*U.S. Fire Administration*

# Four Years Later – A Second Needs Assessment of the U.S. Fire Service

A Cooperative Study Authorized by U.S. Public Law 108-767, Title XXXVI

*FA-303/October 2006*

Homeland Security

NFPA

## U.S. Fire Administration

## Mission Statement

*As an entity of the Department of Homeland Security, the mission of the USFA is to reduce life and economic losses due to fire and related emergencies, through leadership, advocacy, coordination, and support. We serve the Nation independently, in coordination with other Federal agencies, and in partnership with fire protection and emergency service communities. With a commitment to excellence, we provide public education, training, technology, and data initiatives.*

Homeland Security

A cooperative study between:

US Fire Administration (USFA)
Directorate for Preparedness
Department of Homeland Security
and
National Fire Protection Association (NFPA)


## ACKNOWLEDGEMENTS

NFPA Project Manager: John R. Hall, Jr., Ph.D.
NFPA Senior Statistician: Michael J. Karter, Jr.
USFA Project Officer: Mark A. Whitney

This second needs assessment of the U.S. fire service used the unaltered survey instrument developed in the first needs assessment, with the aim of supporting valid timelines on all questions. Once again, America's fire departments rose to the challenge, carefully reviewed their departments' capabilities and described those capabilities in forms submitted to us for use in this study.

We received essential comments at several stages from colleagues at NFPA and from the staff at USFA, and we greatly appreciate their insights.

Lastly, we want to thank the administrative personnel at NFPA, whose painstaking attention to detail and extended hours of work were instrumental in transforming a set of questions and a stack of forms into a unique database and this analysis report:

- John Baldi
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- Helen Columbo

# EXECUTIVE SUMMARY

The 2005 Fire Service Needs Assessment Survey was conducted as a stratified random-sample survey. (See Introduction for Notes to Reader and Survey Methodology) The NFPA used its own list of local fire departments as the mailing list and sampling frame of all fire departments in the US that report on fire incidents attended.

In all, 15,545 fire departments – just over half the total in NFPA Fire Service Inventory (FSI) database, including all departments protecting communities of at least 50,000 population – were mailed survey forms, and 4,709 responded, for a 30% response rate. Because of time constraints, this second survey limited its second mailing to larger departments and states with unusually low response rates, whereas the first survey in 2001 had included a second mailing to all first-mailing non-respondents. This response rate is similar to the response rate in the 2001 survey's first mailing and is sufficient for reliable results at the national and state levels, overall and by community size. The second mailing to small states with low response rates had minimal impact on national estimates.

The content of the survey was developed by NFPA in the 2001 survey, 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. The survey form was used without modification in order to maximize comparability of results and development of valid timelines.

## The US Fire Service – Revenues and Budgets

- Most of the revenues for all- or mostly-volunteer fire departments come from taxes, either a special fire district tax or some other tax, including an average of 64-68% of revenues covered for communities of less than 5,000 population.

- Other governmental payments – including reimbursements on a per-call basis, other local government payments, and state government payments – contributed an average of 11-13% of revenues for communities under 5,000 population.

- Fund-raising contributed an average of 19% of revenues for communities of less than 2,500 population.

- Used vehicles accounted for an average of 40% of apparatus purchased by or donated to departments protecting communities with less than 2,500 population.

- Converted vehicles accounted for an average of 14% of apparatus used by departments protecting communities with less than 2,500 population.

**Table ES-1. Number of Career, Volunteer, and Total Firefighters by Size of Community**

| Population Protected | Career Firefighters | Volunteer Firefighters | Total Firefighters |
|---|---|---|---|
| 1,000,000 or more | 30,700 | 800 | 31,500 |
| 500,000 to 999,999 | 31,700 | 4,150 | 35,850 |
| 250,000 to 499,999 | 21,200 | 5,450 | 26,650 |
| 100,000 to 249,999 | 45,800 | 4,500 | 50,300 |
| 50,000 to 99,999 | 43,450 | 7,150 | 50,600 |
| 25,000 to 49,999 | 44,850 | 28,000 | 72,850 |
| 10,000 to 24,999 | 48,150 | 83,900 | 132,050 |
| 5,000 to 9,999 | 14,400 | 119,100 | 133,500 |
| 2,500 to 4,999 | 6,100 | 155,750 | 161,850 |
| Under 2,500 | 7,750 | 398,350 | 406,100 |
| Total | 294,100 | 807,150 | 1,101,250 |

**Personnel and Their Capabilities**

- There are roughly 1.1 million active firefighters in the US, of which just under three-fourths (73%) are volunteer firefighters. Nearly half the volunteers serve in communities with less than 2,500 population.

- The number of volunteers has been declining and the number of career firefighters has been increasing for several years. Part of the reason is that there has been a slight shift from all- or mostly-volunteer departments toward all- or mostly-career departments.

- In communities with less than 2,500 population, 21% 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 recognized by national standards as the necessary minimum for interior fire attack.

- An estimated 79,000 firefighters serve in fire departments that protect communities of at least 50,000 population and 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 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 42% of them volunteers serving in communities with less than 2,500 population, serve in departments that are involved in structural firefighting but have not formally trained all involved firefighters in those duties.

- An estimated 128,000 firefighters, most of them volunteers serving in communities with less than 2,500 population, serve in departments that are involved in structural firefighting but have not certified any firefighters to Firefighter Level I or II.

- An estimated 36% of fire departments are involved in delivering emergency medical services (EMS) but have not provided formal training in those duties to all involved personnel.

- The majority of fire departments do not have all their personnel involved in emergency medical services (EMS) certified to the level of Basic Life Support and almost no departments have all those personnel certified to the level of Advanced Life Support.

- An estimated 36% of fire departments involved in hazardous material response have not provided formal training in those duties to all involved personnel.

- More than four out of five fire departments do not have all their personnel involved in hazardous material response certified to the Operational level and almost no departments have all those personnel certified to the Technician level.

- An estimated 63% of fire departments involved in wildland firefighting have not provided formal training in those duties to all involved personnel.

- An estimated 50% of fire departments involved in technical rescue service have not provided formal training in those duties to all involved personnel.

- An estimated 737,000 firefighters serve in fire departments with no program to maintain basic firefighter fitness and health, most of them volunteers serving communities with less than 5,000 population.

**Fire Prevention and Code Enforcement**

- An estimated 67.0 million people (23% of the US resident population in 2005) are protected by fire departments that do not provide plans review.

- An estimated 118.9 million (40%) are protected by departments that do not provide permit approval.

- An estimated 128.9 million (44%) are protected by departments that do not provide routine testing of active systems (e.g., fire sprinklers).

- Each of the above services may be provided by another agency or organization in these communities.

- An estimated 103.6 million people (35%) are protected by fire departments that do not have a program for free distribution of home smoke alarms.

- An estimated 120.8 million people (41%) are protected by fire departments that do not have a juvenile firesetter program.

- An estimated 83.6 million people (28%) are protected by fire departments that do not have a school fire safety education program based on a national model curriculum. Moreover, independent data on the breadth of implementation of such curricula indicate that most fire departments reporting programs provide only annual or occasional presentations based on material from such a curriculum.

- An estimated 20.3 million people (7%) live in communities where no one conducts fire-code inspections. Two-fifths of this population live in rural communities, with less than 2,500 population.

**Facilities, Apparatus and Equipment**

- Roughly 17,300 fire stations (36% of the estimated 48,400 total fire stations) are estimated to be at least 40 years old.

- Roughly 26,000 fire stations (54%) have no backup power.

- Roughly 35,000 fire stations (72%) 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 have too few fire stations to meet the guidelines.

- Roughly 14,000 fire engines (pumpers) (17% of all engines) are 15 to 19 years old, another 15,700 (19%) are 20 to 29 years old, and 10,900 (13%) are at least 30 years old. Therefore, roughly half (49%) of all engines are at least 15 years old.

- Among fire departments protecting communities with less than 2,500 population, at least 14% of departments are estimated to have no ladder/aerial apparatus but to have at least one building 4 stories high or higher in the community.

- An estimated 65% of fire departments do not have enough portable radios to equip all emergency responders on a shift. The percentage of departments that cannot provide radios to all emergency responders on a shift is highest for communities under 2,500 population.

- An estimated seven-tenths to three-fourths of fire departments have at least some portable radios that are not water-resistant. An estimated three-fourths to four-fifths of fire departments have at least some portable radios that lack intrinsic safety in an explosive atmosphere. The percentages are higher for small, rural communities.

- An estimated 60% of fire departments do not have enough self-contained breathing apparatus (SCBA) to equip all firefighters on a shift.

- Three-fifths (59%) of fire departments have at least some SCBA units that are at least 10 years old.

- An estimated half (48%) of fire departments do not have enough personal alert system (PASS) devices to equip all emergency responders on a shift.

- An estimated 8% of fire departments do not have enough personal protective clothing to equip all firefighters, most of them departments protecting communities with less than 2,500 population.

- An estimated two-thirds (66%) of departments have at least some personal protective clothing that is at least 10 years old.

**Communications and Communications Equipment**

- Three-fifths to four-fifths of fire departments (64-77%, by size of community protected) say they can communicate at incident scenes with their Federal, state, and local partners. Of these, though, only one-third say they can communicate with all their partners. This means only about one-fourth of departments overall can communicate with all partners.

- Roughly half of all fire departments have no map coordinate system. Most departments with a map coordinate system have only a local system. Interoperability of spatial-based plans, information systems, equipment, and procedures probably will not be possible under these circumstances, for multiple jurisdiction/agency catastrophic disaster response. The U. S. National Grid (USNG-NAD83) standard was adopted by the Federal Geographic Data Committee (12/2001) as the system best suited for eventual national standardization. (http://www.fgdc.gov/usng/index.html)

- One-fourth (28%) of departments (37% of rural fire departments) have 911-Basic for telephone communication. Two-thirds to three-fourths (71%) have 911-Enhanced, and only 1% have no special 3-digit number.

- Overall, one community in 16 (7%) has primary responsibility for dispatch operations lodged with the fire department, but that fraction rises to four-fifths for communities of at least 1 million population.

