

# West Michigan TMC

January 2009

Serving the Grand Rapids Area Freeways



Suzette Peplinski, PE  
Michigan Department of Transportation  
1420 Front Avenue NW  
Grand Rapids, MI 49504  
PeplinskiS@Michigan.gov

## Control Room Coverage

### Control Room Hours of Operation

| Time Period                   | Days  | Hours        |
|-------------------------------|---|--------------|
| October - April               | Monday - Friday   | 6 am - 8 pm  |
|                               | Saturday - Sunday   | As needed    |
| May - September               | Monday - Thursday   | 6 am - 8 pm  |
|                               | Friday  | 6 am - 9 pm  |
|                               | Saturday  | 12 pm - 6 pm |
|                               | Sunday  | 4 pm - 8 pm  |
| Special Events                | All   | As needed    |
| Holidays and Holiday Weekends | New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, Christmas | As needed    |

The following report is limited to data collected during the hours of operation for the control room and within the ITS device coverage area.

### ITS Device Locations and Coverage Area



# West Michigan TMC

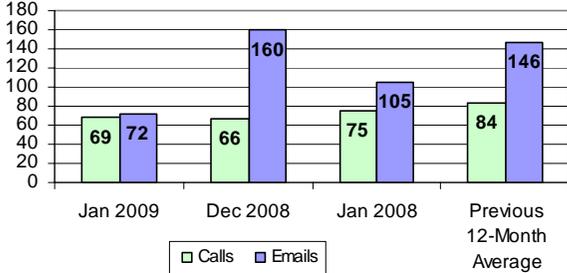
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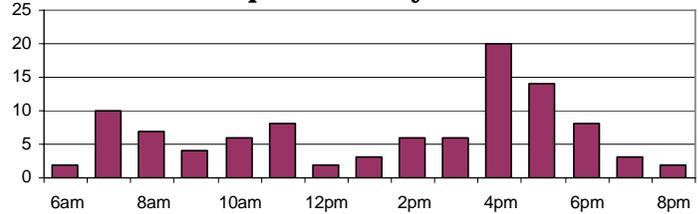
**MDOT**  
Michigan Department of Transportation  
Suzette Peplinski, PE  
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## Control Room Support Activity

**Monthly Communication History**



**Month Total of Unplanned Incidents per Weekday Hour**



**Calls and Emails by Type**

| Agency                         | Calls    |           |           | Emails    |           |           |
|--------------------------------|----------|-----------|-----------|-----------|-----------|-----------|
|                                | In       | Out       | Total     | In        | Out       | Total     |
| City of Grand Rapids           | 0        | 0         | 0         | 6         | 0         | 6         |
| City of Wyoming                | 0        | 3         | 3         | 0         | 0         | 0         |
| Grand Rapids Police Department | 1        | 36        | 37        | 0         | 0         | 0         |
| Kent County Road Commission    | 0        | 4         | 4         | 0         | 0         | 0         |
| MDOT, Construction             | 0        | 0         | 0         | 10        | 0         | 10        |
| MDOT, Traffic/ITS              | 0        | 0         | 0         | 4         | 0         | 4         |
| MDOT, Maintenance              | 0        | 1         | 1         | 4         | 0         | 4         |
| MDOT, Other                    | 0        | 0         | 0         | 3         | 0         | 3         |
| Media                          | 0        | 2         | 2         | 0         | 10        | 10        |
| Michigan State Police          | 0        | 17        | 17        | 0         | 0         | 0         |
| Sheriff, Kent Co.              | 0        | 0         | 0         | 0         | 0         | 0         |
| ITS System Maintenance         | 0        | 4         | 4         | 5         | 0         | 5         |
| Weather                        | 0        | 0         | 0         | 28        | 0         | 28        |
| Other                          | 0        | 1         | 1         | 1         | 1         | 2         |
| <b>Month Total</b>             | <b>1</b> | <b>68</b> | <b>69</b> | <b>61</b> | <b>11</b> | <b>72</b> |

