Kansas City Scout
Traffic Management Center
Monthly Report

April 2010

Prepared For:

KC Scout Board of Directors

Prepared By:

KC Scout Operations Team

Table of Contents

Cover photo: This is a group photograph from the 2010 MOVITE/KC Scout ITS Symposium. It was held at the Crowne Plaza Hotel with approximately 140 people participating in the event.

List of Figures

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 138 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 April 2010.

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 **2331 incidents**, representing a 2% decrease compared to last month.
- 9 were Level 3 incidents with an average duration of 181 minutes (1)
- 275 were Level 2 incidents with an average duration of 53 minutes (1)
- 684 were Level 1 incidents with an average duration of 10 minutes (1)
- 145 were scheduled roadwork (2)
- 11 were within a work zone (2)
- 0 were Ozone Alerts
- 0 were AMBER Alerts
- 48 involved big rigs
- 41 involved injuries
- 6 involved fatalities
- 58 involved DOT property damage
- 4 could be classified as secondary incidents
- 268 cited bad weather as a possible contributing factor
- The TMC managed the following corridor events: 56 I-70, 0 I-29, and 0 I-35
- Dynamic Message Signs (DMS) were activated 1,156 times (3)
- 2,153 DMS messages were displayed (3)

ATIS (Web Site) Messages

- 7,386 total messages were placed for incidents, including 515 for roadwork (4)

Highway Advisory Radio (HAR)

- Activated 0 times this month (5)

Equipment Operability

- On average, 93% of the CCTV cameras were completely operational.
- On average, 99% of the DMS were completely operational.
- On average, 93% of the Detector Stations were completely operational, with 1% reporting some bad detectors, 8% reporting all bad detectors, and 3% not responding. (6)

Tours / Media/Events

Tours

4/20 MoDOT District 4 hosted Big Truck Night. Scout had 25 adults and 20 children tour the Traffic Management Center.
4/22 Scout participated in Bring Your Child to Work Day and a total of 50 parents and children toured the Traffic Management Center.

Public Appearances

4/16 KC Scout gave a ramp metering presentation at the Kansas State University in Manhattan, Kansas
4/20 MoDOT District 4 hosted Big Truck Night, a total of 225 adults and children stopped by the Scout display to learn about services and work the camera.
4/19 KC Scout made a public appearance at the USMC in Belton, MO there were approximately 32 Marines at the training.
4/27 KC Scout made a public appearance at the Traffic Management Symposium in Overland Park, KS and there were approximately 75 people in attendance.
4/29 KC Scout made a public appearance at the Intelligent Transportation Symposium in Kansas City, MO where there were approximately 140 people in attendance.

Awards

No awards were presented this month.

Media appearances

There were no media appearances this month

Additional Information

- TMC operators dispatched 1,191 Missouri Motorist Assist Calls. (9)
- Customer Service Representatives logged 4,253 contacts from external and internal sources, including phone calls, E-mails, and walk-ins. (8)

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.

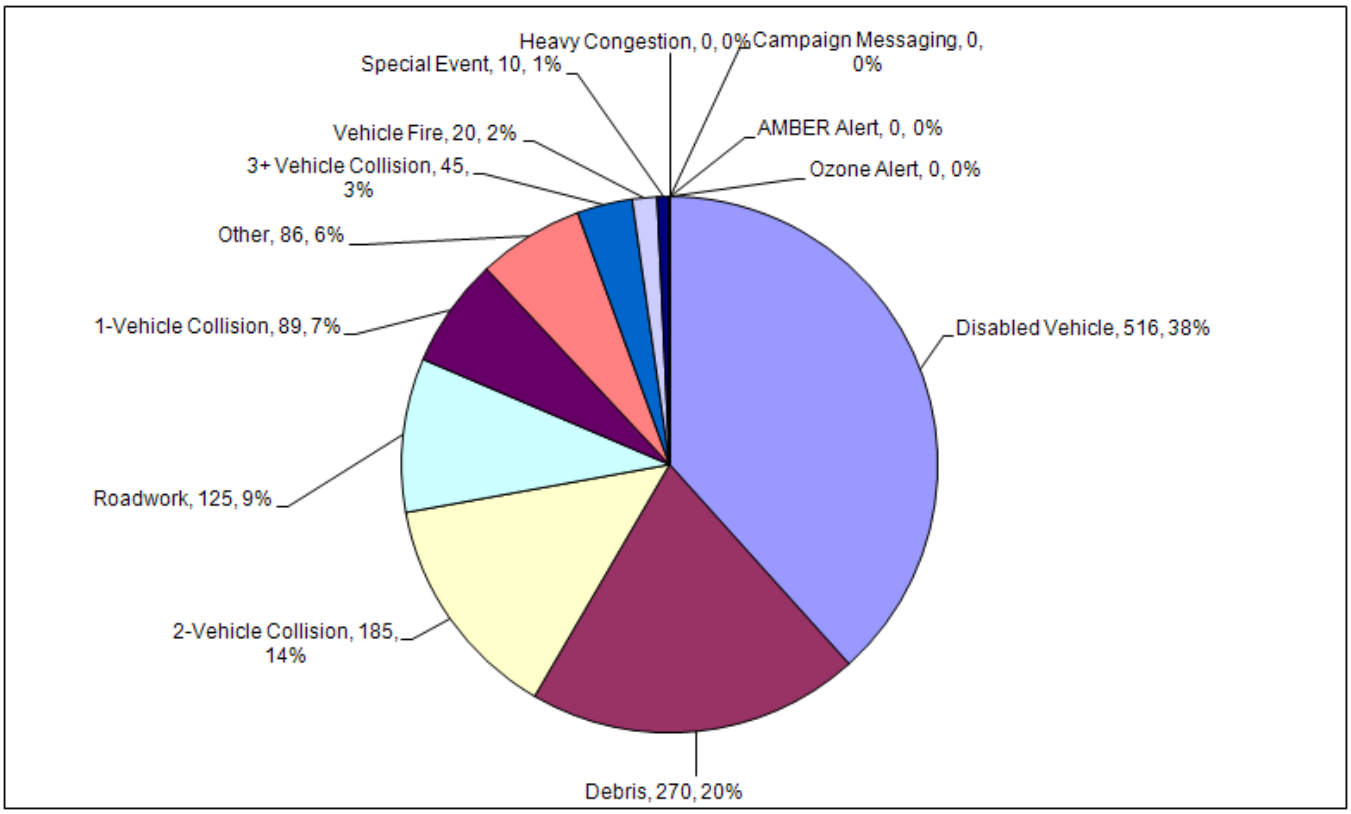
4. The ATIS (Advanced Traveler Information System) is the KC Scout Web Site. The number of ATIS messages reported in the Operations Summary is the total number of messages sent by the operators to the web site. Each message sent creates an icon on the web site map that corresponds to the type of incident 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 involving dispatch of MoDOT Motorist Assist units.
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 April, the TMC responded to 2331 incidents in the Kansas City area. This number represents an decrease of 2% compared to last month. All incidents* are shown by incident type in Figure 1. Disabled Vehicle was the most frequent incident with 516, representing 38% of the total incidents managed. Debris was the second most frequent with 270 (20%). 2-Vehicle Collision (185, 14%) and Roadwork (125, 9%) were the next highest incidents. These 4 incident types accounted for 81% of the total incidents managed by the TMC. The three accident categories accounted for (319, 24%) 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:

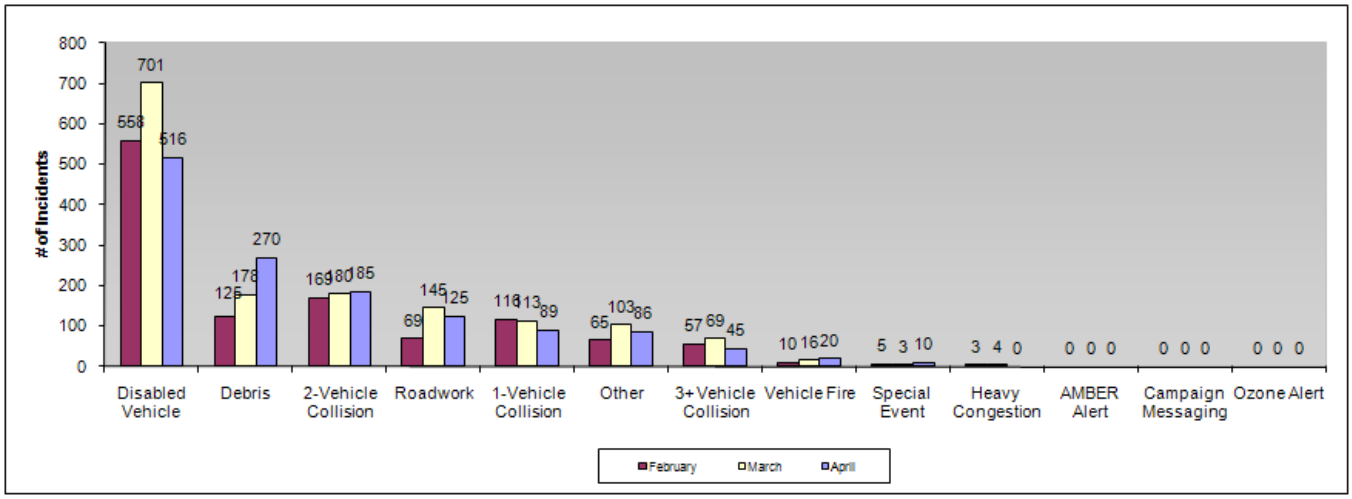
- 11 were within a work zone
- 48 involved big rigs
- 41 involved injuries
- 6 involved fatalities
- 58 involved DOT property damage
- 4 could be classified as secondary incidents

Incident Statistics by Incident Type

April 2010

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

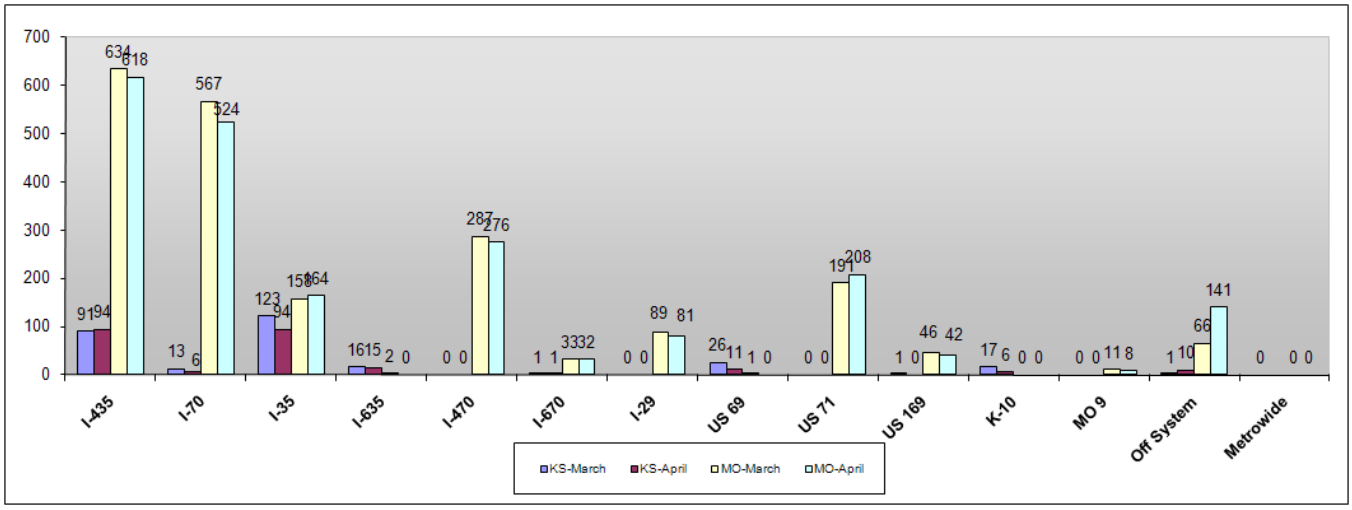


Additional Statistics

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.