- One-third (30%) of communities have primary dispatch responsibility lodged with the police department, and another two-fifths (39%) with a combined public safety department.

- Two-fifths of departments (39%) lack a backup dispatch facility, including nearly half (46%) of departments protecting communities with less than 2,500 population.

- One-fourth (24%) of departments lack Internet access.

**Ability to Handle Unusually Challenging Incidents**

- 11% of fire departments can handle a technical rescue with EMS at a structural collapse of a building with 50 occupants with local trained personnel.
  - One-third (34%) of all departments consider such an incident outside their responsibility. This 2001 survey reported 44% of departments considered such an incident outside their responsibility.
  - 11% can handle the incident with local specialized equipment.
  - 26% have a written agreement to direct use of non-local resources.
  - All needs are greater for smaller communities.
- 12% of fire departments can handle a hazmat and EMS incident involving chemical/biological agents and 10 injuries with local trained personnel.
  - One-third (32%) of all departments consider such an incident outside their responsibility. The 2001 survey reported that 42% of departments considered such an incident outside their responsibility.
  - 10% can handle the incident with local specialized equipment.
  - 30% have a written agreement to direct use of non-local resources.
  - All needs are greater for smaller communities.
- 24% of fire departments can handle a wildland/urban interface fire affecting 500 acres with local trained personnel.

- One-fourth (27%) of all departments consider such an incident outside their responsibility.
- 21% can handle the incident with local specialized equipment.
- Roughly half the departments that consider such an incident within their responsibility, and 40% overall, have a written agreement to direct use of non-local resources.
- All needs for local resources are less for the largest and smallest communities, and the need for written agreements is greater for smaller communities.

- 11% of fire departments can handle mitigation of a developing major flood with local trained personnel.
  - The majority of departments (52%) consider such an incident outside their responsibility.
  - 9% can handle the incident with local specialized equipment.
  - 18% have a written agreement to direct use of non-local resources.
  - All needs are greater for smaller communities.

**New and Emerging Technology**

- The majority of fire departments (55%) now own thermal imaging cameras, and the majority of those that do not have them now have plans to acquire them. The 2001 survey reported only 24% of departments had such cameras and most that did not have them professed no plans to acquire them.

- Only one department in 17 has mobile data terminals, only one in 31 has advanced personnel location equipment, and only one in 18 has equipment to collect chemical or biological samples for remote analysis. Most departments have no plans to acquire any of this equipment.

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# INTRODUCTION

## Notes to the Reader

The following considerations should be kept in mind when using this report:

- This is a fire department self-assessment survey. It defines needs by comparing self-reported resources to available standards or other guidance (which are identified where they are used) on what is needed to do a safe and effective job. These estimates may not be the same as would be produced by using DHS hazard/risk assessment methods or asking local authorities for their judgments of priority local needs.

- This survey was sent out shortly after Hurricane Katrina, which probably affected response rates from those areas involved.

- The response rates varied by stratum with departments protecting smaller communities responding at lower rates than those protecting larger communities. Lower response rates increase the risk for nonresponse bias in estimates. Weighting factors based on response rates and sampling fractions are used to combine results across strata. See the next section entitled 'Survey Methodology' for a breakdown of response rates by stratum.

- Except for the first table with results stated in terms of population protected numbers (Table A), other estimates of population protected use a method in which percentages of departments within stratum having a characteristic are multiplied by the total population protected for the entire stratum per the NFPA Fire Service Inventory (FSI)*. An analogous method is used for estimates of numbers of firefighters after the initial tables. These methods introduce an additional source of variability and potential bias into those estimates.

- Results from all surveys are subject to both sampling and non-sampling error. When a sample, rather than the entire population, is surveyed, there is a chance that the sample estimates may differ from the "true" population values they represent. This "sampling error" varies depending on the particular sample selected and is reflected in the "Margin of Error". In addition, the survey data are also affected by non-sampling errors, which can occur for many reasons including failure to sample a segment of the population, inability to obtain information for all respondents in the sample, the inability or unwillingness of respondents to provide correct information, and errors made in the collection or processing of the data.

**Survey Methodology**

The 2005 Fire Service Needs Assessment survey was conducted as a stratified random sample by size of community. A stratified sample was selected with all larger departments (protecting over 50,000 population) included, and a random sample of departments protecting smaller communities was also selected. It was estimated that a response of approximately 4,500 fire departments would be sufficient to make reliable national estimates and state estimates as long as it included a good response from larger departments.

The NFPA used its own list of local fire departments as the sampling frame of all fire departments in the U.S. In all, 27,166 fire departments were listed on the NFPA FSI*. The following table includes sample size and number of fire departments responding by community size.

**Table M-1. Sample Size and Number of Fire Departments Responding by Community Size**

| Population of Community | (1) Number of Fire Departments on FSI | (2) Number of Fire Departments in Sample | Number of Fire Departments Responding | Response Rate (% of Sample) |
|---|---|---|---|---|
| 1,000,000 or more | 15 | 15 | 10 | 67 |
| 500,000 to 999,999 | 38 | 38 | 28 | 74 |
| 250,000 to 499,999 | 54 | 54 | 46 | 85 |
| 100,000 to 249,999 | 217 | 217 | 169 | 78 |
| 50,000 to 99,999 | 448 | 448 | 300 | 67 |
| 25,000 to 49,999 | 1,073 | 845 | 440 | 52 |
| 10,000 to 24,999 | 2,939 | 2,000 | 888 | 44 |
| 5,000 to 9,999 | 3,764 | 2,961 | 923 | 31 |
| 2,500 to 4,999 | 4,868 | 3,967 | 937 | 24 |
| Under 2,500 | 13,750 | 5,000 | 968 | 19 |
| Total | 27,166 | 15,545 | 4,709 | 30 |

1. The NFPA FSI file was the sampling frame.
2. Stratified random sample.

Response rates were quite similar to response rates achieved from the *first* mailing of the 2001 Fire Service Needs Assessment Survey (the final response rate in the 2001 survey was 46%) and annually achieved in the annual NFPA Fire Experience Survey. Response rates varied considerably by size of community protected, with larger communities responding at a rate of 67% to 85%, medium sized communities at a rate of 44% to 52%, and smaller communities (less than 10,000) responding at a rate of 19% to

31%. Low response rates for smaller departments (comprised mostly of volunteers) occur for a number of reasons, including lack of personnel to complete surveys.

Response rates of larger communities were bolstered by a second mailing to all departments that protect communities of 50,000 or more that had not responded to the initial mailing. Also, states with unusually low response rates were sent a second mailing. Approximately 300 departments responded to the second mailing to small states, and this had minimal impact on national estimates. A second mailing was not sent to all nonrespondents from the first mailing due to the time constraints of the project.

The national results presented in this report are based on 4,709 fire departments, or 30% of the sample, that responded to the 2005 Fire Needs Assessment Survey. The overall total response was sufficient for reliable results at the national and state levels, overall and by community size. Total national results in the survey report were made by summing up the weighted estimates for each stratum, and the stratification methodology adjusted for response rates by community size.

Most of the results in this report are for a proportion (e.g., percent of fire departments that provide EMS services). The results in this report are based on standard statistical methodology for a stratified random sample.** In general, the margin of error will not exceed +/-2% for national results (It will be smaller for proportions close to zero or one). Results for individual community size strata have larger margins of error that range between about +/-10% to +/-19% for communities with over 500,000 population to about +/-6% for communities of 250,000 to 499,999, and about +/-3% to +/-4% for smaller communities.*** This margin of error accounts for sampling variability but not for other issues, e.g., bias due to non-response or other non-sampling errors.

* The NFPA Fire Service Inventory (FSI) file is a listing of all known fire departments in the U.S. The file is continuously maintained by a three year cycle survey which surveys one third of the country each year. The survey is also updated by review of fire marshal listings by state, other NFPA mailings, and other data sources.

** William G. Cochran, Sampling Techniques, John Wiley & Sons, New York, NY, 1977.

*** Because a census was conducted of communities over 50,000, there is technically no “sampling error” per se. However, as noted in the previous table, not all of the departments responded, so there is uncertainty in how well the sample estimate reflects the true population value due to weighting and potential bias. To estimate potential error for estimates by strata, we computed the margin of error if all of the respondents for these communities were in fact the random sample selected from that population (with finite population corrections applied). The margins of error for the other strata reflect standard calculations.

**FEMA Survey Project on Needs of the US Fire Service**

The report that follows presents results based on data from US local fire departments participating in a needs assessment survey.
The questionnaire 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 responsibility. 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 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 US fire departments are volunteer fire departments, but most of the US is protected by career firefighters. Tables 1 and 2 (pp. 6-7) provide summary overviews of US fire departments.

Roughly three of every four US fire departments (73%) are all-volunteer fire departments, but only one of every four US residents (23%) are protected by such a department. Only one in 15 fire departments is all-career, but roughly two of every five US residents (43%) are protected by such a department. Fire departments split roughly 7.5-to-1 between the all- or mostly-volunteer departments vs. the all- or mostly-career departments, but population protected splits roughly 3-to-2 the other way.

From 2001 to 2005, the all-career departments changed slightly from 6% to 7% of departments and from 40% to 43% of population protected. At the other end, the all-volunteer departments changed from 76% to 73% of departments and from 26% to 23% of population protected.

Volunteers are concentrated in rural communities, while career firefighters are found disproportionately in large communities. The all- or mostly-career departments account for all of the fire departments protecting communities of at least 1 million population and for more than 90% of the fire departments protecting communities of 250,000 to 999,999 population. All- or mostly-career departments still account for a majority 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 99% protected by all- or mostly-volunteer departments and account for over half (57%) of all the all- or mostly-volunteer departments in the US.

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.

**Budgets and Revenue Sources**

The first questions of the Needs Assessment Survey focused on big-picture budget and revenue issues. Table 3 (p. 12) asked whether the department has a plan for apparatus replacement on a regular schedule. This is the kind of long-range, capital-budget type of plan that might be more likely in a community with established, institutionalized sources of revenue for the fire department, as one would expect to see in with a career fire department. The overall percent of departments with such plans was 38% in the latest Needs Assessment Survey.

