



TRAFFIC MANAGEMENT CENTER



IOWADOT

TRAFFIC MANAGEMENT CENTER

annual report

2016

Developed for the:



By:



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Measuring performance is key to evaluating the effectiveness of Transportation Systems Management and Operations in Iowa. With this report and other performance metrics, the department has the real-time data to assist in planning, budgeting and implementing TSMO strategies across the state. Ultimately, this helps Iowa DOT achieve our mission of getting you there safely, efficiently, and conveniently.

– Scott Marler, Director, Office of Traffic Operations Director

INTRODUCTION

Iowa's Statewide Traffic Management Center (TMC) is a 24/7 center located in the Motor Vehicle Division building in Ankeny, Iowa. The TMC is one of 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 from 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/quick clearance, detour routing, traffic control, and accurate and timely information to the public. Trained professional staff in the TMC actively monitor traffic conditions and coordinate responses with other DOT staff, state and local law enforcement, 911 communication centers, state and county emergency managers, neighboring states, and the towing and rail industries. The TMC uses tools such as 511, social media, media releases, and Dynamic Message Signs to help protect on-scene responders and to prevent secondary crashes when disruptions occur.

EXECUTIVE SUMMARY

Iowa DOT TMC Operations "At a Glance"

Number of incidents managed by Iowa Statewide Traffic Management Center	24,931
Number of incidents managed by Iowa Statewide Traffic Management Center with lane blockage	2,595
Number of minutes on average that it takes to clear all lanes of traffic following incidents	52.6
Number of customers assisted by Highway Helpers	17,453
Number of work zones managed by Iowa Statewide Traffic Management Center	23,573

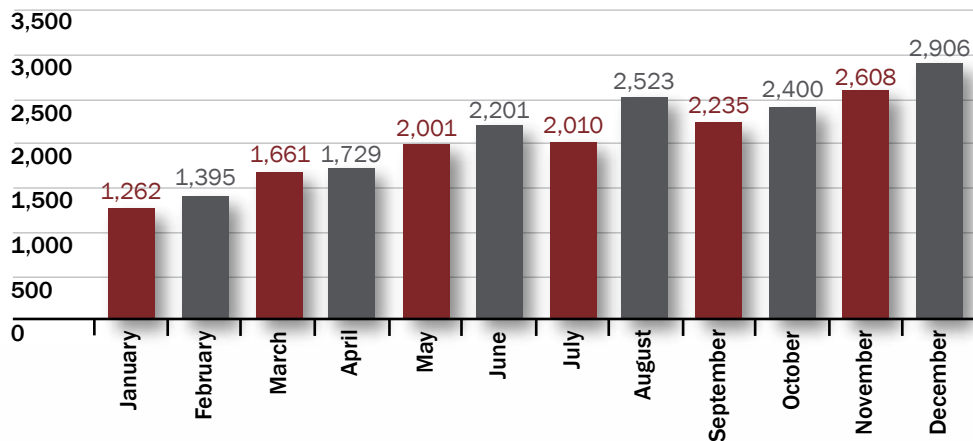
The Traffic Management Center focuses on the following activities:

- ▶ Respond to and clear traffic crashes as safely and quickly as possible
- ▶ Provide timely, accurate and comprehensive traveler information to customers
- ▶ Provide critical data for statewide and regional Traffic Incident Management program activities and performance metrics
- ▶ Reduce the number of secondary crashes through pre-warning and quick clearance
- ▶ Improve travel time reliability
- ▶ Increase the situational awareness for winter weather and special events
- ▶ Maximize the use of the existing roadway capacity.

INCIDENT SUMMARY

Total Incidents Managed by the TMC

The total number of incidents (**24,931**) during a given period. An incident is defined as any event on the roadway which affects or can affect normal traffic flow.

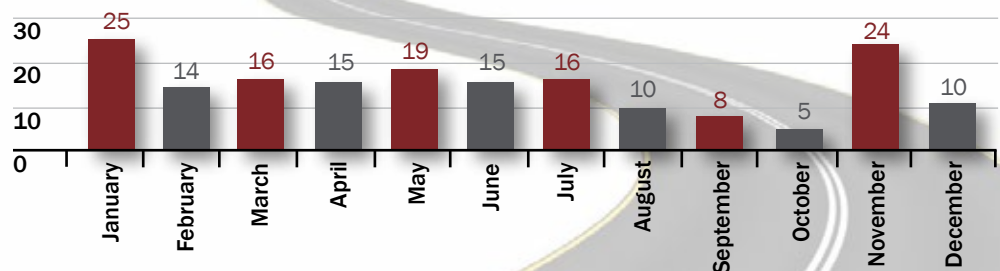


2,077
incidents
per month
on average
in 2016

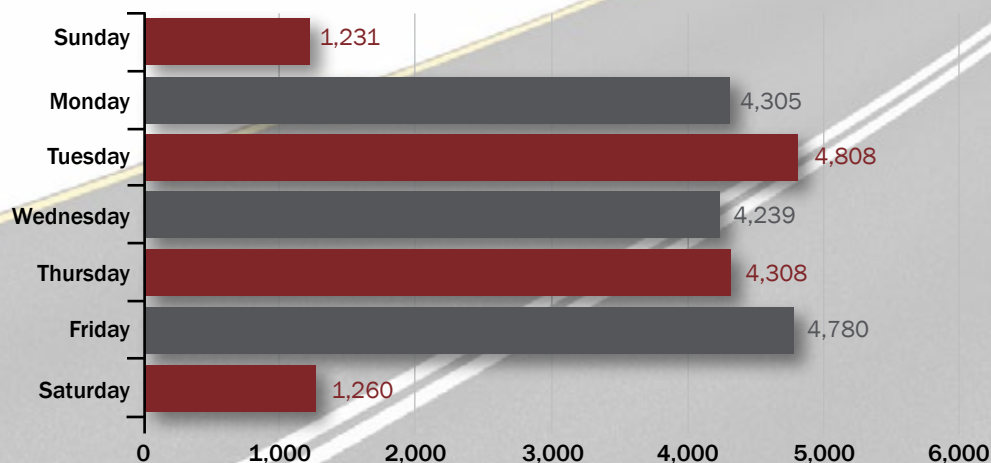
**One hundred
and seventy
seven (177)**
incidents were
classified as
secondary

Secondary Incidents

Secondary incidents can be more severe than the original incident, due to slow moving traffic or stopped queues on the roadway.



Incidents by Day of the Week



Top 3:

1. Tuesday
2. Friday
3. Thursday

Incidents Managed during Peak Hours

Peak hours are defined as:

AM: 6:00-9:00

PM: 3:00-6:00

5,722

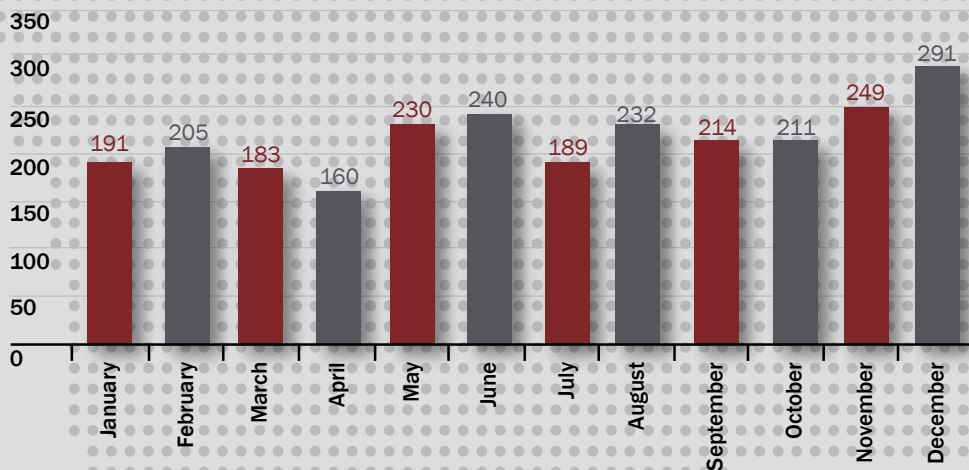
PM Peak

5,714

AM Peak

Lane Blocking Incidents

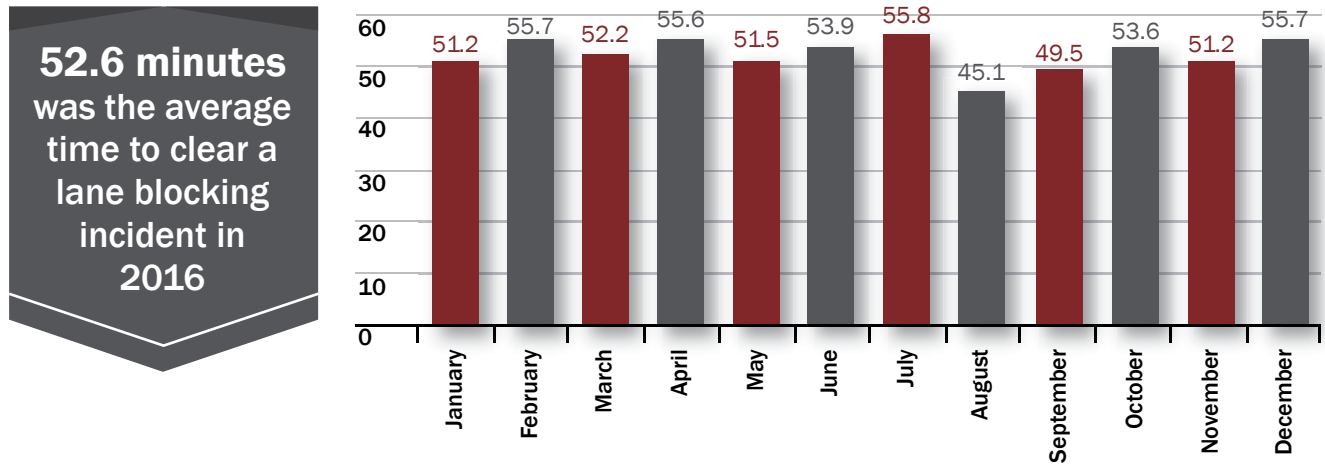
The total number of incidents that resulted in at least one blocked lane of travel are described in the charts below.



2,595
total lane
blocking
incidents

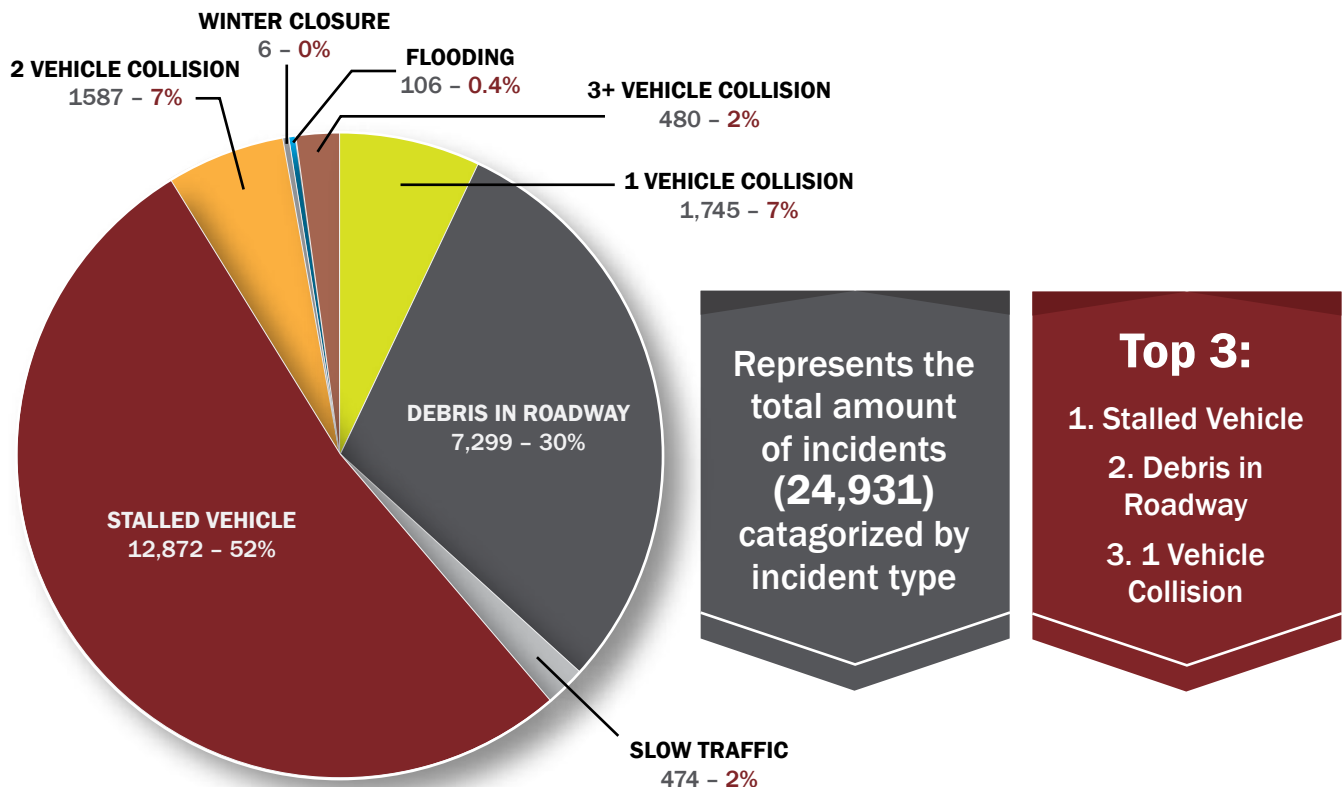
Average Time to Clear a Lane-Blocking Incident

The average time for all lanes to be cleared for an incident is calculated from the incident start time until all lanes are reopened.



