IOWA DOT

Transportation Systems Management and Operations

September 11, 2015

Scott Marler, Office of Traffic Operations

Ramada Tropics Resort and Conference Center
Des Moines
To get you there safely and reliably by actively managing traffic.
Keep Iowans Moving

REAL TIME

PROACTIVE
WHY?
WHY?

1. Safety
BY THE NUMBERS

32,719

2013 Nationwide Traffic Fatalities

321

2014 Iowa Traffic Fatalities

224

2015 Iowa Traffic Fatalities to Date
Total Number of Incidents Managed by the Traffic Operations Center

- May 2015: 1189
- June 2015: 1673
- July 2015: 1585
BY THE NUMBERS

1,482

Average Incidents Per Month for May/June/July
BY THE NUMBERS

1,482

1:4

Average Incidents Per Month for May/June/July

Ratio of Lane Blockage to Delay
BY THE NUMBERS

1,482

1:4

2.8%

Average Incidents Per Month for May/June/July

Ratio of Lane Blockage to Delay

Per Minute Likelihood of a Secondary Crash
BY THE NUMBERS

1,482
1:4
2.8%
30-40

Average Incidents Per Month for May/June/July
Ratio of Lane Blockage to Delay
Per Minute Likelihood of a Secondary Crash
Number of Minutes Till 100% Likelihood
WHY?

1. Safety
2. Reliability
BY THE NUMBERS

$406 b

Annual Value of Goods Shipped through Iowa
BY THE NUMBERS

$406 b
89%

Annual Value of Goods Shipped through Iowa

Freight Tonnage by Truck
BY THE NUMBERS

$406 b
89%
43%

Annual Value of Goods Shipped through Iowa
Freight Tonnage by Truck
Growth of Truck Freight Tonnage
BY THE NUMBERS

$406 b
89%
43%
$380 m

Annual Value of Goods Shipped through Iowa
Freight Tonnage by Truck
Growth of Truck Freight Tonnage
Annual Cost of Congestion in Iowa
BY THE NUMBERS

$406 b
Annual Value of Goods Shipped through Iowa

89%
Freight Tonnage by Truck

43%
Growth of Truck Freight Tonnage

$380 m
Annual Cost of Congestion in Iowa

$654 m
Financial Cost of Traffic Crashes in Iowa
Traffic Operations Center
24/7/365

- Heart of traffic incident management
- Detect, verify, notify, respond
- Field Communications
- Multi-agency coordination
- Unified Command
Our Methods:

- Cameras
- Sensors
- Dynamic Message Signs
- Portable DMS
- ATMS Software
- Communication Systems
- Video Wall Technologies
- Traffic Services and Software
- TEAM WORK
Difference in Speed (Over last 10 minutes)
FLEUR DRIVE CLOSED
BY FLOODING
SOUTH OF M L KING
Our Principles:

- Quick Clearance
- Responder Safety
- Clear, interoperable communications
Multiple Benefits

- Increased survival rate of crash victims
- Reduced delay
- Improved response time
- Improved air quality
- Reduced occurrence of secondary incidents
- Improved safety of responders, crash victims and other motorists
- Reduced recovery time
After Action Review

I-80 Traffic Incident
And
Three Secondary Incidents

May 8, 2015
After Action Review

- Proactive
- Multi-agency Response
- Detour
Stalled Semi and Fire

Mile Marker 203 WB
Two Vehicle Crash

Mile Marker 208 WB
Six Vehicle Crash

Mile Marker 215 WB
Two Vehicle Crash

Mile Marker 212 EB
## Report Parameters

- **Vehicle Costs**
  - 2015 - Passenger: $16.79, Commercial: $96.81
  - 2015 - Passenger: 50%, Commercial: 10%

Delay is calculated against the freeflow speed for segments whose speeds fall 10 mph or more below freeflow.

### Vehicle Type vs. Display

<table>
<thead>
<tr>
<th></th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td></td>
</tr>
</tbody>
</table>

### Total Cost

| Time   | 12 AM | 1 AM | 2 AM | 3 AM | 4 AM | 5 AM | 6 AM | 7 AM | 8 AM | 9 AM | 10 AM | 11 AM | 12 PM | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM | 7 PM | 8 PM | 9 PM | 10 PM | 11 PM | 12 PM |
|--------|-------|------|------|------|------|------|------|------|------|------|-------|------|-------|------|------|------|------|------|------|------|------|-------|-------|-------|
| Rates  | $8K   | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K   | $8K  | $8K   | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K   | $8K   | $253.2K |
| Hourly |
| Rates  | $8K   | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K   | $8K  | $8K   | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K  | $8K   | $8K   | $253.2K |

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**Notes**

- The values in the "Total Cost" display mode are rounded to the nearest hundredth and displayed in thousands when values larger than $1K exist.
- The range of values for the colored backgrounds of each cell are based on the data of the selected display mode.
- Delay values are displayed for every hour of every day within the selected time range.
- The totals for every hour are shown in the bottom row while the totals for every day are shown in the rightmost column.
- The speed limits for the entire time period is shown as the actual value and displayed at the bottom right corner.
- Totals shown for each hour are summed across all road segments.

### Legend

- **Warmest**
- **Coldest**
- **No tint**

### Daily Totals

- **Daily Totals**: $253.2K
- **Grand Total**: $253,217.39
• Primary incident led to 3 secondary incidents

• 17 mile traffic queue

• Detour enacted in 35 minutes

• 4 hours to clear major incident
•  > 30 Injuries

•  NO Fatalities
There is more to life than increasing its speed.

- Mahatma Gandhi
Six Causes Of Congestion In Iowa

- Bottlenecks, 23%
- Traffic Incidents, 27%
- Bad Weather, 28%
- Work Zones, 12%
- Special Events, 5%
- Poor Signal Timing, 5%
$160 Billion

$28 Billion

$380 Million
TSMO

Transportation Systems Management & Operations
Transportation Systems Management and Operations (TSMO) is a cross-cutting approach meant to optimize existing infrastructure through better integration, coordination, and systematic implementation of key operational strategies.