Table 3 shows that above a population of 25,000, which is the dividing line for the majority of departments being all- or mostly-career vs. all- or mostly-volunteer, at least three-fourths (74%) of departments in every community-size group have such plans. Below 10,000 population, the majority of departments do not have such plans, and among rural communities, only one department in four has such a plan.

Table 4 (p. 13) addresses the related question of whether the department's normal budget covers the costs of apparatus replacement or whether the department must seek funds in a more ad hoc fashion, such as seeking a special appropriation for such a purchase. Above a population of 50,000, at least 57% of the departments in each population interval cover apparatus replacement in their normal budget. For communities of 25,000 to 49,999 population, half the departments (49%) cover apparatus replacement in their normal budget. The percentage with apparatus replacement covered in normal budgets drops to 33% for communities of 10,000 to 24,999 population; to 23% for communities of 5,000 to 9,999 population; to 17% for communities of 2,500 to 4,999 population; and to 10% for communities of less than 2,500 population. Because most departments are small all-volunteer departments serving a rural population, this last figure dominates the results for the US fire service as a whole, where only 19% of departments have apparatus replacement covered by the normal budget.

The remaining questions in the "Budget Information" section of the survey were asked only of all- or mostly-volunteer fire departments and were designed to further refine the picture of where their revenue comes from and how such departments acquire apparatus. Tables 5 and 6 (pp. 10-11) provide those results. These questions were analyzed only for communities of less than 50,000 population, which is the maximum community size for which at least one-third of departments are all- or mostly-volunteer.

Table 5 shows that most revenues for all- or mostly-volunteer departments are covered by taxes, either a special fire district tax or some other tax. The share of revenues contributed in this way was 72-81% for communities of 5,000 to 49,999 population and 64-68% for communities of less than 5,000 population. Other governmental payments – including reimbursements on a per-call basis, other local government payments, and state government payments – ranged from 9% of revenues for communities of 25,000 to 49,999 population up to 13% of revenues for communities under 2,500 population. Most of the rest was obtained through fund-raising, which ranged from 8% to 9% of revenues contributed for communities of at least 10,000 population up to 19% of revenues contributed for communities of less than 2,500 population.

Table 6 shows that the smaller communities, with less certain sources of revenue, are more likely to obtain their apparatus either used or converted from a non-fire-department design and use. Vehicles that were purchased or, less often, donated used accounted for an average of 6% of apparatus for departments protecting communities with at least 25,000 population but an average of 40% of apparatus for departments protecting communities with less than 2,500 population.

The smaller the community, the higher the converted-vehicle percentage was. More specifically, converted vehicles accounted for an average of 3% of apparatus for departments protecting communities with at least 25,000 population but an average of 14% of apparatus for departments protecting communities with less than 2,500 population.

Because converted vehicles were not originally designed for fire department use, it can be especially challenging to assure that they are safe and effective, but it essential that any vehicle, converted or not, be evaluated for its compliance with applicable standards, in order to avoid undue hazard or risk to the firefighters who operate it. A starting point for such an evaluation can be NFPA 1912, *Standard for Fire Apparatus Refurbishing*.

**Table 1**
**Number of Departments and Percent of US Population Protected by Type of Department**
**(Q. 1, 7, 8)**

| Type of Department | Number | Percent | Percent of US Population Protected |
|---|---|---|---|
| All Career | 1,842 | 6.8% | 42.6% |
| Mostly Career | 1,304 | 4.8% | 18.6% |
| Mostly Volunteer | 4,105 | 15.1% | 16.3% |
| All Volunteer | 19,915 | 73.3% | 22.6% |
| Total | 27,166 | 100.0% | 100.0% |

Source: FEMA US Fire Administration 2005
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.

The above projections are based on 4,672 departments reporting on Questions 1, 7 and 8. Numbers may not add to totals due to rounding.

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

## Table 2
## Department Type, by Community Size
## (Q. 1, 7, 8)

| Population of Community | All Career Number Depts | All Career Percent | Mostly Career Number Depts | Mostly Career Percent | Mostly Volunteer Number Depts | Mostly Volunteer Percent | All Volunteer Number Depts | All Volunteer Percent | Total Number Depts | Total Percent |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 11 | 73.3% | 4 | 26.7% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 24 | 63.0 | 13 | 33.3 | 1 | 3.7 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 26 | 47.7 | 22 | 40.9 | 6 | 11.4 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 175 | 80.5 | 32 | 14.6 | 9 | 4.3 | 1 | 0.6 | 217 | 100.0 |
| 50,000 to 99,999 | 320 | 71.6 | 78 | 17.3 | 42 | 9.3 | 8 | 1.7 | 448 | 100.0 |
| 25,000 to 49,999 | 477 | 44.4 | 241 | 22.5 | 241 | 22.5 | 114 | 10.6 | 1,073 | 100.0 |
| 10,000 to 24,999 | 599 | 20.4 | 532 | 18.1 | 1,110 | 37.8 | 698 | 23.8 | 2,939 | 100.0 |
| 5,000 to 9,999 | 128 | 3.4 | 227 | 6.0 | 1,218 | 32.3 | 2,191 | 58.2 | 3,764 | 100.0 |
| 2,500 to 4,999 | 32 | 0.6 | 74 | 1.5 | 736 | 15.1 | 4,027 | 82.7 | 4,868 | 100.0 |
| Under 2,500 | 57 | 0.4 | 86 | 0.6 | 728 | 5.3 | 12,879 | 93.7 | 13,750 | 100.0 |
| Total | 1,841 | 6.8 | 1,304 | 4.8 | 4,105 | 15.1 | 19,915 | 73.3 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
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.

The above projections are based on 4,672 departments reporting on these questions. Numbers may not add to totals due to rounding.

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

## Table 3
## Does Department Have a Plan for Apparatus Replacement on a Regular Schedule? by Community Size (Q. 3)

| | Yes | | No | | Total | |
|---|---|---|---|---|---|---|
| **Population of Community** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** |
| 1,000,000 or more | 12 | 80.0% | 3 | 20.0% | 15 | 100.0% |
| 500,000 to 999,999 | 36 | 94.7 | 2 | 5.3 | 38 | 100.0 |
| 250,000 to 499,999 | 47 | 87.0 | 7 | 12.9 | 54 | 100.0 |
| 100,000 to 249,999 | 185 | 85.3 | 32 | 14.7 | 217 | 100.0 |
| 50,000 to 99,999 | 352 | 78.6 | 96 | 21.4 | 448 | 100.0 |
| 25,000 to 49,999 | 793 | 73.9 | 280 | 26.1 | 1,073 | 100.0 |
| 10,000 to 24,999 | 1,724 | 58.7 | 1,215 | 41.3 | 2,993 | 100.0 |
| 5,000 to 9,999 | 1,742 | 46.3 | 2,022 | 53.7 | 3,764 | 100.0 |
| 2,500 to 4,999 | 1,897 | 39.0 | 2,971 | 61.0 | 4,868 | 100.0 |
| Under 2,500 | 3,485 | 25.4 | 10,265 | 74.7 | 13,750 | 100.0 |
| Total | 10,276 | 37.8 | 16,890 | 62.2 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,531 departments reporting on Question 3. Numbers may not add to totals due to rounding.

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

## Table 4
## Does Department's Normal Budget Cover the Costs of Apparatus Replacement? by Community Size
## (Q. 4)

| | Yes | | No* | | Total | |
|---|---|---|---|---|---|---|
| **Population of Community** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** |
| 1,000,000 or more | 12 | 80.0% | 3 | 20.0% | 15 | 100.0% |
| 500,000 to 999,999 | 30 | 78.9 | 8 | 21.1 | 38 | 100.0 |
| 250,000 to 499,999 | 36 | 66.7 | 18 | 33.3 | 54 | 100.0 |
| 100,000 to 249,999 | 149 | 68.7 | 68 | 31.3 | 217 | 100.0 |
| 50,000 to 99,999 | 257 | 57.4 | 191 | 42.6 | 448 | 100.0 |
| 25,000 to 49,999 | 528 | 49.2 | 545 | 50.8 | 1,073 | 100.0 |
| 10,000 to 24,999 | 967 | 32.9 | 1,972 | 67.1 | 2,939 | 100.0 |
| 5,000 to 9,999 | 847 | 22.5 | 2,917 | 77.5 | 3,764 | 100.0 |
| 2,500 to 4,999 | 847 | 17.4 | 4,021 | 82.6 | 4,868 | 100.0 |
| Under 2,500 | 1,431 | 10.4 | 12,319 | 89.6 | 13,750 | 100.0 |
| Total | 5,105 | 18.8 | 22,061 | 81.2 | 27,166 | 100.0 |

*"No" means the department must raise or seek funds to cover some or all expenses.

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,537 departments reporting on Question 4. Numbers may not add to totals due to rounding.

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

**Table 5**
**For All- or Mostly-Volunteer Departments**
**Sources of Budget Revenue**
**by Share (%) of Revenue and Community Size**
**(Q. 5)**

| Population of Community | Fire District or Other Tax | Payment per Call | Other Local Payment | State Government | Fund Raising | Other | Total |
|---|---|---|---|---|---|---|---|
| 25,000 to 49,999 | 80.5% | 1.1% | 5.4% | 2.8% | 7.8% | 2.4% | 100.0% |
| 10,000 to 24,999 | 76.3 | 1.8 | 6.6 | 3.7 | 9.4 | 2.1 | 100.0 |
| 5,000 to 9,999 | 72.4 | 1.7 | 5.9 | 3.2 | 13.2 | 3.7 | 100.0 |
| 2,500 to 4,999 | 68.3 | 1.5 | 5.3 | 4.3 | 16.8 | 3.8 | 100.0 |
| Under 2,500 | 63.9 | 1.4 | 6.1 | 5.9 | 18.7 | 3.9 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,005 departments reporting on Question 5. Numbers may not add to totals due to rounding.

