Kansas City Scout
Traffic Management Center
Monthly Report

July 2009

Prepared For:

KC Scout Board of Directors

Prepared By:

KC Scout Operations Team

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Cover photo: The Traffic Incident Management Meeting was held at the Overland Park Convention Center July 28. Multiple police, fire, EMS, DOT and tow agencies attended the meeting.

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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 136 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 July 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 **422 incidents**, representing a 6% increase compared to last month.
- 6 were Level 3 incidents with an average duration of 160 minutes (1)
- 144 were Level 2 incidents with an average duration of 55 minutes (1)
- 103 were Level 1 incidents with an average duration of 15 minutes (1)
- 138 were scheduled roadwork (2)
- 9 were within a work zone (2)
- 0 were Ozone Alerts
- 1 was an AMBER Alert
- 23 involved big rigs
- 63 involved injuries (22% decrease compared to last month)
- 2 involved fatalities
- 13 involved DOT property damage
- 3 could be classified as secondary incident
- 10 cited bad weather as a possible contributing factors
- TMC responded to 627 false incident alarms.
- The TMC managed 65 I-70 corridor incidents and 3 I-29 corridor incidents

Dynamic Message Signs (DMS)

- DMS were activated 859 times (4)
- 1,656 DMS messages were displayed (4)

ATIS (Web Site) Messages

- 807 total messages were placed for incidents, including 198 for roadwork (5)

Highway Advisory Radio (HAR)

- Activated 0 times this month (6)

Equipment Operability

- On average, 94% of the CCTV cameras were completely operational.

- On average, 97% of the DMS were completely operational.
- On average, 75% of the Detector Stations were completely operational, with 13% reporting some bad detectors, 10% reporting all bad detectors, and 2% not responding. (7)

Tours / Media/Events

Tours

- 7/1-Tour of Scout by KDOT, 12 people attended this tour.
- 7/8-There were approximately 20 Summer Transportation Institute students who toured the Scout TMC.
- 7/15 Scout was toured by 4 maintenance personnel from Gateway Guide.

Public Appearances

- 7/20-Jason Sims, Gina Myles and Cathy Jones made a public appearance at the Ramp Metering Mobile meeting held at 7418 W. 119th Street, Shawnee Mission, Kansas
- 7/31-Gina Myles, Nancy Powell, Resha Sims, Scott Browning, Mark Sommerhauser, Jackie Davis, Lauryn Cox made a public appearance at the KC T-Bones game held at Community America Ballpark in KCK.

Media appearances

- Rusty James made a media appearance July 24, 2009 in response to Scout's One Accord Agreement Signing and KCPD award to Motorists Assist and Incident Management programs.

Additional Information

- TMC operators logged 2,643 telephone calls with partner agencies. (8)
- Customer Service Representatives logged 4,348 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.

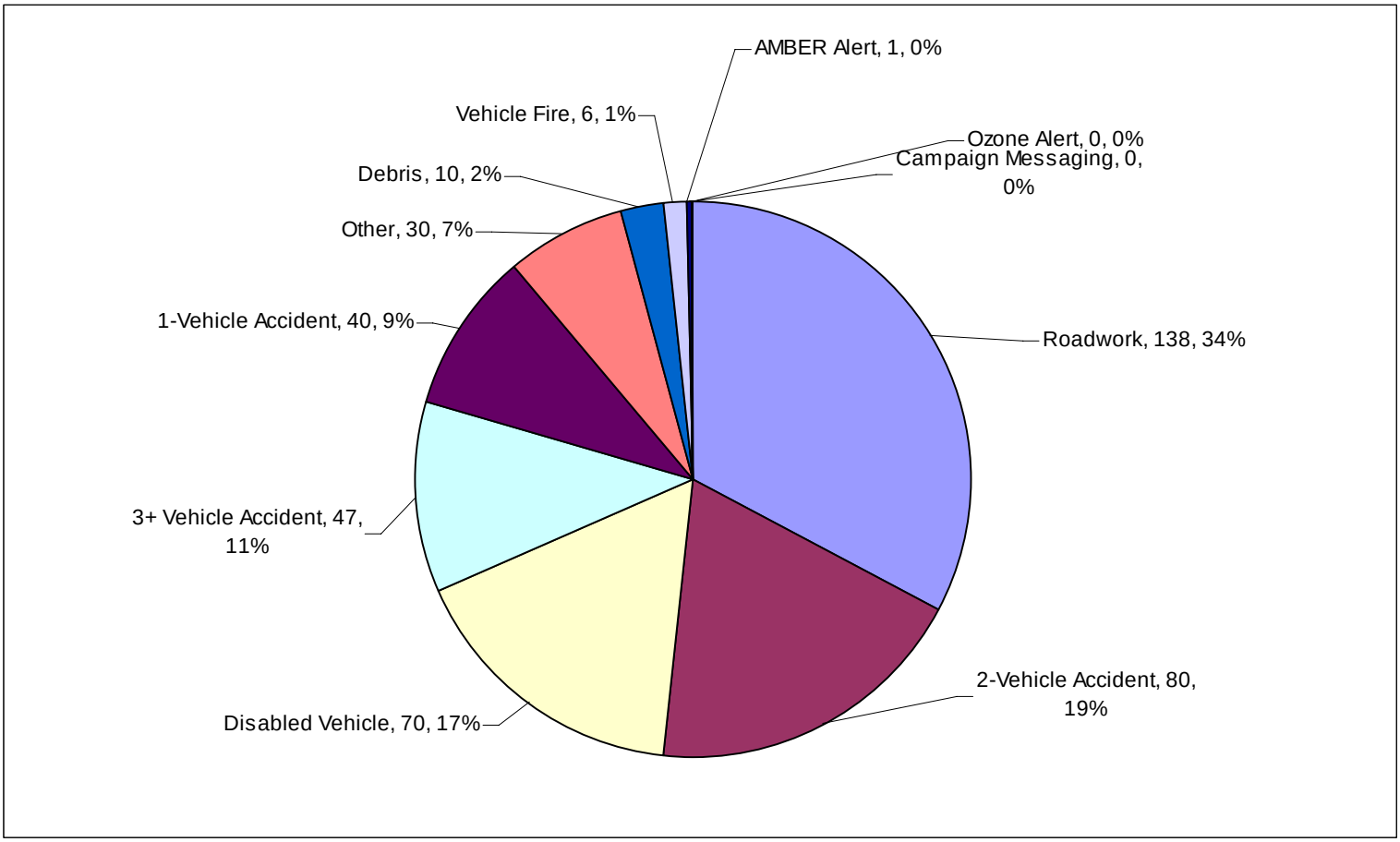
3. The ATMS (Advanced Transportation Management System) software utilized by the TMC has an automatic incident detection (AID) feature that uses VDS data to automatically sense that an incident has occurred and places an icon on the ATMS map to inform the operator of the incident. If the VDS have not been fully calibrated / tuned, the ATMS falsely senses that an incident has occurred. When an incident icon appears on the map, the operator confirms or denies an incident has occurred by viewing CCTV cameras in the immediate area. The operator then responds accordingly. The numbers of actual and false incidents can be determined through daily review of the incident reports.

