

February 8, 2010

Docket Management Facility
US Department of Transportation
1200 New Jersey Avenue SE
West Building, Ground Floor, Room W12-140
Washington, DC 20590-0001

**Re: Strategic Plan for Research, Development and Technology Activities (2010—2015),
Docket ID RITA 2009-0005**

The Transportation Safety Advancement Group appreciates the opportunity to provide input to the referenced Strategic Plan for Research, Development and Technology Activities. We applaud the Department and the Research and Innovative Technology Administration for an aggressive Research Plan, especially as it pursues evolving technologies for public safety.

The Transportation Safety Advancement Group (TSAG) is an assembly of multi-discipline professionals sharing a common interest in transportation operations and public safety including incident management, emergency response, and responder safety. Through its members and allied stakeholders, TSAG promotes a national dialogue on public safety technologies and on public safety practitioner experiences, best practices and lessons learned. Supported by the US DOT, ITS Joint Program Office, TSAG is dedicated to enhancing traveler safety on our nation's roadways through the application of advanced technologies and the promotion of multidiscipline, interagency and inter jurisdictional cooperation.

Our comments and recommendations on the Strategic Plan for Research, Development and Technology Activities (2010-2015) follow.

Respectfully,



Dia Gainor, Chair
Transportation Safety Advancement Group

Background

The **Transportation Safety Advancement Group** (TSAG) through its charter, serves an important function on behalf of the US Department of Transportation (US DOT), Research, Innovation and Technology Administration (RITA), and its ITS-Joint Program Office. Through its members and allied stakeholder groups, TSAG identifies surface transportation technologies and applications and promotes a national dialogue on public safety practitioners' first hand experiences, best practices and lessons learned.

Organized in 2000, TSAG predates important national public safety efforts, including the 2004 Emergency Transportation Operations Initiative, which set a course for key transportation safety measures, including emergency response and incident management, key components of the TSAG charter. This Initiative was significant in defining TSAG direction and in shaping and launching a strong TSAG / ITS Joint Program Office partnership.

Emergency Vehicle / Emergency Responder Safety Issues

To help provide context to specific research recommendations, a brief summary of emergency vehicle and emergency responder safety issues are provided:

On a national scale, emergency vehicle crashes and associated responder injuries can be described as no less than epidemic in proportion. Specifically:

Emergency Medical Services¹

- Ground Emergency Medical Services (EMS) vehicles respond to approximately 30 million emergency medical/injury calls annually
- The crash fatality rate for these EMS vehicle miles traveled is estimated to be in excess of 10-fold higher than that for heavy trucks
- Ambulance 'wake effect' crashes see rates in excess of 5-fold of the identified ambulance crash rates

Law Enforcement²

- Highway related incidents represent the second highest cause of police officer fatalities
- Daily police emergency response events present complex public safety challenges

Fire & Rescue³

- Nearly thirteen percent of Fire & Rescue deaths & injuries are attributed to highway and traffic events

¹ Transportation Research Board, Report 08-3010, Nadine Levick

² 2008 Law Enforcement Officers Killed & Assaulted / US Department of Justice, Oct 2009

³ Extracted from US Fire Administration, 2009 Firefighter Fatality Notices, January 2010

With the foregoing challenges in mind the following sections offer recommendations for specific public safety and emergency responder research. TSAG believes that recommendations meet the critical research success factors identified by the Plan, including applications, technology, and policy targets.

RD&TA Plan Research Recommendations

TSAG is encouraged by the breadth and nature of the RD&TA Plan, especially as the Plan addresses important public safety and emergency response research areas. In shaping its recommendations, TSAG believes that the RITA transportation safety research platform, *IntelliDriveSM* can serve to support important public safety and emergency response research opportunities in the Plan. Accordingly, TSAG proposes that through this same platform, new and supplemental emergency vehicle and emergency response research can be pursued as sub-elements of the RD&TA Plan.

