control, coordinate, and manage emergency operations. Each level of government should respond to an incident using its available resources, to include the use of mutual aid, and may request assistance from the next higher level of government, if required. When local government capabilities are overtaxed, state government has resources and expertise available to provide emergency or disaster assistance. The state will modify normal operations and redirect resources to assist and support local governments in saving lives, relieving human suffering, sustaining survivors, protecting property, and reestablishing essential services. Federal government resources and

¹⁹ Colorado Division of Homeland Security & Emergency Management (DHSEM) Planning Section, "State Emergency Operations Plan: 2019," (Centennial, CO: 2019),

<https://drive.google.com/file/d/1JN8CAkwZcaG80ocHOdcx83-ALCIT8KCz/view>.

expertise can be mobilized to augment emergency or disaster efforts beyond the capabilities of state government.

The SEOP identifies 15 Emergency Support Functions (ESFs) that list the types of assistance activities that local government may need regardless of the nature of the disaster or emergency. CDOT emergency support activities include the following:

1. Coordination of transportation support requests including alternate services (air, rail, surface), assessment and reporting of damages to transportation systems, and coordination of restoration.
2. Coordination of assessments of public works and infrastructure, provision of technical assistance to include engineering expertise and construction management, and provision of emergency repair of damaged public infrastructure and critical facilities.

The Colorado Division of Emergency Management (CDEM) provides financial and technical support to local governments throughout the state with both out-stationed

and in-house staff. Pueblo County is in the South Region, as shown in **Figure 5.4**.

State of Colorado Homeland Security Strategy

The State of Colorado Homeland Security Strategy was prepared by the Colorado Department of Local Affairs with extensive cooperation and input from the Governor's Office, the Colorado Department of Public Safety, the state's county emergency managers, the regional Homeland Security coordinators, and the Center for the Study and Prevention of Violence at the University of Colorado-Boulder.

Colorado's Homeland Security Strategy provides a framework for enhancing the state's ability to prevent, respond to, and recover from an act of terrorism. The plan furnishes state and local officials with the means to develop interlocking and mutually supporting emergency preparedness programs.

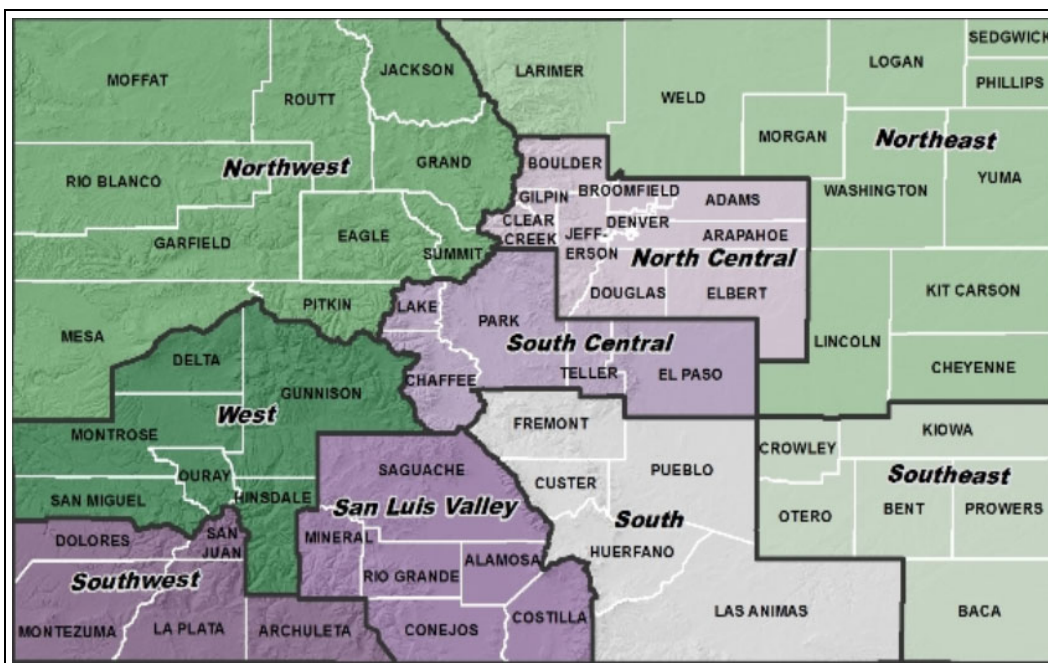


Figure 5.4: Pueblo County within the Homeland Security Region System

Source: "Homeland Security Coordinators: Overview," Colorado Division of Homeland Security and Emergency Management, 2019, <https://www.colorado.gov/pacific/dhsem/homeland-security-coordinators>.