4. 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.
5. 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.
6. 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.
7. 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).
8. 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 to.
9. 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 July, the TMC responded to 422 incidents in the Kansas City area. This number represents an increase of 6% compared to last month. All incidents are shown by incident type in Figure 1. Roadwork was the most frequent incident with 138, representing 34% of the total incidents managed. 2-Vehicle Accident was the second most frequent with 80 (19%). Disabled Vehicle (70, 17%) and 3+ Vehicle Accident (47, 11%) were the next highest incidents. These 4 incident types accounted for 79% of the total incidents managed by the TMC. The three accident categories accounted for (167, 40%) 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



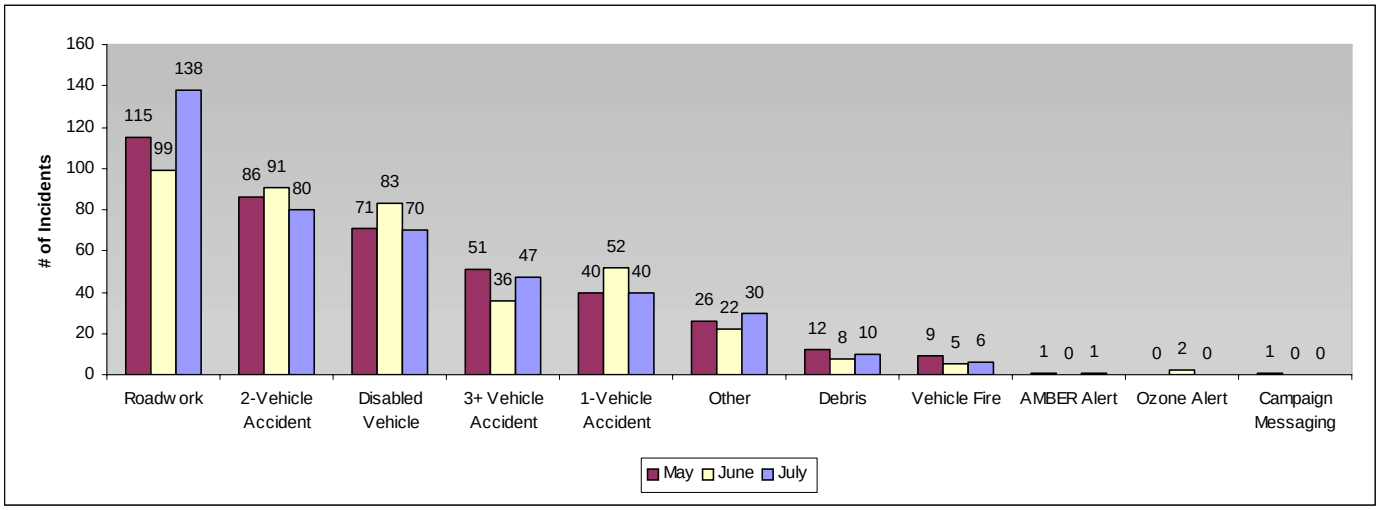
Incident Statistics by Incident Type July 2009

Additional Incident Details:

- 9 were within a work zone
- 23 involved big rigs
- 63 involved injuries
- 2 involved fatalities
- 13 involved DOT property damage
- 3 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

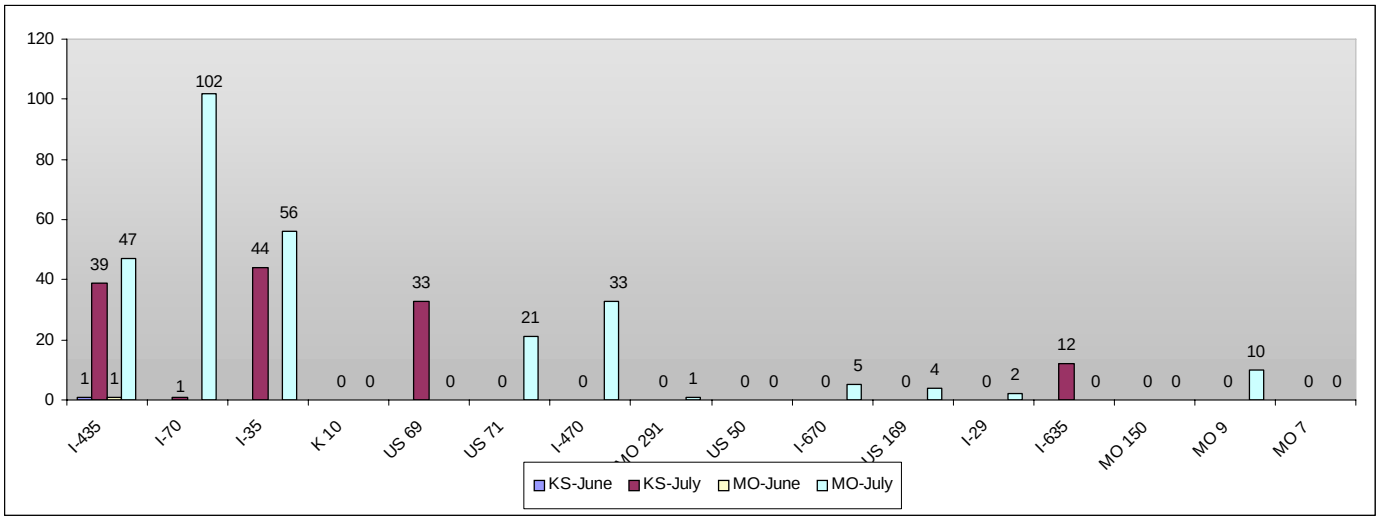


Additional Statistics

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.

