A Needs Assessment of the Fire Service

ARIZONA

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FOREWORD

When the national results of the first comprehensive study of the needs of the U.S. fire service were released in 2002 by NFPA for Congress, I described it as a call to action. That study showed clearly that most fire departments in the U.S. severely lack resources to respond to challenging incidents like terrorism.

Today's fire service is a broad-spectrum emergency-response service, as well as a leader in the drive to prevent emergencies. In area after area of critical importance to our safety, fire departments are attempting to operate with insufficient personnel, equipment, and training. Nowhere is this shortfall more evident than in the area of terrorism preparedness.

Now firefighters are faced with additional needs, including specialized training and equipment to combat terrorism. In all sizes of communities, most departments don't have that training or that equipment.

This concise state version of the needs assessment for your fire service will help policymakers and others closely examine where individual shortfalls exist and work toward providing greater safety for citizens in your state and the firefighters who protect them.

James M. Shannon
President
NFPA
May 2004

ACKNOWLEDGEMENTS

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Thanks to the many fire departments who carefully reviewed their departments' capabilities and described those capabilities in forms submitted to us for use in this study.

Thanks to the many individuals who guided us in selecting the most important questions to ask and the most appropriate interpretations of answers received. These include our Technical Advisory Group:

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- Gary Tokle, Assistant Vice President, Public Fire Protection Division
- Carl Peterson, Assistant Director, Public Fire Protection Division
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- Bruce Teele, Senior Fire Service Specialist, Public Fire Protection Division
- Rita Fahy, Manager – Fire Data Bases and Systems, Fire Analysis & Research Division

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- John Baldi
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EXECUTIVE SUMMARY

PL 106-398, Section 1701, Sec. 33 (b) required that the Director of the Federal Emergency Management Agency (FEMA) conduct a study in conjunction with the National Fire Protection Association (NFPA) to

(a) define the current role and activities associated with the fire services;
(b) determine the adequacy of current levels of funding; and
(c) provide a needs assessment to identify shortfalls.

The Fire Service Needs Assessment Survey was conducted as a census, with appropriate adjustments for non-response. The NFPA used its own list of local fire departments as the mailing list and sampling frame of all fire departments in the US. The Fire Service Needs Assessment Survey was sent only to departments with administrative and reporting responsibilities, in order to minimize double-counting. This means that the total number of departments we contacted may be much lower than the total number of departments in the state, as reflected in the state's own records. The data in this state report is at least affected by this discrepancy in results reported separately by community size. Any statistics for the entire state must be used with caution and may not give sufficient weight to conditions in the smallest communities. For Arizona, we analyzed responses from 114 of the 224 fire departments in the state.

Analysis of the results by state was done by NFPA after and outside of the Fire Service Needs Assessment Survey contract. Those results have not been reviewed or approved by anyone at the Department of Homeland Security (new parent agency of FEMA).

All statistics calculated as percents of firefighters are based on percents of departments by population interval, combined with national figures on ratios of firefighters per department between population intervals. Ratios have not been developed for individual states.

Personnel and Their Capabilities

- In communities with less than 2,500 population, 27% of fire departments, nearly all of them all- or mostly-volunteer departments, deliver an average of 4 or fewer volunteer firefighters to a mid-day house fire. Because these departments average only one career firefighter per department, it is likely that most of these departments often fail to deliver the minimum of 4 firefighters needed to safely initiate an interior attack on such a fire.

- Of the fire departments that protect communities of at least 10,000 population, 0-70%, by population interval, have fewer than 4 career firefighters assigned to first-due engine companies. It is likely that, for many of these departments, the first arriving complement of firefighters often falls short of the minimum of 4 firefighters needed to safely initiate an interior attack on a structure fire, thereby

requiring the first-arriving firefighters to wait until the rest of the first-alarm responders arrive.

- An estimated 17% of firefighters are involved in structural firefighting but lack formal training in those duties.

- An estimated 18% of fire department personnel involved in delivering emergency medical services (EMS) lack formal training in those duties.

- An estimated 22% of firefighters serve in fire departments with no program to maintain basic firefighter fitness and health.

Facilities, Apparatus and Equipment

- An estimated 67 fire stations (13% of total fire stations) are estimated to be at least 40 years old, an estimated 280 fire stations (54%) have no backup power, and an estimated 389 fire stations (75%) are not equipped for exhaust emission control.

- Using maximum response distance guidelines from the Insurance Services Office and simple models of response distance as a function of community area and number of fire stations, developed by the Rand Corporation, it is estimated that three-fifths to three-fourths of fire departments nationally have too few fire stations to meet the guidelines. Statistics specific to Arizona have not been developed.

- An estimated 129 engines (16% of all engines) are 15 to 19 years old, another 121 (15%) are 20 to 29 years old, and another 77 (9%) are at least 30 years old. Therefore, 40% of all engines are at least 15 years old.

- An estimated 19% of the emergency responders on a shift lack portable radios.

- An estimated 11% of firefighters per shift are not equipped with self-contained breathing apparatus (SCBA).

- An estimated 16% of emergency responders per shift are not equipped with personal alert system (PASS) devices.

- An estimated 4% of firefighters lack personal protective clothing.

Ability to Handle Unusually Challenging Incidents

- Only 13% of fire departments can handle a technical rescue with EMS at a structural collapse of a building with 50 occupants with local trained personnel.

- 30% of all departments consider such an incident outside their scope.
- Only 11% can handle the incident with local specialized equipment.
- Only 37% have a written agreement to direct use of non-local resources.
- All needs are greater for smaller communities.

- Only 21% of fire departments can handle a hazmat and EMS incident involving chemical/biological agents and 10 injuries with local trained personnel.
  - 29% of all departments consider such an incident outside their scope.
  - Only 14% can handle the incident with local specialized equipment.
  - Only 37% have a written agreement to direct use of non-local resources.
  - All needs are greater for smaller communities.
- Only 18% of fire departments can handle a wildland/urban interface fire affecting 500 acres with local trained personnel.
  - 20% of all departments consider such an incident outside their scope.
  - Only 16% can handle the incident with local specialized equipment.
  - Only 59% have a written agreement to direct use of non-local resources.
- Only 13% of fire departments can handle mitigation of a developing major flood with local trained personnel.
  - 41% of departments consider such an incident outside their scope.
  - Only 15% can handle the incident with local specialized equipment.
  - Only 24% have a written agreement to direct use of non-local resources.

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INTRODUCTION

PL 106-398, Section 1701, Sec. 33(b) required that the Director of the Federal Emergency Management Agency (FEMA) conduct a study in conjunction with the National Fire Protection Association (NFPA) to

(a) define the current role and activities associated with the fire services;
(b) determine the adequacy of current levels of funding; and
(c) provide a needs assessment to identify shortfalls.

The questionnaire developed to meet this requirement principally involved multiple approaches to answering the question "what does the fire department need?". Most of the questions were intended to determine what fire departments have, in a form that could be compared to existing standards or formulas that set out what fire departments should have. Some of the questions asked what fire departments have with respect to certain cutting-edge technologies for which no standards yet exist and no determinations of need have yet been proposed.

The questionnaire also sought to define the emergency-response tasks that fire departments considered to be within their scope. For such tasks the survey asked how far departments would have to go to obtain the resources necessary to address those tasks or an illustrative incident of that type. Clearly, if departments believe the resources they would need are only available from sources separated from them by great distance – and the associated likelihood of significant delay in attaining those resources, then there may be a need for planning, training, or arrangements for equipment that can be more quickly accessed and deployed, to assure timely and effective response.

See Appendix 2 for a copy of the questionnaire.

Glossary

Here are standard definitions for some of the specialized terms used in this report:

Advanced Life Support. Functional provision of advanced airway management, including intubation, advanced cardiac monitoring, manual defibrillation, establishment and maintenance of intravenous access, and drug therapy. [from NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, 2001 edition.]

Basic Life Support. Functional provision of patient assessment, including basic airway management; oxygen therapy; stabilization of spinal, musculo-skeletal, soft tissue, and shock injuries; stabilization of bleeding; and stabilization and intervention for sudden illness, poisoning and heat/cold injuries, childbirth, CPR, and automatic external defibrillator (AED) capability. [from NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, 2001 edition.]

Emergency Medical Care. The provision of treatment to patients, including first aid, cardiopulmonary resuscitation (CPR), basic life support (EMT level), advanced life support (Paramedic level), and other medical procedures that occur prior to arrival at a hospital or other health care facility. [from NFPA 1581, *Standard on Fire Department Infection Control Program*, 2000 edition] In this report, reference is made to "EMS" or "emergency medical service," which is the service of providing emergency medical care.

First Responder (EMS). Functional provision of initial assessment (i.e., airway, breathing, and circulatory systems) and basic first-aid intervention, including CPR and automatic external defibrillator (AED) capability. [from NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, 2001 edition.]

Hazardous Material. A substance that presents an unusual danger to persons due to properties of toxicity, chemical reactivity, or decomposition, corrosivity, explosion or detonation, etiological hazards, or similar properties. [from NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, 1997 edition.]

Structural Fire Fighting. The activities of rescue, fire suppression, and property conservation in buildings, enclosed structures, aircraft interiors, vehicles, vessels, aircraft, or like properties that are involved in a fire or emergency situation. [from NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, 1997 edition.]

Technical Rescue. The application of special knowledge, skills, and equipment to safely resolve unique and/or complex rescue situations. [from NFPA 1670, *Standard on Operations and Training for Technical Rescue Incidents*, 1999 edition.]

Wildland/Urban Interface. The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. [from NFPA 295, *Standard for Wildfire Control*, 1998 edition]

THE US FIRE SERVICE

Career and Volunteer Fire Departments

Most fire departments are volunteer fire departments, but most large departments are all- or mostly-career departments. Therefore, career firefighters account for a much larger share of population protected than of departments. Table 1 provides an overview of Arizona fire departments by type of department and.

Volunteers are concentrated in rural communities, while career firefighters are found disproportionately in large communities. All- or mostly-career departments account for half or more of departments down to communities of at least 25,000 population. Rural communities, defined by the US Bureau of Census as a community with less than 2,500 population, are all protected by all- or mostly-volunteer departments, and these communities account for 61% of all the all- or mostly-volunteer departments in Arizona.

Community size is related to the US fire service not only in terms of the relative emphasis on career vs. volunteer firefighters but also in terms of the challenges faced by local departments. However, it is possible to exaggerate those differences. Even a rural community can have a large factory complex, a large stadium, or even a high-rise building, with all the technical complexities and potential for high concentration of people or valued property that such a property entails. Even a large city can have a wildland/urban interface region and exposure to the unique fire dangers attendant on such an area. It is likely that every fire department will need to have some familiarity with every type of fire and every type of emergency, if not as part of protecting their own community, then at least in their role as a source of mutual aid or a component of regional or even national response to a major incident.

In any community, fire burns the same way in open or in enclosed spaces. Fire harms people and property in the same ways. And the resources and best practices required to safely address the fire problem – or any other major emergency – tend to be the same everywhere. What may differ is the defined scope of responsibility of the local fire department and the quality and quantity of resources available to the department to perform those responsibilities.

Table 1
Department Type, by Community Size
(Q. 1, 7, 8)

Population of Community	All Career		Mostly Career		Mostly Volunteer		All Volunteer		Total	
	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	4	75.0%	1	25.0%	0	0.0%	0	0.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	2	18.2%	11	81.8%	0	0.0%	0	0.0%	13	100.0%
10,000 to 24,999	6	22.7%	13	50.0%	6	22.7%	1	4.5%	26	100.0%
5,000 to 9,999	0	0.0%	15	42.9%	15	42.9%	5	14.3%	36	100.0%
2,500 to 4,999	0	0.0%	2	5.9%	19	52.9%	15	41.2%	36	100.0%
Under 2,500	0	0.0%	3	2.9%	23	22.9%	74	74.3%	99	100.0%
Total	21	9.4%	45	20.2%	63	28.1%	95	42.3%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Type of department is broken into four categories. All-career departments are comprised of 100% career firefighters. Mostly-career departments are comprised of 51 to 99% career firefighters, while mostly-volunteer departments are comprised of 1 to 50% career firefighters. All-volunteer departments are comprised of 100% volunteer firefighters.

Numbers may not add to totals due to rounding.

The Fire Service Needs Assessment Survey was sent only to departments with administrative and reporting responsibilities, in order to minimize double-counting. This means that the total number of departments we contacted may be much lower than the total number of departments in the state, as reflected in the state's own records. The data in this state report is least affected by this discrepancy in results reported separately by community size. Any statistics for the entire state must be used with caution and may not give sufficient weight to conditions in the smallest communities.

Q. 1: Population (number of permanent residents) your department has primary responsibility to protect (excluding mutual aid areas)
Q. 7: Total number of full-time (career) uniformed firefighters
Q. 8: Total number of active part-time (call or volunteer) firefighters

PERSONNEL AND THEIR CAPABILITIES

Adequacy of Number of Firefighters Responding

Tables 2-3 provide statistics on the percentage of all- or mostly-career fire departments that assigned less than 3, 3, 4, or more than 4 career firefighters to an engine/pumper apparatus and the percentage of all- or mostly-volunteer fire departments that responded with less than 3, 3-4, or more than 4 volunteer firefighters to a mid-day house fire.

In the national report, the indicators of response profiles were compared to recently adopted standards regarding the minimum complement of firefighters to permit an interior attack on a structural fire with adequate safeguards for firefighter safety. The comparisons were complicated, however, because most fire departments have both career and volunteer firefighters, while the survey asked only about responses by career firefighters alone or volunteer firefighters alone.

