



Assistance to Firefighters Grant Program

Performance Assessment System

Fiscal Year 2014 Annual Report to Congress
November 13, 2014



Homeland
Security

Federal Emergency Management Agency

Message from the Administrator

[November 13, 2014]

I am pleased to submit the following Fiscal Year 2014 Annual Report to Congress titled the *Assistance to Firefighters Grant Program Performance Assessment System*, (AFG Report). The AFG report is prepared by the Federal Emergency Management Agency (FEMA), pursuant to the requirement in the *Federal Fire Prevention and Control Act of 1974* (FFPCA) (Pub. L. No. 93-498), as amended by the *Fire Grants Reauthorization Act of 2012* (FGRA). The FGRA was enacted as Title XVIII of the *National Defense Authorization Act for Fiscal Year 2013*, (Pub. L. No. 112-239).



Section 1803 of the FGRA amended Section 33 of the FFPCA by including a requirement that the Administrator of FEMA develop and implement a performance assessment system and to annually evaluate and report the effectiveness of the AFG program. This report summarizes FEMA's development and application of an AFG performance assessment system, including quantifiable metrics of grant effectiveness and administration.

Pursuant to congressional requirements, FEMA provides this report to the following Members of Congress:

The Honorable Tom Carper
Chairman, Senate Committee on Homeland Security and Governmental Affairs

The Honorable Tom A. Coburn, M.D.
Ranking Member, Senate Committee on Homeland Security and Governmental Affairs

The Honorable Lamar Smith
Chairman, House Committee on Science, Space, and Technology

The Honorable Eddie Bernice Johnson
Ranking Member, House Committee on Science, Space, and Technology

The Honorable Bill Shuster
Chairman, House Committee on Transportation and Infrastructure

The Honorable Nick J. Rahall II
Ranking Member, House Committee on Transportation and Infrastructure

Inquiries relating to this report may be directed to me at (202) 646-3900.

Sincerely,

A handwritten signature in blue ink, appearing to read "W. Craig Fugate". The signature is fluid and cursive, extending to the right.

W. Craig Fugate
Administrator
Federal Emergency Management Agency

Executive Summary

This report, titled *Assistance to Firefighters Grant Program Performance Assessment System*, is submitted pursuant to Section 33(p)(4) of the *Federal Fire Prevention and Control Act of 1974* (FFPCA) (Pub. L. No. 93-498) as amended by Section 1803 of the *Fire Grants Reauthorization Act of 2012* (FGRA) (Pub. L. No. 112-239). This report summarizes FEMA’s Assistance to Firefighters Grant (AFG) program’s performance assessment system and evaluates AFG’s effectiveness at achieving congressionally established goals.

Background on the AFG Program

In 2000, Congress amended the FFPCA to establish the AFG program to “[protect] the health and safety of the public and firefighting personnel against fire and fire-related hazards...”¹ Congress most recently reauthorized the AFG program in January 2013 with the enactment of the *Fire Grants Reauthorization Act of 2012*. The FGRA was enacted as Title XVIII of the *National Defense Authorization Act for Fiscal Year 2013* (Pub. L. No. 112-239).

FEMA awards AFG funds to fire departments, nonaffiliated emergency medical service (EMS) organizations, and state fire training academies primarily to help purchase personal protective equipment (PPE), vehicles, and other operational equipment as well as to modernize facilities, deliver training, and develop wellness and fitness programs. Under AFG’s authorizing statute, FEMA also awards Fire Prevention and Safety (FP&S) grants to support firefighter and public safety through research and community initiatives, such as installing smoke detectors in high-risk areas. Since Fiscal Year (FY) 2002, FEMA has awarded over \$6.4 billion through 158,127 AFG grants.

Performance Assessment System

In consultation with fire service representatives and the Comptroller General of the United States, FEMA designed 11 objective, quantitative performance metrics to assess AFG program effectiveness. FEMA’s performance assessment system has two components: effectiveness metrics based on safety standards and administrative metrics based on programmatic priorities.

AFG Program Performance Assessment

FEMA analyzed over 140,000 data points from AFG applications between FY 2008-2013 and AFG closeout reports between FY 2008-2010 to assess the program’s effectiveness. FEMA measures the program’s effectiveness by examining the extent to which grantees achieve compliance with safety standards related to equipping on-duty personnel with protective gear as well as maintaining vehicles and/or operational equipment. The data show the following results:

- AFG awards enabled 93 percent of FY 2008–2010 PPE grantees to provide all of their on-duty firefighters with protective gear that is compliant with relevant safety standards.
- AFG awards helped 86 percent of FY 2008-2010 vehicle grantees replace sub-standard vehicles that were 25 years old or older; the age at which safety standards recommend departments replace vehicles.