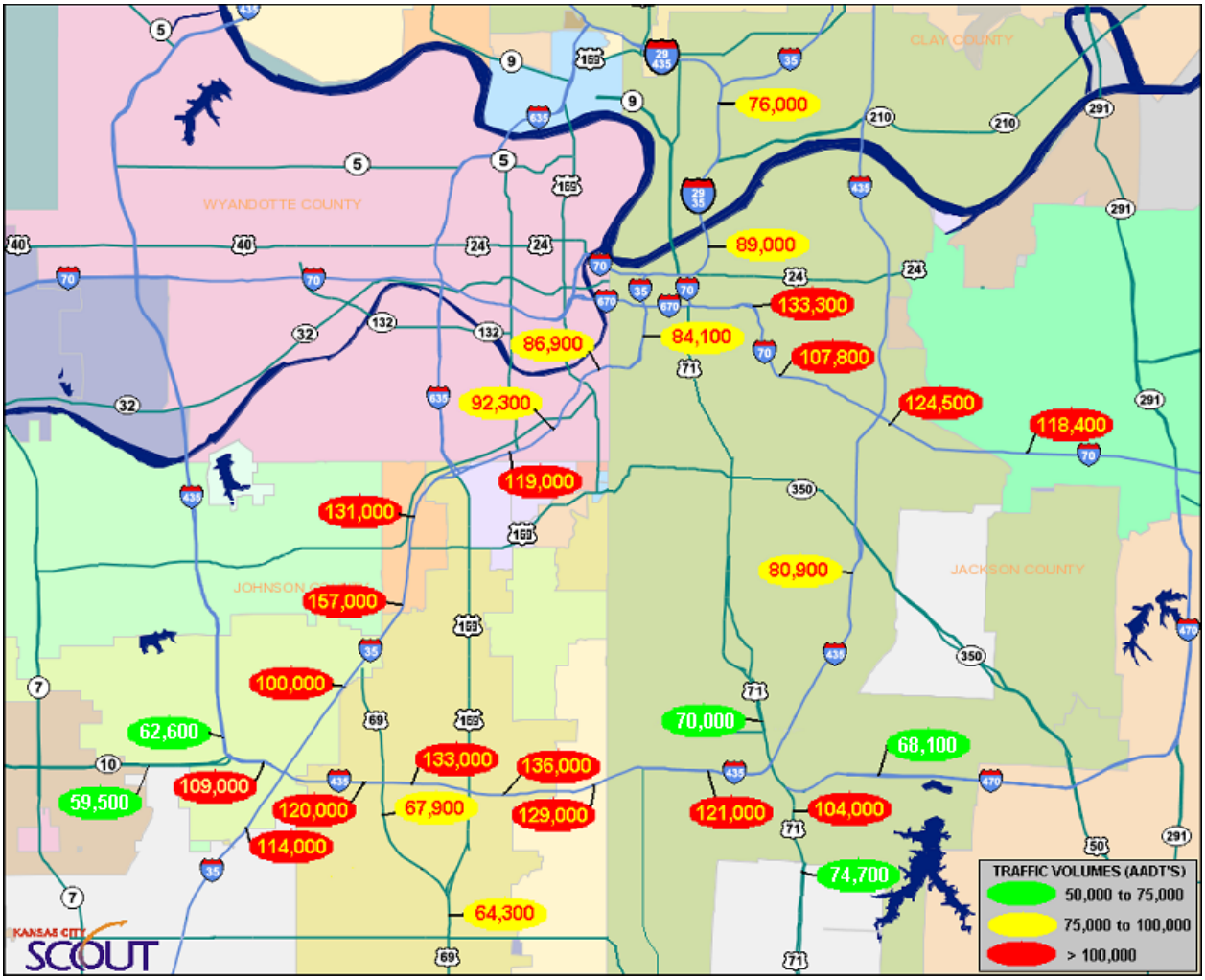
Figure 3 – Incidents by Facility



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.

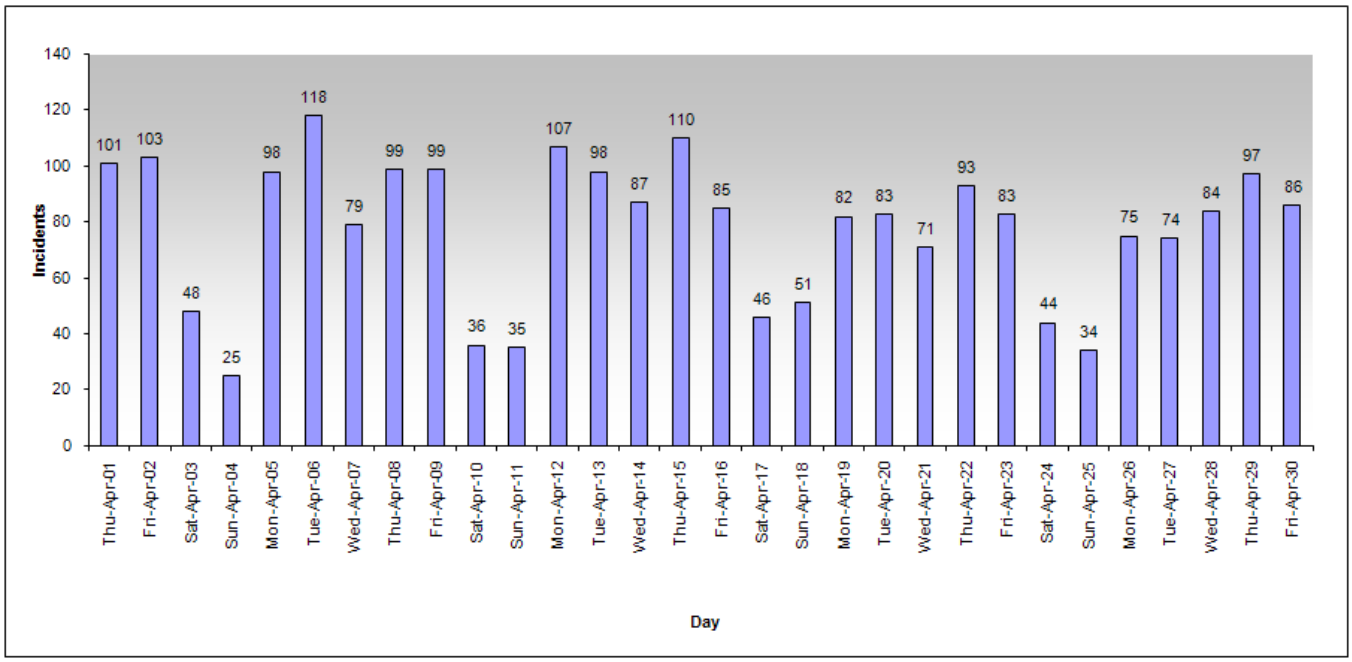
Figure 4 – AADT Map



Incidents by Day

Figure 5 shows the number of incidents occurring on each day of April. The number of incidents per day varies widely, with the average being approximately 78 incidents per day. Weekdays generally incur more frequent incidents, averaging 91.5 incidents/day, compared to 39.8 on weekends. If only non-roadwork incidents are considered, the rates for weekdays and weekends are 86.2 and 38.6 incidents/day, respectively.

