

US Fire Administration Applied Research & Technology

Program Update

Federal Fire Working Group

July 8, 2014



FEMA

USFA Research Project Initiatives:

“Stakeholder Driven, based on Data”

In support of DHS & FEMA strategic goals and USFA operational objectives, work with Federal partners and other public and private sector organizations in the development and management of projects and other activities which save lives, prevent injuries, and preserve property.

**Applied Research and Programs
in Support of the Fire Service
and Fire Safety**



FEMA

National Fire Data Center Applied Research Program

- Systems and Technology
 - Residential Sprinklers
 - Residential Smoke Alarms
 - Ventilation Techniques
 - Wind Driven Fires
 - Water Supply Systems Evaluation
 - Ongoing Projects
 - New Publications

- Firefighter Health & Safety
 - Firefighter & Emergency Responder Health & Wellness
 - Emergency Vehicle Safety
 - Roadway Safety
 - Firefighter Operational Safety



FEMA

Study of Cancer Among Firefighters – Study with NIOSH

Formal Epidemiological Study with Medical Oversight

Key Study Features

- Largest multi-department firefighter cohort ever assembled
 - Large enough to provide statistically reliable data
 - Over 30,000 Firefighters
 - Study Design (Cohort) provides best evaluation of overall patterns of disease
- Included cancer incidence and mortality (Death)
- Collected and analyze exposure information
- Development of Firefighter Cancer Information Website



Study of Cancer Among Firefighters – Study with NIOSH

FY 2012

Complete work history data history entry

Complete mortality analyses

FY 2013

Complete cancer incident analyses

FY 2014

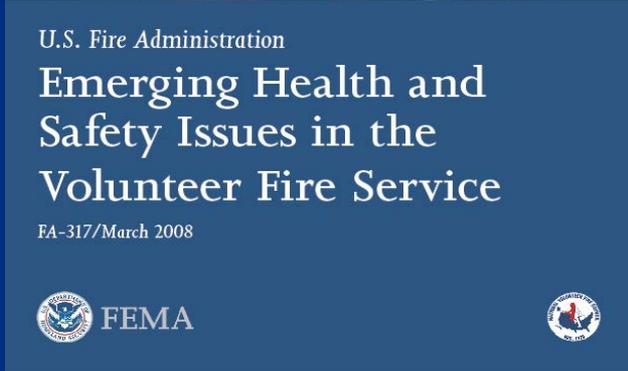
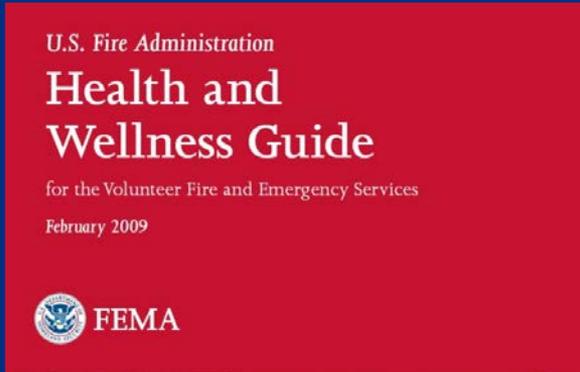
Results were published in *Occupational and Environmental Medicine* October 14, 2013.



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Study of Emergent Health and Safety Issues for the Volunteer Fire Service

Partnership with the National Volunteer Fire Council (NVFC):



Supported by US DOT, USFA initiated the **Emergency Vehicle Safety Initiative** to reduce, if not eliminate, deaths from vehicle crashes and roadway operations.

Vehicle crashes account for approximately one quarter of firefighter on-duty fatalities.



