

# Chapter 7

# Safety and Security

## METRO AREA STATS

7

People are killed in  
crashes each year

49

People suffer major  
injuries from crashes  
each year

5%

Of crashes involve  
drivers under the  
influence of drugs or  
alcohol

EVERY 8 DAYS

A crash occurs involving  
a non-motorist

70%

Of crashes occur on  
city or county roads

Black Hawk MPO 10-year statistics  
2008-2017

<https://icat.iowadot.gov>

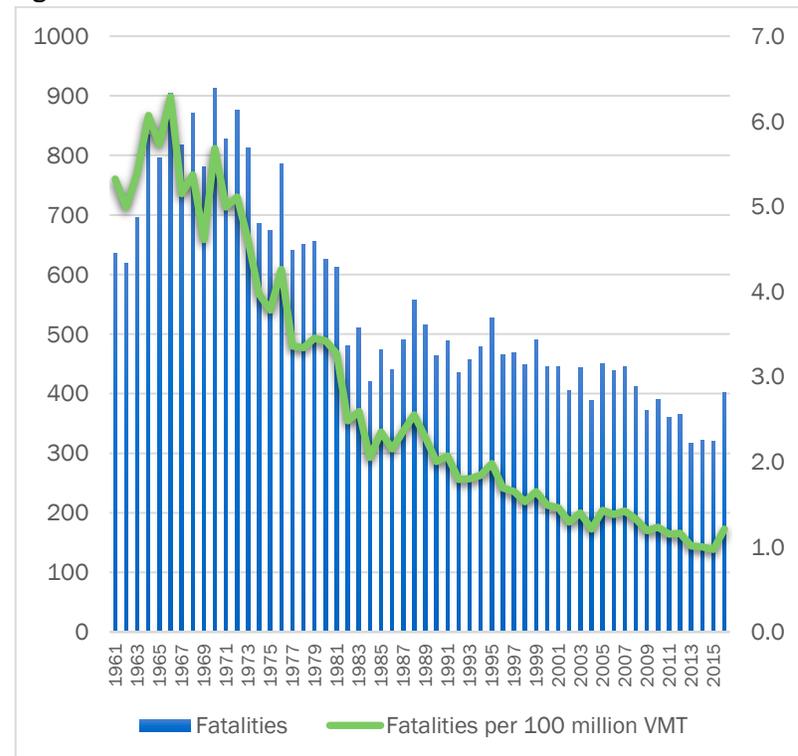
## Chapter 7 – Safety and Security

### Crash Background

Reducing motor vehicle crash fatalities was a significant public health achievement of the 20<sup>th</sup> century. However, tens of thousands of people are killed and millions more injured each year from motor vehicle crashes. According to the National Highway Traffic Safety Administration (NHTSA), 37,461 lives were lost on U.S. roads in 2016, an increase of 5.6 percent from calendar year 2015. The number of vehicle miles traveled on U.S. roads in 2016 increased by 2.2 percent and resulted in a fatality rate of 1.18 deaths per 100 million vehicle miles traveled – a 2.6-percent increase from the previous year.

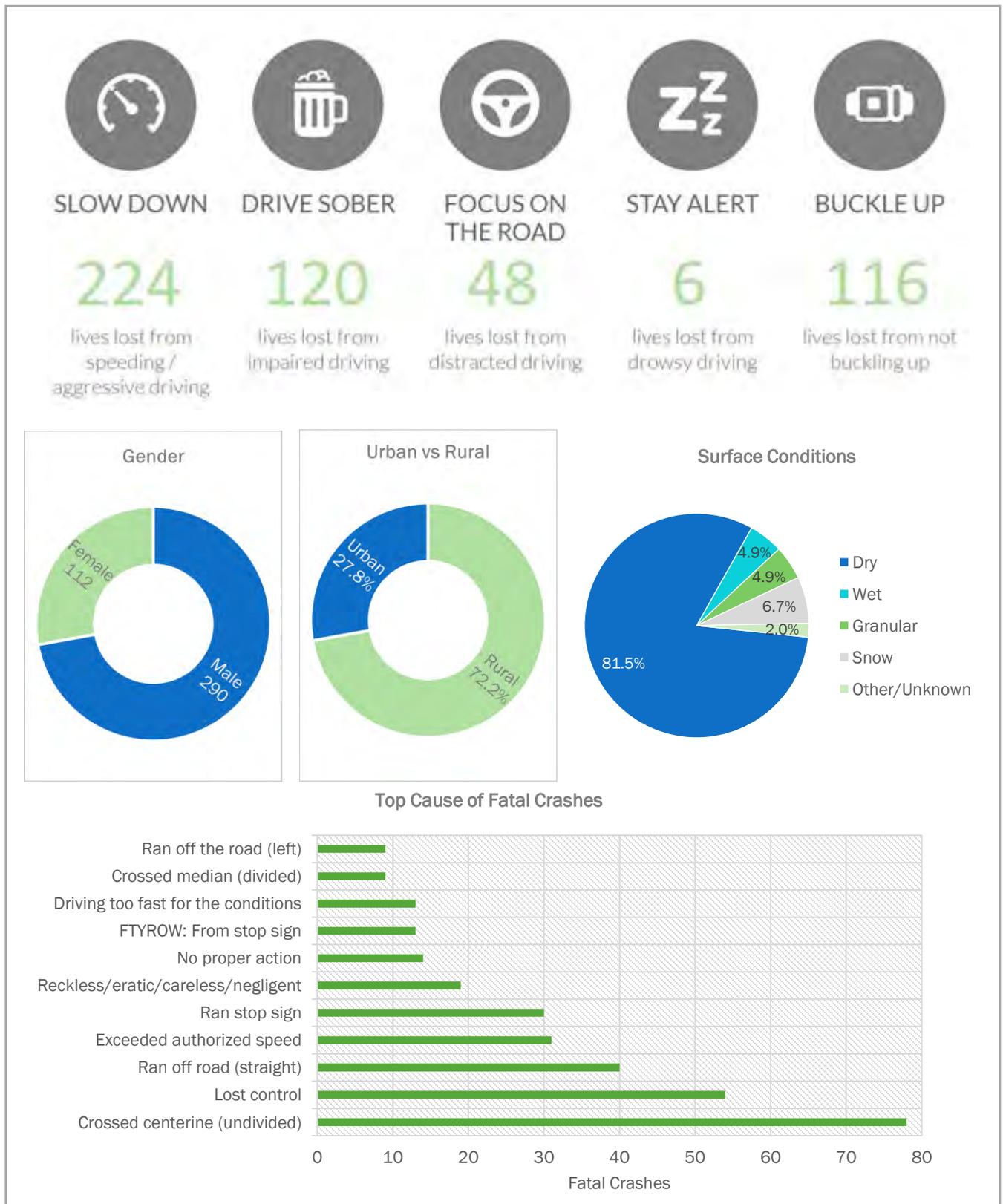
For Iowa, the number of traffic fatalities has decreased significantly over time, though 2016 experienced the most traffic fatalities since 2008. In 2016, there were 402 people killed on Iowa’s roadways, a 26-percent increase over 2015. Figure 7.1 shows the historical trend of traffic fatalities in Iowa, and Figure 7.2 provides additional fatality statistics for the state.