¹ Section 1701 of the *Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001* (Pub. L. No. 106-398)

- AFG awards supported 88 percent of FY 2008–2010 equipment grantees to improve department compliance with industry safety standards, benefitting firefighter and public safety.

FEMA also tracks administrative metrics to assess the AFG program's success in advancing programmatic priorities. The administrative data demonstrate that the AFG program promotes fire safety and national preparedness by: (1) encouraging mutual and automatic aid agreements; (2) focusing awards on departments that protect critical infrastructure; (3) providing sharable regional resources; and (4) fulfilling other legislative requirements.



Assistance to Firefighters Grant Program Performance Assessment System Fiscal Year 2014 Annual Report to Congress

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I. Legislative Language

This report, titled *Assistance to Firefighters Grant Program Performance Assessment System Fiscal Year 2014 Annual Report to Congress*, is submitted pursuant to Section 33 of the *Federal Fire Prevention and Control Act of 1974* (Pub. L. No. 93-498) as amended by Section 1803 of the *Fire Grants Reauthorization Act of 2012* (Pub. L. No. 112-239).

(p) ENSURING EFFECTIVE USE OF GRANTS –

(2) PERFORMANCE ASSESSMENT.—

(A) IN GENERAL.—The Administrator of FEMA shall develop and implement a performance assessment system, including quantifiable performance metrics, to evaluate the extent to which grant awards awarded under this section are furthering the purposes of this section, including protecting the health and safety of the public and firefighting personnel against fire and fire-related hazards.

(B) Consultation.—The Administrator of FEMA shall consult with the fire service representatives and with the Comptroller General of the United States in developing the assessment system required by subparagraph (A).

(4) ANNUAL REPORTS TO CONGRESS.—

“(A) IN GENERAL.—Not later than September 30, 2013 and each year thereafter through 2017, the Administrator of FEMA shall submit to the Committee on Homeland Security and Governmental Affairs of the Senate and the Committee on Science and Technology and the Committee on Transportation and Infrastructure of the House of Representatives a report that provides—

(i) information on the performance assessment system developed under paragraph (2); and

(ii) using the performance metrics developed under such paragraph, an evaluation of the effectiveness of the grants awarded under this section.

This report addresses the annual AFG reporting requirement under the FGRA.

II. Background

In 2000, Congress amended the *Federal Fire Prevention and Control Act of 1974* to establish the AFG program to “[protect] the health and safety of the public and firefighting personnel against fire and fire-related hazards...”² Congress most recently reauthorized the AFG program in January 2013 with the enactment *Fire Grants Reauthorization Act of 2012*, enacted as Title XVIII of the *National Defense Authorization Act for Fiscal Year 2013*, (Pub. L. No. 112-239).

FEMA awards AFG funding to fire departments, non-affiliated EMS organizations, and state fire training academies. In addition, FEMA awards funding to other nonprofit organizations recognized for their experience and expertise with respect to fire prevention; fire safety programs and activities; or firefighter research and development programs.

After the September 11th attacks and the creation of the U.S. Department of Homeland Security in 2003, FEMA expanded the scope of the AFG program to include national preparedness and regional disaster response considerations, such as fire department responsibilities for critical infrastructure protection and compliance with the National Incident Management System (NIMS)..

AFG Program Overview

Since the AFG program’s creation, FEMA has awarded over \$6.4 billion in AFG funding through 158,127 grants to eligible recipients across the country. The AFG grant program includes three primary components: operations and safety, vehicle acquisition, and joint/regional programs. These components provide awards to grantees to help procure equipment, purchase fire and EMS vehicles, deliver training, modify facilities, and develop wellness and fitness programs. In 2002, FEMA introduced FP&S grants, which provide funding fire-safety community initiatives for high-risk groups, including individuals more likely to sustain a fire-related injury—such as children and the elderly—and geographic areas with above-average fire risks. In 2005, FEMA introduced research and development (R&D) projects aimed at improving firefighter health and safety as an eligible project under the FP&S Program.

Since 2002, grantees have used AFG awards to purchase over \$1.9 billion in firefighting equipment, \$2 billion in PPE, and nearly \$1.5 billion in vehicles. Together, these three categories account for nearly 85 percent of all AFG awards. While AFG grants supporting PPE, equipment, and vehicles play a direct role in promoting operational response capabilities, other grant categories support awardee readiness and safety through facility modification, general training, and health and wellness programs. Figure 1 illustrates the AFG grant allocation by activity awarded since FY 2002.

