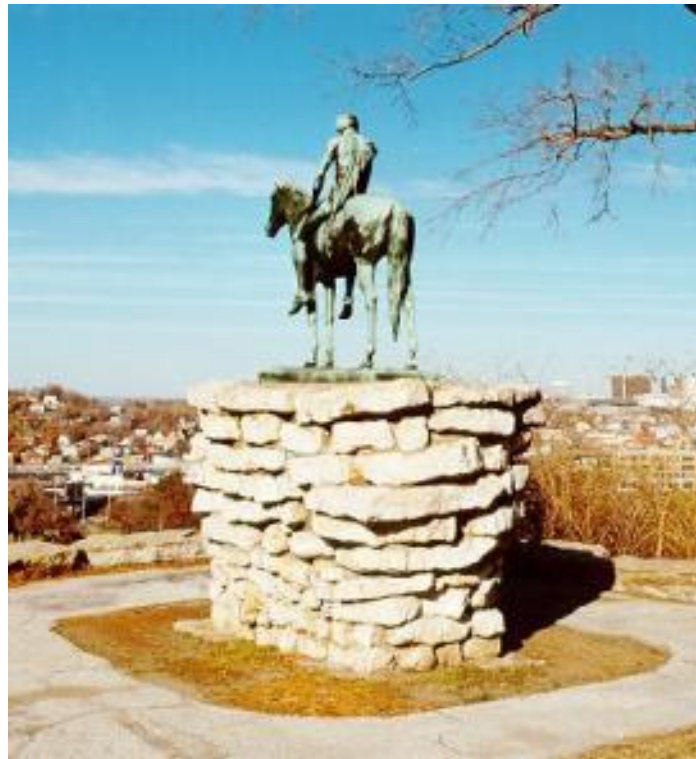


Kansas City Scout Traffic Management Center Monthly Report

October 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 October 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 **710 incidents**, representing a 67% increase compared to last month.
- 10 were Level 3 incidents with an average duration of 182 minutes (1)
- 207 were Level 2 incidents with an average duration of 52 minutes (1)
- 362 were Level 1 incidents with an average duration of 14 minutes (1)
- 106 were scheduled roadwork (2)
- 11 were within a work zone (2)
- 0 were Ozone Alerts
- 2 were an AMBER Alert
- 24 involved big rigs
- 51 involved injuries (18% decrease compared to last month)
- 1 involved fatality
- 13 involved DOT property damage
- 3 could be classified as secondary incident
- 69 cited bad weather as a possible contributing factor
- The TMC managed the following corridor events: 46 I-70, 2 I-29, and 1 I-35
- Dynamic Message Signs (DMS) were activated 960 times (3)
- 1,662 DMS messages were displayed (3)

ATIS (Web Site) Messages

- 2,855 total messages were placed for incidents, including 531 for roadwork (4)

Highway Advisory Radio (HAR)

- Activated 0 times this month (5)

Equipment Operability

- On average, 99% of the CCTV cameras were completely operational.
- On average, 99% of the DMS were completely operational.
- On average, 80% of the Detector Stations were completely operational, with 4% reporting some bad detectors, 10% reporting all bad detectors, and 6% not responding. (6)

Tours / Media/Events

Tours

- **10/08**-2 clients of the External Civil Rights Community Connections office toured Scout. The tour was facilitated by Gina Myles.
- **10/13**-Approximately 28 students from KU's School of Engineering toured the Scout TMC that was facilitated by Jason Sims.
- **10/30** Scout was toured by new MODOT Commissioner Miller. The tour was facilitated by Mark Sommerhauser.

Public Appearances

- **10/05-10/07** Gina Myles, Jeremy Ball, Jason Sims made a public appearance at the IEEE ITS Conference held in St. Louis, MO.
- **10/13** Jeremy Ball, Jason Sims and Nancy Powell made a public appearance at the Ramp Metering Public meeting held at Ruskin High School in Kansas City, MO.

Media appearances

- There were no media appearances this month.

Additional Information

- TMC operators logged 503 telephone calls with partner agencies. (7)
- TMC operators dispatched 1,715 Missouri Motorist Assist Calls. (8)
- Customer Service Representatives logged 3,491 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

Introduction

October 2009

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 for which MoDOT Motorist Assist units were dispatched.
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.
- 9.

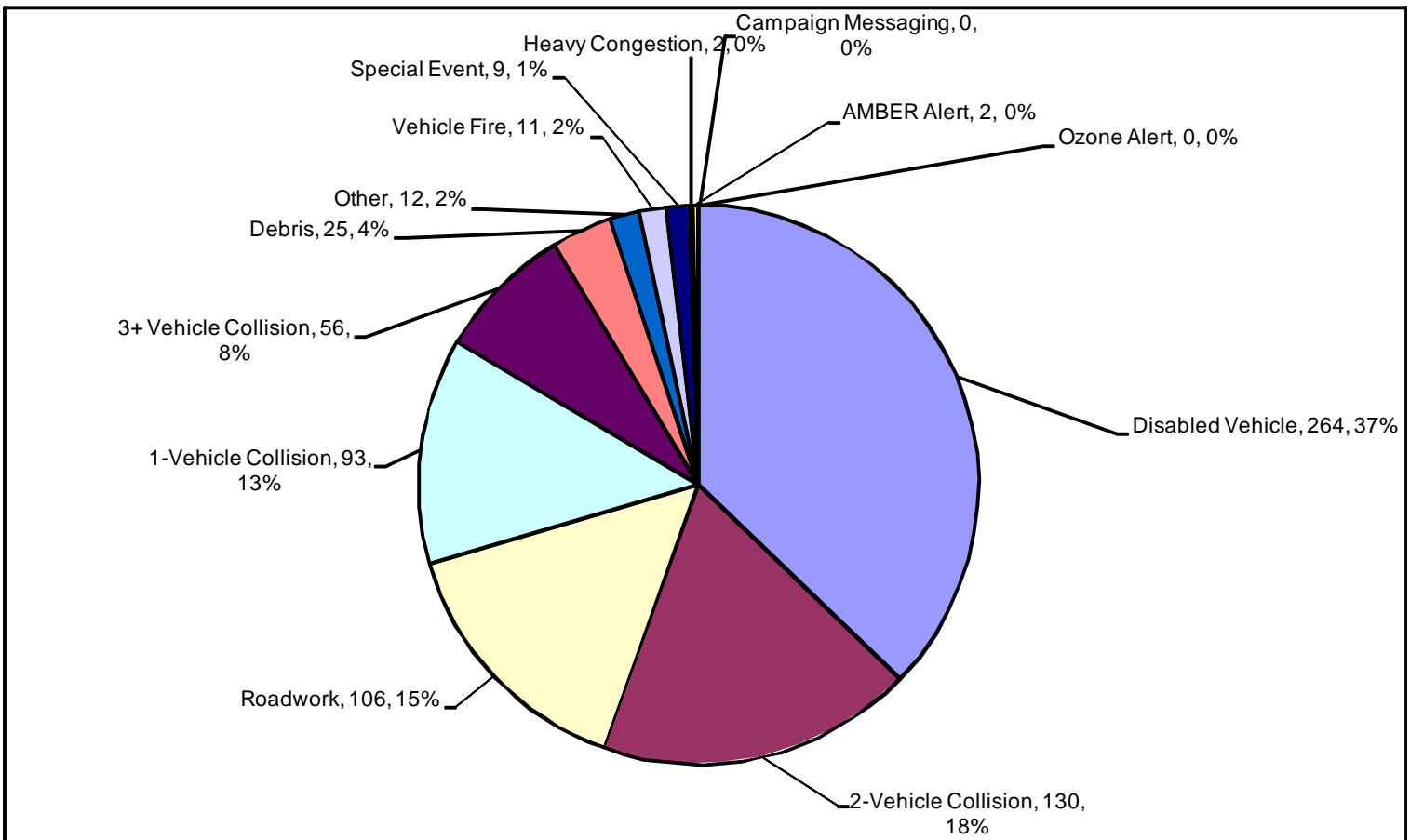
Incident Statistics by Incident Type
October 2009

