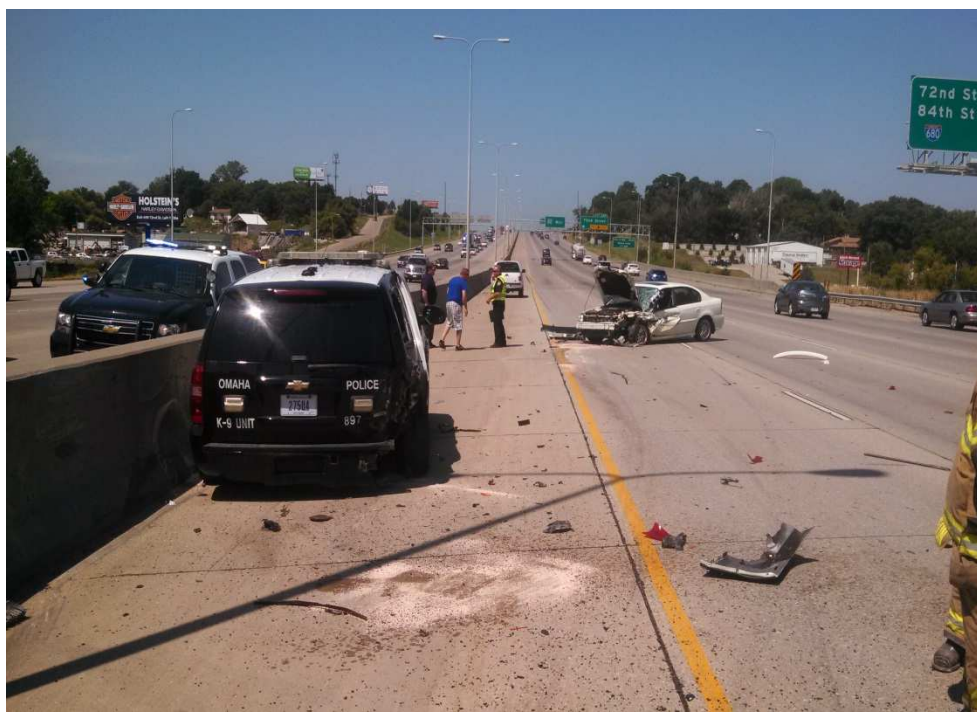


2013

D-2 DOC Annual Report



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Department of Roads

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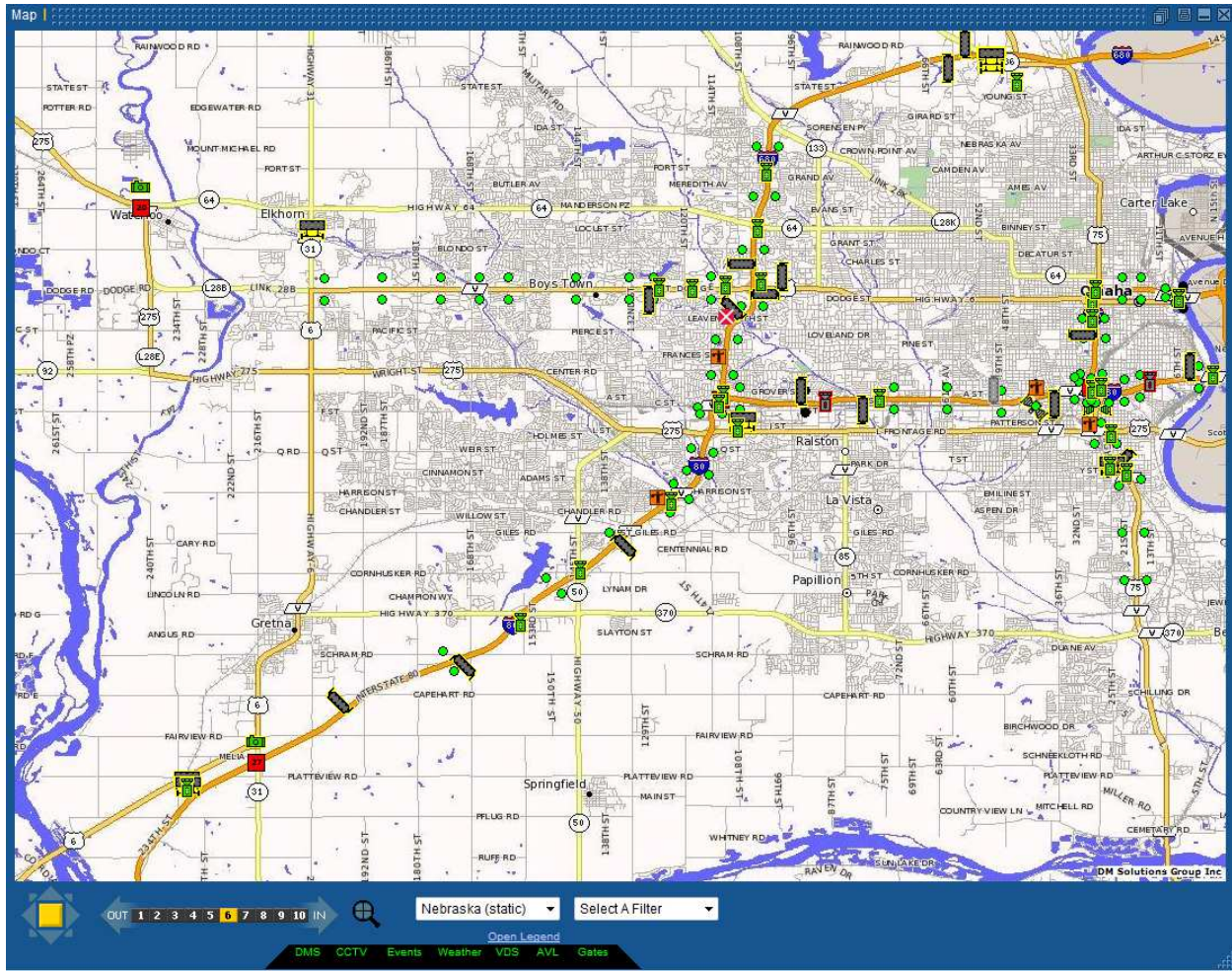
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This report will provide operational data for 2013 and comparisons from the years 2011 and 2012 where feasible.