Incident Types

A breakdown by type of incidents logged by the Traffic Management Center (TMC) for 2016 and percentage of total incidents logged is shown with the chart.



HIGHWAY HELPER 2016

This contains statistical and operational data of activities of the Highway Helper program for the period January 1st 2016 to December 31st 2016

TOTAL HIGHWAY HELPER INCIDENT RESPONSES

The total number of incidents Highway Helper responded to during a given period

17,453

INCIDENTS WITH LANE BLOCKAGE

The total number of incidents which resulted in at least one blocked lane of travel

941

CRASHES RESPONDED TO BY HIGHWAY HELPER

The total number of crashes during this period Highway Helper responded to

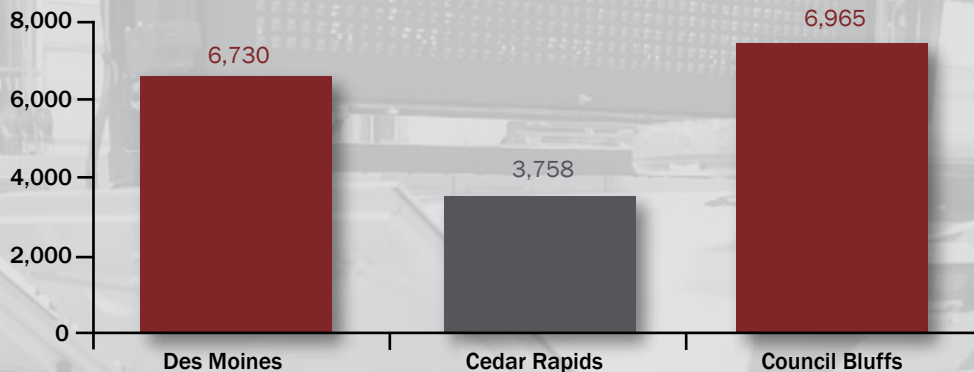
1,292

AVERAGE INCIDENTS HIGHWAY HELPER RESPONDED TO PER DAY

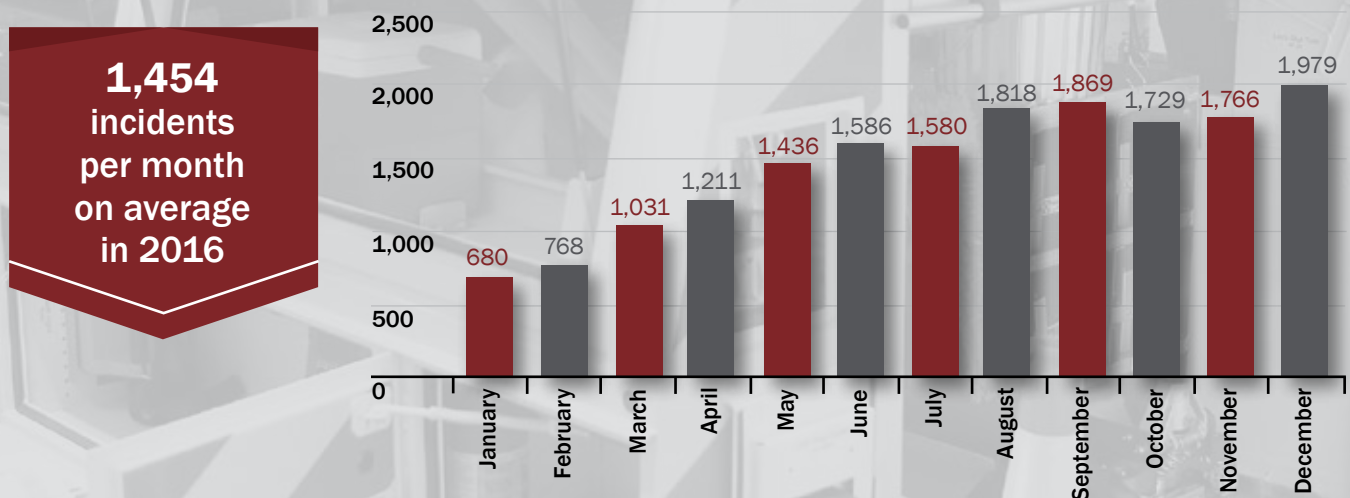
The average of daily responses for Highway Helper in 2016 (calculated using a 5 day work week)

67

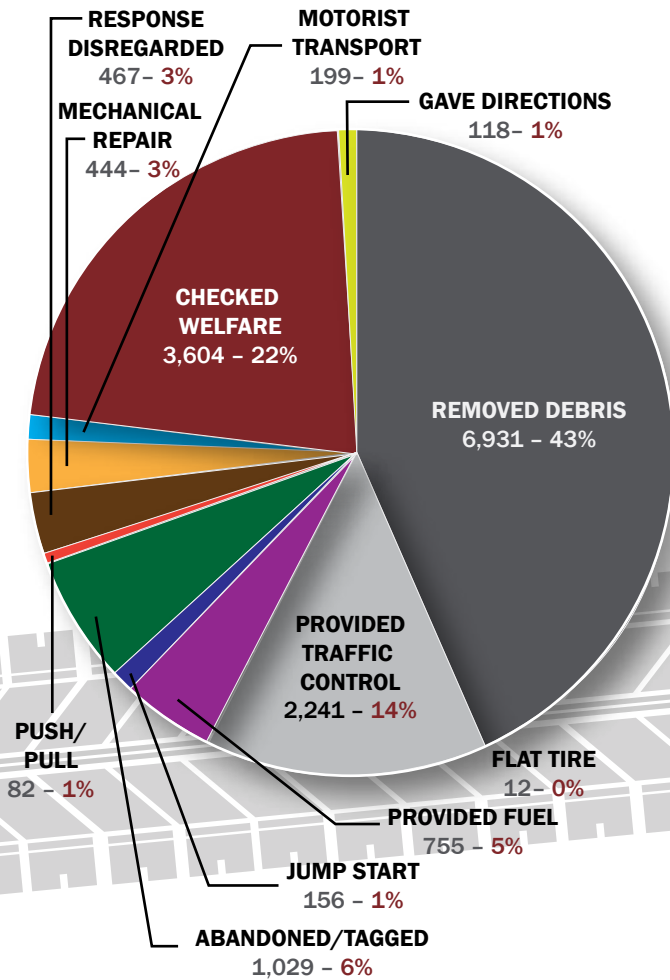
Total Incidents Responded to by Area



Total Incidents Responded to by Highway Helper



Highway Helper Incident Response Type

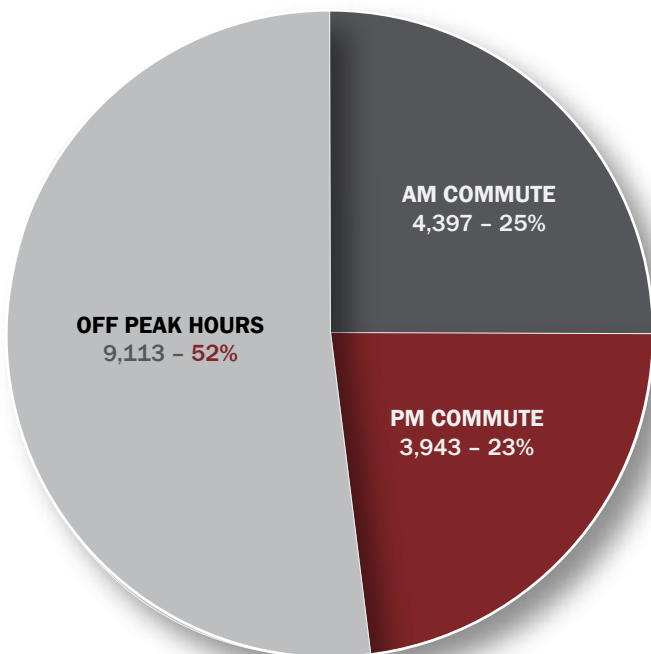


17,453
total amount
of incidents
categorized by
incident type

Top 3:

1. Removed Debris
2. Checked Welfare
3. Provided Traffic Control

Incident Response by Time of Day

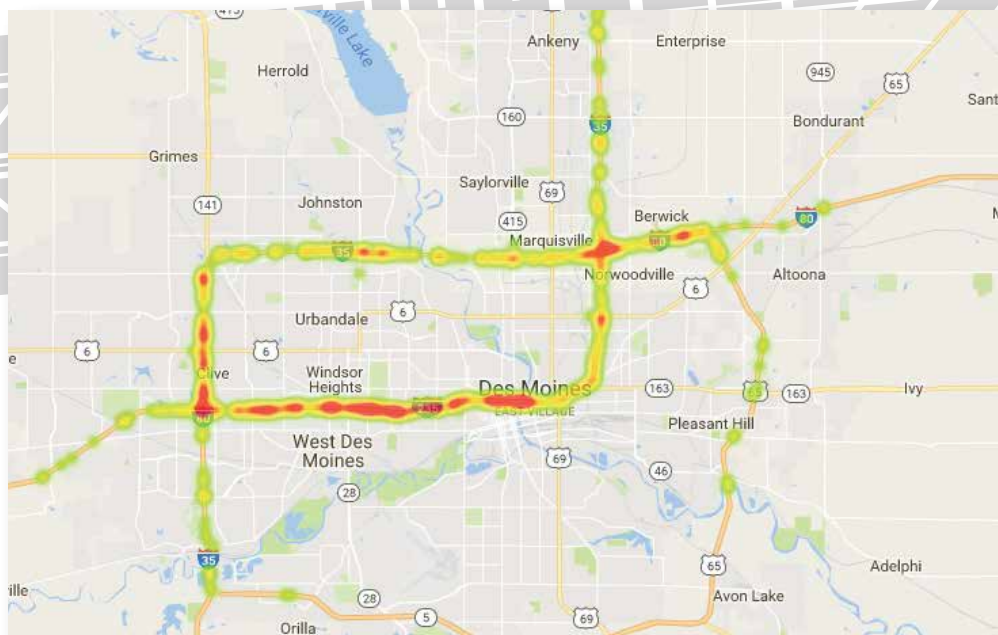


17,453
total incidents

DES MOINES

HIGHWAY HELPER INCIDENT RESPONSE DASHBOARD

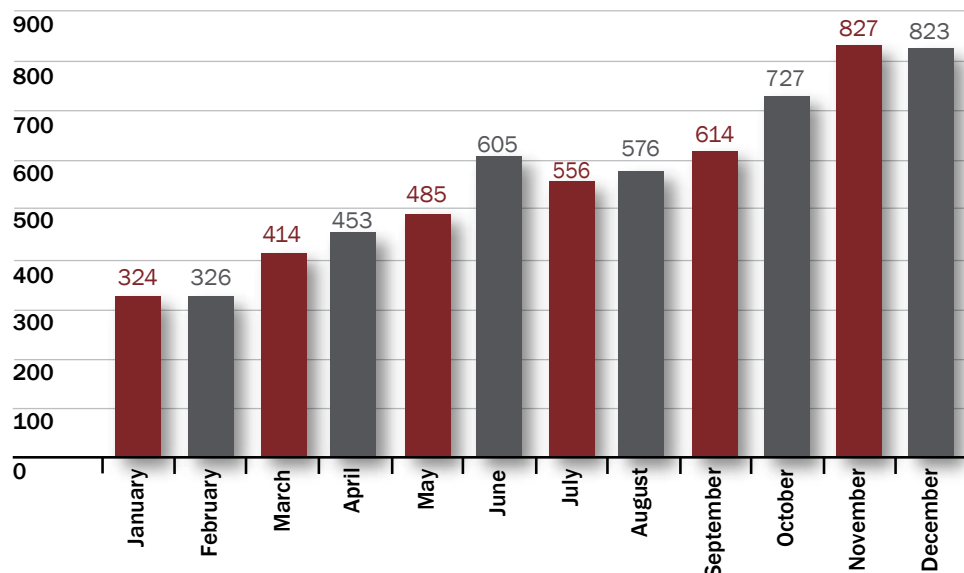
Heat Map of Highway Helper Crash Response Location Density



“
They were so
great! Very
fast and super
friendly. They
could not have
been more helpful.
- Customer comment