² Section 1701 of the *Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001* (Pub. L. No. 106-398)

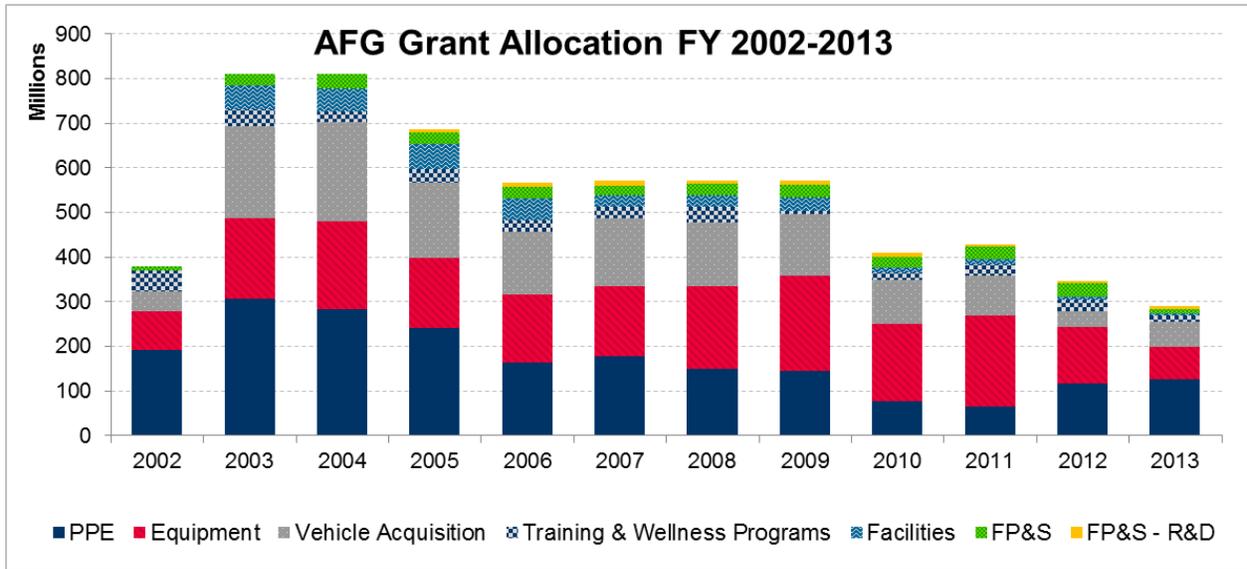


Figure 1: Since FY 2002, FEMA has awarded over \$6.4 billion in AFG grants.

Structure of the Report

The 2014 AFG Report is comprised of two sections that follow the statutory requirements of the FGRA:

- (1) AFG Performance Assessment System: Identifies and justifies FEMA’s performance metrics for the AFG program.
- (2) AFG Program Performance Assessment: Assesses grant performance using available data from FY 2008–2013 and FEMA’s quantitative effectiveness and administrative performance metrics.

III. AFG Performance Assessment System

FEMA’s AFG performance assessment system has two components: effectiveness metrics based on safety standards and administrative metrics based on programmatic priorities. For both components, FEMA analyzes data from grantee applications and closeout reports to calculate results and develop key findings.

A. Effectiveness Metrics

In consultation with fire service representatives and the Comptroller General of the United States, FEMA developed quantitative effectiveness metrics based on safety standards from the National Fire Protection Association (NFPA), the Occupational Safety and Health Administration (OSHA), state governments, and local regulatory agencies. Appendix A includes a list of the NFPA and OSHA standards that are most relevant to the AFG performance assessment system.

- **NFPA Standards:** The NFPA is an international nonprofit organization of subject-matter experts that develops codes and standards for the fire, electrical, and construction trades with the goal of reducing the worldwide burden of fire—including fire-related injuries, property damage, and other effects. Increased departmental compliance with NFPA standards demonstrates progress in advancing firefighter and public safety. Several AFG funding categories, including PPE, vehicles, and certain types of equipment, correspond to specific NFPA standards that define minimum safe operational requirements.
- **OSHA Standards:** OSHA maintains several standards applicable to AFG grantees, primarily in the areas of firefighter safety. While OSHA standards are only applicable to private-sector employers, 27 states and territories have adopted federally approved occupational health and safety programs. These “OSHA states” apply OSHA standards to all state and local government agencies, including fire departments.
- **State, Local, Tribal, and Territorial Governments Regulatory Standards:** In all other jurisdictions, the state, local, tribal, or territorial regulatory agencies develop and enforce standards for fire service personnel. These standards vary across jurisdictions. For example, Alaska requires certain firefighting equipment to be annually examined, tested, and documented by an inspector. Fire departments in Georgia must maintain a minimum quantity of certain types of PPE, vehicles, and equipment.