Introduction

District 2 District Operation Center (D-2 DOC) is a comprehensive traffic and incident management center. This center is designed to address traffic impacts on 71 miles of contiguous interstate and freeways in the Omaha metropolitan area and other state highways in District 2. To date, D-2 DOC integrates 24 Closed Circuit Television (CCTV) cameras, 17 Dynamic Message Signs (DMS), 30 Portable Dynamic Message Signs (PDMS), 46 Vehicle Detection Stations (VDS), 5 Road/Weather Information Sites (RWIS) and 2 ramp gate systems. These devices are operated and/or accessed using NETworks, an Automated Traffic Management System (ATMS). NETworks software provides D-2 DOC the ability to operate and access any of the mentioned devices in District 2 and throughout the state.

D-2 DOC operators are responsible for collecting, entering, updating and terminating all road conditions, construction/maintenance activities, accidents and other incidents and events within District 2 into the Highway Condition Reporting System (HCRS).

Other responsibilities of D-2 DOC operators include taking incoming calls and disseminating the information requiring the creation of a District Incident Reporting Knowledgebase (DIRK) and sending said DIRK to appropriate NDOR personnel via the DIRK e-mailing system. Our operators will and have assisted other districts for sign activation, HCRS entries and any other function that is requested of us.

The DOC Operators also manage the TFCC Alert System which is the software our district heavily utilizes for the automated call-out of winter operation crews.

D-2 DOC is the clearing house for the statewide traffic signal system. All state traffic signal locations provide an 800 phone number which rings into the D-2-DOC (Omaha). Based on information and location from calls of the malfunctioning traffic signal, D-2 DOC operators will contact appropriate district personnel, provide this information to that individual and finally DIRK this contact to provide a data record.

History

D-2 DOC began limited operation on September 4, 2007. From September 2007 to January 2008, new operators received training on all aspects of traffic management. NETworks, the primary tool for operations, began limited use in September 2007 with enhancements and/or upgrades occurring through 2013.

Winter Operations & Overtime

During 2013 the D-2 DOC operators amassed a total of 454.75 hours of paid overtime compared with 412.0 hours the previous 2012 year. These overtime hours were accumulated while working Winter Operations and a majority for construction project work during the construction season. Obviously, the 2012-2013 Winter Operations season was relatively mild and little overtime occurred.

During Winter Operations, the D-2 DOC goes into a 24/7 status to assist the District maintenance forces. D-2 DOC operators maintain constant 2- hour updates of the HCRS System. D-2 DOC handles calls forwarded from other maintenance offices as well as those from the media and private sector, as they pertain to our District's operation and conditions.



Seasonal Operation

During the 2013 construction season (April 1 thru October 31 and later) the abundance of nighttime project work again necessitated the D-2 DOC to be operated 22 hours per day, 5 days per week. Some projects also required operators to work on weekends to accommodate the project's need for sign activation.

Also, throughout the year the DOC operators took bi-weekly turns at being in an On-Call status. An On-Call operator carried a state supplied cell phone and also a laptop computer with air card where they could communicate remotely with our ATMS system and HCRS during after-hour and weekend incidents occurring on our metro system highways.



Dynamic Message Sign (DMS) Locations in District 2

DMS 1	I-80 Eastbound at MP 442 (near Giles Road)
DMS 2	I-80 Eastbound at 82 nd St
DMS 3	I-80 Eastbound at 40 th St
DMS 4	I-80 Westbound at Missouri River
DMS 5	I-80 Westbound at 50 th St
DMS 6	I-80 Westbound at 93 rd St
DMS 7	I-680 Southbound between Dodge and Pacific St
DMS 8	I-480 Southbound at Woolworth Ave
DMS 9	US 75 Northbound at "T" St
DMS 10	US 6 (West Dodge Expressway) Eastbound at 128 th St
DMS 11	I-680 Southbound Exit ramp to West Dodge Expressway (2-Line DMS)
DMS 12	I-680 Northbound Exit ramp to West Dodge Expressway (2-Line DMS)
DMS 13	US 6 (West Dodge Expressway) at 101 st St
DMS 14	I-80 Westbound at MP 435 (4 miles west of NE Hwy 370)
DMS 15	I-80 Eastbound at MP 437.5 (1.5 miles west of NE Hwy 370)
DMS 16	I-680 Westbound at 60 th St
DMS 17	I-680 Eastbound at 60 th St



Reasons for DMS Activation

There were a number of reasons that the DMS in District 2 were activated. Listed below are the major reasons for activation and the number of times DMS were activated or the message had to be modified during each of those occurrences.

<u>REASON</u>	<u>NUMBER OF OCCURENCES</u>		<u>ACTIVATION/MODIFICATIONS</u>	
	<u>2013</u>	<u>2012</u>	<u>2013</u>	<u>2012</u>
Amber Alert	1	0	222	0
Crash or Accident	295	234	1162	825
Traffic Delay or Congestion	36	28	85	65
Events	10	12	98	56
Public Service Announcements	24	1	181	2
Construction/Maintenance	155	312	526	767
Debris or Trash in Roadway	6	12	15	19
Stalled Vehicle	16	14	48	41
Winter Operations (storms)	17	10	432	224
Iowa DOT Requests	6	3	40	10