Figure 7.1: Historical Trend of Iowa Traffic Fatalities



Source: Iowa DOT Crash History, 2016

Figure 7.2: Traffic Fatality Statistics for Iowa, 2016

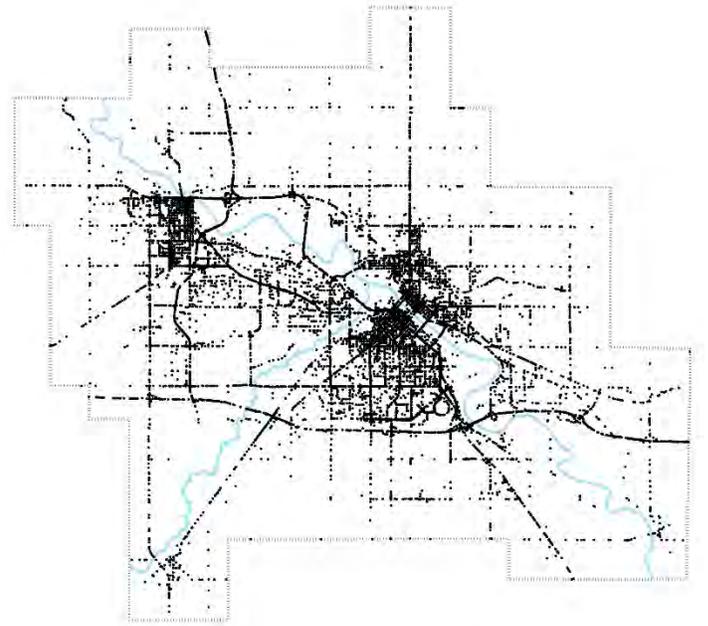
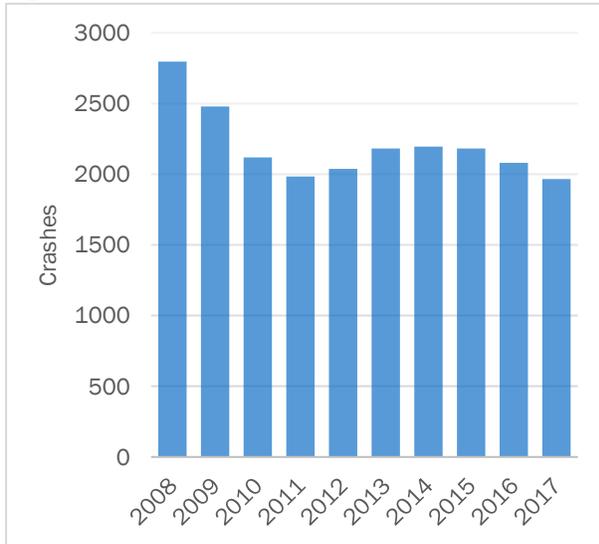


Source: Iowa Zero Fatalities

### MPO Crash Statistics

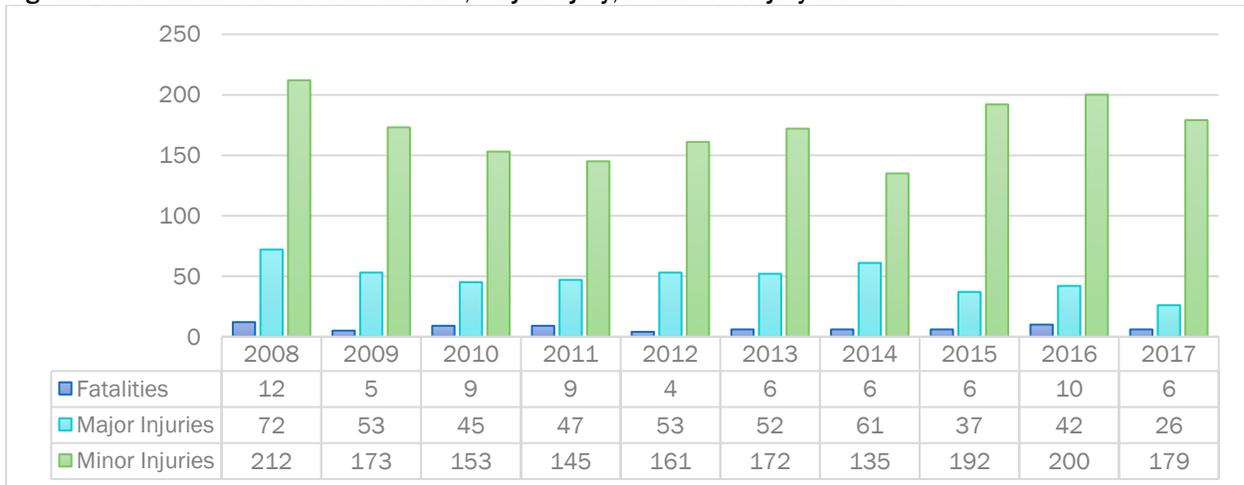
For the MPO, the total number of crashes, fatalities, major injuries, and minor injuries have been on the decline. In 2017, the metropolitan area experienced a ten-year low of 1,966 crashes and 26 major injuries. Though the area has made significant progress, on average, seven people are killed each year in the MPO. Figure 7.3 provides a historical trend of MPO crashes along with a map of all crash points, and Figure 7.3 provides a historical trend of MPO fatal, major injury, and minor injury crashes. The maps on the following pages show crash statistics for the metropolitan area to visualize specific problem areas.

**Figure 7.3: Historical Trend of MPO Crashes**



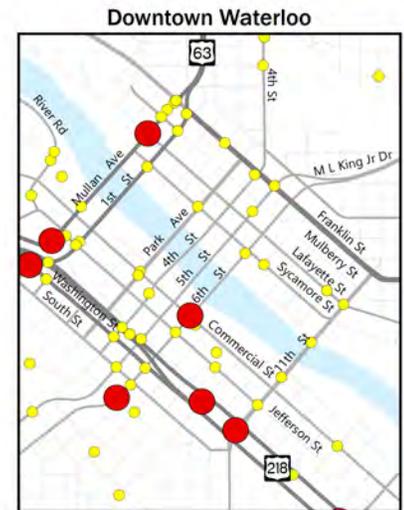
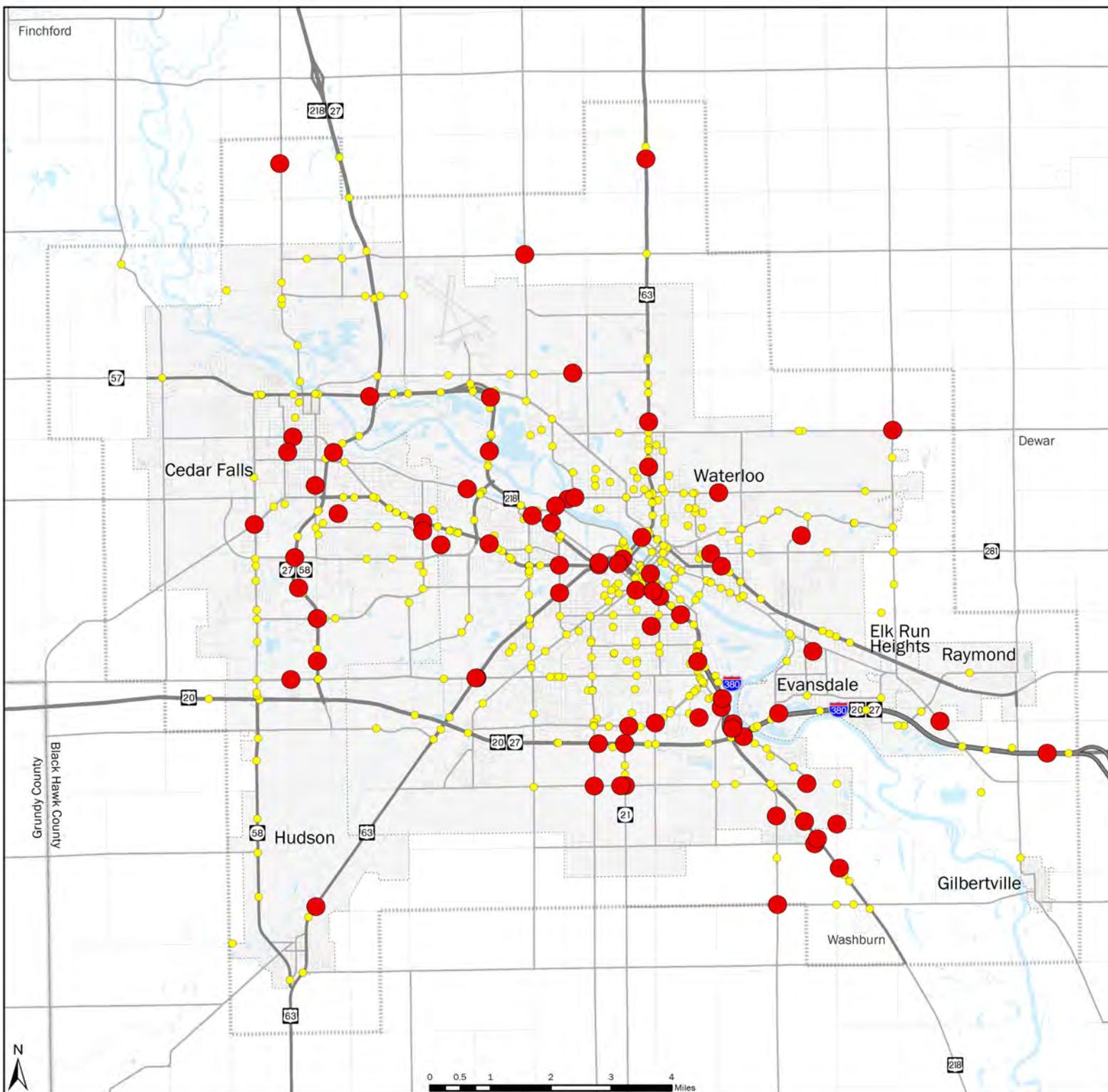
Source: Iowa DOT Crash Analysis Tool

