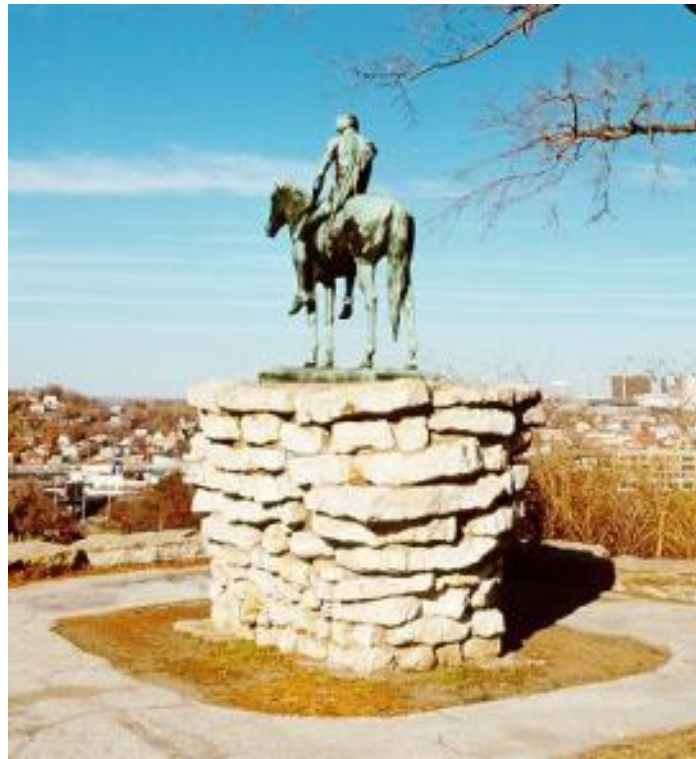# Kansas City Scout
Traffic Management Center
Monthly Report

August 2009

Prepared For:

KC Scout Board of Directors

Prepared By:

KC Scout Operations Team

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Cover photo: The Scout statue that looks out at Kansas City from Penn Valley Park

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Introduction

Kansas City Scout (KC Scout) is a comprehensive traffic and incident management system designed to address the traffic impacts on over 100 miles of contiguous freeways in the bi-state Kansas City metropolitan area. The Missouri Department of Transportation (MoDOT) and the Kansas Department of Transportation (KDOT) jointly operate the system. Scout integrates 128 closed circuit television (CCTV) cameras, 38 dynamic message signs (DMS), 277 vehicle detector stations (VDS), a highway advisory radio (HAR) system, and a dynamic web site, www.kcscout.net.

This report describes the operation and specific activities of Scout's Traffic Management Center (TMC), located in Lee's Summit, Missouri, during August 2009.

Operations Summary

A summary of the operational results and activities of the TMC staff during the reporting period is presented below. The numbers in parentheses shown with some of the items refer to the explanatory notes on those items included in the "Notes on Operations Summary" section following this section.

Incidents

- The TMC actively responded to **393 incidents**, representing a 7% decrease compared to last month.
- 6 were Level 3 incidents with an average duration of 175 minutes (1)
- 134 were Level 2 incidents with an average duration of 52 minutes (1)
- 126 were Level 1 incidents with an average duration of 15 minutes (1)
- 105 were scheduled roadwork (2)
- 16 were within a work zone (2)
- 0 were Ozone Alerts
- 0 was an AMBER Alert
- 27 involved big rigs
- 64 involved injuries (2% decrease compared to last month)
- 2 involved fatalities
- 21 involved DOT property damage
- 2 could be classified as secondary incidents
- 15 cited bad weather as a possible contributing factor
- TMC responded to 464 false incident alarms.
- The TMC managed 37 I-70 corridor incidents
- Dynamic Message Signs (DMS) were activated 675 times (4)
- 1,434 DMS messages were displayed (4)

ATIS (Web Site) Messages

- 797 total messages were placed for incidents, including 179 for roadwork (5)

Highway Advisory Radio (HAR)

- Activated 0 times this month (6)

Equipment Operability

- On average, 92% of the CCTV cameras were completely operational.
- On average, 99% of the DMS were completely operational.

- On average, 72% of the Detector Stations were completely operational, with 12% reporting some bad detectors, 14% reporting all bad detectors, and 2% not responding. (7)

Tours / Media/Events

Tours

8/6 -Tour of Scout for KDOT employee, Paul Freeland facilitated by Cathy Jones

8/7 -There were 4 KCPL contractors who toured the Scout TMC facilitated by Jeremy Ball.

8/24 - Operation Green Light hosted a group from Ohio DOT and the City of Columbus the tour was facilitated by Mark Sommerhauser. The guests included:

- 3 from the City of Columbus (Signals Project Coordinator and 2 Traffic Engineers)
- 1 from the MPO (Senior Planner, including ITS)
- 1 from ODOT District (FMC Manager)
- 1 from ODOT Central Office (Freeway Operations Engineer)
- 1 Consultant (from HNTB)
- 1 from a suburban city (Traffic Engineer)
- 1 from FHWA

Public Appearances

8/8 - Jason Sims, Gina Myles, Jeremy Ball, Nancy Powell and Cathy Jones made a public appearance at the Ramp Metering Mobile meeting held at **5000 W. 119th Street, Leawood, KS at the Town Center Mall.** Scout staff interacted with approximately 150 people.

Media appearances

There were no media appearances this month.

Additional Information

- TMC operators logged 2,427 telephone calls with partner agencies. (8)
- Customer Service Representatives logged 3,157 contacts from external and internal sources, including phone calls, E-mails, and walk-ins. (9)

Notes on Operations Summary

1. Duration levels used by the TMC are the levels defined in the Manual on Uniform Traffic Control Devices (MUTCD) as follows:

- Level 1 (Minor) – under 30 minutes
- Level 2 (Intermediate) – 30 minutes to 2 hours
- Level 3 (Major) – more than 2 hours

2. The number of scheduled roadwork incidents represents the number of short-term work zones, usually lasting 8 hours or less, that involve lane, road, or ramp closures for which the TMC staff has placed DMS messages. The number of incidents within work zones represents the number of accidents, stalled vehicles, debris, etc. that involve lane or ramp closures within existing work zones, either long-term or short- term.

