

West Michigan TMC

December 2006

Serving the Grand Rapids Area Freeways



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Control Room Coverage

Control Room Hours of Operation

| Day | Time Period | Time of Day |
|---------------------|--|------------------------|
| Mondays – Thursdays | All | 6:00 a.m. to 8:00 p.m. |
| Fridays | May through Labor Day | 6:30 a.m. to 9:00 p.m. |
| Sundays | May through Labor Day | 5:00 p.m. to 8:00 p.m. |
| Fridays | Labor Day through April | 6:30 a.m. to 8:00 p.m. |
| Sundays | Labor Day through April | None |
| Special Events | All | As needed |
| Holidays | New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, and Christmas Day. | None |

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



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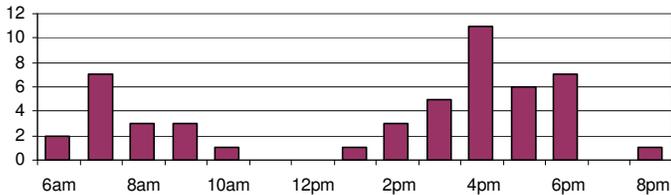
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Control Room Support Activity

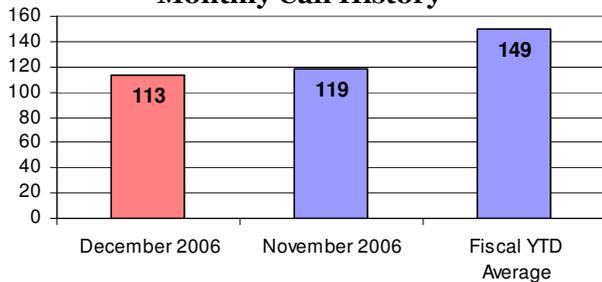
Month Total of Unplanned Incidents per Weekday Hour



Monthly High Impact Unplanned Incident Activity

| Incident | Dec 2006 | Nov 2006 | Fiscal YTD Average |
|------------------|----------|----------|--------------------|
| Lane Closures | 7 | 11 | 11 |
| Ramp Closures | - | 4 | 2 |
| Freeway Closures | - | - | 0 |

Monthly Call History



Total Monthly Unplanned Incidents by Roadway

| Freeway | Dec 2006 | | Nov 2006 | | Fiscal YTD Average | |
|----------------------|-----------|------------|------------|------------|--------------------|------------|
| | Total | per mi. | Total | per mi. | Total | per mi. |
| I-96 (4.5 mi.)* | 4 | 0.9 | 5 | 1.1 | 4 | 1.0 |
| I-196 (8.5 mi.)* | 14 | 1.6 | 30 | 3.5 | 26 | 3.1 |
| US-131 (11 mi.)* | 32 | 2.9 | 65 | 5.9 | 64 | 5.8 |
| Monthly Total | 50 | 2.1 | 100 | 4.2 | 94 | 3.9 |

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

Calls by Type

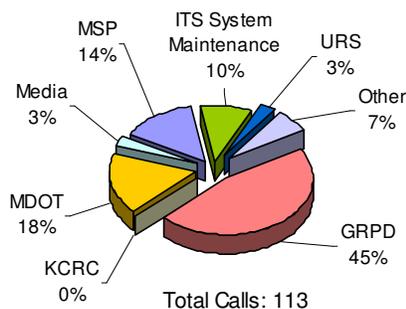
| Agency | In | Out | Total |
|--------------------------------|-----------|-----------|------------|
| City of Grand Rapids | 0 | 0 | 0 |
| City of Wyoming | 0 | 1 | 1 |
| Grand Rapids Police Department | 6 | 46 | 52 |
| Kent County Road Commission | 0 | 0 | 0 |
| MDOT, Construction | 13 | 5 | 18 |
| MDOT, Traffic/ITS | 1 | 0 | 1 |
| MDOT, Maintenance | 1 | 0 | 1 |
| MDOT, Other | 0 | 0 | 0 |
| Media | 2 | 1 | 3 |
| Michigan State Police | 2 | 14 | 16 |
| Sheriff, Kent Co. | 0 | 0 | 0 |
| URS Corporation | 3 | 0 | 3 |
| ITS System Maintenance | 1 | 10 | 11 |
| Other | 4 | 3 | 7 |
| Month Total | 33 | 80 | 113 |

Traffic Management Center News

Control Room operators have been running validation tests on the Wavetronics vehicle detection software in order to determine its accuracy.