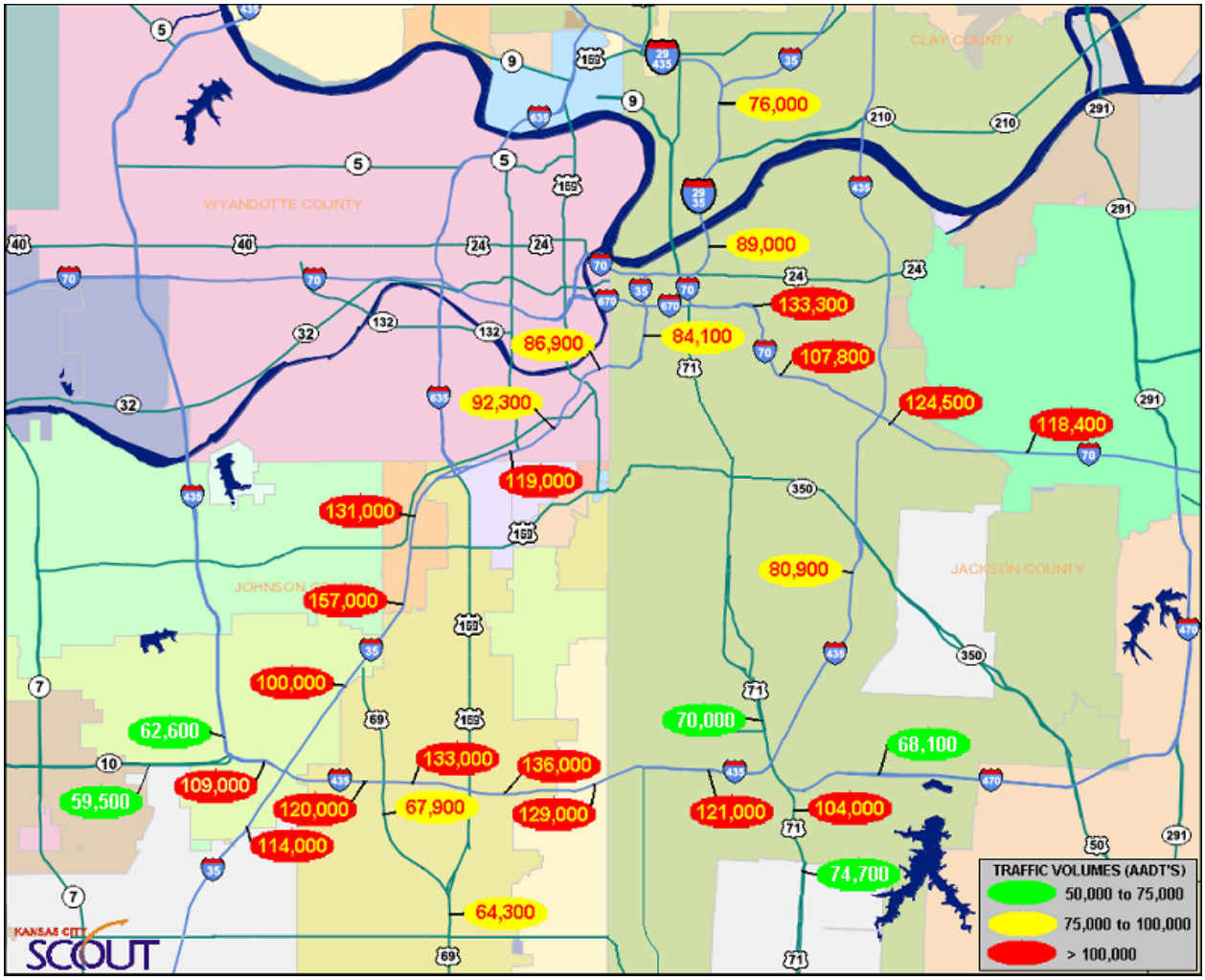
Figure 3 – Incidents by Facility



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.

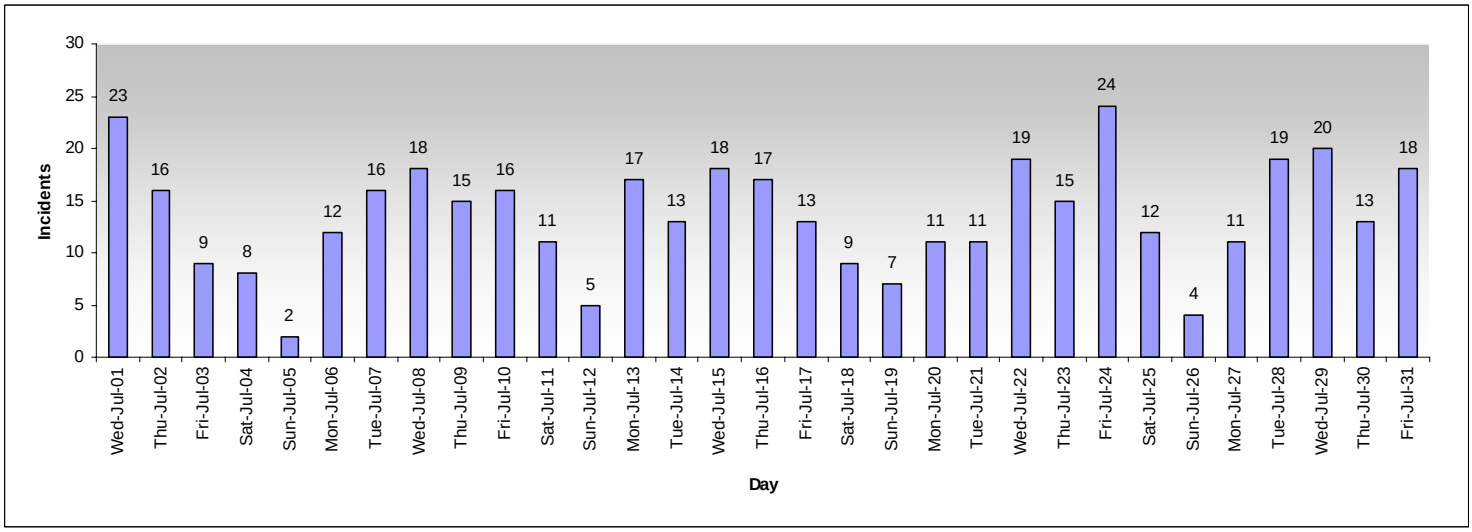
Figure 4 – AADT Map



Incidents by Day

Figure 5 shows the number of incidents occurring on each day of July. The number of incidents per day varies widely, with the average being approximately 14 incidents per day. Weekdays generally incur more frequent incidents, averaging 18.2 incidents/day, compared to 7.3 on weekends. If only non-roadwork incidents are considered, the rates for weekdays and weekends are 11.9 and 5.8 incidents/day, respectively.