3. Each incident report provides the number of DMSs activated for that incident and the number of messages displayed on each DMS during the incident. The total numbers of
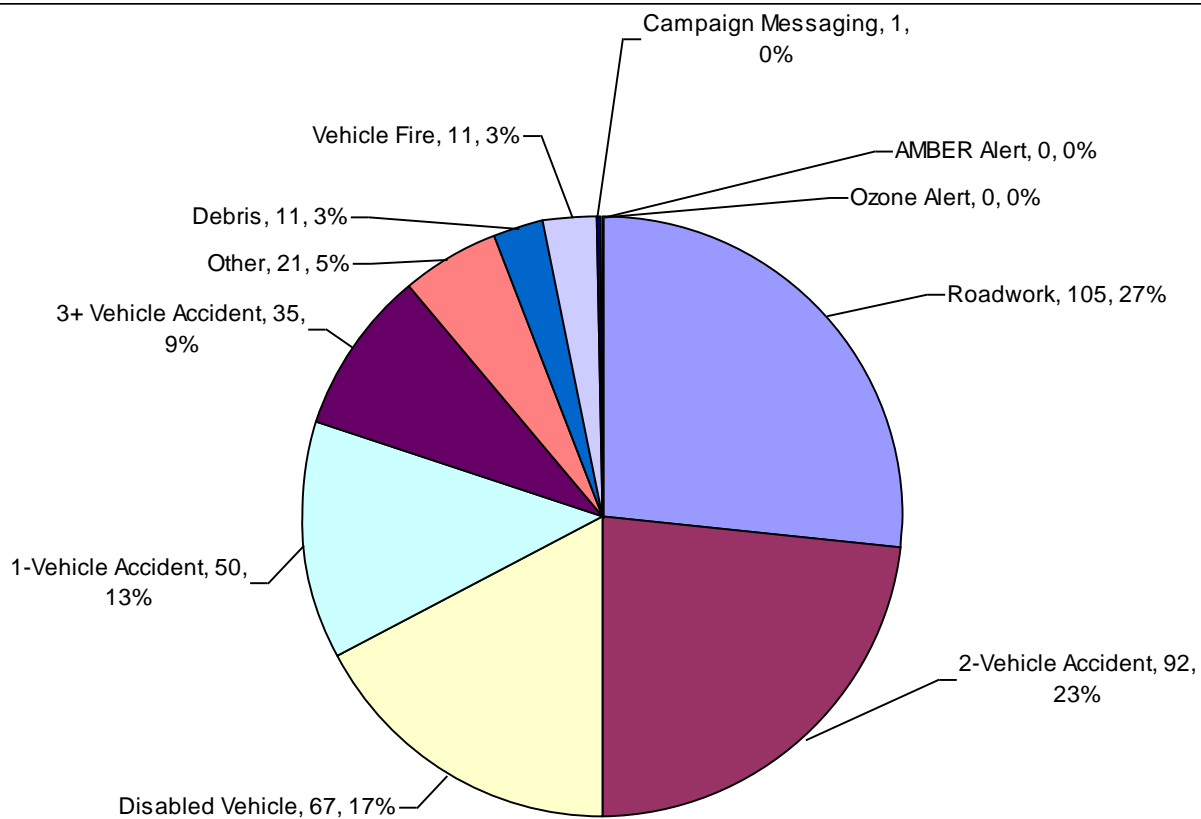
DMS activations and messages displayed in the DMS Operations Summary reflect the numbers from each incident report totaled for all incidents occurring during the reporting period.

4. The ATIS (Advanced Traveler Information System) is the KC Scout Web Site. The number of ATIS messages reported in the Operations Summary is the total number of messages sent by the operators to the web site. Each message sent creates an icon on the web site map that corresponds to the type of incident being reported; e.g., accident, scheduled event, and emergency work. This number does not reflect the number of messages posted in the scroll on the web site home page. Those scroll messages are posted as necessary and may include AMBER Alert notices, web site updates, emergency closures, etc.

5. The HAR is deployed on the Missouri side only and is not integrated with the ATMS software. Operators interface with the system through a dial-up modem.

6. A vehicle detector station (VDS) consists of detectors (induction loops or radar units) capable of detecting vehicle speeds and volumes in each traffic lane. The VDS status in the Operations Summary provides the number of stations that were completely operational (i.e., all detection capability in that station is operational), partially operational (i.e., some but not all of the detection capability in the station is operational), not operational (i.e., none of the detection capability in the station is operational), and not responding (i.e., there is no apparent communication between the station and the TMC).

7. Partner agencies consist of MoDOT Motorist Assist, Kansas Highway Patrol (KHP), local law enforcement and incident management agencies, and MoDOT/KDOT maintenance/construction personnel. The tally also includes all incidents MoDOT Motorist Assist units were dispatched on.

8. External and internal sources consist of the general public, the media, public and private agencies, and other MoDOT offices. Contacts comprise phone calls, E-mails, and walk-ins.

Incident Statistics by Incident Type

In August, the TMC responded to 393 incidents in the Kansas City area. This number represents a decrease of 7% compared to last month.   All incidents are shown by incident type in Figure 1. Roadwork was the most frequent incident with 105, representing 27% of the total incidents managed. 2-Vehicle Accident was the second most frequent with 92 (23%). Disabled Vehicle (67, 17%) and 1-Vehicle Accident (50, 13%) were the next highest incidents. These 4 incident types accounted for 80% of the total incidents managed by the TMC. The three accident categories accounted for (177, 45%) of the total incidents managed. For the purposes of this report, *Disabled Vehicle* incidents are generally counted only if they involve lane closures.

Figure 1 – Incidents by Type

Additional Incident Details:

- 16 were within a work zone
- 27 involved big rigs
- 64 involved injuries
- 2 involved fatalities
- 21 involved DOT property damage
- 2 could be classified as secondary incidents

Figure 2 shows the number of incidents that the TMC managed during each of the last three months. It is intended to show short-term trends in the types of incidents that are occurring on the area's freeways.