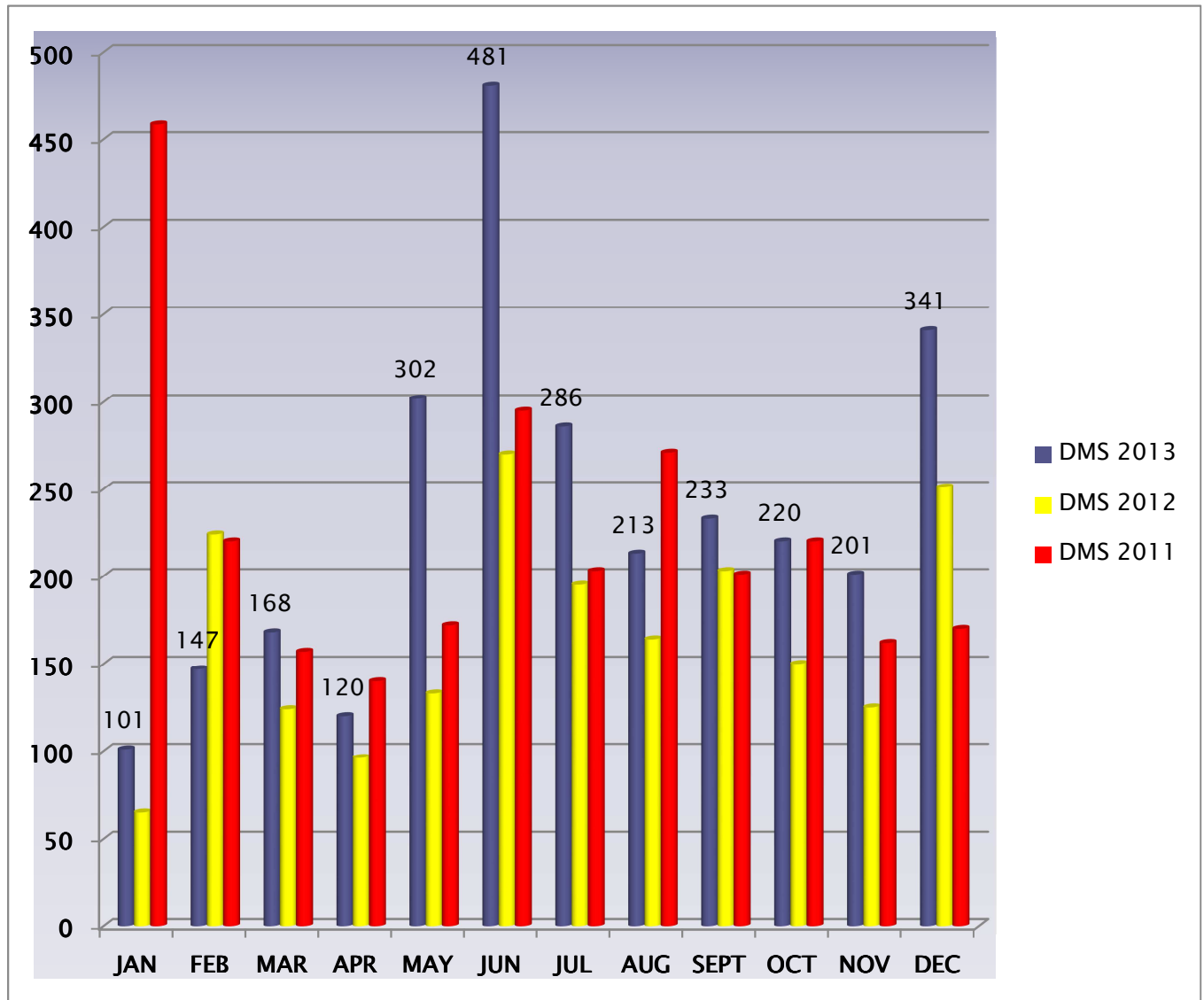
2013 Dynamic Message Signs (DMS) Monthly Usage

2012 and 2011 Comparisons

DMS were activated to display messages due to a variety of incidents/accidents, construction/maintenance, road conditions and events, such as the College World Series, TD Ameritrade Park, Nebraska football, Night Hawks football, etc.

There were 2,813 activations in 2013 compared to 2,010 activations for 2012 and 2,670 for 2011.

Figure 1 - Graph of Monthly DMS Usage



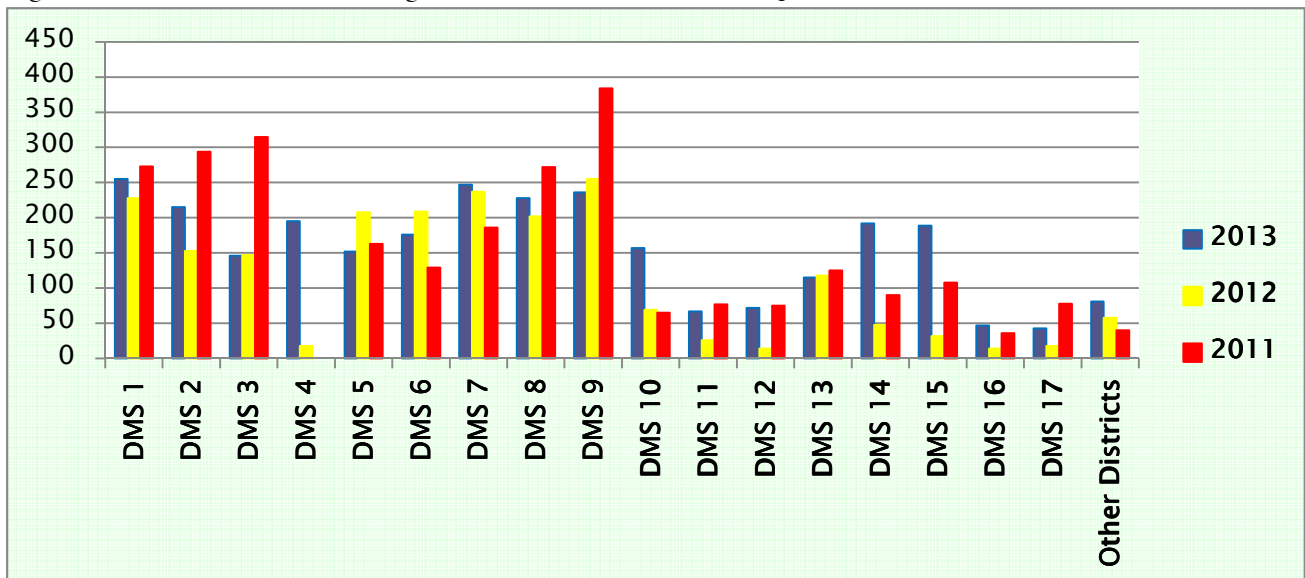
2013 Dynamic Message Signs (DMS) Annual Usage by Site

