



Transportation Systems Management & Operations (TSMO)



**2017 ACEC-IA/IDOT/FHWA Transportation
Conference**

August 24, 2017

What is TSMO?

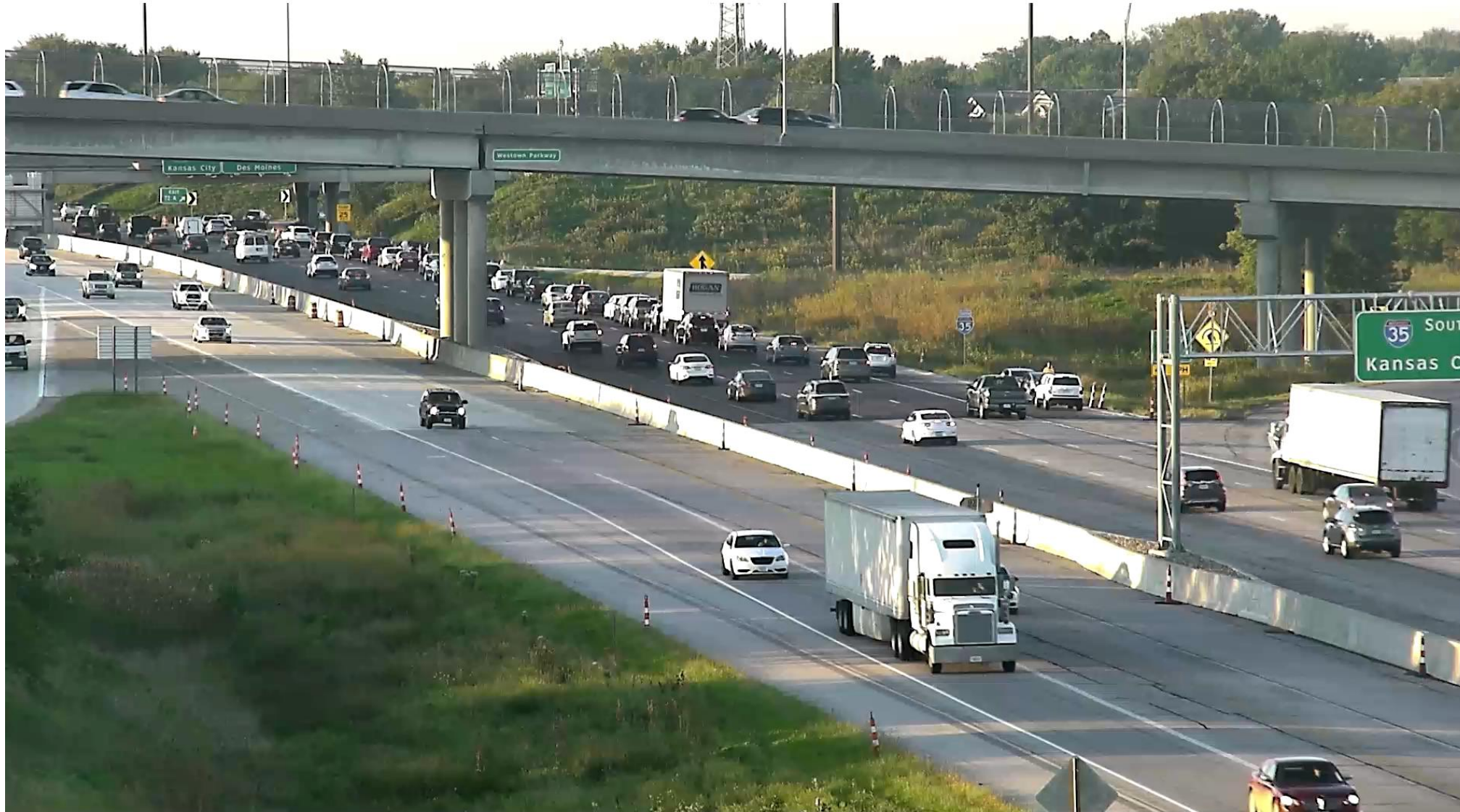
A **coordinated approach** to managing and operating our roadways as safely and efficiently as possible, focused on **maximizing existing** infrastructure, **addressing** the causes of breakdowns in flow, and overall **performance** of the transportation system.

Why Manage Traffic in Iowa?

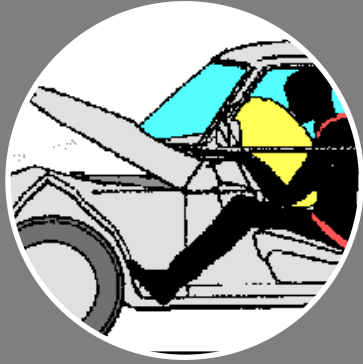


Why Manage Traffic in Iowa?

I-35/80 @ University (DMTV51) 09/19/2016 07:32:34



Why Manage Traffic in Iowa?