Figure 5 – Incidents by Day

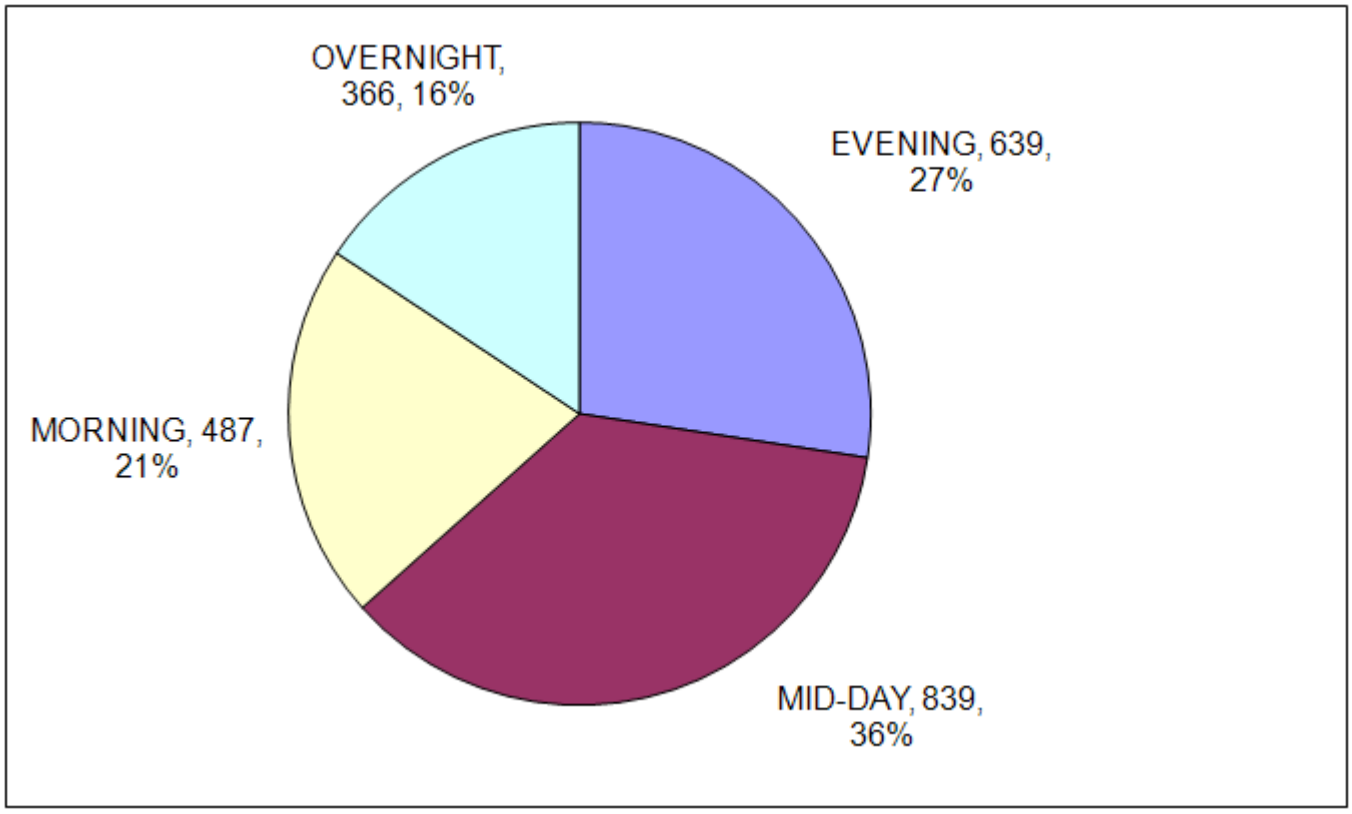


Incidents by Time of Day

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

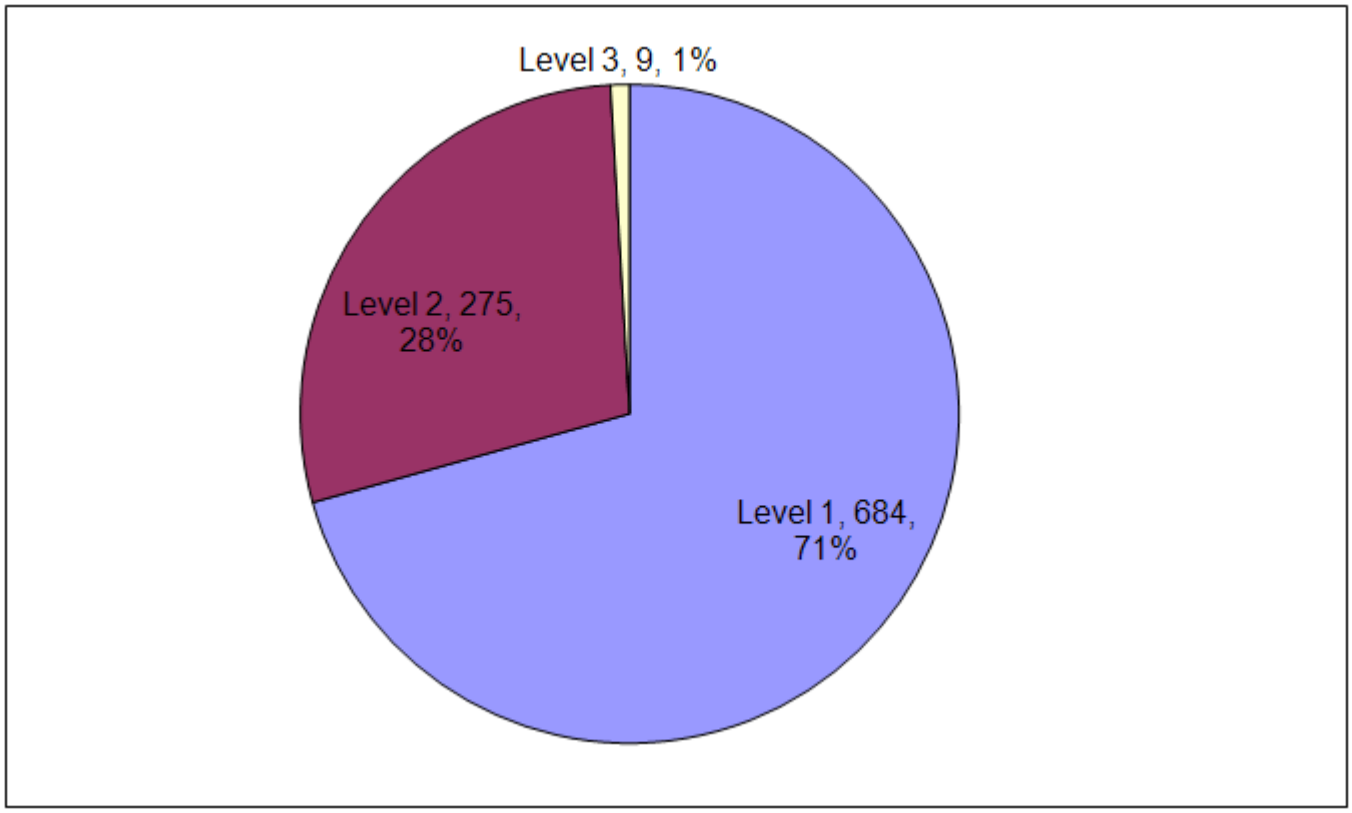


Incidents by Duration Level

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 9 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.