FEMA developed seven effectiveness metrics based on grantee compliance with these safety standards. The effectiveness metrics focus on increased compliance with safety standards for PPE, vehicle acquisition, and equipment—the three grant activities that account for over 85 percent of all AFG awards. These measures—introduced in Table 1—enable FEMA to assess the impact and effectiveness of the AFG program in achieving congressionally established goals.

Table 1: AFG Effectiveness Metrics and Explanations

Effectiveness Metric	Explanation
Average percent of on-duty members from AFG PPE grantee departments who received PPE in compliance with applicable NFPA and OSHA standards	<p>FEMA tracks this metric to determine if AFG grants assist PPE grantees to equip more of their on-duty members with PPE in compliance with applicable NFPA and OSHA standards. PPE—including self-contained breathing apparatus (SCBA)—provides enhanced overall thermal protection for firefighters, allowing them to safely remain in adverse conditions for longer periods of time.</p> <p>Relevant Safety Standards: NFPA 1971, NFPA 1981, NFPA 1999, 29 CFR § 1910.120, 29 CFR § 1910.134, 29 CFR § 1910.156</p>
Percent of AFG PPE grantees who equipped 100 percent of on-duty active members with PPE in compliance with applicable NFPA and OSHA standards	<p>FEMA tracks this metric to evaluate the percent of PPE grantees enabled to equip all of their on-duty, active members with PPE in compliance with applicable NFPA and OSHA standards. This metric provides additional insight into the average-based metric above to distinguish the percent of grantees who achieve full compliance as a result of grant award.</p> <p>Relevant Industry Standards: NFPA 1971, NFPA 1981, NFPA 1999, 29 CFR § 1910.120, 29 CFR § 1910.134, 29 CFR § 1910.156</p>
Percent of AFG vehicle grantees requesting funding to replace a sub-standard vehicle who then permanently removed the sub-standard vehicle from service	<p>FEMA tracks this metric to evaluate the percent of vehicle grantees who report removing sub-standard vehicles from service following grant award and closeout.</p> <p>Relevant Industry Standards: NFPA 1901 and NFPA 1906</p>
Percent of fire vehicles replaced using AFG funding that were 15 years old or older	<p>FEMA tracks the age of grantee fire vehicles replaced through the AFG program because it reflects vehicle condition, capability, and safety. Replacing older fire vehicles increases compliance with NFPA 1901, which states, "...fire departments should seriously consider the value (or risk) to fire fighters of keeping fire apparatus older than 15 years in first-line service... [vehicles that are] over 25 years old should be replaced"³</p> <p>Relevant Industry Standards: NFPA 1901 and NFPA 1906</p>
Percent of fire vehicles replaced using AFG funding that were 25 years old or older	
Percent of AFG equipment grantees who reported that AFG-funded equipment primarily provided a health and safety benefit to members of the organization	<p>FEMA tracks this metric to evaluate the percentage of equipment grantees who reported that the equipment purchased with AFG awards primarily provided a health and safety benefit to members of the organization—increasing compliance with OSHA safety standards. In addition, the grants may also enhance operational efficiency or other mission-related purposes.</p> <p>Relevant Industry Standards: NFPA 1801, OSHA § 1910.158, OSHA § 1910.161, and OSHA § 1910.63</p>
Percent of AFG equipment grantees who reported that the AFG grant brought them into compliance with state, local, NFPA, or OSHA standards	<p>FEMA tracks this metric to determine if AFG funding increases grantee compliance with state, local, NFPA, or OSHA standards.</p> <p>Relevant Industry Standards: NFPA 1801, NFPA 1936, NFPA 1963, NFPA 1964, OSHA § 1910.156, and state and local standards</p>

³ NFPA 1901, *Standard for Automotive Fire Apparatus*, (National Fire Protection Association 2009), pg. 176

B. Administrative Metrics

FEMA developed four administrative metrics to assess the AFG program’s success in advancing programmatic priorities. Each of these administrative metrics focuses on elements of firefighter and EMS contributions to national preparedness and regional response capacity. FEMA uses this data—along with other application characteristics—to determine AFG awards. Table 2 introduces the administrative metrics.