Calls by Type



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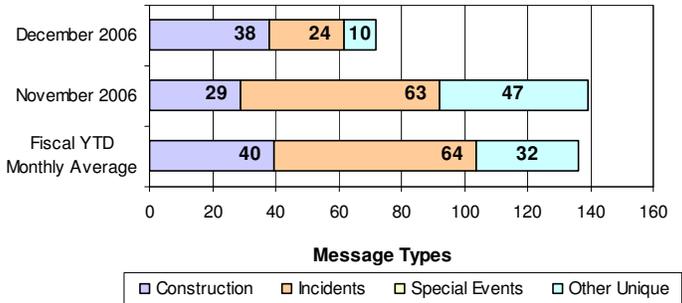
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Traveler Information Activity

- 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.

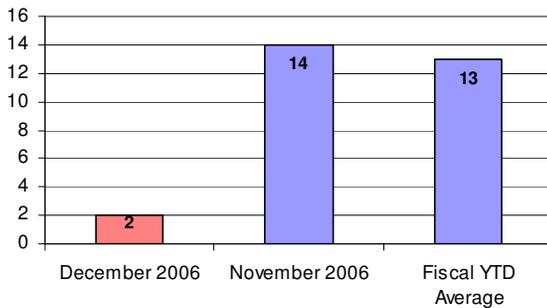
Unique DMS Messages by Type



Top Three Utilized DMS

1. Northbound US-131 at 28th Street
2. Westbound I-196 at Plymouth Avenue
3. Northbound US-131 at 36th Street

Monthly Incident Notification History



Monthly Incident Notification Communication Accuracy

| | Dec 2006 | Nov 2006 | Fiscal YTD Average |
|-----------------|----------|----------|--------------------|
| Format Correct | 100.0% | 85.7% | 84.6% |
| Content Correct | 100.0% | 78.6% | 92.3% |

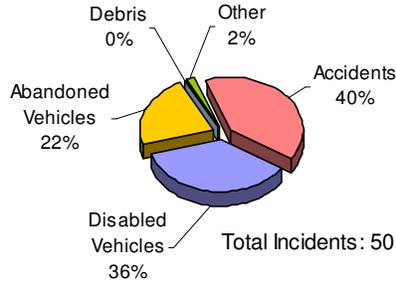
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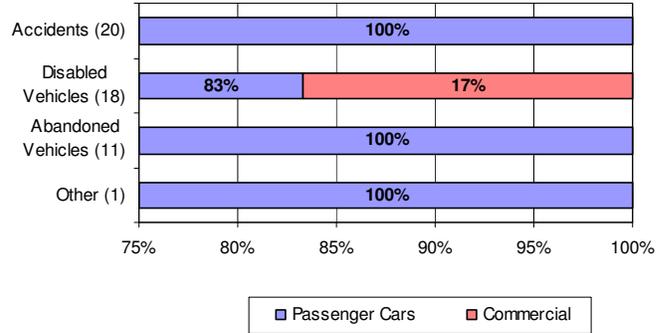
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Incident Management Information