Emergency Vehicle Safety Initiative

FA-272 / August 2004



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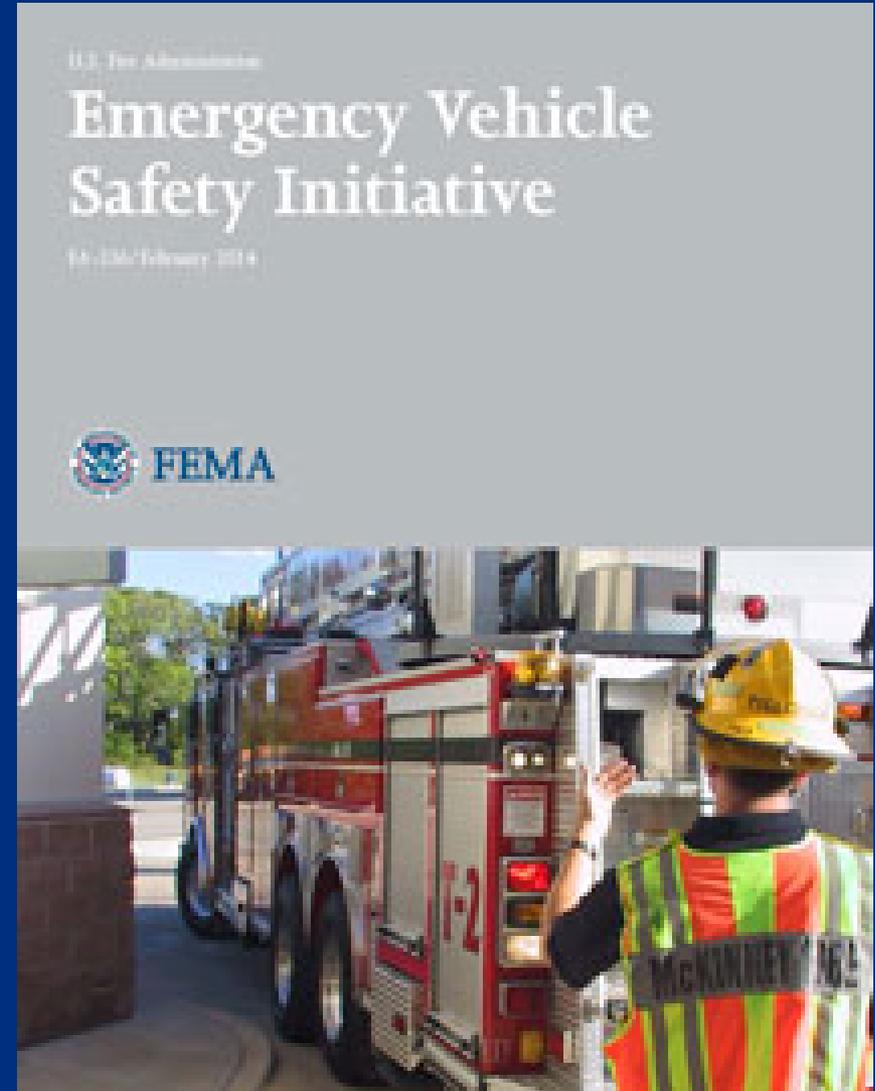
FEMA

Updated through support
of US Department of
Justice (DOJ) National
Institute of Justice (NIJ) –

*Public Safety Emergency
Vehicle Safety Initiative*

*Expanded to include Law
Enforcement and other
Emergency Responders*

Many USFA program
efforts in this area
supports the Law
Enforcement.



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Supported by the U.S. Department of Justice – USFA in partnership with the IAFF:

Expanded the **Improving Apparatus Response and Roadway Operational Safety in the Career Fire Service** into a comprehensive training program for **all** public safety, including law enforcement.

Worked with IACP.

Many USFA program initiatives in these areas also supports the Law Enforcement Community.

Best Practices for Emergency Vehicle and Roadway Operations Safety in the Emergency Services



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Protecting Emergency Responders on the Highways



Developed Slow Down and Move Over Public Service Announcement based on past USFA supported Roadway Safety Research.



NEW Slow Down Move Over PSA



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Protecting Emergency Responders on the Highways

Civilian Driver
Behavioral Study



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Traffic Incident Management Systems (TIMS) Technical Research supported by DOT FHWA - Updated USFA Manual