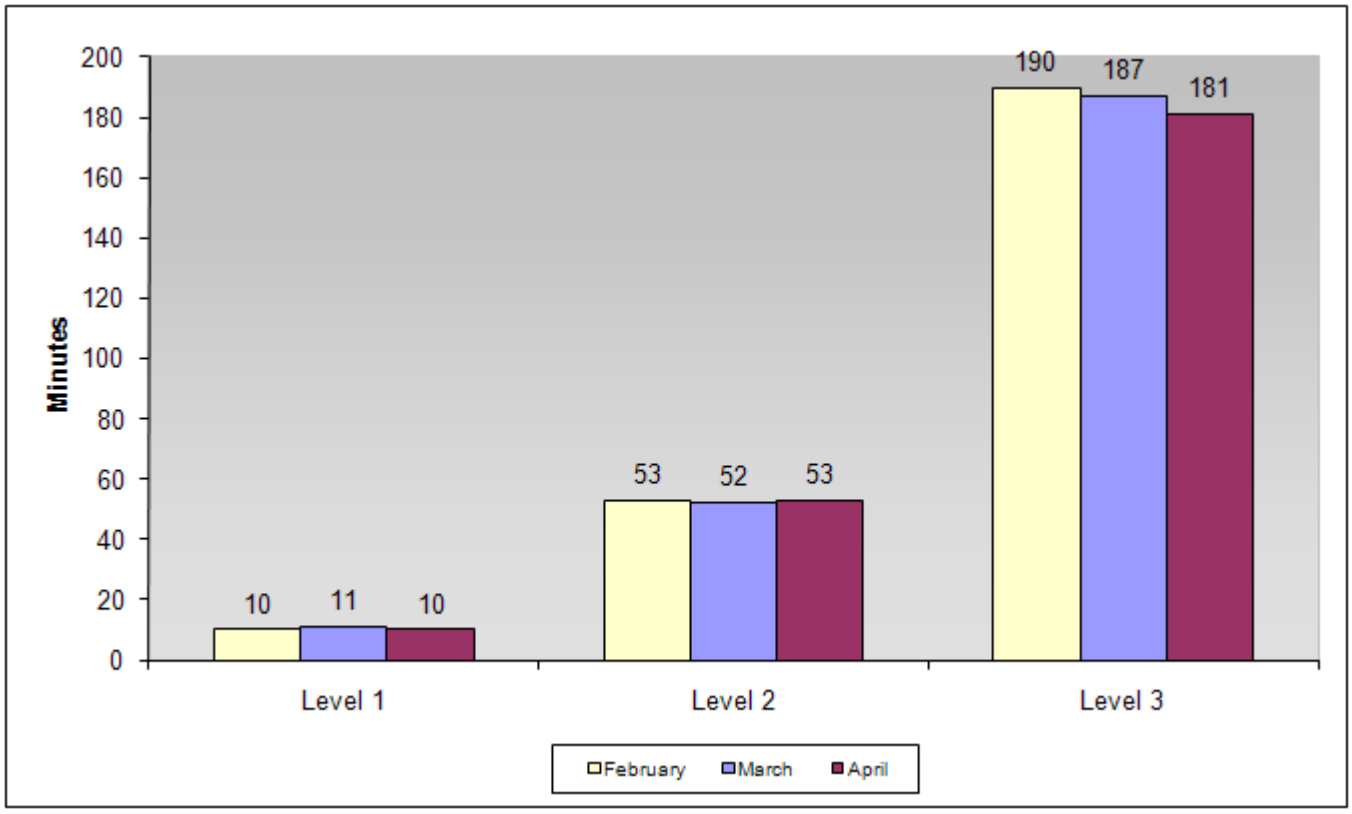
Figure 7 – Incidents by Duration Level



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.

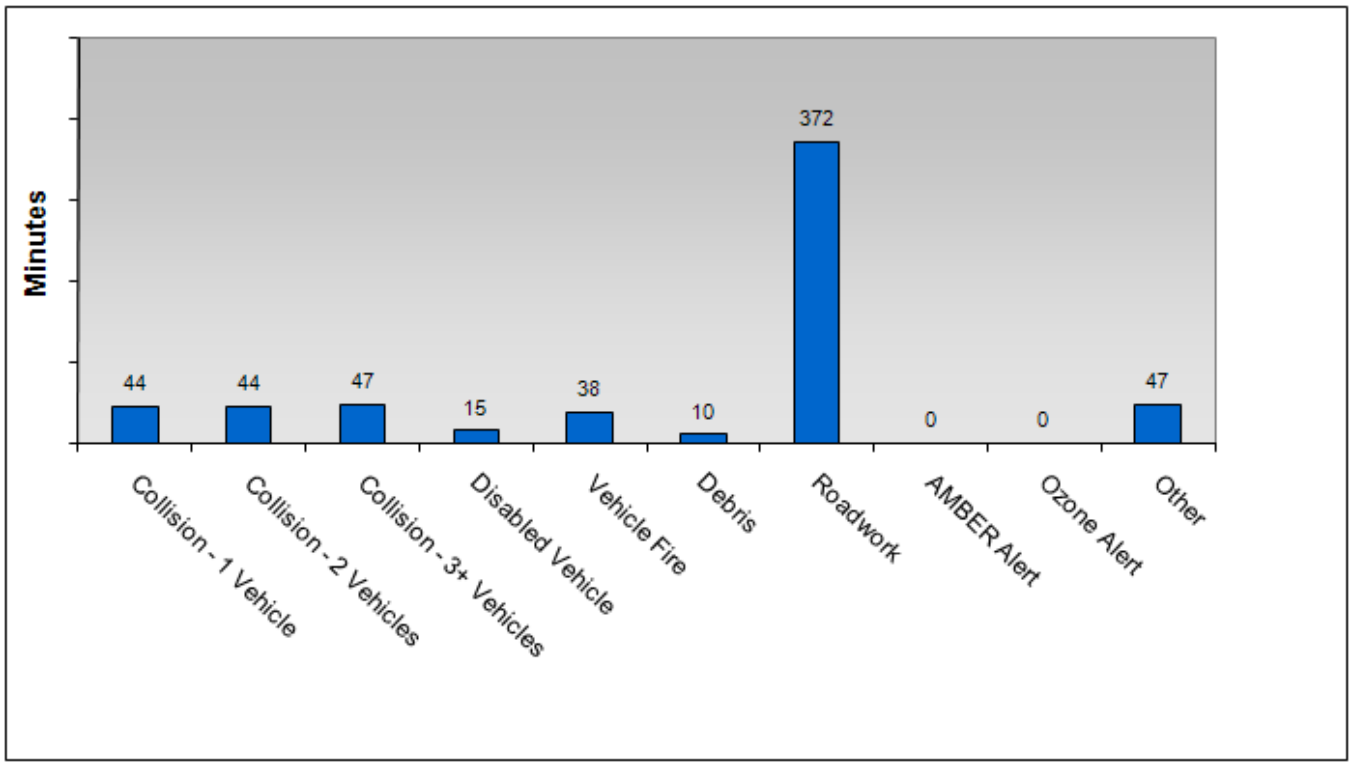
Figure 8 – Incident Duration by Level / 3-Month Summary