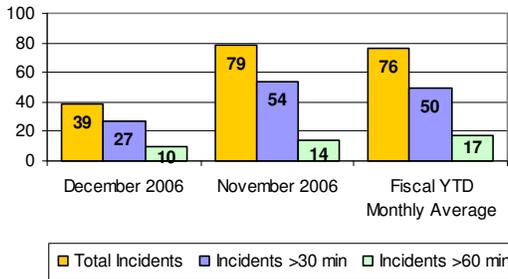
Incidents Managed by Type



Vehicle Composition of Incidents

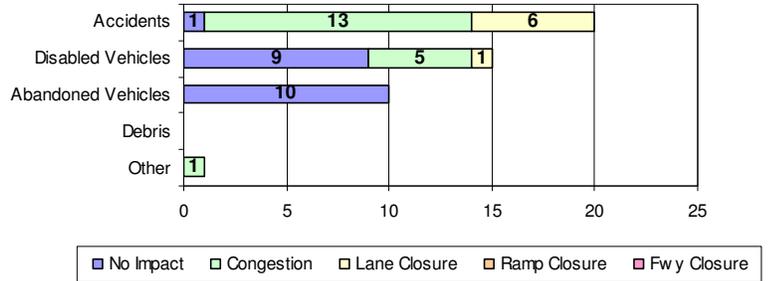


Incident Duration History*

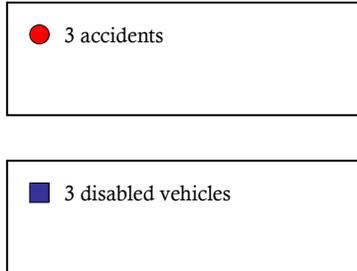


*Incident Duration History does not include abandoned vehicles.

Traffic Impacts by Incident Type



Incident Hot Spots



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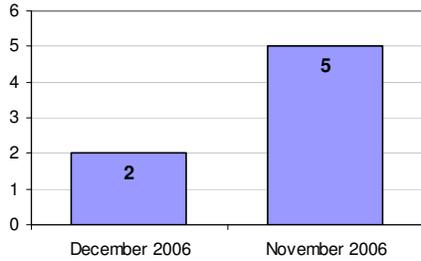
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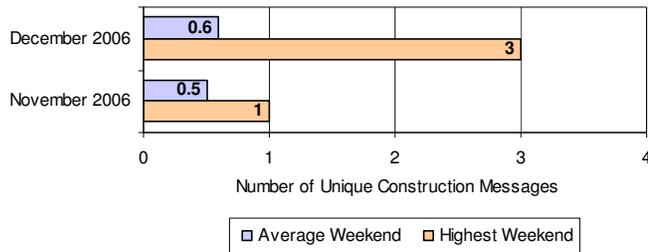
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Construction Management Information

Incidents Occurring in Construction Zones



Weekend* Construction DMS Message Activity



*Friday, Saturday and Sunday.

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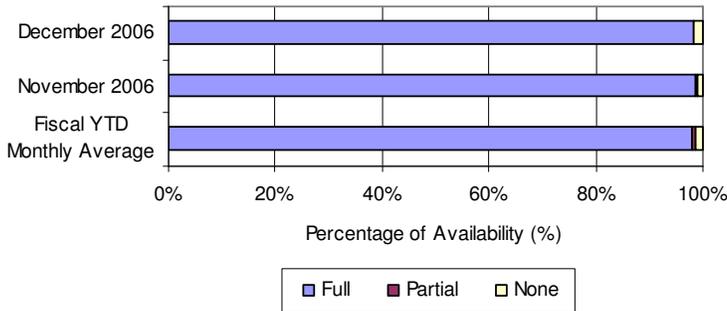


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ITS Field Infrastructure Reliability

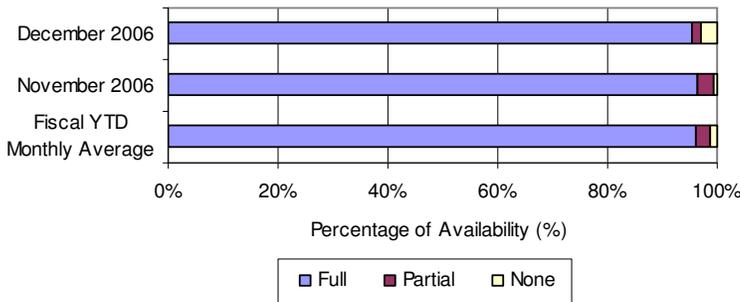
Overall Camera System Availability



Individual CCTV Camera Availability

| Camera | Full | Partial | None |
|-----------------------------|------|---------|------|
| 1 US-131 @ 28th St | 100% | - | - |
| 2 US-131 @ Franklin St | 97% | - | 3% |
| 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 | 100% | - | - |
| 10 US-131 @ West River | 85% | - | 15% |
| 11 I-196 @ Chicago Dr | 97% | - | 3% |
| 12 I-196 @ Lake Michigan Dr | 97% | - | 3% |
| 13 I-196 @ Lane Ave | 97% | - | 3% |
| 14 I-196 @ College Ave | 100% | - | - |
| 15 I-196 @ Fuller Ave | 100% | - | - |
| 16 I-96 @ I-196 | 100% | - | - |
| 17 I-96 @ Fulton/M-21 | 100% | - | - |