**Monthly High Impact Unplanned Incident Activity**

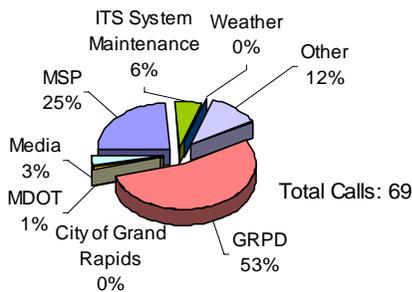
| Incident         | Jan 2009 | Dec 2008 | Jan 2008 | Previous 12-Month Avg. |
|------------------|----------|----------|----------|------------------------|
| Lane Closures    | 41       | 27       | 8        | 13                     |
| Ramp Closures    | -        | -        | 1        | 0                      |
| Freeway Closures | 2        | 1        | -        | 1                      |

**Total Monthly Unplanned Incidents by Roadway**

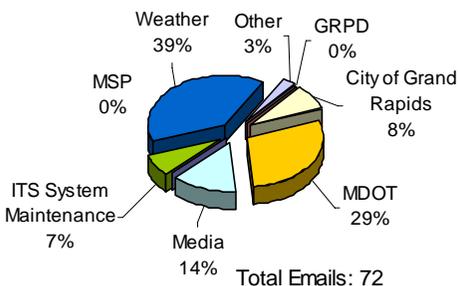
| Freeway          | Jan 2009  |            | Dec 2008  |            | Jan 2008  |            | Previous 12-Month Avg. |            |
|------------------|-----------|------------|-----------|------------|-----------|------------|------------------------|------------|
|                  | Total     | per mi.    | Total     | per mi.    | Total     | per mi.    | Total                  | per mi.    |
| I-96 (4.5 mi.)*  | 15        | 3.3        | 7         | 1.6        | 7         | 1.6        | 6                      | 1.2        |
| I-196 (8.5 mi.)* | 31        | 3.6        | 22        | 2.6        | 16        | 1.9        | 18                     | 2.1        |
| US-131 (11 mi.)* | 51        | 4.6        | 24        | 2.2        | 37        | 3.4        | 37                     | 3.4        |
| <b>Total</b>     | <b>97</b> | <b>4.0</b> | <b>53</b> | <b>2.2</b> | <b>60</b> | <b>2.5</b> | <b>61</b>              | <b>2.5</b> |

\*Mileages reflect the portion of the roadway within the coverage area.

**Calls by Type**



**Emails by Type**



## Traffic Management Center News

The 4 PM hour continued to be the highest hour for unplanned incidents in January. Mid-day incidents were also higher than normal.

High-impact incident lane closures during January 2009 were approximately 5 times higher than during January 2008 and 3 times higher than the previous 12-month average. The month of January 2009 had 2 times the number of total incidents compared to December 2008 and the highest number of incidents since February 2007.

Three traffic cameras and one DMS (all devices on I-196 west of US-131) were without power for a significant portion of January due to weather. The US-131/Franklin camera was without power for most of January because of a nearby construction project.

Due to adverse weather, the advisory speed shown on the VSS signs in the S-curve was changed 16 times in January.

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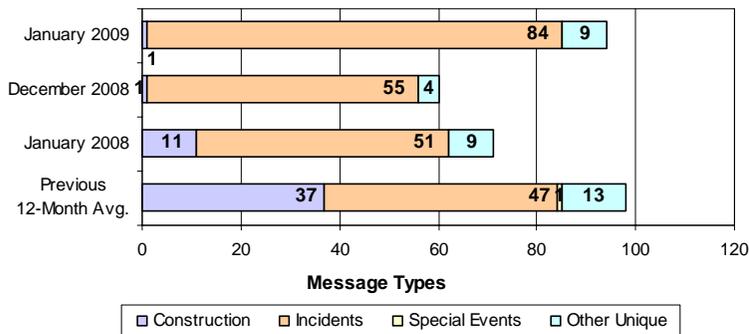
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## Traveler Information Activity

- The MDOT ITS Control Room provides traffic information to freeway users via 10 dynamic message signs (DMS) positioned in key locations along the freeway system in the greater Grand Rapids area.