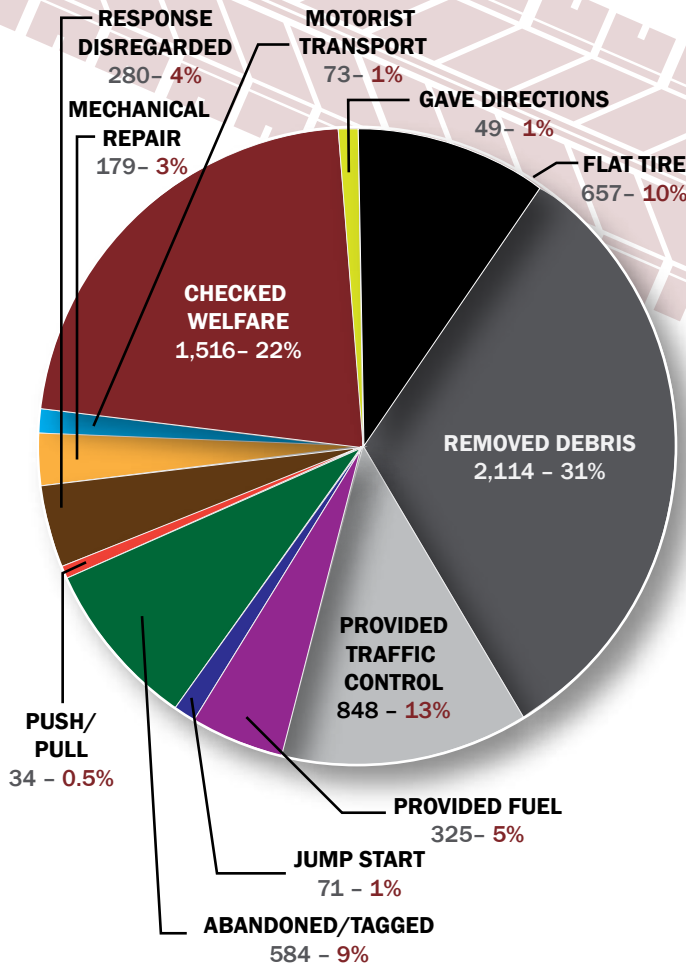
”

Total Incidents Responded to by Highway Helper



560
incidents
per month
on average
in 2016

Highway Helper Incident Response Type

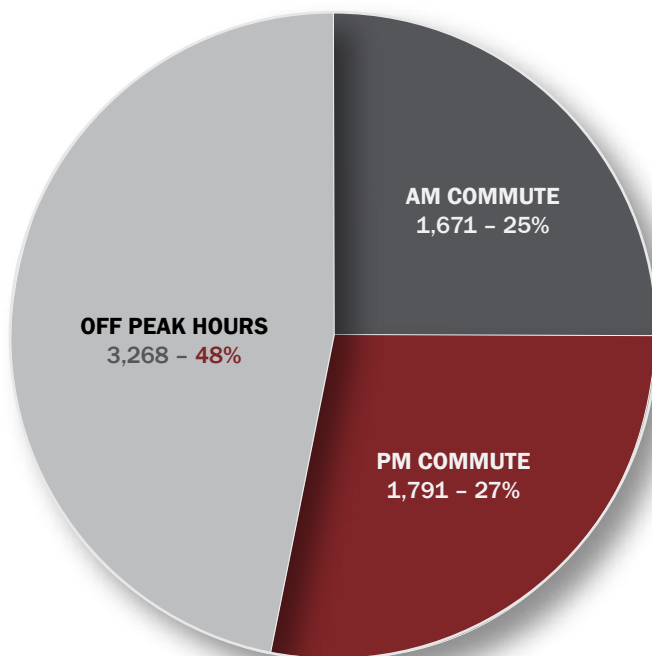


6,730
total amount
of incidents
categorized by
incident type

Top 3:

1. Removed Debris
2. Checked Welfare
3. Provided Traffic Control

Incident Response by Time of Day

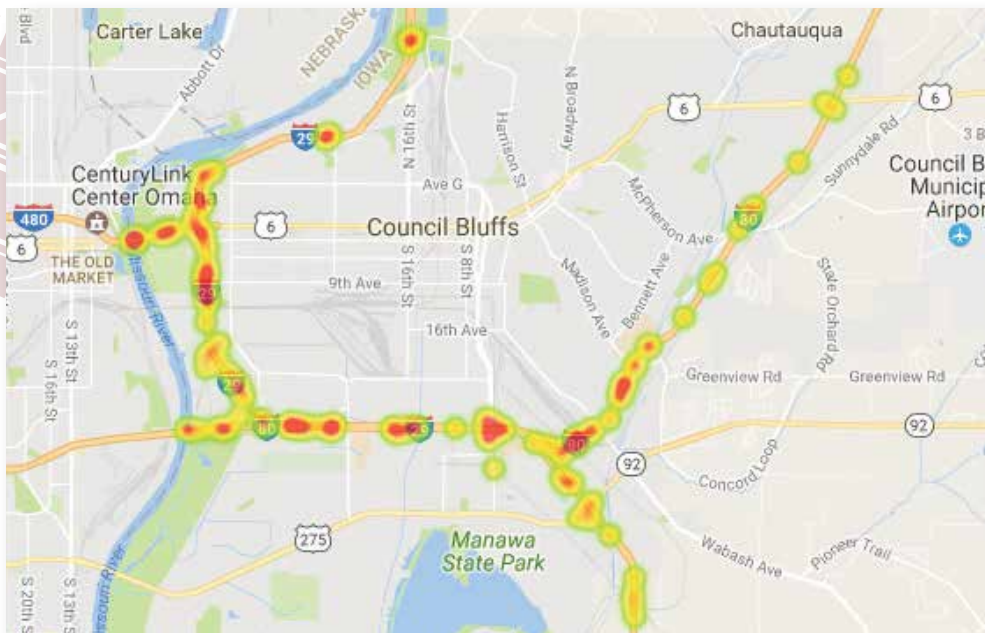


6,730
total incidents

COUNCIL BLUFFS

HIGHWAY HELPER INCIDENT RESPONSE DASHBOARD

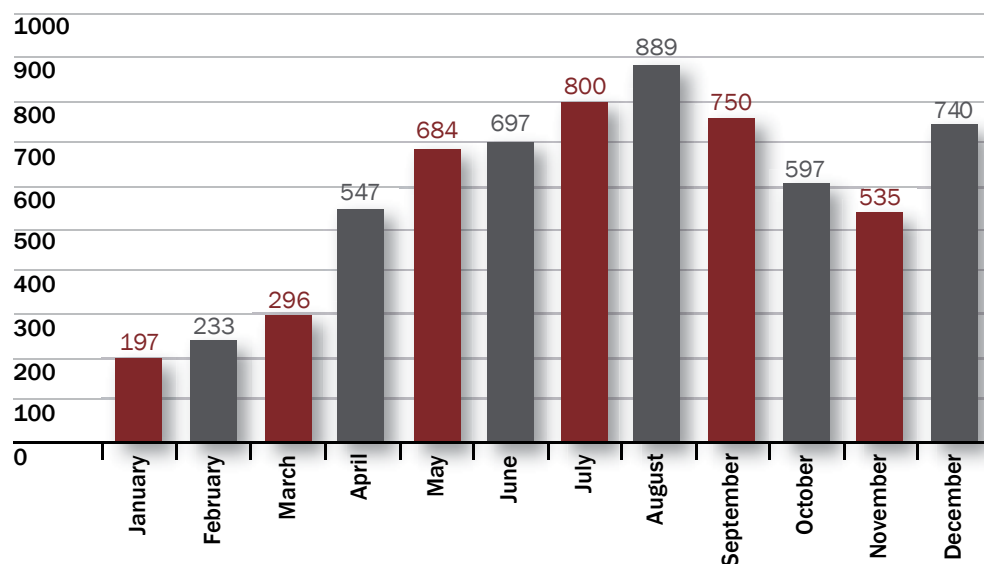
Heat Map of Highway Helper Crash Response Location Density



“
He saved my life
on the coldest
day of the year.
The program is
wonderful. I can't
thank you enough.
- Customer comment

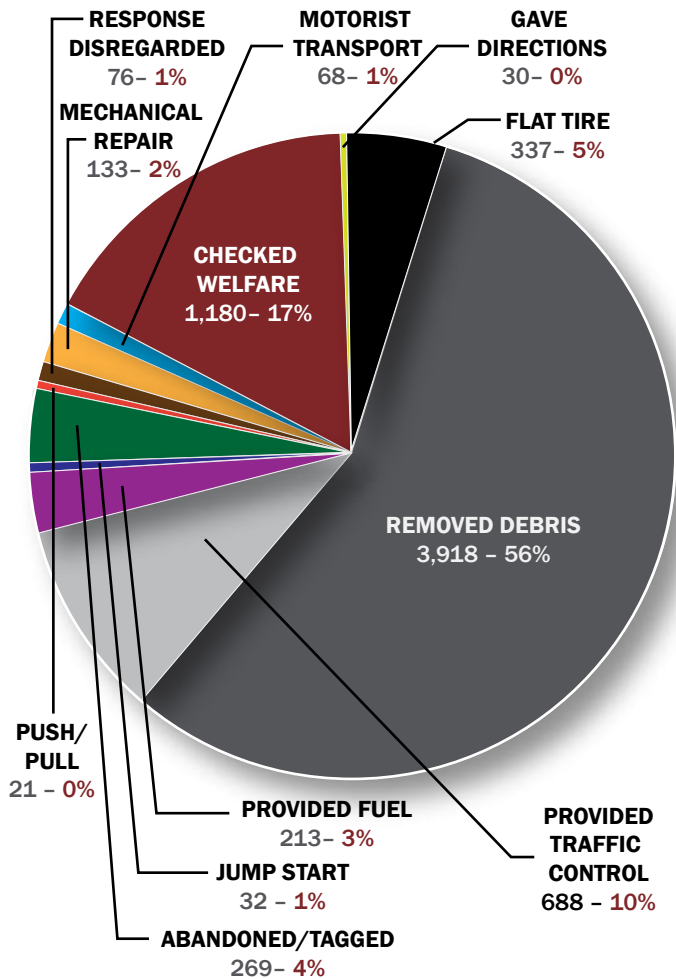
”

Total Incidents Responded to by Highway Helper



580
incidents
per month
on average
in 2016

Highway Helper Incident Response Type

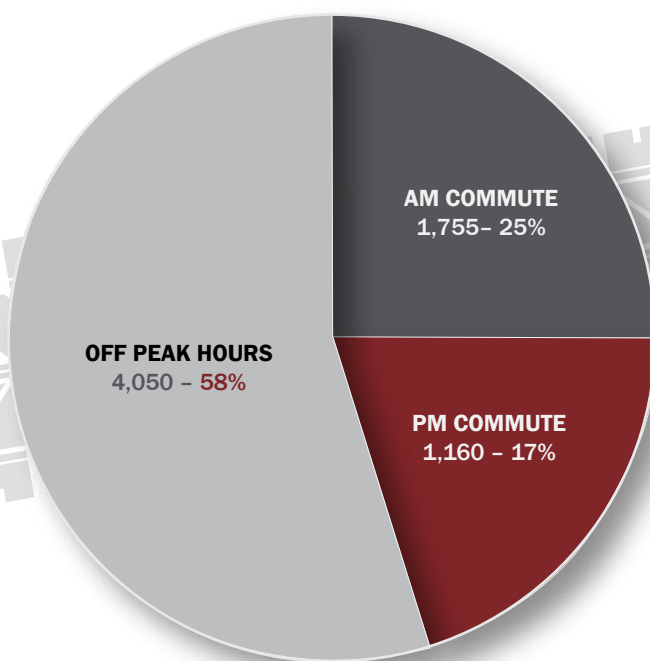


6,965
total amount
of incidents
categorized by
incident type

Top 3:

1. Removed Debris
2. Checked Welfare
3. Provided Traffic Control

Incident Response by Time of Day



6,965
total incidents

IOWA CITY/ CEDAR RAPIDS

HIGHWAY HELPER INCIDENT RESPONSE DASHBOARD

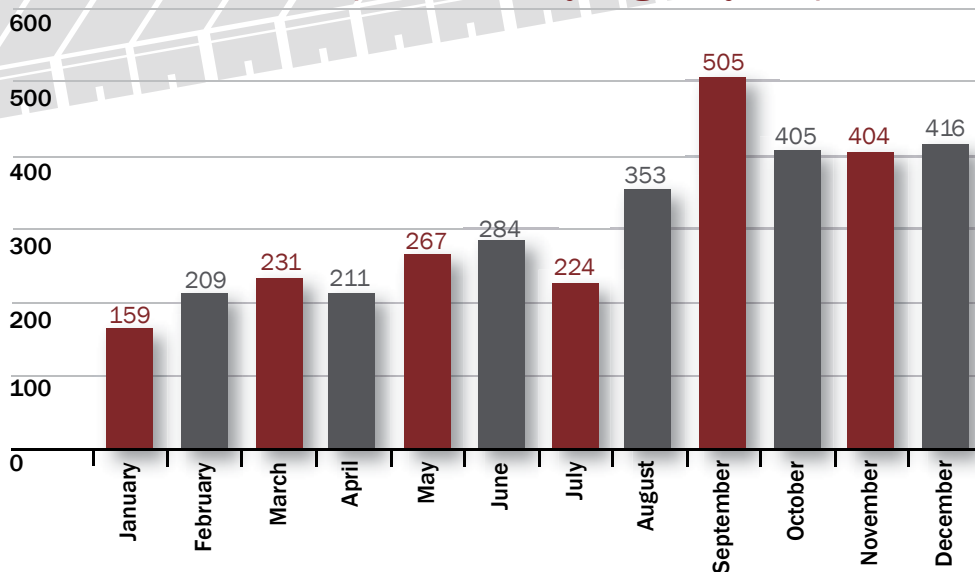
Heat Map of Highway Helper Crash Response Location Density



“
*I was so relieved
when I saw
the truck pull
up behind me.
Thank you!*
- Customer comment