2012 and 2011 Comparisons

Figure 2 - In the graph below, total sign activation is shown per individual DMS site. This shows high and low usage of DMS sites.

<u>SITE</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>SITE</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>
DMS 1	255	228	273	DMS 10	157	69	65
DMS 2	215	153	294	DMS 11	67	26	77
DMS 3	146	147	315	DMS 12	72	14	75
DMS 4	195	18	0	DMS 13	115	118	125
DMS 5	152	208	163	DMS 14	192	48	90
DMS 6	176	209	129	DMS 15	189	32	108
DMS 7	247	237	186	DMS 16	47	14	36
DMS 8	228	202	272	DMS 17	43	18	78
DMS 9	236	255	384	Other Districts	81	58	40

Figure 2 – Itemized Individual Usage of DMS & 2011 & 2012 Comparisons

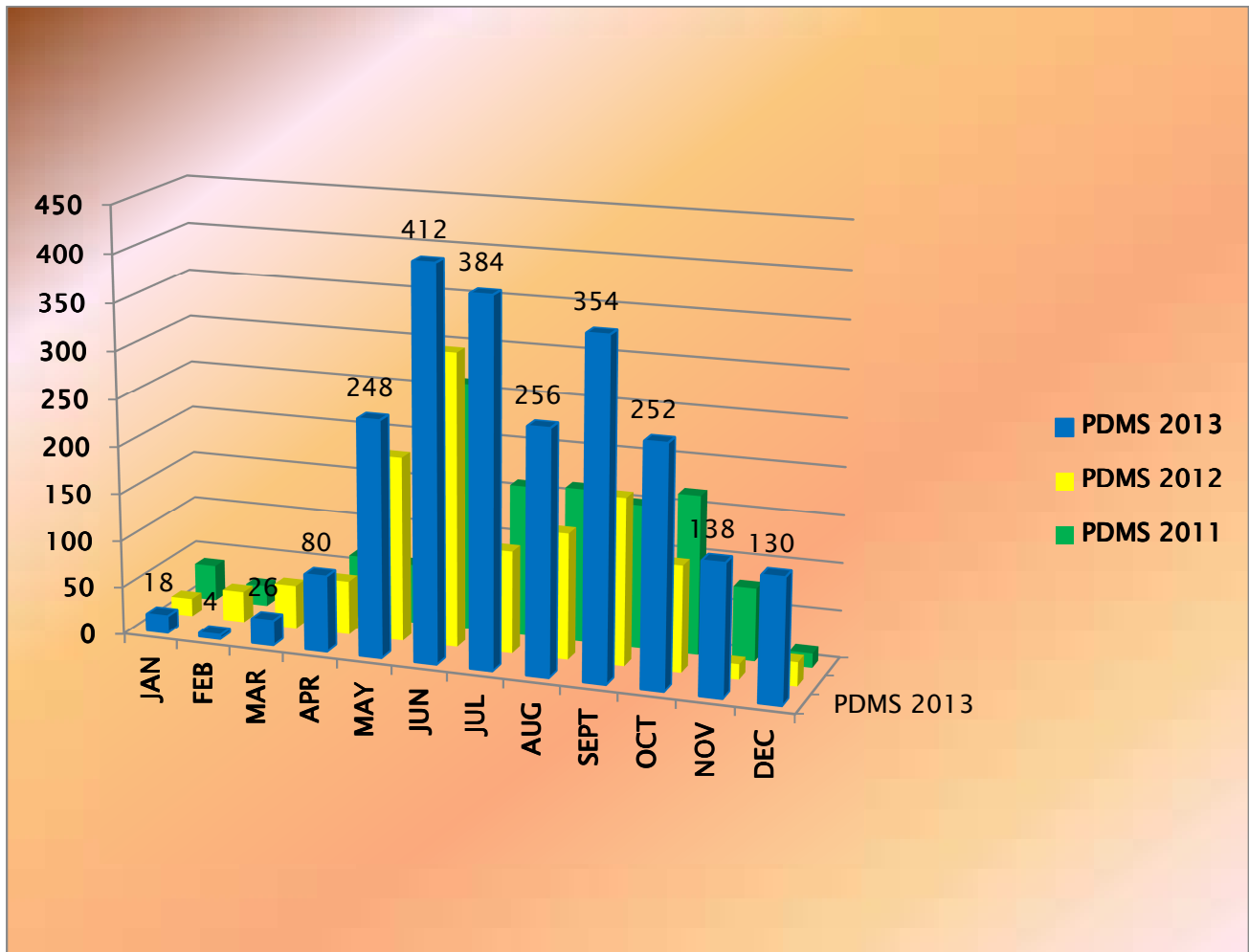


Portable Dynamic Message Boards (PDMS)

District 2 has a total of 30 PDMS that are activated to display messages due to a variety of construction/maintenance work zones, events, and on occasion have been used for long-term incidents/accidents where DMS coverage was not available. Primarily these units are used for construction and maintenance work zones and detours. Because these units are portable, no specific site(s) can be generated for this report.

The following chart shows the number of PDMS activated by month in 2013 as compared to the 2011 and 2012 data.

