

DIVISION OF RESEARCH AND INNOVATION
Research Initial Scope of Work
FY 10/11

I. Project Number: P715

Project Title: Quick Clearance for Major Traffic Incidents

II. Task Number: 2245

Task Title: Quick Clearance for Major Traffic Incidents

III. Project Problem Statement:

Traffic incidents account for about 25% of traffic congestion and delay. Clearing incidents rapidly is crucial in minimizing congestion, reducing secondary crashes, and improving safety for both emergency responders and travelers. Especially for incidents where large vehicles such as big rig and freight trucks are involved, the clearance time can be several hours because of the size of the vehicles and the cargo they carry.

Caltrans recognizes the importance of quick clearance of traffic incidents. Thus, one of the performance measures identified for achieving Objective 2.2 – improve incident management – in the Caltrans Strategic Plan 2007 – 2012 is to track the percentage of major incidents cleared in less than 90 minutes on a quarterly basis. Major incidents* were defined as those taking 30 minutes or more to clear. Although there was slight improvement since we started reporting this performance measure in 2005, the average clearance time for major incidents for the quarter ending December 31, 2008 was 3 hours and 15 minutes. This is still a long way from our target clearance time of 90 minutes or less, and we do not have a clear understanding of why we are so far from our goal. Therefore, we need to investigate why it takes over three hours to clear a major incident, and what can be done to reduce major incident clearance times. There is the additional complication of numerous and often conflicting data sources when it comes to measuring incident response and clearance times, so we also need a comprehensive, accurate, and reliable data source for incident management performance measurement.

* Starting the first quarter of FY 10, major incident is now defined as "An unplanned non-recurring event that reduces highway capacity that requires both agencies (CHP and Caltrans) to respond to the incident scene."

IV. Objective:

The main objectives of this research are to identify the areas that need the biggest improvement in incident response and clearance throughout the state, to gain a better understanding of how the different response agencies track and collect incident information such as start and end time of incident, and to be able to accurately determine how to improve and reduce the time it takes to respond to and recover from major traffic incidents.

DIVISION OF RESEARCH AND INNOVATION
Research Initial Scope of Work
FY 10/11

V. Task Description of Work and Expected Deliverables:

The preliminary scope of the research will include conducting incident management case studies in the mountain area, the valley region, the urban area and the desert area of the State. Tasks may include collecting incident data from various databases and incident logs, analyzing various data sources, conducting an inventory of available databases – assess the availability, reliability, and accuracy of the data, identifying who manages the data, and reconciling the sources, interviewing with emergency response agencies (Caltrans, CHP, CAL FIRE, EMS, etc.), performance measure and evaluation.

VI. Background:

Caltrans recognizes the importance of quick clearance of incidents. One of the strategies identified in the Caltrans Strategic Plan 2007-2012 for achieving Objective 2.2 – by 2012, increase reliability by 10 percent throughout the transportation system – is to improve incident management. The performance measure used to monitor incident management is the percentage of major incidents cleared in less than 90 minutes.

We recognize that we are currently not meeting our incident management clearance goal of 90 minutes or less. However, since we are not able to identify why it takes over three hours to clear a major incident, we do not have a good sense of what strategies will result in reduced clearance times. Several new incident management technologies/tools, such as the Responder System, have been developed and are being considered as strategies that can improve incident response efforts and reduce clearance times. But without an established baseline, we are unable to evaluate the strategies against each other and prioritize them accordingly. Our funding is limited, and before moving forward with deploying any new strategy, we must need to know whether it is addressing the problem and to what degree.

We also recognize that identifying why it takes over three hours to clear a major incident may be a difficult task due to the numerous agencies involved in incident response and clearance efforts. Many of the actions and communications involved in incident response are not easily tracked or captured in a centralized location, making it difficult to obtain an accurate overall timeline associated with an incident and identify where the major issues are. We are therefore initiating this research to accurately identifying the problem so that we can make sure we implement the correct solutions, and can clearly demonstrate the effectiveness of those solutions.

VII. Estimate of Duration: 18 – 24 months

VIII. Related Research: Please see attached [Preliminary Investigation document](#).

DIVISION OF RESEARCH AND INNOVATION
Research Initial Scope of Work
FY 10/11

IX. Deployment Potential:

The findings from this research will help Caltrans and other transportation agencies to allocate their limited resources towards those incident management strategies/tools that best address the particular problems. Moreover, this research will establish a baseline for monitoring overall incident management performance and accurately report the benefits of any new incident management strategy deployed.

X. Author: Mandy Chu, Caltrans - Division of Research and Innovation

Date: July 30, 2010