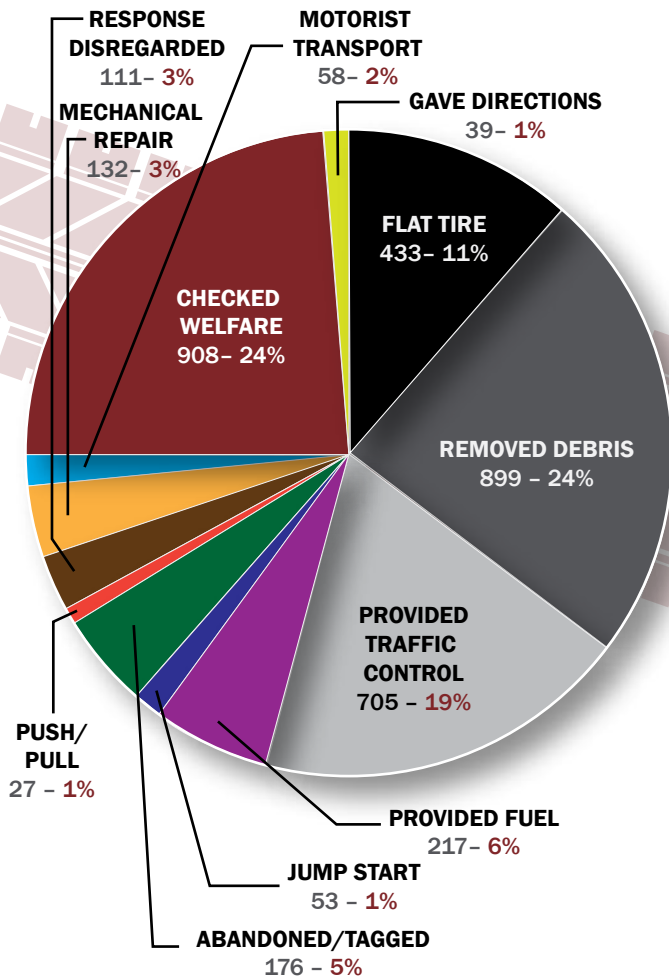
”

Total Incidents Responded to by Highway Helper



313
incidents
per month
on average
in 2016

Highway Helper Incident Response Type

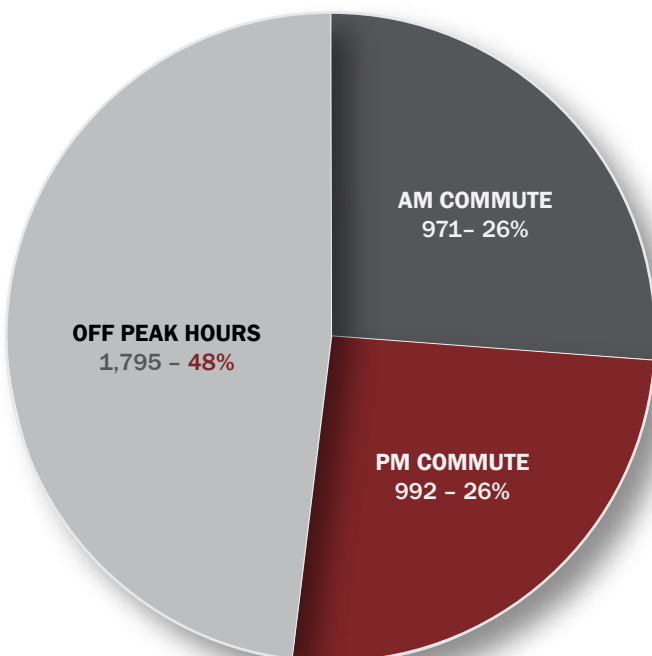


3,758
total amount
of incidents
categorized by
incident type

Top 3:

1. Checked Welfare
2. Removed Debris
3. Provided Traffic Control

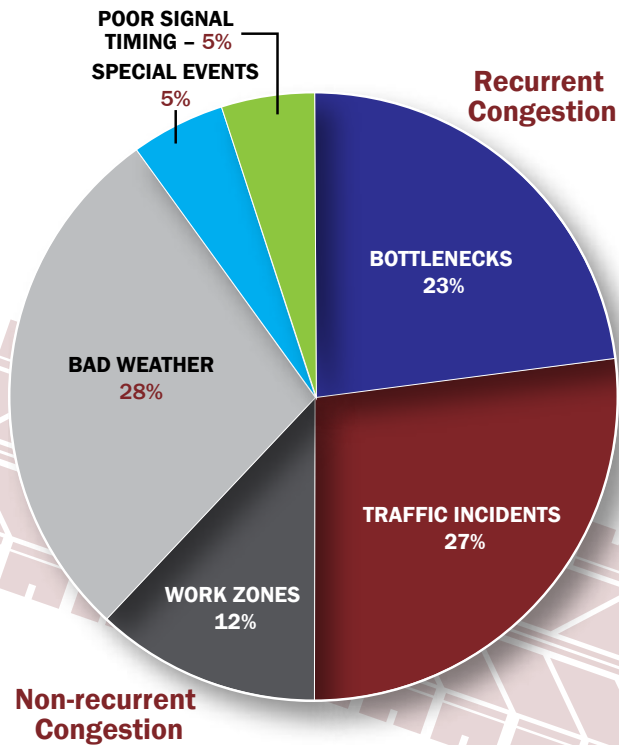
Incident Response by Time of Day



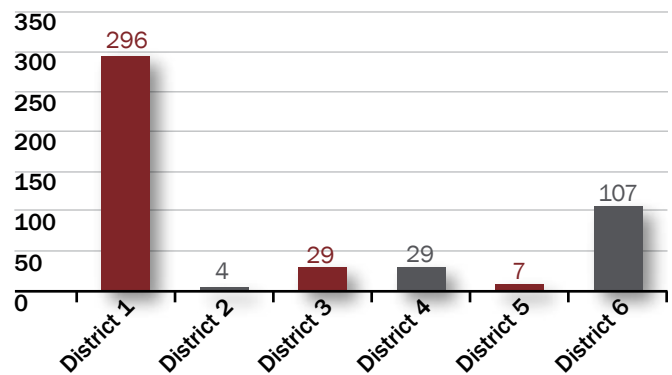
3,758
total incidents

CONGESTION

Congestion in Iowa



Slow Traffic

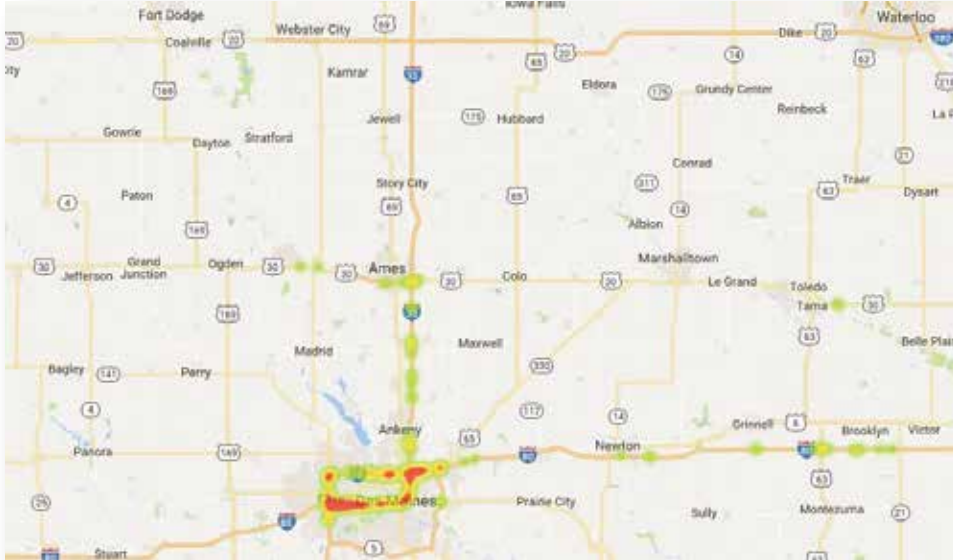


Heat Map of Statewide Congestion



474
slow traffic
events across
the state of
Iowa in 2016

Heat Map of District 1 Congestion



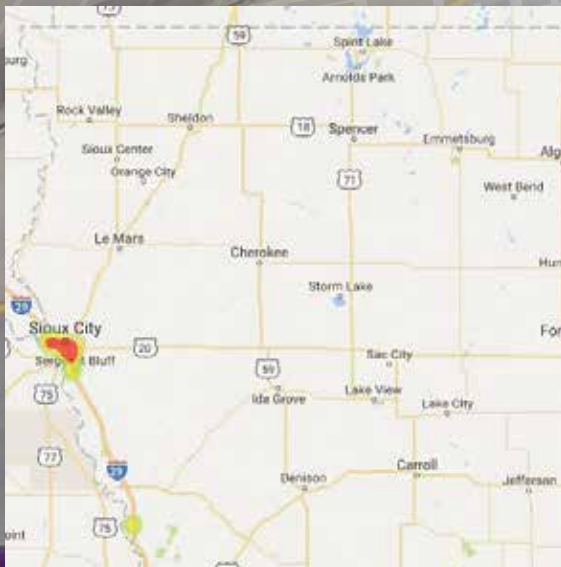
Of the 474 slow traffic events 296 took place in District 1. This accounts for 62% of the slow traffic events the TMC monitored during the year.

Heat Map of District 2 Congestion

All congestion in District 2 took place during the winter months



Heat Map of District 3 Congestion



The highest density congestion in District 3 took place around work zones

Heat Map of District 4 Congestion



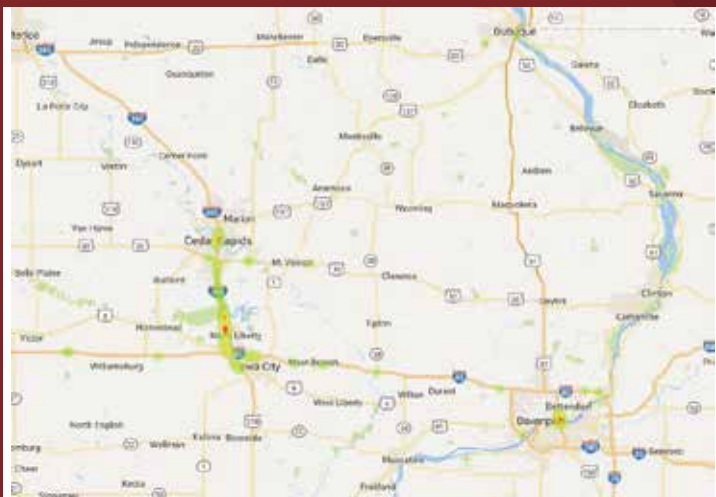
The two highest areas of congestion in District 4 were Pottawattamie County (**58%**) and Dallas County (**41%**)

Heat Map of District 5 Congestion

All congestion in District 5 was around work zones on I-35



Heat Map of District 6 Congestion



57% of the congestion in District 6 took place on the **I-380** corridor

FREIGHT INCIDENTS

137,125

total permits
issued

114,403

oversize/
overweight
permits

95,707

single trip
(routed) permits

16,951

annual
(non-routed)
permits

2 hrs 23 mins

average time to clear a lane
blocking incident involving a
tractor trailer

12

hazmat spills
from vehicles
hauling hazmat

61

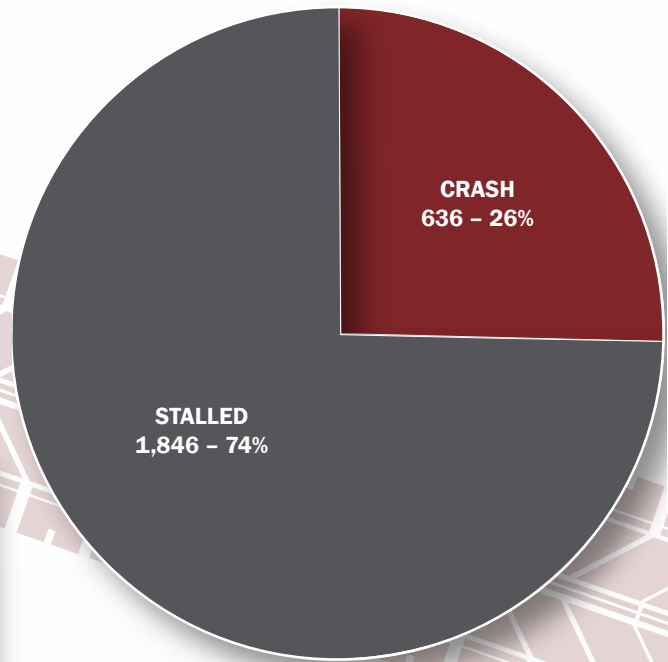
tractor trailer
roll-overs

163

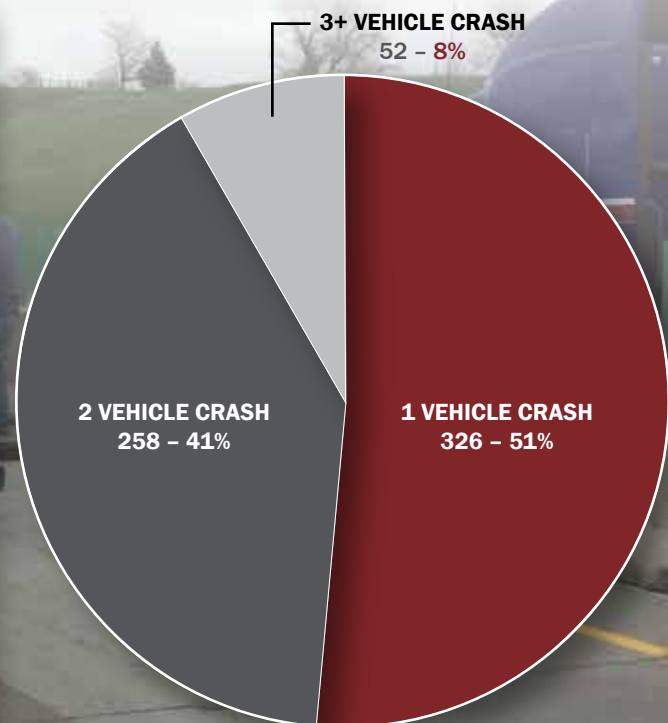
rail incidents

The TMC provides
rail reports for any
incident involving rail,
regardless of impact
to the road network.