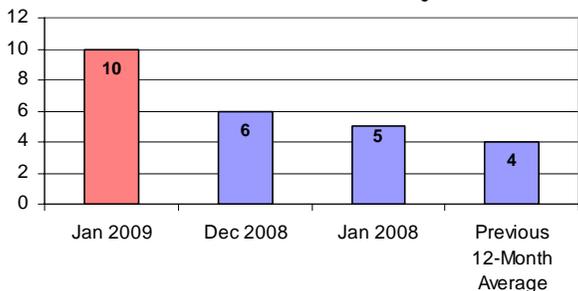
### DMS Messages by Type



### Top Three Utilized DMS

- Westbound I-196 at Plymouth Avenue
- Northbound US-131 at 28th Street
- Westbound I-96 at Fulton/M-21

### Monthly Incident Notification History



### Monthly Incident Notification Communication Accuracy

|                 | Jan 2009 | Dec 2008 | Jan 2008 | Previous 12-Month Avg. |
|-----------------|----------|----------|----------|------------------------|
| Format Correct  | 90.0%    | 100.0%   | 100.0%   | 98.1%                  |
| Content Correct | 100.0%   | 100.0%   | 100.0%   | 96.2%                  |

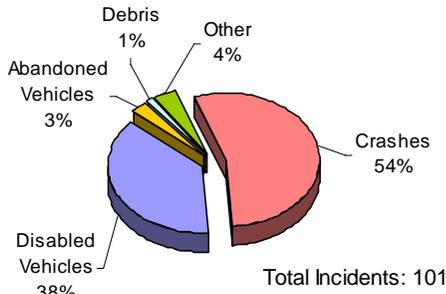
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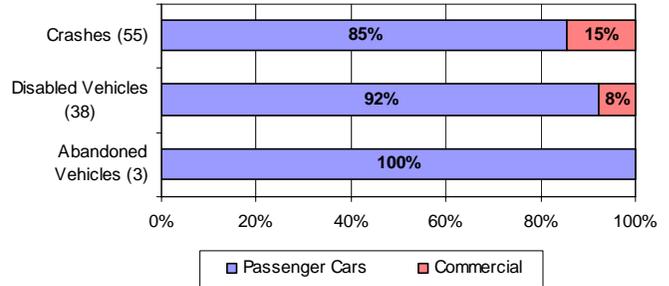
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## Incident Management Information

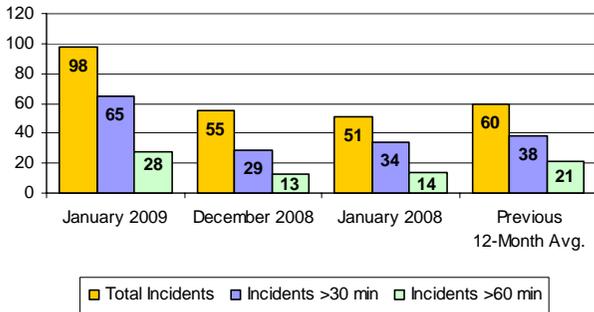
### Incidents Managed by Type



### Vehicle Composition of Incidents

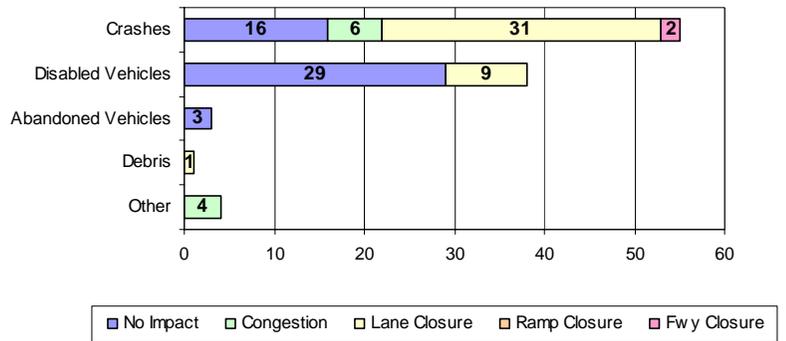


### Incident Duration History\*



\*Incident Duration History does not include abandoned vehicles.