**Figure 2 – Incidents by Type / 3-Month Summary**

getting you there
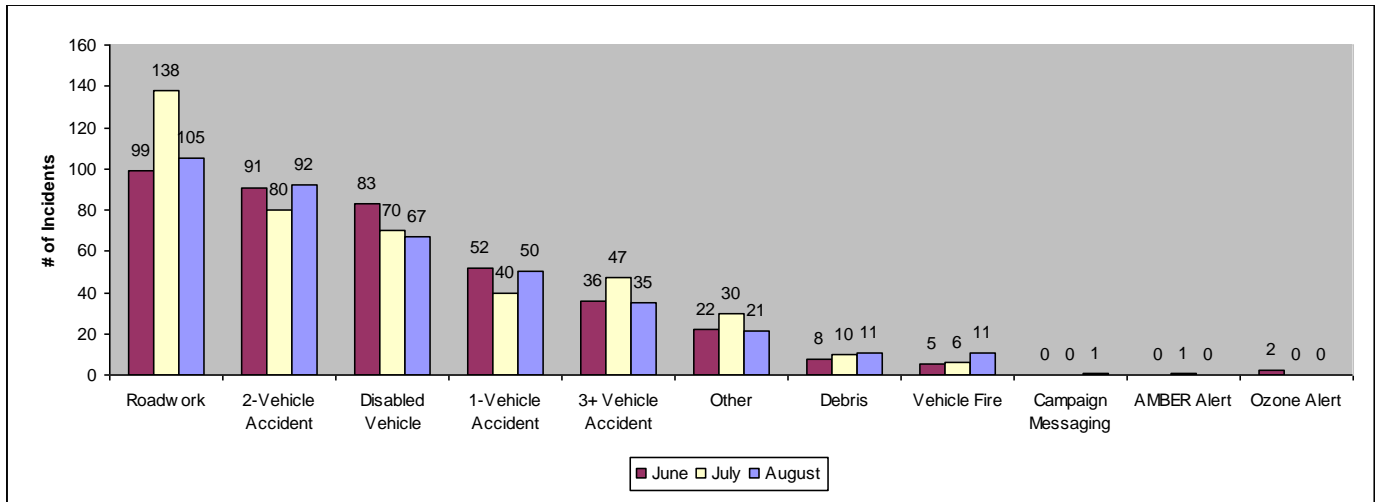
Additional Statistics

Incidents by Facility

The first 3 facilities listed are those interstates that have vehicle detection installed. All others are facilities monitored by Scout via CCTV or interaction with public and private entities. Incidents on each Scout facility are shown in Figure 3.
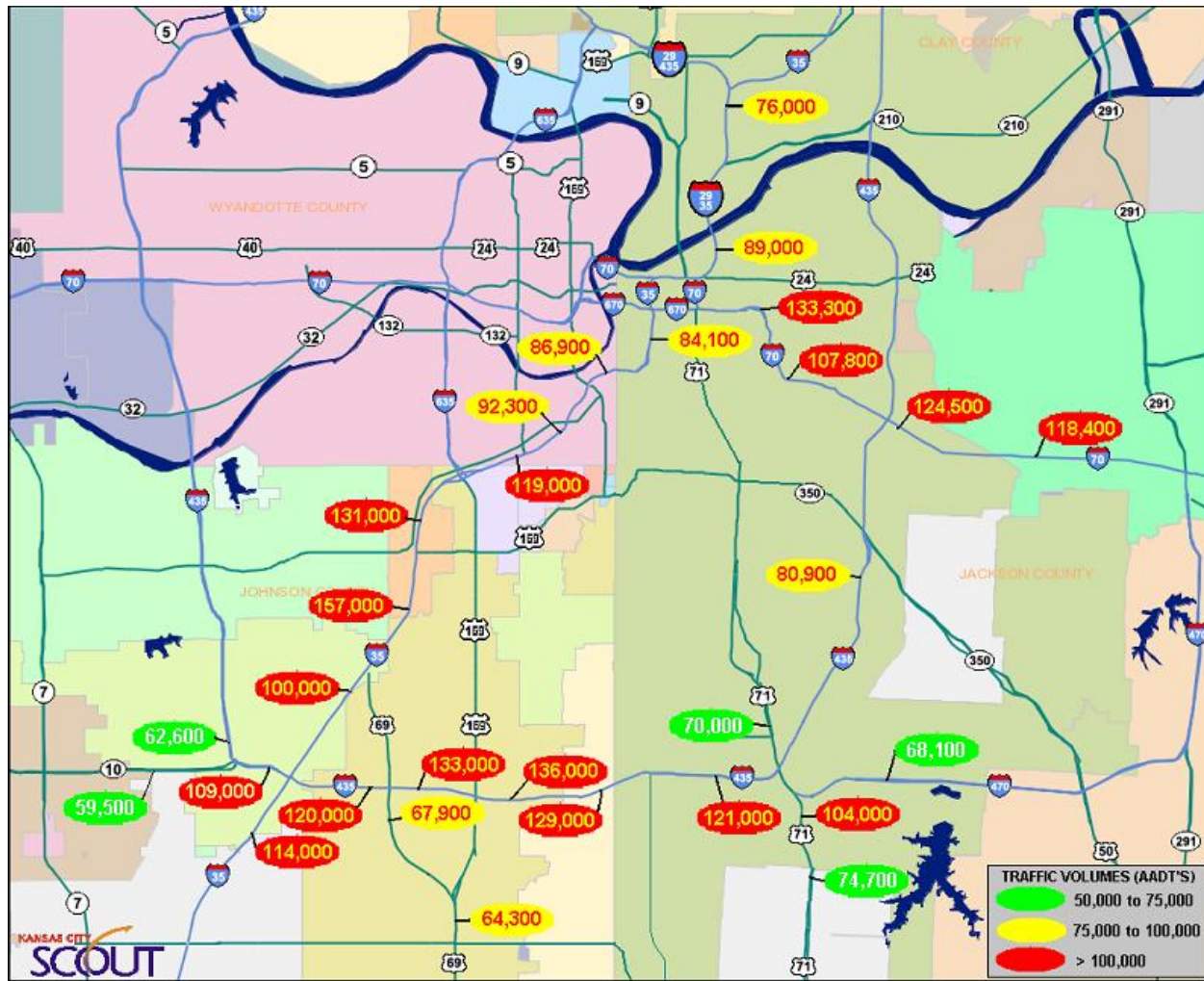
Figure 3 – Incidents by Facility
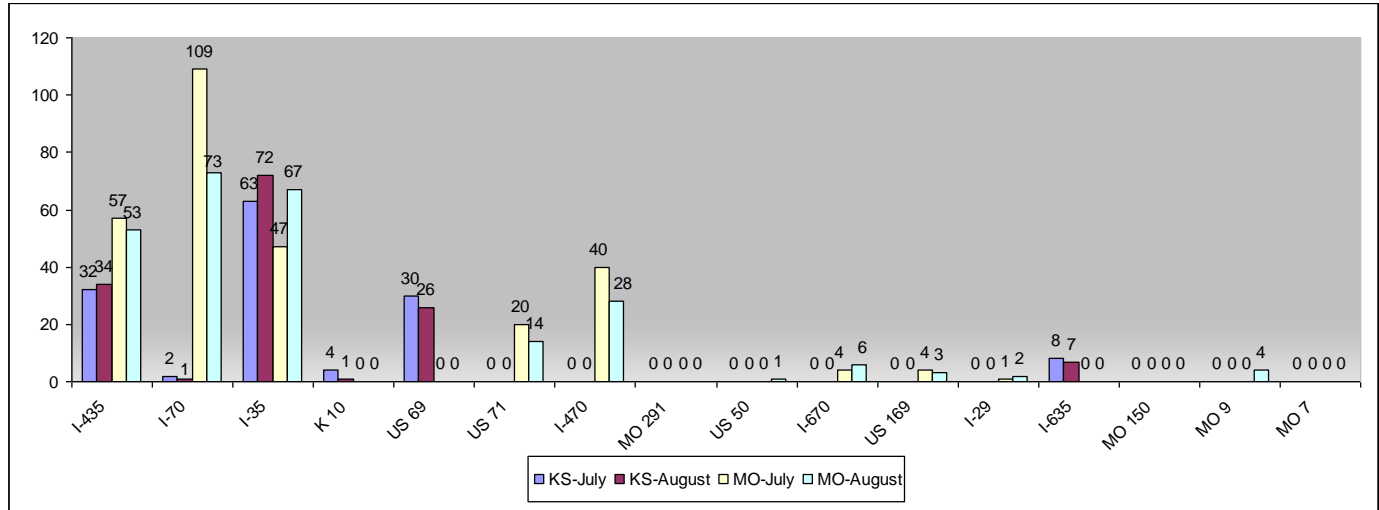
Annual Average Daily Traffic Volumes (AADTs)

Figure 4 shows AADTs for the freeway facilities on the Scout system. It is noted that the number of incidents on each facility generally correlates with the AADTs for that facility.