**Figure 7.4: Historical Trend of MPO Fatal, Major Injury, and Minor Injury Crashes**



Source: Iowa DOT Crash Analysis Tool

# Map 7.1 Fatality and Major Injury Crashes 2006-2016



## Legend

- City Boundary
- MPO Study Area
- Fatal Crash  
(79 Crashes, 80 Fatalities)
- Major Injury Crash  
(497 Crashes, 563 Major Injuries)

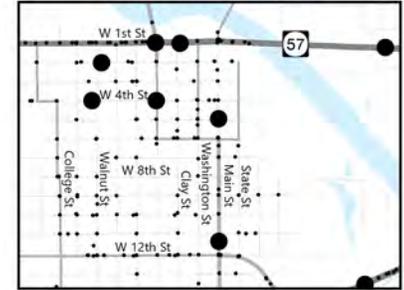
Data Source: INRCOG, Iowa DOT 2006-2016  
Total Data Sample Approximately 24,000 Crashes within the MPO

**INRCOG** Disclaimer: This map is for reference only. No liability is assumed for the accuracy of the data delineated herein, either expressed or implied by INRCOG.  
Iowa Northland Regional Council of Governments

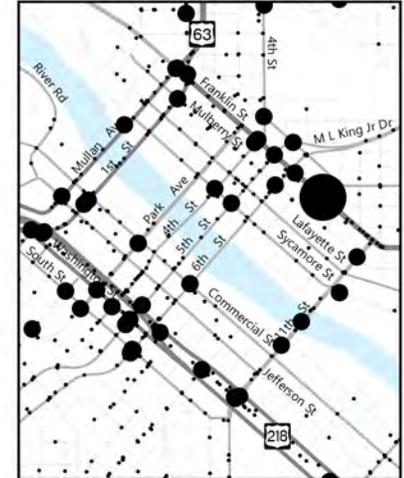
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# Maximum Injuries per Crash Report

## Downtown Cedar Falls



## Downtown Waterloo

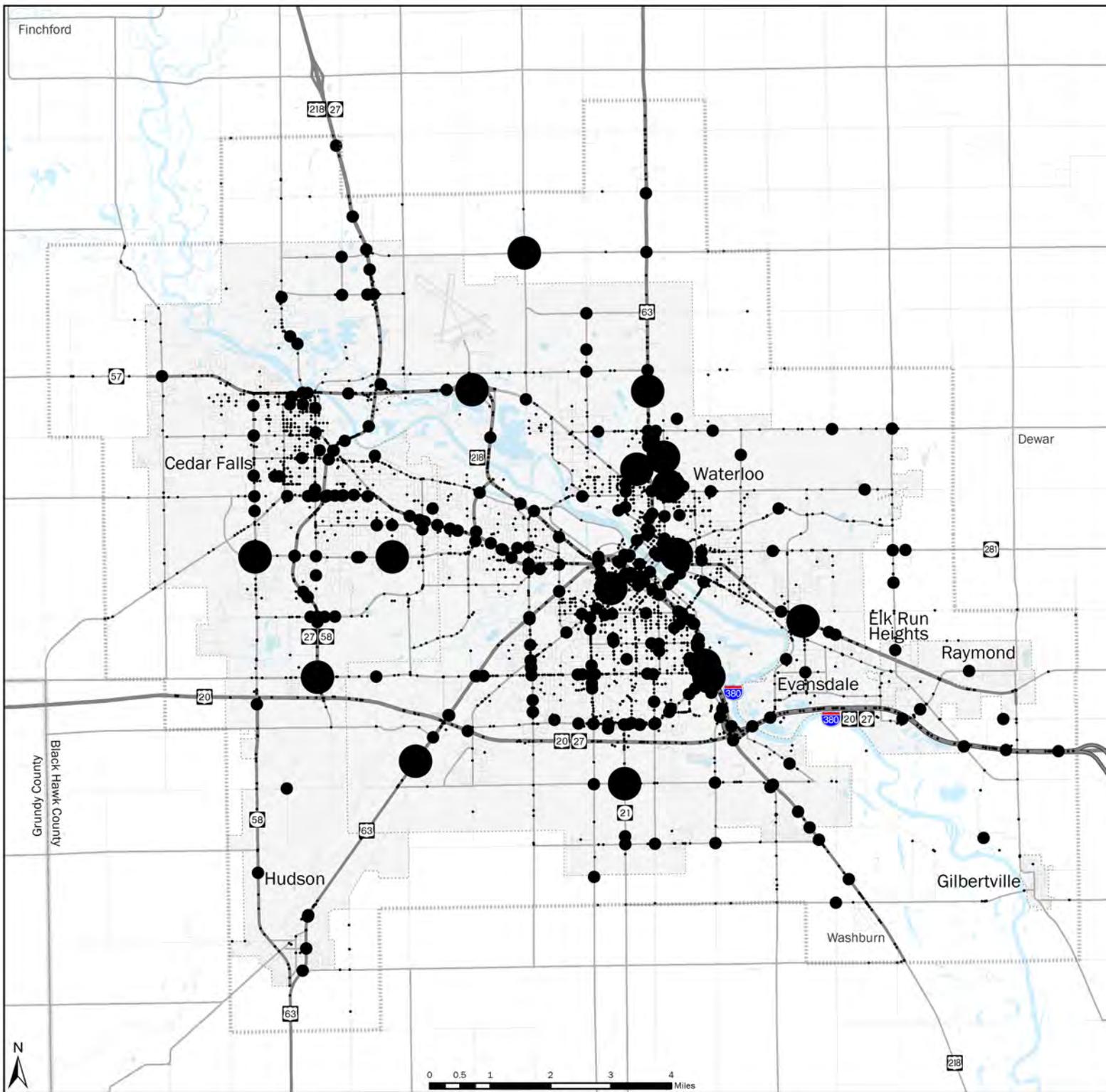


### Legend

- City Boundary
- MPO Study Area

### Maximum Injuries per Crash (2006-2016)

- 0 - 3
- 4 - 5
- 6 - 11



Data Source: INRCOG, Iowa DOT 2006-2016  
 Total Data Sample Approximately 24,000 Crashes within the MPO

**INRCOG** Iowa Northland Regional Council of Governments  
 Disclaimer: This map is for reference only. No liability is assumed for the accuracy of the data delineated herein, either expressed or implied by INRCOG.

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## State Safety Plans

The Iowa DOT has been involved in several initiatives related to improving safety. There is an abundance of crash information and several tools for users located on the Iowa DOT website, as well as documents and plans outlining safety efforts.

### Iowa Strategic Highway Safety Plan 2017

One method States conduct safety planning is through the development of a highway safety plan. Starting in 2016, Iowa's traffic safety community began working on an update to Iowa's Strategic Highway Safety Plan (SHSP). This update was written using a data-driven, innovative, and proactive planning process. The SHSP was published in 2017.

As described in the document, the SHSP was written to address not only the Four E's of roadway safety (engineering, education, enforcement, and emergency medical services), but also a fifth E – everyone. The last E is a reminder that safety is everyone's responsibility.