Safety



Mobility

Transportation Systems Management and Operations

Traffic Safety in Iowa

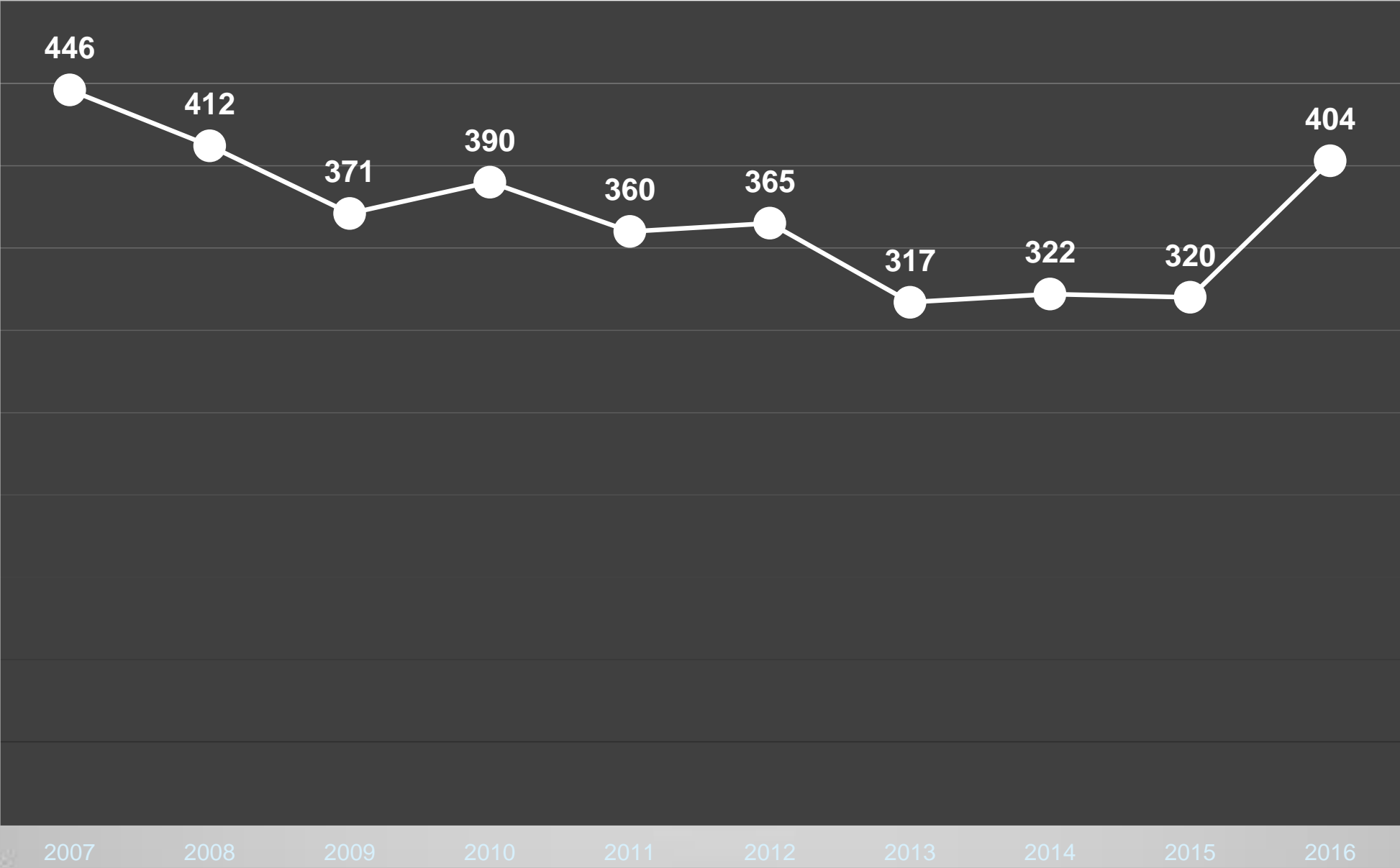
Over
40,000 US
Fatalities
in 2016

404
Iowa
Fatalities
in 2016