Figure 4 – AADT Map

Incidents by Day

Figure 5 shows the number of incidents occurring on each day of August. The number of incidents per day varies widely, with the average being approximately 13 incidents per day. Weekdays generally incur more frequent incidents, averaging 15.1 incidents/day, compared to 11.4 on weekends. If only non-roadwork incidents are considered, the rates for weekdays and weekends are 11.1 and 8.4 incidents/day, respectively.
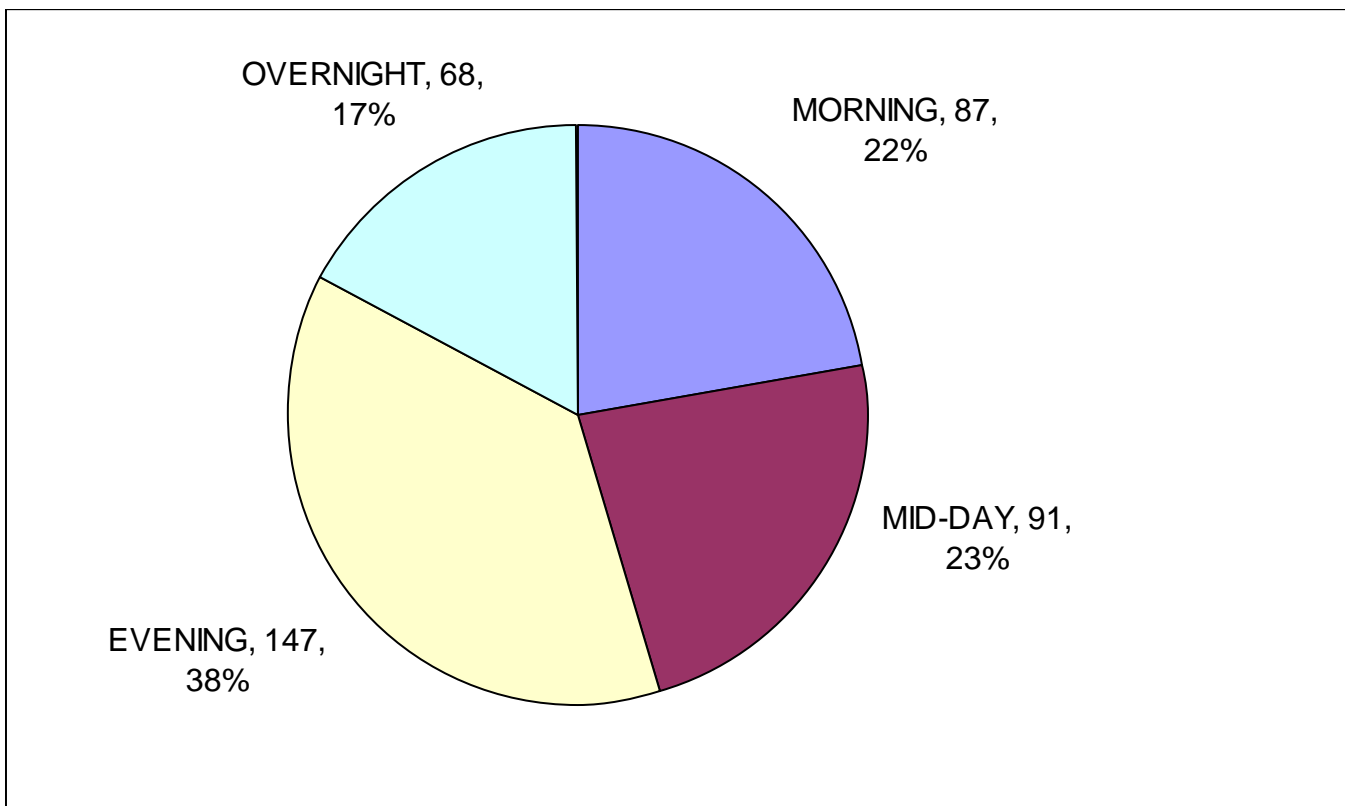
Figure 5 – Incidents by Day
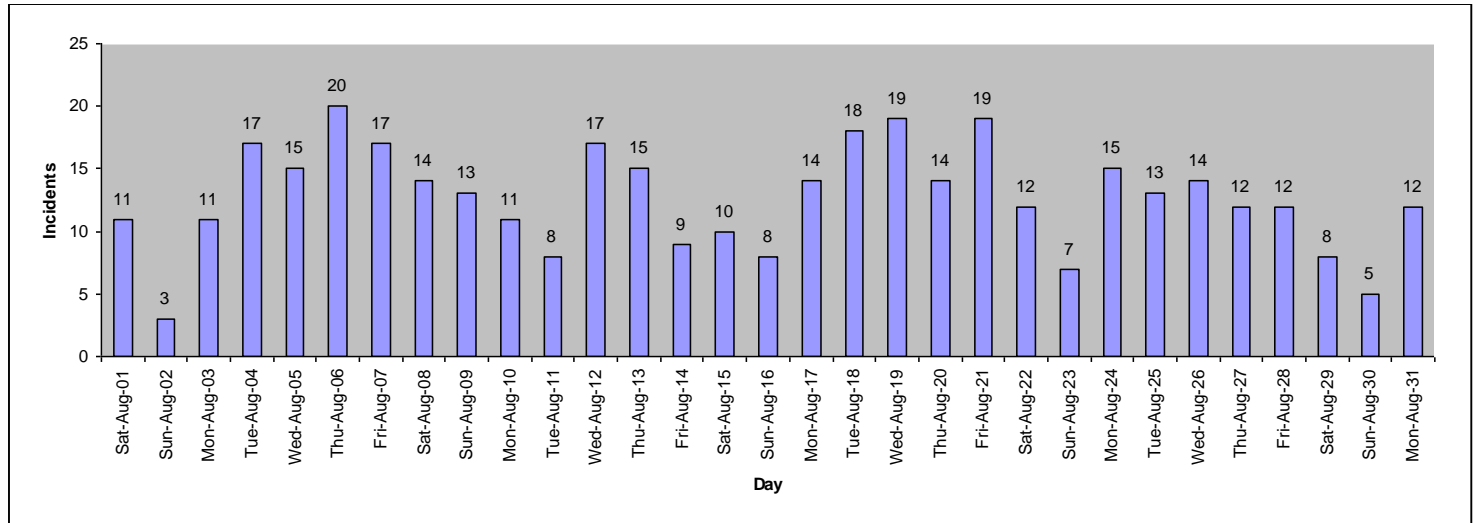
Incidents by Time of Day

Figure 6 shows the breakdown of incidents by time of day. The time periods in the graph are defined as follows.

- *Morning* begins at 5 a.m. and ends at 10 a.m.
- *Mid-day* begins at 10 a.m. and ends at 3 p.m.
- *Evening* begins at 3 p.m. and ends at 9 p.m.
- *Overnight* begins at 9 p.m. and ends at 5 a.m.

**Figure 6 – Incidents by Time of Day**

Incidents by Duration Level

Figure 7 shows the number and percentage of incidents that fall within each of the defined duration levels. (See definitions under "Notes on Operations Summary" on page 2.) Not included in this graph are incidents solely related to the support of roadwork, since these tend to have longer durations that would skew the data. Also not included are incidents related to the posting of Ozone Alert or AMBER Alert and Safety messages, which also tend to have longer durations.

This month's graph shows that there were 6 Level 3 incidents. Level 1 and Level 2 incidents remained relatively unchanged from July. Details of the Level 3 incidents and other unusual incidents/events are provided in the section, "Summary of Major Incidents/Events" on page 15.

Figure 7 – Incidents by Duration Level
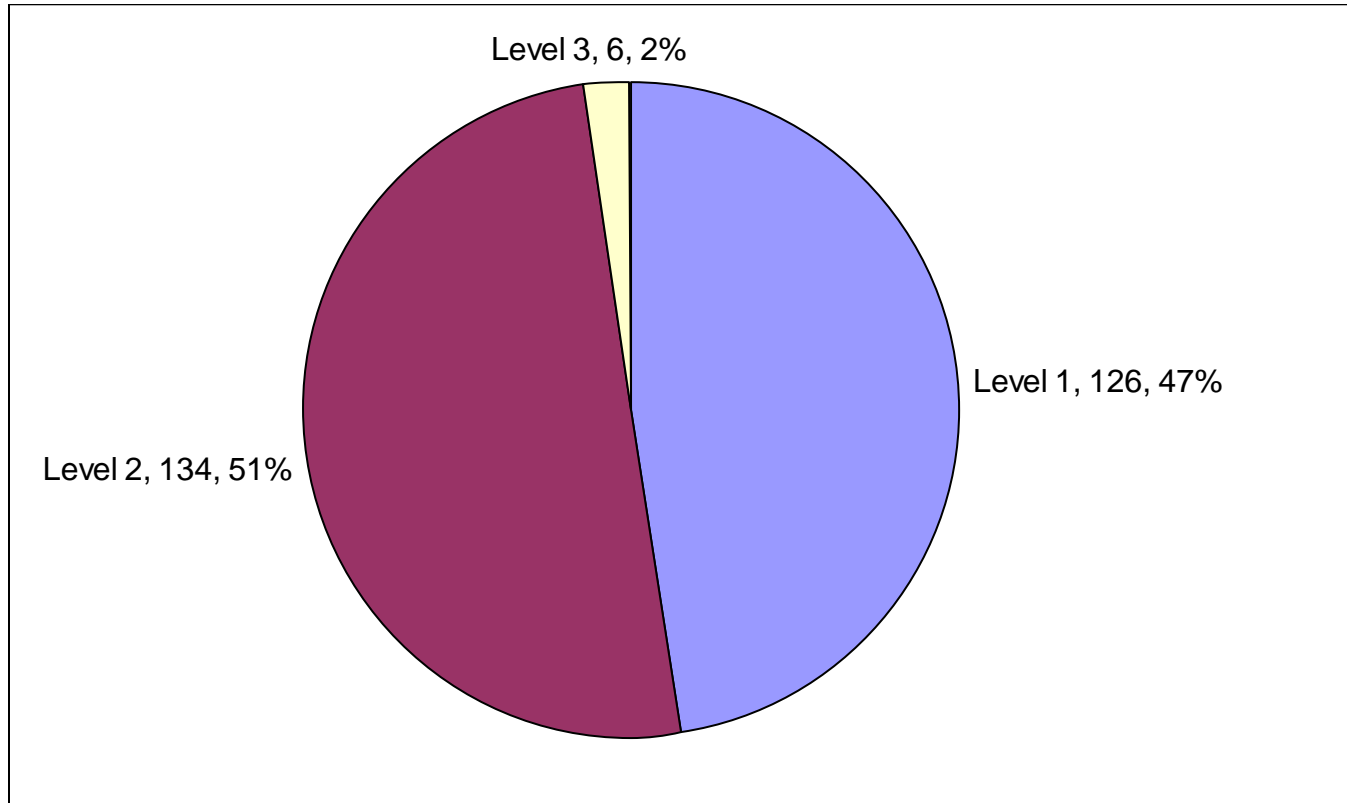
Incident Duration by Level