Incident Statistics by Incident Type

In October, the TMC responded to 710 incidents in the Kansas City area. This number represents an increase of 67% compared to last month. All incidents are shown by incident type in Figure 1. Disabled Vehicle was the most frequent incident with 264, representing 37% of the total incidents managed. 2-Vehicle Collision was the second most frequent with 130 (18%). Roadwork (106, 15%) and 1-Vehicle Collision (93, 13%) were the next highest incidents. These 4 incident types accounted for 84% of the total incidents managed by the TMC. The three accident categories accounted for (248, 35%) of the total incidents managed.

As of September 1, KC Scout converted to a new software and data management system. The new system allows Scout to send Webalerts automatically every time an incident is created. Scout began creating incidents for Disabled Vehicles lasting over 5 minutes with police and/or Motorist Assist response. This increase also accounts for the overall 67% increase for the month.

Figure 1 – Incidents by Type



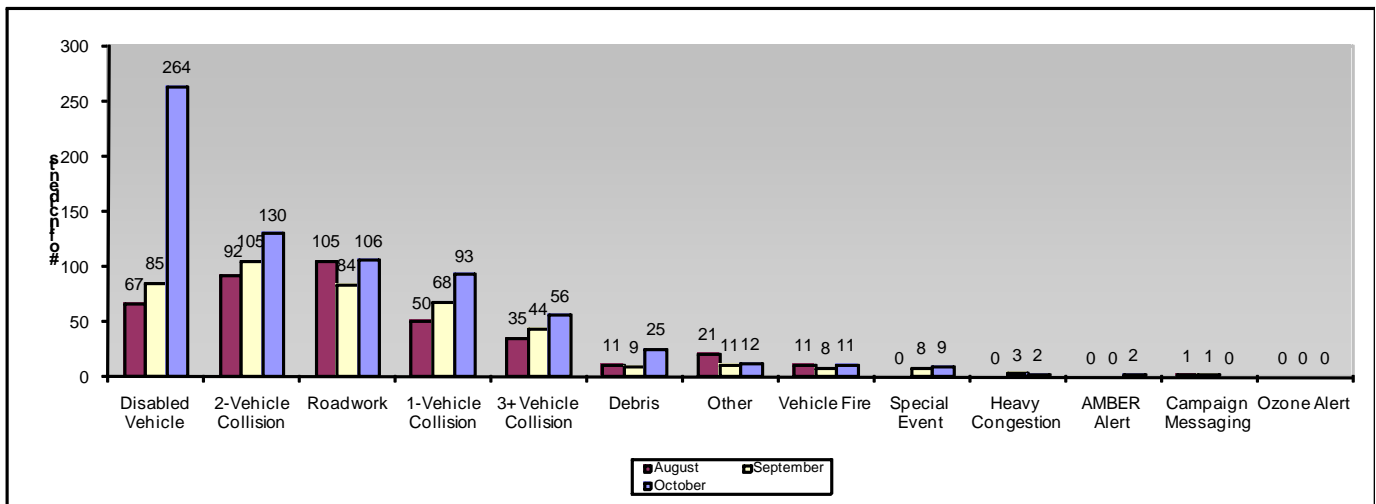
Incident Statistics by Incident Type
October 2009

Additional Incident Details:

- 11 were within a work zone
- 24 involved big rigs
- 51 involved injuries
- 1 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

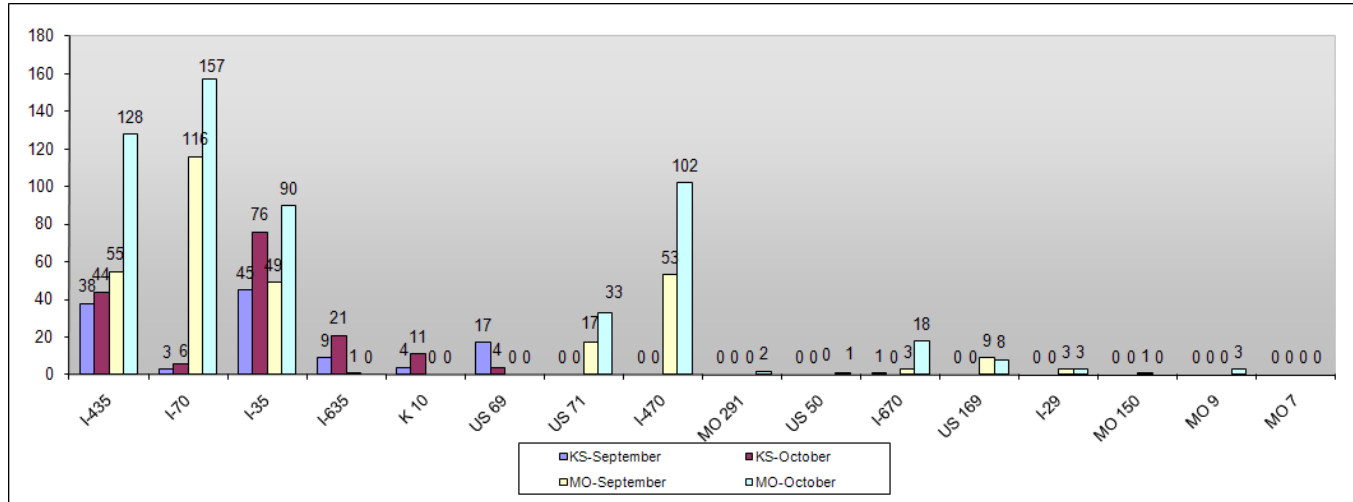


Additional Statistics

Incidents by Facility

The first 4 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.