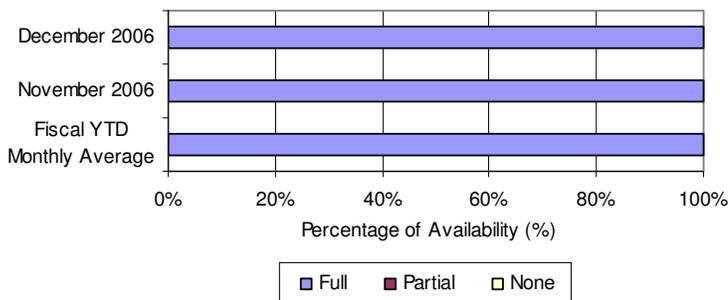
Overall DMS System Availability



Individual Dynamic Message Sign Availability

| DMS | Full | Partial | None |
|--------------------------|------|---------|------|
| 1 WB I-96 @ Fulton/M-21 | 100% | - | - |
| 2 WB I-196 @ Chicago Dr | 100% | - | - |
| 3 EB I-196 @ Plymouth | 100% | - | - |
| 4 SB US-131 @ West River | 73% | 9% | 18% |
| 5 SB US-131 @ Ann | 97% | 3% | - |
| 6 NB US-131 @ Leonard | 88% | 3% | 9% |
| 7 SB US-131 @ Pearl | 100% | - | - |
| 8 SB US-131 @ Hall | 100% | - | - |
| 9 NB US-131 @ 36th St | 100% | - | - |
| 10 NB US-131 @ 28th St | 97% | - | 3% |

Overall VSS System Availability



Individual Variable Speed Sign Availability

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

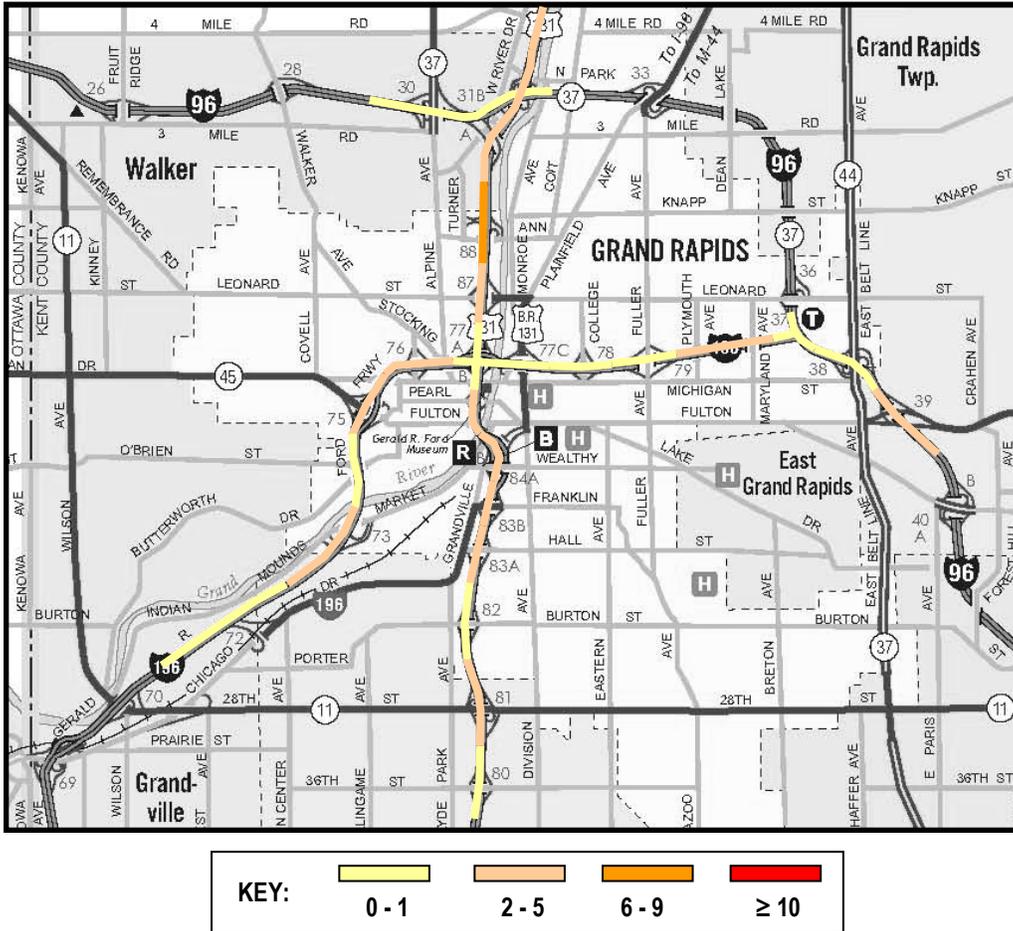
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Safety Summary