Figure 8 shows the average duration of incidents by duration level for the past three months. As stated earlier, these levels are defined by the MUTCD and do not include incidents solely related to the support of roadwork, posting of AMBER Alert, Ozone Alert or Safety messages. Because Levels 1 and 2 are defined in a set range, it is expected that these averages will remain consistent somewhere near the middle of their respective ranges. The data in Figure 8 bears this out. Average Level 3 incident durations are typically based on only a few incidents per month. Consequently, the duration can vary widely from month to month, despite the best incident management efforts.

Figure 8 – Incident Duration by Level / 3-Month Summary
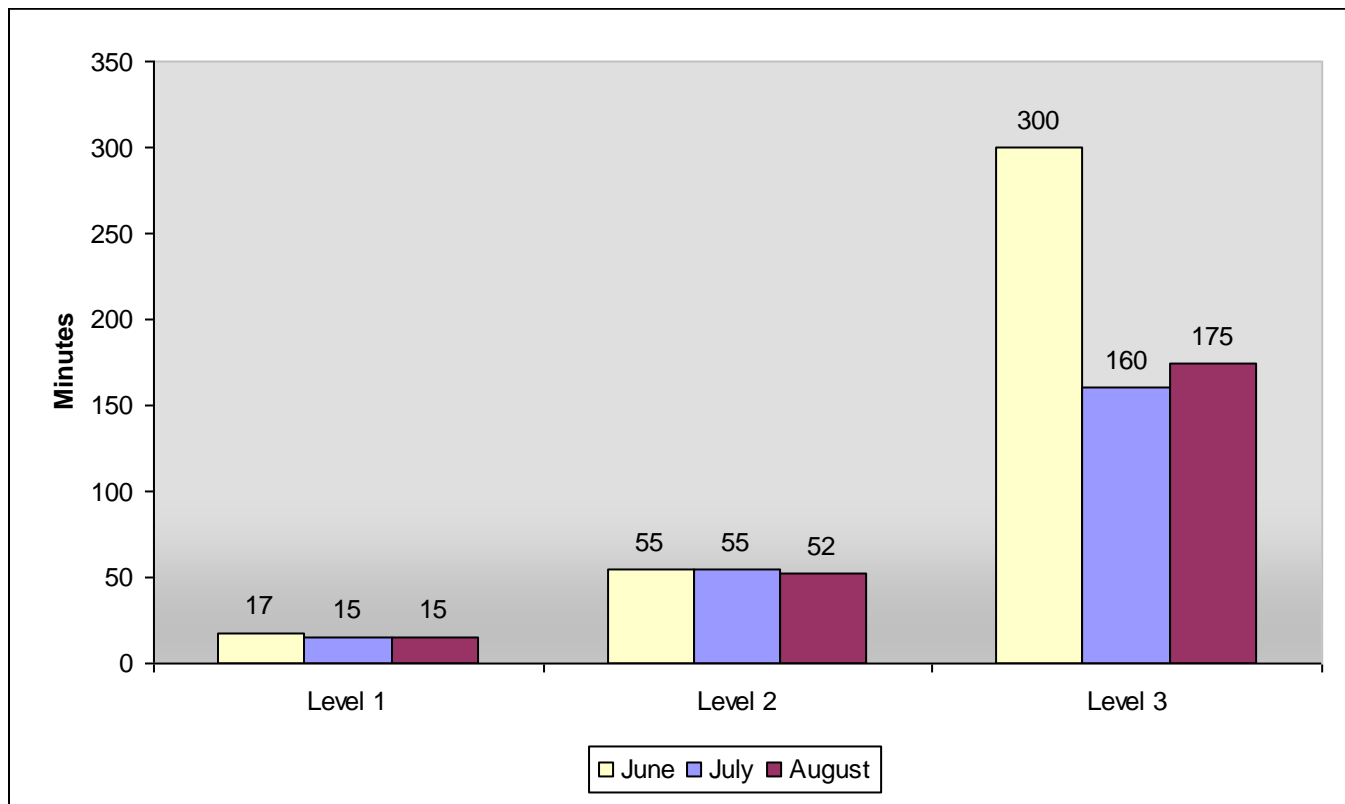
Incident Duration by Incident Type

Figure 9 breaks down the average duration of incidents by incident type. It is clear that roadwork incidents have significantly longer durations than other types of incidents worked, which is why *Roadwork* incidents were omitted from Figure 7 and Figure 8. The average *Roadwork* duration was 567 minutes.