Truck Incidents by Type



Truck Crashes by Type





Traveler Information
www.511ia.org or dial 511

3,395,928

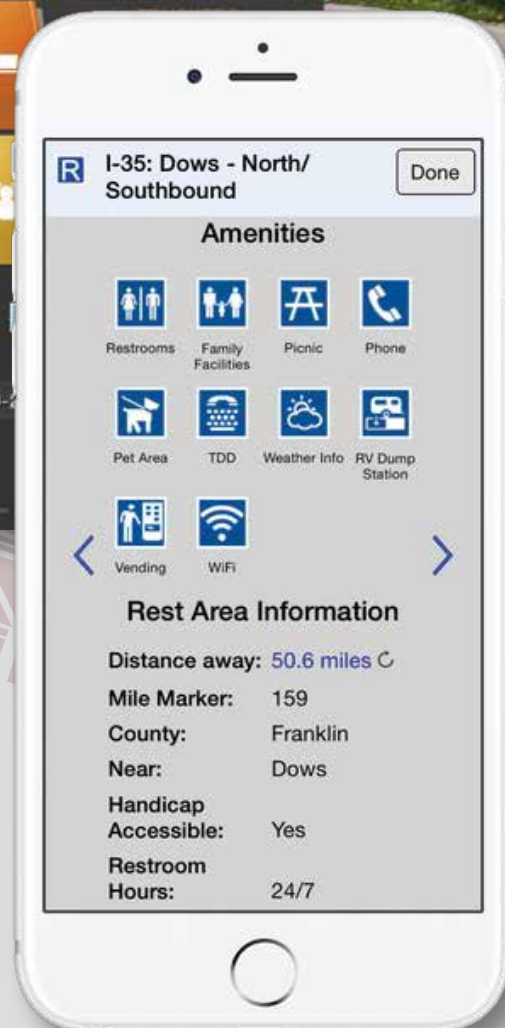
total visits to
511 traveler
information
website
(includes all
versions of
website)

71,582

total 511 App
downloads

129,827

total number
of calls to 511

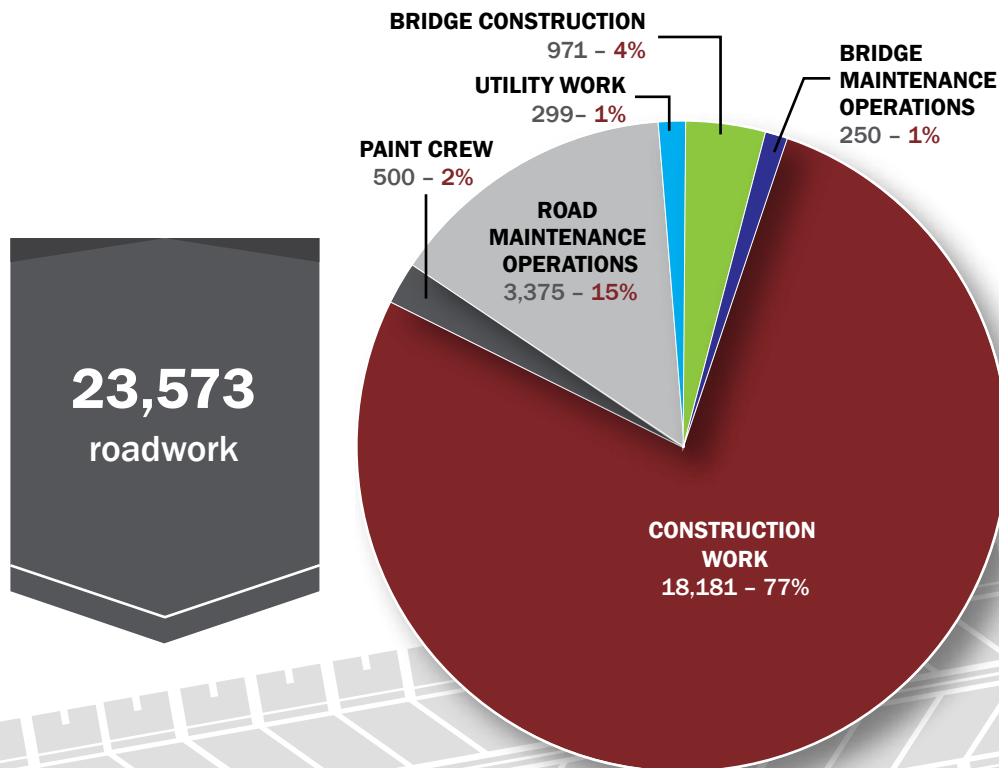


ROADWORK

Roadwork is tracked by each change in a work zone, not the project as a whole. If the project is not continuous, e.g. night work only, each night is logged in our system.

67 projects utilized extra law enforcement provided by Motor Vehicle Enforcement, Iowa State Patrol or local Police departments.

There were **64 Traffic Critical Projects** during the 2016 construction season; of those, **34 had intelligent work zone systems**.



Map of Work Zone Crashes

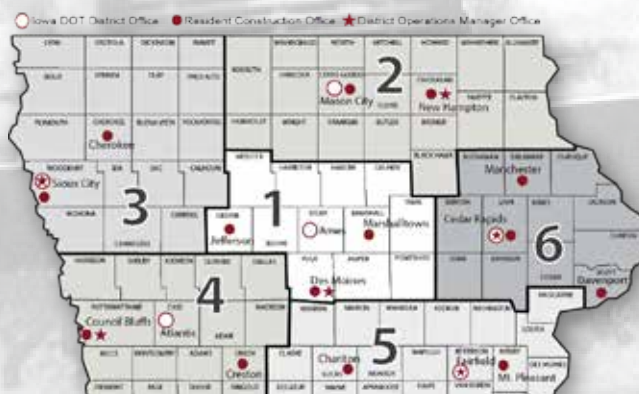
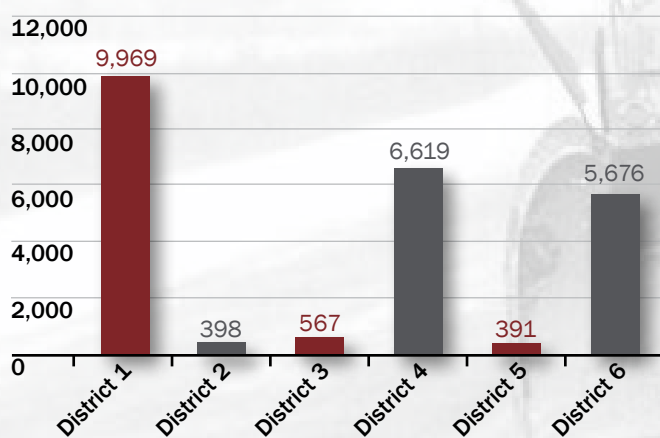


110
workzone
crashes

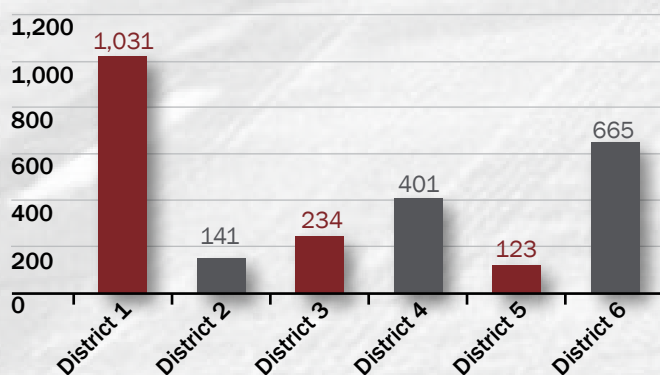
INCIDENTS AND ROADWORK BY DISTRICT

The Iowa DOT splits the state into **6 different districts**. This section is a breakdown of incidents and work zones in each district.