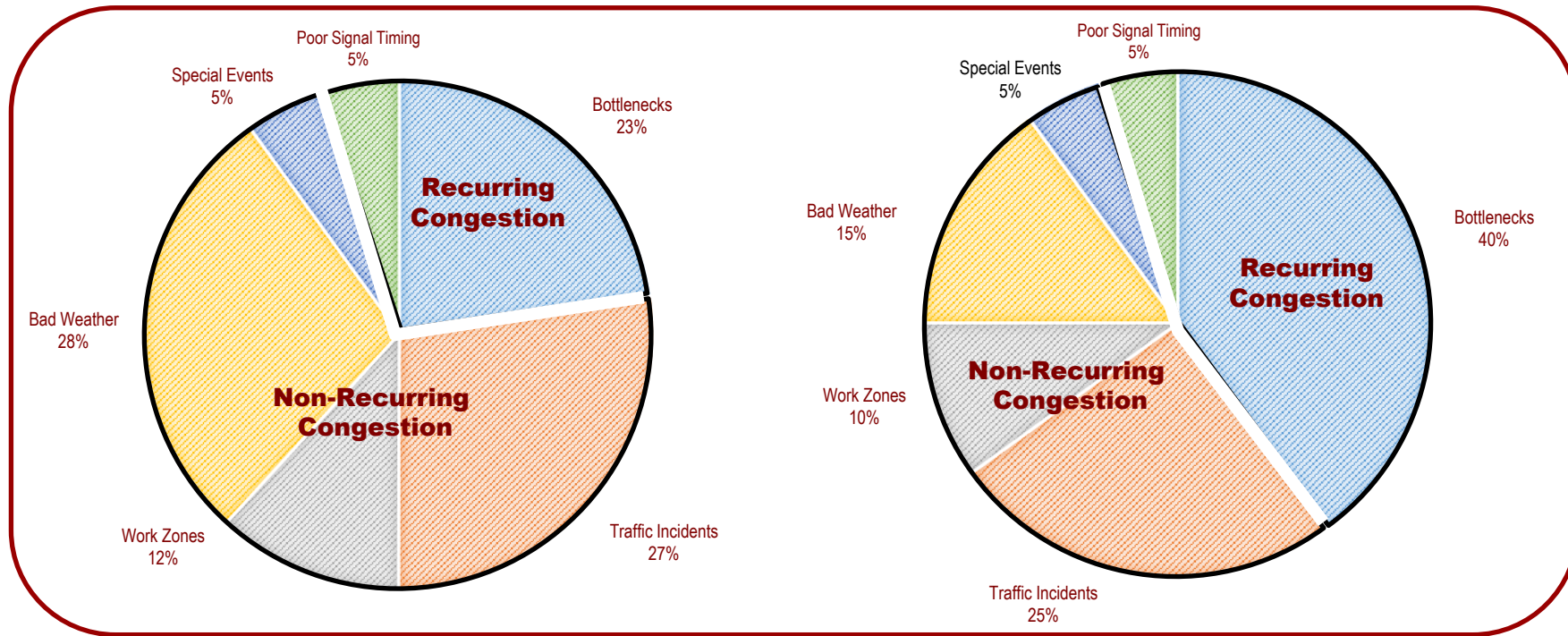
Over
2,000
incidents
per month

52.6
minutes
average
lane
blockage

Iowa Fatalities, 2007-2016



Mobility in Iowa

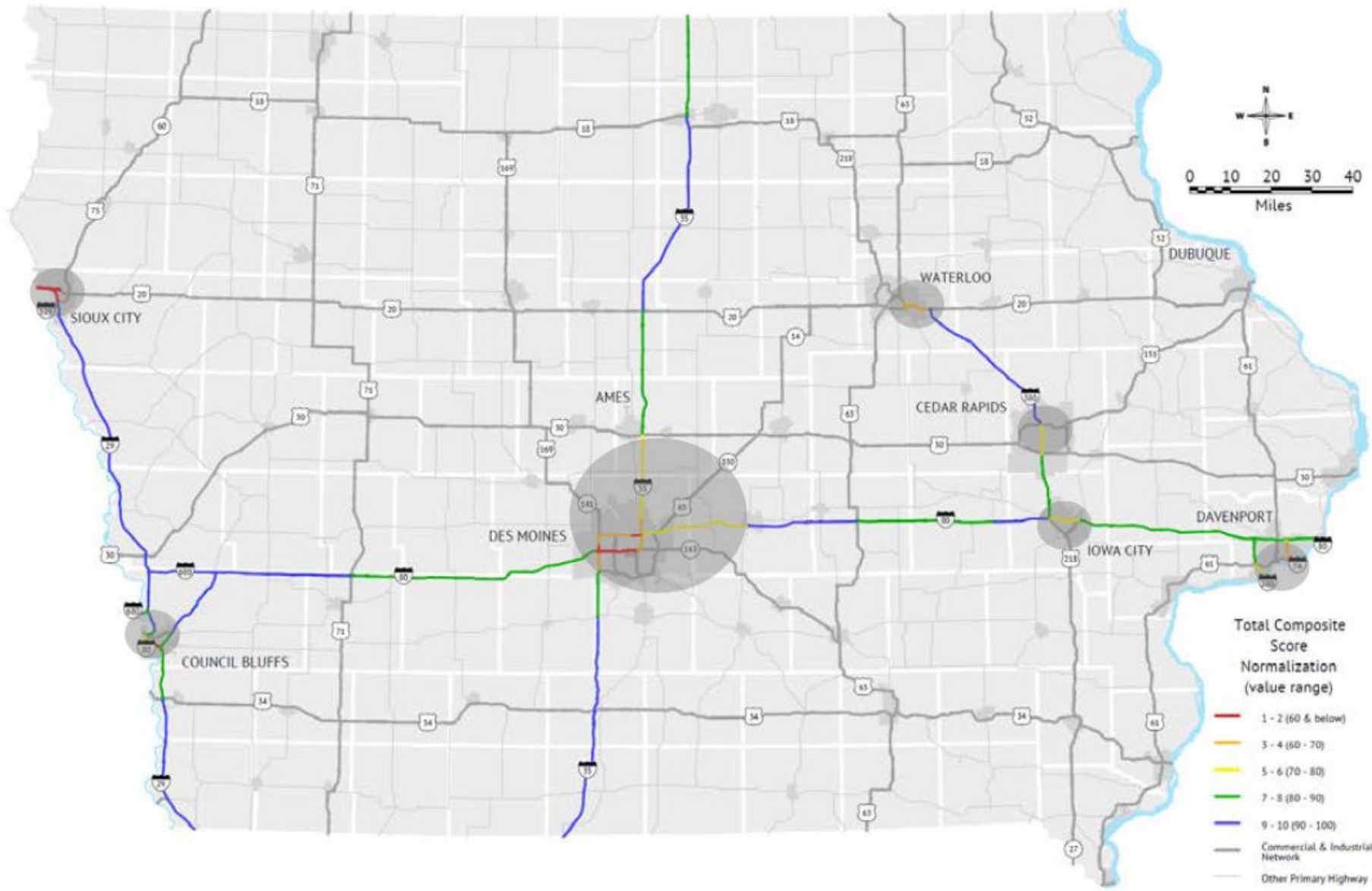