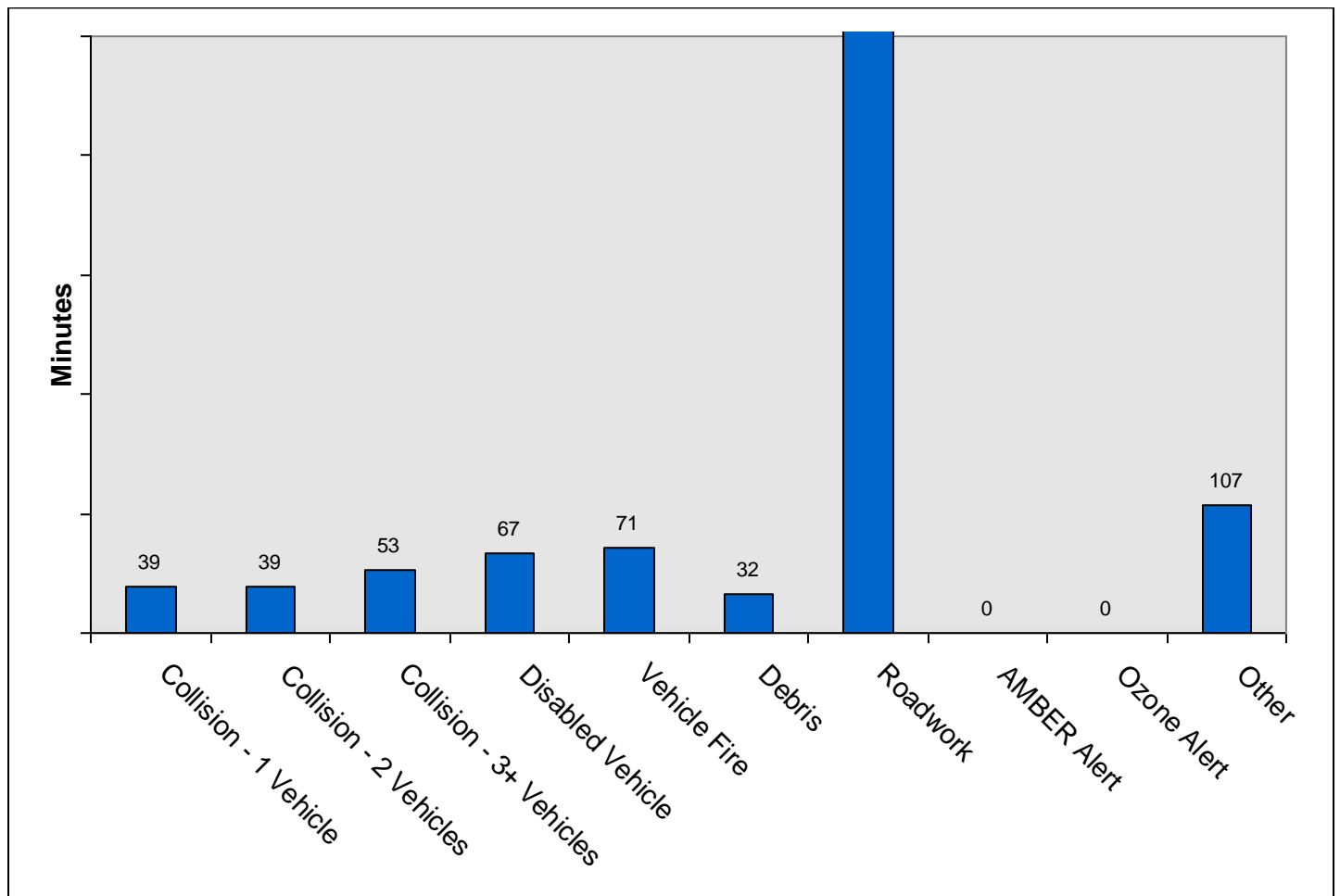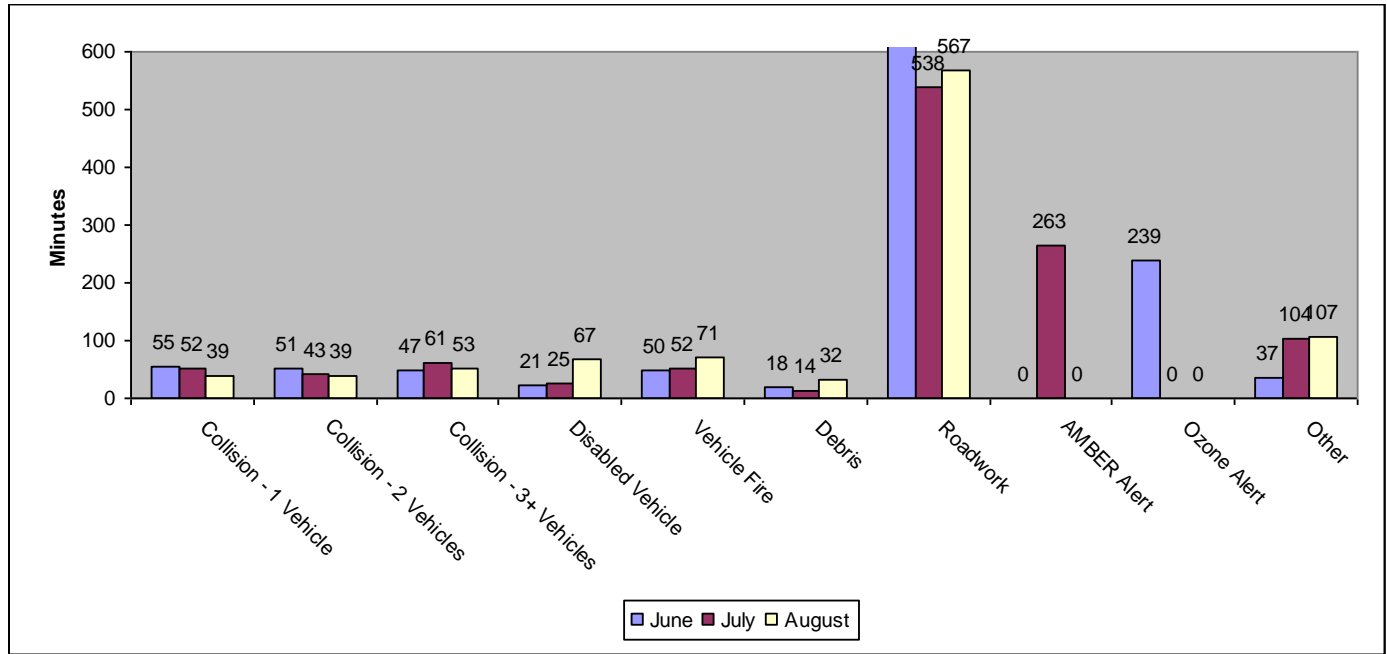**Figure 9 – Incident Duration by Incident Type**

Figure 10 shows trends over the last 3 months. Campaign Messaging has been excluded due to the length of time.
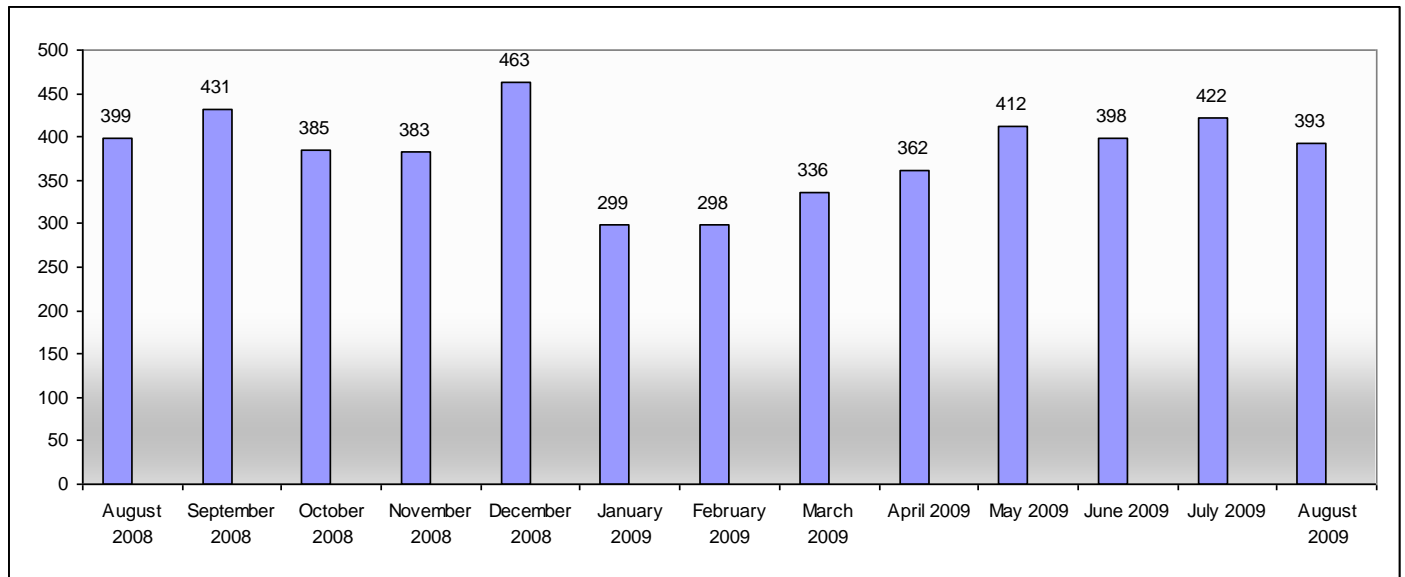
Figure 10 – Incident Duration by Incident Type / 3-Month Summary

13-Month Incident History

Figure 11 shows the number of incidents that TMC operators have managed during the past 13 months.

Figure 11 – Incidents by Month

Summary of Major Incidents/Events

The TMC responded to the following major and other unusual incidents/events during August:

1. August 15, Saturday 12:44 p.m. (Road Closure) A loaded dump truck overturned and caught fire closing the EB lanes of I-470 at View High for one hour. There was one injury and DOT damage reported with the incident. The event lasted from 12:44 p.m. to 3:58 p.m.