Also, in considering the results below, keep in mind that "adequacy" is being assessed here relative to only one of the several objectives of a fire department confronted with a serious fire – the protection of the firefighters themselves from unreasonable risk of injury or death. Relative success in meeting this objective will not necessarily imply anything about the department's ability to reliably achieve the other departmental suppression objectives, whether those be preventing conflagrations, preventing fire from involving an entire large structure, or intervening decisively before the onset of flashover in the room of fire origin.

In addition, success in meeting any of these objectives involves more than a sufficiency of personnel. Equipment of many types is also needed, as are skills and knowledge, as achieved through training and certification. Each of these areas of need is addressed in different parts of the survey.

In Arizona's all- or mostly-career fire departments, 0-70% assign fewer than 4 career firefighters to an engine, depending on population interval.

While the gap between assignments and the new requirements can be made up by volunteers or in other ways, an analysis was done on the national data of the estimated total gap in career firefighters, assuming that the gap represented a real need for additional staff. That estimate came out to a need for about one additional career firefighter for every five now serving. Estimates were not possible for volunteers even at the national level, though it was clear that gaps exist there as well. And the proportional need tended to be greater the smaller the community size.

The need for career firefighters can be estimated as a 33% increase for departments that respond with 3 firefighters (adding 1 to 3 to make 4 is a 33% increase) and a 50% increase for departments that respond with 1-2 firefighters (adding 2 to 2 to make 4 is a

50% increase). Based on this rough formula, Arizona's need for career firefighters translates into a 23-25% increase for communities of 10,000 to 49,999 population.

Extent of Training, by Type of Duty

Structural Firefighting

Table 4 indicates whether structural firefighting is within the scope of the fire department. Roughly 1% of departments say no.

Table 5 asks how many of the personnel responsible for structural firefighting have received formal training. Answers were solicited in the form of: All, Most, Some, and None. For analysis purposes, "Most" was estimated as 2/3 and "Some" was estimated as 1/3. The estimated percentage for the entire state was based on the state's percentage for each community size and national figures of numbers of firefighters per department for each community size.

Based on these assumptions, 17% of Arizona's firefighters are estimated to need formal training because they work in departments with responsibility for structural firefighting and have not been so trained. In rural communities (less than 2,500 population), the percentage needing training was 44%.

The breakdown of need by community size, using this approach, is given in Figure 1 and Table A as percentage of firefighters.

Figure 1. Estimated Percent of Firefighters Involved in Structural Firefighting Who Lack Formal Training

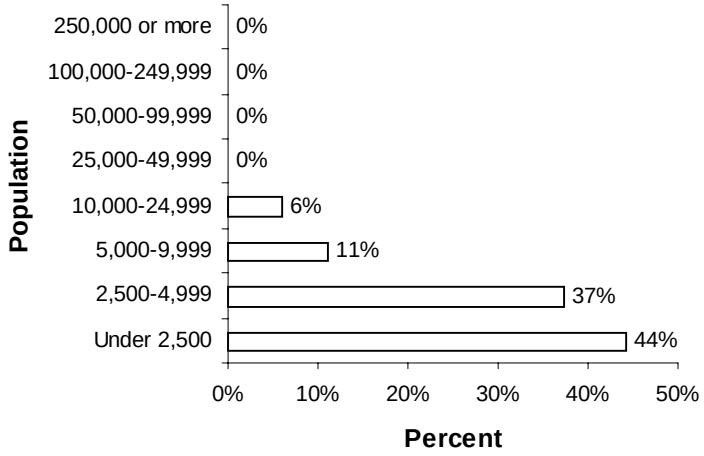

Table A. Estimated Percent of Firefighters Involved in Structural Firefighting Who Lack Formal Training by Size of Community Protected (Q. 13b)

Population Protected	Estimated Percent of Firefighters Lacking Formal Training
250,000 or more	0%
100,000 to 249,999	0%
50,000 to 99,999	0%
25,000 to 49,999	0%
10,000 to 24,999	6%
5,000 to 9,999	11%
2,500 to 4,999	37%
Under 2,500	44%
Total	17%
National total	21%
Lowest state total	1%
Highest state total	53%

The above projections are based on departments reporting yes on Question 13a and reporting on Question 13b and assume "Most" = 2/3 and "Some" = 1/3. See Tables 4 and 5.

Q. 13b: If [structural firefighting is a role your department performs] how many of your personnel who perform this duty have received formal training (not just on-the job)? All, Most, Some, None.

Emergency Medical Service

Table 6 asks whether emergency medical service (EMS) is within the scope of the fire department. Roughly one-seventh (15%) of departments say no.

Table 7 asks how many of the assigned personnel in departments responsible for EMS have received formal training. The breakdown by community size is given in Figure 2 and Table B, in terms of percent of personnel performing this duty who lack formal training. The estimated percentage for the entire state was based on the state's percentage for each community size and national figures of numbers of firefighters per department for each community size.

One-sixth to one-fifth (18%) of Arizona's personnel are estimated to need training.

Figure 2. Estimated Percent of Personnel Involved in EMS Who Lack Formal Training

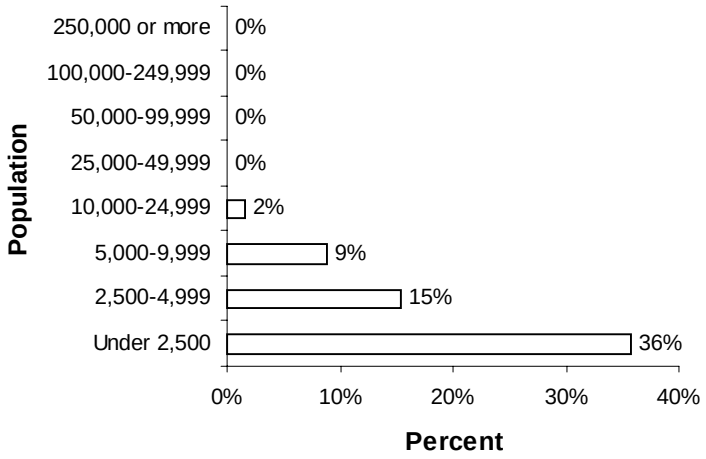

Table B. Estimated Percentage of Personnel Involved in EMS Who Lack Formal Training, by Size of Community Protected (Q. 14b)

Population Protected	Estimated % of Personnel Lacking Formal Training
250,000 or more	0%
100,000 to 249,999	0%
50,000 to 99,999	0%
25,000 to 49,999	0%
10,000 to 24,999	2%
5,000 to 9,999	9%
2,500 to 4,999	15%
Under 2,500	36%
Total	18%
National total	27%
Lowest state total	0%
Highest state total	45%

The above projections are based on departments reporting yes on Question 14a and reporting on Question 14b and assume "Most" = 2/3 and "Some" = 1/3. See Tables 6 and 7.

Q. 14b: If [emergency medical services (EMS) is a role your department performs], how many of your personnel who perform this duty have received formal training (not just on-the job)? All, Most, Some, None.

Hazardous Material Response

Table 8 asks whether hazardous material response is within the scope of the fire department. One-fifth (20%) of departments say no.

Technical Rescue

Table 9 asks whether technical rescue is within the scope of the fire department. One-third (36%) of departments say no. Even for rural fire departments, protecting fewer than 2,500 population, more than half of fire departments now provide technical rescue.

Programs to Maintain and Protect Firefighter Health

Table 10 indicates whether departments have a program to maintain basic firefighter fitness and health, such as is required in NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*. An estimated one-fifth to one-fourth (22%) of firefighters are in fire departments that indicate that they do not have such a program. Figure 3 estimates what percentage of firefighters, career or volunteer, are in departments without such programs.

Figure 3. Estimated Percent of Firefighters Whose Fire Departments Have No Programs to Maintain Basic Firefighter Fitness and Health

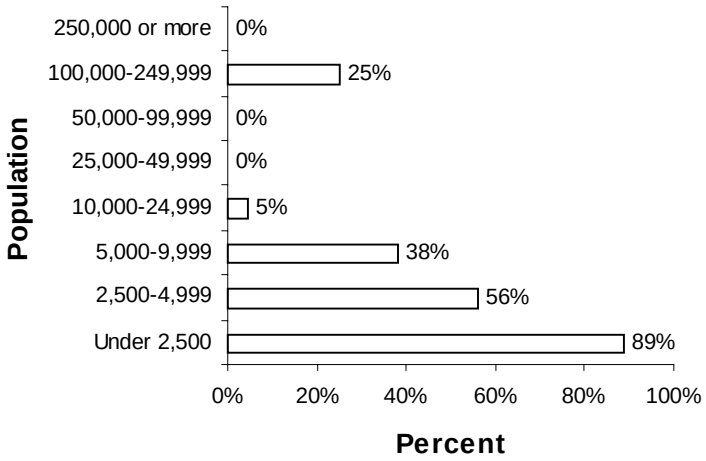

Table C estimates what percent of firefighters, career or volunteer, are in departments without such programs. The estimated percentage for the entire state was based on the state's percentage for each community size and national figures of numbers of firefighters per department for each community size.

Table C. Estimated Percent of Firefighters Whose Fire Departments Have No Program to Maintain Basic Firefighter Fitness and Health by Size of Community Protected (Q. 18)

Population Protected	Estimated Percent of Firefighters Without Program to Maintain Fitness
250,000 or more	0%
100,000 to 249,999	25%
50,000 to 99,999	0%
25,000 to 49,999	0%
10,000 to 24,999	5%
5,000 to 9,999	38%
2,500 to 4,999	56%
Under 2,500	89%
Total	22%
National total	73%
Lowest state total	20%*
Highest state total	92%

The above projections are based on departments reporting on Question 18. See Table 10.

* Excludes one state where the percent was 0%.

Q. 18: Does your department have a program to maintain basic firefighter fitness and health (e.g., as required in NFPA 1500)?

Table 2
For All- or Mostly-Volunteer Departments
Average Number of Volunteer Firefighters Who Respond to a Mid-Day House Fire
Percent of Departments by Community Size
(Q. 10)

Average Number of Volunteer Firefighters Responding

Population of Community	1-2	3-4	5-9	10-14	15-19	20 or More	Total
25,000 to 49,999	2.6%	9.4%	23.0%	28.3%	15.2%	21.5%	100.0%
10,000 to 24,999	3.7%	11.7%	32.8%	26.5%	13.0%	12.4%	100.0%
5,000 to 9,999	2.9%	11.4%	39.5%	26.1%	12.7%	7.3%	100.0%
2,500 to 4,999	3.1%	12.2%	45.9%	25.6%	9.7%	3.6%	100.0%
Under 2,500	3.0%	18.3%	48.0%	22.1%	6.1%	2.5%	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

A mostly-volunteer department might respond with some career firefighters as well, but this question asked only about volunteers responding.

Numbers may not add to totals due to rounding.

Q. 10: Average number of call/volunteer personnel who respond to a mid-day house fire (blank for actual number).

Table 3
For All- or Mostly-Career Departments
Number of Career Firefighters Assigned to an Engine/Pumper Apparatus
Percent of Departments by Community Size
(Q. 11)

Number of Career Firefighters Assigned to Engine/Pumper

Population of Community	1-2	3	4	5 or More	Total
250,000 or more	0.0%	0.0%	100.0%	0.0%	100.0%
100,000 to 249,999	0.0%	25.0%	75.0%	0.0%	100.0%
50,000 to 99,999	0.0%	0.0%	100.0%	0.0%	100.0%
25,000 to 49,999	10.0%	60.0%	30.0%	0.0%	100.0%
10,000 to 24,999	12.5%	50.0%	37.5%	0.0%	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 11: Number of on-duty career/paid personnel assigned to an engine/pumper (answers given as ranges shown).

Table 4
Does Department Provide Structural Firefighting?
by Community Size
(Q. 13a)

	Yes		No		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	3	100.0%
100,000 to 249,999	5	100.0%	0	0.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	6	100.0%
25,000 to 49,999	13	100.0%	0	0.0%	13	100.0%
10,000 to 24,999	26	100.0%	0	0.0%	26	100.0%
5,000 to 9,999	36	100.0%	0	0.0%	36	100.0%
2,500 to 4,999	36	100.0%	0	0.0%	36	100.0%
Under 2,500	96	97.2%	3	2.8%	99	100.0%
Total	221	98.8%	3	1.2%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 13a: Is [structural firefighting] a role your department performs?

Table 5
For Departments That Provide Structural Firefighting
How Many Personnel Who Perform This Duty Have Received Formal Training?
by Community Size
(Q. 13b)

Population of Community	All		Most		Some		None		Total	
	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	5	100.0%	0	0.0%	0	0.0%	0	0.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	13	100.0%	0	0.0%	0	0.0%	0	0.0%	13	100.0%
10,000 to 24,999	22	86.4%	2	9.1%	1	4.5%	0	0.0%	26	100.0%
5,000 to 9,999	27	76.2%	5	14.3%	3	9.5%	0	0.0%	36	100.0%
2,500 to 4,999	11	29.4%	11	29.4%	15	41.2%	0	0.0%	36	100.0%
Under 2,500	20	20.6%	25	26.5%	51	52.9%	0	0.0%	96	100.0%
Total	107	48.5%	44	19.7%	70	31.8%	0	0.0%	221	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 13b: If [structural firefighting is a role your department performs], how many of your personnel who perform this duty have received formal training (not just on-the-job)?