The strategy plan focuses on preparedness for acts of terrorism and addresses disaster planning that is supplemented by local strategic and operations plans. This coordinated effort by federal, state, and local governments identifies needed resources, develops strategies, and creates partnerships throughout the public and private sector that serve as a foundation for homeland security efforts now and in the future.

State Homeland Security/Emergency Management

Colorado's Multi-Agency Coordination Center (MACC) offers the ability for state, federal, and local agencies to come together in a central location to coordinate the response to emergencies and disasters throughout the state. The MACC is a state-of-the-art center developed specifically to help Colorado respond to any type of disaster or emergency it may face. The center is housed with South Metro Fire and Rescue in Centennial, Colorado. The Colorado Information Analysis Center (CIAC) was added to the center with a disaster prevention focus and strong links to federal and local agencies.

The MACC is linked to CDOT's Transportation Operations Center (TOC), which provides highway surveillance camera displays to monitor state roadways and weather throughout Colorado. The center also provides general intelligence on all transportation systems, including railroads and airports. The TOC has command and control over all state road systems, bridges, and underpasses; provides avalanche analysis and control; and acts as the command and control center in the event of an emergency.

Colorado Department of Transportation

CDOT's role in emergency management consists primarily of safeguarding and maintaining the state transportation system in the affected area and facilitating and coordinating evacuation routes that utilize the state transportation system. CDOT maintenance staff serve as the primary responders for addressing damage to CDOT

infrastructure and providing assistance to others.

Colorado Information Analysis Center

The CIAC is designed to be a cross-jurisdictional partnership between local, state, and federal agencies, including private sector participation when appropriate. This center centralizes the collection, analysis, and timely dissemination of terrorism-related information in Colorado. Information is distributed from the CIAC in the form of daily reports, special reports, and bulletins to numerous agencies representing a multitude of disciplines, including the Colorado State Patrol.

Colorado Department of Public Health and Environment

The Colorado Department of Public Health and Environment (CDPHE) works closely with the Centers for Disease Control and Prevention (CDC), state Local Public Health Agencies (LPHAs), and communities to provide updated information about health-related issues. The agency's strategic plan for 2019–2023 addresses the priorities of air quality, healthy eating, immunizations, suicide prevention, emergency preparedness, and advancing operational excellence that consistently exceeds expectations. Added to this list of priorities is the 2019–2020 onset of the COVID-19 virus. Some background on the challenges of the COVID-19 pandemic is useful in the context of safety in the state and in Pueblo County.

COVID-19

Coronaviruses are a large family of viruses; COVID-19 is a novel coronavirus identified in 2019, and in its name "CO" stands for "corona," "VI" for "virus," "D" for disease, and "19" for "2019." A novel (or new) coronavirus is a strain of virus that has not been previously identified in humans. Rarely, animal coronaviruses can evolve and infect people and then spread between people, such as has been seen with Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). These viruses have caused outbreaks internationally and have been known

to cause severe illness. Scientists think this is what happened with COVID-19.

Beginning in early 2020, COVID-19 has been spreading from person to person in most countries and states, including Colorado.

- At the state level, the CDPHE has set up a website to address questions and find solutions for citizens of the state. Among the many issues addressed are Frequently Asked Questions (FAQs), COVID-19 symptoms checklist and screening, the stay-at-home order, safe quarantining and related topics. The website links users to social media sites on Facebook, Twitter, and Instagram.²⁰
- PACOG has responded to the COVID-19 challenge by linking the PACOG website to that of the Pueblo Department of Public Health and Environment (PDPHE). The PDPHE is continuing in 2020 to closely monitor the COVID-19 outbreak and is in close and regular contact with CDPHE and Centers for Disease Control and Prevention (CDC). PDPHE has been planning for and practicing response for situations like this for over 10 years. The agency has plans, partnerships, and resources in place to support the community and is working in close coordination with regional public health partners, hospitals, and the health care community. Related guidance is provided on this website for the following:
 - Stay-at-home orders
 - Best practices for retail food, pick-up/delivery services
 - Emergency child care
 - Frequently Asked Questions (FAQs)

The PDPHE has also made an emergency preparedness film, which can be accessed their website. Produced by Reel Focus Productions, *The Plan: Are You Prepared?* is available in both English and Spanish.²¹

5.3.3 PACOG's Role in Security and Emergency Management

MPOs such as PACOG also have a role in security and emergency management efforts. This role varies based upon the political and institutional context of the region. Clearly, emergency management, public safety, and transportation operating agencies have the primary responsibility for responding to disasters. However, outside of the immediate urgency of response, there are opportunities to support coordinated responses to potential incidents and to assist in developing strategies to handle demands on the transportation system, before or after an incident, in which the MPO can play an important role. As a facilitator of collaboration, the MPO can assist in multiple ways. The MPO can serve as a forum for cooperative decision making and as an advocate for funding of regional transportation strategies. At the technical level, the MPO can provide transportation network-based technical analyses to assess both the impacts of and needs related to security and emergency management efforts.