2. August 19, Wednesday, 4:47 p.m. (Lane Closure) Three lanes of I-35 SB at 87th Street were closed for approximately two hours and 15 minutes after a pedestrian was struck and killed. The event lasted from 10:17 p.m. to 12:33 a.m.

3. August 25, Tuesday, 12:12 p.m. (Ramp Closure) A tractor-trailer NB on I-470 failed to negotiate the ramp to I-70 EB. The vehicle overturned spilling the load of structural steel beams. The driver had to be extricated. The ramp remained closed for three hours and 30 minutes. The event lasted from 12:12 p.m. to 3:51 p.m.

4. August 28, Friday, 3:49 p.m. (Ramp Closures) A building fire at Truman and Woodland next to I-70 closed the exits in both directions to Paseo Blvd. The event lasted from 3:49 p.m. to 7:04 p.m.

5. August 28, Friday, 11:13 p.m. (Lane Closure) A one vehicle accident resulted in one lane of 71 Hwy SB being closed for two hours. There was one injury reported. The event lasted from 11:13 p.m. to 1:28 a.m.

6. August 28, Friday, 11:14 p.m. (Ramp Closure) A motorcycle did not manage to make the ramp from I-70 EB to I-470 SB. One of the two riders received fatal injuries. The ramp was closed for over two hours. The event lasted from 11:14 p.m. to 2:02 a.m.

Status of Equipment

Tracking the operational status of equipment is important both for system maintenance and for system operation. This tracking assists the maintenance staff in determining repair priorities and allows operators to be aware of the resources at their disposal. Figure 12 shows the monthly operational status of the DMS, the CCTV cameras, and the loop detectors.

Figure 12 – Operational Status by Month

getting you there
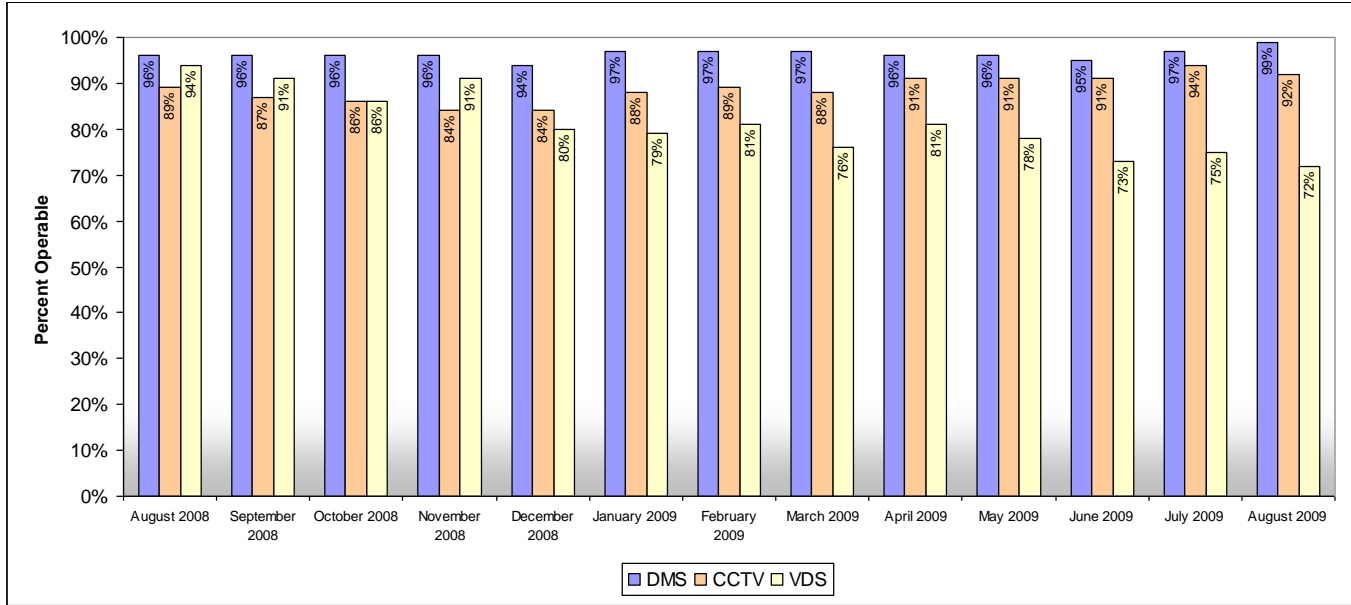
Interagency Coordination

During August, the Scout team participated in the following interagency activities:

August 5 – Rusty James attended the Metro Chiefs Luncheon

August 6 – Rusty James met with the KCKPD Communications Department

August 12 – Rusty James met with the KTA in Wichita, KS

August 13 – Rusty James met with the Johnson County Operations team

August 28 – Rusty James conducted Traffic Incident Management Training at the KCPD Academy

Staff Management Report

During August, Scout operators logged a total of 2643 calls with agency partners assisting in operating the TMC. The total number of calls included 1902 with MoDOT Motorist Assist (MA) staff, 51 with the Kansas City Police Department (KCPD) staff, 62 with the Kansas Highway Patrol (KHP) staff, and 628 with staff from other agencies.

Figure 13 indicates the staff utilization for the past 13 months. The graph represents the percentage of actual hours worked versus hours scheduled for the TMC staff.   Utilization of less than 100% reflects vacation, sick, and training/meeting time used by operators.

Figure 13 – Staff Utilization by Month
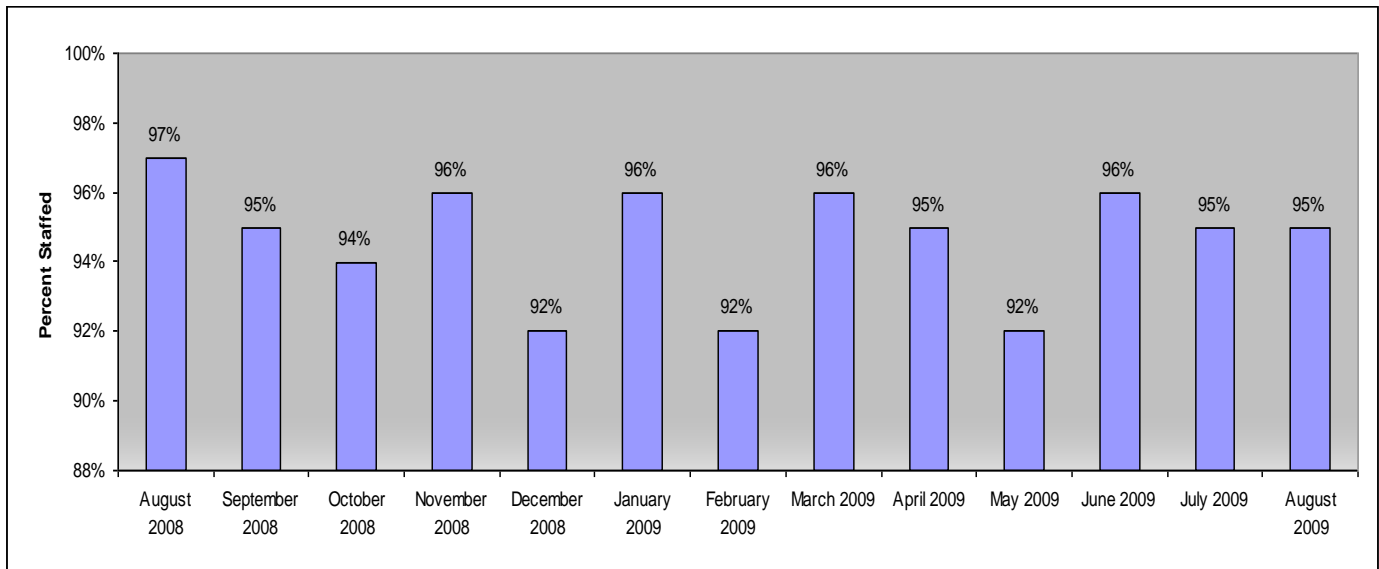
Web Site Utilization Data