Table 6
Does Department Provide Emergency Medical Service (EMS)?
by Community Size
(Q. 14a)

	Yes		No		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	3	100.0%
100,000 to 249,999	5	100.0%	0	0.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	6	100.0%
25,000 to 49,999	13	100.0%	0	0.0%	13	100.0%
10,000 to 24,999	25	95.5%	1	4.5%	26	100.0%
5,000 to 9,999	34	95.2%	2	4.8%	36	100.0%
2,500 to 4,999	28	76.5%	8	23.5%	36	100.0%
Under 2,500	77	77.8%	22	22.2%	99	100.0%
Total	191	85.1%	33	14.9%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 14a: Is [emergency medical service] a role your department performs?

Table 7
For Departments That Provide Emergency Medical Service
How Many Personnel Who Perform This Duty Have Received Formal Training?
by Community Size
(Q. 14b)

Population of Community	All		Most		Some		None		Total	
	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	5	100.0%	0	0.0%	0	0.0%	0	0.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	13	100.0%	0	0.0%	0	0.0%	0	0.0%	13	100.0%
10,000 to 24,999	24	95.0%	1	5.0%	0	0.0%	0	0.0%	25	100.0%
5,000 to 9,999	27	78.9%	5	15.8%	2	5.3%	0	0.0%	34	100.0%
2,500 to 4,999	17	61.5%	8	30.8%	2	7.7%	0	0.0%	28	100.0%
Under 2,500	22	28.6%	28	35.7%	28	35.7%	0	0.0%	77	100.0%
Total	117	61.2%	43	22.4%	31	16.5%	0	0.0%	191	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding. No department in the 25,000 or more range responded to this question.

Q. 14b: If [emergency medical service is a role your department performs], how many of your personnel who perform this duty have received formal training (not just on-the-job)?

Table 8
Does Department Provide Hazardous Material Response?
by Community Size
(Q. 15a)

	Yes		No		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	3	100.0%
100,000 to 249,999	4	75.0%	1	25.0%	5	100.0%
50,000 to 99,999	0	0.0%	6	100.0%	6	100.0%
25,000 to 49,999	13	100.0%	0	0.0%	13	100.0%
10,000 to 24,999	25	95.5%	1	4.5%	26	100.0%
5,000 to 9,999	33	90.5%	3	9.5%	36	100.0%
2,500 to 4,999	34	94.1%	2	5.9%	36	100.0%
Under 2,500	69	69.4%	30	30.6%	99	100.0%
Total	180	80.3%	44	19.7%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 15a: Is [hazardous materials response] a role your department performs?

Table 9
Does Department Provide Technical Rescue Service?
by Community Size
(Q. 17a)

	Yes		No		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	3	100.0%
100,000 to 249,999	4	75.0%	1	25.0%	5	100.0%
50,000 to 99,999	0	0.0%	6	100.0%	6	100.0%
25,000 to 49,999	12	90.9%	1	9.1%	13	100.0%
10,000 to 24,999	22	86.4%	4	13.6%	26	100.0%
5,000 to 9,999	21	57.1%	15	42.9%	36	100.0%
2,500 to 4,999	23	64.7%	13	35.3%	36	100.0%
Under 2,500	58	58.3%	41	41.7%	99	100.0%
Total	143	63.7%	81	36.3%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 17a: Is [technical rescue] a role your department performs?

Table 10
Does Department Have a Program to Maintain Basic Firefighter Fitness and Health? by Community Size (Q. 18)

Population of Community	Yes		No		Total	
	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	3	100.0%
100,000 to 249,999	4	75.0%	1	25.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	6	100.0%
25,000 to 49,999	13	100.0%	0	0.0%	13	100.0%
10,000 to 24,999	25	95.5%	1	4.5%	26	100.0%
5,000 to 9,999	22	61.9%	14	38.1%	36	100.0%
2,500 to 4,999	16	43.8%	20	56.3%	36	100.0%
Under 2,500	11	11.1%	88	88.9%	99	100.0%
Total	100	44.5%	124	55.5%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 18: Does your department have a program to maintain basic firefighter fitness and health (e.g., as required in NFPA 1500)?

FACILITIES, APPARATUS AND EQUIPMENT

Fire Stations

Table 11 describes the average number of fire stations per department by size of community. Note that a community may have two or more fire stations, and each fire station may have two or more firefighting companies, each attached to a particular apparatus, such as an engine/pumper. Table 11 also describes the fraction of stations with characteristics that indicate potential needs, specifically age of station over 40 years, a lack of backup power, or a lack of exhaust emission control equipment. Table D converts these figures to total numbers of fire stations with those needs, by size of community and overall.

Table D. Number of Fire Stations With Characteristics Indicating Potential Need, by Size of Community Protected (Q. 23)

Population Protected	Total Number of Fire Stations With Indicated Characteristics in Communities of This Population Size		
	Over 40 Years Old	No Backup Power	Not Equipped for Exhaust Emission Control
250,000 or more	9	29	42
100,000 to 249,999	0	10	40
50,000 to 99,999	6	12	12
25,000 to 49,999	4	9	23
10,000 to 24,999	4	40	56
5,000 to 9,999	7	38	52
2,500 to 4,999	7	47	50
Under 2,500	30	95	113
Total	67	280	389
Percent of state total	13%	54%	75%
National percent	32%	57%	78%
Lowest state percents	13%	0%	37%
Highest state percents	65%	82%	100%

The above projections are based on departments reporting on all four parts of Question 23. Numbers may not add to totals due to rounding. See Table 11.

Q. 23: Number of fire stations, number over 40 years old, number having backup power, number equipped for exhaust emission control (e.g., diesel exhaust extraction).

In addition to needs associated with the condition of fire stations, there are also questions about needs with respect to the number and coverage of fire stations. The number and coverage needed are those required to achieve response with sufficient fire suppression flow within a target period of time. The information contained in the Needs Assessment Survey is not sufficient to perform such a calculation, but a simplified version is possible. This calculation was considered too complex to repeat separately for each state, but because it is an important issue, the logic used and the primary overall conclusions are repeated here.

The *Fire Suppression Rating Schedule* of the Insurance Services Office includes a number of guidelines and formulas to use in performing a complete assessment of the adequacy of fire department resources, but for this simplified calculation on adequacy of number of fire stations, Item 560 has a basis: "The built-upon area of the city should have a first-due engine company within 1-½ miles and a ladder-service company within 2-½ miles."* For this simplified calculation, we can use these two numbers as a range for the maximum distance from any point in the community to the nearest fire station.

NFPA 1710 states its requirements in terms of time, specifically, a requirement that 90% of responses by the initial arriving company shall be within 4 minutes. If the first-response area is considered as a circle with the fire station in the middle, and if emergency calls are evenly distributed throughout the response area, then 90% of responses will be within 95% of the distance from the fire station to the boundary of the response area.** If the average speed of fire apparatus is 21 mph, as it might be in the downtown area of a city, then the 4-minute requirement corresponds to a 1.5-mile requirement. If the average speed of fire apparatus is 36 mph, as it might be in a suburban or rural area, then the 4-minute requirement corresponds to a 2.5-mile requirement. In a very rural community, the average speed could be even higher, and the allowable distance would be even greater.

Note the limitations in this assumption: Item 560 implies that a larger maximum distance is acceptable for parts of the community that are not "built-upon"; this will be especially relevant for smaller communities. This larger maximum distance may or may not be on the order of the 2 ½ miles cited for ladder-service companies responding in the built-upon area, so the use of 2 ½ miles as an upper bound for calculation is done for convenience rather than through any compelling logic. Item 560 does not reflect variations in local travel speeds or the need for adequate fire flow by the responding apparatus; those issues are addressed elsewhere in the *Fire Suppression Rating Schedule*. This guideline is not a mandatory government requirement or a consensus voluntary standard.

* *Fire Suppression Rating Schedule*, New York: Insurance Services Office, Inc., August 1998, p. 28.

** If r is the distance from station to boundary, then the size of the response area is πr^2, and the radius of a circle with area equal to $0.9\pi r^2$ will be $r\sqrt{0.9}$ or approximately 0.95r.

To use this guideline with the data available from the Needs Assessment Survey, it is necessary to have a formula giving the maximum distance from fire station to any point in the community as a function of data collected in the survey. The Rand Institute developed such a formula for expected (i.e., average) distance as part of its extensive research on fire deployment issues in the 1960s and 1970s.***

The formula has been developed and tested against actual travel-distance data from selected fire departments for both straight-line travel and the more relevant right-angle travel that characterizes the grid layout of many communities. It has been developed assuming either a random distribution of fire stations throughout the community or an optimal placement of stations to minimize travel distances and times.

The formula is called the square root law: Expected distance = $k \sqrt{(A/n)}$

where k is a proportionality constant
A is the community's area in square miles
n is the number of fire stations

Note the limitations of this approach, cited by the Rand authors: Most importantly, it ignores the effect of natural barriers, such as rivers or rail lines. It assumes an alarm is equally likely from any point in the community. It assumes a unit is always ready to respond from the nearest fire station.

If one further assumes that response areas can be approximated by circles with fire stations at the center, then expected distance equals one-half of maximum distance. If response areas are more irregularly shaped, expected distance will be a smaller fraction of maximum distance.

With these assumptions, the number of fire stations will be sufficient to provide acceptable coverage, defined as a maximum travel distance that is less than the ISO-based value, if the following is true:

$A - ½ (n)(D_{max})^2/(k^2) < 0$

where

A is the community's area in square miles
n is the number of fire stations
D_{max} is the maximum acceptable travel distance (1-½ miles or 2-½ miles)
k is the Rand proportionality constant, which is assumed to be for right-angle travel and is 0.6267 for random station location and 0.4714 for optimal station location

*** Warren E. Walker, Jan M. Chaiken, and Edward J. Ignall, eds., *Fire Department Deployment Analysis*, Publications in Operations Research series of the Operations Research Society of America, New York: Elsevier North Holland, 1979, pp. 180-184.

It may be appropriate to use the shorter maximum distance for larger communities and the larger maximum distance for smaller communities. In fact, as noted, if the average speed achievable by fire apparatus is well above 36 mph, an even larger maximum distance is justified under NFPA 1710. Note also that NFPA 1720, the standard for volunteer fire departments, has no speed of response or distance requirement, reflecting the fact that very low population densities in the smallest communities mean the number of people exposed to long response times may be very small.

Also, while few if any communities will have optimal station locations, it is likely that most will have placements that are considerably better than random. Based on these observations and calculations, the national report concluded that, in every population interval, roughly two-thirds to three-fourths of fire departments have too few stations to provide the indicated coverage. Specifically, if 1.5 miles is used for communities of 10,000 or more and 2.5 miles is used for smaller communities, with optimal location used for both, then the national study found that 65-76% of departments have too few stations, except for communities of 500,000 to 999,999 population, where the percentage was 82%.

Apparatus

Table 12 characterizes the size of the engine/pumper fleet inventory, overall and by age of vehicle. Using the statistics from Table 1 on departments by population interval, one can identify the number of engines whose ages raise questions about the need for replacement. The breakdown by community size is shown in Figure 4 in terms of percent of apparatus and in Table E in terms of number of apparatus. The estimated percentage for the entire state was based on the state's percentage for each community size and national figures of numbers of firefighters per department for each community size.

Table E and Figure 4 indicate that overall 40% of engines – an estimated 327 engines in use – are at least 15 years old, including an estimated 77 that are at least 30 years old.

Vehicle age alone is not sufficient to confirm a need for replacement, but it is indicative of a potential need, which should be examined.

Figure 4. Percent of Engines and Pumpers That Are At Least 15 Years Old

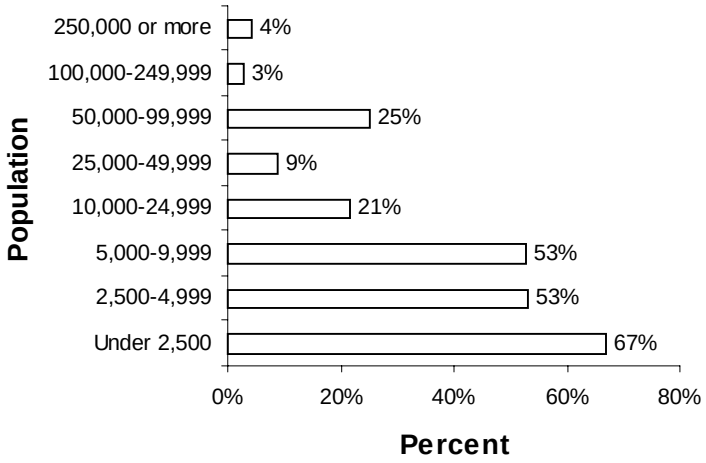

Table E. Number of Engines in Service, Limited to Engines At Least 15 Years Old by Age of Equipment and Size of Community Protected (Q. 24)

Population Protected	Total Number of Engines in Service of This Age in Fire Departments Protecting Communities of This Population Size		
	15 to 19 Years Old	20 to 29 Years Old	30+ Years Old
250,000 or more	4	0	0
100,000 to 249,999	1	0	0
50,000 to 99,999	6	0	0
25,000 to 49,999	5	1	0
10,000 to 24,999	13	8	0
5,000 to 9,999	29	12	19
2,500 to 4,999	23	27	19
Under 2,500	48	72	39
Total	129	121	77
Percent of state total	16%	15%	9%
National percent	16%	21%	13%
Lowest state percents	11%	2%	0%
Highest state percents	31%	33%	29%

The above projections are based on departments reporting on all parts of Question 24. Numbers may not add to totals due to rounding. See Table 12.

