

# Kansas City Scout Traffic Management Center Monthly Report

September 2009



Prepared For:

**KC Scout Board of Directors**

Prepared By:

**KC Scout Operations Team**

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**Cover photo:** Mark Sommerhauser from KC Scout talks with two people that attended the Open House.

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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](http://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 September 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 **426 incidents**, representing an 8% increase compared to last month.
- 11 were Level 3 incidents with an average duration of 188 minutes (1)
- 165 were Level 2 incidents with an average duration of 52 minutes (1)
- 143 were Level 1 incidents with an average duration of 15 minutes (1)
- 102 were scheduled roadwork (2)
- 1 was within a work zone (2)
- 0 were Ozone Alerts
- 0 was an AMBER Alert
- 21 involved big rigs
- 42 involved injuries (-52% decrease compared to last month)
- 2 involved fatalities
- 19 involved DOT property damage
- 2 could be classified as secondary incident
- 5 cited bad weather as a possible contributing factor
- The TMC managed 33 I-70 corridor incidents and 3 I-29 incidents
- Dynamic Message Signs (DMS) were activated 610 times (4)
- 1,122 DMS messages were displayed (4)

### ATIS (Web Site) Messages

- 1,905 total messages were placed for incidents, including 87 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, 92% of the Detector Stations were completely operational, with 2% reporting some bad detectors, 3% reporting all bad detectors, and 3% not responding. (7)

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**Introduction****Tours / Media/Events****Tours**

**9/9** - 15 People attended a tour of Scout from Stresscrete. The tour was facilitated by Jason Sims and Mark Sommerhauser.

**9/11** - Approximately 16 people from the kcICON group toured the Scout TMC. The tour was facilitated by Don Gentry.

**9/22** - Scout was toured by 5 personnel from Motor Carrier. The tour was led by Don Spencer and Jeremy Ball.

**Public Appearances**

**9/22** - Gina Myles, Jeremy Ball, Mark Sommerhauser and Nancy Powell made a public appearance at the Ramp Metering Public meeting held at Leawood Middle School in Leawood, Kansas.

**9/23** - Steve Spires made a public appearance at the Cal-Mar Health Fair in Grandview, Missouri.

**Media appearances**

There were no media appearances this month.

**Additional Information**

- TMC operators logged 2,247 telephone calls with partner agencies. (8)
- Customer Service Representatives logged 3,418 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.

Introduction

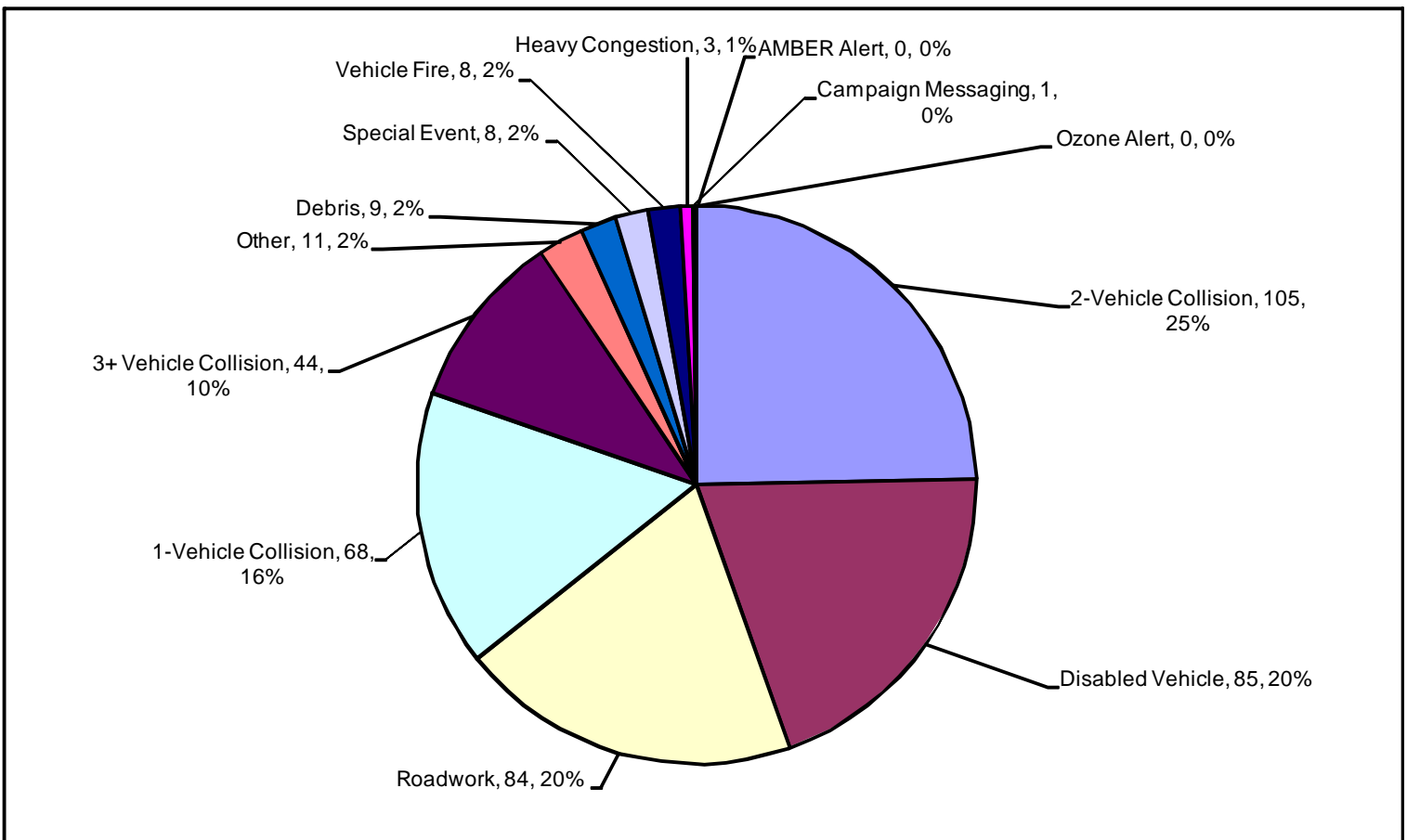
September 2009

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 September, the TMC responded to 426 incidents in the Kansas City area. This number represents an increase of 8% compared to last month. All incidents are shown by incident type in Figure 1. 2-Vehicle Collisions were the most frequent incidents with 105, representing 25% of the total incidents managed. Disabled Vehicle was the second most frequent with 85 (20%). Roadwork (84, 20%) and 1-Vehicle Collision (68, 16%) 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 (217, 51%) 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**