The Scout Web Site (www.kcscout.net) received a total of 28,698 visits in August, a 0.66% increase compared to last month. Since its inception in June 2004, the web site has received a total of 15,282,064 visits through August. The average visit duration was about 12 minutes. 5,529 unique visitors utilized the web site, a 17% decrease compared to last month. The average number of visits per visitor was 5.19, a 22% increase. The larger the average number of visits per unique visitor, the more times individual users are coming back to use the site, thus indicating how helpful the site is to these individual users. Web site visits and unique visitors by month are shown in Figure 14 and Figure 15, respectively.
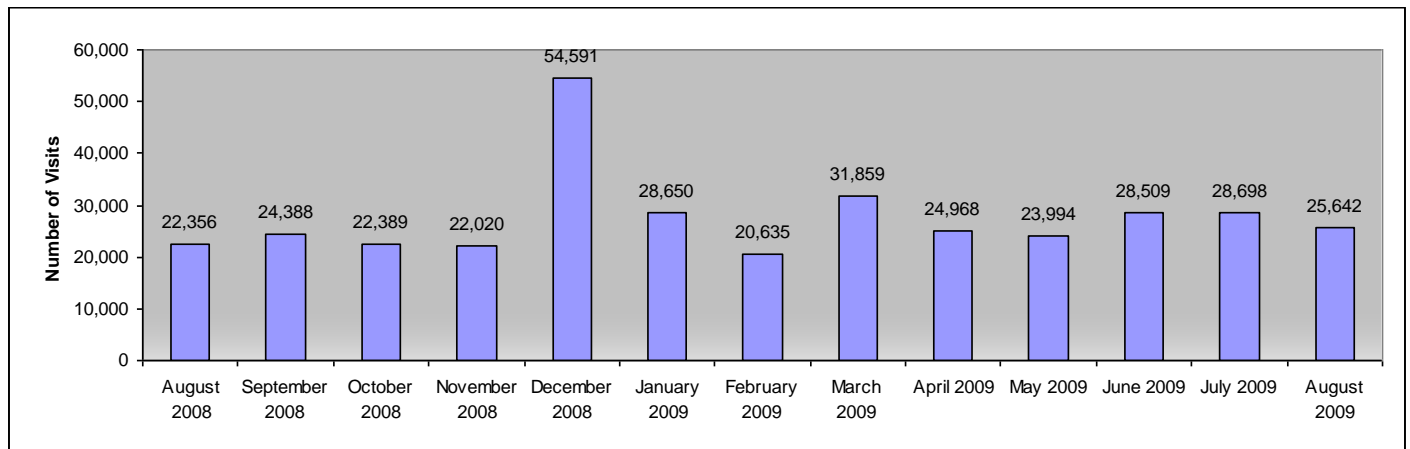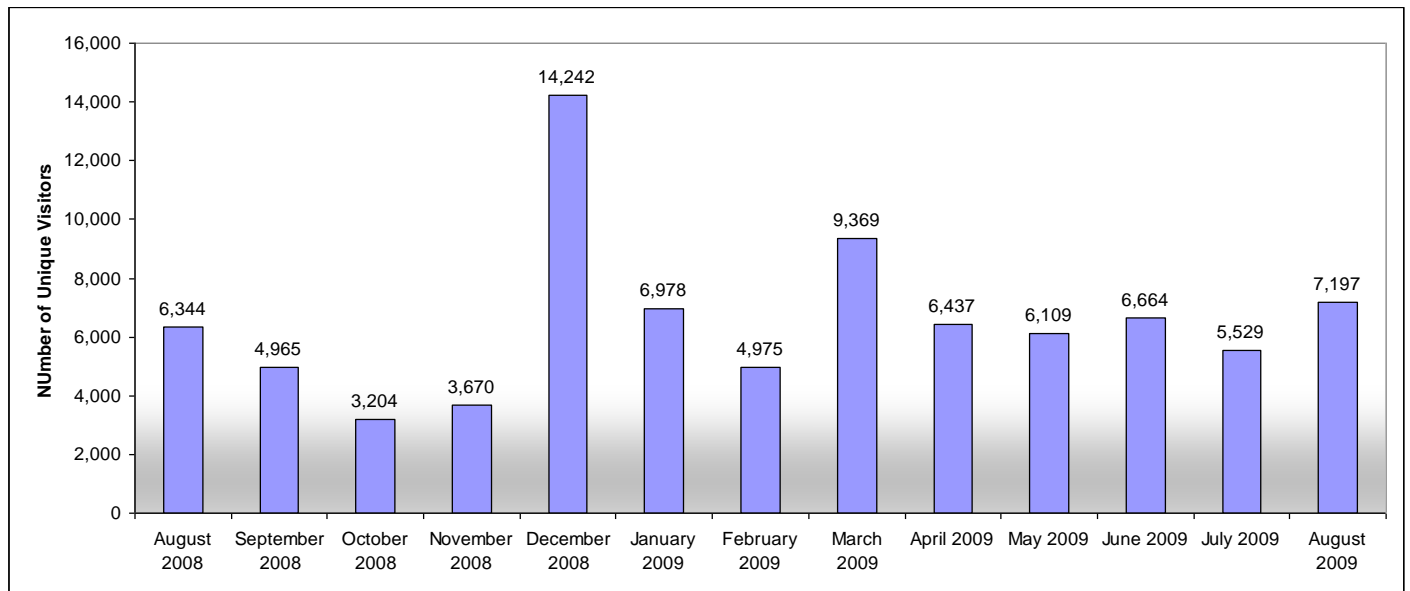
Figure 14 – Web Site Visits by Month

Figure 15 – Web Site Unique Visitors by Month

getting you there

System Hardware/Software and Maintenance Activities/Issues

The following activities/issues regarding Scout system hardware/software and maintenance occurred during August:

1. Mike DeBrot provided a FTC to Delcan for ramp metering software testing.

2. Kenny Lynch developed a list of excess equipment for sale through GovDeals. He then moved that equipment to the storage cage awaiting sale.

3. Gary Covey developed a procedure for the use of the new KC Scout Maintenance database and will provide training on the new procedure September 1st and 2nd.

4. Don Gentry has received the new laptop for Jim Musil. He will configure and install in September.

5. Kenny Lynch has removed the boxes and misc. equipment from the Data Center and stored in the KC Scout Storage area.

6. The Air Handlers for the Data Center failed again. The fan motor and high pressure valve failed. This is the third failure in the last two years. Either a new unit needs to be added or an additional backup needs to be installed.

7. Gary Covey developed a TransSuite Transition Plan. The plan was executed as a validation of the transition plan and a test of the TransSuite system in full production on the 18th of August. TransSuite was run for a period of 24 hours and then the Delcan ATMS was restored.

8. Don Gentry updated the Cisco 15454 software to version 8.0 but the OC48 cards were no longer supported in this version of the ONS. Communication problems started to occur on the network, so Don had to restore the ONS back to version 7.3. Cisco is now on version 8.6 of the ONS software.

9. Mark Sommerhauser and Gary Covey worked up a proposed reduction to the FY 2010 budget at the request of KDOT. The revised budget will be proposed at the September KC Scout Board meeting.

10. Mike DeBrot observed the foundation and lowering device installation for the MoDOT Rural CCTV installations.

11. Gary Covey developed the contract for the new Operational Contract with TransCore. Awaiting the final SOW and cost sheets to complete.

12. Gary Covey developed the first draft of the new Hardware Maintenance RFP.

13. Mark Sommerhouser and Cathy Jones met with Overland Park to discuss the establishment of a flood warning procedure.