Safety strategies were developed for several areas with the priority strategies outlined in the following categories:

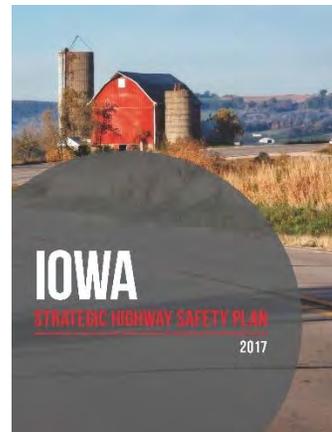
- Education – Multimedia education campaign
- Education – Enhance driver education
- Enforcement – High-visibility enforcement
- Enforcement – Deploy state-of-the-art technology
- Enforcement – Expand impaired enforcement programs
- Engineering – Prevent lane departures
- Engineering – Improve intersections
- Policy – Enhance multiagency collaborative efforts
- Policy – Strengthen legislative policies
- Data Management and Use – Safety data improvement

For the 2017 SHSP, two areas of concern were revealed after the crash data was analyzed. Both the older driver and motorcycle-related categories saw an upward trend in severe injuries since the 2013 SHSP was adopted. As these were the only two categories that did not consistently display a downward trend, a special emphasis was placed on them.

Iowa continues to align with the national vision to eliminate all traffic fatalities on all public roads. In order to do this, the Zero Fatalities campaign was developed in 2014 in partnership with the Iowa Departments of Transportation, Public Safety, and Public Health. Messaging strategies have focused on the fact that zero is the only acceptable goal, and every fatality is a life that was important to someone and not just a statistic.

Following the development of the 2013 SHSP, the state has made significant progress toward its goal of reducing fatalities and serious injuries by 15 percent by the year 2020. In order to continue this progress, safety stakeholders established two new goals related to exposure of life-altering injuries. For the first measure, the state coordinated with the Governor's Traffic Safety Bureau on setting a target fatality rate of 1 per 100 million vehicle-miles traveled (VMT). For the second measure, safety stakeholders set the target rate for serious injuries at 4.3 per 100 million VMT. These targets are set for 2020 and will be reexamined for the next SHSP update.

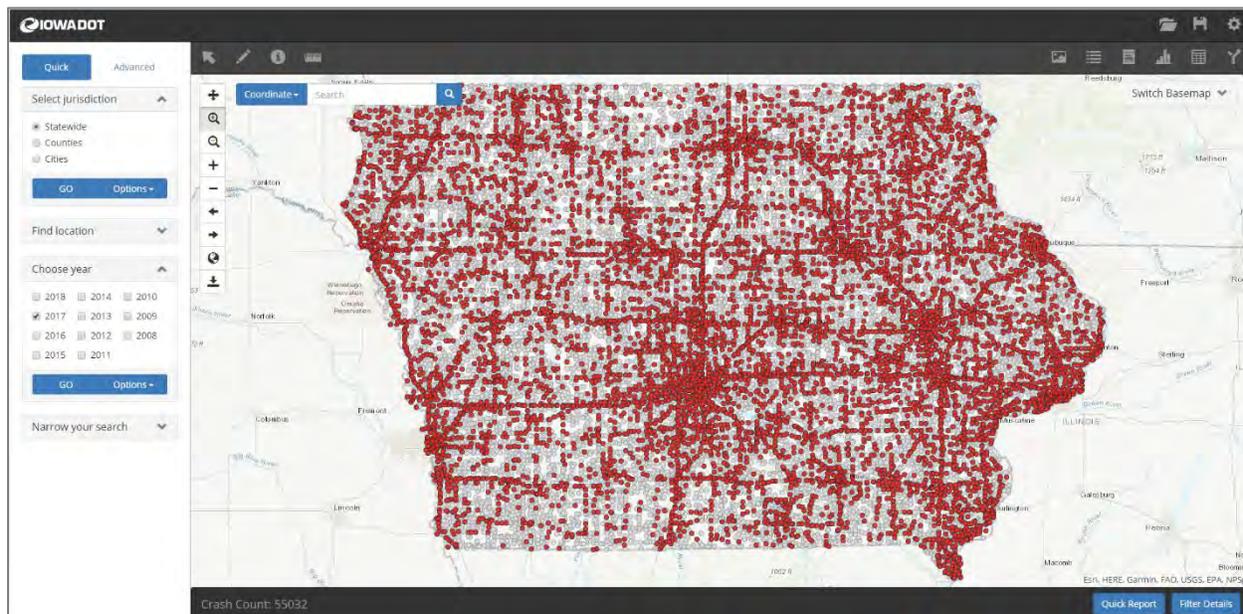
<https://iowadot.gov/traffic/pdfs/iowa2017SHSP.pdf>



### Iowa DOT Crash Analysis Tool

The Iowa DOT provides public access to a web-based Crash Analysis Tool (ICAT). This tool provides quick, user-friendly functionality to review and analyze ten-years of crash data. Through the online interface, users can select geographic boundaries, query crash records, export crash data, and produce summary charts and reports.

<https://icat.iowadot.gov>



### Local Road Safety Workshops

The Iowa State University Institute for Transportation (InTrans) holds a series of workshops which are funded by the Iowa DOT Office of Traffic Safety. Planning and presentations are provided by several co-sponsors including the Iowa DOT Systems Planning and Local Systems offices, FHWA – Iowa Division, Governor’s Traffic Safety Bureau (GTSB), and the Iowa Local Technical Assistance Program (LTAP). These workshops are presented annually across the state to provide the most current information and advice for improving safety on local roads and streets in terms of planning, law enforcement, education, and engineering.

### Traffic Safety Culture in Iowa

A report was issued in 2011 by InTrans called *Improving Traffic Safety Culture in Iowa*. This report examined the traffic safety culture in Iowa through the eyes of a diverse range of experts. In addition to summarizing the best practices and effective laws in improving traffic safety culture, the study also recommended 11 high-level goals with specific actions for success. The goals were as follows:

- Improve emergency medical services response
- Toughen law enforcement and prosecution
- Increase safety belt use
- Reduce speeding-related crashes
- Reduce alcohol-related crashes
- Improve commercial vehicle safety
- Improve motorcycle safety
- Improve young driver education
- Improve older driver safety
- Strengthen teenage licensing process
- Reduce distracted driving

As a follow-up to the 2011 study, a second phase was undertaken to focus on producing actions that would ultimately improve the traffic safety culture across Iowa. The focus of the second phase was on synthesizing the expert opinions solicited in Phase I with prevailing public views and/or opinions via a public opinion survey to make recommendations to the Iowa DOT about actions that will improve the traffic safety culture. Recommendations were grouped by potential based on trends in public opinion to reflect support and opportunity, as well as effectiveness. Some of the recommendations include:

- High Potential
  - Continue to aggressively pursue stronger legislation and enforcement to address the growing problem of distracted driving.
  - Increase education and marketing efforts to reduce distracted driving.
  - Continue to improve enforcement to reduce alcohol-related crashes through increased use of data.
  - Improve and increase parental involvement in driving to strengthen the teenage licensing process and improve young driver education.
  - Support increased rider training to improve motorcycle safety.
  - Improve older driver safety by instituting driving tests for persons starting at 70 years old.
- Medium Potential
  - Increase media and marketing efforts to reduce alcohol-related crashes.
  - Pursue increase in fines to increase safety belt use.
  - Pursue graduated driver licensing to improve commercial vehicle safety.
- Low Potential
  - Increase education and marketing efforts to change teen attitudes toward driving, strengthen the teenage licensing process, and improve young driver education.
  - Improve motorcycle safety by pursuing a lower blood alcohol content limit for motorcyclists.

[http://www.intrans.iastate.edu/research/documents/research-reports/safety\\_culture\\_ii\\_w\\_cvr.pdf](http://www.intrans.iastate.edu/research/documents/research-reports/safety_culture_ii_w_cvr.pdf)

### **Iowa DOT Top 200 Safety Improvement Candidate Locations**

The Iowa DOT routinely updates a list of the top 200 Safety Improvement Candidate Location (SICL) intersections and targets these locations for funding assistance to develop safety improvements under the Iowa Transportation Safety Improvement Program. The list is developed by analyzing all intersections in Iowa with at least one crash. The intersections are then ranked by a detailed methodology that focuses on the number of crashes, severity of the crashes, and rate at which the crashes occur per average daily traffic. The Iowa DOT utilizes crash reports filed by city police departments, county sheriffs, the Iowa State Patrol, and individual drivers in determining the listings.



