# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>1</td>
</tr>
<tr>
<td>INCIDENT SUMMARY</td>
<td>2</td>
</tr>
<tr>
<td>Total Incidents Managed by the TMC</td>
<td>2</td>
</tr>
<tr>
<td>Secondary Incidents</td>
<td>2</td>
</tr>
<tr>
<td>Incidents Managed During Peak Hours</td>
<td>3</td>
</tr>
<tr>
<td>Incidents by Day of the Week</td>
<td>3</td>
</tr>
<tr>
<td>Lane Blocking Incidents</td>
<td>4</td>
</tr>
<tr>
<td>Average Time to Clear a Lane-Blocking Incident</td>
<td>4</td>
</tr>
<tr>
<td>Incident Types</td>
<td>5</td>
</tr>
<tr>
<td>HIGHWAY HELPER 2017</td>
<td>6</td>
</tr>
<tr>
<td>Total Incidents Responded to by Area</td>
<td>6</td>
</tr>
<tr>
<td>Total Incidents Responded to by Highway Helper</td>
<td>6</td>
</tr>
<tr>
<td>Highway Helper Services Provided</td>
<td>7</td>
</tr>
<tr>
<td>Incident Response by Time of Day</td>
<td>7</td>
</tr>
<tr>
<td>DES MOINES (HIGHWAY HELPER)</td>
<td>8</td>
</tr>
<tr>
<td>INCIDENT RESPONSE DASHBOARD</td>
<td>8</td>
</tr>
<tr>
<td>Highway Helper Crash Response</td>
<td>8</td>
</tr>
<tr>
<td>Heat Map of Location Density</td>
<td>8</td>
</tr>
<tr>
<td>Total Incidents Responded to by Highway Helper</td>
<td>8</td>
</tr>
<tr>
<td>Highway Helper Services Provided</td>
<td>9</td>
</tr>
<tr>
<td>Incident Response by Time of Day</td>
<td>9</td>
</tr>
<tr>
<td>COUNCIL BLUFFS (HIGHWAY HELPER)</td>
<td>10</td>
</tr>
<tr>
<td>INCIDENT RESPONSE DASHBOARD</td>
<td>10</td>
</tr>
<tr>
<td>Highway Helper Crash Response</td>
<td>10</td>
</tr>
<tr>
<td>Heat Map of Location Density</td>
<td>10</td>
</tr>
<tr>
<td>Total Incidents Responded to by Highway Helper</td>
<td>10</td>
</tr>
<tr>
<td>Highway Helper Services Provided</td>
<td>11</td>
</tr>
<tr>
<td>Incident Response by Time of Day</td>
<td>11</td>
</tr>
<tr>
<td>IOWA CITY/CEDAR RAPIDS (HIGHWAY HELPER)</td>
<td>12</td>
</tr>
<tr>
<td>INCIDENT RESPONSE DASHBOARD</td>
<td>12</td>
</tr>
<tr>
<td>Highway Helper Crash Response</td>
<td>12</td>
</tr>
<tr>
<td>Heat Map Location Density</td>
<td>12</td>
</tr>
<tr>
<td>Total Incidents Responded to by Highway Helper</td>
<td>12</td>
</tr>
<tr>
<td>Highway Helper Services Provided</td>
<td>13</td>
</tr>
<tr>
<td>Incident Response by Time of Day</td>
<td>13</td>
</tr>
<tr>
<td>FREIGHT INCIDENTS</td>
<td>14</td>
</tr>
<tr>
<td>Truck Incidents by Type</td>
<td>15</td>
</tr>
<tr>
<td>Truck Crashes by Type</td>
<td>15</td>
</tr>
<tr>
<td>511 TRAVELER INFORMATION</td>
<td>16</td>
</tr>
<tr>
<td>ROADWORK</td>
<td>17</td>
</tr>
<tr>
<td>Work Zone Crashes</td>
<td>17</td>
</tr>
<tr>