Q. 5: What share (%) of your budgeted revenue is from [each of the listed alternatives]?

## Table 6
## For All- or Mostly-Volunteer Departments
## Manner of Purchase of Apparatus
## by Share (%) of Apparatus and Community Size
## (Q. 6)

| Population of Community | Purchased New | Donated New | Purchased Used | Donated Used | Converted Vehicles | Other | Total |
|---|---|---|---|---|---|---|---|
| 25,000 to 49,999 | 91.2% | 0.1% | 5.5% | 0.6% | 2.5% | 0.0% | 100.0% |
| 10,000 to 24,999 | 84.2 | 0.3 | 9.5 | 1.5 | 3.7 | 0.6 | 100.0 |
| 5,000 to 9,999 | 76.1 | 0.6 | 13.5 | 2.7 | 5.8 | 1.2 | 100.0 |
| 2,500 to 4,999 | 62.9 | 0.7 | 21.4 | 3.6 | 10.4 | 0.8 | 100.0 |
| Under 2,500 | 43.5 | 1.0 | 33.3 | 7.0 | 13.7 | 1.7 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 2,967 departments reporting on Question 6. Numbers may not add to totals due to rounding.

Q. 6: What share (%) of your apparatus was [each of the listed alternatives]?

## PERSONNEL AND THEIR CAPABILITIES

### Number of Firefighters

Table A indicates the number of career, volunteer, and total firefighters, by the size of the community their fire department protects. These numbers will be used repeatedly throughout the report to convert survey responses phrased in terms of the fraction of a department's firefighters having a characteristic into estimates of the number of firefighters having that characteristic.

**Table A. Number of Career, Volunteer, and Total Firefighters by Size of Community (Q. 1, 7, 8)**

| Population Protected | Career Firefighters | Volunteer Firefighters | Total Firefighters |
|---|---|---|---|
| 1,000,000 or more | 30,700 | 800 | 31,500 |
| 500,000 to 999,999 | 31,700 | 4,150 | 35,850 |
| 250,000 to 499,999 | 21,200 | 5,450 | 26,650 |
| 100,000 to 249,999 | 45,800 | 4,500 | 50,300 |
| 50,000 to 99,999 | 43,450 | 7,150 | 50,600 |
| 25,000 to 49,999 | 44,850 | 28,000 | 72,850 |
| 10,000 to 24,999 | 48,150 | 83,900 | 132,050 |
| 5,000 to 9,999 | 14,400 | 119,100 | 133,500 |
| 2,500 to 4,999 | 6,100 | 155,750 | 161,850 |
| Under 2,500 | 7,750 | 398,350 | 406,100 |
| Total | 294,100 | 807,150 | 1,101,250 |

The above projections are based on 4,675 departments reporting on Questions 7 and 8. Numbers are estimated to the nearest 50 and may not add to totals due to rounding.

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

Table A data on the number of firefighters by community size can be combined with needs-assessment survey results on the percent of firefighters, by community size, who have some need-related characteristic. The result is an estimate of the number of firefighters, by community size, with that need-related characteristic.

Table B indicates the average number of career/paid firefighters per department who are on duty available to respond to emergencies, by size of community the department

protects. These figures do not indicate the average number of firefighters per department on duty, because volunteers are not included and every community-size interval has some departments that are not all-career departments.

**Table B. Average Number of Career/Paid Firefighters per Department on Duty Available to Respond to Emergencies, by Size of Community (Q. 9)**

| Population Protected | # of Firefighters |
|---|---|
| 1,000,000 or more | 387.4 |
| 500,000 to 999,999 | 221.6 |
| 250,000 to 499,999 | 105.6 |
| 100,000 to 249,999 | 55.3 |
| 50,000 to 99,999 | 26.0 |
| 25,000 to 49,999 | 12.5 |
| 10,000 to 24,999 | 5.5 |
| 5,000 to 9,999 | 2.0 |
| 2,500 to 4,999 | 0.8 |
| Under 2,500 | 0.5 |

The above projections are based on 3,029 departments reporting on Question 9.

Q. 9: Average number of career/paid firefighters on duty available to respond to emergencies.

**Adequacy of Number of Firefighters Responding**

Tables 7-9 (pp. 29-31) provide statistics on numbers of firefighters responding to fight fires under certain circumstances (e.g., as volunteer or career firefighters, to a certain type of fire or with a certain type of apparatus).

These indicators of response profiles can be 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 are complicated, however, because many fire departments have both career and volunteer firefighters, while Questions 10-12 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 are preventing conflagrations, preventing fire from

involving an entire large structure, or intervening decisively before the onset of flashover in the room of fire origin. Other analyses will address measures that are more related to those questions.

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.

### Volunteer Firefighters

Table 7 provides statistics on the average number of volunteer firefighters who respond to a mid-day house fire, for only the all- or mostly-volunteer fire departments in communities under 50,000 population. Note that a "mostly-volunteer" department might respond with some career firefighters as well, and those numbers are not included in Table 7.

NFPA 1720, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*, calls for a minimum of 4 firefighters on-site before an interior attack on a structure fire is begun. There are difficulties in applying these standards to Table 7. As noted, responding career firefighters from mostly-volunteer departments are not shown, the statistics shown are average numbers responding rather than minimum numbers responding, and the threshold number of 4 is combined with averages from 3 to 4 in the questionnaire. Nevertheless, some limited observations are possible.

Departments that deliver an average of 1-2 volunteers to a mid-day house fire almost certainly fall below the minimum of 4 firefighters in most responses, at least for departments protecting communities with less than 5,000 population, because Table B indicated that those departments average only 1-2 career firefighters on duty for the department. Departments that deliver an average of 1-2 volunteers (and an unknown number of career firefighters) to a mid-day house fire constituted 3% of departments protecting communities with less than 2,500 population and 3% of departments protecting communities with 2,500 to 4,999 population (see Table 7).

Departments that deliver an average of 3-4 volunteers may fall below the minimum number of 4 firefighters in some responses. Departments that deliver an average of 4 or fewer volunteers to a mid-day house fire constituted 21% of departments protecting communities with less than 2,500 population. Because roughly 8% of the US resident population live in communities of this size, this suggests roughly 2% of the US population is protected by fire departments that average fewer than 4 firefighters responding to a mid-day house fire and so may often fail to achieve the minimum standard response to initiate an interior attack. (The 2% is calculated as 8% of 21%.)

### Career Firefighters

Table 8 provides statistics for only the all- or mostly-career fire departments in communities with 10,000 or more population, on the number of career firefighters assigned to an engine or pumper. Note that a "mostly career" department might also respond with some volunteers, and those numbers are not reflected in Table 8. 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*, requires a minimum of 4 firefighters on an engine or pumper.

The percentage of departments with fewer than 4 career firefighters assigned to an engine or pumper is 75% for departments protecting 10,000 to 24,999 population, 77% for departments protecting 25,000 to 49,999 population, 71% for departments protecting 50,000 to 99,999 population, 59% for departments protecting 100,000 to 249,999 population, 44% for departments protecting 250,000 to 499,999 population, 27% for departments protecting 500,000 to 999,999 population, and 10% for departments protecting at least a million population.

Because Table A indicates that communities with less than 50,000 population have a substantial number of volunteer firefighters, it is appropriate to focus on departments protecting communities of 50,000 population or more as the ones where the number of responding career firefighters will tend to be the same as the number of responding total firefighters.

This translates into an estimated 79,000 career firefighters serving in fire departments where the community protected has at least 50,000 population and fewer than 4 career firefighters are assigned to an engine. (This figure is calculated as the sum over all community sizes of 50,000 population or more of [number of career firefighters in a community size interval, from Table A] times [percentage of all- or mostly-career fire departments in that interval that assign fewer than 4 people to an engine, from Table 8].)

Table 9 provides statistics comparable to those in Table 8 but for ladder apparatus. There is no comparable simple formula to use in assessing the adequacy of these numbers, so the table is presented without comment.

## Extent of Training and Certification, by Type of Duty

### Structural Firefighting

Table 10 (p. 36) indicates whether structural firefighting is within the responsibility of the fire department. Less than 1% of departments say no, nearly all of them in rural communities serving less than 2,500 population.

Table 11 (p. 37) 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.

**Figure 1. Estimated Percent of Firefighters in Departments That Are Involved in Structural Firefighting But Where Not All Involved Firefighters Have Formal Training**

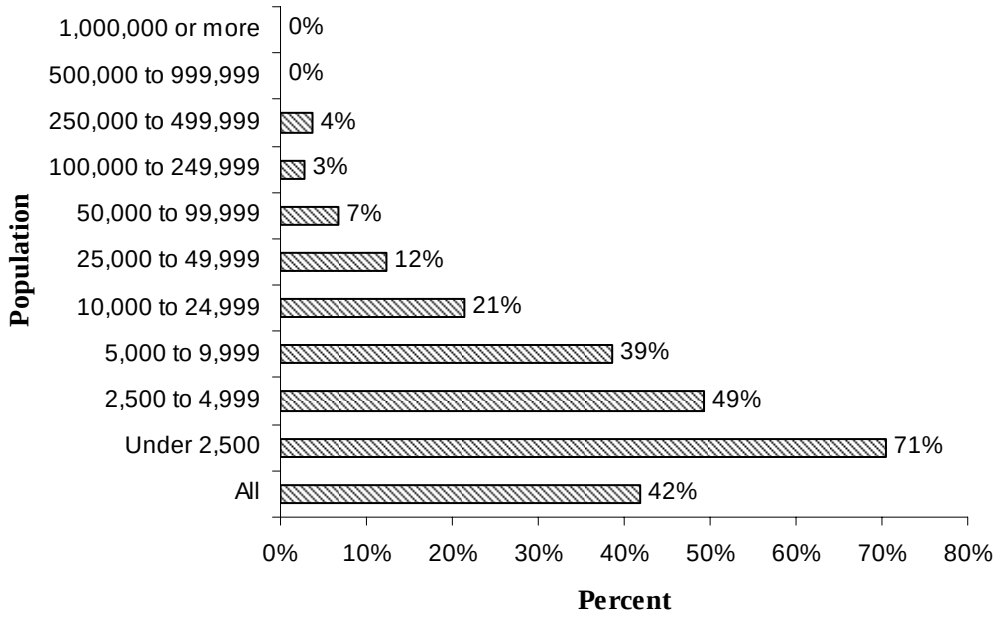



Table C indicates what percentage of departments perform structural firefighting and either (a) do not have all firefighters involved in structural firefighting trained or (b) only have some or none of involved firefighters trained. The first percentages identify departments with some need, because all involved firefighters should be trained. The second percentages identify departments with substantial need, because all such departments have only some or none of their involved firefighters trained. Figure 1 shows the same percentages, but the percentage for all fire departments is weighted by the total number of firefighters in each community size group. Therefore, Figure 1 indicates the estimated percentage of firefighters working in departments where not all involved firefighters have been trained.