### Traffic Impacts by Incident Type

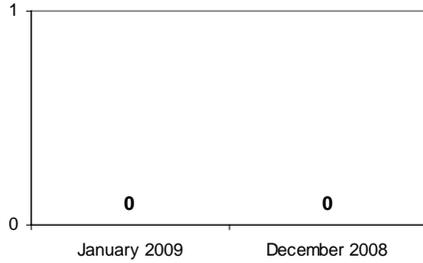


### Incident Hot Spots

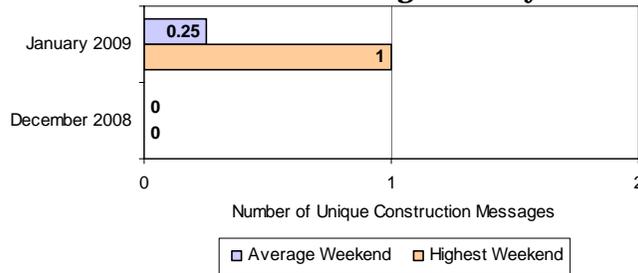
- 5 crashes
- 4 crashes
- 5 disabled vehicles

## Construction Management Information

### Incidents Occurring in Construction Zones



### Weekend\* Construction DMS Message Activity



\*Friday, Saturday and Sunday.

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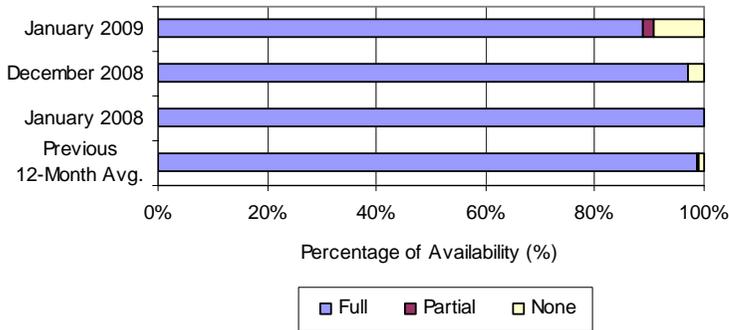
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## ITS Field Infrastructure Reliability

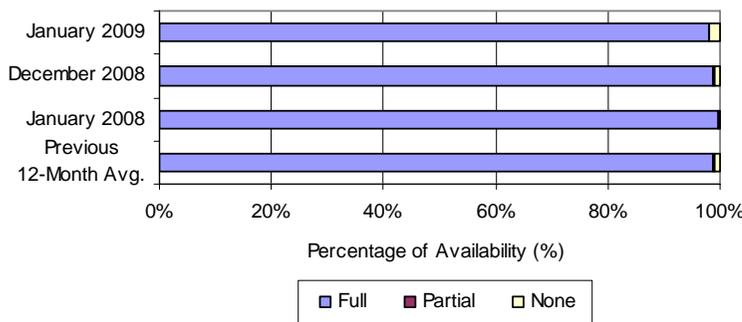
### Overall CCTV Camera System Availability



### Individual CCTV Camera Availability

| Camera                      | Full | Partial | None |
|-----------------------------|------|---------|------|
| 1 US-131 @ 28th St          | 100% | -       | -    |
| 2 US-131 @ Franklin St      | 9%   | 2%      | 89%  |
| 3 US-131 @ Market Ave       | 100% | -       | -    |
| 4 US-131 @ Pearl St         | 100% | -       | -    |
| 5 US-131 @ I-196            | 100% | -       | -    |
| 6 US-131 @ Leonard St       | 100% | -       | -    |
| 7 US-131 @ Ann St           | 100% | -       | -    |
| 8 US-131 @ I-96             | 100% | -       | -    |
| 9 US-131 @ Hall St          | 66%  | 34%     | -    |
| 10 US-131 @ West River Dr   | 100% | -       | -    |
| 11 I-196 @ Chicago Dr       | 77%  | -       | 23%  |
| 12 I-196 @ Lake Michigan Dr | 77%  | -       | 23%  |
| 13 I-196 @ Lane Ave         | 77%  | -       | 23%  |
| 14 I-196 @ College Ave      | 100% | -       | -    |
| 15 I-196 @ Fuller Ave       | 100% | -       | -    |
| 16 I-96 @ I-196             | 100% | -       | -    |
| 17 I-96 @ Fulton St (M-21)  | 100% | -       | -    |