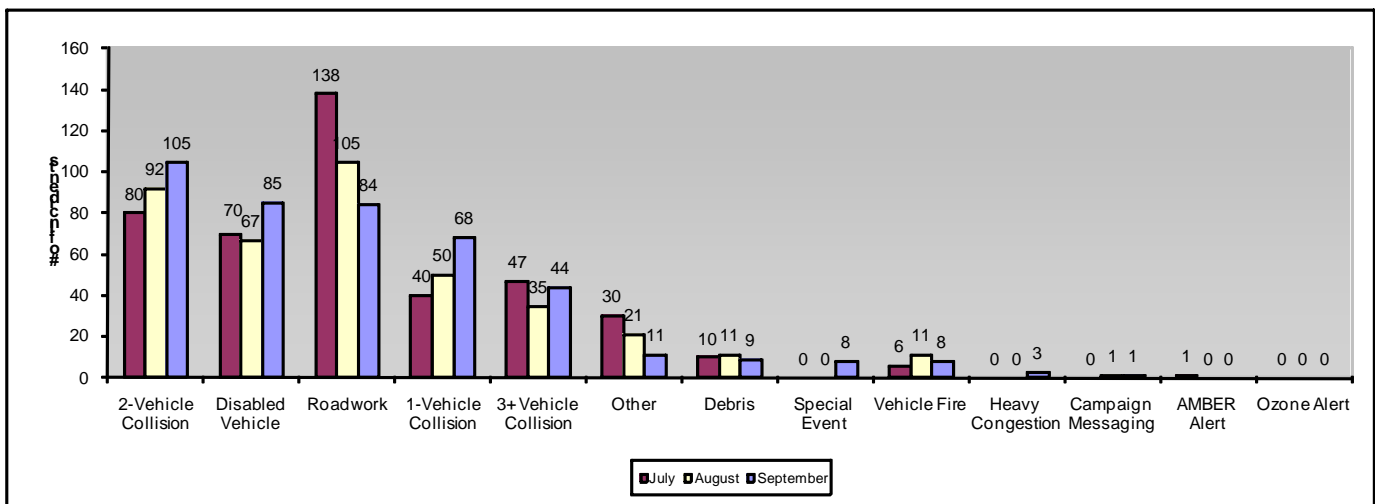
Incident Statistics by Incident Type

Additional Incident Details:

- 1 was within a work zone
- 21 involved big rigs
- 42 involved injuries
- 2 involved fatalities
- 19 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