Table 2: AFG Administrative Metrics and Explanations

Administrative Metric	Explanation
Percent of AFG PPE grantees responsible for protecting critical infrastructure ⁴	FEMA tracks this metric to assess the AFG program’s role in promoting national preparedness by prioritizing grantees responsible for protecting critical infrastructure.
Percent of AFG-funded equipment purchases that benefit and/or are available for use by other organizations	FEMA tracks this metric to determine what percent of grantees use AFG funds to procure shareable equipment that benefits peer organizations, increasing collaboration and regional response capacity.
Percent of AFG-funded vehicles supporting either automatic or mutual aid ⁵	Since FY 2008, 100 percent of AFG vehicle grantees participated in <i>either</i> mutual- <i>or</i> automatic-aid agreements. FEMA encourages grantees to participate in <i>both</i> mutual- <i>and</i> automatic-aid agreements. FEMA tracks these metrics to assess the percentage of grantees who support either automatic or mutual aid as well as grantees who support both.
Percent of AFG-funded vehicles supporting both automatic and mutual aid	

C. Annual AFG Assessment Methodology

FEMA analyzes available data from grantee applications and closeout reports to conduct an annual performance assessment of the AFG program that compares *actual* results against *projected* application data. In the AFG application, FEMA requires applicants to project the grant’s impact on several categories, including:

- How the grant will improve their department’s compliance with related NFPA, OSHA, state, and local standards;
- How the new purchases will affect their department’s inventory and operations; and
- How the department will train or prepare its personnel to safely and effectively employ grant-funded purchases.

FEMA uses these projections to award AFG funding and to establish baselines for the grant’s expected impact for each of the effectiveness and administrative metrics. Upon grant closeout, grantees submit reports to FEMA explaining how they spent the AFG award and the grant’s *actual* effect on increased compliance with industry standards, department inventory and operations, and

⁴ Critical infrastructure in this report refers “any system or asset that if attacked would result in catastrophic loss of life or catastrophic economic loss,” as defined in the AFG application, including a list of examples.

⁵ According to the Insurance Services Office, “automatic aid is assistance dispatched automatically by contractual agreement between two communities or fire districts to all first alarm structural fires. That differs from mutual aid or assistance [that is] arranged case by case” depending on response needs.

personnel training. FEMA compares the *projected* impacts from grantee applications with the *actual* impacts reported in the closeout data to assess results for all 11 performance assessment system metrics. FEMA expects grantees that use AFG funding effectively will meet or exceed their projected impacts. Additionally, FEMA evaluates grant outcome trends over time, providing insight into the AFG program's effectiveness in improving each metric.

IV. AFG Program Performance Assessment

This section evaluates the effectiveness of the AFG program against quantitative metrics using over 140,000 data points from grant applications between FY 2008-2013 and closeout reports between FY 2008-2010.⁶

A. Effectiveness Metrics

AFG grants strongly support compliance with accepted safety standards for PPE, vehicles, and equipment. From FY 2008–2010:

- AFG awards enabled 96 percent of PPE grantees to provide all of their on-duty firefighters with protective gear that is compliant with relevant safety standards;
- AFG awards helped 86 percent of vehicle grantees replace sub-standard vehicles that were 25 years old or older—the age at which safety standards recommend departments replace vehicles; and
- AFG awards supported 88 percent of equipment grantees to improve department compliance with safety standards, benefitting firefighter and public safety.

Furthermore, grantees on average exceeded, met, or nearly met the projections established in their applications every year of the assessment period for five of the seven metrics. This outcome demonstrates that, on average, grantees effectively spent AFG funding to achieve—and in many instances exceed—projected gains to firefighter and public safety.

Key Finding: From FY 2008–2010, AFG PPE grantees increased the average percent of on-duty members equipped with PPE in compliance with NFPA and OSHA standards by more than three percentage points—from 95.4 percent to 98.7 percent.

Average percent of on-duty members from AFG PPE grantee departments who received PPE in compliance with applicable NFPA and OSHA standards					
Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
<i>Projected</i>	96.2%	97.8%	98.9%	97.8%	99.0%
<i>Actuals</i>	95.4%	97.6%	98.7%	N/A	N/A

Key Finding: AFG PPE grants enable the vast majority of PPE grantees to equip 100 percent of their firefighters with PPE that is compliant with NFPA and OSHA standards. Grantees set ambitious goals, with over 94 percent of departments projecting in their applications that AFG funding would enable them to equip all of their on-duty members with compliant PPE. Between FY 2008–2010, an average of nearly 93 percent of fire departments did achieve 100 percent compliance. Equipping all on-duty members with compliant protective clothing and breathing apparatus helps protect firefighters from dangerous elements and minimizes response-related injuries.