Figure 5 – Incidents by Day

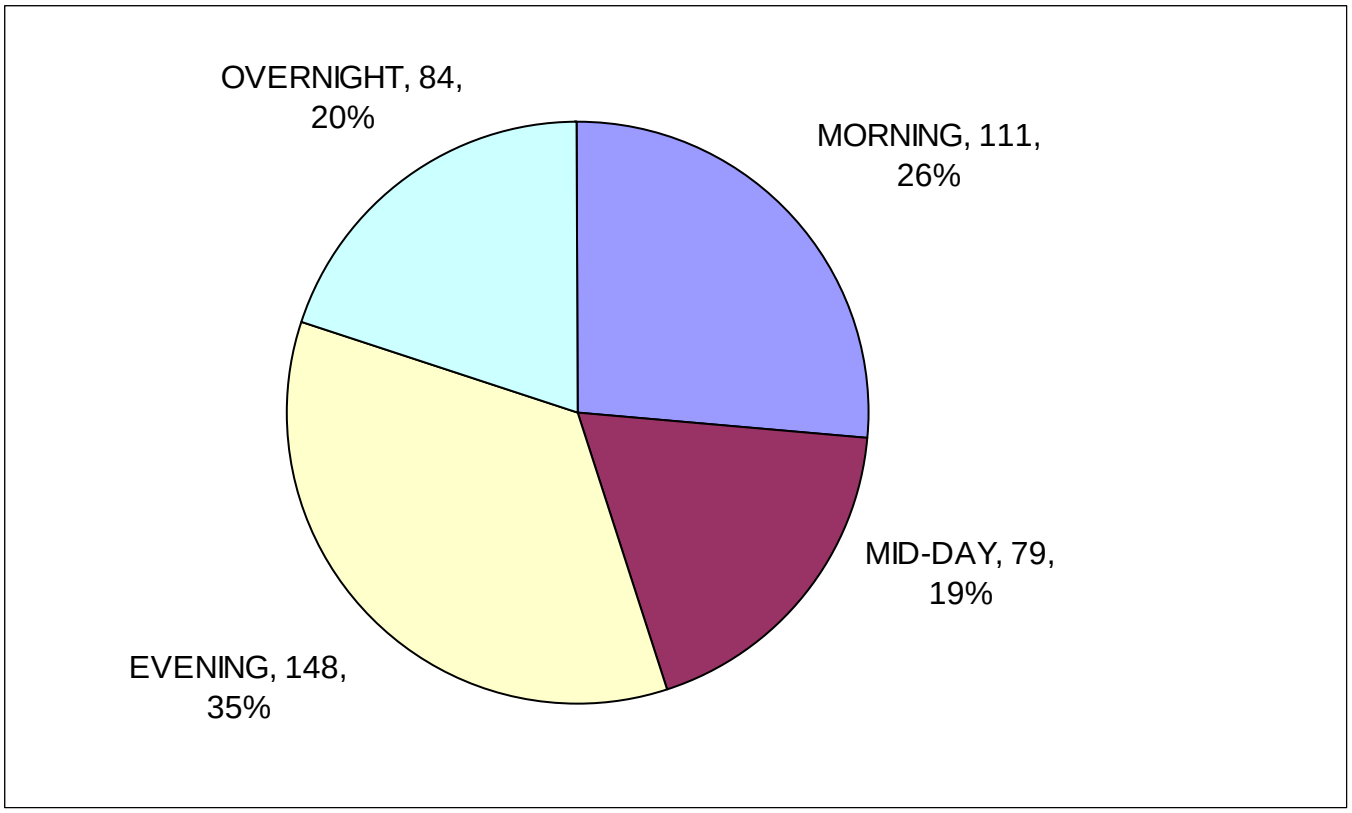


Incidents by Time of Day

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

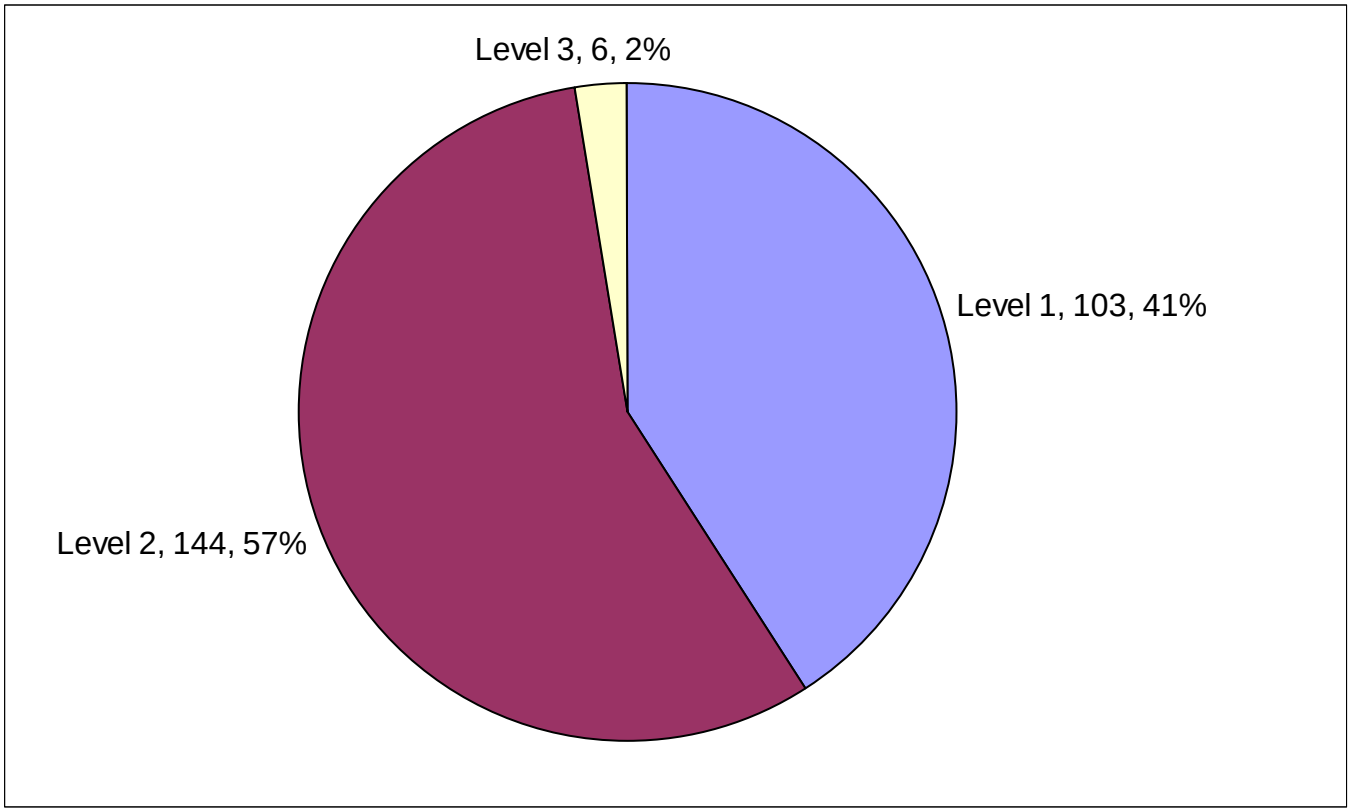


Incidents by Duration Level

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 December. Details of the Level 3 incidents and other unusual incidents/events are provided in the section, "Summary of Major Incidents/Events" on page 15.