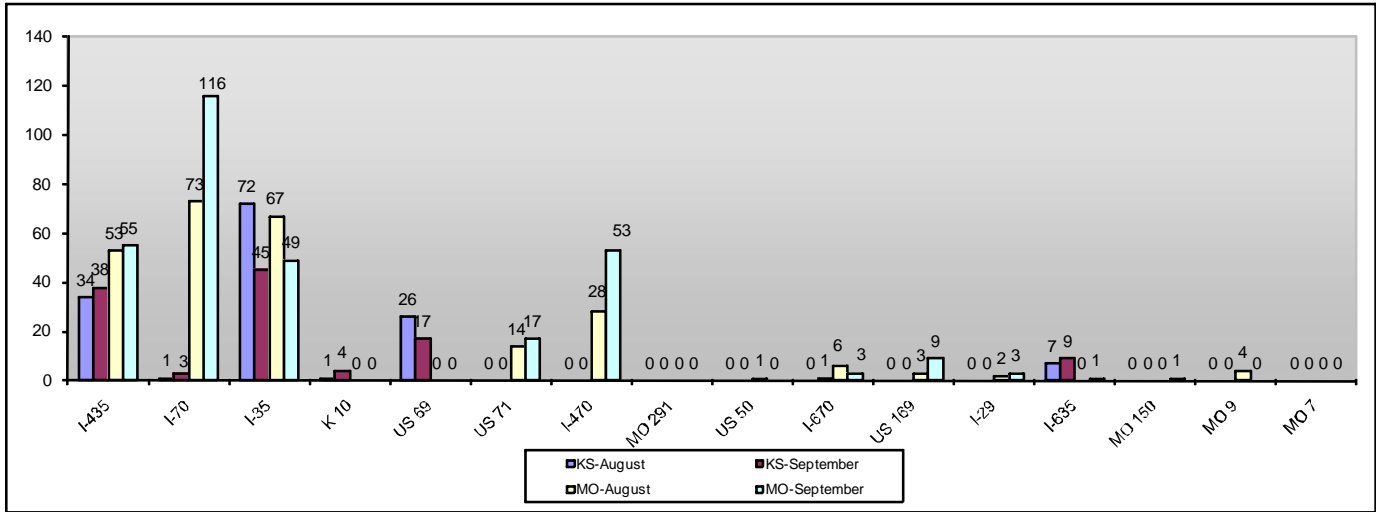


**Additional Statistics**

**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.

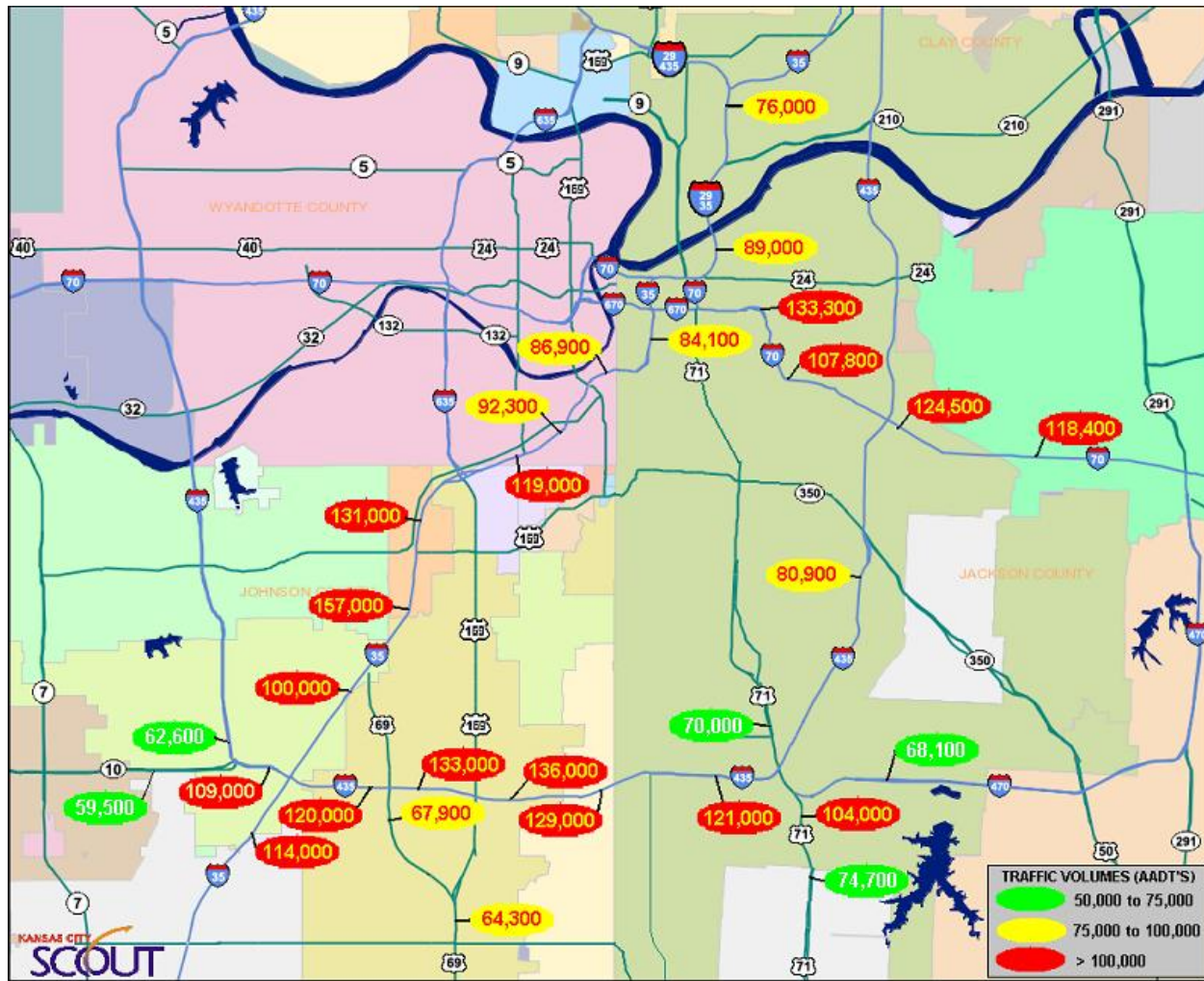
**Figure 3 – Incidents by Facility**



### 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.

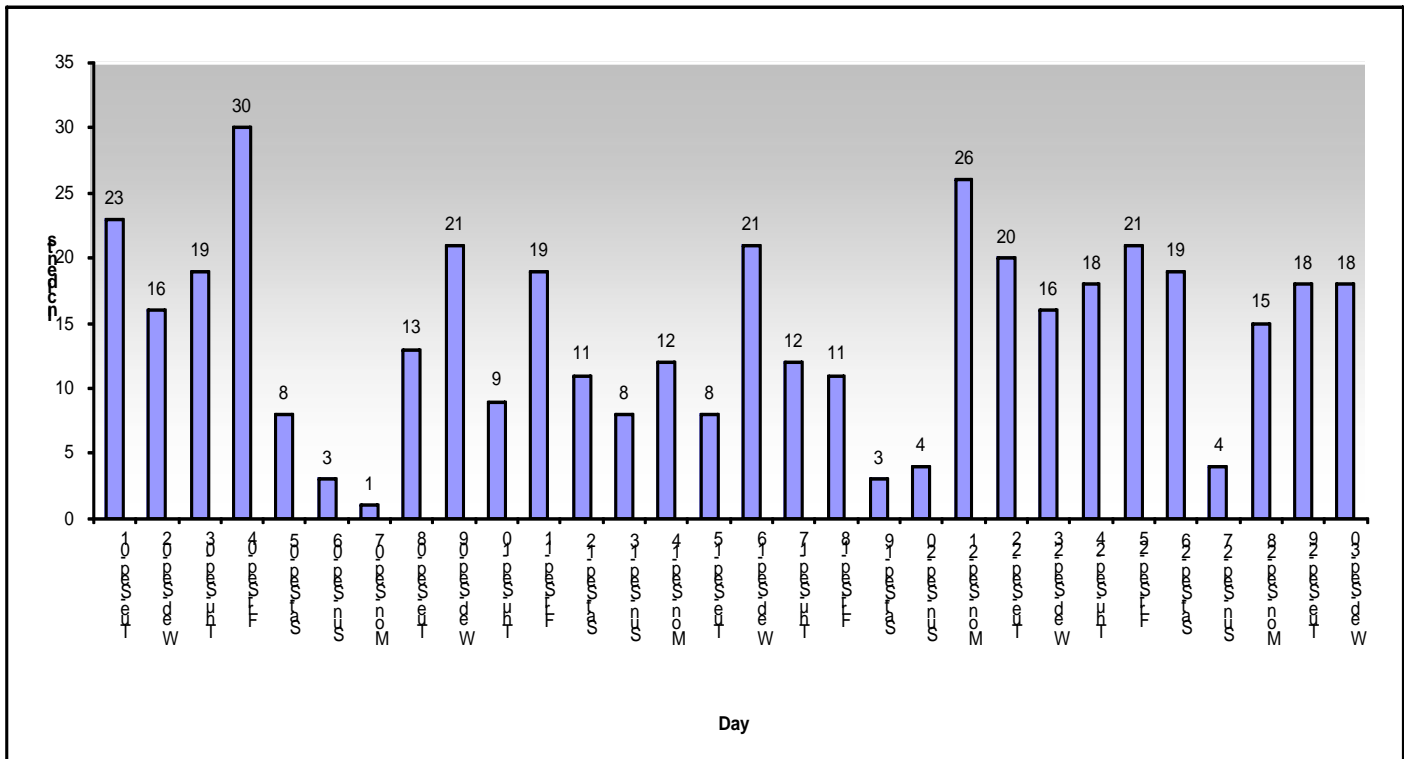
Figure 4 – AADT Map



**Incidents by Day**

Figure 5 shows the number of incidents occurring on each day of September. The number of incidents per day varies widely, with the average being approximately 14 incidents per day. Weekdays generally incur more frequent incidents, averaging 18.3 incidents/day, compared to 7.5 on weekends. If only non-roadwork incidents are considered, the rates for weekdays and weekends are 13.5 and 6.9 incidents/day, respectively.