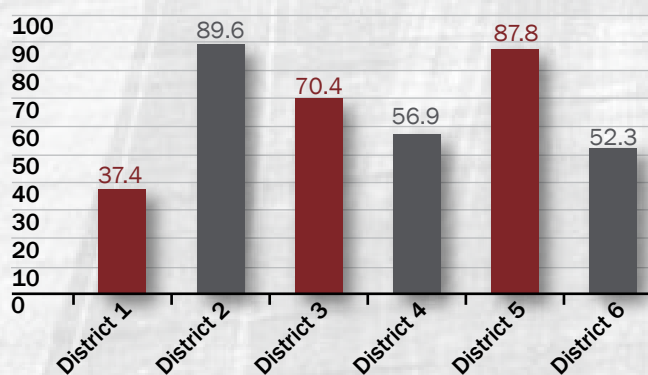
Total Incidents by District



Lane Blocking Incidents



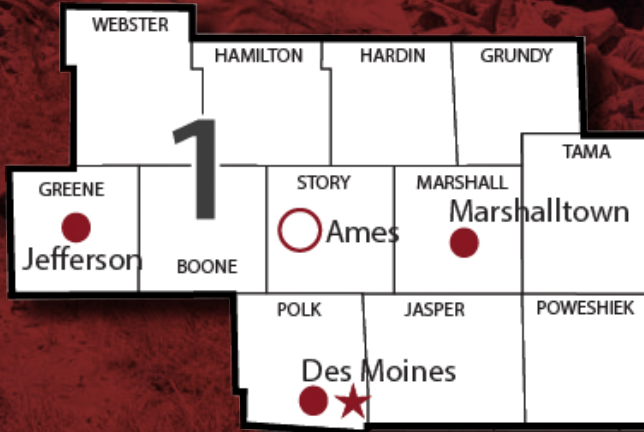
Average Time to Clear Lanes



54 total pavement blow outs

20 total bridge hits

DISTRICT 1



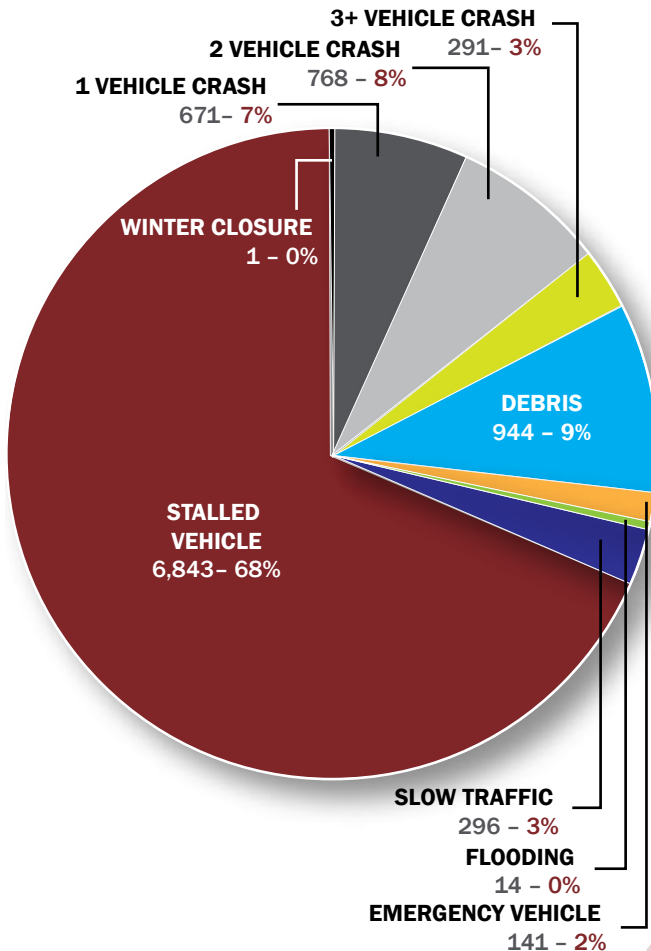
Heat Map of Incidents



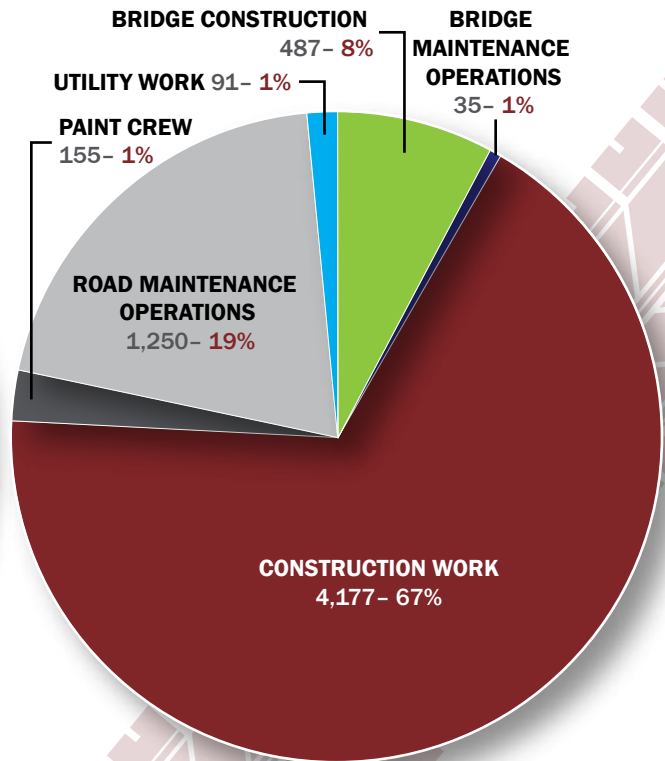
5 pavement
blowouts

8 bridge
hits

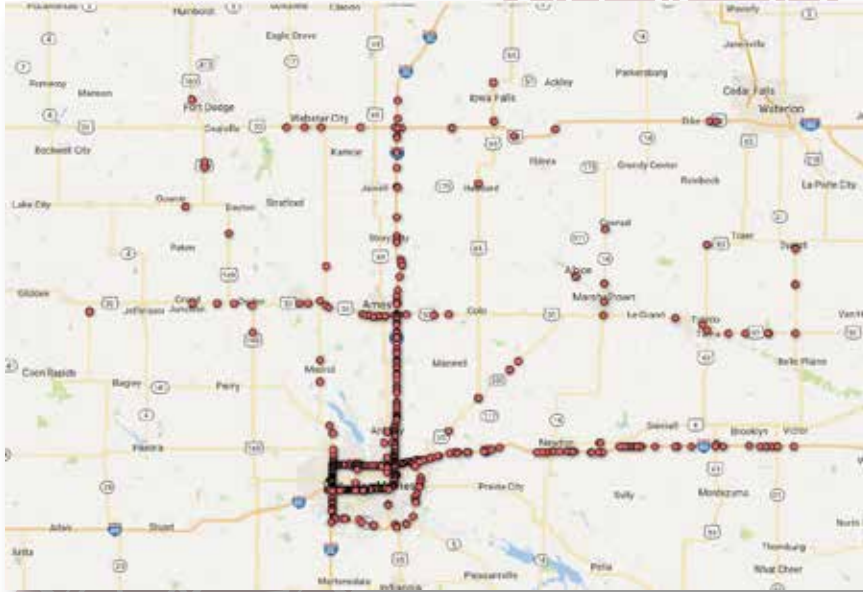
Incidents – 9,969 Total



Roadwork – 6,195 Total



Map of Lane Blocking Incidents



37.4
average time
to clear lanes

1,031
lane blocking
incidents

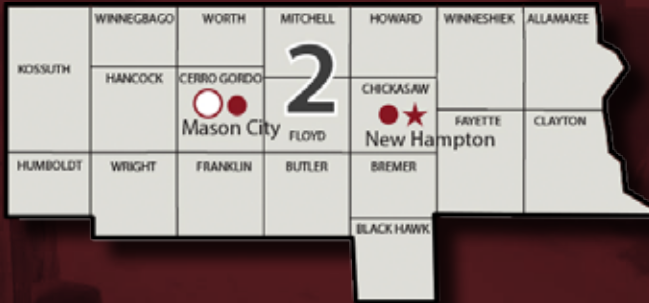
Heat Map of Workzone Crashes



80
secondary
crashes

25
workzone
crashes

DISTRICT 2



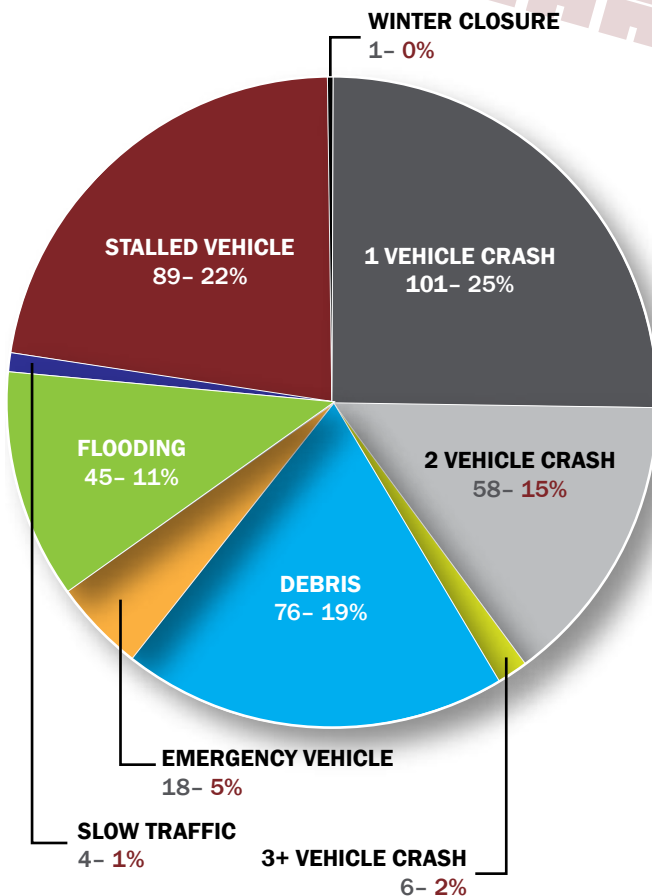
Heat Map of Incidents



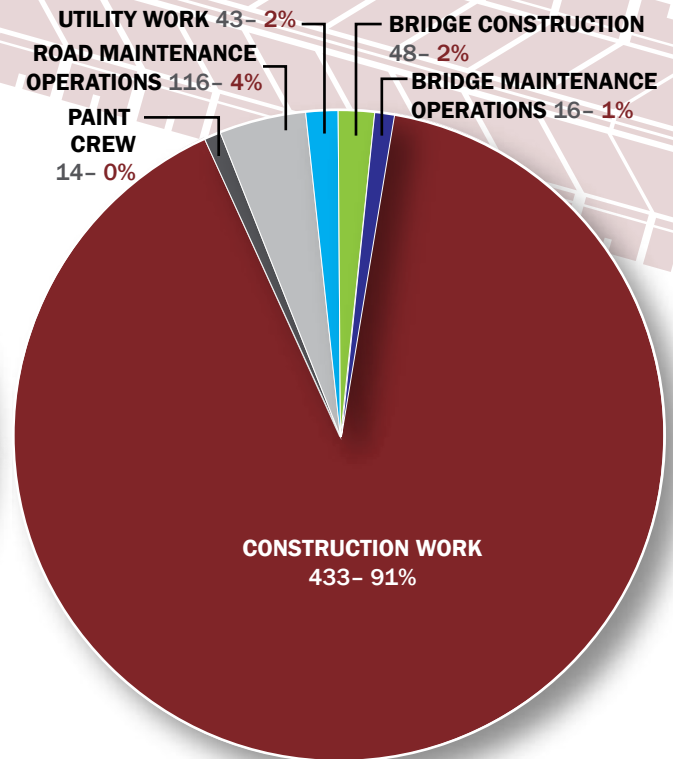
4 pavement
blowouts

0 bridge
hits

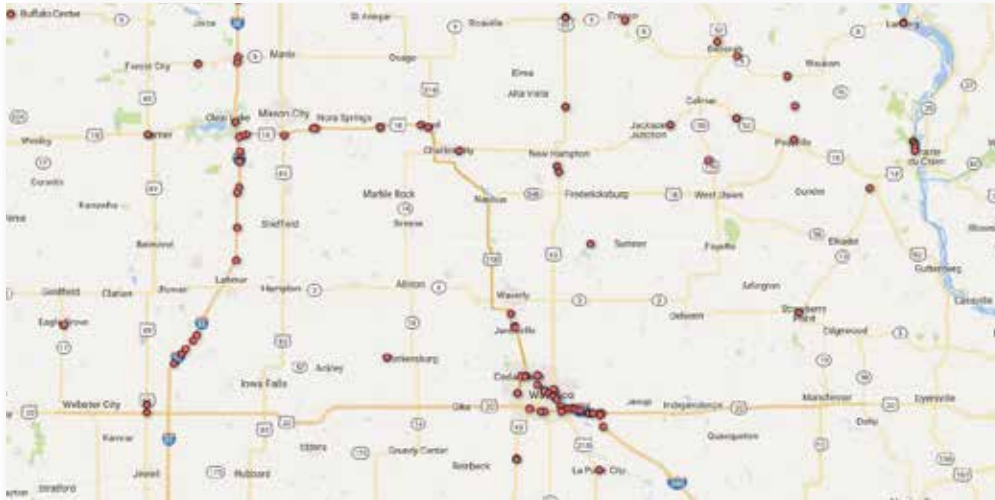
Incidents – 398 Total



Roadwork – 2,670 Total



Map of Lane Blocking Incidents



89.6
average time
to clear lanes

141
lane blocking
incidents