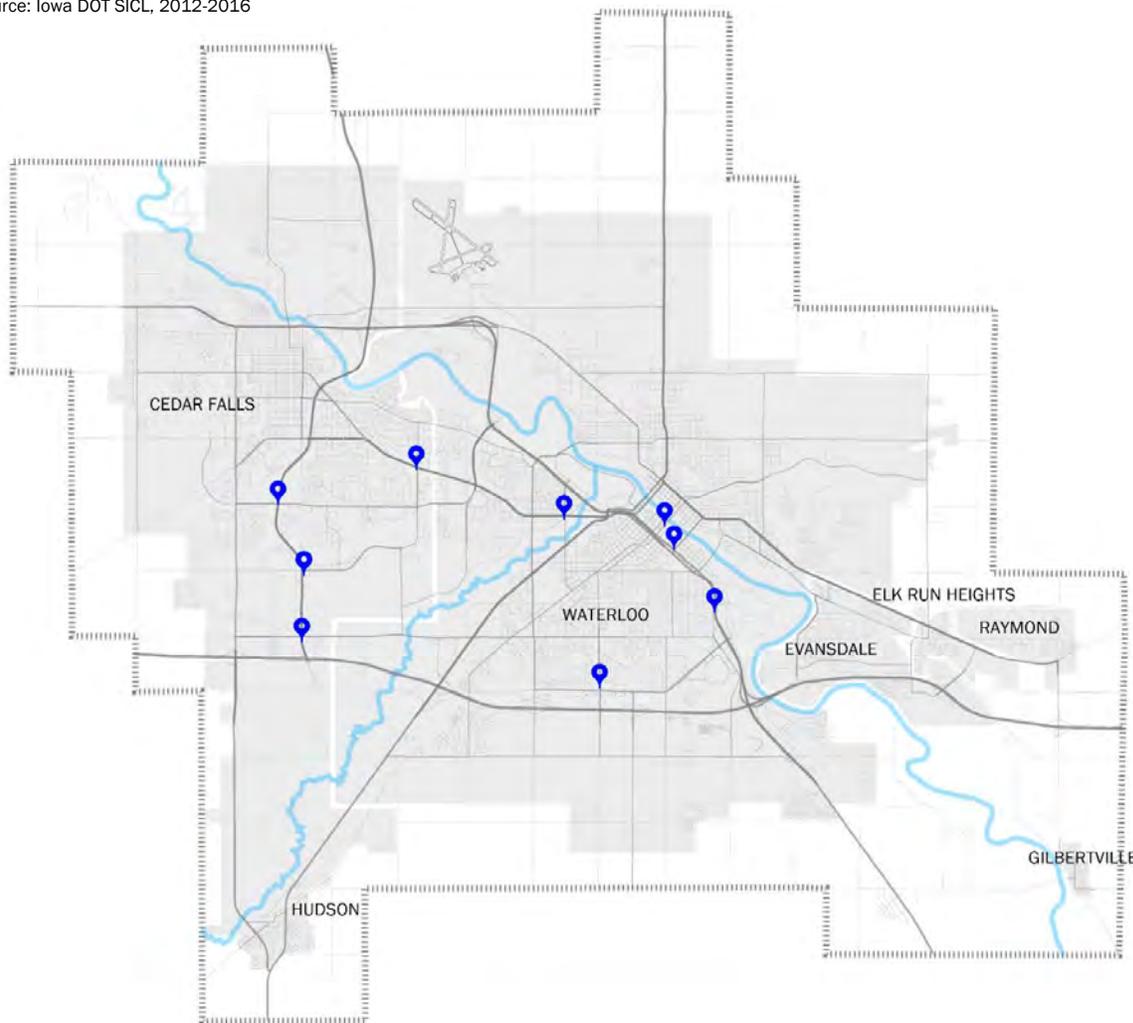
Construction of the interchange at IA Hwy 58 and Viking Rd, currently ranked 5 on the Top 200 SICL  
Foth

In the most recent listing (2012-2016), the metro area had nine intersections ranked in the Top 200. These locations are of concern when it comes to safety improvements as they have been rated as among the worst crash locations on a statewide level. Planning and mitigation efforts are discussed in Table 7.1.

**Table 7.1: MPO Intersections Included in the Top 200 Safety Improvement Candidate Locations**

Statewide Ranking	City	Intersection	Mitigation Efforts
5	Cedar Falls	IA Hwy 58 & Viking Rd	Interchange construction (2018-2019)
20	Cedar Falls	University Ave & Cedar Heights Dr	Roundabout construction (2018)
54	Cedar Falls	IA Hwy 58 & Greenhill Rd	Interchange identified in IA Hwy 58 Environmental Assessment Proposed Action
66	Cedar Falls	IA Hwy 58 & W Ridgeway Ave	System interchange and access control identified in IA Hwy 58 Environmental Assessment Proposed Action
73	Waterloo	W 6 <sup>th</sup> St & Commercial St	Intersection improvements completed as part of Traffic Safety Improvement Program project
75	Waterloo	I-380 & U.S. Hwy 218/Washington St & Mitchell Ave	No mitigation efforts currently planned
102	Waterloo	University Ave & Fletcher Ave	Roundabout intersection planned (2020)
136	Waterloo	U.S. Hwy 218/Washington St & W 11 <sup>th</sup> St	Red light running cameras added at intersection
174	Waterloo	San Marnan Dr & Kimball Ave	Intersection improvements completed in 2015

Source: Iowa DOT SICL, 2012-2016



## Drive Safe Cedar Valley

A local effort aimed at improving driving habits and decreasing the number of crashes is Drive Safe Cedar Valley. The goal of Drive Safe Cedar Valley is to change the culture of driving in the region. The public awareness program has used spokespersons, special events, targeted education programs, children's coloring books, and other public awareness initiatives to highlight community-wide safe-driving issues. The campaign is a partnership between the City of Waterloo, the Iowa DOT, and INRCOG, and the project continues to be funded in part through the MPO.



### WHY SAFE DRIVING MATTERS

Traffic accidents in the Waterloo-Cedar Falls metropolitan area are responsible for about five deaths every year. Hundreds of needless mutilations, disfigurements, injuries, and a significant amount of property damage happen during an average year.

[Read More](#)



### YOU CAN HELP

As a driver in the Cedar Valley, it is your responsibility to do your part in preventing automobile crashes. Who knows? You may one day help to save a life - maybe even your own.

[Read More](#)



### 9 THINGS THAT MAKE PARK AVENUE DIFFERENT FROM OTHER STREETS IN WATERLOO

20 MPH SPEED LIMIT: A Lower speed limit is good for at least 2 things. 1) When bikes and cars run at closer speeds there is less chance of an accident. 2) The accident will be less severe. Accidents are still more dangerous for bicycles. Everyone must be careful and mind the cyclists.

[Read More](#)



### BIKE FRIENDLY WATERLOO

The City of Waterloo, Iowa, has taken the first step in creating a fully integrated bicycle transportation system children and adults alike. The system will eventually connect the entire city and beyond through the trails network, designated bike routes, and bike lanes, making it safe for kids and parents riding in the Greater Waterloo Area.