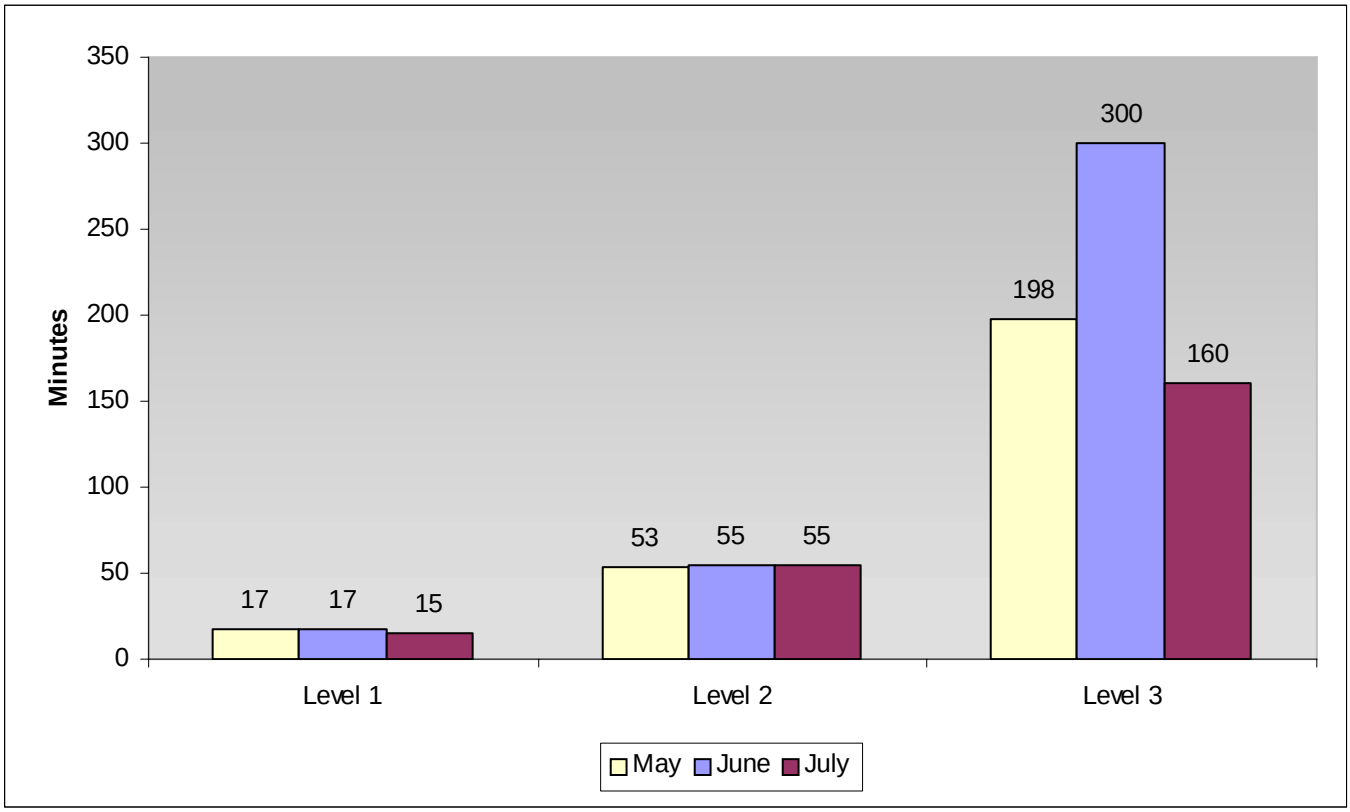
Figure 7 – Incidents by Duration Level



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 538 minutes.