Q. 24: Number of engines/pumpers in service. Total, 0-14 years old, 15-19 years old, 20-29 years old, 30 or more years old, unknown age

Personal Protective Equipment and Clothing

Table 13 indicates what percentage of emergency responders on a single shift are equipped with portable radios. Figure 5 and Table F translate the results of Table 13 into estimated percentages of emergency responders on a shift who lack radios. The estimated percentage for the entire state was based on the state's percentage for each community size and national figures of numbers of firefighters per department for each community size.

In Arizona, one-fifth (19%) of emergency responders are estimated to lack radios.

Figure 5. Percent of Emergency Responders on a Shift Who Lack Radios

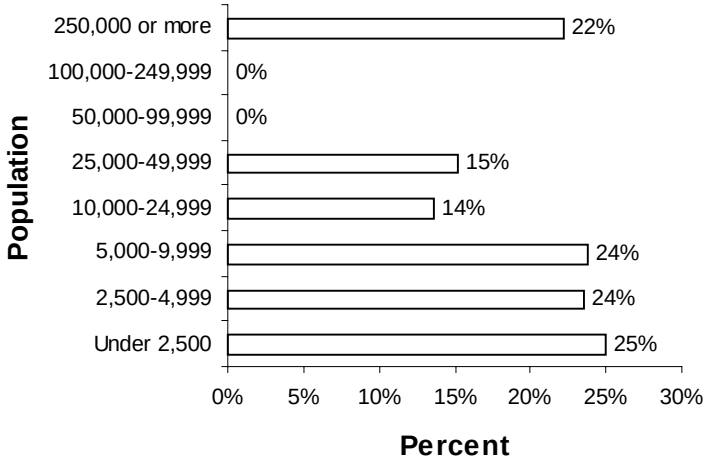

Table F. Emergency Responders on a Shift Who Lack Radios by Size of Community Protected (Q. 27a)

Population Protected	Percent of Emergency Responders on Shift Lacking Radios
250,000 or more	22%
100,000 to 249,999	0%
50,000 to 99,999	0%
25,000 to 49,999	15%
10,000 to 24,999	14%
5,000 to 9,999	24%
2,500 to 4,999	24%
Under 2,500	25%
Total	19%
National total	45%
Lowest state total	19%
Highest state total	65%

The above projections are based on departments reporting on Question 27a. "Most" and "Some" are converted to 2/3 and 1/3. See Table 13.

Q. 27a: How many of your emergency responders on-duty on a single shift can be equipped with portable radios? All, Most, Some, None

Table 14 estimates how many emergency responders on a shift or otherwise on-duty are equipped with self-contained breathing apparatus (SCBA).

The breakdown of need by community size is given in Figure 6 and Table G, in terms of percent of personnel on a shift who lack SCBA. The estimated percentage for the entire state was based on the state's percentage for each community size and national figures of numbers of firefighters per department for each community size.

One-ninth (11%) of firefighters are estimated to need SCBA units in Arizona.

Figure 6. Percent of Firefighters per Shift Lacking Self-Contained Breathing Apparatus (SCBA)

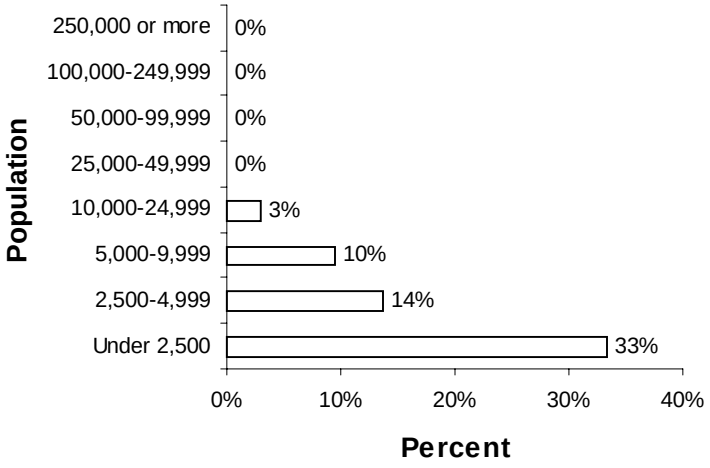

Table G. Firefighters per Shift Lacking SCBA by Size of Community (Q. 28a)

Population Protected	Estimated Percent of Firefighters per Shift Not Equipped With SCBA
250,000 or more	0%
100,000 to 249,999	0%
50,000 to 99,999	0%
25,000 to 49,999	0%
10,000 to 24,999	3%
5,000 to 9,999	10%
2,500 to 4,999	14%
Under 2,500	33%
Total	11%
National total	36%
Lowest state total	0%
Highest state total	56%

The above projections are based on departments reporting on Question 28a. "Most" and "Some" are converted to 2/3 and 1/3. See Table 14.

Q. 28a: How many emergency responders on-duty on a single shift can be equipped with self-contained breathing apparatus (SCBA)? All, Most, Some, None

Table 15 indicates what fraction of emergency responders on a single shift are equipped with Personal Alert Safety System (PASS) devices.

The breakdown of need is given in Figure 7 and Table H, in terms of percent of personnel on a shift who lack PASS devices, by size of community protected. The estimated percentage for the entire state was based on the state's percentage for each community size and national figures of numbers of firefighters per department for each community size.

One-sixth (16%) of firefighters are estimated to need PASS devices in Arizona.

Figure 7. Percent of Emergency Responders per Shift Lacking Personal Alert Safety System (PASS) Devices

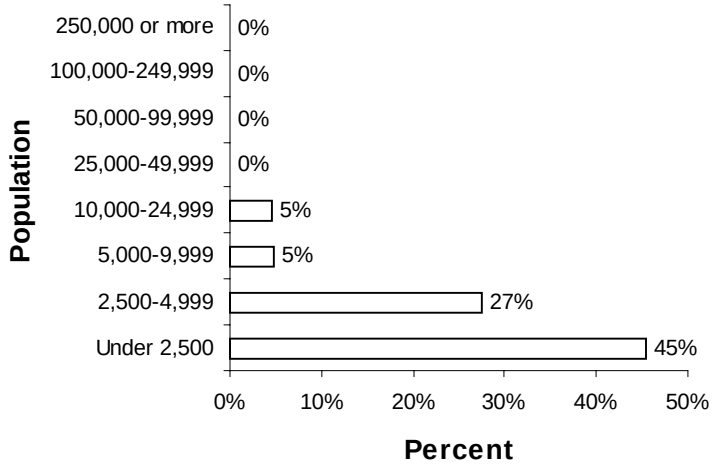

Table H. Estimated Average Percent of Emergency Responders per Shift Not Provided With PASS Devices, by Size of Community (Q. 29)

Population Protected	Emergency Responders per Shift Not Provided with PASS Devices
250,000 or more	0%
100,000 to 249,999	0%
50,000 to 99,999	0%
25,000 to 49,999	0%
10,000 to 24,999	5%
5,000 to 9,999	5%
2,500 to 4,999	27%
Under 2,500	45%
Total	16%
National total	42%
Lowest state total	0%
Highest state total	85%

The above projections are based on departments reporting on Question 29. "Most" and "Some" are converted to 2/3 and 1/3. See Table 15.

Q. 29: How many of your emergency responders on-duty on a single shift are equipped with Personal Alert Safety System (PASS) devices? All, Most, Some, None

Table 16 indicates how many emergency responders are equipped with their own personal protective clothing.

The breakdown by community size is shown in Figure 8 and Table I. The estimated percentage for the entire state was based on the state's percentage for each community size and national figures of numbers of firefighters per department for each community size.

One in 25 (4%) of firefighters are estimated to need personal protective clothing in Arizona.

Figure 8. Estimated Percent of Firefighters Lacking Personal Protective Clothing

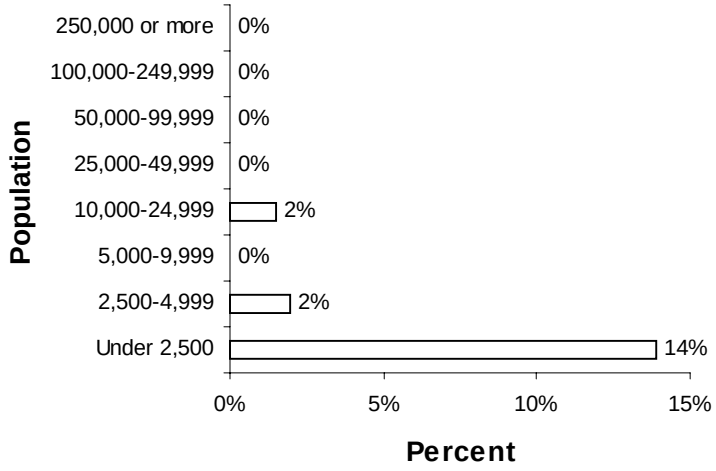

Table I. Firefighters in Departments Where Not All Firefighters Are Equipped With Personal Protective Clothing by Size of Community (Q. 30a)

Population Protected	Estimated Firefighters Lacking Personal Protective Clothing
250,000 or more	0%
100,000 to 249,999	0%
50,000 to 99,999	0%
25,000 to 49,999	0%
10,000 to 24,999	2%
5,000 to 9,999	0%
2,500 to 4,999	2%
Under 2,500	14%
Total	4%
National total	5%
Lowest state total	0%
Highest state total	23%

The above projections are based on departments reporting on Question 30a. "Most" and "Some" are converted to 2/3 and 1/3. See Table 16.

Q. 30a: How many of your emergency responders are equipped with personal protective clothing? All, Most, Some, None

Table 11
Number of Fire Stations and Selected Characteristics by Community Size (Q. 23)

Population of Community	Average Number of Stations	Percent Stations Over 40 Years Old	Percent Stations Having Backup Power	Percent Stations Equipped for Exhaust Control
250,000 or more	31.0	9.7%	69.4%	54.8%
100,000 to 249,999	8.0	0.0%	75.0%	0.0%
50,000 to 99,999	3.0	33.3%	33.3%	33.3%
25,000 to 49,999	3.8	7.9%	81.6%	52.6%
10,000 to 24,999	2.7	5.8%	44.2%	21.2%
5,000 to 9,999	1.8	10.9%	39.3%	17.7%
2,500 to 4,999	1.4	14.3%	7.1%	0.0%
Under 2,500	1.3	22.5%	27.8%	14.3%
Total	2.3	12.9%	45.9%	24.8%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Total row is for all communities and is not the sum of the other rows.

Q. 23: Number of fire stations, number over 40 years old, number having backup power, number equipped for exhaust emission control (e.g., diesel exhaust extraction).

Table 12
Average Number of Engines/Pumpers in Service and Age of Engine/Pumper Apparatus by Community Size (Q. 24)

Population of Community	Average Number of Engines	Engines 0-14 Years Old	Engines 15-19 Years Old	Engines 20-29 Years Old	Engines 30 or More Years Old
250,000 or more	32.67	31.33	1.33	0.00	0.00
100,000 to 249,999	8.75	8.50	0.25	0.00	0.00
50,000 to 99,999	4.00	3.00	1.00	0.00	0.00
25,000 to 49,999	5.09	4.64	0.36	0.09	0.00
10,000 to 24,999	3.82	3.00	0.50	0.32	0.00
5,000 to 9,999	3.16	1.49	0.80	0.32	0.54
2,500 to 4,999	3.65	1.71	0.65	0.76	0.53
Under 2,500	2.39	0.79	0.48	0.73	0.39
Total	3.63	2.17	0.58	0.54	0.34

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Total row is for all communities and is not the sum of the other rows.

Q. 24: Number of engines/pumpers in service, number 0-14 years old, number 15-19 years old, number 20-29 years old, number 30 or more years old, number unknown age.

Table 13
How Many of Department's Emergency Responders on a Single Shift Are Equipped With Portable Radios? by Community Size (Q. 27a)

Population of Community	All Number Depts	All Percent	Most Number Depts	Most Percent	Some Number Depts	Some Percent	None Number Depts	None Percent	Total Number Depts	Total Percent
250,000 or more	2	66.7%	0	0.0%	1	33.3%	0	0.0%	3	100.0%
100,000 to 249,999	5	100.0%	0	0.0%	0	0.0%	0	0.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	9	72.7%	1	9.1%	2	18.2%	0	0.0%	13	100.0%
10,000 to 24,999	18	68.2%	6	22.7%	2	9.1%	0	0.0%	26	100.0%
5,000 to 9,999	17	47.6%	12	33.3%	7	19.0%	0	0.0%	36	100.0%
2,500 to 4,999	21	58.8%	4	11.8%	11	29.4%	0	0.0%	36	100.0%
Under 2,500	61	61.1%	11	11.1%	19	19.4%	8	8.3%	99	100.0%
Total	139	62.6%	34	16.5%	42	18.3%	8	2.6%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 27a: How many of your emergency responders on-duty on a single shift can be equipped with portable radios?

Table 14
How Many Emergency Responders on a Single Shift Are Equipped With Self-Contained Breathing Apparatus (SCBA)? by Community Size (Q. 28a)

Population of Community	All		Most		Some		None		Total	
	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	5	100.0%	0	0.0%	0	0.0%	0	0.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	13	100.0%	0	0.0%	0	0.0%	0	0.0%	13	100.0%
10,000 to 24,999	24	90.9%	2	9.1%	0	0.0%	0	0.0%	26	100.0%
5,000 to 9,999	27	76.2%	7	19.0%	2	4.8%	0	0.0%	36	100.0%
2,500 to 4,999	25	70.6%	6	17.6%	4	11.8%	0	0.0%	36	100.0%
Under 2,500	36	36.1%	33	33.3%	25	25.0%	6	5.6%	99	100.0%
Total	139	69.3%	49	18.4%	31	10.5%	6	1.8%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 28a: How many emergency responders on-duty on a single shift can be equipped with self-contained breathing apparatus (SCBA)?

