ACKNOWLEDGEMENTS

The 2015 Annual Report brought to you by the Kansas Department of Transportation (KDOT).

With the Assistance of:

SEDGwick COUNTY
911

TranSystems

EXPERIENCE | Transportation
INTRODUCTION

WICHway is KDOT’s Traffic Management Center (TMC) in the Wichita Metro Area and is co-located with Sedgwick County 911 allowing direct communication between 911 personnel, first responders, WICHway personnel and the public. WICHway actively monitors I-135, I-235, US-54 (Kellogg) and K-96 Monday through Friday, 6 am to 7 pm, and during special events or emergencies.

Installation of ITS devices began in 2009 and today includes 23 Dynamic Message Signs (DMS), 41 traffic cameras, and 52 traffic sensors. Sign messages, camera snapshots, traffic congestion, construction information and road conditions during winter weather events are displayed on the WICHway website at www.WICHway.org.

WICHway’s mission is to provide real-time data for traffic management to:

- help coordinate interagency response to incidents
- improve safety for highway drivers and first responders
- communicate travel time reliability
- reduce congestion delays

WICHway’s third annual report summarizes incident and congestion metrics from January 1, 2015 to December 31, 2015. It includes information and contributions from the Kansas Department of Transportation (KDOT), Kansas Highway Patrol (KHP), Sedgwick County, City of Wichita, Wichita Area Metropolitan Planning Organization and TranSystems Corporation.
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INCIDENT SUMMARY

What is an incident? For our purposes, it’s an event occurring on the highway that affects the safety or capacity of the highway. This may be an accident, stalled vehicle, grass or vehicle fire, pedestrians on the highway, or roadway debris. Quick detection and response is essential to minimizing the incident duration, preventing secondary accidents and lessening the effects of the initial incident. Detecting incidents and organizing appropriate responses is a primary focus of the WICHway system.

Total Incidents

<table>
<thead>
<tr>
<th>Highway</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>US-54</td>
<td>791</td>
<td>977</td>
</tr>
<tr>
<td>K-96</td>
<td>264</td>
<td>229</td>
</tr>
<tr>
<td>I-235</td>
<td>343</td>
<td>314</td>
</tr>
<tr>
<td>I-135</td>
<td>719</td>
<td>748</td>
</tr>
</tbody>
</table>

2015 Incident Breakdown by Type

- Stalled Vehicle: 55.6%
- Accident-Inj/Fat: 9.8%
- Accident-PDO: 25.7%
- Fire: 0.5%
- Pedestrian: 1.1%
- TOW: 2.0%
- Debris: 4.7%
- Medical: 0.3%
- Animals: 0.3%
Over 50% of incidents occur during peak driving times, 7-9 am and 4-6 pm.
In 2015, July had the highest number of incidents and November had the lowest.
“I would like to give you kudos for the WICHway site on the web. I think it is one of the best apps ever and I am telling lots of people about it. It will come in very handy with all that will be going on this year! Thank you for providing the information that you do.”

Becky Fields, Wichita
Incident clearance time is an important factor to consider with traffic management. The longer an incident remains on the roadway, the larger the effect on traffic (including congestion and secondary collisions). Safely and quickly reducing traffic exposure to incidents is essential to an efficient transportation system.

The average clearance time by month shown below excludes stalled vehicles, tow and construction incidents since these events often last multiple days and would be difficult to show in relationship to the other incidents.

Between 2013 & 2015, Accident Clearance Time DECREASED by over 2 hours.
The average incident clearance time for Wichita in 2015 was 34 minutes, down 14 minutes from 2014 and almost two hours since 2013! Wichita’s average clearance time excludes stalled vehicles, tow and construction incidents. Kansas law (K.S.A. 8-1102) allows motorists 48 hours to remove an abandoned vehicle before it will be towed, unless it creates a traffic hazard.

KC Scout’s\(^1\) 36 minute clearance time is the average time it takes to clear lanes for lane-blocking incidents. Incident clearance time as reported by WICHway includes the time all emergency personnel, equipment, and vehicles have left the scene.