<td>INCIDENTS AND ROADWORK BY DISTRICT</td>
<td>18</td>
</tr>
<tr>
<td>Total Incidents by District</td>
<td>19</td>
</tr>
<tr>
<td>Lane Blocking Incidents by District</td>
<td>19</td>
</tr>
<tr>
<td>Average Time to Clear Lanes by District</td>
<td>19</td>
</tr>
<tr>
<td>DISTRICT 1</td>
<td>20</td>
</tr>
<tr>
<td>Heat Map of Incidents</td>
<td>20</td>
</tr>
<tr>
<td>Incidents</td>
<td>20</td>
</tr>
<tr>
<td>Roadwork</td>
<td>20</td>
</tr>
<tr>
<td>Map of Lane Blocking Incidents</td>
<td>21</td>
</tr>
<tr>
<td>Map of Workzone Crashes</td>
<td>21</td>
</tr>
<tr>
<td>DISTRICT 2</td>
<td>22</td>
</tr>
<tr>
<td>Heat Map of Incidents</td>
<td>22</td>
</tr>
<tr>
<td>Incidents</td>
<td>22</td>
</tr>
<tr>
<td>Roadwork</td>
<td>22</td>
</tr>
<tr>
<td>Map of Lane Blocking Incidents</td>
<td>23</td>
</tr>
<tr>
<td>Map of Workzone Crashes</td>
<td>23</td>
</tr>
<tr>
<td>DISTRICT 3</td>
<td>24</td>
</tr>
<tr>
<td>Heat Map of Incidents</td>
<td>24</td>
</tr>
<tr>
<td>Incidents</td>
<td>24</td>
</tr>
<tr>
<td>Roadwork</td>
<td>24</td>
</tr>
<tr>
<td>Map of Lane Blocking Incidents</td>
<td>25</td>
</tr>
<tr>
<td>Map of Workzone Crashes</td>
<td>25</td>
</tr>
<tr>
<td>DISTRICT 4</td>
<td>26</td>
</tr>
<tr>
<td>Heat Map of Incidents</td>
<td>26</td>
</tr>
<tr>
<td>Incidents</td>
<td>26</td>
</tr>
<tr>
<td>Roadwork</td>
<td>26</td>
</tr>
<tr>
<td>Map of Lane Blocking Incidents</td>
<td>27</td>
</tr>
<tr>
<td>Map of Workzone Crashes</td>
<td>27</td>
</tr>
<tr>
<td>DISTRICT 5</td>
<td>28</td>
</tr>
<tr>
<td>Heat Map of Incidents</td>
<td>28</td>
</tr>
<tr>
<td>Incidents</td>
<td>28</td>
</tr>
<tr>
<td>Roadwork</td>
<td>28</td>
</tr>
<tr>
<td>Map of Lane Blocking Incidents</td>
<td>29</td>
</tr>
<tr>
<td>Map of Workzone Crashes</td>
<td>29</td>
</tr>
<tr>
<td>DISTRICT 6</td>
<td>30</td>
</tr>
<tr>
<td>Heat Map of Incidents</td>
<td>30</td>
</tr>
<tr>
<td>Incidents</td>
<td>30</td>
</tr>
<tr>
<td>Roadwork</td>
<td>30</td>
</tr>
<tr>
<td>Map of Lane Blocking Incidents</td>
<td>31</td>
</tr>
<tr>
<td>Map of Workzone Crashes</td>
<td>31</td>
</tr>
</tbody>
</table>
Evaluating the effectiveness of Transportation Systems Management and Operations is paramount to efficiently moving people, goods and services across the state of Iowa. The Traffic Management Center is the “hub” of communication to coordinate getting motorists to their destination safely, efficiently and conveniently. With this annual performance measure report and other metrics, the department has real time data to assist in planning, budgeting, and implementing TSMO strategies across the state.