Iowa Sources of Congestion
2013-2015

National Sources of Congestion
2005

2040 Truck Volumes





Mobility Report, 2013-15

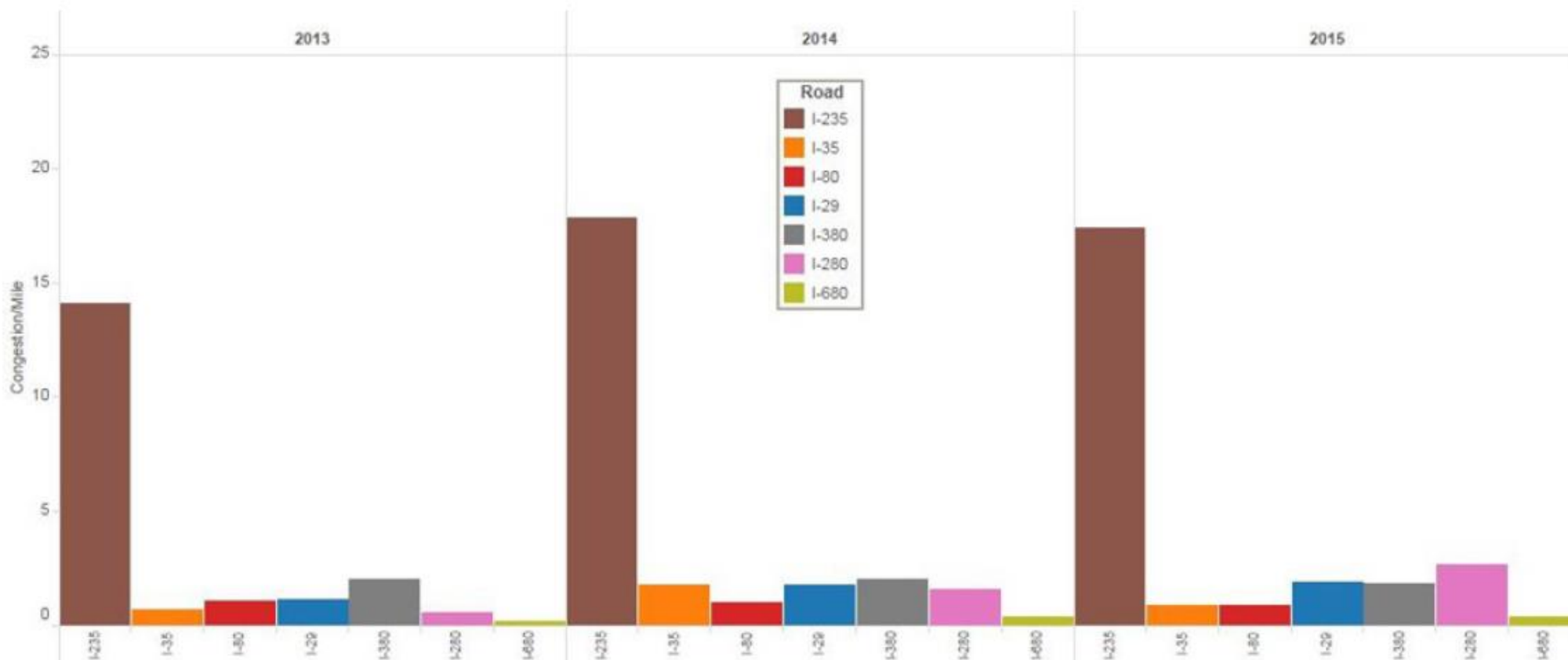
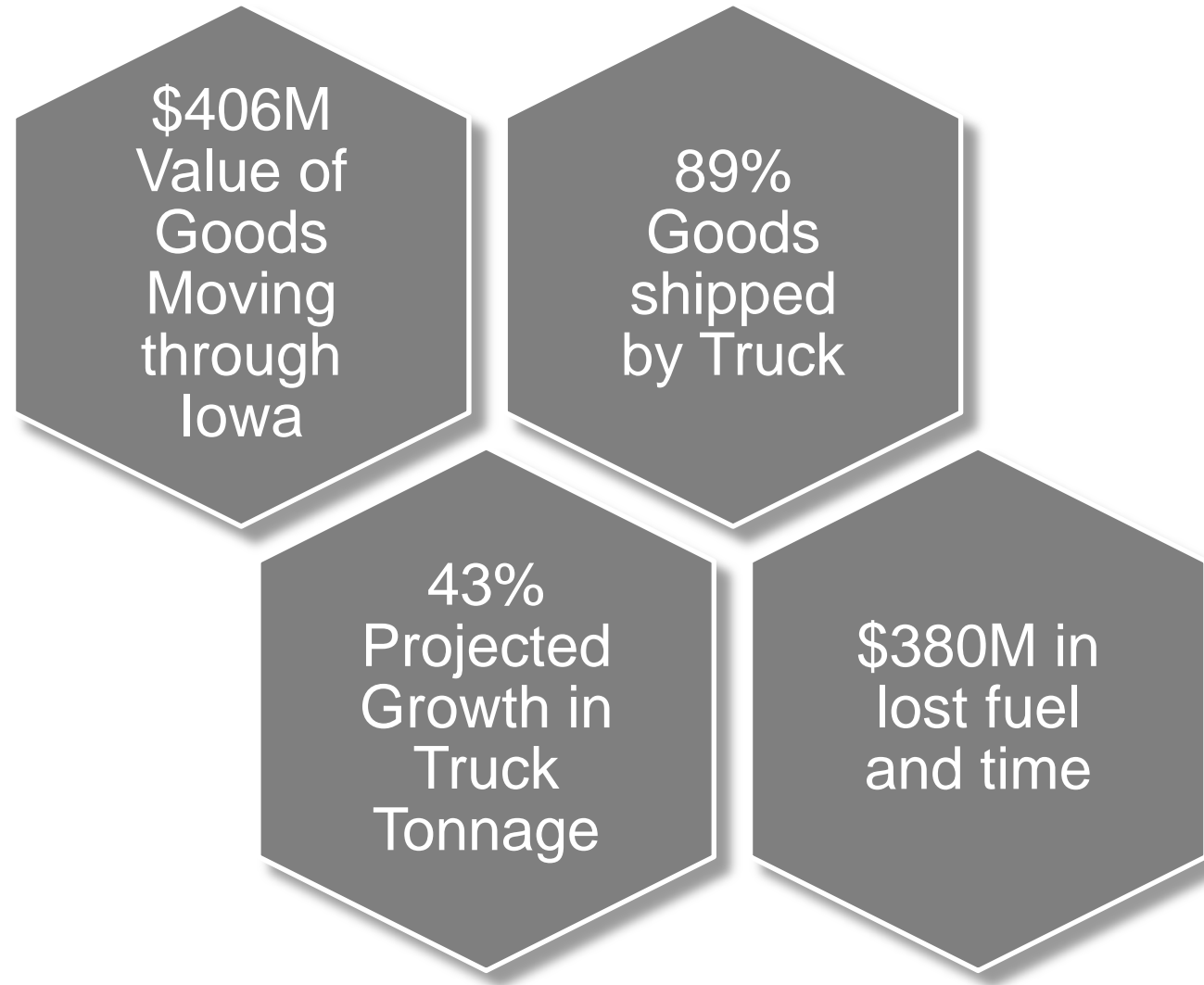


