



FIRST Program 2011 Summary Report



MINNESOTA DEPARTMENT OF TRANSPORTATION

REGIONAL TRANSPORTATION MANAGEMENT CENTER

INCIDENT MANAGEMENT UNIT

Table of Contents

FIRST Services:	1
FIRST Staffing:	1
FIRST Equipment:.....	2
Freeway Coverage.....	2
Summary of Results for 2011	4
FIRST Program Upgrades	4

List of Tables:

Table 1: Total Incidents per Route 2008 - 2011	5
Table 2: Types of Services Incident Provided for 2008 - 2011	7
Table 3: Breakdown of services provided for 2008 - 2011	7
Table 4: Mn/DOT FIRST program annual costs.....	8

List of Figures:

Figure 1: FIRST Routes Map.....	3
Figure 2: Annual FIRST Incidents for 2008 - 2011	5
Figure 3: 2011 Incidents per routes.....	6
Figure 4: Percentages of Incidents by Type in 2011	6
Figure 5: Services provided by FIRST in 2011.....	7
Figure 6: Incident Method of Detection for 2011	8

FIRST – A service of MnDOT

FIRST (Freeway Incident Response Safety Team) drivers are a trained group of MnDOT employees in specially equipped vehicles who respond to incidents impacting traffic on the Minneapolis / St Paul metropolitan area freeway system. Their priority is keeping traffic moving and reducing secondary incidents.

FIRST Services:

- Clearing traffic lanes blocked by disabled vehicles or debris.
- Emergency traffic control for incidents that cannot be moved.
- Assisting stalled motorists with a small amount of fuel, battery jump start, or help changing a tire.
- Removal of abandoned vehicles from the roadway shoulder
- Detection of incidents through continuous patrol.

Timely response to highway crashes by emergency responders translates into savings (time, money and lives) for travelers. Incidents must be detected and cleared as fast as possible to minimize congestion and prevent secondary crashes. The FIRST program assists State Patrol in clearing incidents and quickly as possible.

FIRST Staffing:

- There are 21 employees with the FIRST program including one supervisor, one lead FIRST driver for both shifts, and 18 FIRST drivers.
- Weekday patrol: 3:30 AM to 9:00 PM (with limited coverage on weekends)
- 8 AM FIRST drivers and 11 PM FIRST drivers
- All FIRST drivers currently have First Responder training (EMS). In addition, a few drivers have Emergency Medical Technician training and one driver is a paramedic.

What to do if your vehicle breaks down on the freeway:

- **Move vehicle out of lane of traffic – to the shoulder**
- **Drive to an exit if you can**
- **Remain alert to traffic around you - never turning your back to traffic**
- **Stay visible – use car flashers**
- **Remain in vehicle with seat belts buckled**
- **Use cell phone to call for a tow or 911**

FIRST Equipment:

- 2 Ton Jacks
- 5 Gallons of Floor Dry
- Air Compressor
- Auto Fluids
- Booster Cables
- Cell Phones
- Nextel
- Fire Extinguishers
- First Aid Kits
- Flares
- Flashing Arrow Board
- Public Address System
- Radiator Water
- Reflective Cones
- Wood Blocks
- Basic repair tools
- Defibrillator

Freeway Coverage

The FIRST program covers critical freeway segments using a route structure to optimize response times. Routes have been tested and selected based on the potential for incident - created congestion. Factors used in the determination consist of roadway characteristics, extent and severity of daily congestion, number of incidents, and the presence or absence of video surveillance.

There are currently 11 routes covering 382 miles of metro area freeways. The FIRST Route map (Figure 1) is shown on the following page.

Summary of Results for 2011

FIRST assisted at 25,931 incidents in 2011, of which 55 percent were detected by FIRST drivers patrolling designated routes. The leading assistant type was tire changing at 37%. The three main types of incidents were stalled vehicles, crashes, and debris.

FIRST Program Upgrades

In August 2008 a new CAD (Computer Aided Dispatch) System was integrated to coordinate incidents between the MnDOT's Freeway Operations Section and the Department of Public Safety's 911 dispatch unit.