**Figure 5 – Incidents by Day**

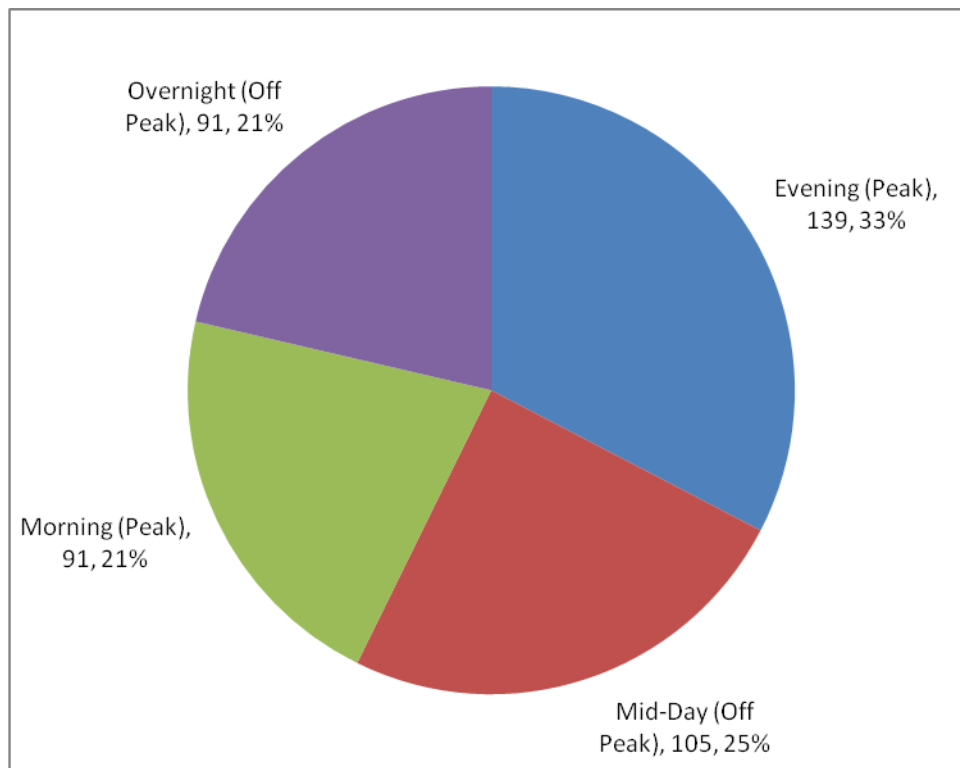


**Incidents by Time of Day**

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**

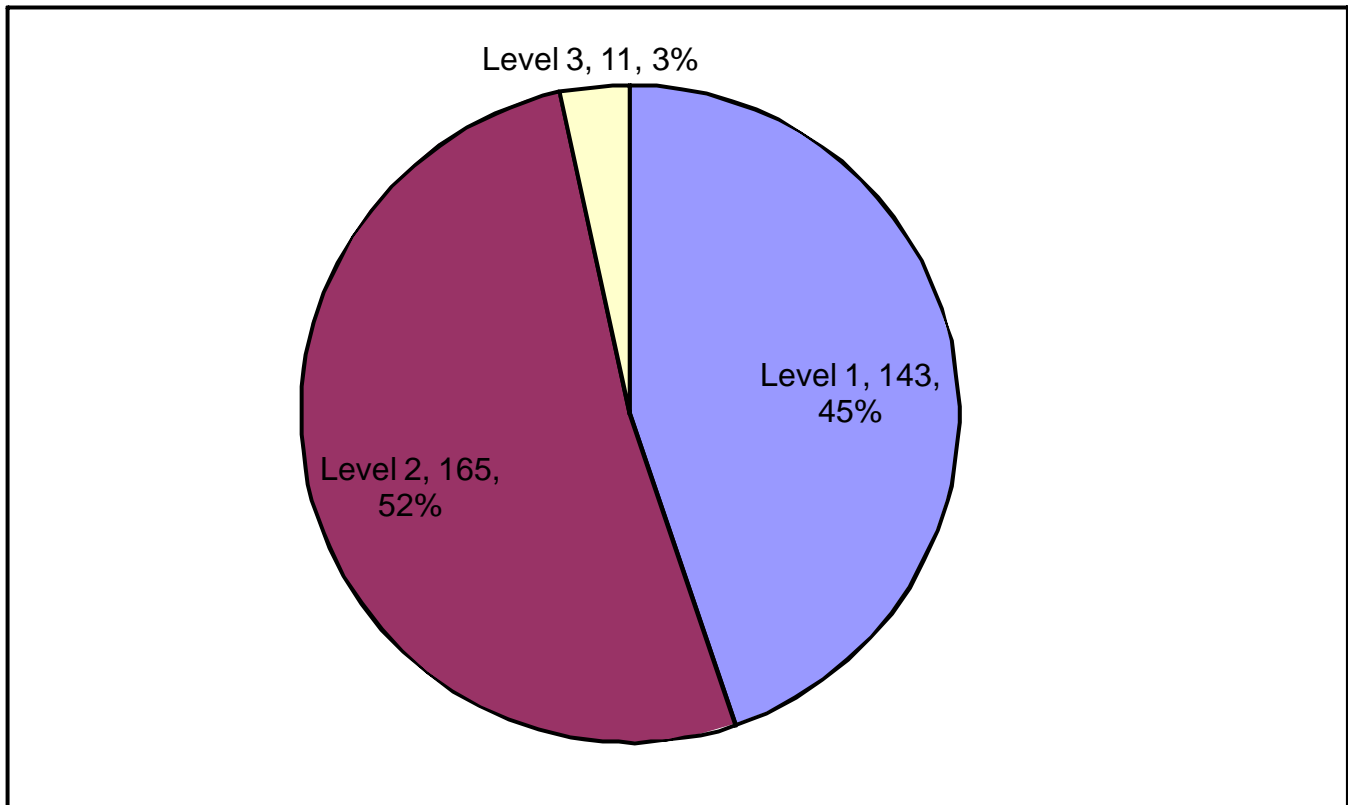


**Incidents by Duration Level**

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

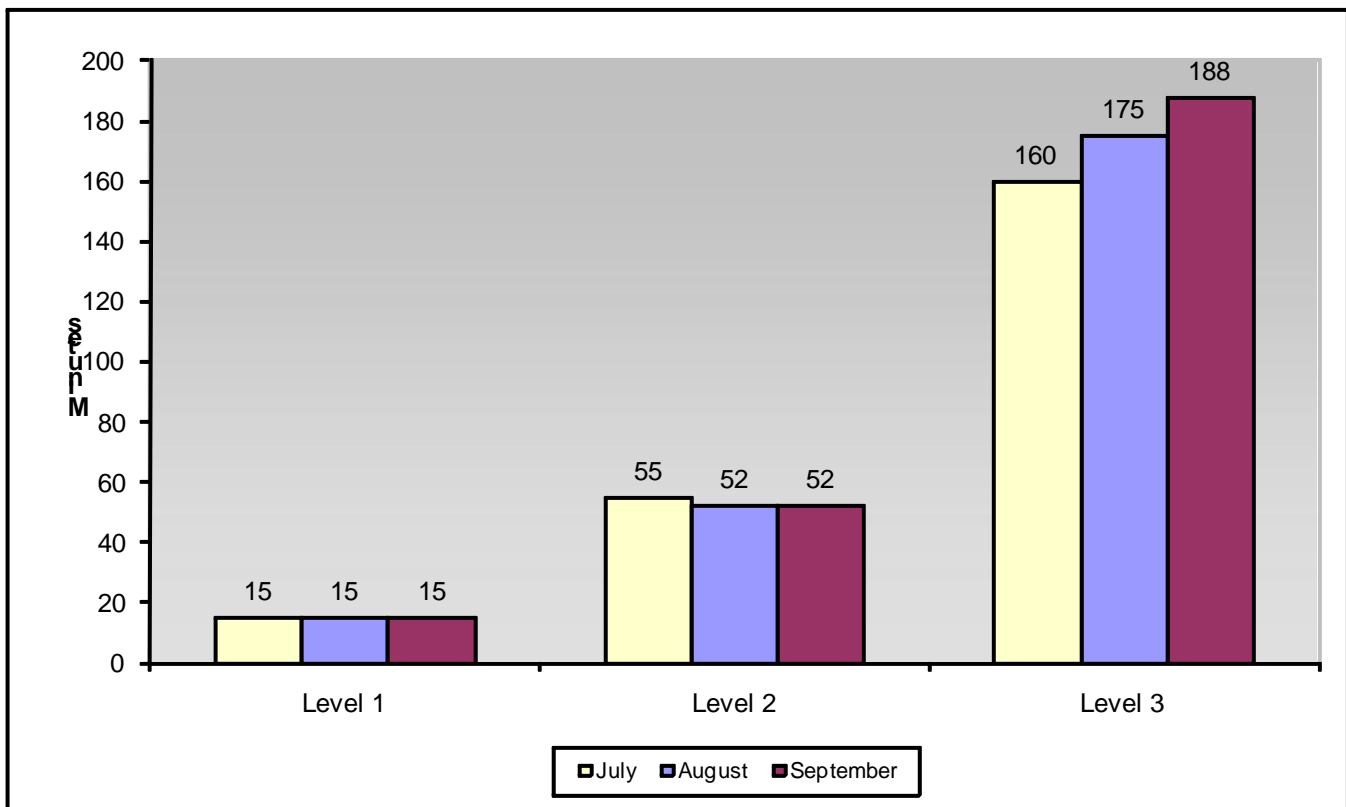