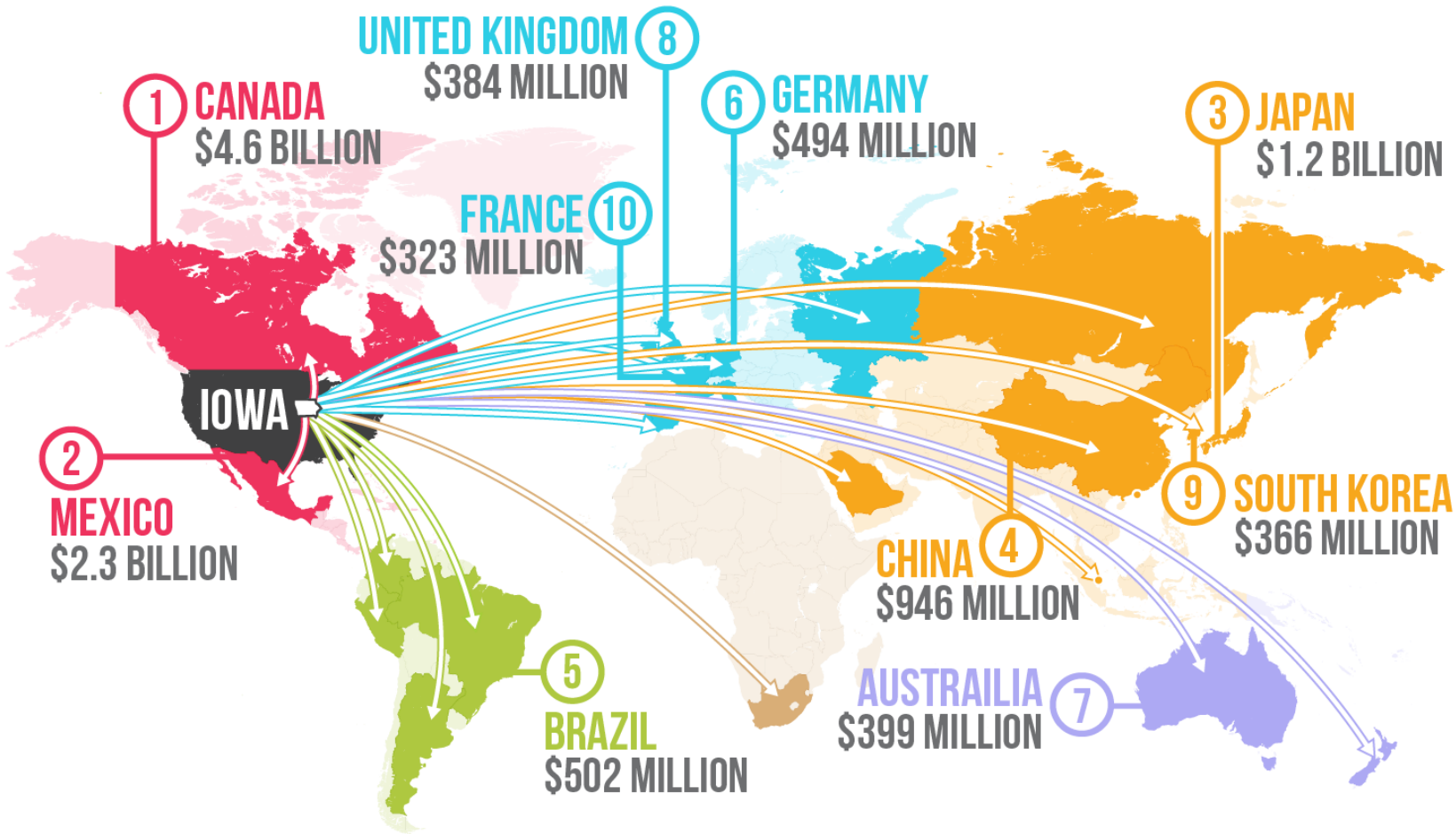
FIGURE 11. CONGESTED HOURS PER MILE INTERSTATE COMPARISON BY YEAR.