⁶ FY 2011–2013 closeout reports are not yet available for analysis, as AFG is in the process of collecting and adjudicating closeout submissions. This data provides insight into trends among grantees, not fire departments at large.

Percent of AFG PPE grantees who equipped 100 percent of on-duty active members with PPE in compliance with applicable NFPA and OSHA standards

Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
<i>Projected</i>	92.2%	95.5%	97.5%	95.3%	97.4%
Actuals	90.7%	95.0%	97.3%	N/A	N/A

Case Study: New Jersey AFG Investments Aid Sandy Response Efforts

Hurricane Sandy made landfall in New Jersey in October 2012, causing power outages and severe flooding throughout the region. During the response, firefighters from the Hoboken and Toms River Township Fire Departments worked long hours in hip-deep salt water, sometimes contaminated by raw sewage or petroleum fuel. These conditions damaged five of the departments' fire apparatus and contaminated PPE. Using a fire engine pumper and nearly 150 sets of PPE previously purchased using AFG funding, the fire departments were able to replace the damaged equipment and continue responding to emergency calls. In total, the AFG program provided over \$800,000 in equipment that supported these departments' firefighters in the response to Hurricane Sandy.

Key Finding: Over 98 percent of grantees applying to replace a sub-standard or unsafe vehicle indicated in their application that the sub-standard vehicle would be permanently removed from service. Closeout data exceeded or nearly met projections for each year from FY 2008 through 2010 and, on average, 98 percent of respondents indicated the sub-standard vehicle was permanently removed from service. Vehicles that were not permanently removed from service can be placed in reserve status or otherwise removed from front-line operations.

Percent of AFG vehicle grantees requesting funding to replace a sub-standard vehicle who then permanently removed the sub-standard vehicle from service

Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
<i>Projected</i>	98.1%	98.4%	99.2%	100%	98.8%
Actuals	97.7%	99.0%	98.9%	N/A	N/A

Key Finding: On average, more than 86 percent of the fire vehicles that grantees replaced using FY 2008–2010 AFG funding were 25 years old or older and more than 99 percent were 15 years old or older. Replacing older fire vehicles improves compliance with NFPA 1901, which recommends removing fire vehicles that are over 15 years old from first-line service and calls for departments to replace vehicles over 25 years old.

Percent of fire vehicles replaced using AFG funding that were 15 years old or older

Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
<i>Projected</i>	99.3%	100%	99.5%	100%	98.8%
Actuals	99.2%	100%	97.7%	N/A	N/A

Percent of fire vehicles replaced using AFG funding that were 25 years old or older

Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
<i>Projected</i>	86.1%	87.7%	89.4%	90.4%	85.4%
Actuals	85.0%	86.9%	87.2%	N/A	N/A

Case Study: FP&S Smoke Alarms Save Lives in Illinois, Tennessee, and Texas

According to the NFPA, almost two-thirds of home fire deaths in the United States occur in properties without smoke alarms. Fire departments use FP&S grants to purchase and install smoke alarms around the country. In Illinois, the Galesburg Fire Department used FP&S funding to install 3,300 smoke alarms, primarily in low-income communities and for high-risk populations, such as individuals older than 75 and younger than five years old. One of the FP&S-funded alarms helped save five adults and two children from a residential fire less than a year after installation. In Tennessee, a similar program helped save over 41 lives across the state in 2013 alone. Additionally, in 2012, the Houston Fire Department invested an \$84,000 FP&S grant to purchase and install 2,000 visual smoke detectors in homes for individuals who are deaf or hard of hearing.

Key Finding: From FY 2008–2010, 90 percent of AFG grantees used grant funding to purchase equipment primarily benefitting the health and safety of their members, including cardiac monitors, communications equipment, rescue extrication equipment, and emergency scene lighting. Grantees who reported that equipment purchases did not primarily support a health and safety benefit for the organization explained that the purchases:

- Enhanced safety for the community, such as public education materials;
- Increased department effectiveness, such as data management systems; or
- Supported or enhanced other equipment, such as battery chargers or carrying cases for specialty tools.