This upgrade also includes computer systems within the MnDOT's FIRST unit vehicles and Minnesota State Patrol's unit vehicles. CAD has greatly improved communication and coordination in emergency situations. Each unit is able to see what the other unit's status is and their comments with a click of a mouse button. The system also allows direct messaging to troopers in the field. With improved communication response time to incidents has improved. The data from CAD is stored by State Patrol in an Oracle database providing a reliable data source. The new system gives an accurate and complete set of data records for both dispatch units.

Other program upgrades include listed by year:

- 2005 – AEDs (defibrillator) in all FIRST vehicles
- 2008 – FIRST trucks laptop computer (CAD) installed
- 2008 – Upgraded LED signboards and high visibility truck decaling.
- 2008/2009 – Tow authority MOU
In 2008 the Minnesota Legislature passed legislation allowing MnDOT FIRST drivers to order a tow for abandoned vehicles on the freeway. In 2009 a 'Memo Of Understanding' between FIRST responders and the MN State Patrol was designed to identify training, authority and other issues that could arise during the towing process.
- 2009 – Aluminum racing jacks and jump-start packs for faster (safer) incident response.
- 2009 – EMS First Responder training becomes mandatory
- 2010 – Rear-facing LED flashers and roof-mounted spot lights on FIRST vehicles
- 2011 – Upgraded roof mounted LED emergency lights

Figure 2 shows data collected annually that includes quantities of all incidents that a FIRST unit responded.

FIRST Response to Incidents for 2008-2011

Incidents

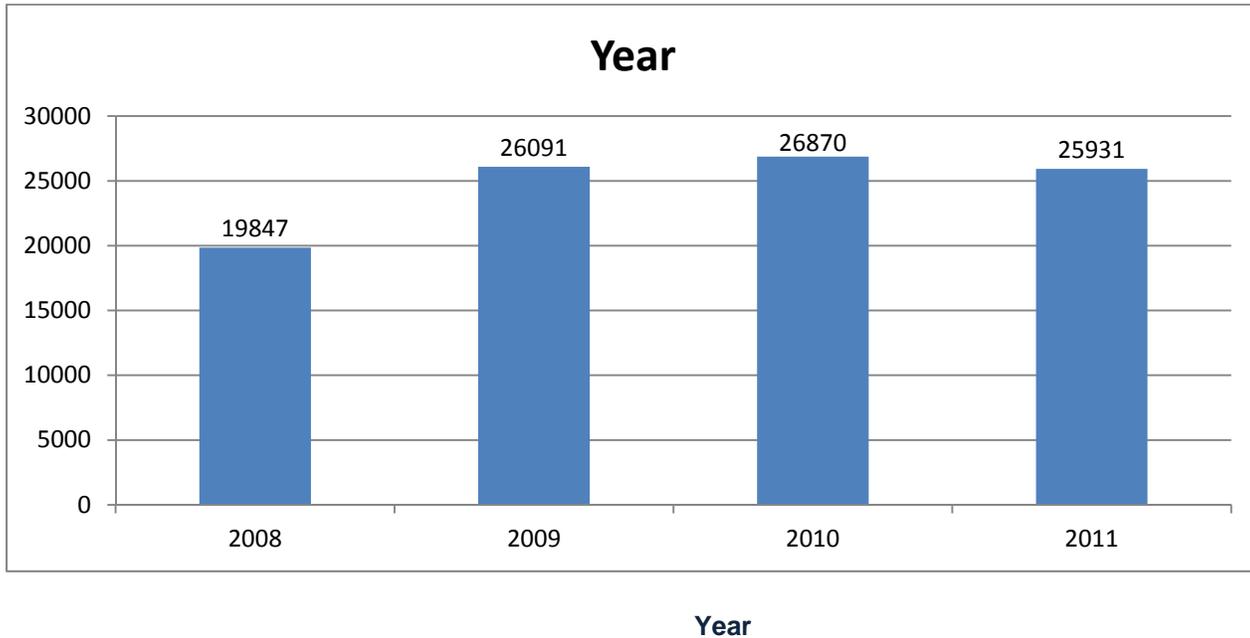


Figure 2: Annual FIRST Incidents
Data Source: CAD Oracle Database

Table 1 shows the number of incidents that happened per route. Below in Figure 3 it shows the details for the year 2011 by route.