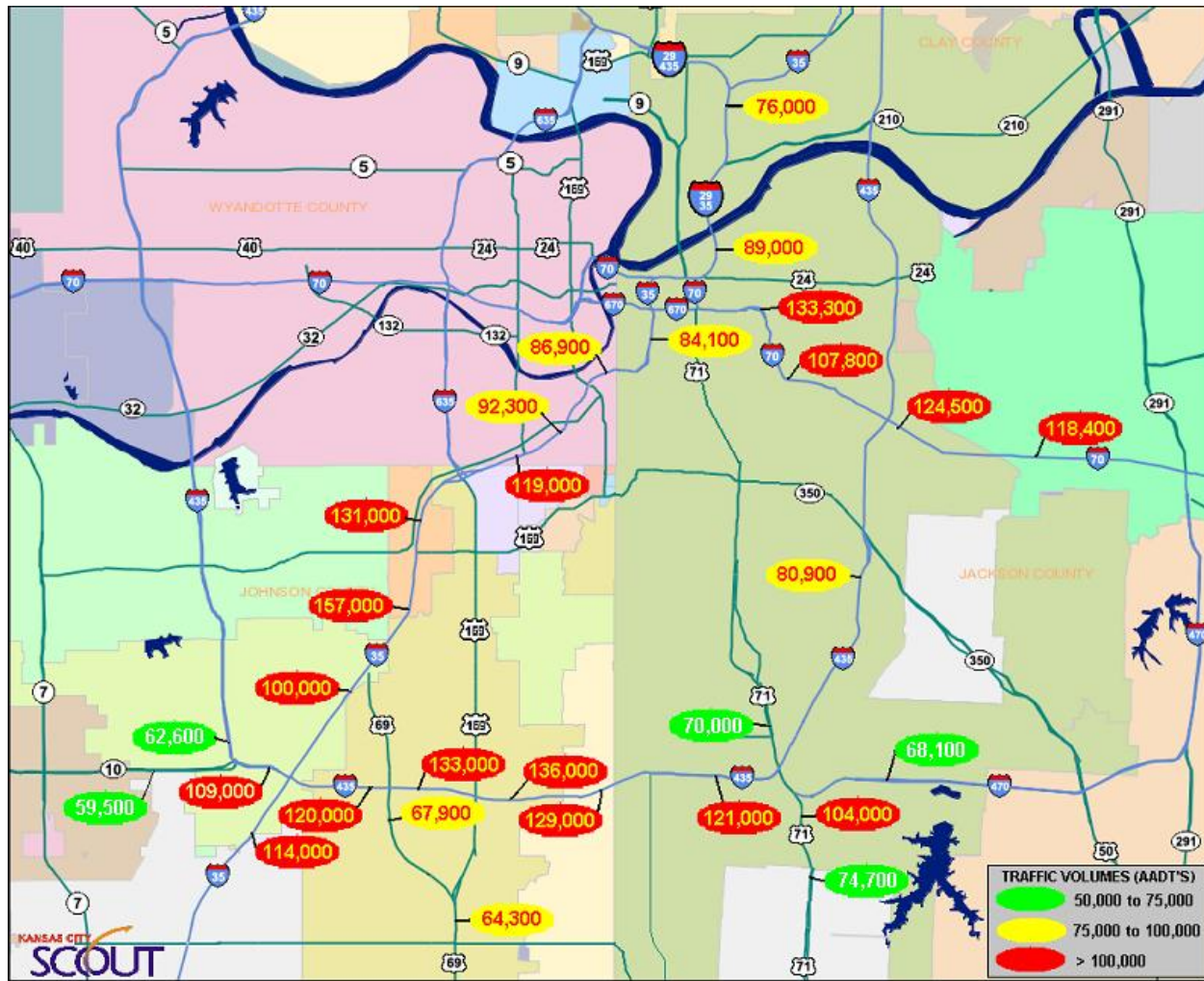
Figure 3 – Incidents by Facility



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.

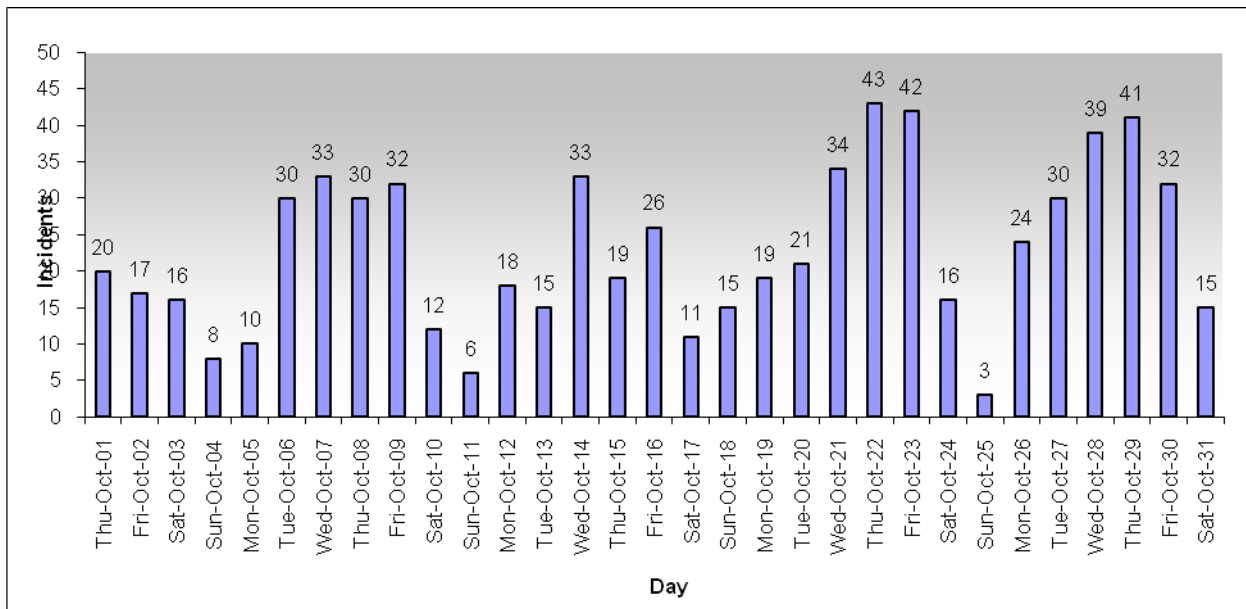
Figure 4 – AADT Map



Incidents by Day

Figure 5 shows the number of incidents occurring on each day of October. The number of incidents per day varies widely, with the average being approximately 23 incidents per day. Weekdays generally incur more frequent incidents, averaging 30.4 incidents/day, compared to 12.8 on weekends. If only non-roadwork incidents are considered, the rates for weekdays and weekends are 25.9 and 10.9 incidents/day, respectively.