[Read More](#)

Screenshot from Drive Safe Cedar Valley webpage

[www.drivesafecv.com](http://www.drivesafecv.com)

[www.kidstrafficsafety.com](http://www.kidstrafficsafety.com)

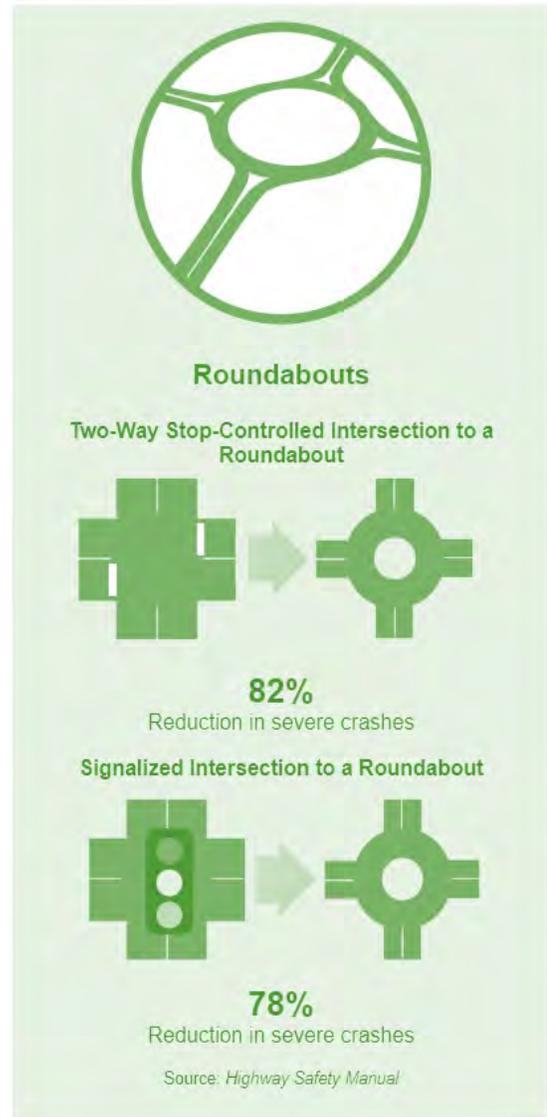
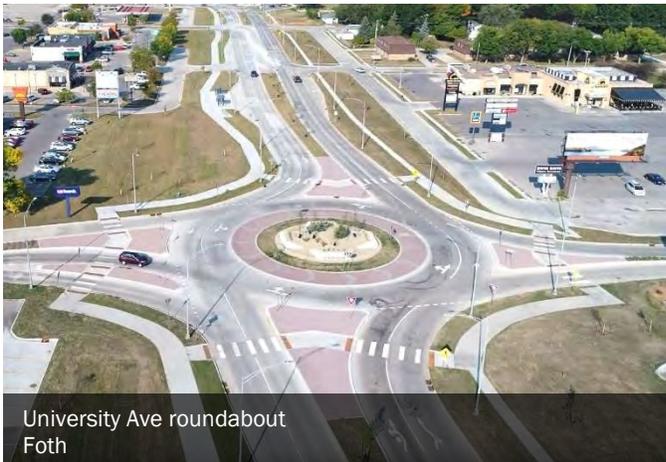
## Safety Improvements

There are many safety improvements, techniques, and countermeasures that can be used to mitigate existing safety problems or prevent safety issues from developing. The information on the following pages is from the FHWA ([www.safety.fhwa.dot.gov/provencountermeasures](http://www.safety.fhwa.dot.gov/provencountermeasures)) and outlines techniques that can be used in certain situations to improve safety.

### Roundabouts

The modern roundabout is a type of circular intersection configuration that safely and efficiently moves traffic through an intersection. Roundabouts feature channelized approaches and a center island that results in lower speeds and fewer conflict points. Entering traffic yields to vehicles already circulating, leading to improved operational performance.

Roundabouts have been proven to provide substantial safety and operational benefits compared to other intersection types, most notably a reduction in severe crashes. They can be implemented in both urban and rural areas under a wide range of traffic conditions. They can replace signals, two-way stop controls, and all-way stop controls. Roundabouts are an effective option for managing speed and transitioning traffic from high-speed to low-speed environments, such as freeway interchange ramp terminals, and rural intersections along high-speed roads.



### Road Diet

A Road Diet, or roadway reconfiguration, typically involves converting an existing four-lane undivided roadway to a three-lane roadway consisting of two through lanes and a center two-way left-turn lane (TWLTL). This improvement can be a low-cost safety solution when planned in conjunction with a simple pavement overlay, and the reconfiguration can be accomplished at zero to minimal additional cost.

Benefits of Road Diet installations may include:

- An overall crash reduction of 19 to 47 percent.
- Reduction of rear-end and left-turn crashes due to the dedicated left-turn lane.
- Reduced right-angle crashes as side street motorists cross three versus four travel lanes.
- Fewer lanes for pedestrians to cross.
- Opportunity to install pedestrian refuge islands, bicycle lanes, or transit stops.
- Traffic calming and more consistent speeds.
- A more community-focused, Complete Streets environment that better accommodates the needs of all road users.

### Corridor Access Management

Access management refers to the design, application, and control of entry and exit points along a roadway. This includes intersections with other roads and driveways that serve adjacent properties. Access management along a corridor can simultaneously enhance safety for all modes, facilitate walking and biking, and reduce trip delay and congestion. Successful corridor access management involves balancing overall safety and corridor mobility for all users along with the access needs of adjacent land use.

The following access management strategies can be used individually or in a combination with one another:

- Driveway closure, consolidation, or relocation
- Limited-movement designs for driveways (i.e. right-in/right-out only)
- Raised medians that preclude across-roadway movements
- Intersection designs such as roundabouts or those with reduced left-turn conflicts (i.e. J-turns)
- Turn lanes (left-only, right-only, two-way left)
- Lower speed one-way or two-way off-arterial circulation roads



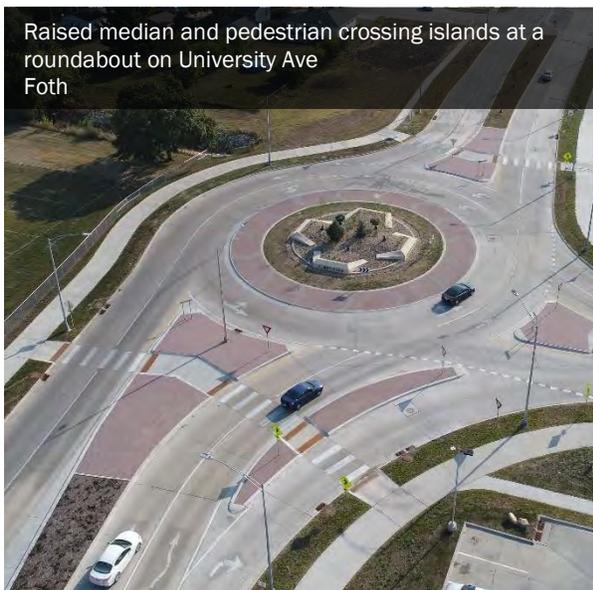
### Medians and Pedestrian Crossing Islands in Urban and Suburban Areas

A *median* is the area between opposing lanes of traffic, excluding turn lanes. Medians in urban and suburban areas can be defined by pavement markings, raised medians, or islands to separate motorized and non-motorized road users. A *pedestrian crossing island* (or refuge area) is a raised island, located between opposing traffic lanes at intersection or midblock locations, which separates crossing pedestrians from motor vehicles.

For pedestrians to safely cross a roadway, they must estimate vehicle speeds, adjust their walking speed, determine gaps in traffic, and predict vehicle paths. Installing raised medians or pedestrian crossing islands can help improve safety by simplifying these tasks and allowing pedestrians to cross one direction of traffic at a time.

### Leading Pedestrian Intervals

A leading pedestrian interval (LPI) gives pedestrians the opportunity to enter an intersection three to seven seconds before vehicles are given a green indication. With this head start, pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn left. LPIs provide increased visibility of crossing pedestrians, reduced conflicts between pedestrians and vehicles, increased likelihood of motorists yielding to pedestrians, and enhanced safety for pedestrians who may be slower to start into the intersection.



### Medians and Pedestrian Crossing Islands in Urban and Suburban Areas

**SAFETY BENEFITS:**

- Raised Median**  
**46%**  
Reduction in pedestrian crashes
- Pedestrian Crossing Island**  
**56%**  
Reduction in pedestrian crashes

Source: Desktop Reference for Crash Reduction Factors, FHWA-SA-08-011, September 2008, Table 11.