**Figure 7 – Incidents by Duration Level**



### 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 503 minutes. There was one campaign event that lasted for 11462 minutes.

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

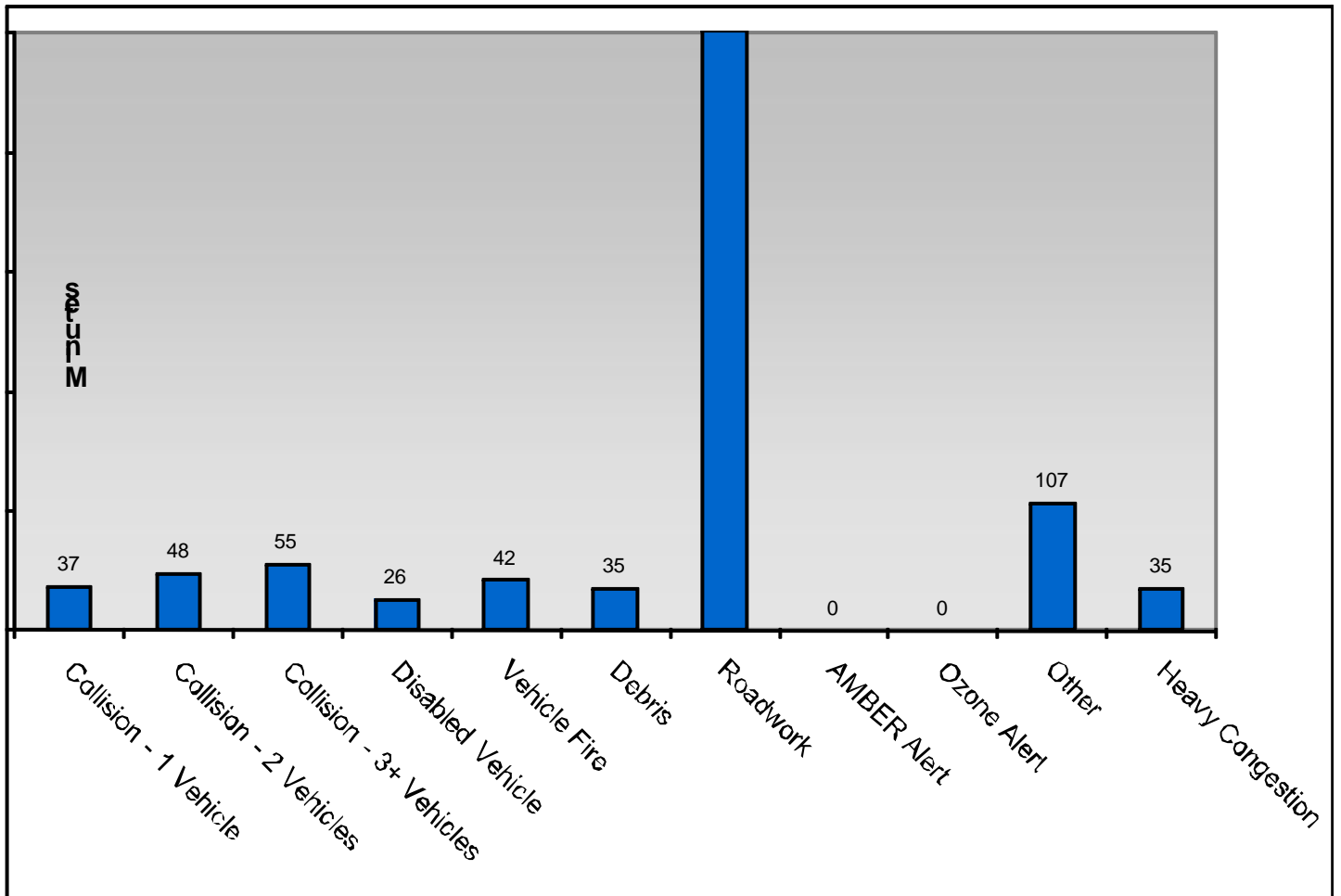
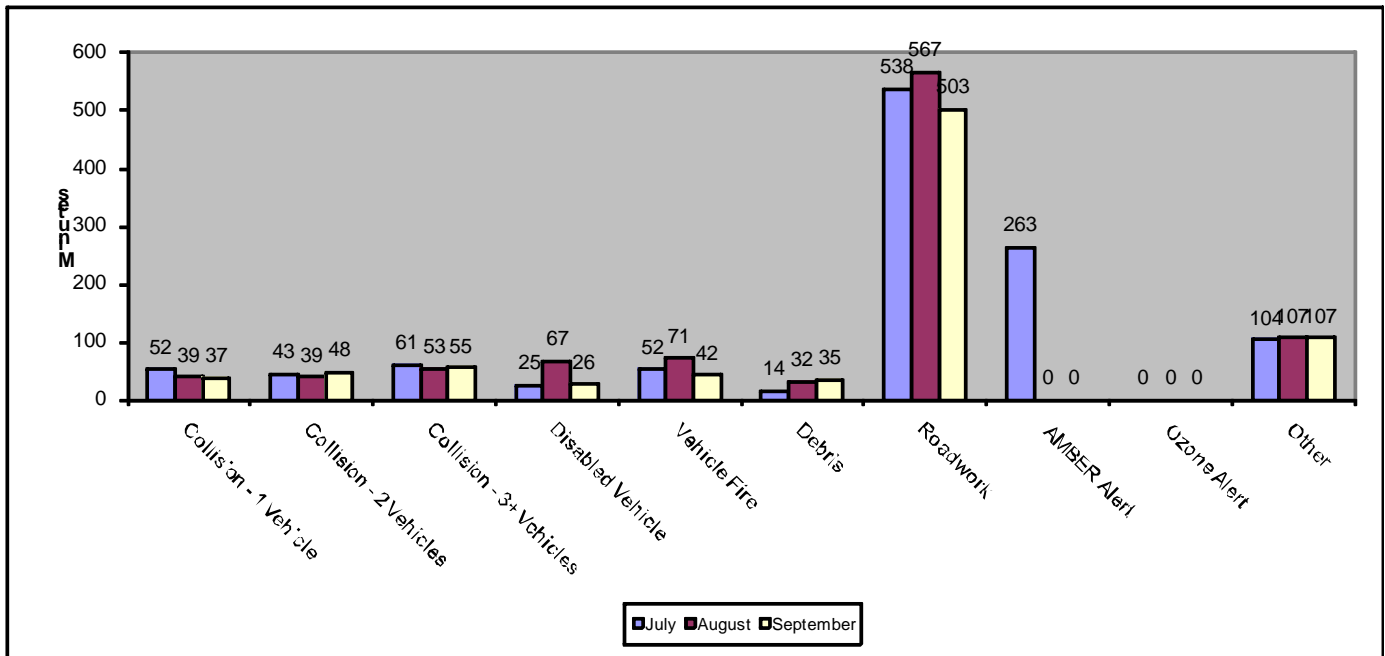