From Table C and Figure 1, it may be seen that 53% of fire departments, with an estimated 42% of firefighters, do not have all involved firefighters trained. Also, 20% of fire departments only have some or none of involved firefighters trained.

In the largest cities, there were no departments with reported need, and the percentage without all involved firefighters trained was less than 10% for communities down to 50,000 population. By contrast, 71% of rural fire departments, protecting communities of less than 2,500 population, did not have all involved firefighters trained, and 31% did not have all or most involved firefighters trained.

**Table C. Estimated Percentage of Fire Departments That Are Involved in Structural Firefighting But Where Not All Involved Firefighters Have Formal Training by Size of Community Protected (Q. 13b)**

| Population Protected | Not All Involved Firefighters Have Formal Training | Only Some or None of Involved Firefighters Have Formal Training |
|---|---|---|
| 1,000,000 or more | 0% | 0% |
| 500,000 to 999,999 | 0% | 0% |
| 250,000 to 499,999 | 4% | 2% |
| 100,000 to 249,999 | 3% | 1% |
| 50,000 to 99,999 | 7% | 1% |
| 25,000 to 49,999 | 12% | 1% |
| 10,000 to 24,999 | 21% | 4% |
| 5,000 to 9,999 | 39% | 7% |
| 2,500 to 4,999 | 49% | 14% |
| Under 2,500 | 71% | 31% |
| Total | 53% | 20% |

The above projections are based on 4,616 departments reporting yes on Question 13a and reporting on Question 13b. "Not All" means Most, Some, or None. See Tables 10 and 11.

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.

Table 12 (p. 38) indicates what levels of certification are held by some or all of the firefighters who perform structural firefighting, by department. An estimated 128,000

firefighters are estimated to serve in fire departments where no certification of firefighters as Firefighter Level I or II has taken place.

None of these firefighters were in fire departments protecting populations of 250,000 or more. Most of the firefighters in departments with no certification for structural firefighting were in rural fire departments and so were almost certainly volunteer firefighters.

Note that there may be other firefighters – possibly many other firefighters – who lack certification serving in departments where some firefighters are certified. These firefighters are not reflected in the 128,000 figure cited above. Conversely, some departments where no one is certified may be providing a local equivalent of certification. The breakdown by community size is shown in Table D.

**Table D. Estimated Number of Firefighters Involved in Structural Firefighting Serving in Fire Departments Where No One is Certified, by Size of Community Protected (Q. 13c)**

| Population Protected | Estimated Firefighters Lacking Certification |
|---|---|
| 1,000,000 or more | 0 |
| 500,000 to 999,999 | 0 |
| 250,000 to 499,999 | 0 |
| 100,000 to 249,999 | 3,000 |
| 50,000 to 99,999 | 2,000 |
| 25,000 to 49,999 | 3,000 |
| 10,000 to 24,999 | 6,000 |
| 5,000 to 9,999 | 10,000 |
| 2,500 to 4,999 | 20,000 |
| Under 2,500 | 84,000 |
| Total | 128,000 |
| Percent of total firefighters | 12% |

The above projections are based on 4,671 departments reporting yes on Question 13a and reporting on Question 13c. Numbers are estimated to the nearest 1,000 and may not add to totals due to rounding. See Tables 10 and 12.

Q. 13c: [If structural firefighting is a role your department performs,] have any of your personnel been certified to any of the following levels? Firefighter Level I and II.

## Emergency Medical Service

Table 13 (p. 39) asks whether emergency medical service (EMS) is within the responsibility of the fire department. Roughly one-third (33%) of departments say no, mostly in smaller communities. However, even for rural fire departments, protecting fewer than 2,500 population, most fire departments (60%) now provide EMS.

Table 14 (p. 40) 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 E, in terms of percent of departments performing this duty where not all involved personnel (or only some or none of involved personnel) have formal training. For communities of 100,000 population or more, no more than 10% of departments are involved in EMS but fail to have formal training for all personnel involved in EMS. For rural communities of less than 2,500 population, two-fifths (41%) of departments are involved in EMS but do not have all involved personnel formally trained.

**Figure 2. Estimated Percent of Departments That Are Involved in EMS But Where Not All Involved Personnel Have Formal Training**

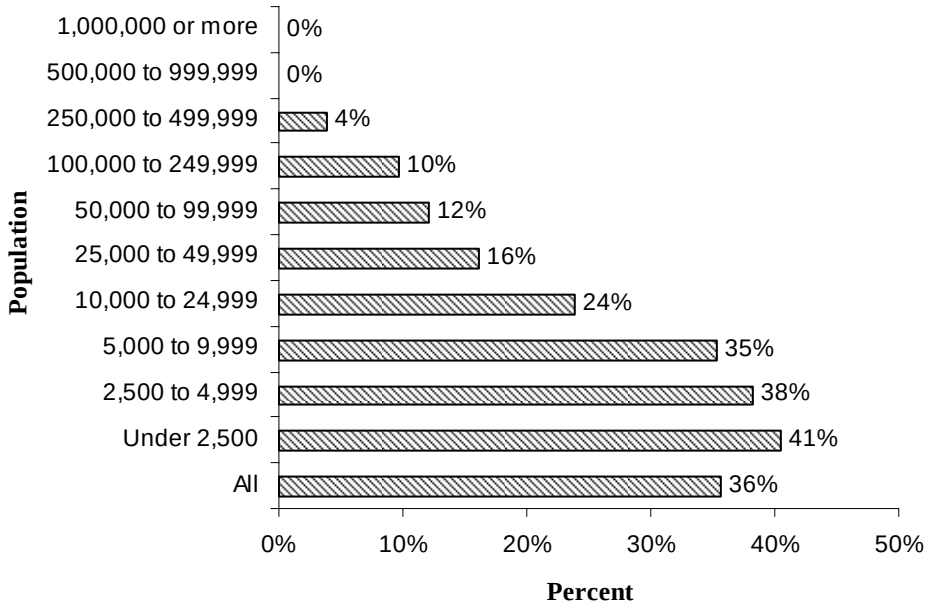



Table 15 (p. 41) indicates certification of personnel who perform EMS. The question asked whether any personnel had been certified to any of several possible levels. The columns of Table 15 are defined by combinations of the four levels of certification.

Because the four levels are progressive, with each level incorporating the skills and knowledge of the previous level, it is reasonable to assume that a combination answer (e.g., First Responder and Basic Life Support) indicates that some personnel in the

department are certified to one of the levels and other personnel are certified to another level. By contrast, a department that responds with only one level presumably has all its certified personnel certified to that one level. In every case, it is possible that some assigned personnel are not certified to any level.

**Table E. Estimated Percentage of Fire Departments That Are Involved in EMS But Where Not All Involved Personnel Have Formal Training by Size of Community Protected (Q. 14b)**

| Population Protected | Not All Involved Personnel Have Formal Training | Only Some or None of Involved Personnel Have Formal Training |
|---|---|---|
| 1,000,000 or more | 0% | 0% |
| 500,000 to 999,999 | 0% | 0% |
| 250,000 to 499,999 | 4% | 2% |
| 100,000 to 249,999 | 10% | 2% |
| 50,000 to 99,999 | 12% | 1% |
| 25,000 to 49,999 | 16% | 2% |
| 10,000 to 24,999 | 24% | 7% |
| 5,000 to 9,999 | 35% | 13% |
| 2,500 to 4,999 | 38% | 18% |
| Under 2,500 | 41% | 23% |
| Total | 36% | 18% |

The above projections are based on 3,431 departments reporting yes on Question 14a and reporting on Question 14b. "Not All" means Most, Some, or None. See Tables 13 and 14.

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.

Table 15 indicates that almost no departments performing EMS are completely lacking in certified personnel. Conversely, no departments reported that all their certified personnel were certified to the level of Paramedic, the highest level of certification, and very few departments reported that all their certified personnel were certified to the level of Advanced Life Support, the second highest level of certification.

### Hazardous Material Response

Table 16 (p. 42) asks whether hazardous material response is within the responsibility of the fire department. Roughly one-fifth (20%) of departments say no, and the ones saying no are mostly smaller communities. Even for rural fire departments, protecting fewer than 2,500 population, seven out of ten (71%) fire departments now provide hazardous material response.

**Table F. Estimated Percentage of Fire Departments That Are Involved in Hazardous Material Response But Where Not All Involved Personnel Have Formal Training by Size of Community Protected (Q. 15b)**

| Population Protected | Not All Involved Personnel Have Formal Training | Only Some or None of Involved Personnel Have Formal Training |
|---|---|---|
| 1,000,000 or more | 0% | 0% |
| 500,000 to 999,999 | 0% | 0% |
| 250,000 to 499,999 | 4% | 2% |
| 100,000 to 249,999 | 10% | 2% |
| 50,000 to 99,999 | 12% | 1% |
| 25,000 to 49,999 | 16% | 2% |
| 10,000 to 24,999 | 24% | 7% |
| 5,000 to 9,999 | 35% | 13% |
| 2,500 to 4,999 | 38% | 18% |
| Under 2,500 | 41% | 23% |
| Total | 36% | 18% |

The above projections are based on 3,990 departments reporting yes on Question 15a and reporting on Question 15b. "Not All" means Most, Some, or None. See Tables 16 and 17.

Q. 15b: If [hazardous materials response 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.

Table 17 (p. 43) asks how many of the assigned personnel in departments responsible for hazardous material response have received formal training. Requirements of the US Environmental Protection Agency (EPA) and the US Occupational Safety and Health Administration (OSHA) specify that all assigned personnel must have formal training. Table 17 indicates only 29% of departments are compliant with these requirements,

including two-thirds or more of departments protecting communities of at least 50,000 population – where most departments are all- or mostly-career – and one-sixth of departments protecting rural communities.