The Public Works Departments of the City of Pueblo and of Pueblo County are important partners in the PACOG security planning process. They are also the stewards, with CDOT, of the key portions of the existing roadway network as noted in Chapter 2, "Existing Transportation System." Note that in this particular chapter of the LRTP, safety and security are blended in the way they deliver value to the residents of the PACOG region. Specific roles and responsibilities of the regional leadership include:

- Inspection of bridges, roads, signs, lighting, airports, and sidewalks for damage.
- Coordination and repair of damaged transportation structures, including roads, traffic control systems, and signage.
- Maintaining rights-of-way for emergency vehicles.
- Assisting in traffic management during incidents.

²⁰ "Information on the Outbreak of COVID-19," Colorado Department of Public Health & Environment and Colorado State Emergency Operations Center, accessed April 16, 2020, <https://covid19.colorado.gov/>.

²¹ "COVID-19," Pueblo Department of Public Health and Environment (PDPHE), accessed April 16, 2020, <https://county.pueblo.org/public-health/covid-19>.

- Helping secure geographic areas with roadblocks or other physical measures.
- Establishing short-term and long-term detours and signage.
- Removing debris and cleaning streets and roadways.
- Setting priorities for restoration of transportation systems.

5.3.4 PACOG's Policy Goals for Security

The current 2045 PACOG LRTP formalizes the security goal of the MPO by citing it specifically:

To increase the security of the transportation system for motorized and non-motorized users by implementing transportation improvements and securing existing transportation facilities.

The intent of this goal is to move toward providing an enhanced transportation system and personal security for both residents of and visitors to the region. This goal includes securing high-value targets through measures such as access control, monitoring/surveillance, standoffs, and “hardened” construction. The measures utilized may vary based on the threats posed (e.g., earthquake, hurricane, wildfire, or terrorist attack). Personal security measures include emergency call phones, improved lighting, and surveillance. It is anticipated that performance measures would be identified in more detail as security goals nationwide are better defined. They may include the percentage of identified high-value targets secured, the percentage of identified redundant evacuation routes implemented, and the percentage of identified transportation facilities secured for the traveling public.

The first step in the security realm is the cataloging of PACOG transportation assets. It is anticipated that a baseline year can then be set in the near future and that all transportation assets will be subjected to a deadline for a full security audit.

5.3.5 Key PACOG Transportation Assets

Key transportation system assets in the PACOG Planning Area include the:

- Interstate Highway System.
- National Highway System (NHS) Routes.
- Strategic Highway Network (STRAHNET) Routes –The STRAHNET is the road system deemed necessary for emergency mobilization and peacetime movement of heavy armor, fuel, ammunition, repair parts, food, and other commodities to support U.S. military operations in the region.
- Transit System – The transit system is particularly important relative to its potential contribution to the evacuation of areas.
- Pueblo Memorial Airport.
- The Burlington Northern Santa Fe (BNSF) and Union Pacific (UP) Rail Line Corridors.

Most of these facilities are linear in nature, and although risks exist across these networks due to a potential incident, there is built-in redundancy from the supporting network of state, county, and city roadways that can serve, if necessary, as alternative routes for the movement of vehicles in the case of an incident. However, there are elements of these networks, such as key bridges, that, if damaged, would have a more significant effect on the operation of the system.

Using guidelines developed in a seminal report on transportation infrastructure security,²² an assessment to identify potentially important bridge facilities should be carried out. The key criteria for this analysis include the following:

- Casualty risk
- Economic disruption
- Military support
- Emergency relief

²² Douglas B. Ham, Stephen Lockwood (Parsons Brinckerhoff) and Science Applications International Corporation (SAIC) “Contractor’s Final Report: National Needs Assessment for Ensuring

Infrastructure Security (report requested by AASHTO Transportation Security Task Force, October 2002).

Agencies primarily responsible for major highway security in the Pueblo planning area include the Colorado State Patrol and local law enforcement. Effective coordination and communication between these agencies are crucial during emergency situations. Security is provided through routine road patrols, the traffic management/operations center, flight patrols, and crash and criminal investigations.