Figure 5 – Incidents by Day

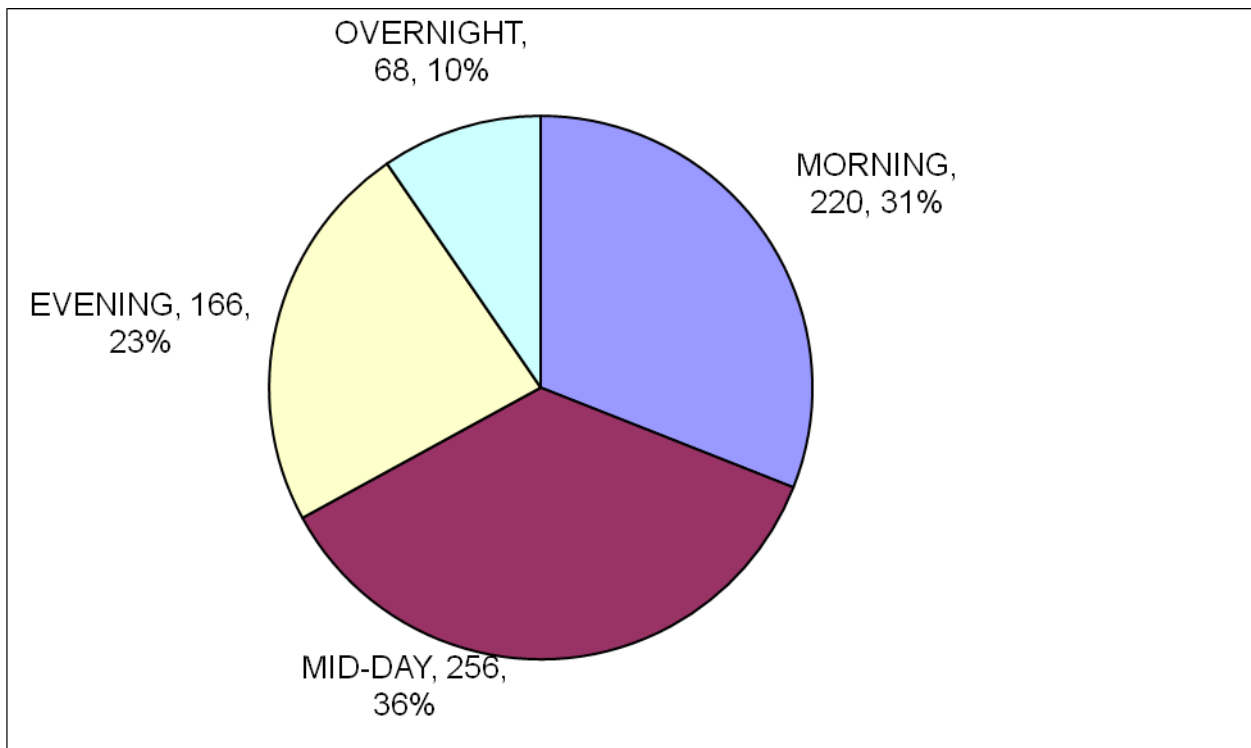


Incidents by Time of Day

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 9 a.m.
- *Mid-day* begins at 9 a.m. and ends at 3 p.m.
- *Evening* begins at 3 p.m. and ends at 7 p.m.
- *Overnight* begins at 7 p.m. and ends at 5 a.m.

Figure 6 – Incidents by Time of Day

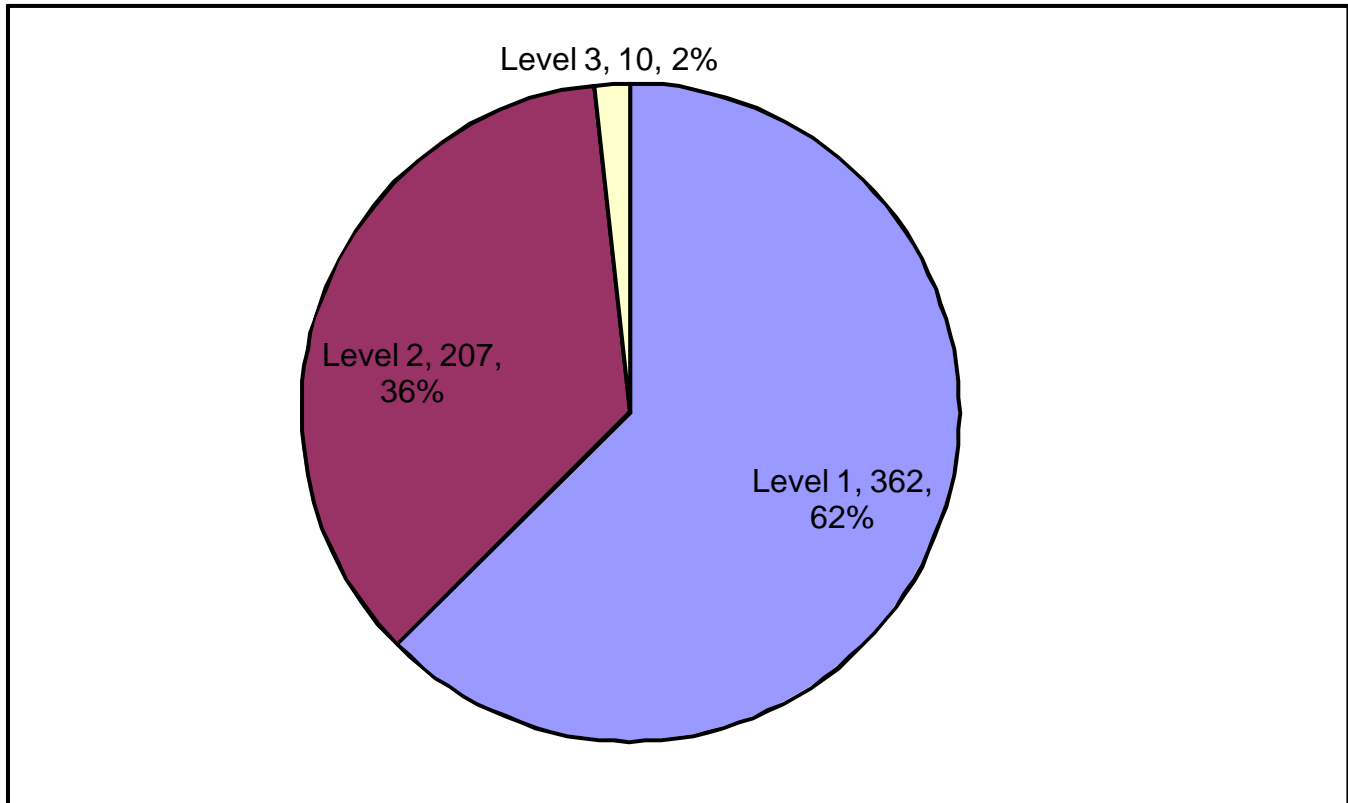


Incidents by Duration Level

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 10 Level 3 incidents. Level 1 and Level 2 incidents remained relatively unchanged from September. Details of the Level 3 incidents and other unusual incidents/events are provided in the section, “Summary of Major Incidents/Events” on page 15.