Incidents per route year 2008 – 2011

Year	Route #												Total Incidents
	8101	8102	8103	8104	8105	8106	8107	8108	8109	8110	8111	Other	
2008	2570	2465	3260	2033	2601	2322	1822	42	1344	137	160	1091	19847
2009	4387	3220	3294	2703	2610	2921	1859	1761	643	643	33	2017	26091
2010	4361	3291	3792	2851	2799	3165	2236	2	2238	340	1	1794	26870
2011	4381	2977	3864	2751	2875	2950	2054	2	2243	689	2	1143	25931

Table 1: Total Incidents per Route for years 2008 – 2011
Data Source: CAD Oracle Database

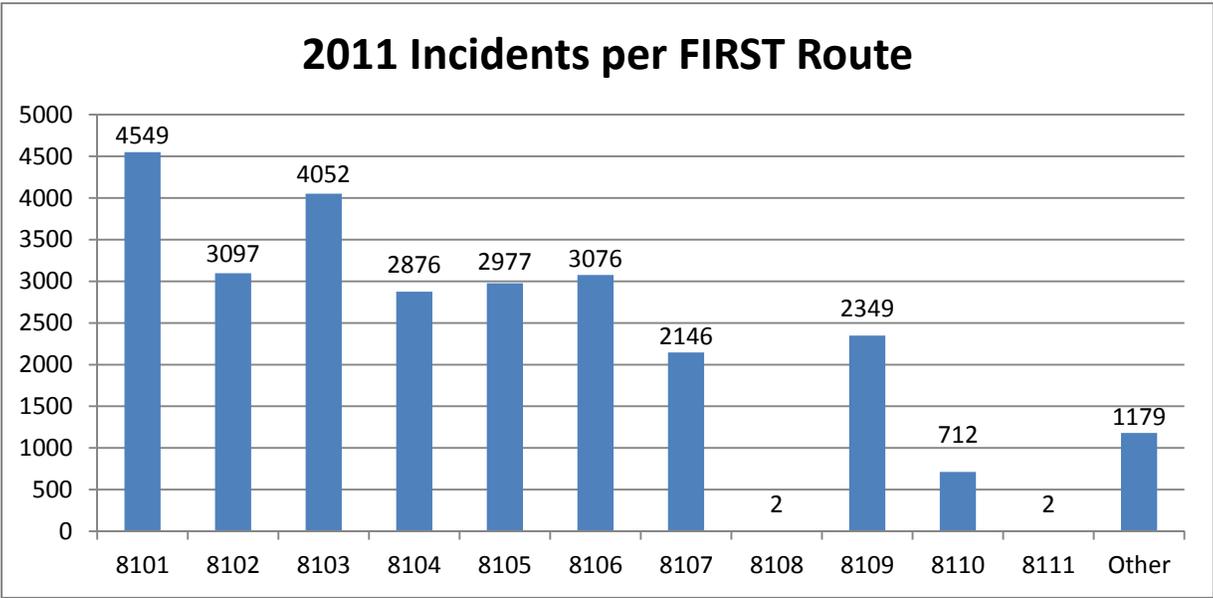


Figure 3: Incidents per Route for 2011
 Data Source: CAD Oracle Database

FIRST responds to three main types of incidents: stalls, crashes and the removal of debris from the roadway. The pie chart below shows the portion of the total incidents in each of these incident categories and services provided totals by the year.