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 122 minutes.

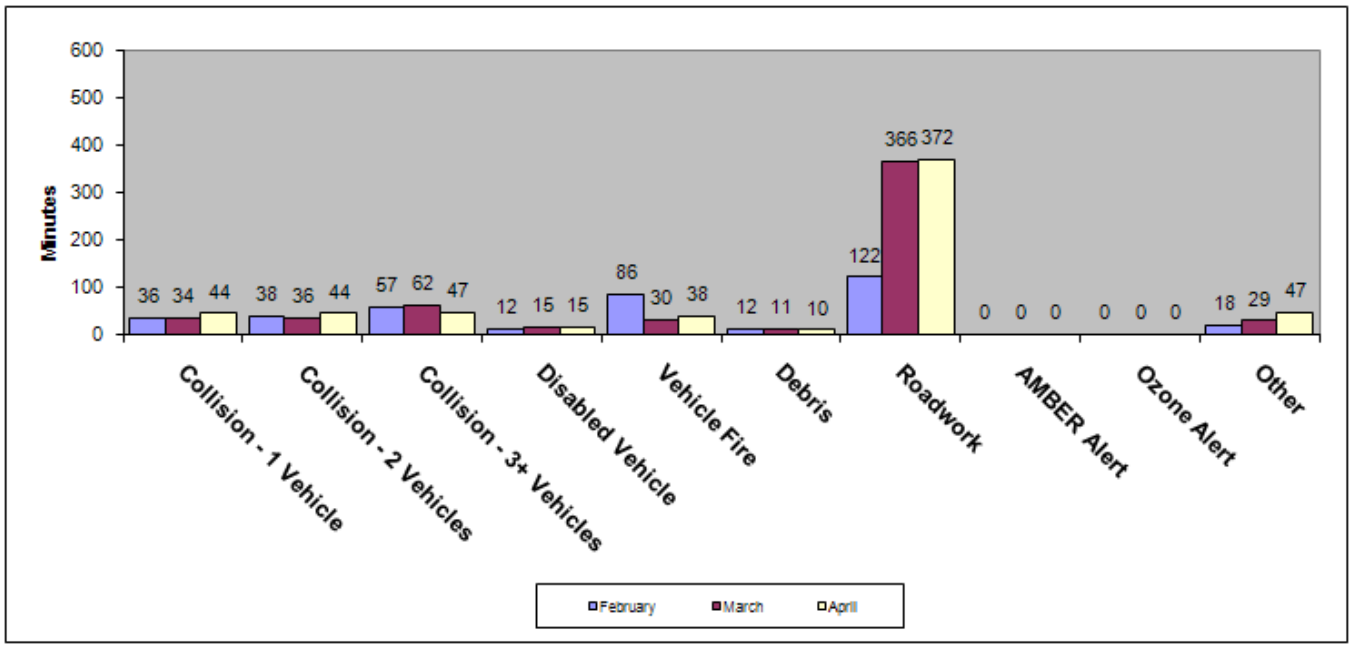
Figure 9 – Incident Duration by Incident Type



Additional Statistics

Figure 10 shows trends over the last 3 months.

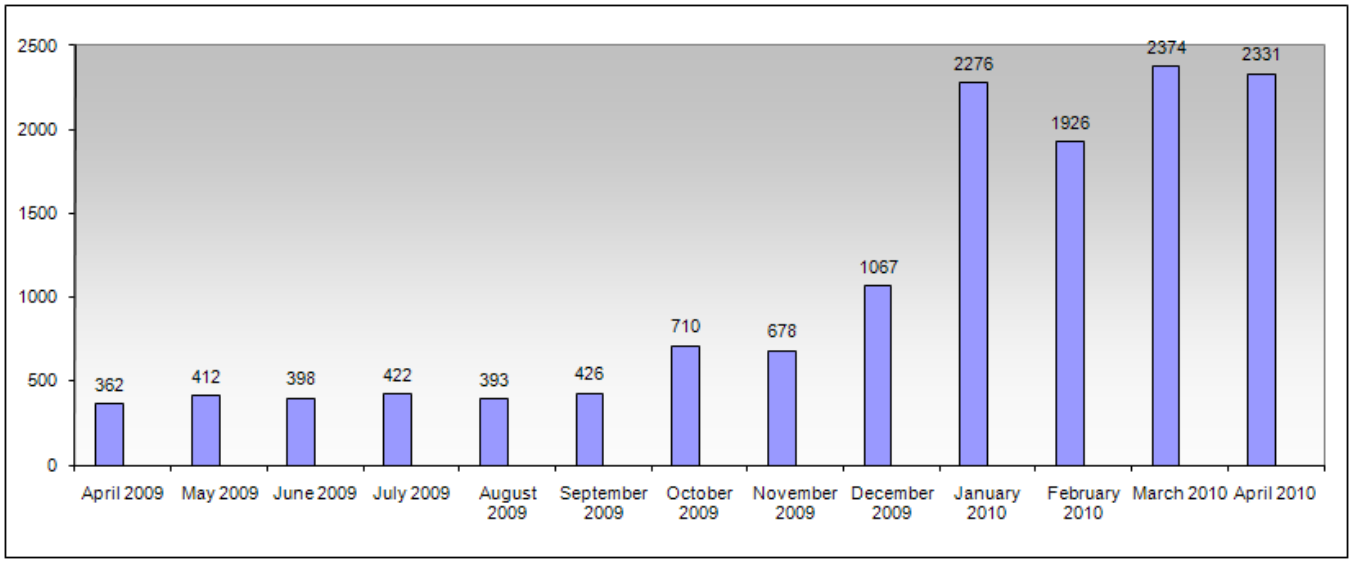
Figure 10 – Incident Duration by Incident Type / 3-Month Summary