– Donna Matulac, Assistant Director
  Office of Traffic Operations
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”

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of incidents managed by Iowa Statewide Traffic Management Center</td>
<td>39,434</td>
</tr>
<tr>
<td>Number of incidents managed by Iowa Statewide Traffic Management Center with lane blockage</td>
<td>3,162</td>
</tr>
<tr>
<td>Number of minutes on average that it takes to clear all lanes of traffic following incidents</td>
<td>53</td>
</tr>
<tr>
<td>Number of services provided by Highway Helpers</td>
<td>19,959</td>
</tr>
<tr>
<td>Number of work zones managed by Iowa Statewide Traffic Management Center</td>
<td>29,106</td>
</tr>
</tbody>
</table>

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.
Total Incidents Managed by the TMC

The total number of incidents (39,434) during a given period. An incident is defined as any event on the roadway which affects or can affect normal traffic flow.

Secondary Incidents

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

One hundred and forty-eight (148) incidents were classified as secondary.

3,286 incidents per month on average in 2017
Incidents by Day of the Week

<table>
<thead>
<tr>
<th>Day</th>
<th>Incidents Managed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>2,958</td>
</tr>
<tr>
<td>Monday</td>
<td>6,367</td>
</tr>
<tr>
<td>Tuesday</td>
<td>6,502</td>
</tr>
<tr>
<td>Wednesday</td>
<td>6,758</td>
</tr>
<tr>
<td>Thursday</td>
<td>6,746</td>
</tr>
<tr>
<td>Friday</td>
<td>7,048</td>
</tr>
<tr>
<td>Saturday</td>
<td>3,055</td>
</tr>
</tbody>
</table>

Top 3:
1. Friday
2. Wednesday
3. Thursday
Lane Blocking Incidents

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

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. The average time to clear lanes in minutes is shown below.

52.7 minutes was the average time to clear a lane blocking incident in 2017
Incident Types

A breakdown by type of incidents logged by the Traffic Management Center (TMC) for 2017 and percentage of total incidents logged is shown with the chart.

- **STALLED VEHICLE**: 23,488 - 60%
- **DEBRIS ON ROADWAY**: 6,848 - 17%
- **1 VEHICLE COLLISION**: 2,083 - 5%
- **SLOW TRAFFIC**: 2,191 - 6%
- **EMERGENCY VEHICLES**: 2,138 - 6%
- **2 VEHICLE COLLISION**: 1,926 - 5%
- **GRASS FIRE**: 40 - 0.1%
- **FLOODING**: 47 - 0.1%
- **VEHICLE FIRE**: 126 - 0.3%
- **3+ VEHICLE COLLISION**: 547 - 1%

**Represented the total amount of incidents (39,434) categorized by incident type**

**Top 3:**
1. Stalled Vehicle
2. Debris in Roadway
3. Emergency Vehicles
This contains statistical and operational data of activities of the Highway Helper program for the period January 1st 2017 to December 31st 2017

**TOTAL HIGHWAY HELPER INCIDENT RESPONSES**

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

19,209

**INCIDENTS WITH LANE BLOCKAGE**

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

799

**CRASHES RESPONDED TO BY HIGHWAY HELPER**

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

1,363

**AVERAGE INCIDENTS HIGHWAY HELPER RESPONDED TO PER DAY**

The average of daily responses for Highway Helper in 2017 (calculated using a 5 day work week)

74

**Total Incidents Responded to by Area**

<table>
<thead>
<tr>
<th>Location</th>
<th>Incidents Responded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Des Moines</td>
<td>8,339</td>
</tr>
<tr>
<td>Cedar Rapids</td>
<td>4,901</td>
</tr>
<tr>
<td>Council Bluffs</td>
<td>5,989</td>
</tr>
</tbody>
</table>

**Total Incidents Responded to by Highway Helper**

1,600 incidents per month on average in 2017

<table>
<thead>
<tr>
<th>Month</th>
<th>Incidents Responded</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>2,012</td>
</tr>
<tr>
<td>February</td>
<td>1,771</td>
</tr>
<tr>
<td>March</td>
<td>1,834</td>
</tr>
<tr>
<td>April</td>
<td>1,463</td>
</tr>
<tr>
<td>May</td>
<td>1,418</td>
</tr>
<tr>
<td>June</td>
<td>1,345</td>
</tr>
<tr>
<td>July</td>
<td>1,385</td>
</tr>
<tr>
<td>August</td>
<td>1,473</td>
</tr>
<tr>
<td>September</td>
<td>1,206</td>
</tr>
<tr>
<td>October</td>
<td>1,965</td>
</tr>
<tr>
<td>November</td>
<td>1,678</td>
</tr>
<tr>
<td>December</td>
<td>1,659</td>
</tr>
</tbody>
</table>

19,209 total incidents
The Highway Helper Services Provided graphic provides an overview of what happened on Highway Helper incidents; multiple services may be provided on a single incident.

**Highway Helper Services Provided**

- **19,959 total amount of services provided by response type.**
  - 1. Removed Debris
  - 2. Checked Welfare
  - 3. Provided Traffic Control

**Incident Response by Time of Day**

- **10,674** 56%
  - Off Peak Hours
- **4,642** 24%
  - PM Commute
- **3,893** 20%
  - AM Commute

**Top 3:**

1. Removed Debris
2. Checked Welfare
3. Provided Traffic Control
DES MOINES
HIGHWAY HELPER INCIDENT RESPONSE DASHBOARD

Heat Map of Highway Helper Crash Response Location Density

What a great service! Priceless! The young man who helped me was fantastic! I don’t know what I would have done without him. Thank you!
- Customer comment

Total Incidents Responded to by Highway Helper

695 incidents per month on average in 2017
Highway Helper Services Provided

The Highway Helper Services Provided graphic provides an overview of what happened on Highway Helper incidents; multiple services may be provided on a single incident.