December 2006 Incidents by Freeway Segment



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DATA KEY INFORMATION

| Table | Description | Purpose | Data Source |
|--|--|--|--|
| Month Total of Unplanned Incidents per Weekday Hour | 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. | <u>Control Room Activity Log</u> Manually entered information by the operator. |
| Monthly High Impact Unplanned Incident Activity | Displays the number of major unplanned incidents for the current month, previous month and fiscal year-to-date monthly average. | Provides a snapshot view of the major incidents that affect the roadway and freeway interchanges along with historical data. | <u>Control Room Activity Log</u> Manually entered information by the operator. |
| Total Monthly Unplanned Incidents by Roadway | 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. | <u>Control Room Activity Log</u> Manually entered information by the operator. |
| Monthly Call History | Displays the number of telephone calls (incoming and outgoing) for the Control Room Operators for the current month, previous month and fiscal year-to-date monthly average. | Provides a snapshot view of the control room workload in a historical context. | <u>Control Room Activity Log</u> Manually entered information by the operator. |
| Calls by Type (Table) | Displays the number and types of call 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. | <u>Control Room Activity Log</u> Manually entered information by the operator. |
| Calls by Type (Pie Chart) | 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. | <u>Control Room Activity Log</u> Manually entered information by the operator. |

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| Table | Description | Purpose | Data Source |
|---|---|--|--|
| Unique DMS Messages by Type | Displays the total number of unique DMS messages by type that occurred during the month. | Provides a snapshot view of the level of effort and need related to DMS messages. | <u>Control Room Activity Log</u> Manually entered information by the operator. |
| Top Three Utilized DMS | 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. | <u>Control Room Activity Log</u> Manually entered information by the operator. |
| Monthly Incident Notification History | Displays the number of email incident notifications sent out by Control Room Operators for the current month, previous month and fiscal year-to-date monthly average. | Provides a snapshot view of the control room workload in a historical context. | <u>QA/QC Log</u> Manually entered information by operations supervisor. |
| Monthly Incident Notification Communication Accuracy | 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. | <u>QA/QC Log</u> Manually entered information by operations supervisor. |

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

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|--|--|--|--|
| Incidents Occurring in Construction Zones | 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. | <u>Control Room Activity Log</u> Manually entered information by the operator. |
| Weekend Construction DMS Message Activity | 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. | <u>Control Room Activity Log</u> Manually entered information by the operator. |

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| Table | Description | Purpose | Data Source |
|---|--|---|---|
| Overall Camera System Availability | Displays the percentage of CCTV camera availability for the current month, previous month and fiscal year-to-date monthly average. | Provides a snapshot view of system availability in relation to historical data. | <u>Daily Shift Report</u> Manually entered information by the operator. |
| Individual CCTV Camera Availability | 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. | <u>Daily Shift Report</u> Manually entered information by the operator. |
| Overall DMS System Availability | Displays the percentage of Dynamic Message Sign availability for the current month, previous month and fiscal year-to-date monthly average. | Provides a snapshot view of system availability in relation to historical data. | <u>Daily Shift Report</u> Manually entered information by the operator. |
| Individual Dynamic Message Sign Availability | 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. | <u>Daily Shift Report</u> Manually entered information by the operator. |
| Overall VSS System Availability | Displays the percentage of Variable Speed Sign availability for the current month, previous month and fiscal year-to-date monthly average. | Provides a snapshot view of system availability in relation to historical data. | <u>Daily Shift Report</u> Manually entered information by the operator. |
| Individual Variable Speed Sign Availability | 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. | <u>Daily Shift Report</u> Manually entered information by the operator. |
| Incidents by Freeway Segment | 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. | <u>Daily Shift Report</u> Manually entered information by the operator. |