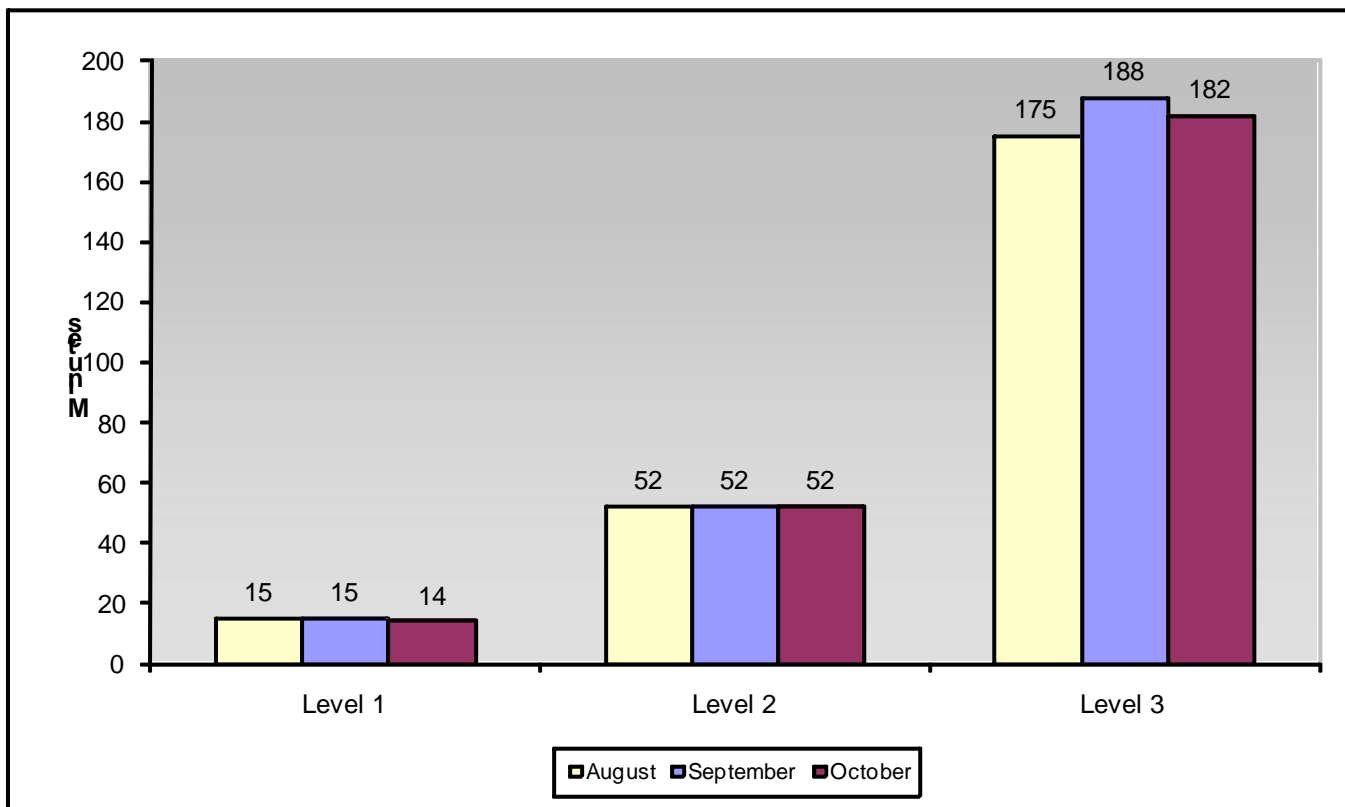
Figure 7 – Incidents by Duration Level



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 345 minutes.

Figure 9 – Incident Duration by Incident Type

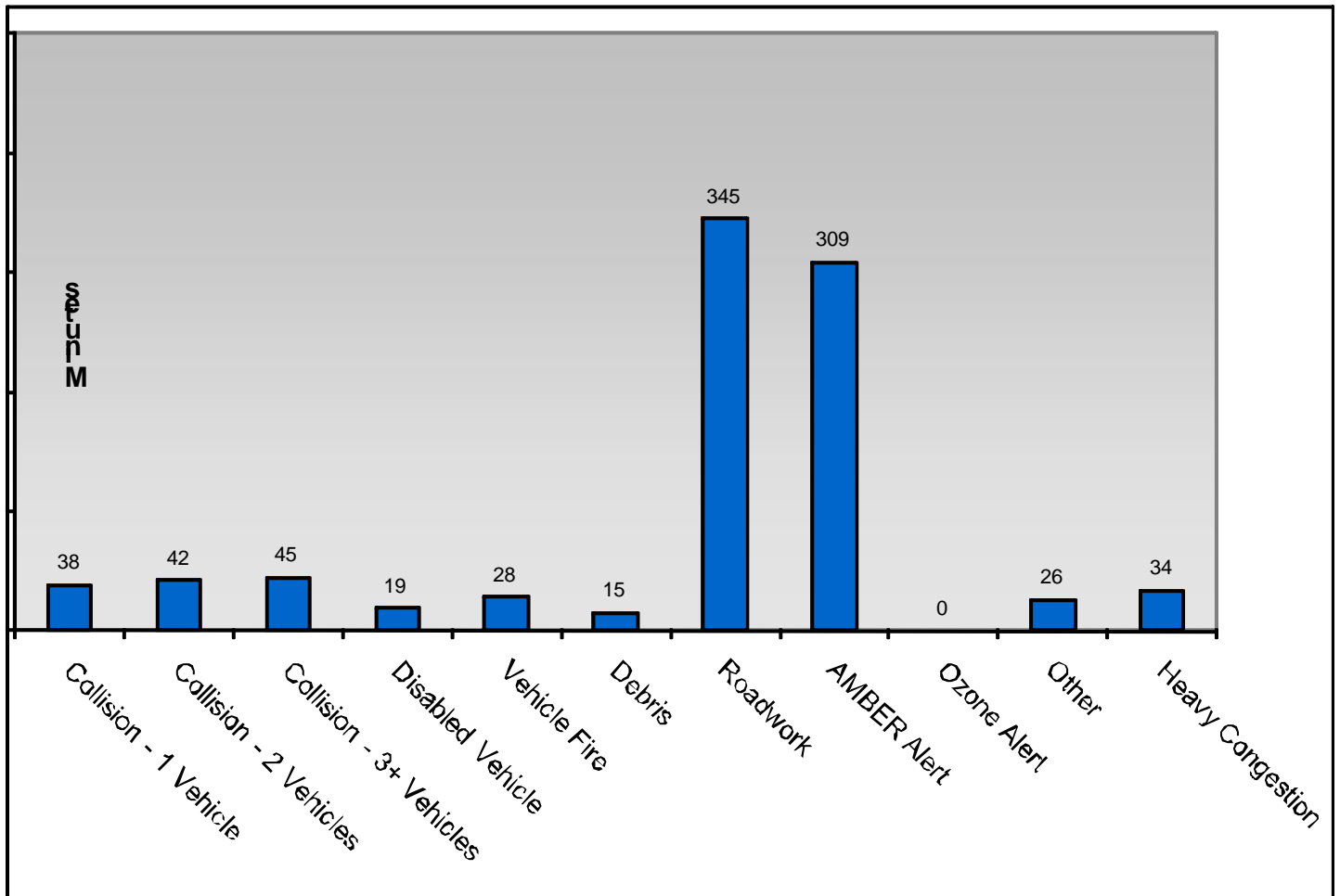
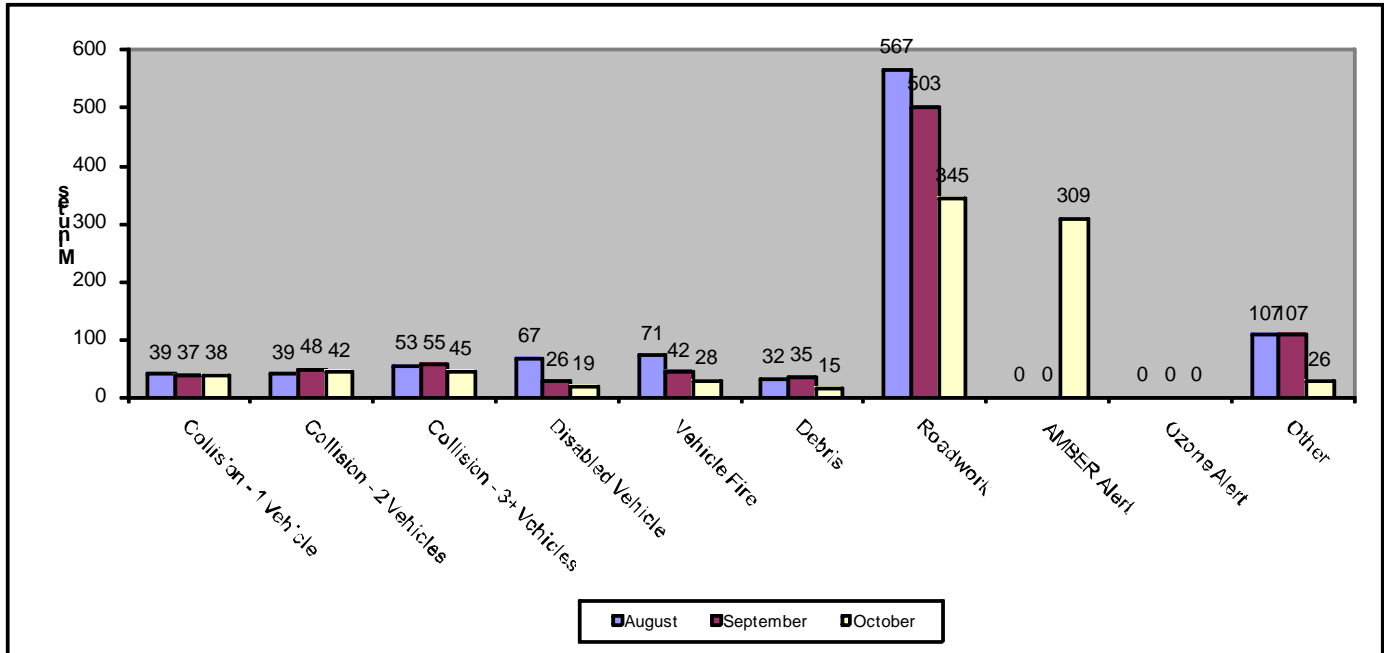