### Leading Pedestrian Intervals

**SAFETY BENEFIT**

- 60%**  
Reduction in pedestrian-vehicle crashes at intersections

Source: Highway Safety Manual

### Longitudinal Rumble Strips and Stripes

Longitudinal rumble strips are milled or raised elements on the pavement intended to alert drivers through vibration and sound that their vehicles have left the travel lane. They can be installed on the shoulder, edge line of the travel lane, or at or near center line of an undivided roadway. Rumble stripes are edge line or center line rumble strips where the pavement marking is placed over the rumble strip, which can result in an increased visibility of the pavement marking during wet or nighttime conditions. These treatments are designed to address roadway departure crashes caused by distracted, drowsy, or otherwise inattentive drivers who drift from their lane. They are most effective when deployed in a systemic application since driver error may occur on all roads.

### SafetyEdge<sup>SM</sup>

SafetyEdge<sup>SM</sup> technology shapes the edge of the pavement at approximately 30 degrees from the pavement cross slope during the paving process. This systemic safety treatment eliminates the vertical drop-off at the pavement edge, allowing drifting vehicles to return to the pavement safely. It has minimal effect on asphalt pavement project cost with the potential to improve pavement life.



### Longitudinal Rumble Strips and Stripes

**SAFETY BENEFITS:**

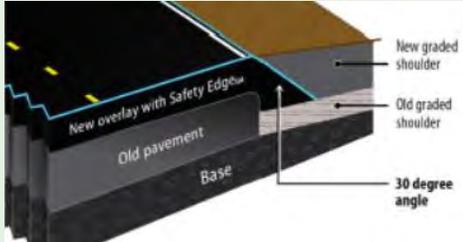
**Center Line Rumble Strips**  
**44-64%**  
Head-on, opposite-direction, and sideswipe fatal and injury crashes

**Shoulder Rumble Strips**  
**13-51%**  
Single vehicle, run-off-road fatal and injury crashes

Source: NCHRP Report 641, Guidance for the Design and Application of Shoulder and Centerline Rumble Strips.



### SafetyEdge<sup>SM</sup>



**SAFETY BENEFIT:**

**11%**  
Reduction in fatal and injury crashes

Source: Safety Effects of the SafetyEdge<sup>SM</sup>, FHWA-SA-17-044.

## Walkways

A walkway is any type of defined space or pathway for use by a person traveling by foot or using a wheelchair. These may be pedestrian walkways, shared use paths, sidewalks, or roadway shoulders. With more than 5,000 pedestrian fatalities and 70,000 pedestrian injuries occurring in roadway crashes annually, it is important for communities to improve conditions and safety for pedestrians and to integrate walkways more fully into the transportation system<sup>1</sup>. Well-designed pedestrian walkways, shared use paths, and sidewalks improve the safety and mobility of pedestrians.

## Pedestrian Hybrid Beacons

A pedestrian hybrid beacon (PHB) is a traffic control device designed to help pedestrians safely cross busy or higher-speed roadways at midblock crossings and uncontrolled intersections. The beacon head consists of two red lenses above a single yellow lens. The lenses remain “dark” until a pedestrian desiring to cross the street pushes the call button to activate the beacon. The signal then initiates a yellow to red lighting sequence consisting of steady and flashing lights that directs motorists to slow and come to a stop.

More than 75 percent of pedestrian fatalities nationwide occur at non-intersection locations, and vehicle speeds are often a major contributing factor<sup>1</sup>. The PHB is an intermediate option between a flashing beacon and a full pedestrian signal because it assigns right of way and provides positive stop control. It also allows motorists to proceed once the pedestrian has cleared their side of the travel lane, reducing vehicle delay.



<sup>1</sup>National Highway Traffic Safety Administration, *Traffic Safety Facts 2015 Data – Pedestrians*. Report DOT HS 812 375.



## Walkways

### SAFETY BENEFITS:

**Sidewalks 65-89%**

Reduction in crashes involving pedestrians walking along roadways

**Paved Shoulders 71%**

Reduction in crashes involving pedestrians walking along roadways

Source: *Desktop Reference for Crash Reduction Factors*, FHWA-SA-08-011, Table 11.



## Pedestrian Hybrid Beacons

### Safety Benefits:

**69%**

Reduction in pedestrian crashes

**29%**

Reduction in total crashes

**15%**

Reduction in serious injury and fatal crashes

Source: CMF Clearinghouse, CMF IDs: 2911, 2917, 2922.

## Funding Programs for Safety Projects

There are a variety of state and federal funding programs available through the Iowa DOT to help fund safety improvements. MPO jurisdictions are encouraged to consider the programs outlined below to implement safety improvements.

### Traffic Safety Improvement Program (TSIP)

TSIP is funded by one half of one percent of the Road Use Tax Fund. Cities, counties, and the Iowa DOT can apply for three types of projects. *Site-specific* projects account for \$5-6 million per year, and a maximum of \$500,000 can be awarded to a project. The other two project types are *traffic control devices* and *traffic safety studies*; each program has \$500,000 to distribute annually.

[www.iowadot.gov/traffic/traffic-and-safety-programs/tsip/tsip-program](http://www.iowadot.gov/traffic/traffic-and-safety-programs/tsip/tsip-program)

### Highway Safety Improvement Program (HSIP) – Secondary

This program utilizes a \$2 million set-aside from the HSIP which provides a 90 percent federal reimbursement for safety projects on the county road system. TSIP provides the 10 percent matching funds which results in a net zero funding requirement for counties. This program promotes a greater number of safety projects on the county road system by focusing on low cost, systemic improvements along a corridor. The goal of the program is to reduce lane departure crashes.

[www.iowadot.gov/traffic/traffic-and-safety-programs/hsip-secondary-program](http://www.iowadot.gov/traffic/traffic-and-safety-programs/hsip-secondary-program)

### Iowa Traffic Engineering Assistance Program (TEAP)

TEAP provides traffic engineering expertise to cities and counties without the resources of a staff traffic engineer. The purpose is to identify cost-effective traffic safety and operational improvements as well as potential funding sources to implement the recommendations. Typical studies include high-crash locations, unique lane configurations, obsolete traffic control devices, school pedestrians, truck routes, parking issues, and other traffic studies. The program will fund up to 100 hours of consultant time.

[www.iowadot.gov/traffic/traffic-and-safety-programs/traffic-engineering-assistance-program-teap](http://www.iowadot.gov/traffic/traffic-and-safety-programs/traffic-engineering-assistance-program-teap)

### Sign Replacement Program for Cities and Counties

This program provides funding to replace regulatory, warning, and school area signs and posts that are damaged, obsolete, or substandard. The program will provide up to \$5,000 for cities and \$10,000 for counties per grantee on a first-come, first-served basis.



[www.iowadot.gov/traffic/traffic-and-safety-programs/sign-replacement-program](http://www.iowadot.gov/traffic/traffic-and-safety-programs/sign-replacement-program)

## Security Planning

The security of the transportation system is a primary concern at the federal, state, and local levels. Security is essential for every mode of transportation, for both freight and passengers. Natural disasters, such as floods, blizzards, or tornadoes, and manmade accidental or intentional accidents (i.e. industrial plant emergencies, acts of terrorism), can cause serious disruption to the transportation system and pose danger to the public. Conversely, the transportation system is also what provides a means for exit during an emergency when people need to evacuate or be routed around an area. Transportation considerations are important at all levels of emergency management and planning. These include preventing incidents, preparing for potential events, quickly and efficiently responding to events, recovering from incidents, and applying lessons learned for future planning.

### U.S. DOT Strategic Plan

The U.S. Department of Transportation Strategic Plan for FY 2018-2022 establishes the DOT's strategic goals and objectives.