Table 15
What Fraction of Emergency Responders on a Single Shift Are Equipped With Personal Alert Safety System (PASS) Devices? by Community Size
(Q. 29)

Population of Community	All		Most		Some		None		Total	
	Number of Depts	Percent	Number of Depts	Percent	Number of Depts	Percent	Number of Depts	Percent	Number of Depts	Percent
250,000 or more	3	100.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	5	100.0%	0	0.0%	0	0.0%	0	0.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	13	100.0%	0	0.0%	0	0.0%	0	0.0%	13	100.0%
10,000 to 24,999	25	95.5%	0	0.0%	0	0.0%	1	4.5%	26	100.0%
5,000 to 9,999	33	90.5%	2	4.8%	2	4.8%	0	0.0%	36	100.0%
2,500 to 4,999	21	58.8%	6	17.6%	2	5.9%	6	17.6%	36	100.0%
Under 2,500	36	36.4%	21	21.2%	12	12.1%	30	30.3%	99	100.0%
Total	142	72.1%	29	9.9%	16	5.4%	38	12.6%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 29: How many of your emergency responders on-duty on a single shift are equipped with Personal Alert Safety System (PASS) devices?

Table 16
What Fraction of Emergency Responders Are Equipped With Personal Protective Clothing? by Community Size (Q. 30a)

Population of Community	All		Most		Some		None		Total	
	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	5	100.0%	0	0.0%	0	0.0%	0	0.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	13	100.0%	0	0.0%	0	0.0%	0	0.0%	13	100.0%
10,000 to 24,999	25	95.5%	1	4.5%	0	0.0%	0	0.0%	26	100.0%
5,000 to 9,999	36	100.0%	0	0.0%	0	0.0%	0	0.0%	36	100.0%
2,500 to 4,999	34	94.1%	2	5.9%	0	0.0%	0	0.0%	36	100.0%
Under 2,500	72	72.2%	14	13.9%	14	13.9%	0	0.0%	99	100.0%
Total	193	89.6%	17	6.1%	14	4.3%	0	0.0%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 30a: How many of your emergency responders are equipped with personal protective clothing?

ABILITY TO HANDLE UNUSUALLY CHALLENGING INCIDENTS

Questions 36-39 were designed to check the capabilities of fire departments, in communities of various sizes, to handle unusually severe and challenging incidents, only one of which involved a fire. These have to do with the increasingly important first responder role of fire departments.

In addition to asking whether such incidents were within the department's scope, the survey asked whether fire departments could handle such incidents with local personnel and equipment and whether a plan existed to support effective coordination with non-local resources and partners.

Technical Rescue and EMS at Structural Collapse With 50 Occupants

Table 17 indicates whether a technical rescue with EMS at a structural collapse of a building with 50 occupants is within the scope of the department.

Tables 18-20 address, for the departments that consider such a rescue within their scope, how far they have to go for people and equipment and whether they have a plan, respectively.

By combining Table 17 with Tables 18-20, one can obtain an even better indication of different types of department needs to address such incidents, as seen in Tables J to L. In Tables J to L, the rightmost column reproduces the "No, not within scope" statistics from Table 17. The other columns are produced by multiplying the columns from Tables 18-20, respectively, by the "Yes, within scope" statistics from Table 17.

Only 13% of Arizona's departments say they can handle such an incident with local personnel.

Only 11% say they can handle such an incident with local equipment.

Only 37% say they have a written plan on how to handle such incidents.

Table J. Departments by Whether They Can Handle This Type of Incident, Where They Obtain Necessary Personnel With Specialized Training, and Size of Community (Q. 36b)

Population Protected	Can Department Handle Technical Rescue with EMS at Structural Collapse of a Building with 50 Occupants?		
	Yes and With Local Trained People	Yes But Need Non-Local Trained People	No, Not Within Scope
250,000 or more	67%	33%	0%
100,000 to 249,999	25%	75%	0%
50,000 to 99,999	0%	100%	0%
25,000 to 49,999	9%	91%	0%
10,000 to 24,999	14%	68%	18%
5,000 to 9,999	20%	61%	19%
2,500 to 4,999	6%	56%	38%
Under 2,500	8%	36%	56%
Total	13%	58%	30%
National totals	11%	45%	44%
Lowest state totals	0%		0%
Highest state totals	20%		58%

The above projections are based on departments reporting on Questions 36a and 36b. See Tables 17 and 18.

Q. 36b: If [technical rescue and EMS for a building with 50 occupants after structural collapse is within your department's scope], how far would you have to go to obtain enough people with specialized training for this incident?

Table K. Departments by Whether They Can Handle This Type of Incident, Where They Obtain the Necessary Specialized Equipment, and Size of Community (Q. 36c)

Population Protected	Can Department Handle Technical Rescue with EMS at Structural Collapse of a Building with 50 Occupants?		
	Yes and With Local Equipment	Yes But Need Non-Local Equipment	No, Not Within Scope
250,000 or more	44%	22%	0%
100,000 to 249,999	6%	19%	0%
50,000 to 99,999	0%	0%	0%
25,000 to 49,999	1%	8%	0%
10,000 to 24,999	2%	12%	18%
5,000 to 9,999	5%	15%	19%
2,500 to 4,999	0%	6%	38%
Under 2,500	2%	7%	56%
Total	11%	59%	30%
National totals	11%	46%	44%
Lowest state totals	0%		0%
Highest state totals	18%		58%

The above table breakdown and projections are based on departments reporting on Questions 36a and 36c. See Tables 17and 19.

Q. 36c: If [technical rescue and EMS for a building with 50 occupants after structural collapse is within your department's scope], how far would you have to go to obtain enough specialized equipment to handle this incident?

Table L. Departments by Whether They Can Handle This Type of Incident, Type of Plan for Using Non-Local Resources, and Size of Community (Q. 36d)

Population Protected	Can Department Handle Technical Rescue with EMS at Structural Collapse of a Building with 50 Occupants?			
	Yes – Written Agreement	Yes – But Not Written	Yes – But No Plan	No, Not Within Scope
250,000 or more	67%	33%	0%	0%
100,000 to 249,999	75%	25%	0%	0%
50,000 to 99,999	100%	0%	0%	0%
25,000 to 49,999	46%	55%	0%	0%
10,000 to 24,999	41%	27%	14%	18%
5,000 to 9,999	57%	19%	5%	19%
2,500 to 4,999	19%	38%	6%	38%
Under 2,500	19%	14%	11%	56%
Total	37%	25%	9%	30%
National totals	19%	26%	11%	44%
Lowest state totals	9%			0%
Highest state totals	37%			58%

The above table breakdown and projections are based on departments reporting on Questions 36a and 36d. See Tables 17 and 20.

Note: In comments on the draft of this report, State Fire Marshal Duane Pell indicated the state is in the process of implementing a statewide all-risk response plan for the fire service.

Q. 36d: If [technical rescue and EMS for a building with 50 occupants after structural collapse is within your department's scope], do you have a plan for working with others on this type of incident?

Hazmat and EMS for Incident Involving Chemical/Biological Agents and 10 Injuries

Table 21 indicates whether hazmat and EMS for an incident involving chemical/ biological agents and 10 injuries is within the scope of the department. (Note that casualty counts of 100 to 1,000 are not unusual in chemical/biological agent weapons of mass destruction.)

Tables 22-24 address, for the departments that consider such an incident within their scope, how far they have to go for people and equipment and whether they have a plan, respectively.

By combining Table 21 with Tables 22-24, one can obtain an even better indication of different types of department needs to address such incidents, as seen in Tables M to O.

In Tables M to O, the rightmost column reproduces the "No, not within scope" statistics from Table 21. The other columns are produced by multiplying the columns from Tables 22-24, respectively, by the "Yes, within scope" statistics from Table 21.

Only 21% of Arizona's departments say they can handle such an incident with local personnel.

Only 14% say they can handle such an incident with local equipment.

Only 37% say they have a written plan on how to handle such incidents.

Table M. Departments by Whether They Can Handle This Type of Incident, Where They Obtain Necessary Personnel With Specialized Training, and Size of Community (Q. 37b)

Population Protected	Can Department Handle a Hazmat and EMS Incident Involving Chemical/Biological Agents and 10 Injuries?		
	Yes and With Local Trained People	Yes But Need Non-Local Trained People	No, Not Within Scope
250,000 or more	100%	0%	0%
100,000 to 249,999	25%	50%	25%
50,000 to 99,999	0%	100%	0%
25,000 to 49,999	18%	82%	0%
10,000 to 24,999	43%	39%	18%
5,000 to 9,999	20%	56%	24%
2,500 to 4,999	12%	65%	24%
Under 2,500	14%	33%	53%
Total	21%	51%	29%
National totals	13%	45%	42%
Lowest state totals	5%		10%
Highest state totals	67%		54%

The above table breakdown and projections are based on departments reporting on Questions 37a and 37b. See Tables 21 and 22.

Q. 37b: If [hazmat and EMS for an incident involving chemical/biological agents and 10 injuries is within your department's scope], how far would you have to go to obtain enough people with specialized training for this incident?

Table N. Departments by Whether They Can Handle This Type of Incident, Where They Obtain the Necessary Specialized Equipment, and Size of Community (Q. 37c)

Population Protected	Can Department Handle a Hazmat and EMS Incident Involving Chemical/Biological Agents and 10 Injuries?		
	Yes and With Local Equipment	Yes But Need Non-Local Equipment	No, Not Within Scope
250,000 or more	100%	0%	0%
100,000 to 249,999	8%	17%	25%
50,000 to 99,999	0%	0%	0%
25,000 to 49,999	3%	15%	0%
10,000 to 24,999	15%	28%	18%
5,000 to 9,999	5%	15%	24%
2,500 to 4,999	1%	11%	24%
Under 2,500	2%	12%	53%
Total	14%	57%	29%
National totals	11%	47%	42%
Lowest state totals	1%		10%
Highest state totals	67%		54%

The above projections are based on departments reporting on Questions 37a and 37c. See Tables 21 and 23.

Q. 37c: If [hazmat and EMS for an incident involving chemical/biological agents and 10 injuries is within your department's scope], how far would you have to go to obtain enough specialized equipment to handle this incident?

Table O. Departments by Whether They Can Handle This Type of Incident, Type of Plan for Using Non-Local Resources, and Size of Community (Q. 37d)

Population Protected	Can Department Handle a Hazmat and EMS Incident Involving Chemical/Biological Agents and 10 Injuries?			
	Yes – Written Agreement	Yes – But Not Written	Yes – But No Plan	No, Not Within Scope
250,000 or more	100%	0%	0%	0%
100,000 to 249,999	50%	25%	0%	25%
50,000 to 99,999	100%	0%	0%	0%
25,000 to 49,999	73%	27%	0%	0%
10,000 to 24,999	46%	32%	5%	18%
5,000 to 9,999	43%	33%	0%	24%
2,500 to 4,999	18%	53%	6%	24%
Under 2,500	22%	11%	14%	53%
Total	37%	26%	8%	29%
National totals	21%	28%	9%	42%
Lowest state totals	6%			10%
Highest state totals	38%			54%

The above projections are based on departments reporting on Questions 37a and 37d. See Tables 21 and 24.

Note: In comments on the draft of this report, State Fire Marshal Duane Pell indicated the state is in the process of implementing a statewide all-risk response plan for the fire service.

Q. 37d: If [hazmat and EMS for an incident involving chemical/biological agents and 10 injuries is within your department's scope], do you have a plan for working with others on this type of incident?

Wildland/Urban Interface Fire Affecting 500 Acres

Table 25 indicates whether a wildland/urban interface fire affecting 500 acres is within the scope of the department.

Tables 26-28 address, for the departments that consider such an incident within their scope, how far they have to go for people and equipment and whether they have a plan, respectively.

By combining Table 25 with Tables 26-28, one can obtain an even better indication of different types of department needs to address such incidents, as seen in Tables P to R.

In Tables P to R, the rightmost column reproduces the "No, not within scope" statistics from Table 25. The other columns are produced by multiplying the columns from Tables 26-28, respectively, by the "Yes, within scope" statistics from Table 25.

Only 18% of Arizona's departments say they can handle such an incident with local personnel.

Only 16% say they can handle such an incident with local equipment.

Only 59% say they have a written plan on how to handle such incidents.

Table P. Departments by Whether They Can Handle This Type of Incident, Where They Obtain Necessary Personnel With Specialized Training, and Size of Community (Q. 38b)

Population Protected	Can the Department Handle a Wildland/Urban Interface Fire Affecting 500 Acres?		
	Yes and With Local Trained People	Yes But Need Non-Local Trained People	No, Not Within Scope
250,000 or more	33%	67%	0%
100,000 to 249,999	50%	25%	25%
50,000 to 99,999	0%	100%	0%
25,000 to 49,999	20%	70%	10%
10,000 to 24,999	19%	71%	10%
5,000 to 9,999	19%	57%	24%
2,500 to 4,999	12%	77%	12%
Under 2,500	17%	53%	31%
Total	18%	63%	20%
National totals	26%	44%	31%
Lowest state totals	0%		0%
Highest state totals	52%		53%

The above projections are based on departments reporting on Questions 38a and 38b. See Tables 25 and 26.