Figure 10 shows trends over the last 3 months. Campaign Messaging has been excluded due to the length of time.

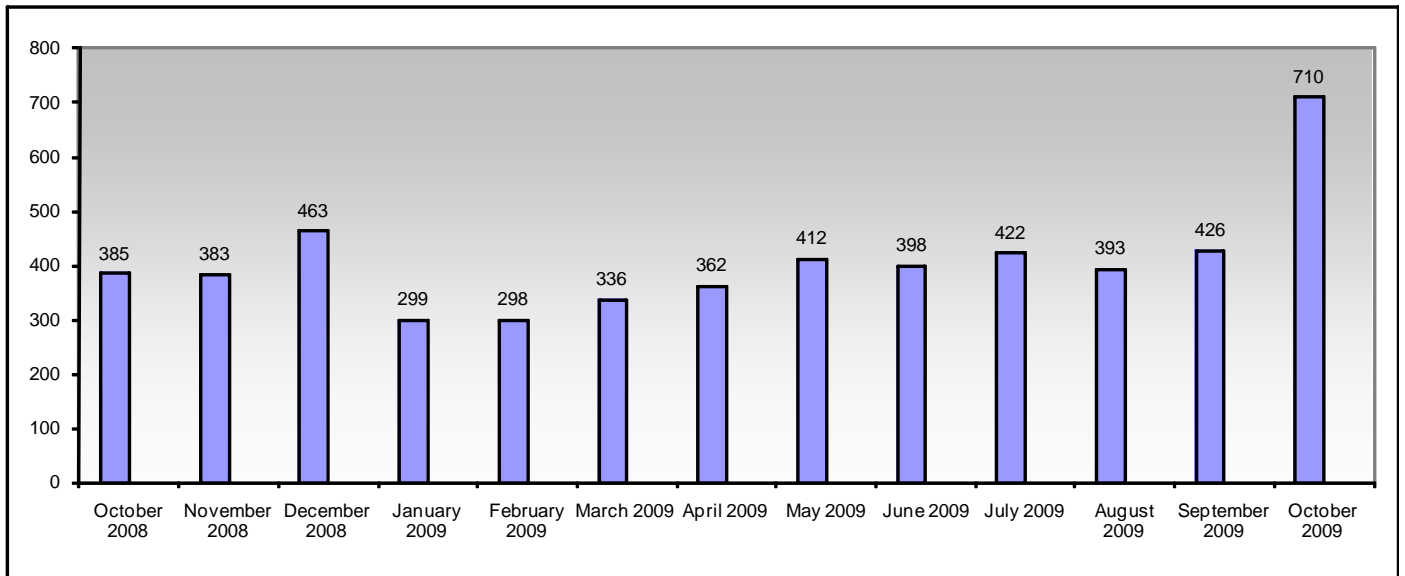
Figure 10 – Incident Duration by Incident Type / 3-Month Summary