Houston TranStar’s\(^2\) 31.2 minute clearance time did not specifically mention which incidents are included and whether or not the time was for complete removal from the roadway or only for lane-blocking incidents.

The average incident clearance time for Wichita in 2015 was 34 minutes, down almost 2 hours since 2013

Sources
CRASH SUMMARY

Unlike incidents which include all events occurring on the highway, crashes involve the collision of a vehicle with another vehicle, animal, pedestrian or debris. Reducing the time it takes to safely remove the crash from the roadway is a goal for the Wichita area. Identifying high incident areas is important when determining the need for safety improvements. These maps illustrate locations of logged crashes in 2015.

Crash – the collision of a vehicle with another vehicle, animal, pedestrian, debris or stationary object
Crash Clearance Times

Crash clearance time is an important factor to consider in traffic management and an improvement goal for the Wichita area. This graph illustrates how much time it takes to clear a percentage of all crashes. In 2015, 68% of all recorded crashes were cleared in less than 60 minutes! This graph includes both injury and non-injury crashes clearance times logged by TMC operators.

Cumulative Distribution of Crash Clearance Time

- 95% of Crashes Cleared < 120 min
- 88% of Crashes Cleared < 90 min
- 68% of Crashes Cleared < 60 min
- 50% of Crashes Cleared < 45 min

In 2015, 68 percent of crashes were cleared in less than 60 minutes.
Total Crashes by Highway

<table>
<thead>
<tr>
<th>Highway</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>US-54</td>
<td>199</td>
<td>294</td>
</tr>
<tr>
<td>K-96</td>
<td>55</td>
<td>47</td>
</tr>
<tr>
<td>I-135</td>
<td>90</td>
<td>97</td>
</tr>
<tr>
<td>I-235</td>
<td>29</td>
<td>42</td>
</tr>
<tr>
<td>ACCIDENT-PDO</td>
<td>72</td>
<td>110</td>
</tr>
<tr>
<td>ACCIDENT-INJ/FAT</td>
<td>13</td>
<td>18</td>
</tr>
</tbody>
</table>

Crash Clearance Time

<table>
<thead>
<tr>
<th>Highway</th>
<th>ACCIDENT-PDO</th>
<th>ACCIDENT-INJ/FAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>US-54</td>
<td>0:49</td>
<td>1:02</td>
</tr>
<tr>
<td>K-96</td>
<td>0:42</td>
<td>1:06</td>
</tr>
<tr>
<td>I-135</td>
<td>0:43</td>
<td>1:15</td>
</tr>
<tr>
<td>I-235</td>
<td>0:45</td>
<td>1:11</td>
</tr>
</tbody>
</table>

Average Time (hour:min)

- US-54 ACCIDENT-PDO: 0:49
- US-54 ACCIDENT-INJ/FAT: 1:02
- K-96 ACCIDENT-PDO: 0:42
- K-96 ACCIDENT-INJ/FAT: 1:06
- I-135 ACCIDENT-PDO: 0:43
- I-135 ACCIDENT-INJ/FAT: 1:15
- I-235 ACCIDENT-PDO: 0:45
- I-235 ACCIDENT-INJ/FAT: 1:11
- I-135 ACCIDENT-PDO: 0:48
- I-135 ACCIDENT-INJ/FAT: 0:57
Severity Levels

Minor – duration under 30 min.
Intermediate – duration of 30 min. to 2 hrs.
Major – duration greater than 2 hrs.

Source

CONGESTION SUMMARY

Traffic congestion affects our daily lives as we travel along the roadways. Wichita’s Intelligent Transportation System (ITS) utilizes 52 traffic sensors to detect vehicle speeds, volume, lane occupancy and direction in 15-minute intervals, all of which is stored on local TMC data servers.

When a peak period is referenced, the peak periods correspond to 7:15 to 8:15 am and 4:30 to 5:30 pm. The peak periods in this report were determined using data collected over the 12-month time period.

The congestion index report informs commuters of travel time reliability on Wichita highways. The congestion indices used in this report are:

- Travel Time Index (TTI)
- Planning Time Index (PTI)
- Buffer Time Index (BTI)

All three travel time reliability indices are calculated standards used by the Federal Highway Administration (FHWA).