Transportation Economic Impacts in Iowa



2014 ANNUAL VALUE OF IOWA EXPORTS TO TOP 10 COUNTRIES

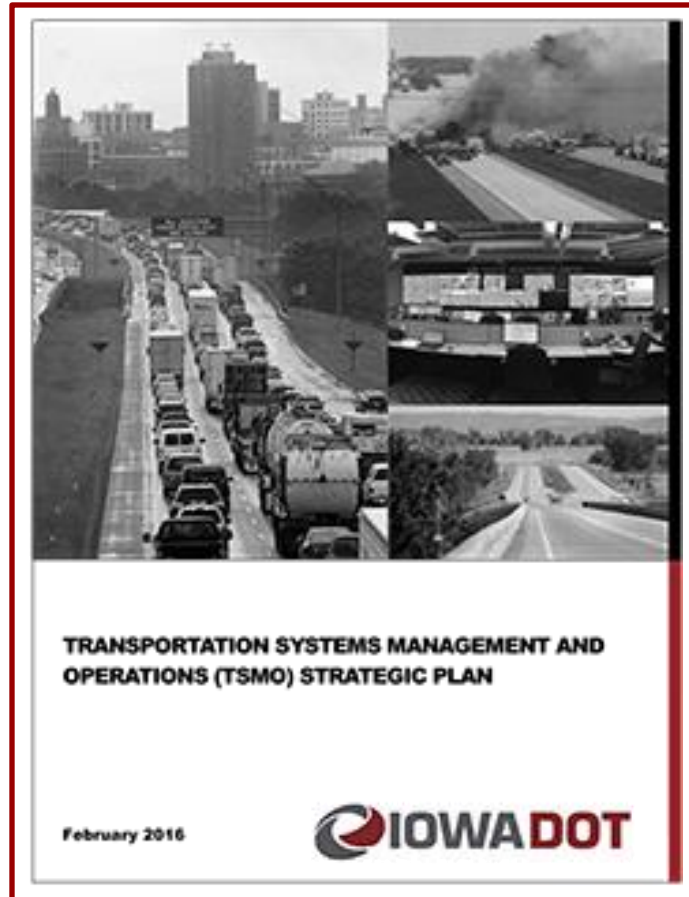
SHADED COUNTRIES REPRESENT TOP 25



What Are We Doing?



Iowa's TSMO Plan



- **2 of 3 parts completed February 2016**
 - Strategic Plan - complete
 - Program Plan - complete
 - 8 Service Layer Plans – 3 complete
- **One of the 1st TSMO Plans in the Country**
- **Referred to as “The Iowa Model”**

Strategic Plan and Program Plan can be found at: www.iowadot.gov/tsmo/



Traffic Management Center-2018/19

ITS and Communications-complete



Traveler Information-complete

Traffic Incident Management-complete



Emergency Management-2017/18

Work Zone Management-2017/18



Active Transp. and Demand Mgmt.-2018/19

Connected and Autonomous Vehicle-2017/18



Iowa TSMO Vision and Mission







VISION

Iowa's transportation system is safe, efficient and reliable, supporting the state's environmental and economic health as a result of TSMO.

MISSION

To get you there safely and reliably by proactively managing the transportation system.