Q. 38b: If [wildland/urban interface fire affecting 500 acres is within your department's scope], how far would you have to go to obtain enough people with specialized training for this incident?

Table Q. Departments by Whether They Can Handle This Type of Incident, Where They Obtain the Necessary Specialized Equipment, and Size of Community (Q. 38c)

Population Protected	Can the Department Handle a Wildland/Urban Interface Fire Affecting 500 Acres?		
	Yes and With Local Equipment	Yes But Need Non-Local Equipment	No, Not Within Scope
250,000 or more	33%	67%	0%
100,000 to 249,999	17%	33%	25%
50,000 to 99,999	0%	0%	0%
25,000 to 49,999	4%	16%	10%
10,000 to 24,999	5%	14%	10%
5,000 to 9,999	5%	14%	24%
2,500 to 4,999	2%	9%	12%
Under 2,500	3%	14%	31%
Total	16%	64%	20%
National totals	22%	47%	31%
Lowest state totals	2%		0%
Highest state totals	75%		53%

The above projections are based on departments reporting on Questions 38a and 38c. See Tables 25 and 27.

Q. 38c: If [wildland/urban interface fire affecting 500 acres is within your department's scope], how far would you have to go to obtain enough specialized equipment to handle this incident?

Table R. Departments by Whether They Can Handle This Type of Incident, Type of Plan for Using Non-Local Resources, and Size of Community (Q. 38d)

Population Protected	Can the Department Handle a Wildland/Urban Interface Fire Affecting 500 Acres?			
	Yes – Written Agreement	Yes – But Not Written	Yes – But No Plan	No, Not Within Scope
250,000 or more	100%	0%	0%	0%
100,000 to 249,999	75%	0%	0%	25%
50,000 to 99,999	100%	0%	0%	0%
25,000 to 49,999	90%	0%	0%	10%
10,000 to 24,999	57%	33%	0%	10%
5,000 to 9,999	52%	24%	0%	24%
2,500 to 4,999	35%	53%	0%	12%
Under 2,500	58%	9%	3%	31%
Total	59%	21%	1%	20%
National totals	33%	31%	5%	31%
Lowest state totals	7%			0%
Highest state totals	66%			53%

The above projections are based on departments reporting on Questions 38a and 38d. See Tables 25 and 28.

Note: In comments on the draft of this report, State Fire Marshal Duane Pell indicated the state is in the process of implementing a statewide all-risk response plan for the fire service.

Q. 38d: If [wildland/urban interface fire affecting 500 acres is within your department's scope], do you have a plan for working with others on this type of incident?

Mitigation of a Developing Major Flood

Table 29 indicates whether mitigation of a developing major flood is within the scope of the department.

Tables 30-32 address, for the departments that consider such an incident within their scope, how far they have to go for people and equipment and whether they have a plan, respectively.

By combining Table 29 with Tables 30-32, one can obtain an even better indication of different types of department needs to address such incidents, as seen in Tables S to U.

In Tables S to U, the rightmost column reproduces the "No, not within scope" statistics from Table 29. The other columns are produced by multiplying the columns from Tables 30-32, respectively, by the "Yes, within scope" statistics from Table 29.

Only 13% of Arizona's departments say they can handle such an incident with local personnel.

Only 15% say they can handle such an incident with local equipment.

Only 24% say they have a written plan on how to handle such incidents.

Table S. Departments by Whether They Can Handle This Type of Incident, Where They Obtain Necessary Personnel With Specialized Training, and Size of Community (Q. 39b)

Population Protected	Can the Department Handle Mitigation of a Developing Major Flood?		
	Yes and With Local Trained People	Yes But Need Non-Local Trained People	No, Not Within Scope
250,000 or more	67%	33%	0%
100,000 to 249,999	0%	100%	0%
50,000 to 99,999	0%	0%	100%
25,000 to 49,999	18%	64%	18%
10,000 to 24,999	10%	62%	29%
5,000 to 9,999	26%	41%	33%
2,500 to 4,999	13%	63%	25%
Under 2,500	6%	22%	72%
Total	13%	46%	41%
National totals	12%	33%	54%
Lowest state totals	0%		15%
Highest state totals	37%		68%

The above projections are based on departments reporting on Questions 39a and 39b. See Tables 29 and 30.

Q. 39b: If [mitigation (confining, slowing, etc.) of a developing major flood is within your department's scope], how far would you have to go to obtain enough people with specialized training for this incident?

Table T. Departments by Whether They Can Handle This Type of Incident, Where They Obtain the Necessary Specialized Equipment, and Size of Community (Q. 39c)

Population Protected	Can the Department Handle Mitigation of a Developing Major Flood?		
	Yes and With Local Equipment	Yes But Need Non-Local Equipment	No, Not Within Scope
250,000 or more	33%	67%	0%
100,000 to 249,999	0%	0%	0%
50,000 to 99,999	0%	0%	100%
25,000 to 49,999	4%	14%	18%
10,000 to 24,999	1%	8%	29%
5,000 to 9,999	10%	16%	33%
2,500 to 4,999	3%	9%	25%
Under 2,500	2%	4%	72%
Total	15%	44%	41%
National totals	11%	35%	54%
Lowest state totals	0%		15%
Highest state totals	18%		68%

The above projections are based on departments reporting on Questions 39a and 39c. See Tables 25 and 27.

Q. 39c: If [mitigation (confining, slowing, etc.) of a developing major flood is within your department's scope], how far would you have to go to obtain enough specialized equipment to handle this incident?

Table U. Departments by Whether They Can Handle This Type of Incident, Type of Plan for Using Non-Local Resources, and Size of Community (Q. 39d)

Population Protected	Can the Department Handle Mitigation of a Developing Major Flood?			
	Yes – Written Agreement	Yes – But Not Written	Yes – But No Plan	No, Not Within Scope
250,000 or more	33%	33%	33%	0%
100,000 to 249,999	75%	0%	25%	0%
50,000 to 99,999	0%	0%	0%	100%
25,000 to 49,999	55%	18%	9%	18%
10,000 to 24,999	38%	29%	5%	29%
5,000 to 9,999	33%	19%	14%	33%
2,500 to 4,999	13%	63%	0%	25%
Under 2,500	8%	11%	8%	72%
Total	24%	26%	9%	41%
National totals	13%	21%	11%	54%
Lowest state totals	4%			15%
Highest state totals	67%			68%

The above projections are based on departments reporting on Questions 39a and 39d. See Tables 25 and 28.

Note: In comments on the draft of this report, State Fire Marshal Duane Pell indicated the state is in the process of implementing a statewide all-risk response plan for the fire service.

Q. 39d: If [mitigation (confining, slowing, etc.) of a developing major flood is within your department's scope], do you have a plan for working with others on this type of incident?

Table 17
Is Technical Rescue and EMS for a Building With 50 Occupants After Structural Collapse Within the Scope of Department? by Community Size (Q. 36a)

Population of Community	Yes		No		Total	
	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	3	100.0%
100,000 to 249,999	5	100.0%	0	0.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	6	100.0%
25,000 to 49,999	13	100.0%	0	0.0%	13	100.0%
10,000 to 24,999	21	81.8%	5	18.2%	26	100.0%
5,000 to 9,999	29	81.0%	7	19.0%	36	100.0%
2,500 to 4,999	23	62.5%	14	37.5%	36	100.0%
Under 2,500	44	44.4%	55	55.6%	99	100.0%
Total	144	70.2%	80	29.8%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 36a: Is [technical rescue and EMS for a building with 50 occupants after structural collapse] within your department's scope?

Table 18
For Departments Where Technical Rescue and EMS For a Building With 50 Occupants After Structural Collapse Is Within Their Scope, How Far Do They Have to Go to Obtain Sufficient People With Specialized Training to Handle Such an Incident? by Community Size (Q. 36b)

	Local		Regional		State		National		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	2	66.7%	1	33.3%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	1	25.0%	4	75.0%	0	0.0%	0	0.0%	5	100.0%
50,000 to 99,999	0	0.0%	6	100.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	1	9.1%	7	54.5%	5	36.4%	0	0.0%	13	100.0%
10,000 to 24,999	4	16.7%	11	50.0%	7	33.3%	0	0.0%	21	100.0%
5,000 to 9,999	7	25.0%	15	50.0%	7	25.0%	0	0.0%	29	100.0%
2,500 to 4,999	2	10.0%	16	70.0%	5	20.0%	0	0.0%	23	100.0%
Under 2,500	8	18.8%	28	62.5%	8	18.8%	0	0.0%	44	100.0%
Total	26	17.9%	86	60.0%	32	22.1%	0	0.0%	144	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 36b: If [technical rescue and EMS for a building with 50 occupants after structural collapse is within your department's scope], how far would you have to go to obtain enough people with specialized training for this incident?

Table 19
For Departments Where Technical Rescue and EMS For a Building With 50 Occupants After Structural Collapse Is Within Their Scope, How Far Do They Have to Go to Obtain Sufficient Specialized Equipment to Handle Such an Incident? by Community Size (Q. 36c)

Population of Community	Local		Regional		State		National		Total	
	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	2	66.7%	1	33.3%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	1	25.0%	3	50.0%	1	25.0%	0	0.0%	5	100.0%
50,000 to 99,999	0	0.0%	6	100.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	1	9.1%	7	54.5%	5	36.4%	0	0.0%	13	100.0%
10,000 to 24,999	2	11.1%	9	44.4%	9	44.4%	0	0.0%	21	100.0%
5,000 to 9,999	7	25.0%	13	43.8%	9	31.3%	0	0.0%	29	100.0%
2,500 to 4,999	0	0.0%	15	66.7%	8	33.3%	0	0.0%	23	100.0%
Under 2,500	8	18.8%	25	56.3%	11	25.0%	0	0.0%	44	100.0%
Total	22	15.5%	79	54.6%	43	29.9%	0	0.0%	144	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 36c: If [technical rescue and EMS for a building with 50 occupants after structural collapse is within your department's scope], how far would you have to go to obtain enough specialized equipment to handle this incident?

Table 20
For Departments Where Technical Rescue and EMS for a Building With 50 Occupants After Structural Collapse Is Within Their Scope, Do They Have a Plan for Working With Others? by Community Size (Q. 36d)

	Yes – Written Agreement		Yes – Informal		Yes – Other		No		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	2	66.7%	1	33.3%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	4	75.0%	1	25.0%	0	0.0%	0	0.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	6	45.5%	6	45.5%	1	9.1%	0	0.0%	13	100.0%
10,000 to 24,999	11	50.0%	5	22.2%	2	11.1%	4	16.7%	21	100.0%
5,000 to 9,999	21	70.6%	5	17.6%	2	5.9%	2	5.9%	29	100.0%
2,500 to 4,999	7	30.0%	11	50.0%	2	10.0%	2	10.0%	23	100.0%
Under 2,500	19	43.8%	11	25.0%	3	6.3%	11	25.0%	44	100.0%
Total	22	15.5%	79	54.6%	43	29.9%	0	0.0%	144	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 36d: Do you have a plan for working on others on [technical rescue and EMS for a building with 50 occupants after structural collapse]?

Table 21
Is a Hazmat and EMS Incident Involving Chemical/Biological Agents and 10 Injuries Within the Scope of Department? by Community Size (Q. 37a)

	Yes		No		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	3	100.0%
100,000 to 249,999	4	75.0%	1	25.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	6	100.0%
25,000 to 49,999	13	100.0%	0	0.0%	13	100.0%
10,000 to 24,999	21	81.8%	5	18.2%	26	100.0%
5,000 to 9,999	27	76.2%	9	23.8%	36	100.0%
2,500 to 4,999	28	76.5%	8	23.5%	36	100.0%
Under 2,500	47	47.2%	52	52.8%	99	100.0%
Total	149	71.3%	75	28.7%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 37a: Is [hazmat and EMS for an incident involving chemical/biological agents and 10 injuries] within your department's scope?

Table 22
For Departments Where a Hazmat and EMS Incident Involving Chemical/Biological Agents and 10 Injuries Is Within Their Scope How Far Do They Have to Go to Obtain Sufficient People With Specialized Training to Handle Such an Incident? by Community Size (Q. 37b)

	Local		Regional		State		National		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	1	33.3%	3	66.7%	0	0.0%	0	0.0%	4	100.0%
50,000 to 99,999	0	0.0%	6	100.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	2	18.2%	7	54.5%	4	27.3%	0	0.0%	13	100.0%
10,000 to 24,999	11	52.9%	6	29.4%	4	17.6%	0	0.0%	21	100.0%
5,000 to 9,999	7	26.7%	15	53.3%	5	20.0%	0	0.0%	27	100.0%
2,500 to 4,999	4	15.4%	15	53.8%	8	30.8%	0	0.0%	28	100.0%
Under 2,500	14	29.4%	17	35.3%	17	35.3%	0	0.0%	47	100.0%
Total	43	29.0%	68	45.6%	38	25.4%	0	0.0%	149	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 37b: If [hazmat and EMS for an incident involving chemical/biological agents and 10 injuries is within your department's scope], how far would you have to go to obtain enough people with specialized training for this incident?