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

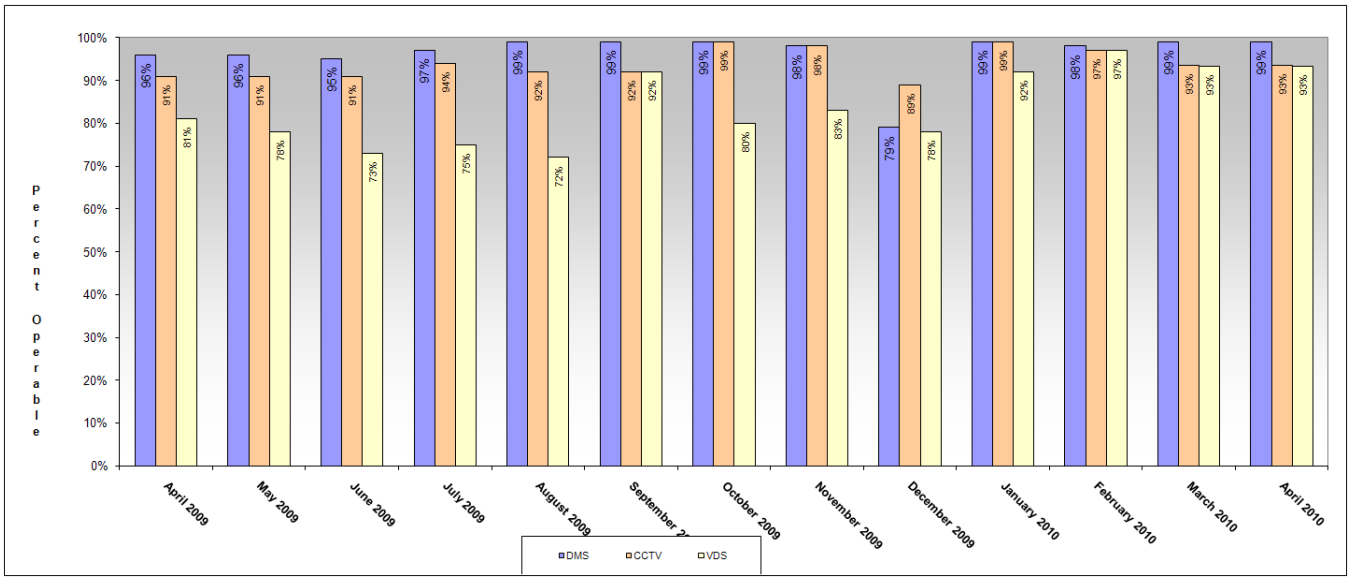
The TMC responded to the following major and other unusual incidents/events during April:

1. April 4, Sunday, 7:59 p.m. (Road Closure) A two vehicle collision involving a motorcycle resulted in a fatality. 71 NB at I-435 was closed for approximately 15 minutes. The event lasted from 7:59 p.m. to 10:42 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 April, the Scout team participated in the following interagency activities:

4/2 - Incident Management personnel attended Secret Service Training at the KCPD Academy

4/6 & 4/9 – KC Scout provided Traffic Incident Management Training to the KCPD East Patrol

4/13 – Traffic Incident Management Training was provided to the Independence PD

4/15 - KC Scout provided Traffic Incident Management Training to the Gladstone PD

4/19 – KC Scout provided incident training to the US Marine Corp in Belton, MO

4/20-4/23- KC Scout personnel attended the SEMA conference in Branson, MO

4/26 – Training was provided to the Higginsville Ambulance Staff in Higginsville, MO

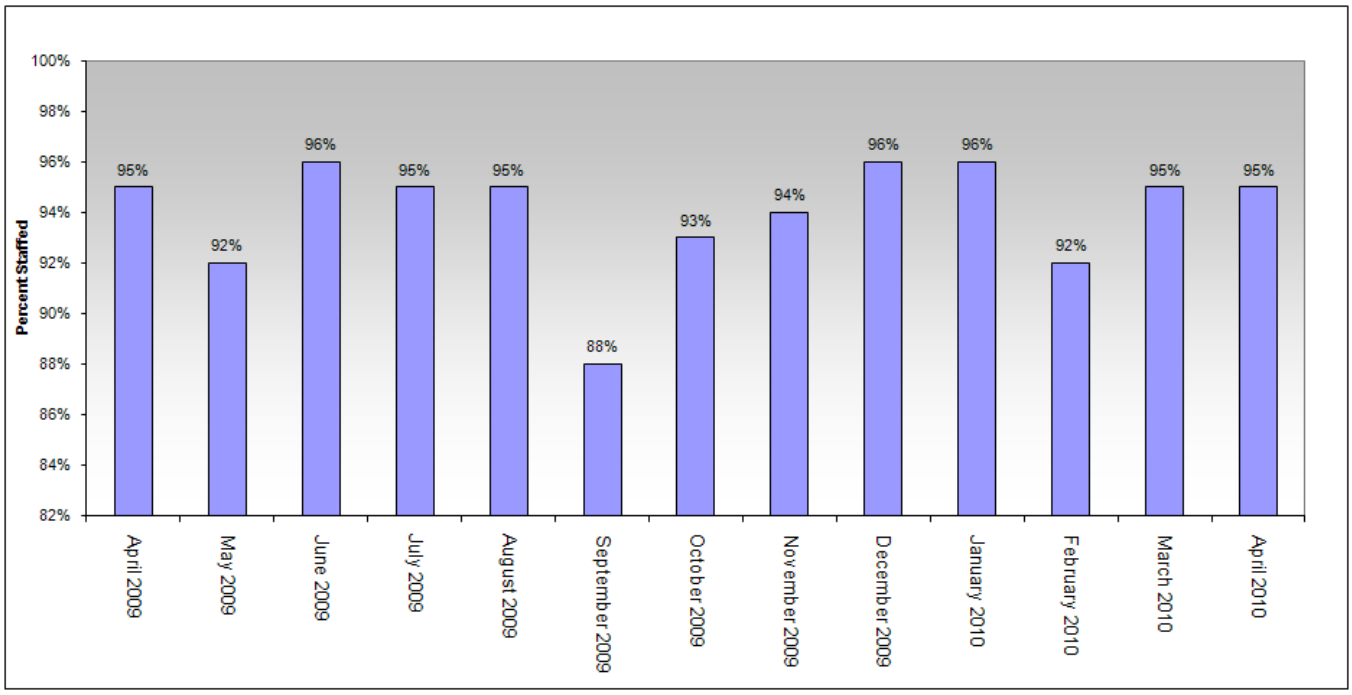
4/27 – The Metro Traffic Incident Management meeting was held at Lenexa Fire Station No. 3

4/29 – The 3rd Annual KC Scout ITS Symposium was held at the Crowne Plaza Hotel.

