

**Rural EMS Driver Safety Research Program:
A Phase I Feasibility Study**

by

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Executive Summary

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EXECUTIVE SUMMARY

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As a pilot study, the project work plan focused on the feasibility of (a) gathering baseline data on EMS driving behaviors associated with rural ambulance crashes as well as (b) measuring the potential safety benefits of onboard driving quality feedback systems (QFS) within a rural ambulance fleet. Based on the (original) task schedule in Table 1, Tasks 1 through 3 and 6 have been completed with a copy of their associated task deliverable (D) included below. Note that Task 6 included an extra conference deliverable within the scope of this project.

Table 1. Planned Project Schedule (including Milestones and Deliverables)

Project Task	Lead	1	2	3	4	5	6	7	8	9	10	11	12
Task 1. Analyze EMS tasks and performance standards	CIT	x	x	x	D1								
Task 2. Analyze EMS crash factors	CIT	x	x	D2									
Task 3. Install and demonstrate onboard QFS devices	CIT		M3	x	M4	x	x	x					
Task 4. Review and evaluation of data collection systems	WTI						x	x	x	x	M5		
Task 5: Naturalistic Study and Evaluation Design	WTI										x	x	D6
Task 6. Conference	WTI												D7

Task 1: Analyze EMS tasks and performance standards

Deliverable – Driver Behavior and Performance Checklist (D1)

http://www.westerntransportationinstitute.org/documents/reports/4W2008_Final_Report_D1.pdf

Task 2: Analyze EMS crash factors

Deliverable – Ambulance Crash Characteristics (D2)

http://www.westerntransportationinstitute.org/documents/reports/4W2008_Final_Report_D2.pdf

Research also supported an independent student research project that resulted in an additional deliverable that provided an important understanding of the role of individual personality differences amongst EMS drivers in terms of crash risk and traffic violations.

http://www.westerntransportationinstitute.org/documents/reports/4W2008_Final_Report_D2_Student.pdf

Task 3: Install and demonstrate onboard QFS devices

Despite extensive efforts to increase data collection by adjusting the data hardware and extend the overall period of data collection by 11 months, we were not able to collect sufficient relevant data events to complete Task 3. The main reasons for this low number of risk events can be attributed to the low driving exposure and high driving skills of frontier rural ambulance services. These reasons were documented by Rusty Weiss, Research and

Consumer Division Director, DriveCam Inc., based on this vendor's prior experience with collecting data in these settings.

Tasks 4 and 5: Review and evaluation of data collection systems

Naturalistic study and evaluation design

As a result of the issues encountered with Task 3, it was not possible to achieve key milestones (M4, M5) for the dependent Tasks 4 and 5. Although these tasks did not have any associated deliverable, their unachieved milestones prevented the completion of Task 6 which culminated in a report outlining future research design recommendations (D6). None-the-less, the experience with data collection in this setting provided valuable information from a pilot study in terms of indicating that future behavioral studies on rural EMS services must (1) develop work plans that recruit large sample sizes across a wide geographic area; and (2) include budgets to cover long periods of observation for a large instrumented fleet. Thus, despite the incomplete task list for this project, the majority of the planned deliverables were completed along with some additional deliverables that supported the project goals. However, because ongoing data collection efforts within the current design would not be cost effective to complete the remaining tasks, I have recommended that the project be closed with a budget return of \$ 22,164.

Task 6: Conference

Deliverable (D7) – Conference presentations

The Rural and Frontier EMS and Trauma summit (Summit at the Lake, May 2008) provided an important opportunity to describe and elicit support for Phase II based on the content of the feasibility report. As part of this task, a conference proceedings document was produced summarizing the findings of this project. A similar document was prepared for the 2008 National Rural ITS Conference in Anchorage, Alaska in September 2008.

**2008 Rural and Frontier EMS and Trauma Summit Presentation, Coeur d'Alene, ID
May 21-23, 2008**

http://www.westerntransportationinstitute.org/documents/reports/4W2008_Final_Report_D6_RFEMST.pdf

**2008 National Rural ITS Conference Presentation, Anchorage, AK, September 2-5,
2008**

http://www.westerntransportationinstitute.org/documents/reports/4W2008_Final_Report_D6_NRITS.pdf