Table 23
For Departments Where a Hazmat and EMS Incident Involving Chemical/Biological Agents and 10 Injuries Is Within Their Scope How Far Do They Have to Go to Obtain Sufficient Specialized Equipment to Handle Such An Incident? by Community Size (Q. 37c)

	Local		Regional		State		National		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	1	33.3%	3	66.7%	0	0.0%	0	0.0%	4	100.0%
50,000 to 99,999	0	0.0%	6	100.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	2	18.2%	7	54.5%	4	27.3%	0	0.0%	13	100.0%
10,000 to 24,999	8	35.3%	10	47.1%	4	17.6%	0	0.0%	21	100.0%
5,000 to 9,999	7	26.7%	15	53.3%	5	20.0%	0	0.0%	27	100.0%
2,500 to 4,999	2	8.3%	11	41.7%	14	50.0%	0	0.0%	28	100.0%
Under 2,500	6	11.8%	19	41.2%	19	41.2%	3	5.9%	47	100.0%
Total	29	19.7%	71	47.7%	46	30.8%	3	1.8%	149	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 37c: If [hazmat and EMS for an incident involving chemical/biological agents and 10 injuries is within your department's scope], how far would you have to go to obtain enough specialized equipment to handle this incident?

Table 24
For Departments Where a Hazmat and EMS Incident Involving Chemical/Biological Agents and 10 Injuries Is Within Their Scope Do They Have a Plan for Working With Others? by Community Size (Q. 37d)

	Yes – Written Agreement		Yes – Informal		Yes – Other		No		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	3	66.7%	1	33.3%	0	0.0%	0	0.0%	4	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	9	72.7%	4	27.3%	0	0.0%	0	0.0%	13	100.0%
10,000 to 24,999	12	55.6%	6	27.8%	2	11.1%	1	5.6%	21	100.0%
5,000 to 9,999	15	56.3%	9	31.3%	3	12.5%	0	0.0%	27	100.0%
2,500 to 4,999	6	23.1%	17	61.5%	2	7.7%	2	7.7%	28	100.0%
Under 2,500	22	47.1%	8	17.6%	3	5.9%	14	29.4%	47	100.0%
Total	77	51.5%	44	29.9%	11	7.2%	17	11.5%	149	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 37d: Do you have a plan for working on others on [hazmat and EMS for an incident involving chemical/biological agents and 10 injuries]?

Table 25
Is a Wildland/Urban Interface Fire Affecting 500 Acres Within the Scope of Department? by Community Size (Q. 38a)

	Yes		No		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	3	100.0%
100,000 to 249,999	4	75.0%	1	25.0%	5	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	6	100.0%
25,000 to 49,999	12	90.0%	1	10.0%	13	100.0%
10,000 to 24,999	24	90.5%	2	9.5%	26	100.0%
5,000 to 9,999	27	76.2%	9	23.8%	36	100.0%
2,500 to 4,999	32	88.2%	4	11.8%	36	100.0%
Under 2,500	69	69.4%	30	30.6%	99	100.0%
Total	176	80.5%	48	19.5%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 38a: Is [a wildland/urban interface fire affecting 500 acres] within your department's scope?

Table 26
For Departments Where a Wildland/Urban Interface Fire Affecting 500 Acres Is Within Their Scope How Far Do They Have to Go to Obtain Sufficient People With Specialized Training to Handle Such an Incident? by Community Size (Q. 38b)

	Local		Regional		State		National		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	1	33.3%	2	66.7%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	3	66.7%	1	33.3%	0	0.0%	0	0.0%	4	100.0%
50,000 to 99,999	0	0.0%	6	100.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	3	22.2%	5	44.4%	4	33.3%	0	0.0%	12	100.0%
10,000 to 24,999	5	21.1%	12	52.6%	6	26.3%	0	0.0%	24	100.0%
5,000 to 9,999	7	25.0%	12	43.8%	9	31.3%	0	0.0%	27	100.0%
2,500 to 4,999	4	13.3%	15	46.7%	13	40.0%	0	0.0%	32	100.0%
Under 2,500	17	24.0%	25	36.0%	22	32.0%	6	8.0%	69	100.0%
Total	39	22.0%	78	44.6%	53	30.3%	6	3.1%	176	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 38b: If [wildland/urban interface fire affecting 500 acres is within your department's scope], how far would you have to go to obtain enough people with specialized training for this incident?

Table 27
For Departments Where a Wildland/Urban Interface Fire Affecting 500 Acres Is Within Their Scope How Far Do They Have to Go to Obtain Sufficient Specialized Equipment to Handle Such An Incident? by Community Size (Q. 38c)

Population of Community	Local Number Depts	Local Percent	Regional Number Depts	Regional Percent	State Number Depts	State Percent	National Number Depts	National Percent	Total Number Depts	Total Percent
250,000 or more	1	33.3%	2	66.7%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	1	33.3%	1	33.3%	1	33.3%	0	0.0%	4	100.0%
50,000 to 99,999	0	0.0%	6	100.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	3	22.2%	5	44.4%	4	33.3%	0	0.0%	12	100.0%
10,000 to 24,999	6	26.3%	10	42.1%	6	26.3%	1	5.3%	24	100.0%
5,000 to 9,999	7	25.0%	10	37.5%	10	37.5%	0	0.0%	27	100.0%
2,500 to 4,999	6	20.0%	13	40.0%	13	40.0%	0	0.0%	32	100.0%
Under 2,500	11	16.7%	32	45.8%	20	29.2%	6	8.3%	69	100.0%
Total	36	20.3%	79	44.8%	54	30.9%	7	4.0%	176	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 38c: If [wildland/urban interface fire affecting 500 acres is within your department's scope], how far would you have to go to obtain enough specialized equipment to handle this incident?

Table 28
For Departments Where a Wildland/Urban Interface Fire Affecting 500 Acres Is Within Their Scope Do They Have a Plan for Working With Others? by Community Size (Q. 38d)

Population of Community	Yes – Written Agreement		Yes – Informal		Yes – Other		No		Total	
	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	3	100.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	4	100.0%	0	0.0%	0	0.0%	0	0.0%	4	100.0%
50,000 to 99,999	6	100.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
25,000 to 49,999	12	100.0%	0	0.0%	0	0.0%	0	0.0%	12	100.0%
10,000 to 24,999	15	63.2%	6	26.3%	2	10.5%	0	0.0%	24	100.0%
5,000 to 9,999	19	68.8%	7	25.0%	2	6.3%	0	0.0%	27	100.0%
2,500 to 4,999	13	40.0%	17	53.3%	2	6.7%	0	0.0%	32	100.0%
Under 2,500	57	83.3%	9	12.5%	0	0.0%	3	4.2%	69	100.0%
Total	128	72.9%	39	21.9%	6	3.6%	3	1.6%	176	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 38d: Do you have a plan for working on others on [wildland/urban interface fire affecting 500 acres]?

Table 29
Is Mitigation of a Developing Major Flood Within the Scope of Department? by Community Size (Q. 39a)

Population of Community	Yes Number Depts	Yes Percent	No Number Depts	No Percent	Total Number Depts	Total Percent
250,000 or more	3	100.0%	0	0.0%	3	100.0%
100,000 to 249,999	5	100.0%	0	0.0%	5	100.0%
50,000 to 99,999	0	0.0%	6	100.0%	6	100.0%
25,000 to 49,999	11	81.8%	2	18.2%	13	100.0%
10,000 to 24,999	19	71.4%	7	28.6%	26	100.0%
5,000 to 9,999	24	66.7%	12	33.3%	36	100.0%
2,500 to 4,999	27	75.0%	9	25.0%	36	100.0%
Under 2,500	28	27.8%	72	72.2%	99	100.0%
Total	116	59.3%	108	40.7%	224	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

Numbers may not add to totals due to rounding.

Q. 39a: Is [mitigation (confining, slowing, etc.) of a developing major flood] within your department's scope?

Table 30
For Departments Where Mitigation of a Major Flood Is Within Their Scope How Far Do They Have to Go to Obtain Sufficient People With Specialized Training to Handle Such an Incident? by Community Size (Q. 39b)

	Local		Regional		State		National		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	2	66.7%	1	33.3%	0	0.0%	0	0.0%	3	100.0%
100,000 to 249,999	0	0.0%	3	50.0%	3	50.0%	0	0.0%	5	100.0%
50,000 to 99,999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25,000 to 49,999	2	22.2%	7	66.7%	1	11.1%	0	0.0%	11	100.0%
10,000 to 24,999	2	13.3%	4	20.0%	11	60.0%	1	6.7%	19	100.0%
5,000 to 9,999	9	38.5%	2	7.7%	13	53.8%	0	0.0%	24	100.0%
2,500 to 4,999	5	16.7%	7	25.0%	16	58.3%	0	0.0%	27	100.0%
Under 2,500	6	20.0%	11	40.0%	11	40.0%	0	0.0%	28	100.0%
Total	26	22.5%	34	29.3%	54	47.1%	1	1.1%	116	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

NA – Not applicable because activity was outside scope for all reporting departments in population interval.

Numbers may not add to totals due to rounding.

Q. 39b: If [mitigation (confining, slowing, etc.) of a developing major flood is within your department's scope], how far would you have to go to obtain enough people with specialized training for this incident?

Table 31
For Departments Where Mitigation of a Major Flood Is Within Their Scope How Far Do They Have to Go to Obtain Sufficient Specialized Equipment to Handle Such An Incident? by Community Size (Q. 39c)

Population of Community	Local		Regional		State		National		Total	
	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	1	33.3%	1	33.3%	1	33.3%	0	0.0%	3	100.0%
100,000 to 249,999	0	0.0%	3	50.0%	3	50.0%	0	0.0%	5	100.0%
50,000 to 99,999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25,000 to 49,999	2	22.2%	7	66.7%	1	11.1%	0	0.0%	11	100.0%
10,000 to 24,999	2	13.3%	5	26.7%	11	60.0%	0	0.0%	19	100.0%
5,000 to 9,999	9	38.5%	2	7.7%	13	53.8%	0	0.0%	24	100.0%
2,500 to 4,999	7	25.0%	5	16.7%	16	58.3%	0	0.0%	27	100.0%
Under 2,500	8	30.0%	8	30.0%	11	40.0%	0	0.0%	28	100.0%
Total	30	26.0%	30	26.0%	55	48.0%	0	0.0%	116	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

NA – Not applicable because activity was outside scope for all reporting departments in population interval.

Numbers may not add to totals due to rounding.

Q. 39c: If [mitigation (confining, slowing, etc.) of a developing major flood is within your department's scope], how far would you have to go to obtain enough specialized equipment to handle this incident?

Table 32
For Departments Where Mitigation of a Major Flood Is Within Their Scope Do They Have a Plan for Working With Others? by Community Size (Q. 39d)

	Yes – Written Agreement		Yes – Informal		Yes – Other		No		Total	
Population of Community	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent	Number Depts	Percent
250,000 or more	1	33.3%	1	33.3%	1	33.3%	0	0.0%	3	100.0%
100,000 to 249,999	0	0.0%	3	50.0%	3	50.0%	0	0.0%	5	100.0%
50,000 to 99,999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25,000 to 49,999	2	22.2%	7	66.7%	1	11.1%	0	0.0%	11	100.0%
10,000 to 24,999	2	13.3%	5	26.7%	11	60.0%	0	0.0%	19	100.0%
5,000 to 9,999	9	38.5%	2	7.7%	13	53.8%	0	0.0%	24	100.0%
2,500 to 4,999	7	25.0%	5	16.7%	16	58.3%	0	0.0%	27	100.0%
Under 2,500	8	30.0%	8	30.0%	11	40.0%	0	0.0%	28	100.0%
Total	30	26.0%	30	26.0%	55	48.0%	0	0.0%	116	100.0%

Source: FEMA/USFA and NFPA Survey of the Needs of the US Fire Service

NA – Not applicable because activity was outside scope for all reporting departments in population interval.

Numbers may not add to totals due to rounding.

Q. 39d: Do you have a plan for working on others on [mitigation (confining, slowing, etc.) of a developing major flood]?

APPENDIX 1: SURVEY METHODOLOGY

The Fire Service Needs Assessment Survey was conducted as a census, with appropriate adjustments for non-response. The choice of a census approach rather than a random sample approach was based on two considerations.

First, the survey is a specific requirement of PL 106-398 in Section 1701, Sec. 33(b), and the larger act is designed to provide the U.S. Fire Service with appropriate assistance for their legitimate needs. Given this intended application, there was general agreement that fire departments would view the survey as an opportunity rather than a burden, an opportunity that every department would wish to be given.

Second, current usage of some of the types of equipment and training to be addressed in the survey was believed to be sufficiently rare that the study would need the largest possible base for analysis.

The NFPA used its own list of local fire departments as the mailing list and sampling frame of all fire departments in the U.S. In all, 26,354 fire departments were mailed survey forms. The NFPA Fire Service Inventory file served as the bases for the Fire Service Needs Assessment Survey project. The fire Service Inventory file classifies departments based on their administrative and reporting responsibilities. We tried no to send forms to departments that referred to other departments for their reporting. This helped minimize the number of duplicates, but it also means that the total number of departments we contacted may be much lower than the total number of departments in the state, as reflected in the state's own records. The data in this state report is least affected by this discrepancy in results reported separately by community size. Any statistics for the entire state must be used with caution and may not give sufficient weight to conditions in the smallest communities.

The content of the survey was developed by NFPA, in collaboration with an ad hoc technical advisory group consisting of representatives of the full spectrum of national organizations and related disciplines associated with the management of fire and related hazards and risks in the U.S. A copy of the survey form is provided at the end of the report.

Overall, NFPA received 12,240 completed surveys and edited, coded, and keyed 8,416 surveys for analysis. The overall response rate was 46%, which is unusually high for a survey involving a large number of smaller departments. The better-than-expected response is due in part to the subject of the survey, its intended use, and undoubtedly the events of September 11.

For Arizona, we analyzed responses from 114 of the 224 fire departments in the state.