Percentage of Incidents by Type in 2011

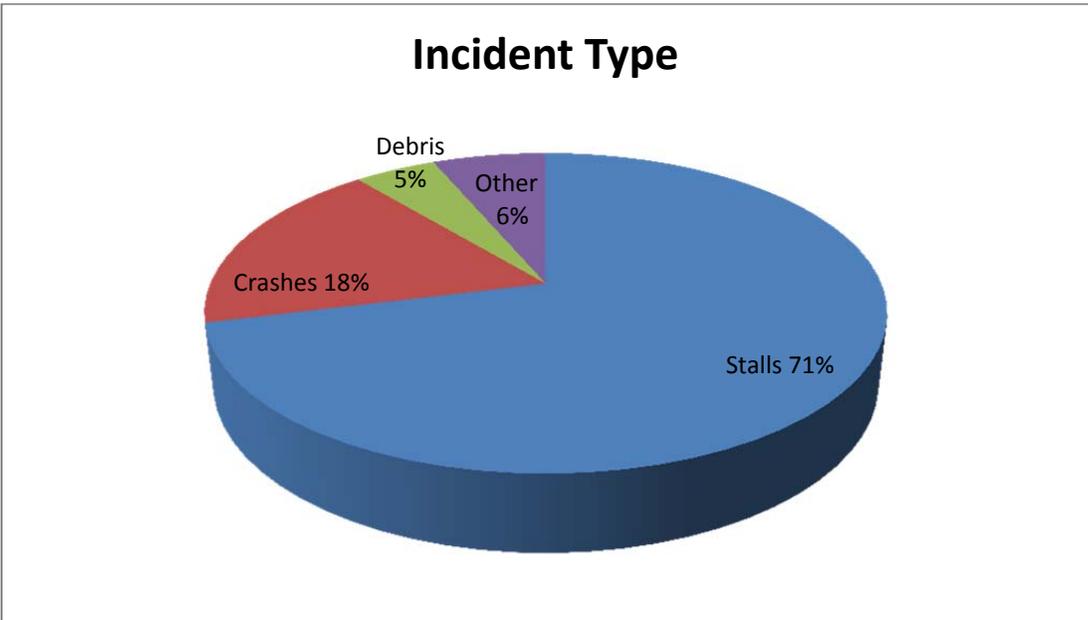


Figure 4: Incident Types 2011
 Data Source: CAD Oracle Database

FIRST Assisting the Public

To help keep our roads safe and reliable FIRST drivers are equipped to provide the following services listed in the table below. Table 3 breaks down the services provided from 2008 to 2011. Figure 6 details the services provided in 2011.

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Provide Fuel	2579	2025	2436	2420
Push Vehicle	1378	924	932	895
Tire Change	2986	2351	2440	2584
Jump Start	662.9	522	651	678
TOTAL	7606	5822	6459	6577