<table>
<thead>
<tr>
<th></th>
<th>TTI</th>
<th>PTI</th>
<th>BTI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM</td>
<td>PM</td>
<td>AM</td>
</tr>
<tr>
<td>WICHway 2013</td>
<td>1.00</td>
<td>1.02</td>
<td>1.15</td>
</tr>
<tr>
<td>WICHway 2014</td>
<td>1.00</td>
<td>1.01</td>
<td>1.18</td>
</tr>
<tr>
<td>WICHway 2015</td>
<td>1.00</td>
<td>1.02</td>
<td>1.24</td>
</tr>
</tbody>
</table>
Traffic Speeds & Average Annual Daily Traffic (AADT) by Route

AADT is a measure of the average annual number of vehicles that cross a point (in both directions) on a roadway segment during a day. Based on typical peaking characteristics, the capacity of a freeway lane is 20,000 vehicles per lane per day.

Peak hours - 7:15-8:15 am and 4:30-5:30 pm
K-96 is a bypass route connecting East US-54 (Kellogg) with North I-135 then continues west to Hutchinson, Kansas.

US-54 runs east and west through the heart of Wichita and has the highest Average Annual Daily Traffic (AADT) in Wichita.
Travel Time Index (TTI) represents the average additional time required during peak times compared to time with no congestion.
Planning Time Index (PTI) AM Peak Hour

Planning Time Index (PTI) PM Peak Hour

Planning Time Index (PTI) represents the total travel time required to maintain arrival time 95% of the time.

2015 Morning Peak

+5.1%
(1.24 min)

In 2014: 1.18 minutes

2015 Evening Peak

+4.0%
(1.30 min)

In 2014: 1.25 minutes

Planning Time Index Legend

- Improved
- Declined

1.0 – 1.30
1.31-1.60
1.61+

Planning Time Index (PTI) Maps

+5.1%
(1.24 min)

In 2014: 1.18 minutes

+4.0%
(1.30 min)

In 2014: 1.25 minutes

Planning Time Index Legend

- Improved
- Declined

1.0 – 1.30
1.31-1.60
1.61+
Buffer Time Index (BTI) represents the additional time or “buffer” necessary above the average peak travel time.

Buffer Time Index Legend
- 0% - 20%
- 21% - 40%
- 41%+

2015 Morning Peak
- +4.0% (22%)
- In 2014: 18%

2015 Evening Peak
- +3.0% (25%)
- In 2014: 22%

Buffer Time Index (BTI) AM Peak Hour

Buffer Time Index (BTI) PM Peak Hour
WEBSITE – WICHWAY.ORG

In late 2013 Wichita’s internet gateway to the Traffic Management Center, WICHway.org, was redesigned and rebuilt from the ground up and became live on December 11, 2013. The website provides users, the public, media and first responders with real-time information such as active incidents, camera views, posted message boards, live travel speeds and road conditions. Users can also find past reports, contact information and links to additional websites.
MOTORIST ASSISTANCE PROGRAM

The Motorist Assistance Program (MAP) is a partnership between the Kansas Department of Transportation and the Kansas Highway Patrol. Wichita’s Motorist Assistance Program operates Monday through Friday, 5 am to Midnight, and 7 am to 11 pm on weekends.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Annual Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
</tr>
<tr>
<td>Public Contacts*</td>
<td>7,375</td>
</tr>
<tr>
<td>Service Rendered</td>
<td>4,918</td>
</tr>
<tr>
<td>Unattended Vehicles**</td>
<td>1,808</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Days Worked</td>
<td>1,108</td>
</tr>
<tr>
<td>Total Hours Worked</td>
<td>9,968</td>
</tr>
<tr>
<td>Total Miles Driven</td>
<td>213,381</td>
</tr>
</tbody>
</table>

*Contact with at least one person. Multiple persons in an encounter are not counted individually

**Red tag placed on the vehicle found abandoned between the fences along a highway. Recovered stolen vehicles are excluded.