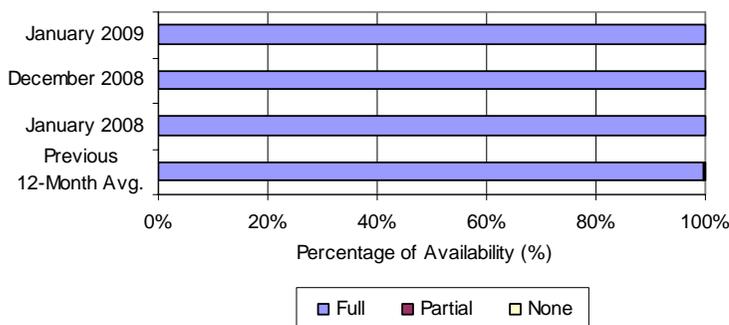
### Overall DMS System Availability



### Individual Dynamic Message Sign Availability

| DMS                          | Full | Partial | None |
|------------------------------|------|---------|------|
| 1 WB I-96 @ Fulton St (M-21) | 100% | -       | -    |
| 2 WB I-196 @ Chicago Dr      | 82%  | -       | 18%  |
| 3 EB I-196 @ Plymouth Ave    | 100% | -       | -    |
| 4 SB US-131 @ West River Dr  | 100% | -       | -    |
| 5 SB US-131 @ Ann St         | 100% | -       | -    |
| 6 NB US-131 @ Leonard St     | 100% | -       | -    |
| 7 SB US-131 @ Pearl St       | 100% | -       | -    |
| 8 SB US-131 @ Hall St        | 100% | -       | -    |
| 9 NB US-131 @ 36th St        | 100% | -       | -    |
| 10 NB US-131 @ 28th St       | 100% | -       | -    |

### Overall VSS System Availability



### Individual Variable Speed Sign Availability

| VSS                       | Full | Partial | None |
|---------------------------|------|---------|------|
| 1 SB US-131 @ Pearl St    | 100% | -       | -    |
| 2 NB US-131 @ Market Ave  | 100% | -       | -    |
| 3 SB US-131 @ Market Ave  | 100% | -       | -    |
| 4 NB US-131 @ Franklin St | 100% | -       | -    |

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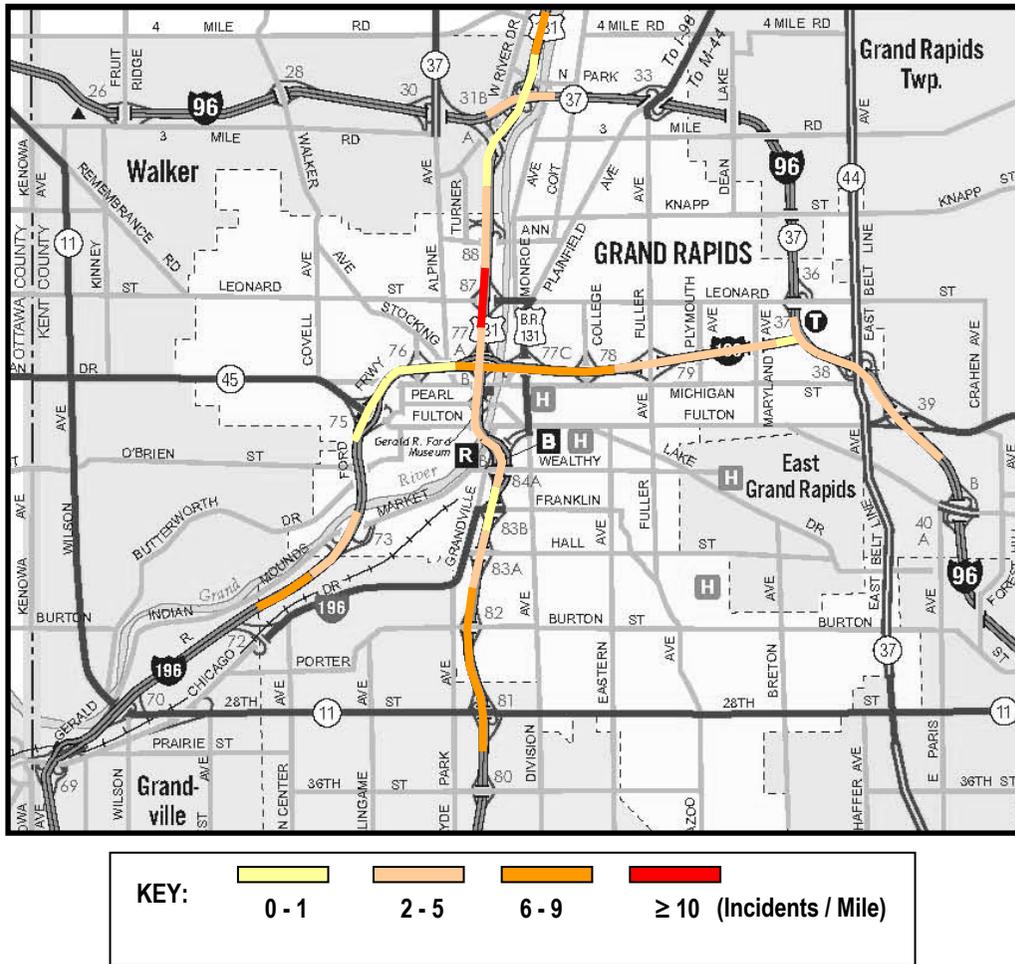
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## Safety Summary