Percent of AFG equipment grantees who reported that AFG-funded equipment primarily provided a health and safety benefit to members of the organization

Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
<i>Projected</i>	92.2%	92.2%	94.5%	98.4%	93.5%
Actuals	90.1%	89.6%	89.6%	N/A	N/A

Key Finding: From FY 2008-2010, 88 percent of equipment grantees reported using AFG funds to bring their fire departments up to current state, local, NFPA, or OSHA standards, reflecting the AFG program’s success in supporting compliance with safety standards. Of the 12 percent of grantees who reported that they did not use AFG funding primarily to reach compliance with safety standards, grantees commonly reported that they purchased items that did not have a related safety standard available (e.g., thermal imaging equipment prior to the release of NFPA 1801 in 2013), although the equipment did contribute to the department’s primary mission and increased firefighter safety.

Percent of AFG equipment grantees who reported that the AFG grant brought them into compliance with state, local, NFPA, or OSHA standards

Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
<i>Projected</i>	99.9%	74.8%	80.9%	86.1%	100%
Actuals	100%	74.2%	78.3%	N/A	N/A

Case Study: Virginia Beach Fire Department Improves Firefighters' Health and Safety

Heart attacks are the leading cause of firefighter deaths in the United States, accounting for 48 percent of all firefighter deaths from 2004–2012. To improve the cardiovascular health and overall fitness of its firefighters, the Virginia Beach Fire Department (VBFD) used AFG funding to purchase health equipment—including treadmills, exercise weights, and heart rate monitors—and developed a wellness program. VBFD also trained 25 firefighters to become Peer Fitness Trainers and help other firefighters improve their fitness assessments. In total, VBFD's investments—combined with the implementation of NFPA-compliant physicals and an NFPA-compliant wellness program—have reduced the percent of firefighters with below average fitness assessments from 16 percent in 2009 to less than 5 percent in 2013.

B. Administrative Metrics

The AFG program's administrative metrics demonstrate FEMA's success in advancing programmatic priorities, such as awarding grants to departments responsible for critical infrastructure protection as well as creating shareable regional resources for emergency response. For example, from FY 2008-2010, 100 percent of vehicles purchased using AFG grants supported either automatic- or mutual-aid agreements, and 91 percent supported both. Additionally, across the administrative metrics, grantees nearly met or met gains as projected from their applications.

Key Finding: The percentage of PPE grants awarded to fire departments responsible for protecting critical infrastructure has increased by 20 percentage points since 2009. This rise reflects FEMA's increased focus on prioritizing awards toward fire departments with greater contributions to national preparedness and regional response.

Percent of AFG PPE grantees responsible for protecting critical infrastructure					
Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Actuals	N/A	68.3%	79.3%	84.9%	84.2%

Note: Data from AFG awardees' applications

Key finding: Overall, more than 88 percent of AFG grantees from FY 2008–2010 report using AFG funds to procure equipment that also benefits peer organizations, demonstrating FEMA's continued support for promoting shared regional resources.

Percent of AFG-funded equipment purchases that benefit and/or are available for use by other organizations					
Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
<i>Projected</i>	90.4%	91.6%	92.3%	92.7%	93.5%
Actuals	88.9%	89.0%	88.9%	N/A	N/A

Key Finding: Automatic- and mutual-aid agreements function as force-multipliers of AFG grant awards as increased capability in one locality improves the response capabilities in the surrounding region. From FY 2008–2012, 100 percent of grantees established projections in their applications that AFG-funded vehicles would support *either* mutual- or automatic-aid

agreements. For the same time period, nearly 92 percent stated that the vehicles would support *both* mutual and automatic aid. Closeout data for FY 2008–2010 indicates 91 percent of AFG-funded vehicles supported *both* mutual and automatic aid. This demonstrates FEMA’s progress in awarding AFG grants to fire departments with automatic- and mutual-aid agreements. As a result, FEMA is supporting capabilities that serve as shareable, deployable resources across localities, states, and regions.

Percent of AFG-funded vehicles supporting either automatic <u>or</u> mutual aid					
Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
<i>Projected</i>	100%	100%	100%	100%	100%
Actuals	100%	100%	100%	N/A	N/A
Percent of AFG-funded vehicles supporting <u>both</u> automatic and mutual aid					
Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
<i>Projected</i>	91.3%	92.2%	87.3%	94.8%	94.9%
Actuals	91.5%	91.7%	88.5%	N/A	N/A

V. Conclusion

This report fulfills the FGRA requirements to evaluate the effectiveness of the AFG program. Over the past 13 years, FEMA has substantially increased firefighter and public safety through the AFG program. The AFG program has enabled fire departments across the country to obtain critically needed equipment, protective gear, emergency vehicles, training, and other resources. With over 158,000 recipients receiving grant funds since FY 2001, the AFG program has strengthened each grantee's ability to protect its community and enhance firefighter safety.