MISSION
To improve traffic safety through timely, courteous, and cost-effective assistance to motorists whose vehicles are stranded or disabled along the roadway.
TRAFFIC INCIDENT MANAGEMENT TRAINING

Traffic Incident Management (TIM) is a comprehensive initiative focused on improving safety, capacity and reliability of a roadway. TIM consists of planned and coordinated efforts to identify and restore roadway capacity as safely and quickly as possible. The course develops a common set of practices and advance standards for all emergency responders and those who support traffic incident management (TIM).

Since starting in 2013, over 616 traffic incident responders from multiple disciplines have completed a 4-hour TIM training.

<table>
<thead>
<tr>
<th>Responders</th>
<th>Total Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
</tr>
<tr>
<td>Law Enforcement</td>
<td>49</td>
</tr>
<tr>
<td>Fire/Rescue</td>
<td>379</td>
</tr>
<tr>
<td>Towing and Recovery</td>
<td>0</td>
</tr>
<tr>
<td>EMS</td>
<td>3</td>
</tr>
<tr>
<td>DOT/ Transportation</td>
<td>24</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>456</strong></td>
</tr>
</tbody>
</table>

Saves Lives
- Faster incident response and clearance times result in fewer secondary crashes
- Training results in less exposure of responder team to moving traffic during recovery

Saves Money
- Less congestion leads to few freight and traveler delays and backups
- Fewer secondary crashes saves on insurance claims
- Faster cleanups lead to cost savings for incident personnel

Saves Time
- Smarter response techniques cut congestion clearance time and decrease delays
WICHWAY TOOLS & EQUIPMENT

WICHway utilizes an array of tools to monitor traffic, notify drivers of travel problems, assist responders at incidents and improve travel reliability in Wichita. Many of these tools are also available through the website, WICHway.org.

**WICHway Website**
Alerts and real-time information about traffic conditions and incidents available on desktop, tablets, and mobile devices.

**Traffic Management Center**
Control center for WICHway, Wichita’s Intelligent Transportation System.

**Live Traffic Monitoring**
Operators view live traffic conditions and update devices with current information.

**Closed-Circuit Cameras**
View live traffic and monitor incidents.

**Traffic Detectors**
Record live traffic data including speed, volume, lane occupancy and direction.

**Dynamic Message Sign (DMS)**
Alerts road users of current traffic conditions.
APPENDICES

Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADT</td>
<td>Average Daily Traffic</td>
</tr>
<tr>
<td>AADT</td>
<td>Average Annual Daily Traffic</td>
</tr>
<tr>
<td>BTI</td>
<td>Buffer Time Index</td>
</tr>
<tr>
<td>CCTV</td>
<td>Closed-Circuit Television</td>
</tr>
<tr>
<td>DMS</td>
<td>Dynamic Message Sign</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>ITS</td>
<td>Intelligent Transportation System</td>
</tr>
<tr>
<td>KDOT</td>
<td>Kansas Department of Transportation</td>
</tr>
<tr>
<td>KHP</td>
<td>Kansas Highway Patrol</td>
</tr>
<tr>
<td>MAP</td>
<td>Motorist Assistance Program</td>
</tr>
<tr>
<td>MAV</td>
<td>Motorist Assist Vehicle</td>
</tr>
<tr>
<td>MIST</td>
<td>Management Information System for Transportation</td>
</tr>
<tr>
<td>MUTCD</td>
<td>Manual on Uniform Traffic Control Devices</td>
</tr>
<tr>
<td>PDO</td>
<td>Property Damage Only</td>
</tr>
<tr>
<td>PTI</td>
<td>Planning Time Index</td>
</tr>
<tr>
<td>SHRP2</td>
<td>Strategic Highway Research Program</td>
</tr>
<tr>
<td>SWZ</td>
<td>Smart Work Zone</td>
</tr>
<tr>
<td>TIM</td>
<td>Traffic Incident Management</td>
</tr>
<tr>
<td>TMC</td>
<td>Traffic Management Center</td>
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<tr>
<td>TTI</td>
<td>Travel Time Index</td>
</tr>
<tr>
<td>VMT</td>
<td>Vehicle Miles Traveled</td>
</tr>
</tbody>
</table>

Sources