Additional opportunities for engaging the broad emergency response community in the Plan include:

- Emergency vehicles and emergency responders represent an important and often overlooked research group
- Emergency vehicles, emergency vehicle operators, and emergency responders can represent broad based and reliable fleets and user groups available for controlled and measurable research
- Emergency responders represent a ready and reliable user group for targeted human factors, special needs operator, and incident scene research

Specific TSAG recommendations for RD&TA research activities, include:

V2V Communications for Safety - - investigate key questions, such as: are vehicle based safety applications using V2V communications effective, and do they have benefits.

- **RECOMMENDED RESEARCH AREAS:**

- **V2V “I’m Here” Research**

- Identify available or emerging technologies that employ passive “I’m Here” and “Move Over” communications from emergency vehicles to impeding or hazardous traffic

- **V2V Collision Avoidance**

- Research emergency vehicle intersection and lateral collision avoidance technologies

- **V2V On Board Hazards & Equipment Failure Warning**

- Research detection and notification of hazardous contents or vehicle systems failures that represent risks to emergency responders, such as biohazards, non deployed air bags, or live electrical systems and hybrid battery systems

V2I Communications for Safety - - Investigate similar questions about V2I communications with initial focus on applications based on relay of traffic signal phase and timing information to vehicles

- **RECOMMENDED RESEARCH AREAS:**

- **V2I Emergency Vehicle Priority**

- Investigate additional V2I applications, beyond traffic signals, for emergency vehicle operations, including roadway/roadside devices such as lane control signals, highway access controls, dynamic message devices, etc

- **V2I Active Alerts of Evacuation Route Interruptions**

- Research technologies that communicate best routes, or pre selected evacuation route management systems that advise emergency vehicle operators of route interruptions, delays, or incidents requiring alternative routings

- **V2I Research Emergency Responder Weather Information Systems**

- Research weather information systems and technologies that specifically interface with emergency response and incident scene management considerations

Human Factors (HF) - - research to examine what extra burden in-vehicle devices may put on drivers

- **RECOMMENDED RESEARCH AREAS:**

- **HF - First Responder Safety**

- Investigate the nature and extent of emergency responder involvement in fatalities, injuries or 'near misses' while engaged in the performance of emergency duties, and of available technologies to prevent or moderate incidents

- **HF - Distracted Emergency Vehicle Driver**

- Investigate the unique in-vehicle emergency systems demands on vehicle operators, both in emergency response situations as well as in routine driving situations, to better understand associated distracted driver hazards

- **HF - Emergency Responder Reaction to Scene Generated Data**

- Research emergency responder processing of vehicle telematics data or other scene specific data available in advance of arrival on an incident scene - - plus assessment and management of resources upon and immediately following their arrival

Exploratory Research (ER) - - safety research for rail, technology scanning, and solicitation for new research ideas

- **RECOMMENDED RESEARCH AREAS:**

- **ER - Emergency Vehicle Safety**

- Investigate the nature, extent, and causes of emergency vehicle crashes and of available and emerging technologies that may prevent or moderate crashes

- **ER – Emergency Responder Safety**

- Investigate the nature and extent of emergency responder involvement in fatalities, injuries or ‘near misses’ while engaged in the performance of emergency duties, and of available technologies to prevent or moderate incidents

Cross-Cutting Activities - - investigate architecture, standards, PCB, tech transfer, and evaluation

- **RECOMMENDED RESEARCH AREAS:**

- **Emergency Communications**

- Investigate technologies and applications, plus institutional and policy frameworks to support national deployment of NG9-1-1 and of interoperability needs and efficiencies among emergency responders and through all levels of emergency communications

- **Incident Management**

- Investigate technologies that support quick response, inter-discipline coordination, safe victim evacuation, and rapid clearance of traffic incidents

The Transportation Safety Advancement Group, its allied stakeholders and its strategic partners look forward to supporting and, as appropriate, participating in research activity directed at the foregoing or other related public safety and emergency responder safety and operations research.