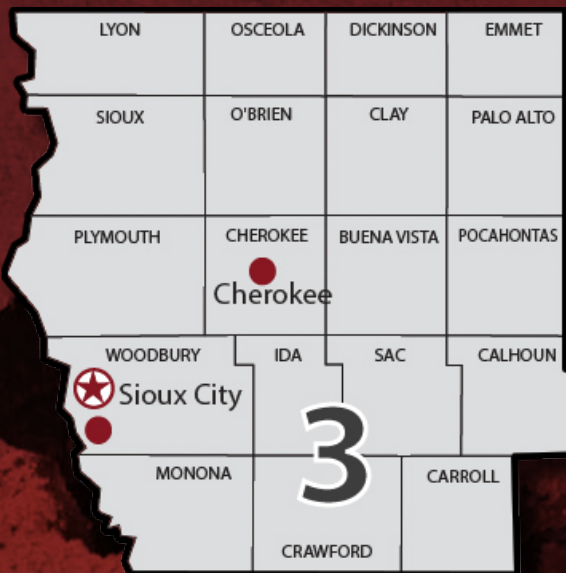
Heat Map of Workzone Crashes



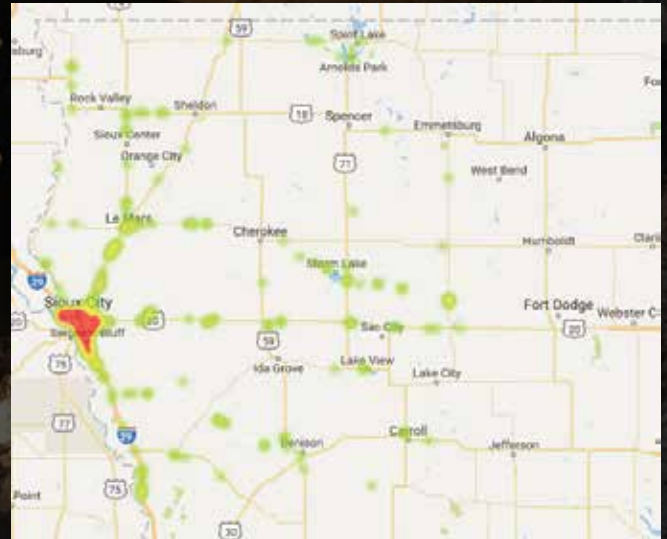
3
secondary
crashes

3
workzone
crashes

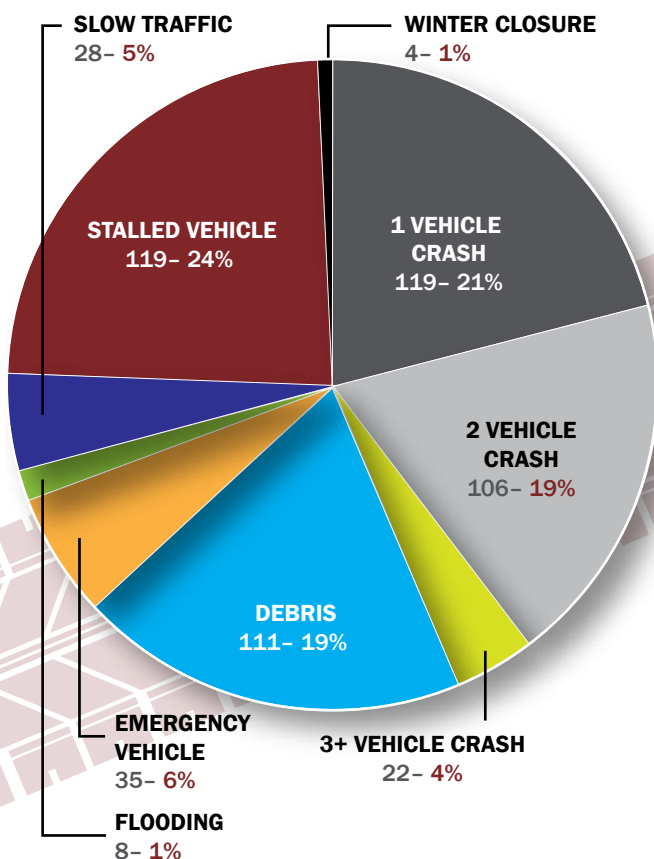
DISTRICT 3



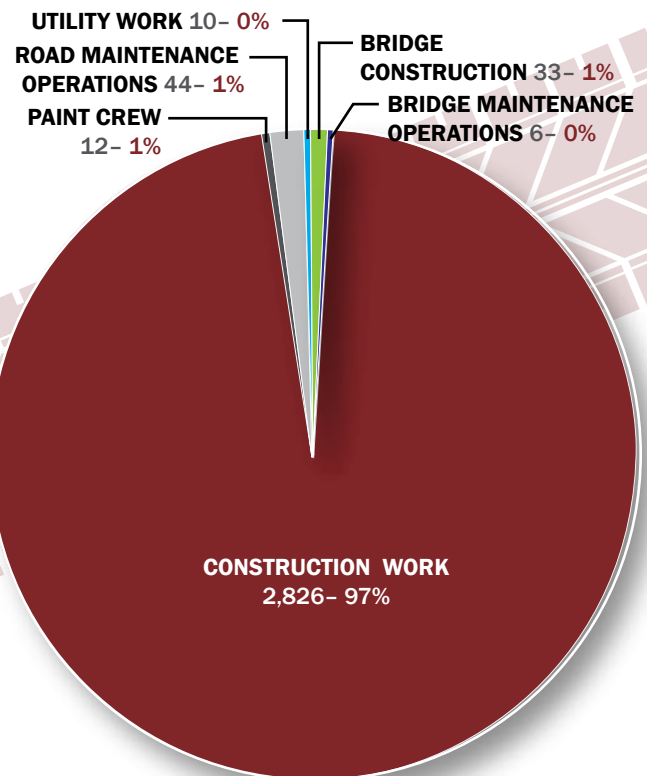
Heat Map of Incidents



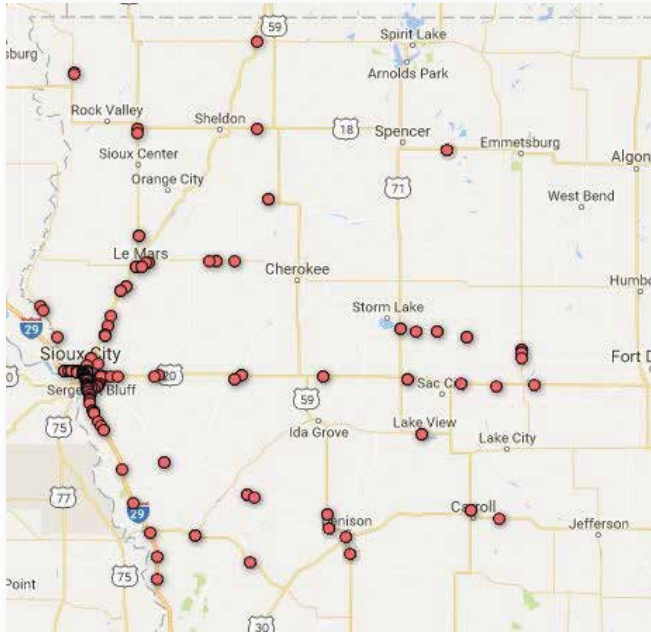
Incidents – 567 Total



Roadwork – 2,931 Total



Map of Lane Blocking Incidents



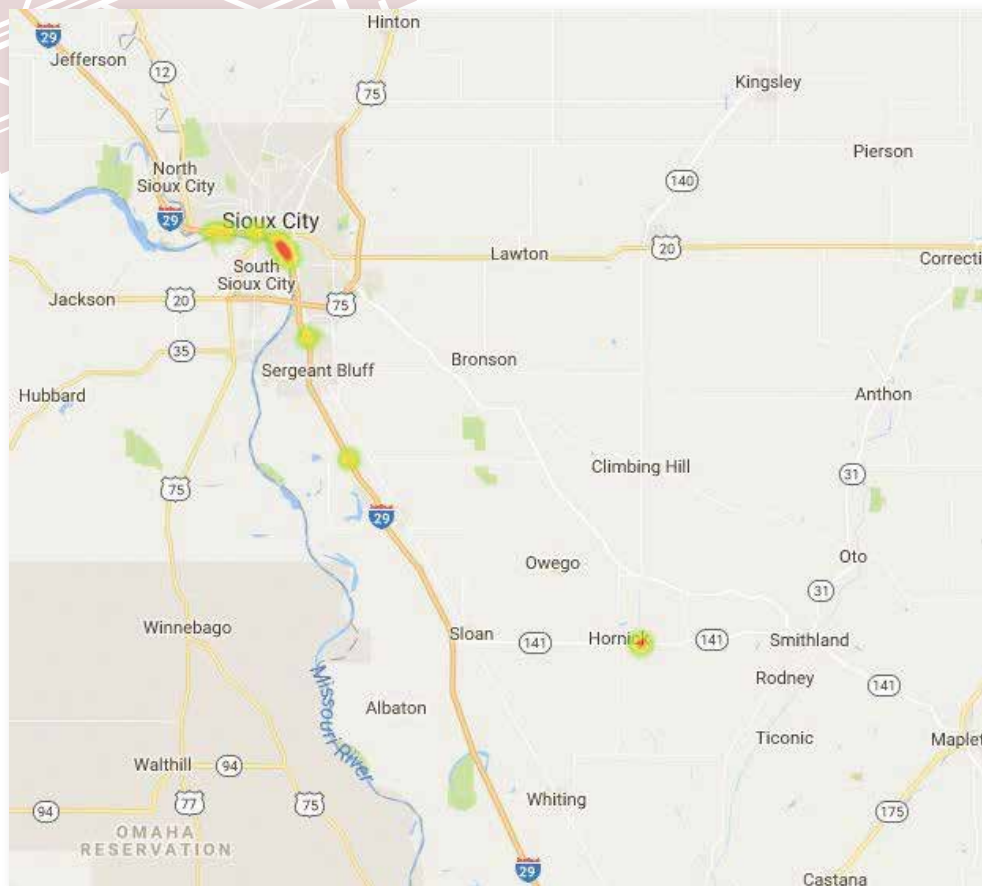
70.4
average time
to clear lanes

234
lane blocking
incidents

13 pavement
blowouts

4 bridge hits

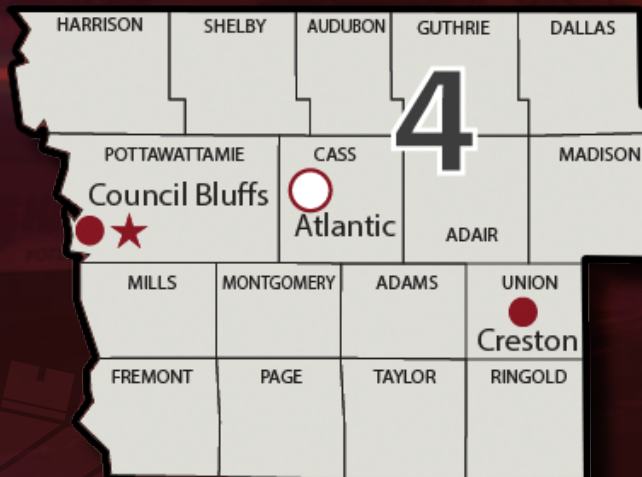
Heat Map of Workzone Crashes



4
secondary
crashes

12
workzone
crashes

DISTRICT 4



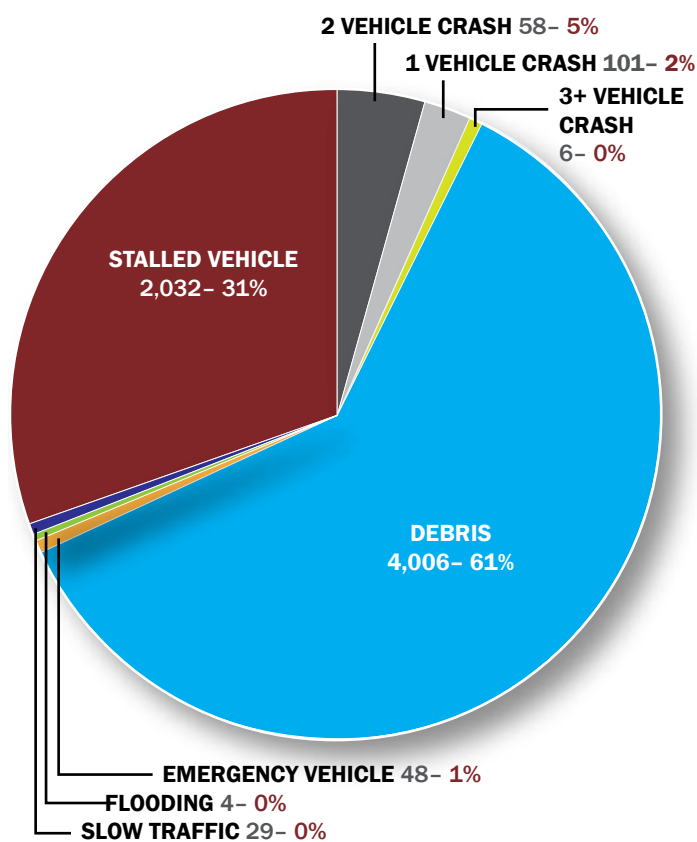
Heat Map of Incidents



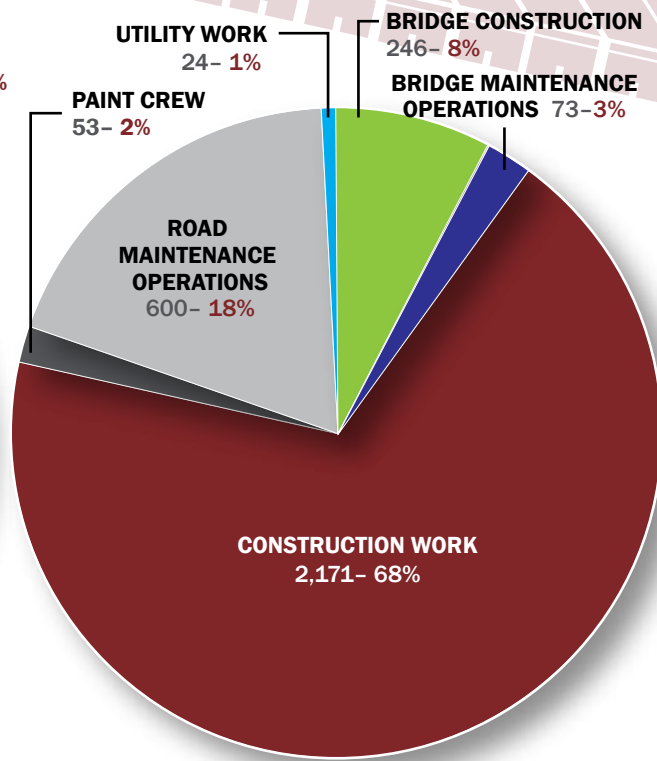
9 pavement
blowouts

2 bridge
hits

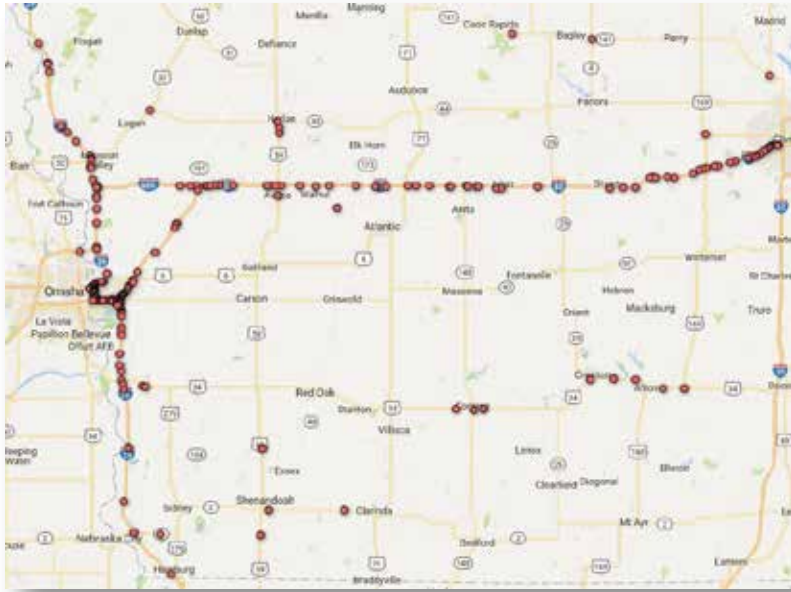
Incidents – 6,619 Total



Roadwork – 3,167 Total



Map of Lane Blocking Incidents



56.9
average time
to clear lanes

401
lane blocking
incidents

Heat Map of Workzone Crashes