Iowa TSMO Strategic Goals & Objectives

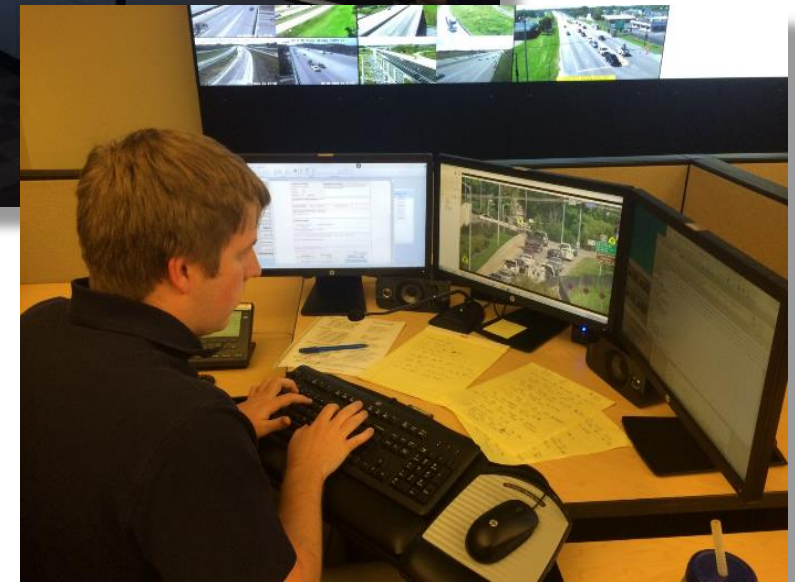
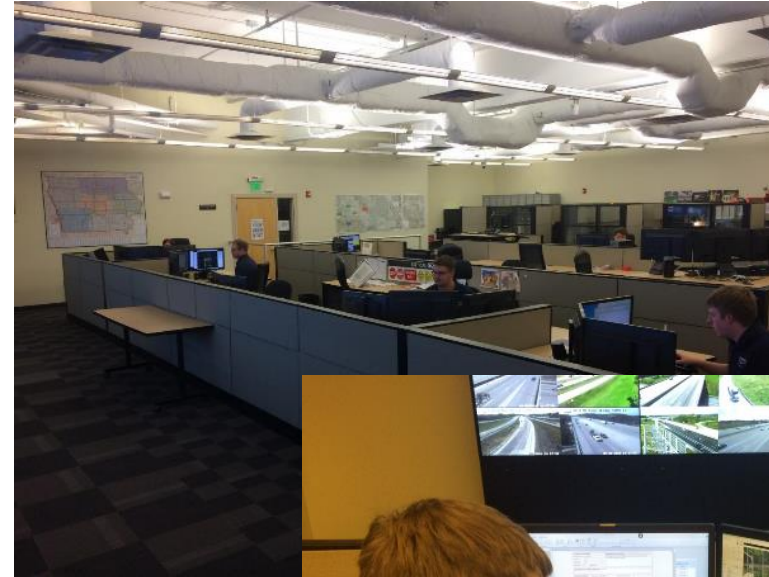
Strategic Goal		Strategic Objective
	1. <i>Safety</i>	Reduce crash frequency and severity
	2. <i>Reliability</i>	Improve transportation system reliability, increase system resiliency, and add highway capacity in critical corridors
	3. <i>Efficiency</i>	Minimize traffic delay and maximize transportation system efficiency to keep traffic moving
	4. <i>Convenience</i>	Provide ease of access and mobility choices to customers
	5. <i>Coordination</i>	Engage all DOT disciplines, and external agencies and jurisdictions to proactively manage and operate the transportation system
	6. <i>Integration</i>	Incorporate TSMO strategies throughout DOT's transportation planning, design, construction, maintenance, and operations activities

Traffic Management Center

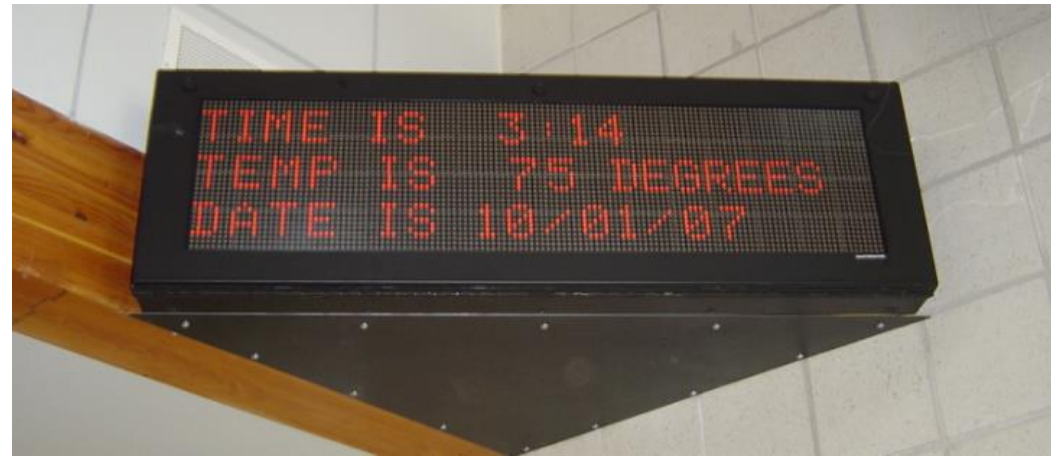


TMC Facts

- **24/7/365 Facility in Ankeny**
- **Provides real-time traveler information**
- **Coordinates closely with:**
 - Law Enforcement
 - Highway Helper
 - Special Events
 - Media
 - Highway Work Zones
- **Over 2,000 incidents per month**



Tools of the TMC



Highway Helper Program

- **Mission of service**

- Back of queue protection
- Service to disabled vehicle to get vehicles moving again and off the shoulders
- Assistance at crash scenes with traffic control

- **Currently serving three areas**

- Cedar Rapids/ Iowa City – Patrol Route miles 43 with 10 miles on-call
- Des Moines - Patrol Route miles 50 with 22 miles on-call
- Council Bluffs - Patrol Route miles 16 with 14 miles on-call





Traffic Incident and Emergency Management

- **Statewide TIM Committee Formed Fall 2016**

- Law Enforcement
- Public Works
- DOT
- Towing
- Fire
- EMS
- FHWA

- **TIM Alternate Route Plans**

- **Training**

- Emergency Responder TIM
- Incident Command System (ICS)
- Tabletop Exercises



Work Zone Management

- **Established Traffic Critical Projects Program 3 years ago**
- **Systematically assesses projects across the state that may cause significant safety or mobility issues**
- **Statewide Contractor to provide Intelligent Work Zone Technology**
- **Seamless Integration with TMC**
- **Held up as National model for work zone management**
- **About 3 dozen TCP projects in 2017**



Where Are We Going?