The breakdown of lack of training by community size is given in Table F, in terms of percent of departments performing this duty where not all involved personnel have formal training, by size of community protected.

Table 18 (p. 44) indicates certification of firefighters who perform hazardous material response. The columns of Table 18 are defined by combinations of the three levels of certification. Since the three levels are progressive, with each level incorporating the skills and knowledge of the previous level, it is reasonable to assume that a combination answer (e.g., Awareness and Technician) indicates that some personnel are certified to one level and other personnel are certified to another level. By contrast, a department that responds with only one level presumably has all its certified personnel certified to that level. In every case, it is possible that some assigned personnel are not certified to any level.

Except for rural communities, almost no departments performing hazardous material response are completely lacking in certified personnel (less than 4% of departments in each population interval, except for 6% for communities of less than 2,500 population). At the other end, almost no departments (3% of departments) have all involved personnel certified to the highest level, which is Technician, and only one-fifth (20%) have all involved personnel certified to at least the second highest level, which is Operational.

### Wildland Firefighting

Table 19 (p. 45) asks whether wildland firefighting is within the responsibility of the fire department. Roughly one-seventh (15%) of departments say no, with the percentage falling to 9% in smaller communities and at least 30% for departments protecting communities of at least 25,000 population, excluding departments protecting communities of 100,000 to 249,999 population, where the percentage saying no was 21%. Even for the most urban fire departments, at least two-thirds of fire departments provide wildland firefighting. However, one cannot determine from available data how many of the departments where wildland firefighting is reported as outside the department's responsibility are departments protecting communities with no significant wildlands to protect.

Table 20 (p. 46) asks how many of the assigned personnel in departments responsible for wildland firefighting have received formal training. The breakdown of lack of formal training by community size is summarized in Table G, in terms of percent of departments performing this duty where not all involved personnel have formal training, by size of community protected.

Table G indicates roughly three-fifths of departments are involved in wildland firefighting but do not have all involved personnel formally trained. The percent of

departments is larger for smaller communities, which are also more likely to provide wildland firefighting as a service.

**Table G. Estimated Percentage of Fire Departments That Are Involved in Wildland Firefighting But Where Not All Involved Personnel Have Formal Training by Size of Community Protected (Q. 16b)**

| Population Protected | Not All Involved Personnel Have Formal Training | Only Some or None of Involved Personnel Have Formal Training |
|---|---|---|
| 1,000,000 or more | 20% | 20% |
| 500,000 to 999,999 | 39% | 13% |
| 250,000 to 499,999 | 35% | 17% |
| 100,000 to 249,999 | 24% | 16% |
| 50,000 to 99,999 | 27% | 17% |
| 25,000 to 49,999 | 37% | 23% |
| 10,000 to 24,999 | 43% | 24% |
| 5,000 to 9,999 | 55% | 27% |
| 2,500 to 4,999 | 66% | 34% |
| Under 2,500 | 72% | 37% |
| Total | 63% | 33% |

The above projections are based on 3,598 departments reporting yes on Question 16a and reporting on Question 16b. "Not All" means Most, Some, or None. See Tables 19 and 20.

Q. 16b: If [wildland 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.

### Technical Rescue

Table 21 (p. 47) asks whether technical rescue is within the responsibility of the fire department. Two-fifths (43%) of departments say no, mostly in smaller communities. However, even for rural fire departments, protecting fewer than 2,500 population, nearly half of fire departments (47%) now provide technical rescue.

Table 22 (p. 48) asks how many of the assigned personnel in departments responsible for technical rescue service have received formal training. The breakdown of lack of training by community size is given in Table H, in terms of percent of departments performing

this duty but not having formal training for all involved personnel, by size of community protected.

**Table H. Estimated Percentage of Fire Departments That Are Involved in Technical Rescue Service But Where Not All Involved Personnel Have Formal Training by Size of Community Protected (Q. 17b)**

| Population Protected | Not All Involved Personnel Have Formal Training | Only Some or None of Involved Personnel Have Formal Training |
|---|---|---|
| 1,000,000 or more | 47% | 7% |
| 500,000 to 999,999 | 37% | 21% |
| 250,000 to 499,999 | 57% | 46% |
| 100,000 to 249,999 | 60% | 39% |
| 50,000 to 99,999 | 58% | 39% |
| 25,000 to 49,999 | 63% | 37% |
| 10,000 to 24,999 | 61% | 40% |
| 5,000 to 9,999 | 56% | 37% |
| 2,500 to 4,999 | 55% | 38% |
| Under 2,500 | 44% | 32% |
| Total | 50% | 35% |

The above projections are based on 3,067 departments reporting on Question 17b. "Not All" means Most, Some, or None. See Tables 21 and 22.

Q. 17b: If [technical rescue 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.

Except for communities with at least 500,000 population, half or more of departments in any community size interval were performing this duty but did not have formal training for all involved personnel.

**Programs to Maintain and Protect Firefighter Health**

Table 23 (p. 49) 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*.

Only one-fourth of fire departments (24%) indicate that they have such a program, although half or more of communities with at least 50,000 population report programs.

Figure 3 estimates what percentage of firefighters, career or volunteer, are in departments without such programs.

In the largest communities, those with populations of 500,000 or more, only 13% of firefighters are estimated to work in fire departments without programs to maintain basic firefighter fitness and health.

In the smallest communities, those with populations of less than 5,000, at least four-fifths of firefighters are estimated in serve in fire departments without such programs.

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

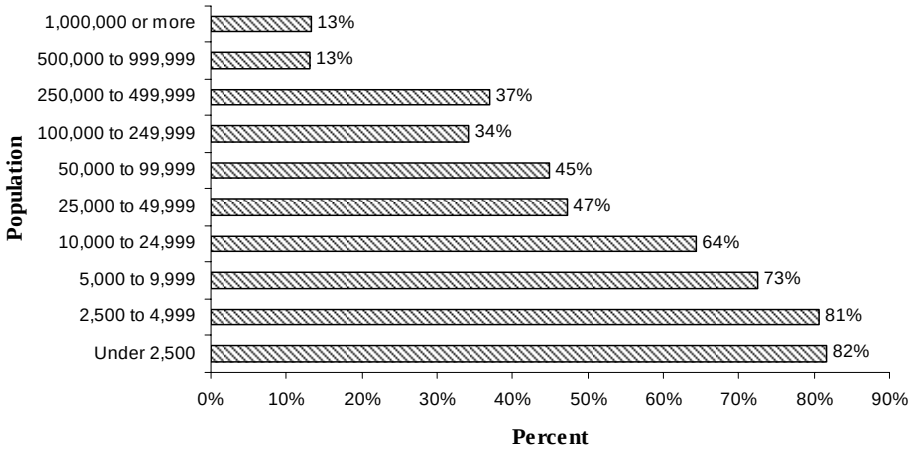



Table I estimates how many firefighters, career or volunteer, are in departments without such programs.

Because such a large share of total firefighters serve as volunteers in smaller communities, which are the same communities where most fire departments do not have programs to maintain basic firefighter fitness and health, the estimated total of 792,000 firefighters without such programs represents roughly two-thirds of the estimated total number of firefighters.

Table 24 (p. 50) indicates that nearly two-thirds of fire departments have programs for infectious disease control, including more than 95% of departments protecting communities with at least 50,000 population.

**Table I. Estimated Number of Firefighters in Fire Departments With No Program to Maintain Basic Firefighter Fitness and Health by Size of Community Protected (Q. 18)**

| Population Protected | Estimated Firefighters Without Program to Maintain Fitness |
|---|---|
| 1,000,000 or more | 4,000 |
| 500,000 to 999,999 | 5,000 |
| 250,000 to 499,999 | 10,000 |
| 100,000 to 249,999 | 17,000 |
| 50,000 to 99,999 | 23,000 |
| 25,000 to 49,999 | 34,000 |
| 10,000 to 24,999 | 85,000 |
| 5,000 to 9,999 | 97,000 |
| 2,500 to 4,999 | 130,000 |
| Under 2,500 | 331,000 |
| Total | 737,000 |
| Percent of total firefighters | 67% |

The above projections are based on 4,636 departments reporting on Question 18. Numbers are shown to the nearest 1,000 and may not sum to totals due to rounding. See Table 23.

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

## Table 7
## 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)

| Population of Community | Average Number of Volunteer Firefighters Responding 1-2 | 3-4 | 5-9 | 10-14 | 15-19 | 20 or More | Total |
|---|---|---|---|---|---|---|---|
| 25,000 to 49,999 | 6.5% | 10.1% | 29.7% | 24.7% | 10.9% | 18.1% | 100.0% |
| 10,000 to 24,999 | 5.1 | 14.8 | 31.8 | 26.8 | 11.2 | 10.5 | 100.0 |
| 5,000 to 9,999 | 3.3 | 11.6 | 40.7 | 27.9 | 10.6 | 6.0 | 100.0 |
| 2,500 to 4,999 | 3.3 | 13.5 | 43.9 | 26.6 | 9.3 | 3.5 | 100.0 |
| Under 2,500 | 3.3 | 17.9 | 46.4 | 22.9 | 7.8 | 2.3 | 100.0 |

Source: FEMA US Fire Administration 2005
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.