Figure 10 shows trends over the last 3 months. Campaign Messaging has been excluded due to the length of time.

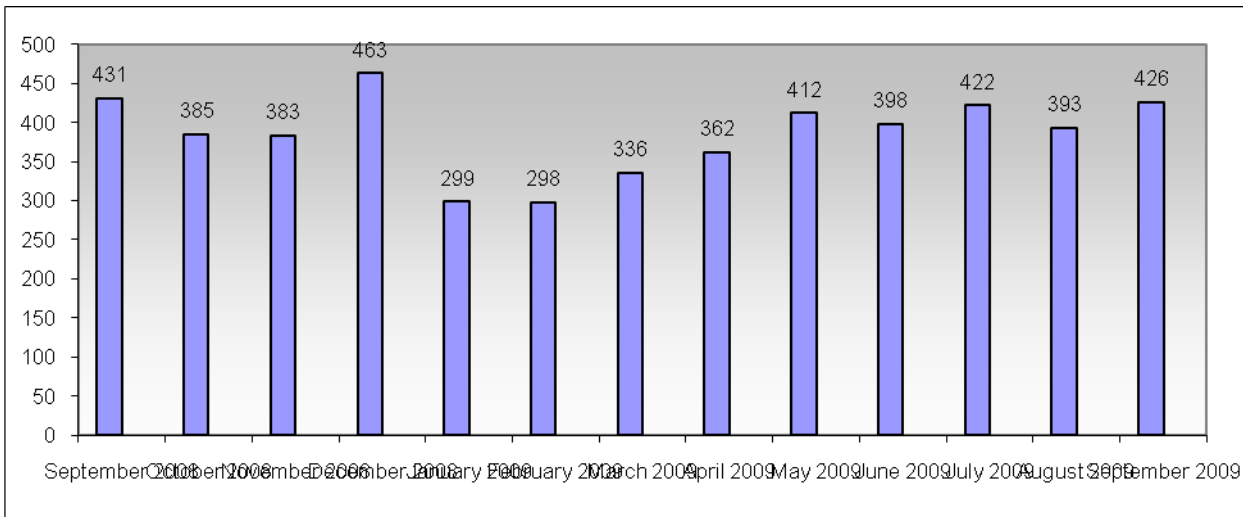
**Figure 10 – Incident Duration by Incident Type / 3-Month Summary**



### 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**

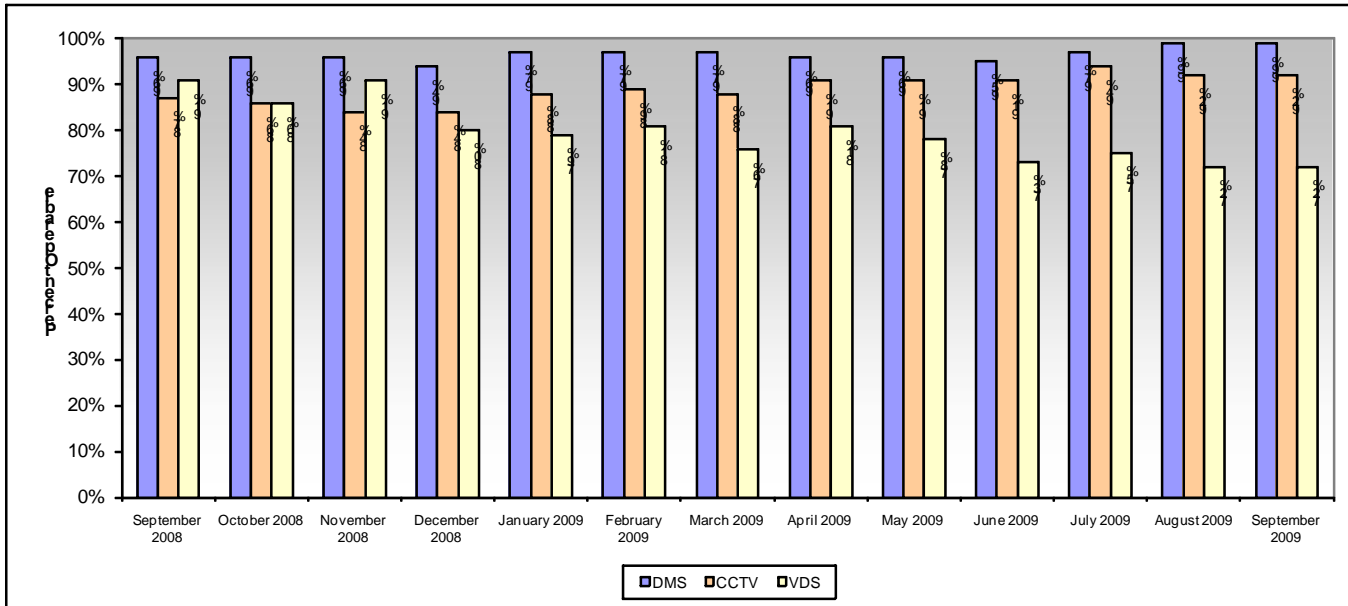
The TMC responded to the following major and other unusual incidents/events during September:

1. September 1, Tuesday 11:27 a.m. (Lane Closure) A four vehicle collision closed two lanes of I-435 NB at 63<sup>rd</sup> street. There was one reported injury and guardrail damage. A SB vehicle crossed into the NB lanes. The event lasted from 11:27 a.m. to 1:41 p.m.
2. September 2, Wednesday, 7:38 a.m. (Road Closure) A one vehicle collision involving a truck pulling an empty horse trailer closed one lane of I-435 NB at 350 Hwy. Guardrail damage was also reported. The event lasted from 7:38 a.m. to 9:57 p.m.
3. September 2, Wednesday, 11:55 p.m. (Road Closure) A multi-vehicle collision closed 169 Hwy NB on the Broadway Bridge. The road was closed for two hours. The event lasted from 11:55 p.m. to 2:08 a.m.
4. September 3, Thursday, 1:16 p.m. (Ramp Closure) A collision involving a tractor trailer closed the ramp from 69 Hwy NB to I-435 WB and 69 Hwy. There was one injury reported. The event lasted from 1:16 p.m. to 5:43 p.m.
5. September 4, Friday, 4:03 p.m. (Exit Closure) A two vehicle collision closed the exit from I-70 WB to Little Blue Pkwy. There was minor DOT damage reported. The exit was closed for 45 minutes. The event lasted from 4:03 p.m. to 6:28 p.m.
6. September 12, Saturday, 3:38 a.m. (Road Closure, Off System) A two vehicle collision closed K-10 Hwy WB at Edgerton Road for four hours. The event lasted from 3:38 a.m. to 7:41 p.m.
7. September 15, Tuesday, 5:43 a.m. (Lane Closure) A stalled tractor trailer closed one lane of I-70 WB past Woods Chapel for four hours. The event lasted from 5:43 a.m. to 9:55 a.m.
8. September 20, Sunday, 5:32 a.m. (Road Closure) A two vehicle collision involving a vehicle going the wrong way resulted in injuries and one fatality. The collision closed I-70 WB at Prospect for just over two hours. The event lasted from 5:32 a.m. to 7:48 a.m.
9. September 21, Monday, 6:07 a.m. (Exit Closure) A collision involving a tractor trailer and an empty school bus closed the exit from I-670 WB to I-35 SB. The truck was carrying scrap automobiles that spilled onto the roadway. Equipment needed to be brought in to reload them. The ramp was closed for three and one half hours. The event lasted from 6:07 a.m. to 9:35 a.m.
10. September 23, Wednesday, 9:27 p.m. (Road Closure) A collision involving a loaded gasoline tanker that overturned resulted in I-70 EB being closed at I-435 1 ½ hours. The truck was leaking product resulting in a hazardous materials response. The leak was stopped and the incident was completed without further problems. The event lasted from 9:27 p.m. to 1:58 a.m.
11. September 29, Tuesday, 2:40 p.m. (Exit Ramp) A multi-vehicle collision on the exit from I-70 EB to Little Blue Pkwy had one vehicle leave the roadway damaging the right of way fence. The event lasted from 2:40 p.m. to 5:04 p.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**



**Interagency Coordination**

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

September 1 – Rusty James gave a Traffic Incident Presentation to the KCPD East Patrol

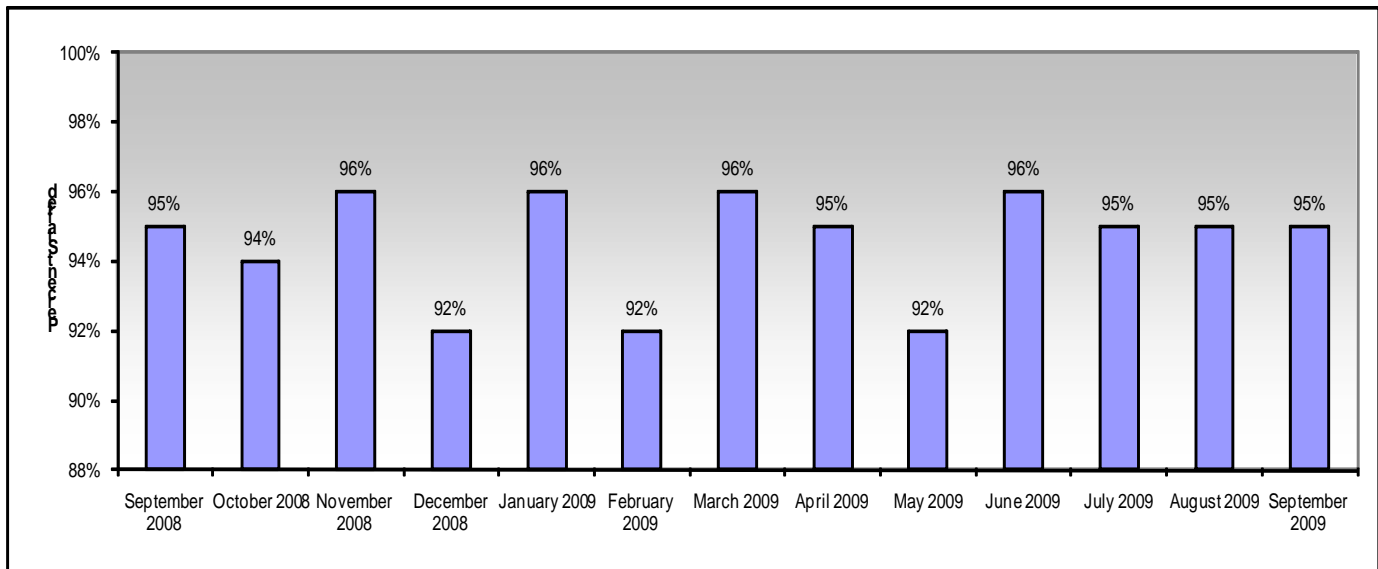
September 15 – Rusty James attended a Traffic Incident Meeting at Gateway Guide in St. Louis

**Staff Management Report**

During September, 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.