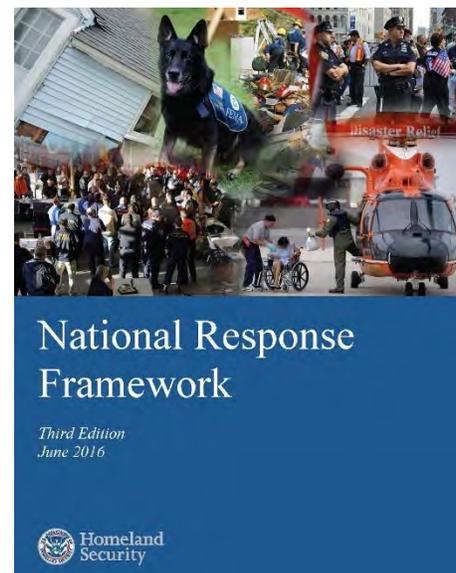
Objectives discussed range from system-level to individual modes of transportation. An objective applicable to MPO transportation security planning is *“to encourage, coordinate, facilitate, and foster world-class research and development to enhance the safety, security, and performance of the Nation’s transportation system.”*

[www.transportation.gov/dot-strategic-plan](http://www.transportation.gov/dot-strategic-plan)

### National Response Framework and National Incident Management System

The National Response Framework (NRF) is a guide to how the Nation responds to all types of disasters and emergencies. It is built on scalable, flexible, and adaptable concepts identified in the National Incident Management System to align key roles and responsibilities across the Nation. The document describes specific authorities and best practices for managing incidents that range from the serious but purely local to large-scale terrorist attacks or catastrophic natural disasters.

The National Incident Management System (NIMS) is a comprehensive, national approach to incident management. NIMS provides a consistent nationwide framework, approach, and command structure to enable government at all levels, the private sector, and nongovernmental organizations to work together to prepare for, prevent, respond to, recover from, and mitigate the effects of incidents. The document uses the Incident Command System (ICS) as a basis for organizational structure. Each jurisdiction in Black Hawk County has adopted NIMS.



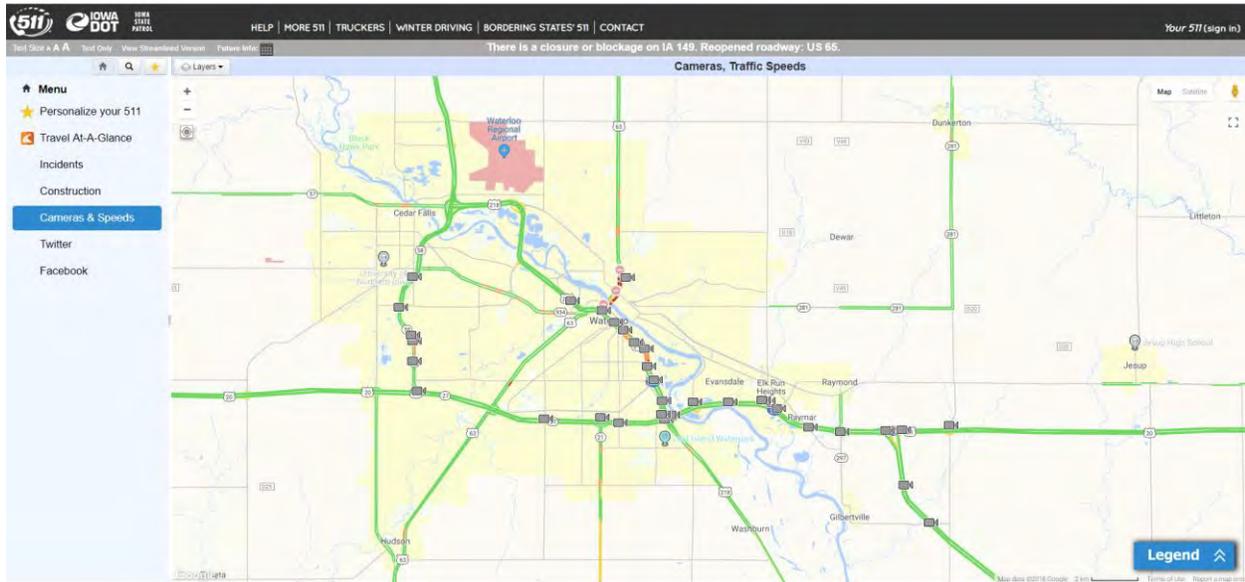
## Iowa Statewide Traffic Management Center

The Traffic Management Center (TMC) is a 24/7 center located in the Motor Vehicle Division building in Ankeny. The TMS is one of the Iowa DOT's key strategies to proactively manage the transportation system by addressing recurring and nonrecurring congestion in real-time. Using advanced technology, the TMC proactively monitors the transportation system for disruptions in traffic flow, such as crashes, work zone delays, congestion, stalled vehicles, special events, or bad weather. When disruptions occur, the TMC coordinates with internal and external partners to provide safe and quick clearance, detour routing, traffic control, and accurate and timely information to the public. The TMC uses tools such as Iowa 511, social media, and Dynamic Message Signs (DMS) to help protect on-scene responders and to prevent secondary crashes when disruptions occur.

## Intelligent Transportation Systems

There are a number of intelligent transportation system (ITS) safety and security activities undertaken by the Iowa DOT. This includes the Iowa 511 Traveler Information System which provides citizens with real-time information on roadway travel conditions, incidents, and construction activities. The 511 system can be accessed via phone, web, or mobile application and provides a way to quickly communicate with the traveling public. Many metropolitan areas have cameras on major routes and speed sensors that monitor congestion. The MPO saw its first installation of both cameras and speed sensors as part of the Interstate 380 reconstruction project in 2012. Since then, the Iowa DOT has expanded the system to include IA Hwy 58, U.S. Hwy 218, U.S. Hwy 20, and portions of U.S. Hwy 63.

[www.511ia.org](http://www.511ia.org)



Another ITS activity undertaken by the Iowa DOT is the use of dynamic message signs. Large overhead signs can be found throughout the state on many interstates and primary highways. These signs can be used to communicate information to drivers on weather, incidents, diversions, Amber Alerts, public reminders, and other topics. DMS have been installed in the MPO on U.S. Hwy 218, U.S. Hwy 20, and Interstate 380.



### 2018 Black Hawk County Evacuation Plan

The purpose of the Evacuation Plan is to provide the Black Hawk County Emergency Management Agency (EMA) and responders an initial framework of information to be used for an orderly and coordinated evacuation in the event of a disaster. The Plan does not address normal day-to-day emergencies or procedures used in coping with such emergencies. The concept of operations reflected in the document focuses on potential large-scale disasters that were identified in the *2015 Black Hawk County Multi-Jurisdictional Hazard Mitigation Plan* and provides a framework for addressing emergency situations. The Black Hawk County Evacuation Plan is designed to be implemented under NIMS. In addition to the Plan, a Flood Evacuation Guide was developed to aid the general public in preparing for an evacuation due to flooding which is one of the most likely natural disasters to impact the county.



### 2015 Black Hawk County Multi-Jurisdictional Hazard Mitigation Plan

The Hazard Mitigation Plan (HMP) was developed to serve Black Hawk County and its cities in making the area less susceptible to natural and manmade hazards. The Plan identifies local community policies, actions, and tools for ongoing, short-, mid-, and long-term implementation to reduce risk and potential future losses of property and lives. The development of the document involved a local planning committee reviewing potential hazards and threats from these hazards. This review included a hazards and risk assessment of the transportation network itself due to the potential for vehicular and other types of crashes or events.



[www.inrcog.org/pdf/Black\\_Hawk\\_County\\_Evacuation\\_Plan.pdf](http://www.inrcog.org/pdf/Black_Hawk_County_Evacuation_Plan.pdf)

[www.inrcog.org/pdf/Black\\_Hawk\\_County\\_Flood\\_Evacuation\\_Guide.pdf](http://www.inrcog.org/pdf/Black_Hawk_County_Flood_Evacuation_Guide.pdf)

[www.inrcog.org/pdf/Black\\_Hawk\\_Co\\_MJ\\_HMP\\_2015.pdf](http://www.inrcog.org/pdf/Black_Hawk_Co_MJ_HMP_2015.pdf)

### Intelligent Transportation Systems Architecture

Another local planning effort is the MPO Intelligent Transportation Systems (ITS) Architecture. Adopted in 2005, it serves as a framework for developing and integrating ITS technologies within the metropolitan area. The architecture is responsive to the unique characteristics of the metropolitan area contained within the MPO planning boundary. The architecture defines the services that must be provided, the stakeholders, and their roles and responsibilities in providing these services within the region. These defined roles and responsibilities guide stakeholders as ITS technologies are implemented.