Figure 9 – Incident Duration by Incident Type

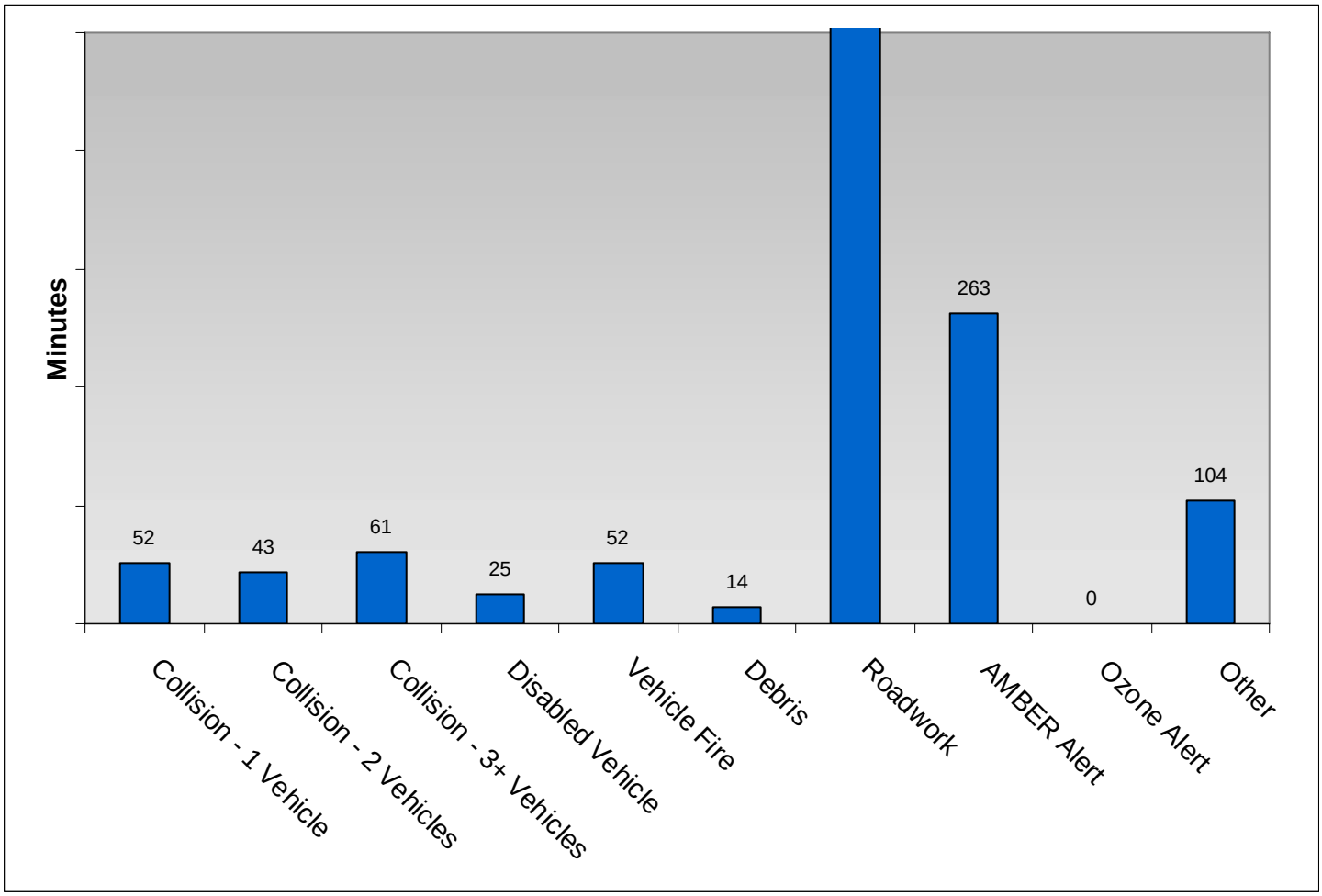
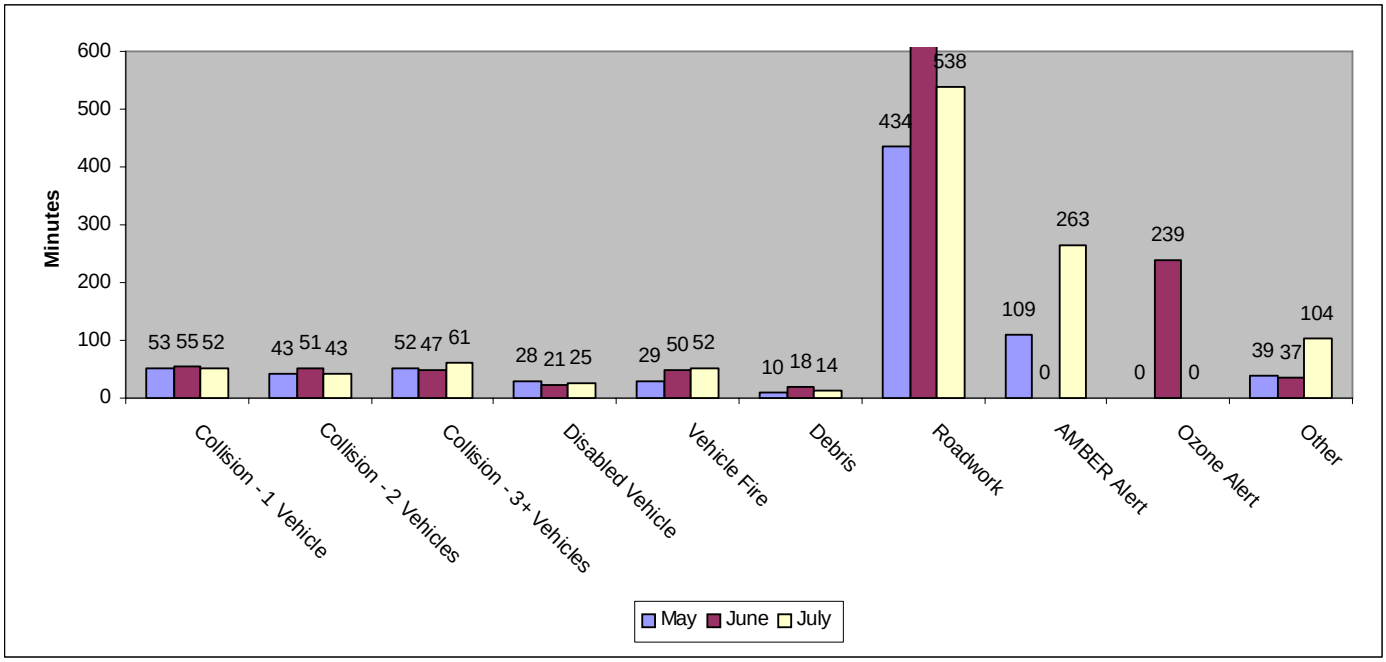


Figure 10 shows trends over the last 3 months. Campaign Messaging has been excluded due to the length of time.

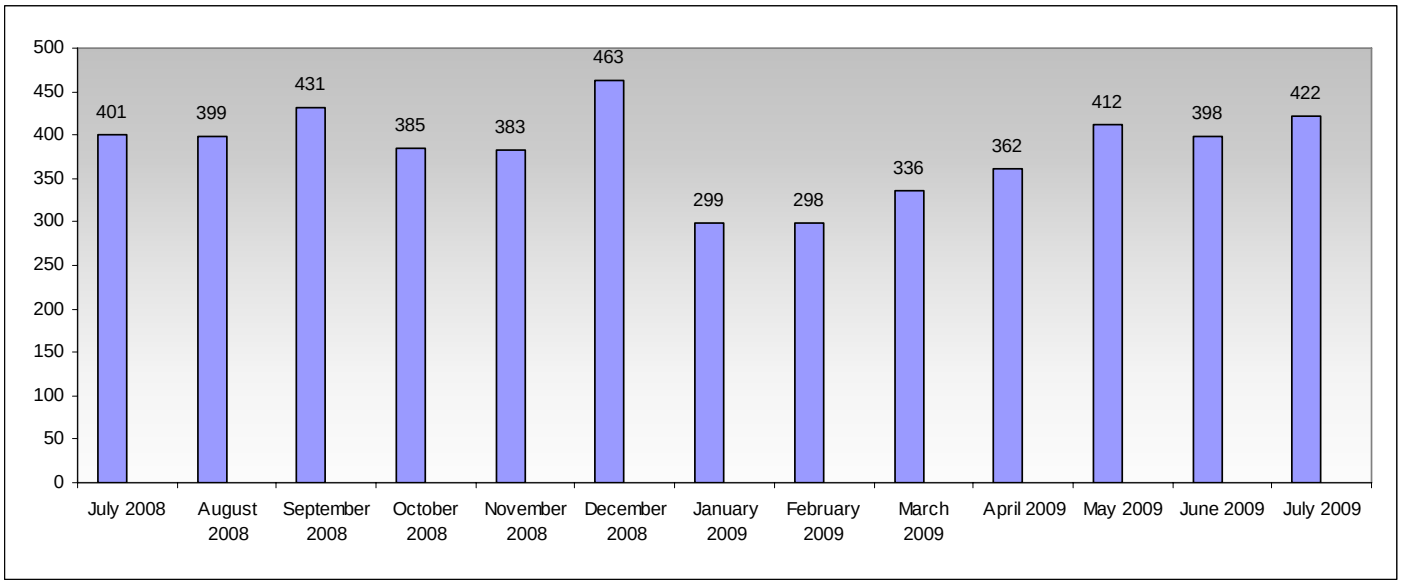
Figure 10 – Incident Duration by Incident Type / 3-Month Summary



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 July:

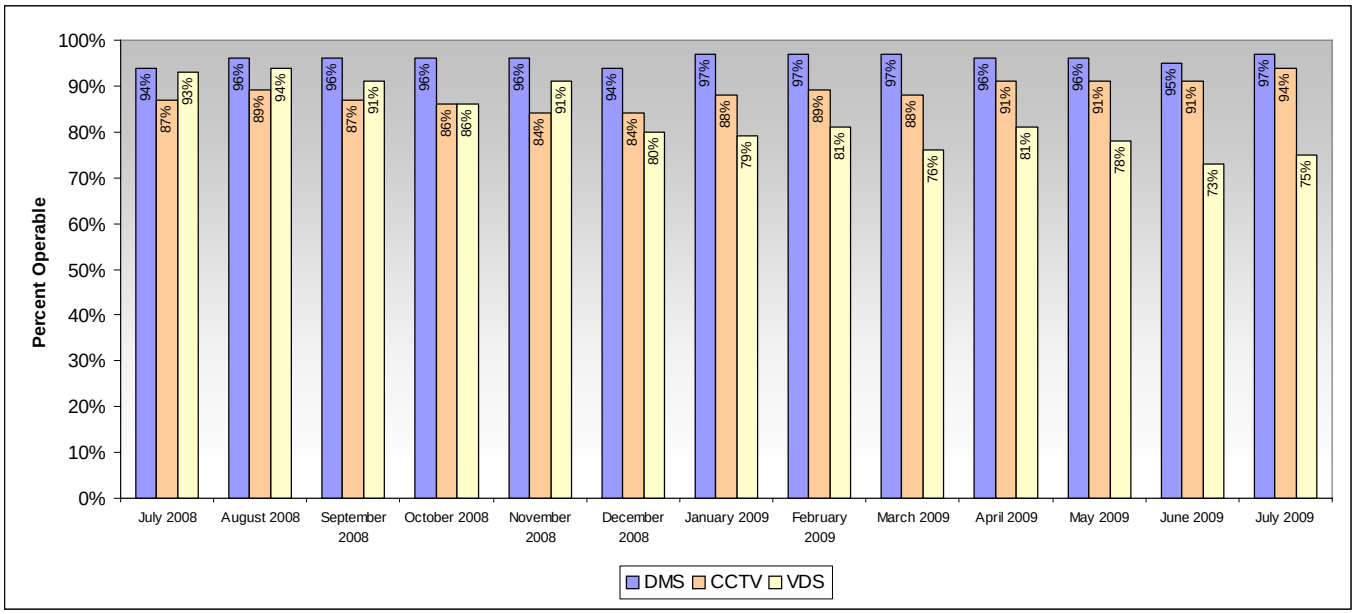
1. July 2, Thursday 7:11 a.m..(Lane Closure) A four car accident resulted in minor injuries and one lane of I-435 SB at Gregory being closed for two hours. The event lasted from 7:11 a.m. to 9:08 a.m.
2. July 6, Monday, 3:15 a.m. (Road Closure) A one vehicle collision resulted in both injuries and a fatality on US 71 Highway SB at 75th St. The event lasted from 3:15 a.m. to 5:17 a.m.
3. July 11, Saturday, 8:55 a.m. (Road Closure) An EB concrete truck overturned through the center barrier wall closing all lanes of I-470 WB at Raytown Rd. In addition to the total WB closure one or two lanes of EB I-470 were closed from 9:09 a.m. to 11:16 a.m. WB was opened at 11:49 a.m. There was one injury. The event lasted from 8:55 a.m. to 11:49 a.m.
4. July 18, Saturday, 12:26 a.m. (Road Closure, off system) Kansas City Police requested that US 71 Highway be closed for a homicide that occurred near the highway. The roadway remained closed until 2:49 a.m. The event lasted from 12:26 a.m to 2:49 a.m.
5. July 25, Saturday, 4:53 a.m. (Ramp Closure) A tractor-trailer involved in a one vehicle collision resulted in one injury, the vehicle catching fire, DOT damage and oil/fuel spill. The accident occurred on the ramp from I-435 NB to Stadium Dr. The event lasted from 4:53 a.m. to 8:47 a.m.
6. July 26, Sunday, 8:01 p.m. (Road Closure) A vehicle struck a Kansas City Police car responding to an emergency call on US 71 Highway at Gregory Blvd. Both officers received injuries and required extrication. The event lasted from 8:01 p.m. to 10:26 p.m.
7. July 27, Monday, 11:43 p.m. (Amber Alert) An Amber Alert was issued out of SE Missouri to locate two children taken by their father. The children were recovered successfully. The event lasted from 11:43 p.m. to 4:06 a.m.

Summary of Major Incidents/Events July 2009

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



Interagency Coordination

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

July 8 – Rusty James attended the Metro Chiefs Luncheon

July 21- Rusty James attended the Tow Association meeting

July 23 – Several Scout members attended the Traffic Incident Management Meeting held at the Overland Park Convention Center

July 24 – Rusty James and several members of the Missouri Motorist Assist attended an award presentation at KCPD.

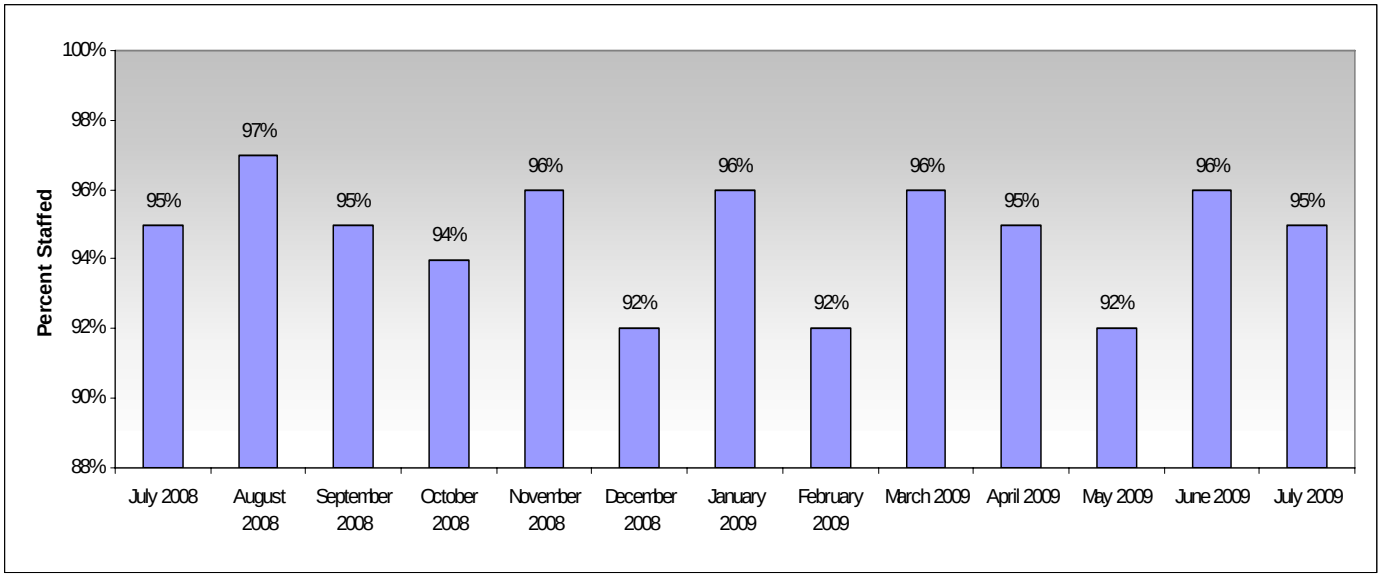
July 28 – Rusty James attended the Kansas City Fire Chiefs meeting and luncheon