All statistics calculated as percents of firefighters are based on percents of departments by population interval, combined with national figures on ratios of firefighters per department between population intervals. Ratios have not been developed for individual states.

APPENDIX 2: SURVEY FORM

The next four pages contain the Needs Assessment Survey form.

It was printed on legal size paper (8-1/2" x 14") but has been shrunk to fit letter size paper here.

OMB NO 3067-0294
Expiration date: 04/30/02

FEDERAL EMERGENCY MANAGEMENT AGENCY
U.S. FIRE ADMINISTRATION
SURVEY OF THE NEEDS OF THE U.S. FIRE SERVICE

PART I. IDENTIFYING INFORMATION

Name of person completing form:_____ Date:_____
Title of person completing form:_____
Non-emergency phone number: ( )_____ Fax: ( )_____
e-mail address: _____

Please use enclosed postpaid envelope and return completed form to:

Fire Analysis and Research Division
1 Batterymarch Park
Quincy, MA 02269-9101 USA
Fax: (617) 984-7478

If you fax the form back, please reduce it first to 8-1/2" x 11" size.

PART II. BASIC INFORMATION

1. Population (Number of permanent residents) your department has *primary* responsibility to protect (exclude mutual aid areas):_____

2. Area (in square miles) your department has primary responsibility to protect (exclude mutual aid areas):_____

PART III. BUDGET INFORMATION

3. Do you have a plan for apparatus replacement on a regular schedule?

❑ Yes ❑ No

4. Does your normal budget cover the costs of apparatus replacement?

❑ Yes, budget covers costs
❑ No, must raise funds or seek special appropriation for purchase

(Questions 5 and 6 are for all or mostly volunteer or call departments ONLY. Indicate % for each, so percents sum to 100 for each question):

5. What share (%) of your budgeted revenue is from: _____ Fire district or other taxes
____ Payments per call ____ Other local payments _____ State government
____ Fund raising (e.g., donations, raffles, suppers, events)
____ Other (specify) _____

6. What share (%) of your apparatus was: ____ Purchased new ____ Donated new
____ Purchased used _____ Donated used
____ Converted vehicles not designed as FD apparatus
____ Other (specify) _____

PART IV. PERSONNEL AND THEIR CAPABILITIES

7. Total number of full-time (career) uniformed fire fighters:_____
8. Total number of active part-time (call or volunteer) fire fighters:_____
9. Average number of career/paid firefighters on duty available to respond to emergencies (total number for department): _____
10. Average number of call/volunteer personnel who respond to a mid-day house fire: _____
11. Number of on-duty career/paid personnel assigned to an engine/pumper (Circle one)
1-2 3 4 5+ Not applicable
12. Number of on-duty career/paid personnel assigned to a ladder/aerial (Circle one)
1-2 3 4 5+ Not applicable

PART IV. PERSONNEL AND THEIR CAPABILITIES (continued)

13. Structural firefighting.

a. Is this a role your department performs? (Check one) ❑ Yes ❑ No

b. If yes, how many of your personnel who perform this duty have received formal training (not just on-the-job)? (Check one) ❑ All ❑ Most ❑ Some ❑ None

c. Have any of your personnel been certified to any of the following levels?
(Circle letters for all that apply) A. Firefighter Level I B. Firefighter Level II

14. Emergency medical service (EMS).

a. Is this a role your department performs? (Check one) ❑ Yes ❑ No

b. If yes, how many of your personnel who perform this duty have received formal training (not just on-the-job)? (Check one) ❑ All ❑ Most ❑ Some ❑ None

c. If yes to a, have any of your personnel been certified to any of the following levels?
(Circle letters for all that apply)
A. First responder B. Basic Life Support (BLS)/EMT Intermediate (EMT I)
C. Advanced Life Support (ALS)/EMT Intermediate (EMT I) D. ALS/Paramedic

15. Hazardous materials response (Hazmat).

a. Is this a role your department performs? (Check one) ❑ Yes ❑ No

b. If yes, how many of your personnel who perform this duty have received formal training (not just on-the-job)? (Check one) ❑ All ❑ Most ❑ Some ❑ None

c. If yes to a, have any of your personnel been certified to any of the following levels?
(circle letters for all that apply) A. Awareness B. Operational C. Technician

16. Wildland firefighting.

a. Is this a role your department performs?
(Check one) ❑ Yes ❑ No

b. If yes, how many of your personnel who perform this duty have received formal training (not just on-the-job)? (Check one) ❑ All ❑ Most ❑ Some ❑ None

17. Technical rescue.

a. Is this a role your department performs?
(Check one) ❑ Yes ❑ No

b. If yes, how many of your personnel who perform this duty have received formal training (not just on-the-job)? (Check one) ❑ All ❑ Most ❑ Some ❑ None

18. Basic firefighter fitness and health.

Does your department have a program to maintain basic firefighter fitness and health (e.g., as required in NFPA 1500)? (Check one) ❑ Yes ❑ No

19. Infectious disease control.

Does your department have a program for infectious disease control?
(Check one) ❑ Yes ❑ No

PART V. FIRE PREVENTION AND CODE ENFORCEMENT

20. Which of the following programs or activities does your department conduct?
(Circle letters for all that apply)
A. Plans review B. Permit approval
C. Routine testing of active systems (e.g., fire sprinkler, detection/alarm, smoke control)
D. Free distribution of home smoke alarms E. Juvenile firesetter program
F. School fire safety education program based on a national model curriculum
G. Other prevention program (specify) _____

21. Who conducts fire code inspections in your community? (Circle letters for all that apply)
A. Full-time fire department inspectors B. In-service firefighters
C. Building department D. Separate inspection bureau
E. Other (specify) _____ F. No one

22. Who determines that a fire was deliberately set? (Circle letters for all that apply)
A. Fire department arson investigator B. Regional arson task force investigator
C. State arson investigator D. Incident commander or other first-in fire officer
E. Police department F. Contract investigator G. Insurance investigator
H. Other (specify) _____

PART VI. FACILITIES, APPARATUS, AND EQUIPMENT

23. Number of fire stations: _____

Number over 40 years old: _____ Number having backup power: _____

Number equipped for exhaust emission control (e.g., diesel exhaust extraction): _____

24. Number of engines/pumpers in service: (Numbers by age should sum to total.)

Total: _____ 0-14 years old: _____ 15-19 years old: _____

20-29 years old: _____ 30 or more years old: _____ Unknown age: _____

25. Number of ladders/aerials in service: _____

Number of buildings in community that are 4 or more stories in height: (Check one)

❑ None ❑ 1–5 ❑ 6–10 ❑ 11 or more

26. Number of ambulances or other patient transport vehicles: _____

27. Portable radios. a. How many of your emergency responders on-duty on a single shift can be equipped with portable radios? (Check one)

❑ All ❑ Most ❑ Some ❑ None

b. How many of your portable radios are water-resistant? (Check one)

❑ All ❑ Most ❑ Some ❑ None ❑ Don't know

c. How many of your portable radios are intrinsically safe in an explosive atmosphere? (Check one)

❑ All ❑ Most ❑ Some ❑ None ❑ Don't know

d. Do you have reserve portable radios equal to or greater than 10% of your in-service radios? (Check one)

❑ Yes ❑ No ❑ Don't know

28. Self-contained breathing apparatus (SCBA). a. How many emergency responders on-duty on a single shift can be equipped with SCBA? (Check one)

❑ All ❑ Most ❑ Some ❑ None

b. How many of your SCBA are 10 years old or older? (Check one)

❑All ❑ Most ❑ Some ❑ None ❑ Don't know

29. Personal alert safety system (PASS) devices.

How many of your emergency responders on-duty on a single shift are equipped with PASS devices? (Check one)

❑ All ❑ Most ❑ Some ❑ None

30. Personal protective clothing.

a. How many of your emergency responders are equipped with personal protective clothing? (Check one) ❑ All ❑ Most ❑ Some ❑ None

b. How much of your personal protective clothing is at least 10 years old? (Check one) ❑ All ❑ Most ❑ Some ❑ None ❑ Don't know

c. Do you have reserve personal protective clothing sufficient to equip 10% of your emergency responders? (Check one) ❑ Yes ❑ No ❑ Don't know

PART VII. COMMUNICATIONS AND COMMUNICATIONS EQUIPMENT:

31. Multi-agency communication.

a. Can you communicate by radio on an incident scene with your federal, state, and local emergency response partners (includes frequency compatibility)?

❑ Yes ❑ No ❑ Don't know

b. If yes, how many of your partners can you communicate with at an incident scene?

❑ All ❑ Most ❑ Some

32. Map coordinate system.

a. Do you have a map coordinate system you would use to help direct your emergency response partners to specific locations? ❑ Yes ❑ No ❑ Don't know

b. If yes, what system do you use? (Check one)

❑ Based on longitude/latitude

❑ Local system – Map Grid/Street Address/Box Alarm Number

❑ Based on Military Grid Reference System (MGRS)

❑ State Plane Coordinate System ❑ Other (specify) _____

33. Telephone communication. Do you have 911 or similar system? ❑ Yes, 911 basic

❑ Yes, 911 enhanced ❑ Yes, other 3-digit system (specify) _____ ❑ No

34. Dispatch. a. Who has primary responsibility for dispatch operations? (Check one)

❑ Fire department ❑ Police department ❑ Private company

❑ Combined public safety agency ❑ Other (specify) _____

b. Do you also have a backup dispatch facility? ❑ Yes ❑ No

35. Internet access. a.Does your department have Internet access? ❑ Yes ❑ No

b. If yes, describe the access you have. (Check one) ❑ All personnel have individual access

❑ One access point per station, multiple stations ❑ One access point at the only station

❑ Access at headquarters, but there are multiple stations ❑ Other (specify) _____

PART VIII. ABILITY TO HANDLE UNUSUALLY CHALLENGING INCIDENTS

Each question is based on an example incident. We want to know whether you have enough local resources to handle such an incident, and if not, how far you would have to go to obtain sufficient resources. Both the type and the size of the incident are specified to give you something specific to react to and a challenge that will often need more than local resources.

36. Technical rescue and EMS for a building with 50 occupants after structural collapse.

a. Is this type of incident within your department's scope? (Check one) ❑ Yes ❑ No

b. If yes, how far would you have to go to obtain enough people with specialized training for this incident? (Check one) ❑ Local would be enough ❑ Regional ❑ State ❑ National

c. If yes, how far would you have to go to obtain enough specialized equipment to handle this incident? (Check one) ❑ Local would be enough ❑ Regional ❑ State ❑ National

d. Do you have a plan for working with others on this type of incident? (Check one)

❑ Yes, written agreement ❑ Yes, informal ❑ Yes, other (specify) _____ ❑ No

37. Hazmat and EMS for an incident involving chemical/biological agents and 10 injuries.

a. Is this type of incident within your department's scope? (Check one) ❑ Yes ❑ No

b. If yes, how far would you have to go to obtain enough people with specialized training for this incident? (Check one) ❑ Local would be enough ❑ Regional ❑ State ❑ National

c. If yes, how far would you have to go to obtain enough specialized equipment to handle this incident? (Check one) ❑ Local would be enough ❑ Regional ❑ State ❑ National

d. Do you have a plan for working with others on this type of incident? (Check one)

❑ Yes, written agreement ❑ Yes, informal ❑ Yes, other (specify) _____ ❑ No

38. Wildland/urban interface fire affecting 500 acres.

a. Is this type of incident within your department's scope? (Check one) ❑ Yes ❑ No

b. If yes, how far would you have to go to obtain enough people with specialized training for this incident? (Check one) ❑ Local would be enough ❑ Regional ❑ State ❑ National

c. If yes, how far would you have to go to obtain enough specialized equipment to handle this incident? (Check one) ❑ Local would be enough ❑ Regional ❑ State ❑ National

d. Do you have a plan for working with others on this type of incident? (Check one)

❑ Yes, written agreement ❑ Yes, informal ❑ Yes, other (specify) _____ ❑ No

39. Mitigation (confining, slowing, etc.) of a developing major flood.

a. Is this type of incident within your department's scope? (Check one) ❑ Yes ❑ No

b. If yes, how far would you have to go to obtain enough people with specialized training for this incident? (Check one) ❑ Local would be enough ❑ Regional ❑ State ❑ National

c.If yes, how far would you have to go to obtain enough specialized equipment to handle this incident? (Check one) ❑ Local would be enough ❑ Regional ❑ State ❑ National

d. Do you have a plan for working with others on this type of incident? (Check one)

❑ Yes, written agreement ❑ Yes, informal ❑ Yes, other (specify)_____ ❑ No

PART IX. NEW AND EMERGING TECHNOLOGY

40. Thermal imaging cameras. Do you have any now or plan to acquire any?
(Check one) ❑ Now own ❑ Plan to have in 1 year ❑ Plan to have in 5 years ❑ No plan to acquire

41. Mobile data terminals. Do you have any now or plan to acquire any?
(Check one) ❑ Now own ❑ Plan to have in 1 year ❑ Plan to have in 5 years ❑ No plan to acquire

42. Advanced personnel location equipment. Do you have any now or plan to acquire any?
(Check one) ❑ Now own ❑ Plan to have in 1 year ❑ Plan to have in 5 years ❑ No plan to acquire

43. Equipment to collect chem/bio samples for analysis elsewhere. Do you have any now or plan to acquire any?
(Check one) ❑ Now own ❑ Plan to have in 1 year ❑ Plan to have in 5 years ❑ No plan to acquire

PART X. YOUR TOP 3 NEEDS IN YOUR WORDS.

44._____

45._____

46._____