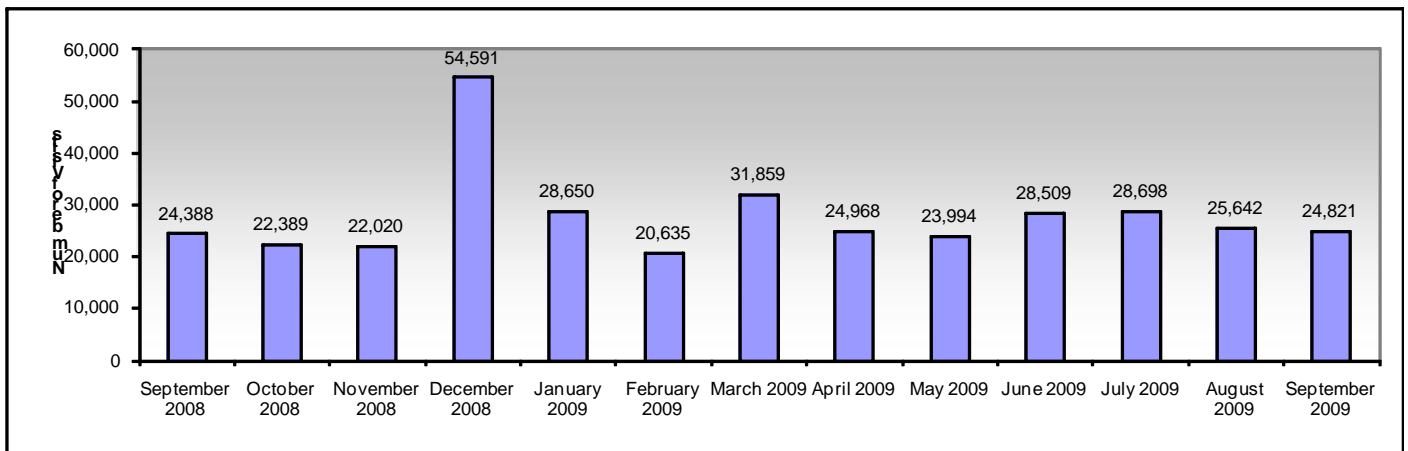
**Figure 13 – Staff Utilization by Month**



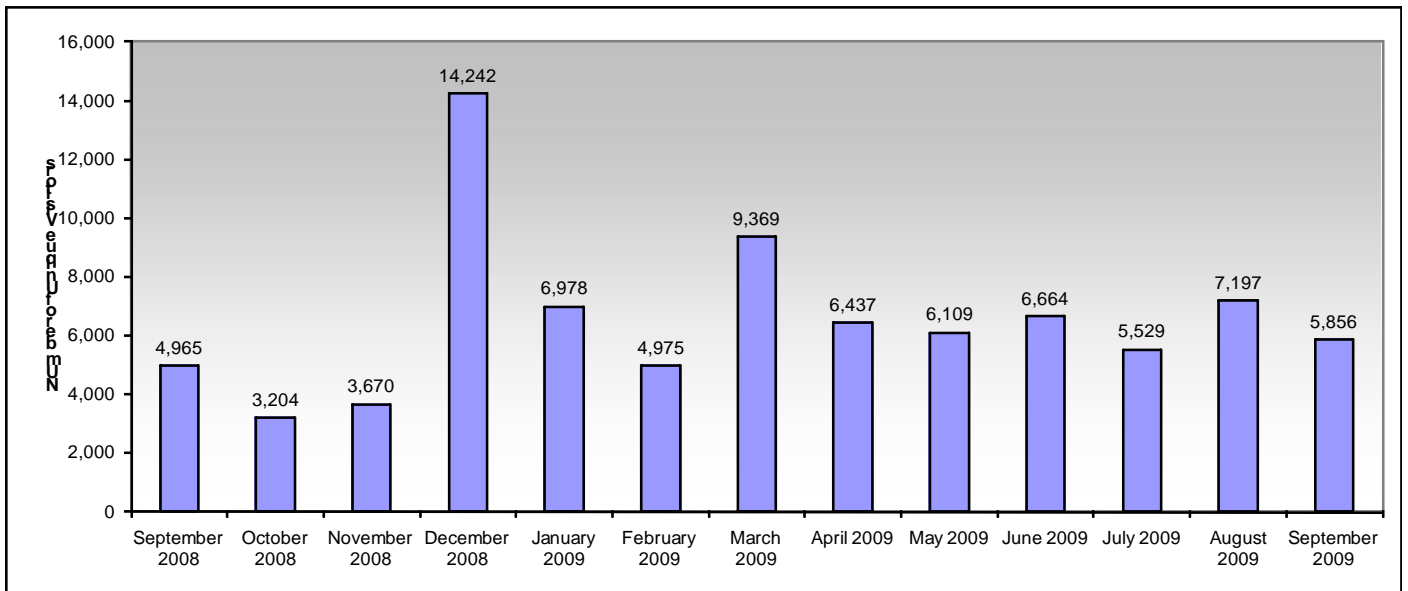
**Web Site Utilization Data**

The Scout Web Site ([www.kcscout.net](http://www.kcscout.net)) received a total of 28,698 visits in September, 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 September. 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 September:

1. Mike DeBrot provided a PDA, Load Switch, Flasher and Flasher Card to Delcan for ramp metering software testing.
2. Mike DeBrot attended Omnicast User Training.
3. On September 8<sup>th</sup> all field maintenance started using the KC Scout Maintenance Data Base. Mike DeBrot is controlling which Work Orders are being sent to Capital Electric. The current Capital Electric Maintenance Contract is almost out of money.
4. The transition to the TransSuite ATMS was completed successfully on the 1<sup>st</sup> of September.
5. Don Gentry wants to make a single upgrade pass to of all workstations and laptops when Windows 7 is released the third week of October.
6. Don Gentry has tested the download of Office 2007 from MoDOT IS's download site.
7. Don Gentry attended a three day HyperV training class.
8. Don Gentry has passed on the only KC Scout requirement for Cathy Jones's MIST laptop to Bill Kritikos. KC Scout will use 5 VPN Accounts to connect the other KC Scout Workstations to MIST so the operators can put messages on the I-70 DMSs in Kansas.
9. KC Scout developed the information for the first KC Scout Invoice to KDOT for FY 2010. The information was sent to Jefferson City for producing the official invoice. Gary met with KDOT to review the information and format of the invoice since budget responsibility has been moved from District 1 to the ITS Unit.