### January 2009 Incident Density by Freeway Segment



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## DATA KEY INFORMATION

| Table  | Description   | Purpose  | Data Source  |
|--|---|--|--|
| <b>Month Total of Unplanned Incidents per Weekday Hour</b> | Displays the total unplanned incidents for 1-hour increments over a 24-hour period.   | Provides a snapshot view of variability of incidents by time of day.   | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Monthly High Impact Unplanned Incident Activity</b>     | Displays the number of major unplanned incidents for the current month, previous month, month last year and the monthly average for the previous 12 months.   | Provides a snapshot view of the major incidents that affect the roadway and freeway interchanges along with historical data. | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Total Monthly Unplanned Incidents by Roadway</b>        | Displays the total unplanned incidents by freeway and the density of incidents based on freeway coverage.   | Provides a snapshot view of the number of incidents per freeway per month.   | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Monthly Communication History</b>                       | Displays the number of telephone calls and emails (incoming and outgoing) for the Control Room Operators for the current month, previous month, month last year and a monthly average for the previous 12 months. | Provides a snapshot view of the control room workload in a historical context.   | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Calls and Emails by Type</b>                            | Displays the number and types of call and email activity for the Control Room operators, separating incoming and outgoing calls.  | Provides a snapshot view of the Control Room call distribution and any apparent trends with the call volume or type.         | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Calls by Type</b>                                       | Displays the percentage distribution of call activity for the Control Room operators.   | Provides a snapshot view of the Control Room call distribution and any apparent trends with the call volume or type.         | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Emails by Type</b>                                      | Displays the percentage distribution of email activity for the Control Room operators.  | Provides a snapshot view of the Control Room email distribution and any apparent trends with the email volume or type.       | Manually entered information by the operator.  |

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## DATA KEY INFORMATION

| Table   | Description   | Purpose  | Data Source  |
|---|---|--|--|
| <b>DMS Messages by Type</b>                                 | Displays the total number of DMS messages by type that occurred during the month.   | Provides a snapshot view of the level of effort and need related to DMS messages.  | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Top Three Utilized DMS</b>                               | Displays the top 3 DMS in terms of the number of unique messages displayed for the month.   | Provides a snapshot view of the "most active" DMS for traveler information, which may indicate areas where additional DMS or other forms of traveler information may be necessary. | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Monthly Incident Notification History</b>                | Displays the number of email incident notifications sent out by Control Room Operators for the current month, previous month, month last year and the monthly average for the previous 12 months. | Provides a snapshot view of the control room workload in a historical context.   | <b><u>QA/QC Log</u></b><br>Manually entered information by operations supervisor.        |
| <b>Monthly Incident Notification Communication Accuracy</b> | Displays the accuracy of email incident notification messages sent out to stakeholders. Accuracy measures include format and content.   | Provides a quantitative method of quality control on operator interactions with stakeholders.  | <b><u>QA/QC Log</u></b><br>Manually entered information by operations supervisor.        |