Manual on Uniform Traffic Control Devices for Streets and Highways

2009 Edition

Including Revision 1 dated May 2012
and Revision 2 dated May 2012



U.S. Department of Transportation
Federal Highway Administration

U.S. Fire Administration

Traffic Incident Management Systems

March 2012



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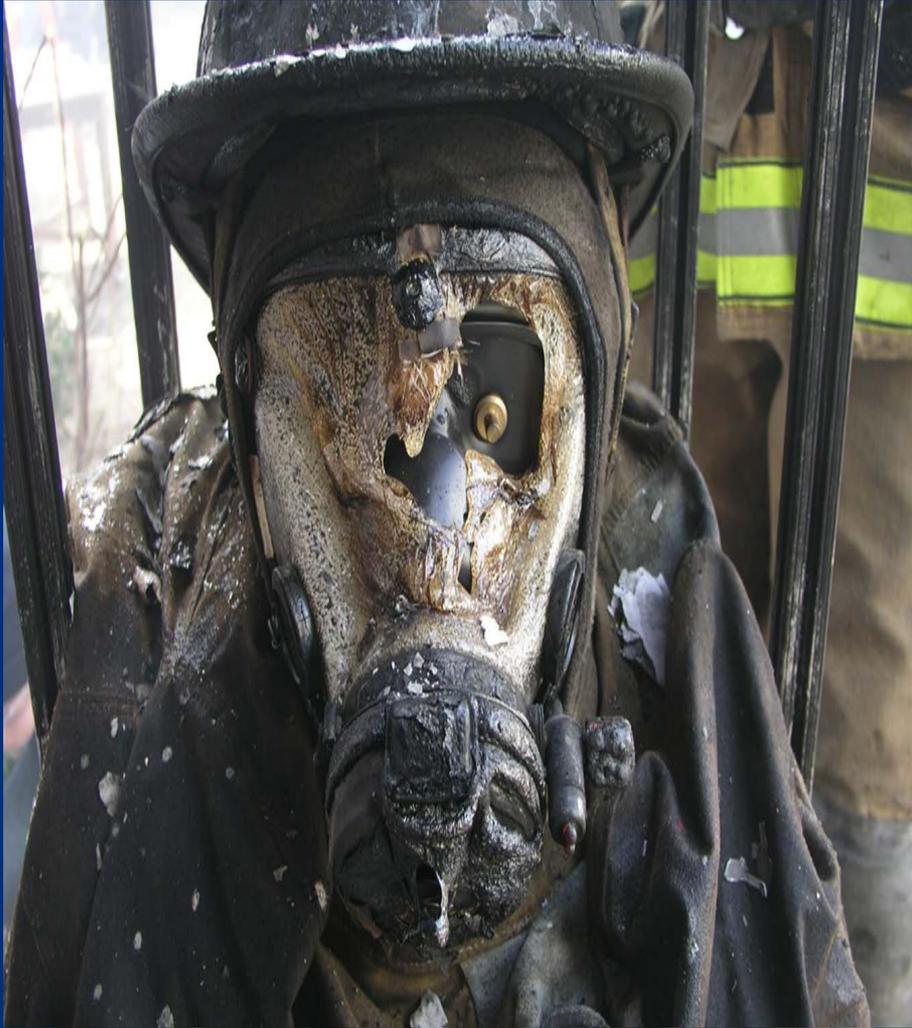


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U.S. Department of Transportation
Federal Highway Administration

SCBA Face Piece Thermal Study



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NIST

National Institute of
Standards and Technology

Study of Thermal Limits of Structural Firefighting Personal Protective Equipment



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NIST
National Institute of
Standards and Technology

Lightweight Construction



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Lightweight Construction Awareness - Outreach to the Fire Service



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 only search Wood Aware

Home About AWC USFA Associations Tools FireFrame

Wood Products Adhesives Fire Perform. Wood Panels Lumber Glulam/SCL I-Joists Trusses

Convert to Mobile!



I-Joists & Firefighter Safety

Awareness Level

This website provides awareness level information to the fire service on traditional and modern wood products used in residential construction. These publications were developed under a cooperative agreement between the Department Homeland Security's United States Fire Administration and the American Wood Council.

As with all types of structural framing exposed to fire, the intensity of the fire load varies from incident to incident, as do the construction materials and details. This results in performance which is unpredictable under fire conditions.

Because each fire is unique, each building is constructed differently and contents are varied the failure of structural components and systems will be initiated by any number of items. These include but are not limited to: loss of strength of framing members, sheathing burn-through, loss of member bracing, or failure of connections or supports, etc.

Therefore, it is vital that firefighters educate themselves with all construction materials, methods of construction and maintain a constant awareness of conditions that are present during fire ground incidents to ensure safe operations.

The National Institute of Occupational Safety and Health (NIOSH) provides a Fire Fighter Fatality Investigation and Prevention Program. In addition to the incident investigations, NIOSH provide recommendations to prevent similar incidences from occurring. This information may be valuable as an educational aid of lessons learned.

Note: *Light frame construction* is defined as: Light frame construction, any method of construction utilizing dimension lumber joists, MPC trusses, MPCMW trusses, steel bar joist trusses, wood I-joists, or composite wood joists as floor or roof system structural elements.

1. *National Engineered Lightweight Construction Fire Research Project – Technical Report: Literature Search & Technical Analysis*, Kirk Grundahl, National Fire Protection Research Foundation Report, 1992 - www.sbcindustry.com/firepro.php

The 10 Rules of Engagement for Structural Fire Fighting and the Acceptability of Risk



FireFrame

Wood Products for Modern Construction

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Updated web-based educational program for the fire service on modern construction components and technology.

It consists of:

[FireFrame](#) (updated in 2013), an interactive tool developed with the assistance of state and local fire training agencies that provides information on the structural use of traditional and engineered wood products in modern construction.

[Woodaware.info](#) (updated in 2013), a website with information about modern building components, including trusses, structural glued laminated timber beams, I-joists, structural composite lumber, structural insulated panels, and wood structural panels.

[Modernfirefighting.com](#) (new in 2013), a portal to contemporary information on topics associated with fireground operations.



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National Safety Culture Change Initiative

Partnership with the IAFC

Assist in the support and advocacy for the need of a culture change in the fire service – incorporating organizational leadership and personal responsibility



FEMA

Supports the National Fallen Firefighters Foundation Life Safety Initiative #1

Define and advocate the need for a cultural change within the fire service relating to safety; incorporating leadership, management, supervision, accountability and personal responsibility.