Figure 3 – PDMS Monthly Usage with 2011 & 2012 Comparisons



2,302 Total 2013 activations

1,277 Total 2012 activations

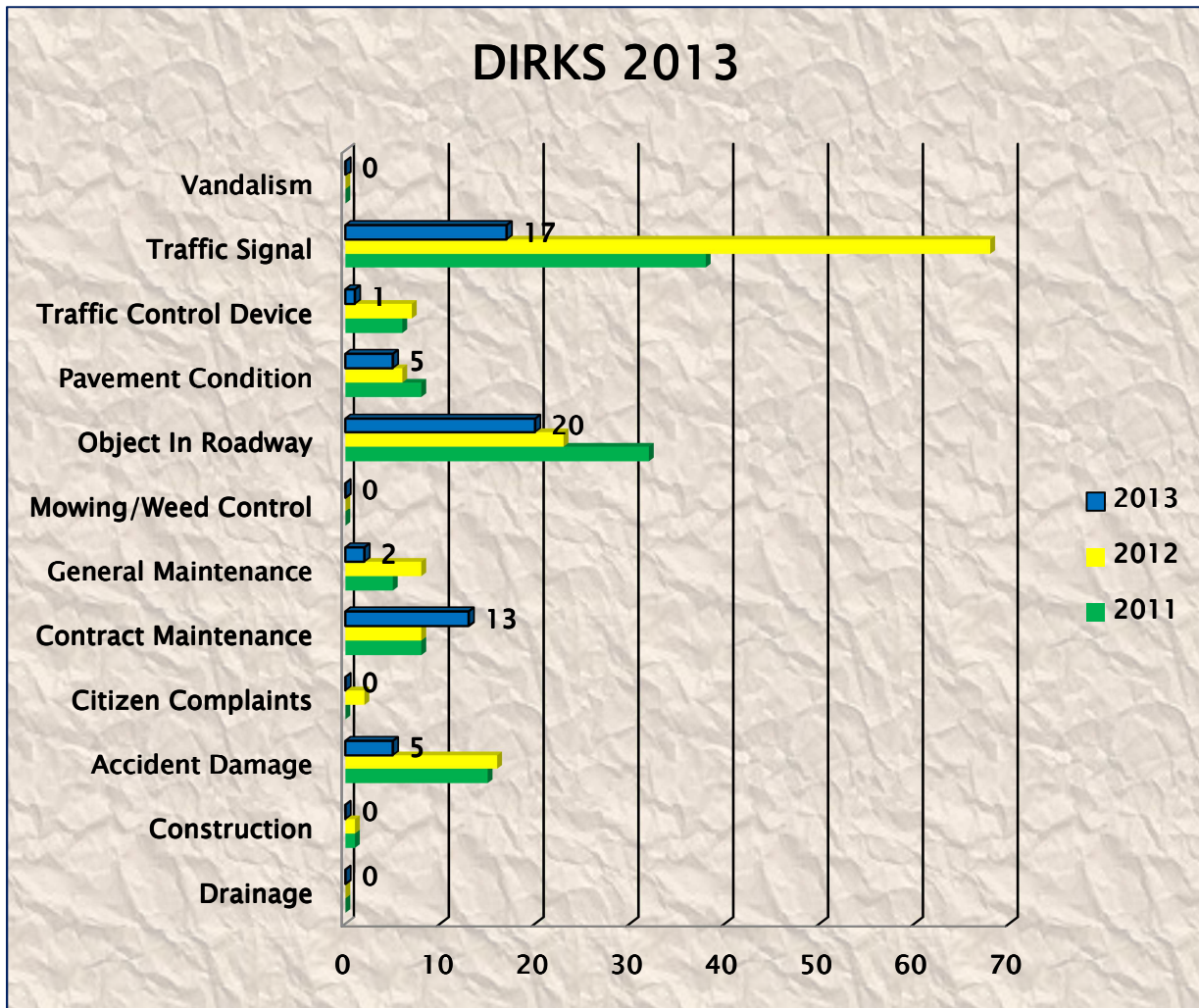
1,202 Total 2011 activations

District Incident Reporting Knowledgebase (DIRK)

With the help of Scott Clinger from District 5, D-2 DOC was provided a report listing all DIRKS created by D-2 DOC personnel for 2013. Previous 2011 and 2012 data is also shown as a comparison.

63 DIRK's were created in 2013 as compared to 138 in 2012 and 113 in 2011 by D-2 DOC personnel in the following categories and number of occurrences.