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
October 2009

Summary of Major Incidents/Events

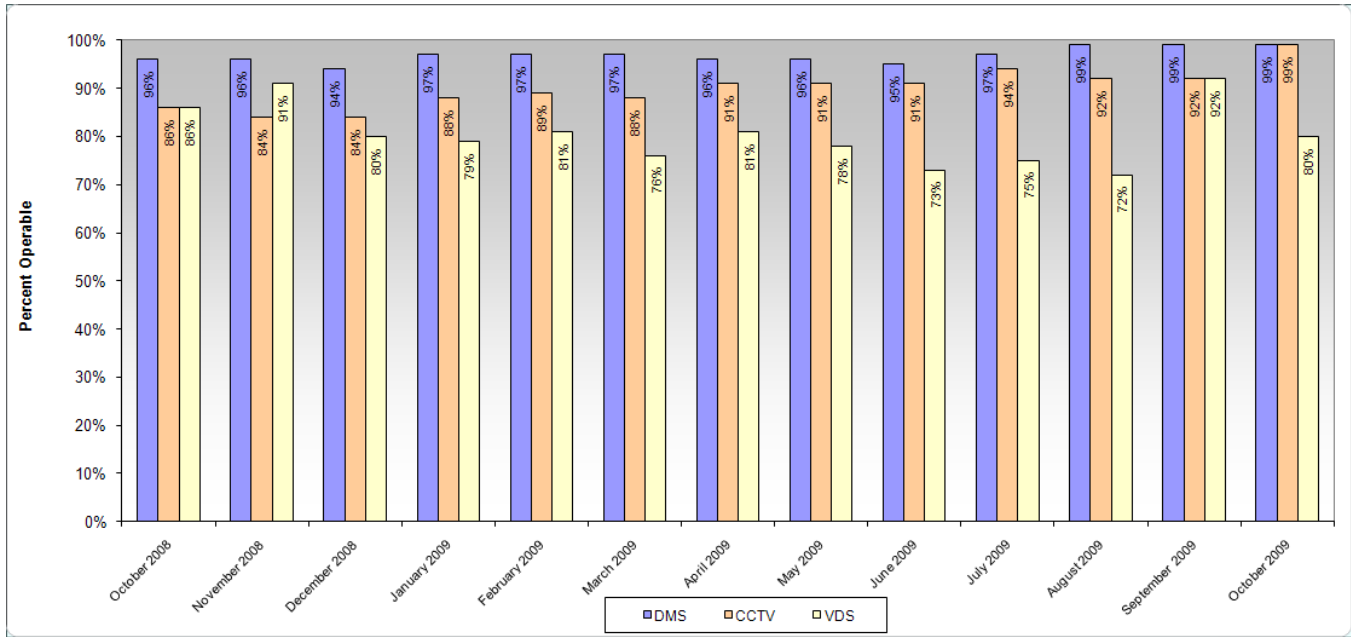
The TMC responded to the following major and other unusual incidents/events during October:

1. October 9, Friday, 4:23 p.m. (Lane Closure) A two vehicle collision closed the two right lanes of I-70 past Noland Rd. There were injuries reported. The event lasted from 4:23 p.m. to 6:44 p.m.
2. October 14, Wednesday, 2:18 a.m. (Road Closure) A multi-vehicle collision closed the NB lanes of US 169 Hwy on the Broadway Bridge for just under three hours. The event lasted from 2:18 a.m. to 5:08 a.m.
3. October 21, Wednesday, 7:42 p.m. (Amber Alert) An Amber Alert was issued by the Kansas Bureau of Investigation for a 17 year old female. She was safely located. The event lasted from 7:42 p.m. to 11:43 p.m.
4. October 22, Thursday, 11:06 a.m. (Road Closure) A two vehicle collision involving a tractor trailer closed I-435 NB past 87th St two different times for a total of one hour and 45 minutes. There was heavy rain at the time. The event lasted from 11:06 a.m. to 1:32 p.m.
5. October 22, Thursday, 11:09 a.m. (Road Closure) A two vehicle collision involving a tractor trailer closed I-435 SB past 350 highway. The road was closed for 30 minutes. This event was probably related to the NB event due to high traffic volume and heavy rain. The event lasted from 11:09 a.m. to 1:10 p.m.
6. October 22, Thursday, 7:25 p.m. (Lane Closure) A stalled vehicle closed two lanes of I-70 WB at Prospect. The event lasted from 7:25 p.m. to 9:38 p.m.
7. October 24, Saturday, 2:32 p.m. (Lane Closure) A tractor trailer with air brake problems closed the right lane of I-435 NB before Stadium Dr. Mechanics had to replace part of the air system. The event lasted from 2:32 p.m. to 4:50 p.m.
8. October 26, Monday, 3:54 p.m. (Lane Closure) A injury collision involving four vehicles closed two lanes of I-70 EB past Manchester Trafficway. The event lasted from 3:54 p.m. to 5:58 p.m.
9. October 28, Wednesday, 11:19 p.m. (Amber Alert) An Amber Alert was issued out of Independence, Missouri for a 17 year old female. She was found safe in St. Joseph, MO. The event lasted from 11:19 p.m. to 5:39 a.m.
10. October 29, Thursday, 10:57 p.m. (Road Closure) A single vehicle struck the barrier wall resulting in one fatality on I-70 EB at 11th St downtown. The roadway was closed for two hours and 15 minutes. The event lasted from 10:57 p.m. to 1:19 a.m.
11. October 30, Friday, 11:32 a.m. (Ramp Closure) A tractor trailer overturned on the ramp from I-435 NB to State Ave WB. There was one injury reported. The incident lasted from 11:32 a.m. to 2:52 p.m.
12. October 31, Saturday, 10:19 p.m. (Lane Closure) A two vehicle collision closed the right lane of I-70 EB past sterling Ave. There were injuries reported. The event lasted from 10:19 p.m. to 1:19 a.m.

Summary of Major Incidents/Events
 October 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 October, the Scout team participated in the following interagency activities:

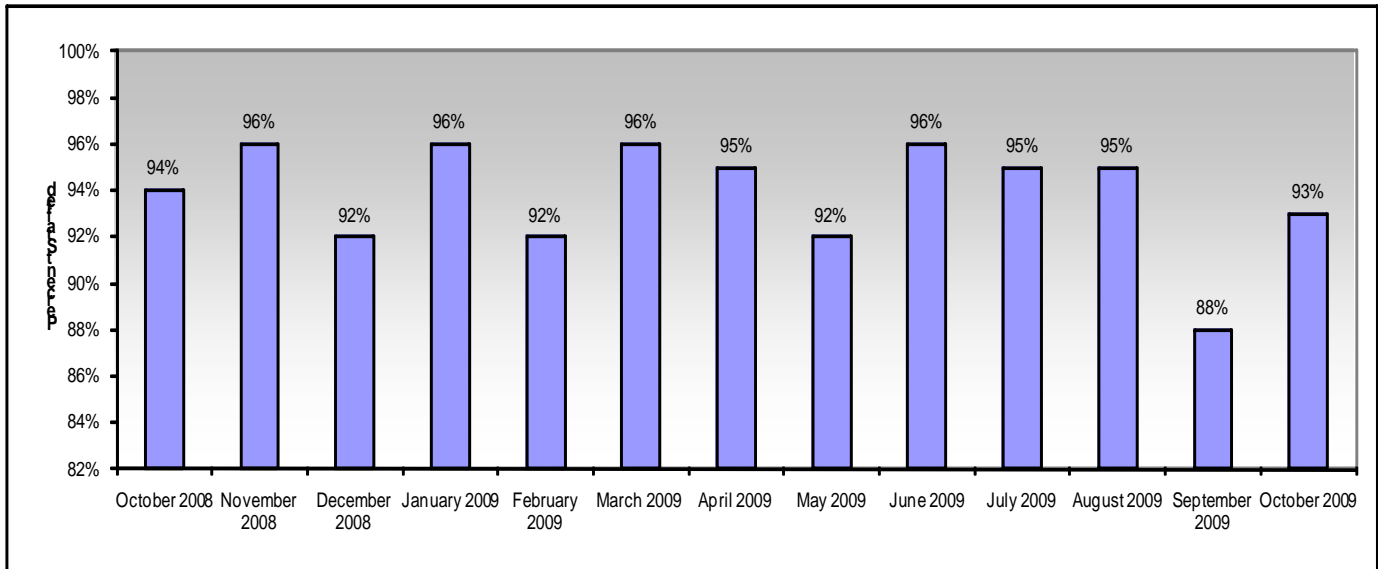
October 30-Rusty James, Donald Spencer and Jeremy Ball met with several members of the KHP and KDOT maintenance department to discuss proceeding with placing a KHP radio into the KC Scout TMC.