Staff Management Report

During July, 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 July, 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 July. 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

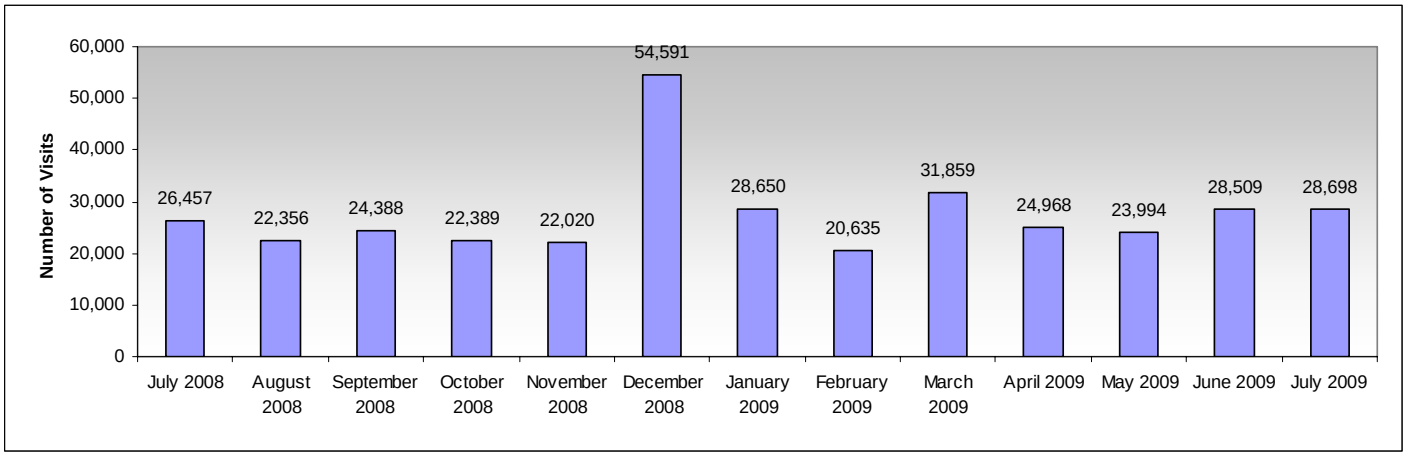
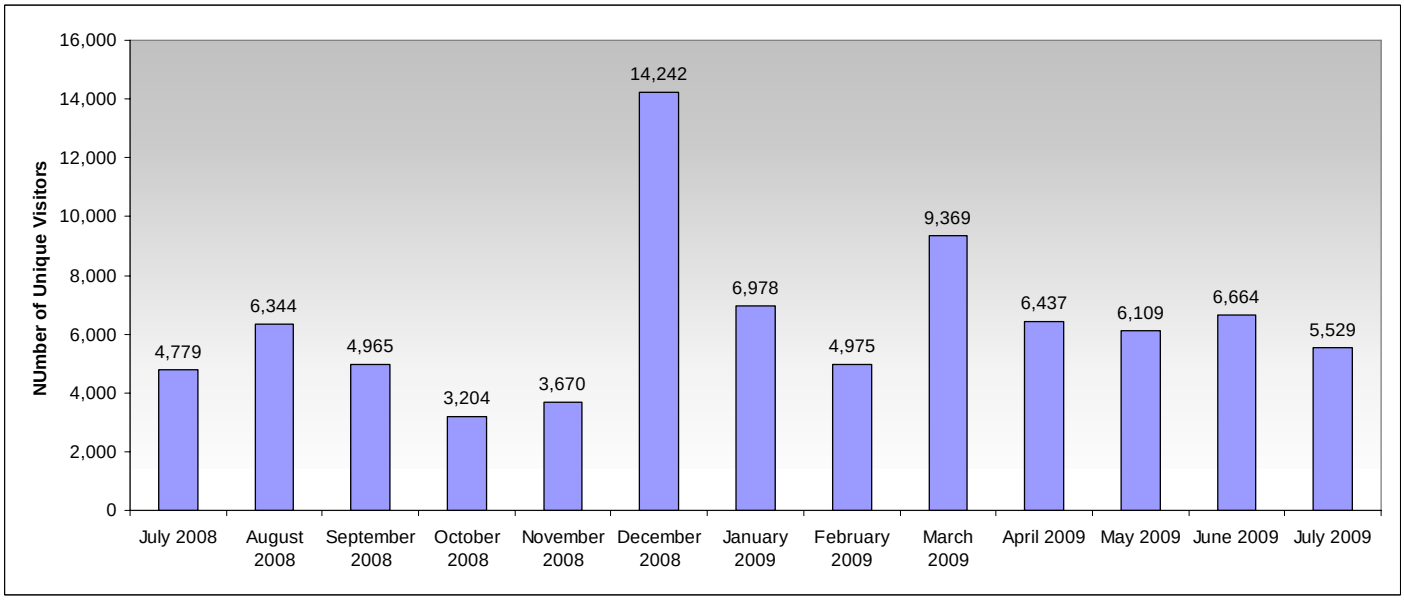


Figure 15 – Web Site Unique Visitors by Month



System Hardware/Software and Maintenance Activities/Issues

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

1. Don Gentry completed the installation of the new workstations and printers for Missouri Motorist Assist.
2. Gary Covey and Don Gentry attended a week of Crystal Reports training.
3. Don Gentry installed and configured a test oracle system to support TransSuite testing of Web Alerts.
4. Gary Covey executed the TransSuite System Acceptance Test.
5. Mike DeBrot and Gary Covey updated the FTC Software for support of new and old FTCs.
6. Jim Musil worked with Dave Shackelford to backup to tape the TransSuite backup files.
7. Cathy Jones reviewed plans and quantities for the US-69 and I-635 North projects.
8. The I-635 North Construction Project was let by KDOT to Capital Electric.
9. KDOT let the US-69 Construction Project. CLS has the ITS work for this project.
10. The I-35/I-29 ITS Expansion and the MoDOT Ramp Metering Construction Projects were let to Leath and Sons.
11. The KDOT Ramp Metering Construction Projects were let to K&W.