Figure 4 – Categories with Related Number of Occurrences

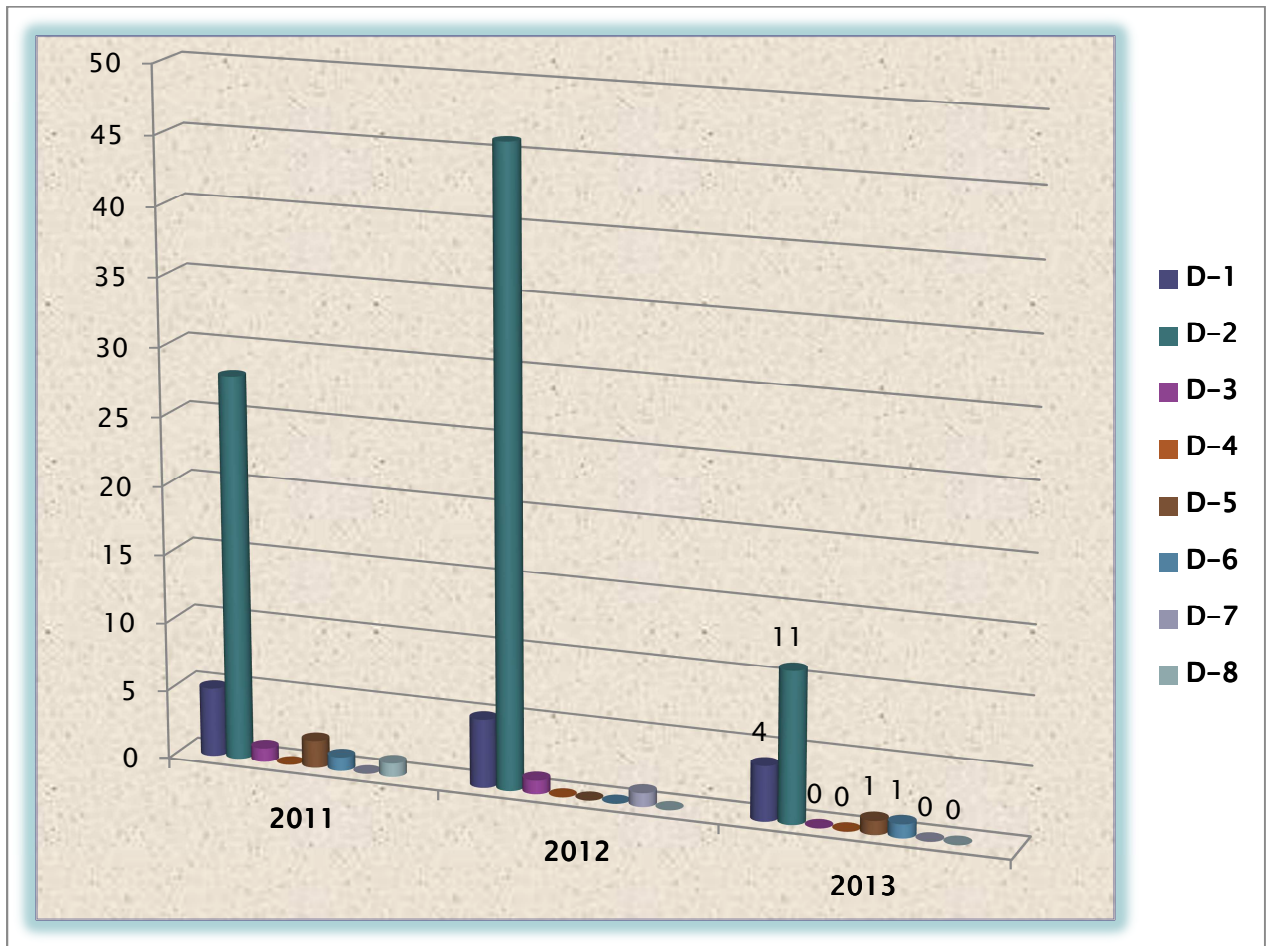


Traffic Signal 800 Phone Number Calls

In March of 2008 NDOR created an 800 phone number, where private citizens can call to report malfunctioning of NDOR maintained traffic signals from across the state. The 800 phone number decal was placed on all NDOR owned traffic signal controller boxes. Calls placed to this 800 phone number ring into D-2 DOC, and D-2 Operators or Nebraska State Patrol Dispatchers handle the calls and disseminate the information to the proper district.

The number of calls received by the D-2 DOC for all districts (including D-2) was 17 as compared to 53 calls in 2012 and 38 calls in 2011. We are unable to determine the reason for the large reduction for incoming calls. Weather may have played a factor in this.

Figure 5 – Graph shows number of 1-800 calls per district by year



Highway Condition Reporting System (HCRS)

Statewide a total of 5,245 events were created into the HCRS system in 2013 compared to 4,929 in 2012. These events ranged from road conditions, closures, events, incidents/accidents, lane restrictions, obstruction/hazard and traffic congestion reporting.

In District 2 a total of 1,273 events were created, making this 24% of the total statewide events created. Figure 6 shows the number of statewide events, per District, per month.

Figure 6 – HCRS Statewide Totals

2013	D-0	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8
JAN	79	51	110	15	68	69	114	44	47
FEB	54	22	109	2	56	98	106	50	49
MAR	68	44	107	3	74	112	114	53	47
APR	62	41	94	16	63	122	148	66	52
MAY	55	19	151	10	27	15	56	17	9
JUN	50	38	158	5	27	9	48	12	0
JUL	51	45	85	4	19	7	76	15	1
AUG	64	19	99	17	21	3	59	13	5
SEPT	61	21	85	6	28	2	56	7	1
OCT	65	17	104	5	21	87	30	6	18
NOV	31	34	66	7	25	33	55	29	29
DEC	74	47	105	4	44	90	117	46	51
TOTAL	714	398	1273	94	473	647	979	358	309

HCRS continued

We must keep in mind that although there were only 5,245 events created statewide, there were numerous updates, modifications and finally termination for each event. Each of these processes required a DOC operator, Superintendent, Supervisor, or other individuals who have access to HCRS to make these changes.

The chart below shows each district's annual created HCRS count for 2013 and then the corresponding column showing the number of modifications and final termination for these events. The numbers can be surprising.

DISTRICT	ACTUAL EVENTS CREATED	CREATED - UPDATED - MODIFIED & TERMINATED
0	714	714
1	398	4983
2	1273	6373
3	94	8655
4	473	5867
5	647	6094
6	979	8880
7	358	5146
8	309	1301



HCRS continued

Below is a breakdown in the major categories of these events. It should be noted that in D-2 during winter operations one event was created per supervisor area and each of these events updated every 2 hours or more often, if necessary, for each 24-hour day by the DOC Operators. These updates were recorded to the event type and did not create a new event number.