5.3.6 Freight & Aviation Security

Truck Freight Security

The Colorado State Patrol and the Pueblo County Sheriff's Office are primarily responsible for providing security on the Pueblo region's truck freight network, which generally implies the interstate and U.S. Highway system. Truck freight security initiatives include the following:

- Mandatory roadside freight checkpoints
- State permitting for haulers
- Commercial vehicle requirements
- Restricted travel times
- Specific restrictions for hazardous material haulers
- Background checks
- Carrier safety ratings and assessments
- Preferred hazardous material routing
- Safety audits and surveys
- A security training program

The Transportation Security Administration (TSA) has been working closely with a number of chemical shippers to develop a series of baseline security standards for both toxic inhalation hazard materials and hazardous chemicals of concern. Those standards will address specific areas such as vehicle tracking, vehicle attendance, vehicle alarm systems, truck cab access controls, locking fifth wheels on tank trailers, and security route and stop areas.

Rail Security

In the United States, a large percentage of hazardous material is transported using the rail mode. The rail lines through the Pueblo region are potential routes for the transport of many types of hazardous material from chemicals to radioactive waste.

Freight rail does not offer terrorists the high densities of passenger targets, but it does provide opportunities that passenger rail does not afford. Specifically, freight rail is used to transport hazardous materials and dangerous cargoes, which, if disrupted, can create substantial damage and panic. An estimated 40 percent of inter-city freight transport occurs by rail, including half of the nation's hazardous materials.

In the aftermath of the September 11, 2001, terrorism events, the leadership of the freight rail industry generated more than 100 action items, a multistage alert system, and around-the-clock communications with homeland security and national defense officials. These action items were based on the results of a strategic review of the transportation of hazardous materials; the security of the industry's information infrastructure, freight rail operations, and infrastructure; and military needs relating to the rail network. The critical action items included the need to:

- Integrate protective housings, valves, and fittings into hazardous transport infrastructure to prevent tampering and facilitate emergency response.
- Increase surveillance of freight equipment through training of staff on observation and installation of video surveillance equipment.
- Improve operations by monitoring for signal tampering, requiring crews and dispatchers to verify communications for train movements and dispatches, and locking locomotive doors to prevent hijackings.
- Secure the information infrastructure that terrorists could use to enhance attacks or cause systemic shutdowns.
- Collaborate with the Department of Defense (DOD) to ensure the viability of the Strategic Rail Corridor Network (STRACNET), defined as designated rail lines that are capable of meeting unique DOD requirements, such as the ability to handle heavy, high, or wide loads.

It is not clear what level of resources should be spent on rail security relative to the security of other potential targets in Pueblo County. The rail corridor that travels through the Pueblo region is heavily used and suffers from a lack of alternative routes. Therefore, attacks on critical freight nodes or functions could create substantial bottlenecks and throughput pressures. The freight rail system is in the hands of the private sector; and the BNSF and UP have comprehensive security programs in place at this time. A collaborative effort between the railroads and PACOG may be valuable.

Aviation Security

The Pueblo Memorial Airport (PUB) is a public airport that is owned and operated by the City of Pueblo. It is used for general aviation and by one airline, subsidized by the Essential Air Service program. Federal Aviation Administration (FAA) records indicate the airport had 2,377 passenger boardings (enplanements) in calendar year 2016, 3,833 in 2017, and 10,459 in 2018. It is used for commercial passenger flights, charter, military, business, and passenger service by based and visiting aircraft, recreational and general aviation flight, and flight training. Security measures installed at the Pueblo Memorial Airport include monitored surveillance of airport property by airport security, video surveillance cameras, fenced grounds, and luggage and passenger screening by TSA personnel.

residents, visitors, and commerce in the PACOG planning area through efforts to reduce injuries, fatalities, and property damage for all modes of transportation and to minimize security risks at airports, rest areas, and public transportation facilities and on roadways and bikeways.

Start the following processes:

- Complete a risk and vulnerability assessment of transportation assets.
- Assist in the identification of key evacuation routes from activity areas in Pueblo.
- Prepare demographic profile information and a geographic inventory of transportation-disadvantaged populations who may need assistance to evacuate during a disaster.

5.3.7 Recommended Future Activities for PACOG

PACOG has identified a small set of tasks to better integrate security into the LRTP. The MPO understands that much of the response framework is in place and that PACOG can offer the ability to coordinate activities and to prepare technical analysis to support resource allocation. It is anticipated that the efforts listed below will be addressed on an ongoing basis.

- Maintain the process to identify state and local agency efforts and/or private sector efforts to enhance security planning for the PACOG transportation system.
- Work to provide safe and secure facilities and transportation infrastructure for