The above projections are based on 3,346 departments reporting on Question 10 and comprised of all- or mostly-volunteer firefighters. 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 8
## For All- or Mostly-Career Departments
## Number of Career Firefighters Assigned to an Engine/Pumper Apparatus
## Percent of Departments by Community Size
## (Q. 11)

| Population of Community | Number of Career Firefighters Assigned to Engine/Pumper | | | | |
|---|---|---|---|---|---|
| | 1-2 | 3 | 4 | 5 or More | Total |
| 1,000,000 or more | 0.0% | 10.0% | 80.0% | 10.0% | 100.0% |
| 500,000 to 999,999 | 0.0 | 26.9 | 65.4 | 7.7 | 100.0 |
| 250,000 to 499,999 | 7.7 | 35.9 | 53.8 | 2.6 | 100.0 |
| 100,000 to 249,999 | 5.1 | 54.1 | 38.7 | 1.9 | 100.0 |
| 50,000 to 99,999 | 7.1 | 63.8 | 26.8 | 2.4 | 100.0 |
| 25,000 to 49,999 | 14.8 | 62.5 | 19.8 | 2.8 | 100.0 |
| 10,000 to 24,999 | 32.7 | 42.7 | 20.6 | 3.9 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 1,113 departments reporting on Question 11 and comprised of all- or mostly-career firefighters. 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 9
## For All- or Mostly-Career Departments
## Number of Career Firefighters Assigned to a Ladder/Aerial Apparatus
## Percent of Departments by Community Size
## (Q. 12)

| Population of Community | Number of Career Firefighters Assigned to a Ladder/Aerial 1-2 | 3 | 4 | 5 or More | Not Applicable | Total |
|---|---|---|---|---|---|---|
| 1,000,000 or more | 0.0% | 10.0% | 70.0% | 20.0% | 0.0% | 100.0% |
| 500,000 to 999,999 | 0.0 | 30.8 | 50.0 | 19.2 | 0.0 | 100.0 |
| 250,000 to 499,999 | 10.5 | 34.2 | 47.4 | 2.6 | 5.3 | 100.0 |
| 100,000 to 249,999 | 11.0 | 38.7 | 43.2 | 5.2 | 1.9 | 100.0 |
| 50,000 to 99,999 | 17.0 | 43.5 | 26.9 | 2.8 | 9.9 | 100.0 |
| 25,000 to 49,999 | 35.6 | 36.0 | 14.2 | 3.8 | 10.4 | 100.0 |
| 10,000 to 24,999 | 52.3 | 11.8 | 7.7 | 0.6 | 27.6 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 1,100 departments reporting on Question 12 and comprised of all- or mostly-career firefighters. Numbers may not add to totals due to rounding.

Q. 12: Number of on-duty career/paid personnel assigned to a ladder/aerial (answers given as ranges shown).

## Table 10
## 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** |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 100.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 54 | 100.0 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 217 | 100.0 | 0 | 0.0 | 217 | 100.0 |
| 50,000 to 99,999 | 448 | 100.0 | 0 | 0.0 | 448 | 100.0 |
| 25,000 to 49,999 | 1,073 | 100.0 | 0 | 0.0 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,939 | 100.0 | 0 | 0.0 | 2,939 | 100.0 |
| 5,000 to 9,999 | 3,755 | 99.8 | 9 | 0.2 | 3,764 | 100.0 |
| 2,500 to 4,999 | 4,868 | 100.0 | 0 | 0.0 | 4,868 | 100.0 |
| Under 2,500 | 13,636 | 99.2 | 114 | 0.8 | 13,750 | 100.0 |
| Total | 27,043 | 99.5 | 122 | 0.5 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,674 departments reporting on Question 13a. Numbers may not add to totals due to rounding.

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

## Table 11
## For Departments That Provide Structural Firefighting
## How Many Personnel Who Perform This Duty Have Received Formal Training?
## by Community Size
## (Q. 13b)

| | All | | Most | | Some | | None | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| Population of Community | Number Depts | Percent | Number Depts | Percent | Number Depts Percent | | Number Depts Percent | | Number Depts | Percent |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 52 | 96.3 | 1 | 1.9 | 1 | 1.9 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 211 | 97.2 | 5 | 2.3 | 1 | 0.5 | 0 | 0.0 | 217 | 100.0 |
| 50,000 to 99,999 | 418 | 93.3 | 26 | 5.8 | 4 | 0.9 | 0 | 0.0 | 448 | 100.0 |
| 25,000 to 49,999 | 940 | 87.6 | 119 | 11.0 | 14 | 1.4 | 0 | 0.0 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,310 | 78.6 | 502 | 17.1 | 127 | 4.3 | 0 | 0.0 | 2,939 | 100.0 |
| 5,000 to 9,999 | 2,306 | 61.4 | 1,178 | 31.4 | 267 | 7.1 | 4 | 0.1 | 3,755 | 100.0 |
| 2,500 to 4,999 | 2,463 | 50.6 | 1,702 | 35.0 | 677 | 13.9 | 26 | 0.5 | 4,868 | 100.0 |
| Under 2,500 | 3,940 | 28.9 | 5,451 | 40.0 | 3,809 | 27.9 | 436 | 3.2 | 13,636 | 100.0 |
| Total | 12,691 | 46.9 | 8,984 | 33.2 | 4,902 | 18.1 | 467 | 1.7 | 27,043 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,616 departments reporting yes to Question 13a and also reporting on this question. 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 12
## For Departments That Provide Structural Firefighting, Level That Personnel Who Perform This Duty Have Been Certified to Percent of Departments by Community Size (Q. 13c)

| Population of Community | No Certification | Firefighter Level 1 | Firefighter Level 2 | Both Levels | Total Departments |
|---|---|---|---|---|---|
| 1,000,000 or more | 0.0% | 10.0% | 50.0% | 40.0% | 100.0% |
| 500,000 to 999,999 | 0.0 | 7.6 | 23.0 | 69.3 | 100.0 |
| 250,000 to 499,999 | 0.0 | 11.4 | 27.3 | 61.3 | 100.0 |
| 100,000 to 249,999 | 5.9 | 7.7 | 29.0 | 57.4 | 100.0 |
| 50,000 to 99,999 | 3.0 | 5.4 | 36.2 | 55.4 | 100.0 |
| 25,000 to 49,999 | 4.4 | 8.1 | 36.9 | 50.7 | 100.0 |
| 10,000 to 24,999 | 4.5 | 9.4 | 26.7 | 59.4 | 100.0 |
| 5,000 to 9,999 | 7.6 | 17.9 | 20.0 | 54.5 | 100.0 |
| 2,500 to 4,999 | 12.6 | 27.9 | 14.3 | 45.2 | 100.0 |
| Under 2,500 | 20.9 | 36.4 | 12.3 | 30.4 | 100.0 |
| Total | 15.6 | 27.0 | 16.6 | 40.7 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,663 departments reporting yes to Question 13a and also reporting on Question 13c. Numbers may not add to totals due to rounding.

Q. 13c: Have any of your personnel been certified to any of the following levels?
Firefighter Level I, II

## Table 13
## 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** |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 100.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 54 | 100.0 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 212 | 97.7 | 5 | 2.3 | 217 | 100.0 |
| 50,000 to 99,999 | 421 | 94.0 | 27 | 6.0 | 448 | 100.0 |
| 25,000 to 49,999 | 932 | 86.9 | 141 | 13.1 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,331 | 79.3 | 608 | 20.7 | 2,939 | 100.0 |
| 5,000 to 9,999 | 2,724 | 72.4 | 1,040 | 27.6 | 3,764 | 100.0 |
| 2,500 to 4,999 | 3,254 | 66.9 | 1,614 | 33.1 | 4,868 | 100.0 |
| Under 2,500 | 8,216 | 59.8 | 5,534 | 40.2 | 13,750 | 100.0 |
| Total | 18,199 | 67.0 | 8,967 | 33.0 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,671 departments reporting on Question 14a. Numbers may not add to totals due to rounding.

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

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

| | All | | Most | | Some | | None | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Population of Community** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 52 | 96.2 | 1 | 1.9 | 1 | 1.9 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 191 | 90.0 | 17 | 8.0 | 4 | 1.9 | 0 | 0.0 | 212 | 100.0 |
| 50,000 to 99,999 | 367 | 87.2 | 50 | 11.9 | 4 | 1.0 | 0 | 0.0 | 421 | 100.0 |
| 25,000 to 49,999 | 759 | 81.4 | 151 | 16.2 | 22 | 2.4 | 0 | 0.0 | 932 | 100.0 |
| 10,000 to 24,999 | 1,628 | 69.9 | 493 | 21.1 | 210 | 9.0 | 0 | 0.0 | 2,331 | 100.0 |
| 5,000 to 9,999 | 1,400 | 51.4 | 838 | 30.8 | 482 | 17.7 | 4 | 0.2 | 2,724 | 100.0 |
| 2,500 to 4,999 | 1,397 | 42.9 | 979 | 30.1 | 878 | 27.0 | 0 | 0.0 | 3,254 | 100.0 |
| Under 2,500 | 2,651 | 32.3 | 2,404 | 29.3 | 3,132 | 38.1 | 29 | 0.4 | 8,215 | 100.0 |
| Total | 8,498 | 46.7 | 4,932 | 27.1 | 4,734 | 26.0 | 33 | 0.2 | 18,199 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,431 departments reporting yes to Question 14a and also reporting on this question. Numbers may not add to totals due to rounding.

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 15
## For Departments That Provide Emergency Medical Service Level That Personnel Have Been Certified to For Departments by Community Size (Percent) (Q.14c)

| Population of Community | None | First Responder | Basic Life Support | First Responder Basic Life Support | First Responder Basic Life Support Advanced Life Support | Basic Life Support Advanced Life Support Paramedic | First Responder Advanced Life Support Paramedic | Advanced Life Support Paramedic | Total |
|---|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 0.0% | 10.0% | 0.0% | 0.0% | 50.0% | 40.0% | 0.0% | 0.0% | 100.0% |
| 500,000 to 999,999 | 0.0 | 0.0 | 3.9 | 7.6 | 57.7 | 23.0 | 0.0 | 7.6 | 100.0 |
| 250,000 to 499,999 | 0.0 | 8.7 | 4.3 | 4.3 | 34.8 | 41.3 | 0.0 | 6.5 | 100.0 |
| 100,000 to 249,999 | 1.8 | 4.2 | 8.5 | 9.7 | 29.1 | 38.8 | 0.6 | 7.3 | 100.0 |
| 50,000 to 99,999 | 0.4 | 3.2 | 8.5 | 10.0 | 31.7 | 38.4 | 0.7 | 7.1 | 100.0 |
| 25,000 to 49,999 | 0.8 | 3.2 | 9.5 | 10.1 | 29.4 | 35.2 | 2.1 | 9.8 | 100.0 |
| 10,000 to 24,999 | 0.6 | 5.3 | 11.0 | 15.8 | 31.6 | 28.8 | 1.3 | 5.7 | 100.0 |
| 5,000 to 9,999 | 1.2 | 6.1 | 13.3 | 24.5 | 29.5 | 20.2 | 1.4 | 3.8 | 100.0 |
| 2,500 to 4,999 | 1.8 | 10.8 | 11.6 | 24.6 | 31.6 | 14.5 | 2.9 | 2.3 | 100.0 |
| Under 2,500 | 2.8 | 17.1 | 11.5 | 36.0 | 19.4 | 7.9 | 3.3 | 2.1 | 100.0 |
| Total | 1.9 | 11.3 | 10.3 | 26.1 | 22.1 | 12.7 | 2.4 | 2.7 | 100.0 |

Source: FEMA U.S. Fire Administration 2005
Survey of the Needs of the U.S. Fire Service

The above projections are based on 3,464 departments reporting yes to Question 14a, and also reporting on this question. Numbers may not add to totals due to rounding.