8,339 total amount of services provided by response type

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

Incident Response by Time of Day

8,339 total incidents

4,569 55% Off Peak Hours
1,627 19% AM Commute
2,143 26% PM Commute

Top 3:
1. Removed Debris
2. Checked Welfare
3. Provided Traffic Control
I was completely and pleasantly surprised by the Highway Helper. The gentlemen that assisted me were so nice and seemed genuinely concerned about helping me. Thank you!

- Customer comment

Total Incidents Responded to by Highway Helper

408 incidents per month on average in 2017
Highway Helper Services Provided

The Highway Helper Services Provided graphic provides an overview of what happened on Highway Helper incidents; multiple services may be provided on a single incident.

5,110 total amount of services provided by response type

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

Incident Response by Time of Day

2,829 58%
Off Peak Hours

1,076 22%
AM Commute

996 20%
PM Commute

4,901 total incidents
IOWA CITY/ CEDAR RAPIDS
HIGHWAY HELPER INCIDENT RESPONSE DASHBOARD

Heat Map of Highway Helper Crash Response Location Density

“I appreciate this service as a person needing help, but I also appreciate the Highway Helpers as a frequent driver - the flashing lights are a good warning of what is ahead” - Customer comment

Total Incidents Responded to by Highway Helper

497 incidents per month on average in 2017
The Highway Helper Services Provided graphic provides an overview of what happened on Highway Helper incidents; multiple services may be provided on a single incident.

Incident Response by Time of Day

- **3,276** total incidents
  - **55%** Off Peak Hours
  - **20%** AM Commute
  - **25%** PM Commute

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

6,242 total amount of services provided by response type
FREIGHT INCIDENTS

1 hrs 34 mins average time to clear a lane blocking incident involving a tractor trailer

32 hazmat spills from vehicles hauling hazmat

27 tractor trailer roll-overs

89 rail incidents

140,911 total permits issued

117,711 oversize/overweight permits

99,121 single trip (routed) permits

16,684 annual (non-routed) permits

Average time to clear a lane blocking incident involving a tractor trailer may not include recovery and/or off-loading time.
Truck Incidents by Type

- Stalled Vehicle: 6,155
- Emergency Vehicles: 71
- Vehicle Fire: 29
- Crash: 736

Truck Crashes by Type

- 1 Vehicle Crash: 349
- 2 Vehicle Crash: 297
- 3+ Vehicle Crash: 90
Traveler Information
www.511ia.org or dial 511

2,878,319 total visits to 511 traveler information website (includes all versions of website)

68,242 total 511 App downloads

104,957 total number of calls to 511
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 78 Traffic Critical Projects during the 2017 construction season; of those, 42 had intelligent work zone systems.

29,106 roadwork

Map of Work Zone Crashes

116 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.
Highway Helpers provide traffic management services within specific areas of Districts 1, 4, and 6. This added layer of service directly impacts the above statistics.
Incidents – 17,565 Total

- STALLED VEHICLE: 10,194
- DEBRIS ON ROADWAY: 3,362
- SLOW TRAFFIC: 1,420
- 1 VEHICLE COLLISION: 666
- EMERGENCY VEHICLES: 827
- 2 VEHICLE COLLISION: 801
- 3+ VEHICLE COLLISION: 250
- GRASS FIRE: 12
- FLOODING: 2
- VEHICLE FIRE: 31

Roadwork – 7,626 Total

- CONSTRUCTION WORK: 5,481
- BRIDGE CONSTRUCTION: 621
- ROAD MAINTENANCE OPERATIONS: 1,120
- BRIDGE MAINTENANCE OPERATIONS: 28
- UTILITY WORK: 139
- PAINT CREW: 237
40 min average time to clear lanes
1,266 lane blocking incidents

76 secondary crashes
42 workzone crashes
Incidents – 699 Total

- STALLED VEHICLE 357
- 2 VEHICLE COLLISION 54
- EMERGENCY VEHICLES 46
- DEBRIS ON ROADWAY 67
- 1 VEHICLE COLLISION 120
- SLOW TRAFFIC 4