Staff Management Report

During October, 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 October, 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 October. 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

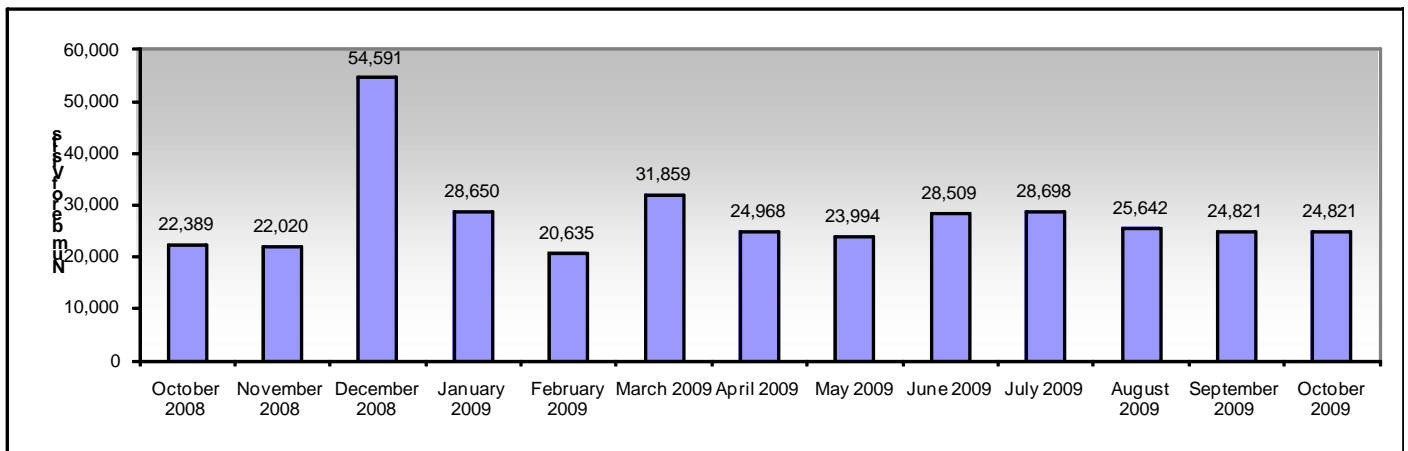
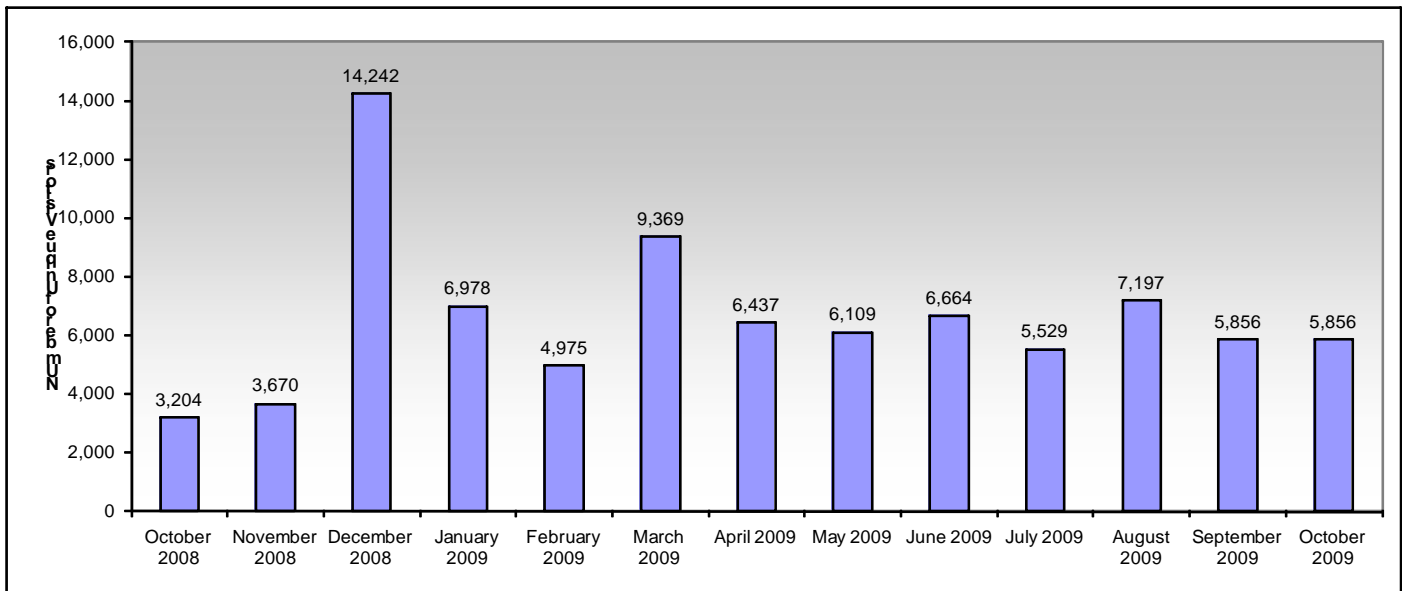


Figure 15 – Web Site Unique Visitors by Month



System Hardware/Software and Maintenance Activities/Issues
October 2009

System Hardware/Software and Maintenance Activities/Issues

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

1. Delcan shipped back the FTC, hardware, Ramp Meter Simulator and cabling to KC Scout for ramp metering software testing. Phase I testing was completed but with failures that will require another build of the Ramp Metering software before we can proceed with field testing. We will retest next Wednesday or Thursday after another build.
2. Gary Covey and Jeremy Ball successfully submitted two abstracts for papers to the MOVITE conference next spring. Gary delivered the Deploying and Operating Ramp Metering abstract. Jeremy delivered the Congestion Report abstract.
3. TransCore successfully transitioned the My KC Scout database from Oracle to SQL.
4. Don Gentry resolved the problem causing the failure of streaming video to the KC Scout website. It turned out to be a PIX configuration problem.
5. The new TransCore Operations Contract is now signed and executed.
6. Gary Covey and Mark Sommerhauser completed the draft of the new Hardware Maintenance Contract and sent it to Robin Warren for review.
7. Mike DeBrot attended a Cisco Training class for a week.
8. Cathy Jones reviewed and verified all of the KC Scout power supplies verses power bills.
9. Kenny Lynch ran Ethernet cables, set up power and rack space for support of the Ramp Metering test.
10. Kenny Lynch has inventoried, labeled and moved excess equipment for sale to the temporary location until sold on Gov Deals.com.
11. Don Gentry installed and wired up the new infrastructure servers in the Data Center. He also cleaned up the wiring in all of the Dell racks.
12. Don Gentry entered the APRs in support of upgrading software licenses on the KC Scout workstations and new servers. This includes Windows 7, MS SQL Enterprise, and Windows Server 2008.