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Focus:

- **Medical** – Medical Exams and Health/Wellness
- **Vehicle Safety** – Both Emergency and Personal Vehicles
- **Incident Risk Management**

Next Steps:

Report and Training Materials supported by Fire Service and Federal Partners

- **Working Group Report**
- **Educational Materials**
- **Website:** www.ffsafetyculture.org

Program Presentation at IAFC Fire Rescue International Conference – August 2014



FEMA

Voice Radio Communications Guide For the Fire Service

Working in partnership with
IAFF to update this through
support of DHS Science
and Technology
Office for Interoperability
and Compatibility
First Responders Group



U.S. Fire Administration

Voice Radio Communications Guide for the Fire Service

September 2008



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EMS Project Initiatives



Partnerships with DHS Office of Health Affairs

Update and Revision to USFA – *Funding Alternatives for Fire and Emergency Services* - Enhanced Concentration on EMS

U.S. Fire Administration

Funding Alternatives for Emergency Medical and Fire Services

EA-141 January 2012



FEMA

EMS Project Initiatives

Partnerships with DHS Office of Health Affairs

Development of an EMS Medical Directors Manual
With the IAFC

EMS Medical Director's
Website with On-Line
Educational Program



Handbook for EMS Medical Directors

March 2012



FEMA

EMS Project Initiatives

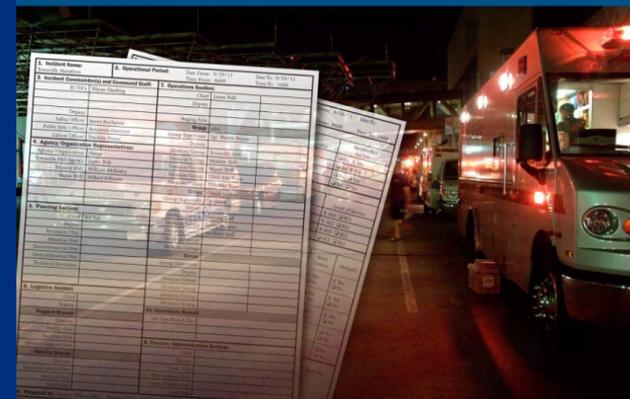


Partnerships with DHS Office of Health Affairs

Study of Model Policies and Protocols for EMS Mass Care Deployment - with National EMS Management Association

Operational Templates and Guidance for EMS Mass Incident Deployment

June 2012



Contact Information

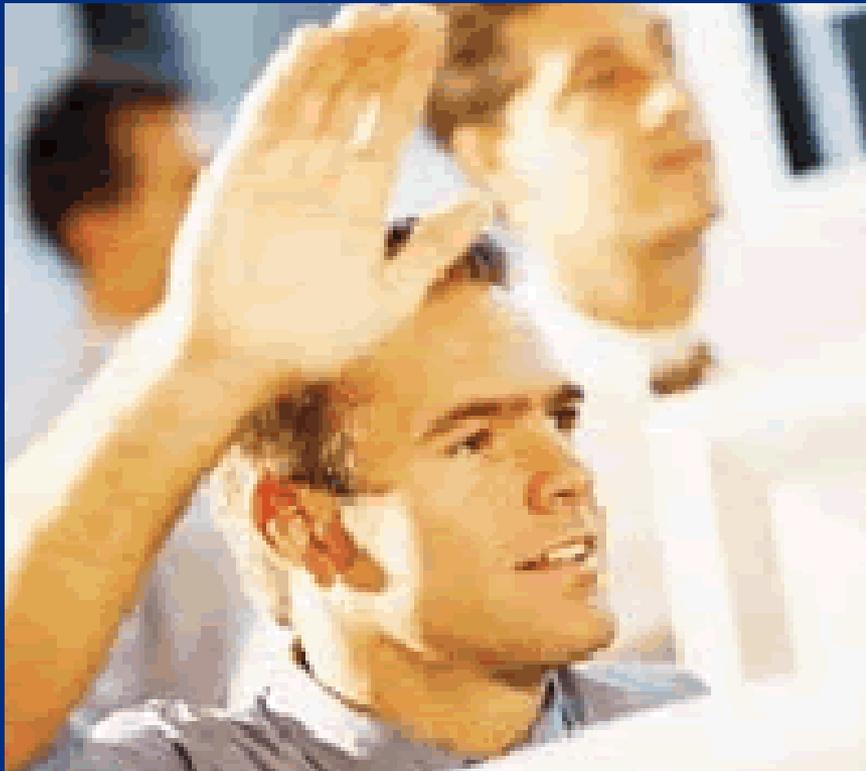
For further information or assistance, please contact me:

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Or visit the USFA web site at: <http://www.usfa.fema.gov>



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**Any
Questions?**



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