46
secondary
crashes

14
workzone
crashes

DISTRICT 5



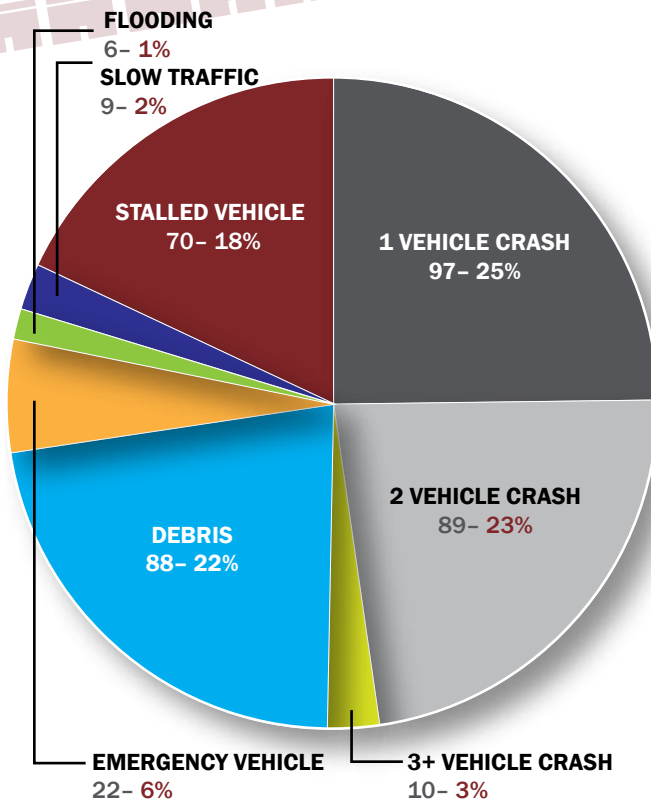
Heat Map of Incidents



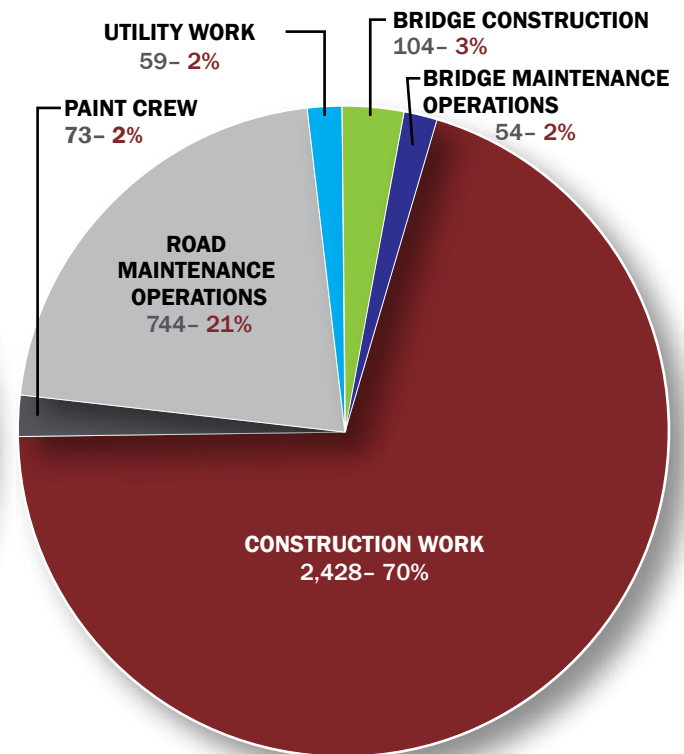
14 pavement
blowouts

3 bridge
hits

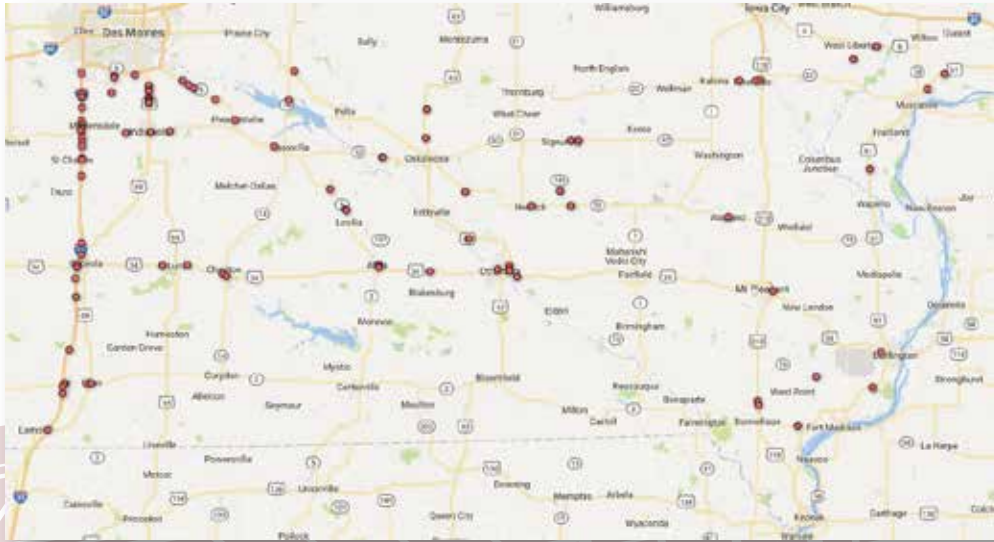
Incidents – 391 Total



Roadwork – 3,465 Total



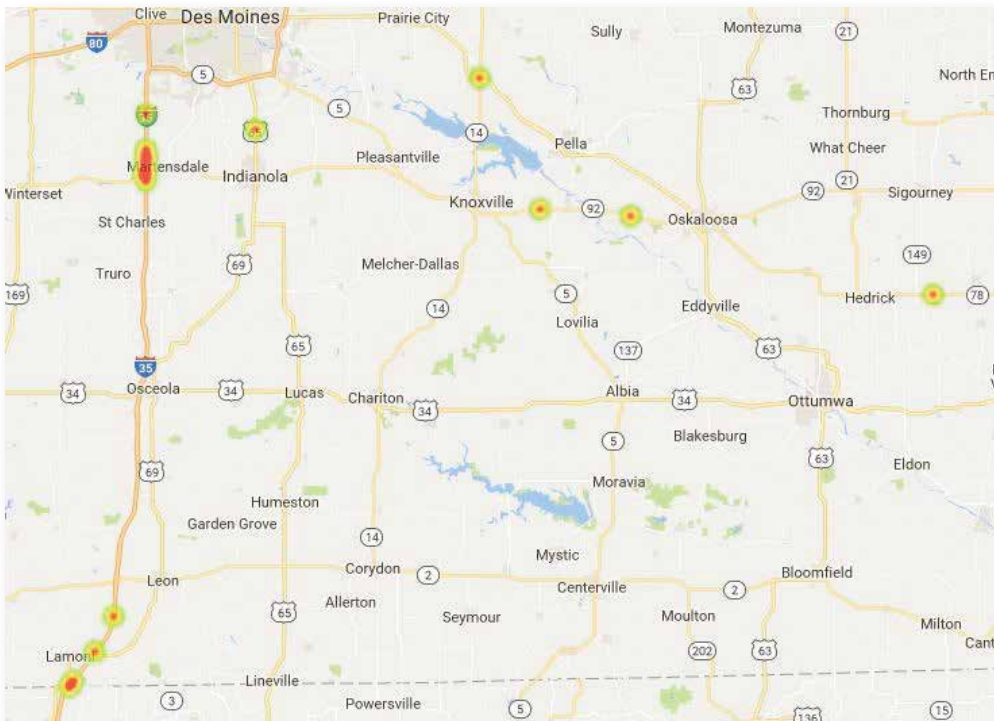
Map of Lane Blocking Incidents



87.8
average time
to clear lanes

123
lane blocking
incidents

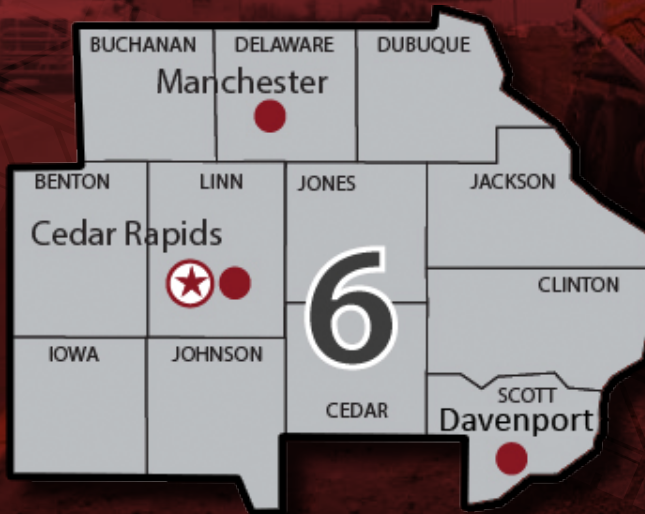
Heat Map of Workzone Crashes



2
secondary
crashes

16
workzone
crashes

DISTRICT 6



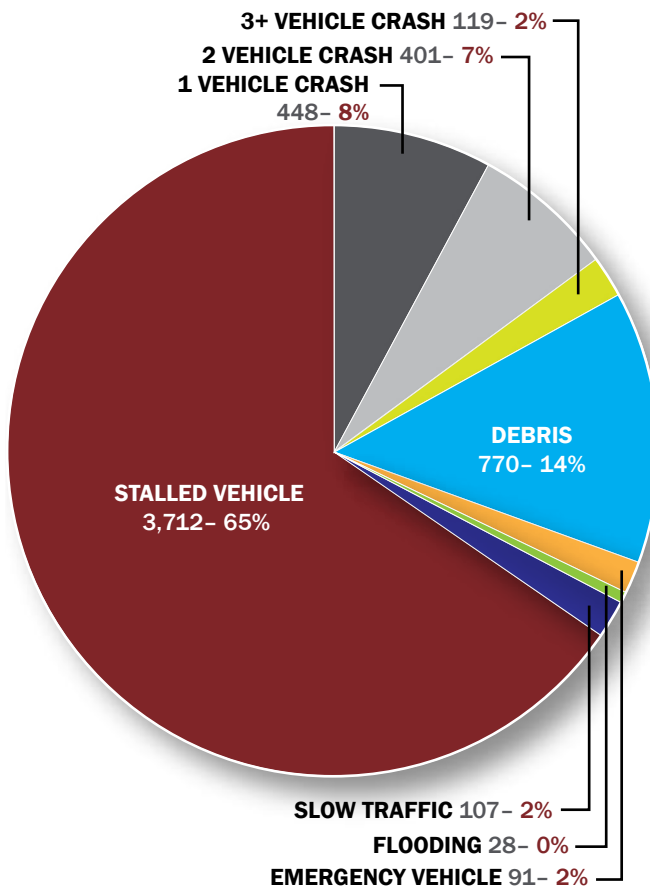
Heat Map of Incidents



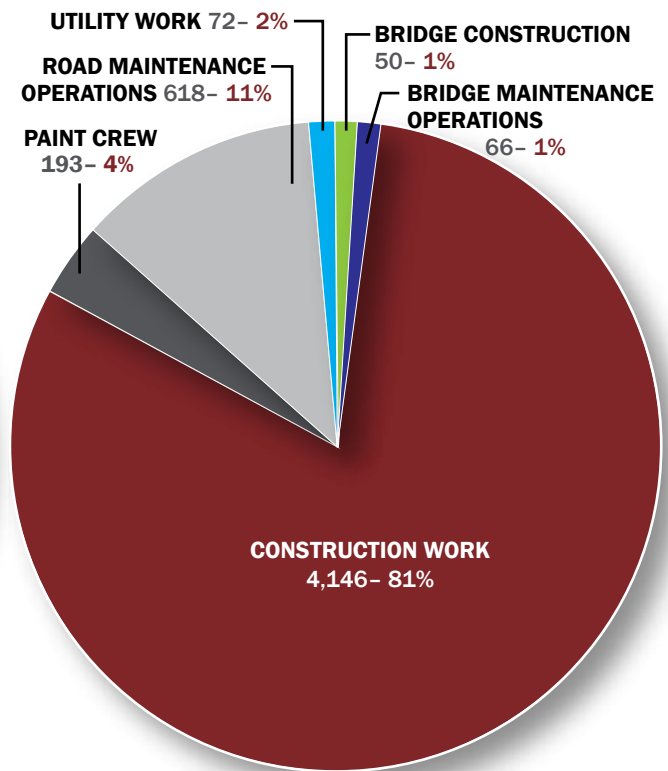
9 pavement
blowouts

3 bridge
hits

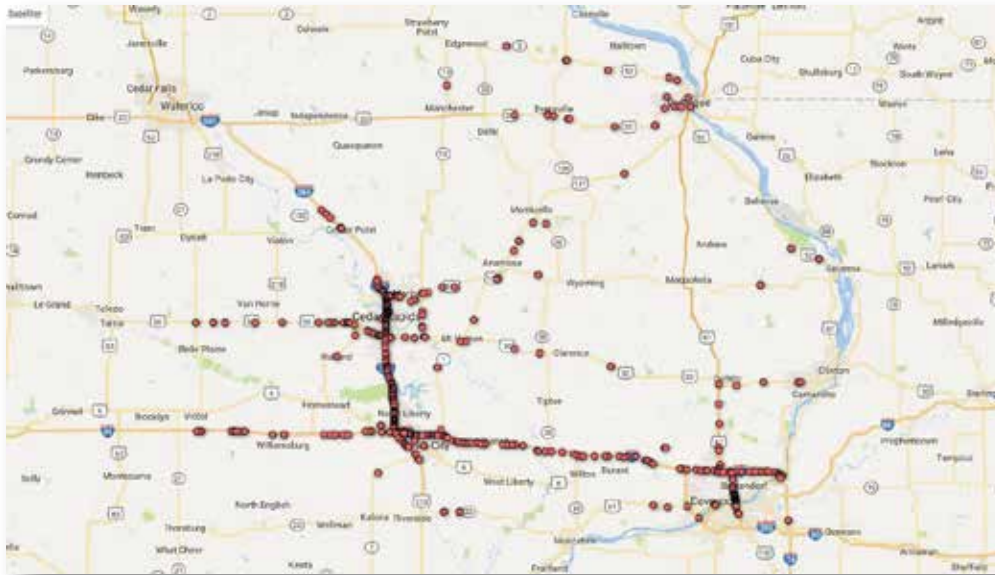
Incidents – 5,676 Total



Roadwork – 5,145 Total



Map of Lane Blocking Incidents



52.3
average time
to clear lanes

665
lane blocking
incidents

Heat Map of Workzone Crashes



42
secondary
crashes

40
workzone
crashes



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