Staff Management Report

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 187,845 visits in April. The average visit duration was about 28 minutes. 89,658 unique visitors utilized the web site, a 227% increase compared to last month. The average number of visits per visitor was 1.68, a 27% decrease. 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

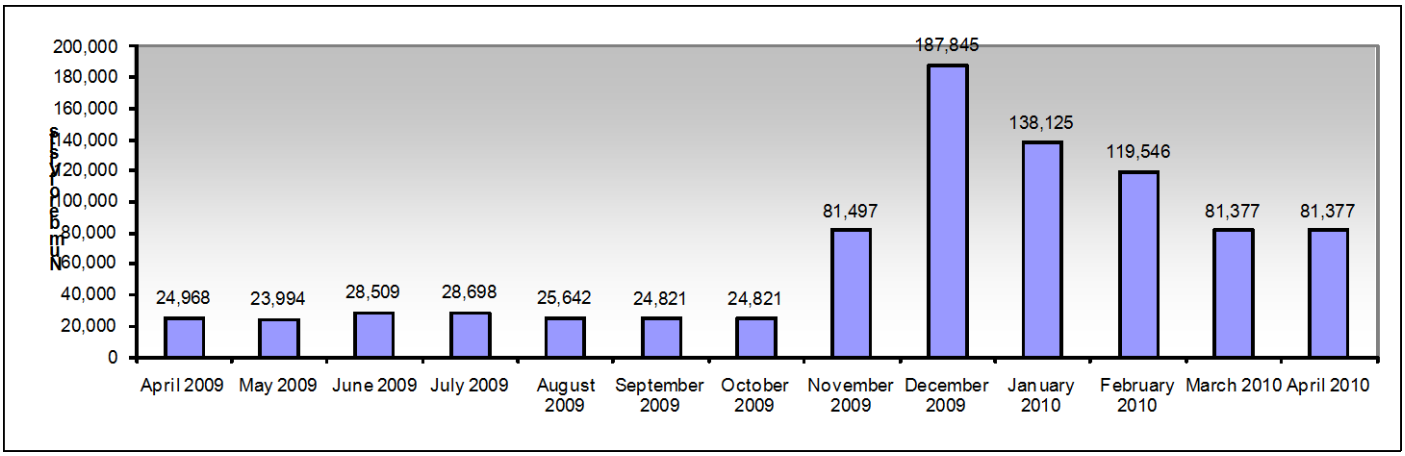
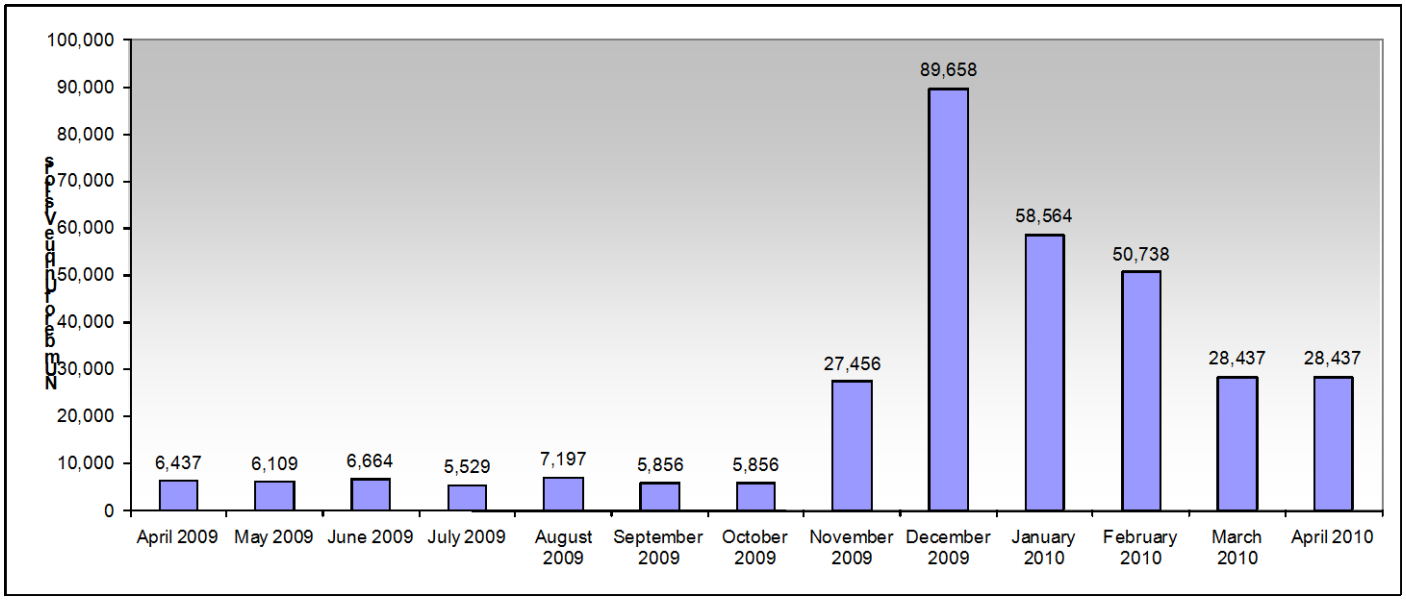


Figure 15 – Web Site Unique Visitors by Month



System Hardware/Software and Maintenance Activities/Issues

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

1. The Teleste Decoder rack was installed in the Data Center for the new CCTVs on the I-635 North Project in Kansas. The team also verified video and PTZ control to all of the CCTVs for the project.

2. All of the CCTVs, DMSs and VDSs records for the I-635 North Project were entered into the TransSuite Database. The CCTV PTZ control, DMS communications and VDS loop status were also verified through TransSuite. Problems were documented and provided back to the Contractor for resolution.

3. Analysis was completed of the US-71 Never-Fail Loops on the north end of the US 71 ITS Implementation Project.

4. The External DNS and the SMTP Servers have been upgraded with new server hardware and Windows Server 2008 R2.

5. Member of KC Scout reviewed and evaluated the KC Scout Hardware Maintenance RFP submittals. A three party contract was developed and is to be used for the new Hardware Maintenance Contract.