Figure 7 – District 2 HCRS Events by Category

NUMBER of EVENTS	TYPE OF EVENT / CATEGORY	TOTAL EVENT ENTRIES
171	CLOSURE -(roads and ramps due to accidents, construction, weather related, etc.)	494
25	CONSTRUCTION & MAINTENANCE	94
2	EVENTS	11
242	INCIDENT / ACCIDENT	638
274	LANE RESTRICTION	662
10	OBSTRUCTION / HAZARD	19
188	ROAD CONDITION	3949
9	TRAFFIC CONGESTION	19



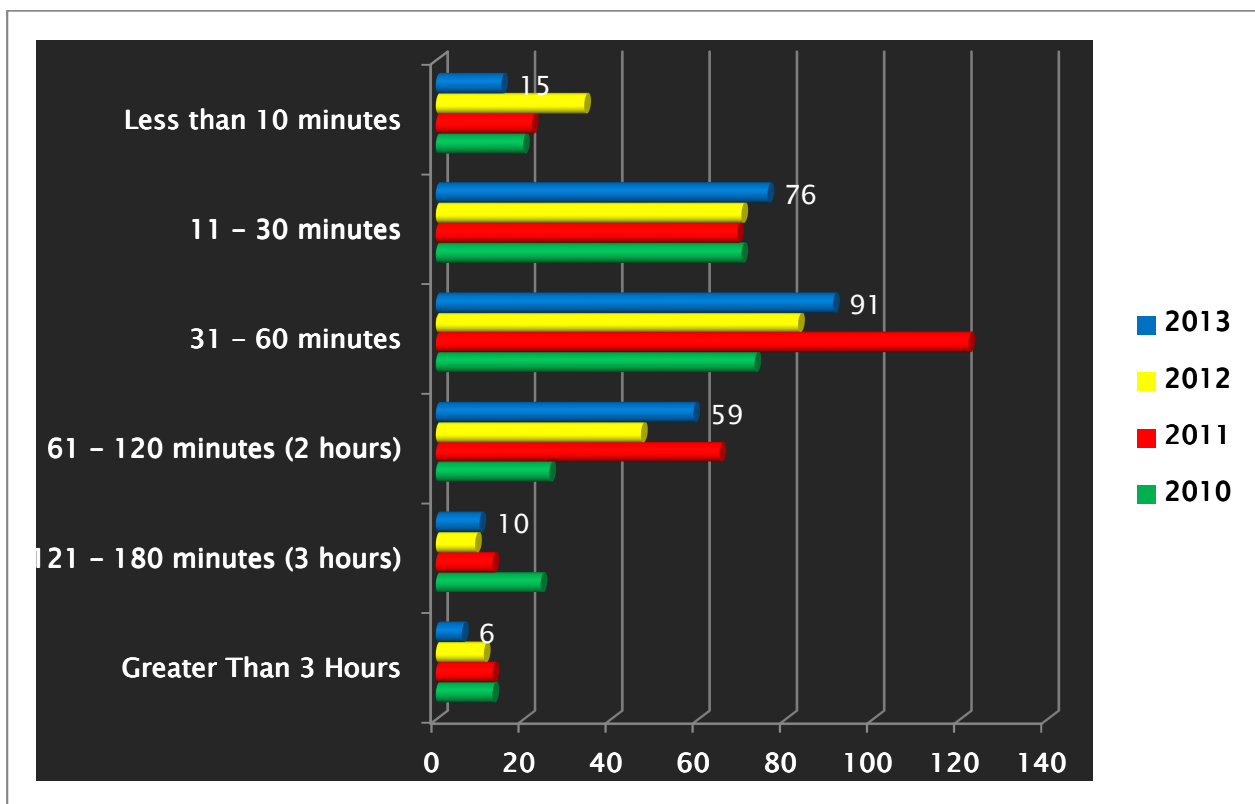
Accident Timing Review

In 2013, D-2 DOC personnel were made aware of 242 accidents on the interstate, expressway and regular highway systems in D-2 compared with 254 in 2012, 304 accidents in 2011 and 226 accidents in 2010. The DOC personnel handled these incidents by creating HCRS entries and activating DMS & PDMS where possible. DOC personnel became aware of these accidents either by notification from law enforcement, observed on closed circuit TV (CCTV), slow speed sensor notification from our NETWORKS software, or calls from the public/private sector. We know this is only a fraction of the total accidents (2,988) reported to the Douglas County, Sarpy County, Pottawattamie County, IA, and State Patrol 911 systems. **(The following pages of this report will cover this area.)**

Our current reporting system of accidents in HCRS does not allow us to differentiate and track the types and severity of accidents whether they are fatality, single or multiple vehicle crashes.

Those accidents in 2013 which we were made aware of, that caused some type of traffic disruption lasted anywhere from 3 minutes to 4 hours – 5 minutes, averaging traffic disruption time of **52** minutes per crash overall for the year. The year 2012 average was **53** minutes and years 2010 & 2011 both averaged **57** minutes each. The chart below shows the number of crashes that occurred within specific time sets:

Figure 8 – Number of Accidents per Time Frame



MUTCD SECTION 6I

Now, if we take the aforementioned information from the previous page and apply the same data to the guidelines from the MUTCD manual, Section 6I, we can graph the following three types of incidents:

Section 6I.02 Major Traffic Incidents

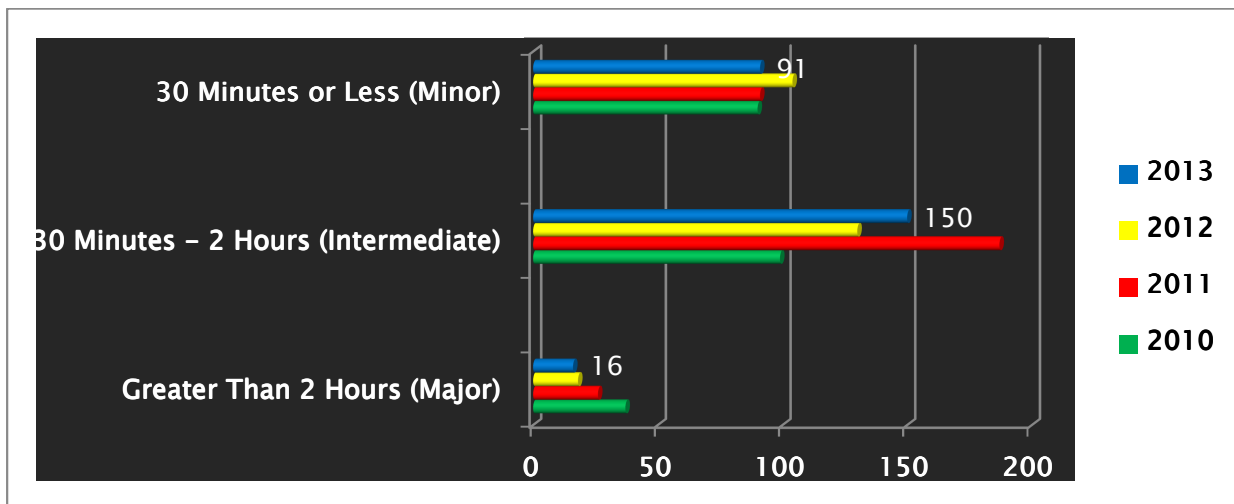
Major traffic incidents are typically traffic incidents involving hazardous materials, fatal traffic crashes involving numerous vehicles, and other natural or man-made disasters. These traffic incidents typically involve closing all or part of a roadway facility for a period exceeding 2 hours.

Section 6I.03 Intermediate Traffic Incidents

Intermediate traffic incidents typically affect travel lanes for a time period of 30 minutes to 2 hours, and usually require traffic control on the scene to divert road users past the blockage. Full roadway closures might be needed for short periods during traffic incident clearance to allow traffic incident responders to accomplish their tasks.

Section 6I.04 Minor Traffic Incidents

Minor traffic incidents are typically disabled vehicles and minor crashes that result in lane closures of less than 30 minutes. On-scene responders are typically law enforcement and towing companies, and occasionally highway agency service patrol vehicles. Diversion of traffic into other lanes is often not needed or is needed only briefly. It is not generally possible or practical to set up a lane closure with traffic control devices for a minor traffic incident. Traffic control is the responsibility of on-scene responders.



Metro Area 911 CENTER Data

Accident data for all incidents from January 1 through December 31, 2012, were obtained from the following Centers: Douglas County 911, Sarpy County 911, Pottawattamie County 911 in Iowa, and Nebraska State Patrol. Special thanks to Monica Spanke, NSP Communications Supervisor, for obtaining this information from the various centers.

The data received covered the following centers and highways in the Omaha / Council Bluffs Metropolitan area:

Douglas County 911 – I-80, I-480, I-680, West Dodge Expressway, North Freeway (US 75) and South Expressway (US 75). Responding agency would either be Omaha Police or Douglas County Sheriff.

Sarpy County 911 – I-80 and South Expressway (US 75). Responding agency would either be Sarpy County Sheriff or Bellevue Police.

Pottawattamie County 911 – I-80 and I-29. Responding agency would either be Council Bluffs Police, Pottawattamie County Sheriff or Iowa Highway Patrol.

Nebraska State Patrol – I-80 (Douglas & Sarpy Counties), I-480, I-680, West Dodge Expressway and US 75 (North & South Expressways). Responding agency is Nebraska State Patrol.

Information provided included the following data:

Date of Incident

Location of Incident

Type of Incident

Time first reported to a 911 center

Time officer cleared the scene

Short Overview of Analysis

911 Center	Number of Incidents Investigated			Average Time per Incident (Hours: Minutes)		
	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Douglas 911	1498	1598	1966	1:22	1:22	1:19
Sarpy 911	365	303	326	0:45	0:52	0:56
Pottawattamie 911	358	396	440	1:00	1:01	1:02
NE State Patrol	177	216	258	:59	1:02	0:52
TOTALS	2398	2513	2988	1:11	1:12	1:12

Incident Type Breakdown Analysis (All Agencies Combined)

Incident Types	Number of Incidents Investigated			Average Time per Incident (Hours: Minutes)		
	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Property Damage (PD)	1325	1340	1766	1:01	1:05	1:05
Personal Injury (PI)	737	767	788	1:35	1:37	1:35
Unknown Property Damage (PU) Pott. 911 Only	78	78	72	0:28	0:31	0:36
Hit & Run (HR)	81	112	104	1:29	1:11	1:18
Accidents (NSP unable to provide incident type breakdown)	177	216	258	0:59	1:02	0:52
TOTALS	2398	2513	2988	N/A	N/A	N/A

At this time there is no way for any of the agencies to identify the severity of incidents (minor, moderate or major).

Note: There was an **18.9%** increase in number of incidents from 2012 to 2013.



Special Thanks

I wish to thank the D-2 DOC Traffic Operators for their assistance in the preparation of this report and their diligent work throughout the year.

Anajo Teel, D-2 DOC Traffic Operator/Lead

Melissa Sheard, D-2 DOC Traffic Operator

Chanda Parker, D-2 DOC Traffic Operator



Acknowledgements

We wish to show appreciation to the following key people, who have contributed, provided information for this report, supported and encouraged this Operation Center to the stage of success it now realizes:

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Tom Sands, Manager – Operations Division

Tom Renninger, Assistant Manager – Operations Division

Sarah Tracy, ITS Engineer – Operations Division

Jane Sutherland, Statistical Analyst III – Communications Division

Joy Mullendore, IT Business Sys Analyst – Operations Division

Jessica Sherwood, Administrative Assistant III – Operations Division

Diane Holthus, Personnel Manager – Human Resources

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Captain Brenda Konfrst, NSP Troop A

Monica Spanke, NSP Communication Specialist Supervisor, NSP Troop A

Communication Specialists Staff, NSP Troop A

Mark Conrey, Douglas County 911 Center

John Prince, Sarpy County 911 Center

Angie Dobyys, Pottawattamie County, IA 911 Center

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Tomas Guerra, Oz Engineering LLC