Table 2: Types of Service Provided by FIRST for years 2008 – 2011

Data Source: CAD Oracle Database

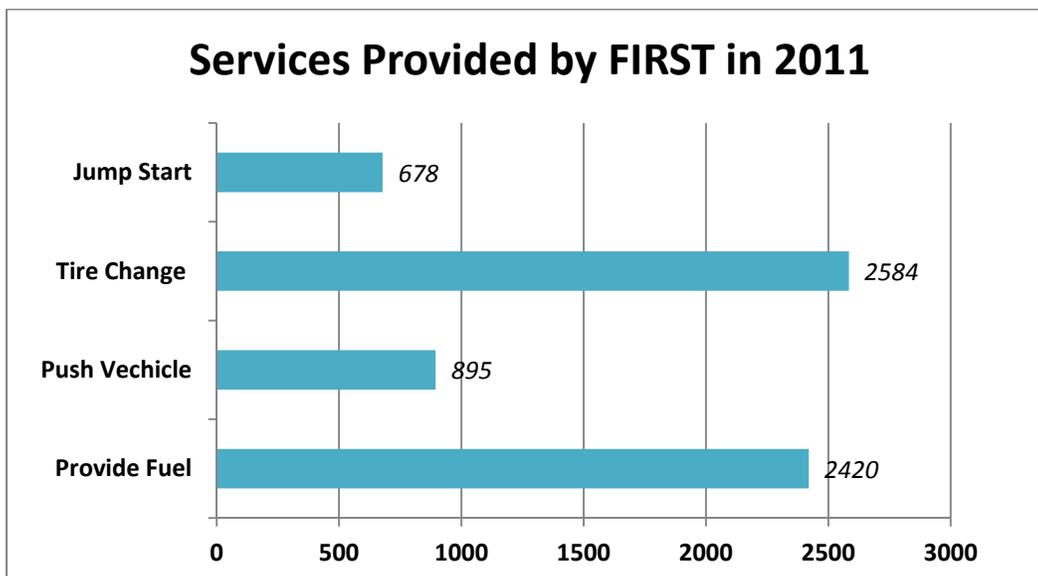


Figure 5: Types of Service Services Provided by FIRST in 2011

Data Source: CAD Oracle Database

Detection Methods

Since FIRST trucks are constantly patrolling, 55 percent of the all incidents attended to by FIRST in 2011 were detected by FIRST drivers. The majority of incidents detected by FIRST are primarily stalled vehicles but do include some crashes. Most crashes are reported to the Minnesota State Patrol through 911 calls. FIRST dispatch also receives calls from stalled motorists and detects

incidents using RTMC cameras. The next figure shows the distribution of how incidents responded to by FIRST are initially detected.

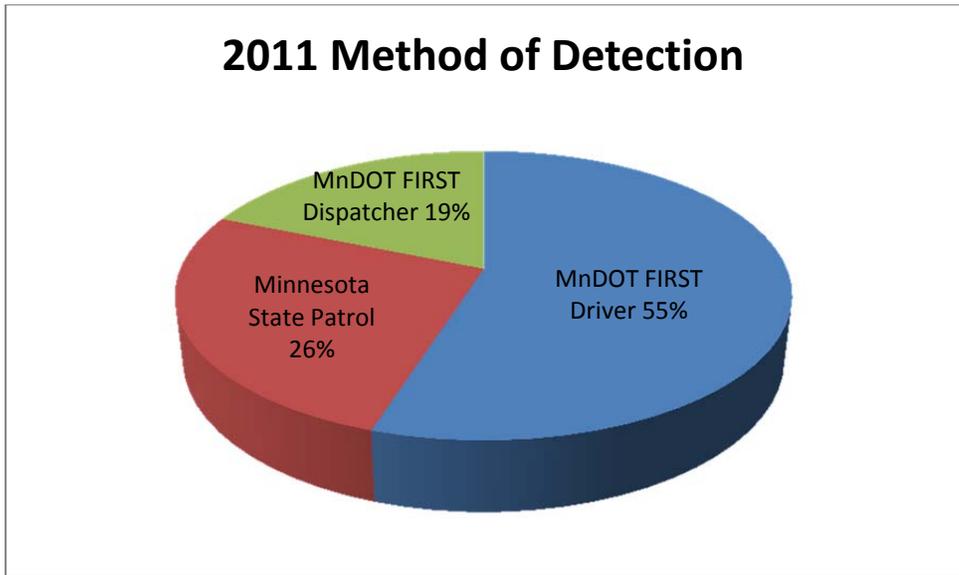


Figure 6: Incident Method of Detection for 2011
Data Source: CAD Oracle Database

FIRST Finances

Table 4 outlines the cost of the FIRST program for the fiscal year 2011. An evaluation conducted in 2004 found the FIRST program to have a cost/benefit ratio of 15:1. Benefits to the motoring public include reduced delay, reduced secondary crashes, and reduced emissions due to the quick removal of incidents from the freeway system.

Mn/DOT FIRST Program Annual Costs	
	FY 2011 Cost
Staffing costs	1,292,247
Vehicle costs	252,893
Supplies/Equipment/Communication/Bldg Operations Costs	47,285
Total Annual Program Costs	1,592,425

Table 3: MnDOT FIRST program annual cost (FY2011)