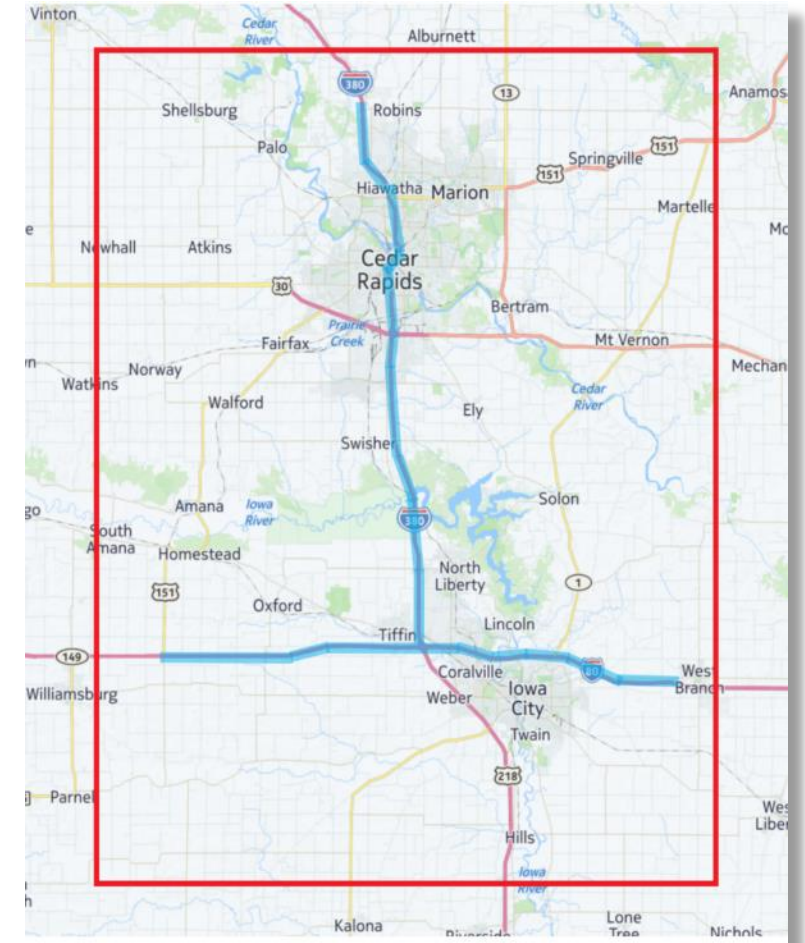
Connected and Autonomous Vehicles



- **I-380 Corridor designated by USDOT as 1 of 10 CAV Proving Grounds**
- **High-definition mapping to assist Automated Vehicles**
- **Winter Weather travel demand modelling**
- **Machine-ready hazard data sharing**



IOWA STATE
UNIVERSITY



HERE's HD Live Map Cloud Communications



Expanded Partnerships

- **Continue to foster TIM-Related Partnerships**
- **Growing Interest in Integrated Corridor Management**
- **Continue data sharing partnerships like Waze**
- **Expanded University R & D Collaboration**



Highway Helper Strategic Expansion

- **Des Moines**
- **Quad Cities (for I-74 reconstruction)**
- **Iowa City (for 80/380 Reconstruction)**



TSMO Subcommittee's

- **Training and Communication**
- **Work Zone Management**
- **Project Delivery Implementation**

Maximizing Existing Roadway Capacity



Future Technical Expertise Needed by Iowa DOT

- **Growing need for different types of technical expertise**
 - Data Analysts
 - Programmers
 - Electrical and Comm. Engineers
 - Cybersecurity
 - Artificial Intelligence



What Do We Expect?

- **Safer highways because we keep traffic moving**
- **Fewer delays because we reduce the time it takes to open lanes for a traffic incident**
- **Extending the life of highways through aggressive traffic operations management**
- **Better Customer Service**
- **Quicker response to major emergencies impacting highways**
- **Better quality of life**

How To Stay Connected?

- **Web:** www.511ia.org plus Apple and Android Apps
- **Twitter:** @statewideia511 plus regional feeds
- **Facebook:** <https://www.facebook.com/iowa511>
- **Instagram:** <https://www.instagram.com/iowadot/>
- **Pinterest:** <https://www.pinterest.com/iowadot/travel/>
- **YouTube:** <https://www.youtube.com/user/iowaDOT>
- **Iowa DOT TSMO Reports:** www.iowadot.gov/tsmo

The background features a red-tinted image of highway signs. On the left is a large sign that reads "THE PEOPLE OF IOWA WELCOME YOU" with a stylized "IOWA" logo and "Fields of Opportunities" below it. In the center and right are several smaller signs: "EXIT 1B HOSPITAL", "EXIT 1A AIRPORT", and a large sign for "SOUTH BUSINESS" with "Sioux City" and "Council Bluffs" listed below, along with route markers for 29 and 75.

Questions

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