- FLOODING 25
- GRASS FIRE 0
- VEHICLE FIRE 4
- 3+ VEHICLE COLLISION 22

Roadwork – 1,643 Total

- CONSTRUCTION WORK 1,136
- BRIDGE MAINTENANCE OPERATIONS 146
- ROAD MAINTENANCE OPERATIONS 208
- UTILITY WORK 208
- PAINT CREW 10
- BRIDGE CONSTRUCTION 120

Heat Map of Incidents

DISTRIBUTION 2

- ROSSUTH
- WINNEBAGO
- WORTH
- MITCHELL
- HOWARD
- WINNEFIRE
- ALLAMIZEE

DISTRICT 2

- WABASH
- HUMBOLDT
- WRIGHT
- FRANKLIN
- BUTLER
- HUMER
- BLACKHAWK
Map of Lane Blocking Incidents

82 min average time to clear lanes
181 lane blocking incidents

Map of Workzone Crashes

3 secondary crashes
3 workzone crashes
Incidents – 853 Total

- Stalled Vehicle: 298
- Vehicle Collision: 128
- Emergency Vehicles: 98
- Debris on Roadway: 108
- Slow Traffic: 67
- Grass Fire: 3
- Flooding: 2
- Vehicle Fire: 10
- 3+ Vehicle Collision: 31

Roadwork – 2,738 Total

- Construction Work: 2,499
- Bridge Maintenance Operations: 12
- Utility Work: 15
- Paint Crew: 13
- Road Maintenance Operations: 73
- Bridge Construction: 126
Map of Lane Blocking Incidents

Map of Workzone Crashes

66 min average time to clear lanes

281 lane blocking incidents

6 secondary crashes

21 workzone crashes
STALLED VEHICLE 3,324

COLLISION 2021 VEHICLE COLLISION 343

EMERGENCY VEHICLES 409

FLOODING 1

DEBRIS ON ROADWAY 3,287

SLOW TRAFFIC 105

CONSTRUCTION WORK 2,700

BRIDGE MAINTENANCE OPERATIONS 489

UTILITY WORK 6

PAINT CREW 69

ROAD MAINTENANCE OPERATIONS 155

BRIDGE CONSTRUCTION 30

VEHICLE FIRE 23

1 VEHICLE COLLISION 343

EMERGENCY VEHICLES 409

2 VEHICLE COLLISION 202

GRASS FIRE 10

FLOODING 1

3+ VEHICLE COLLISION 46

Incidents – 7,750 Total

Roadwork – 3,449 Total
Map of Lane Blocking Incidents

58 min average time to clear lanes
438 lane blocking incidents

Map of Workzone Crashes

9 secondary crashes
8 workzone crashes
DISTRICT 5

Heat Map of Incidents

**Incidents – 946 Total**

- **Stalled Vehicle**: 546
- **2 Vehicle Collision**: 84
- **1 Vehicle Collision**: 165
- **Emergency Vehicles**: 50
- **Grass Fire**: 2
- **Flooding**: 6
- **Vehicle Fire**: 7
- **3+ Vehicle Collision**: 16
- **Debris on Roadway**: 48
- **Slow Traffic**: 22

**Roadwork – 5,690 Total**

- **Bridge Construction Operations**: 625
- **Bridge Maintenance Operations**: 856
- **Utility Work**: 51
- **Paint Crew**: 247
- **Road Maintenance Operations**: 3,867
- **Construction Work**: 3,867
94 min average time to clear lanes

191 lane blocking incidents

Map of Lane Blocking Incidents

Map of Workzone Crashes

1 secondary crashes

18 workzone crashes
Incidents – 11,621 Total

- STALLED VEHICLE: 6910
- DEBRIS ON ROADWAY: 2875
- SLOW TRAFFIC: 227
- 1 VEHICLE COLLISION: 165
- EMERGENCY VEHICLES: 475
- 3+ VEHICLE COLLISION: 125
- 2 VEHICLE COLLISION: 451
- GRASS FIRE: 7
- FLOODING: 11
- VEHICLE FIRE: 41

Roadwork – 7,960 Total

- CONSTRUCTION WORK: 6,218
- BRIDGE CONSTRUCTION: 752
- BRIDGE MAINTENANCE OPERATIONS: 37
- ROAD MAINTENANCE OPERATIONS: 651
- UTILITY WORK: 56
- PAINT CREW: 246
48 min average time to clear lanes
805 lane blocking incidents

53 secondary crashes
24 workzone crashes