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## DATA KEY INFORMATION

| Table                                   | Description   | Purpose  | Data Source  |
|---|---|--|--|
| <b>Incidents Managed by Type</b>        | Displays the distribution of incident types.  | Provides a snapshot view of the composition of incidents.                          | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Vehicle Composition of Incidents</b> | Displays the number of incidents that involved commercial vehicles compared to passenger cars for each incident type.   | Provides a snapshot view of the incidents involving commercial vehicles.           | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Incident Duration History</b>        | Displays the total number of incidents compared with the number of incidents with durations exceeding 30 minutes and 60 minutes. (current month, previous month, month last year and the monthly average for the previous 12 months.) | Provides a snapshot view of the duration of incidents managed by the control room. | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Traffic Impacts by Incident Type</b> | Displays traffic impact distributions by incident type.   | Provides a snapshot view of the typical traffic impacts for each incident type.    | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Incident Hot Spots</b>               | Displays the most frequent locations for accidents and disabled vehicles.   | Provides a snapshot view of where operators should concentrate their attention.    | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |

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| Table  | Description  | Purpose  | Data Source  |
|--|--|--|--|
| <b>Incidents Occurring in Construction Zones</b> | Displays the number of unplanned incidents occurring in construction zones for the current and previous months.  | Provides a snapshot view of the number of incidents occurring in construction zones. | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |
| <b>Weekend Construction DMS Message Activity</b> | Displays the average and maximum number of unique construction messages posted during a full (Friday-Sunday) weekend in the current and previous months. | Provide an snapshot view of the quantity of messaging occurring during the weekend.  | <b><u>Control Room Activity Log</u></b><br>Manually entered information by the operator. |

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## DATA KEY INFORMATION

| Table   | Description  | Purpose   | Data Source   |
|---|--|---|---|
| <b>Overall Camera System Availability</b>           | Displays the percentage of CCTV camera availability for the current month, previous month, month last year and the monthly average for the previous 12 months.   | Provides a snapshot view of system availability in relation to historical data.                               | <b><u>Daily Shift Report</u></b><br>Manually entered information by the operator. |
| <b>Individual CCTV Camera Availability</b>          | Displays the percentage of time each individual CCTV camera is functioning at full, partial and zero capacity.   | Provides a detailed view of ITS system availability.  | <b><u>Daily Shift Report</u></b><br>Manually entered information by the operator. |
| <b>Overall DMS System Availability</b>              | Displays the percentage of Dynamic Message Sign availability for the current month, previous month, month last year and the monthly average for the previous 12 months.  | Provides a snapshot view of system availability in relation to historical data.                               | <b><u>Daily Shift Report</u></b><br>Manually entered information by the operator. |
| <b>Individual Dynamic Message Sign Availability</b> | Displays the percentage of time each individual Dynamic Message Sign is functioning at full, partial and zero capacity.  | Provides a detailed view of ITS system availability.  | <b><u>Daily Shift Report</u></b><br>Manually entered information by the operator. |
| <b>Overall VSS System Availability</b>              | Displays the percentage of Variable Speed Sign availability for the current month, previous month, month last year and the monthly average for the previous 12 months.   | Provides a snapshot view of system availability in relation to historical data.                               | <b><u>Daily Shift Report</u></b><br>Manually entered information by the operator. |
| <b>Individual Variable Speed Sign Availability</b>  | Displays the percentage of time each individual Variable Speed Sign is functioning at full, partial and zero capacity.   | Provides a detailed view of ITS system availability.  | <b><u>Daily Shift Report</u></b><br>Manually entered information by the operator. |
| <b>Incidents by Freeway Segment</b>                 | Displays incident density per segment of roadway within the ITS device coverage. Red indicates a freeway with the highest incident density. Dark orange, light orange and light yellow represent decreasing levels of density, respectively. | Provides a graphic representation of incident density to assist in choosing locations for future ITS devices. | <b><u>Daily Shift Report</u></b><br>Manually entered information by the operator. |