The AFG program supports fire departments in their mission to protect the health and safety of the public and firefighting personnel. As demonstrated by grant application and closeout data:

- AFG awards enabled 93 percent of FY 2008–2010 PPE grantees to provide all of their on-duty firefighters with protective gear that is compliant with relevant safety standards;
- AFG awards helped 86 percent of FY 2008-2010 grantees replace sub-standard vehicles that were 25 years old or older;
- AFG awards supported 88 percent of FY 2008–2010 equipment grantees to improve department compliance with safety standards, benefitting firefighter and public safety; and
- AFG awards promoted mutual- and automatic-aid agreements, critical infrastructure protection, and shareable regional resources.

The AFG program has helped fill critical gaps and promote national preparedness capabilities around the country, ensuring that communities have the resources they need to safely and effectively fight fires and respond to other disasters. By funding equipment, protective gear, emergency vehicles, training, and other resources, the AFG program has increased firefighter and public safety. The AFG program also contributes to national preparedness by providing vehicles and equipment to serve as regional assets when responding to large-scale disasters.

Appendix A: Industry Standards

Table 3: NFPA Standards in the AFG Program Performance Assessment System

NFPA Standard	Title	AFG Category	Description
NFPA 1801	Standard on Thermal Imagers for the Fire Service	Equipment	Establishes requirements for new thermal imagers used by fire service personnel during emergency incident operations
NFPA 1901	Standard for Automotive Fire Apparatus	Vehicles	Defines the requirements for new automotive fire apparatus—including fire engines, pumpers, and trailers—designed to transport emergency personnel and equipment
NFPA 1906	Standard for Wildland Fire Apparatus	Vehicles	Defines the requirements for new automotive fire apparatus—including apparatus equipped with a slip-on fire-fighting module—designed primarily to support wildland fire suppression operations
NFPA 1936	Standard on Powered Rescue Tools	Equipment	Specifies performance requirements for powered rescue tools and components that are used by emergency services personnel to facilitate the extrication of victims from entrapment
NFPA 1963	Standard for Fire Hose Connections	Equipment	Establishes uniform performance requirements for new fire hose couplings and adapters
NFPA 1964	Standard for Spray Nozzles	Equipment	Provides performance requirements for fire-fighting spray nozzles to assure that they nozzles are suitable, effective, and safe for fire suppression use
NFPA 1971	Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting	PPE	Protects firefighters by establishing minimum levels of protection from thermal, physical, environmental, and bloodborne pathogen hazards encountered during structural and proximity firefighting operations
NFPA 1981	Standard on Open-Circuit SCBA for Emergency Services	PPE	Establishes minimum levels of respiratory protection and functional requirements for SCBA
NFPA 1999	Standard on Protective Clothing for Emergency Medical Operations	PPE	Specifies requirements for EMS protective clothing to safeguard personnel during emergency medical operations from contact with blood and body fluid-borne pathogens—as well as provide limited protection from chemical, biological, radiological, and nuclear terrorism agents

Table 4: OSHA Standards in the AFG Program Assessment System

OSHA Standard	Title	AFG Category	Description
29 Code of Federal Regulations (CFR) § 1910.120	Hazardous Waste Operations and Emergency Response	PPE	Sets requirements for first-responder training on basic hazard and risk assessment techniques as well as selecting and using proper PPE
29 CFR § 1910.134	Respiratory Protection	PPE	Establishes prerequisite respiratory protection equipment, PPE, and procedures for hazardous occupations, including interior structural firefighting
29 CFR § 1910.155-165	Fire Protection	PPE, Equipment	Defines requirements for the organization, equipment, training, and PPE of fire departments and fire brigades

Appendix B: Acronym List

AFG	Assistance to Firefighters Grant Program
CFR	Code of Federal Regulations
EMS	Emergency medical services
FEMA	Federal Emergency Management Agency
FFPCA	<i>Federal Fire Prevention Control Act of 1974</i>
FGRA	<i>Fire Grants Reauthorization Act of 2012</i>
FP&S	Fire Prevention and Safety Grants Program
FY	Fiscal Year
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
PPE	Personal protective equipment
R&D	Research and development
SCBA	Self-contained breathing apparatus
VBFD	Virginia Beach Fire Department