Q. 14c: If [emergency medical service is a role your department performs], have any of your personnel been certified to any of the following levels?

## Table 16
## 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** |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 100.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 54 | 100.0 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 210 | 96.8 | 7 | 32.2 | 217 | 100.0 |
| 50,000 to 99,999 | 434 | 96.9 | 14 | 31.1 | 448 | 100.0 |
| 25,000 to 49,999 | 1,019 | 95.0 | 54 | 5.0 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,690 | 91.5 | 249 | 8.5 | 2,939 | 100.0 |
| 5,000 to 9,999 | 3,293 | 87.5 | 471 | 12.5 | 3,764 | 100.0 |
| 2,500 to 4,999 | 4,128 | 84.8 | 740 | 15.2 | 4,868 | 100.0 |
| Under 2,500 | 9,769 | 71.0 | 3,981 | 29.0 | 13,750 | 100.0 |
| Total | 21,652 | 79.7 | 5,514 | 20.3 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above table projections are based on 4,672 departments reporting on Question 15a.
Numbers may not add to totals due to rounding.

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

## Table 17
## For Departments That Provide Hazardous Material Response
## How Many Personnel Who Perform This Duty Have Received Formal Training?
## by Community Size
## (Q. 15b)

| | All | | Most | | Some | | None | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Population of Community** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** |
| 1,000,000 or more | 14 | 93.3% | 0 | 0.0% | 1 | 6.7% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 34 | 89.5 | 1 | 2.6 | 3 | 7.9 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 45 | 83.3 | 2 | 3.7 | 7 | 13.0 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 167 | 79.9 | 21 | 10.0 | 21 | 10.0 | 0 | 0.0 | 209 | 100.0 |
| 50,000 to 99,999 | 297 | 68.4 | 65 | 15.0 | 72 | 16.6 | 0 | 0.0 | 434 | 100.0 |
| 25,000 to 49,999 | 627 | 61.5 | 207 | 20.3 | 185 | 18.2 | 0 | 0.0 | 1,019 | 100.0 |
| 10,000 to 24,999 | 1,409 | 52.3 | 719 | 26.8 | 559 | 20.7 | 2 | 0.1 | 2,690 | 100.0 |
| 5,000 to 9,999 | 1,150 | 35.0 | 1,076 | 32.7 | 1,034 | 31.4 | 33 | 1.0 | 3,293 | 100.0 |
| 2,500 to 4,999 | 954 | 23.1 | 1,378 | 33.3 | 1,754 | 42.5 | 42 | 1.0 | 4,128 | 100.0 |
| Under 2,500 | 1,665 | 17.0 | 2,745 | 28.1 | 4,994 | 51.1 | 365 | 3.8 | 9,769 | 100.0 |
| Total | 6,360 | 29.4 | 6,214 | 28.7 | 8,630 | 39.9 | 444 | 2.0 | 21,652 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,990 departments reporting yes to Questions 15a and also reporting on this question. Numbers may not add to totals due to rounding.

Q. 15b: If [hazardous materials response 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 18**
**For Departments That Provide Hazardous Material Response Level That Personnel Who Perform This Duty Have Been Certified to**
**Percent of Departments by Community Size**
**(Q. 15b)**

| Population of Community | None | Awareness | Operational | Technician | Awareness Operational | Awareness Technician | Operational Technician | Awareness Operational Technician | Total |
|---|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 100.0% | 100.0% |
| 500,000 to 999,999 | 0.0 | 0.0 | 3.9 | 7.6 | 0.0 | 0.0 | 26.9 | 61.5 | 100.0 |
| 250,000 to 499,999 | 0.0 | 2.3 | 2.3 | 9.1 | 2.3 | 2.3 | 11.4 | 70.5 | 100.0 |
| 100,000 to 249,999 | 1.8 | 2.5 | 3.1 | 11.7 | 5.5 | 1.8 | 23.9 | 49.7 | 100.0 |
| 50,000 to 99,999 | 2.8 | 2.8 | 7.2 | 6.6 | 6.9 | 6.9 | 0.3 | 50.0 | 100.0 |
| 25,000 to 49,999 | 1.9 | 4.8 | 12.6 | 10.1 | 10.9 | 1.0 | 15.5 | 43.2 | 100.0 |
| 10,000 to 24,999 | 1.4 | 9.2 | 13.6 | 5.1 | 21.6 | 1.1 | 10.5 | 37.6 | 100.0 |
| 5,000 to 9,999 | 3.1 | 15.8 | 12.3 | 2.5 | 29.6 | 1.5 | 5.6 | 29.6 | 100.0 |
| 2,500 to 4,999 | 3.6 | 25.5 | 11.2 | 2.9 | 33.0 | 1.3 | 1.9 | 20.6 | 100.0 |
| Under 2,500 | 6.3 | 37.2 | 12.2 | 1.5 | 29.6 | 1.6 | 0.9 | 10.7 | 100.0 |
| Total | 4.6 | 27.0 | 12.3 | 2.9 | 28.4 | 1.5 | 4.4 | 21.8 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,025 departments reporting yes to Question 15a and also reporting on this question. Numbers may not add to totals due to rounding.

Q. 15c: If [hazardous material response is a role your department performs], have any of your personnel been certified to any of the following levels?

## Table 19
## Does Department Provide Wildland Firefighting?
## by Community Size
## (Q. 16a)

| | Yes | | No | | Total | |
|---|---|---|---|---|---|---|
| **Population of Community** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** |
| 1,000,000 or more | 10 | 66.7% | 5 | 33.3% | 15 | 100.0% |
| 500,000 to 999,999 | 27 | 70.4 | 11 | 29.6 | 38 | 100.0 |
| 250,000 to 499,999 | 43 | 79.1 | 11 | 20.9 | 54 | 100.0 |
| 100,000 to 249,999 | 137 | 63.9 | 80 | 36.1 | 217 | 100.0 |
| 50,000 to 99,999 | 244 | 54.5 | 204 | 45.5 | 448 | 100.0 |
| 25,000 to 49,999 | 648 | 60.4 | 425 | 39.6 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,018 | 68.7 | 921 | 31.3 | 2,939 | 100.0 |
| 5,000 to 9,999 | 3,048 | 81.0 | 716 | 19.0 | 3,764 | 100.0 |
| 2,500 to 4,999 | 4,364 | 89.7 | 504 | 10.3 | 4,868 | 100.0 |
| Under 2,500 | 12,499 | 90.9 | 1,251 | 9.1 | 13,750 | 100.0 |
| Total | 23,039 | 84.8 | 4,127 | 15.2 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,658 departments reporting on Question 16a. Numbers may not add to totals due to rounding.

Q. 16a: Is [wildland firefighting] a role your department performs?

## Table 20
## For Departments That Provide Wildland Firefighting
## How Many Personnel Who Perform This Duty Have Received Formal Training?
## by Community Size
## (Q. 16b)

| | All | | Most | | Some | | None | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| Population of Community | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 7 | 70.0% | 0 | 0.0% | 2 | 20.0% | 1 | 10.0% | 10 | 100.0% |
| 500,000 to 999,999 | 12 | 44.4 | 10 | 37.0 | 5 | 18.5 | 0 | 0.0 | 27 | 100.0 |
| 250,000 to 499,999 | 24 | 55.8 | 10 | 23.3 | 8 | 18.6 | 1 | 2.3 | 43 | 100.0 |
| 100,000 to 249,999 | 85 | 62.0 | 17 | 12.4 | 27 | 19.7 | 8 | 5.8 | 137 | 100.0 |
| 50,000 to 99,999 | 125 | 51.3 | 42 | 17.1 | 59 | 24.0 | 19 | 7.6 | 244 | 100.0 |
| 25,000 to 49,999 | 248 | 38.2 | 153 | 23.6 | 205 | 31.7 | 42 | 6.6 | 648 | 100.0 |
| 10,000 to 24,999 | 742 | 36.8 | 567 | 28.1 | 568 | 28.1 | 141 | 7.0 | 2,018 | 100.0 |
| 5,000 to 9,999 | 983 | 32.2 | 1,037 | 34.0 | 840 | 27.6 | 188 | 6.2 | 3,048 | 100.0 |
| 2,500 to 4,999 | 1,147 | 26.3 | 1,559 | 35.7 | 1,342 | 30.8 | 317 | 7.3 | 4,364 | 100.0 |
| Under 2,500 | 2,658 | 21.3 | 4,716 | 37.7 | 4,234 | 33.9 | 891 | 7.1 | 12,499 | 100.0 |
| Total | 6,030 | 26.2 | 8,110 | 35.2 | 7,290 | 31.6 | 1,608 | 7.0 | 23,039 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,598 departments reporting yes to Question 16a and also reporting on this question. Numbers may not add to totals due to rounding.

Q. 16b: If [wildland 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 21
## 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** |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 100.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 52 | 96.3 | 2 | 3.7 | 54 | 100.0 |
| 100,000 to 249,999 | 204 | 94.0 | 13 | 6.0 | 217 | 100.0 |
| 50,000 to 99,999 | 394 | 87.9 | 54 | 12.1 | 448 | 100.0 |
| 25,000 to 49,999 | 873 | 81.3 | 200 | 18.7 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,151 | 73.2 | 788 | 26.8 | 2,939 | 100.0 |
| 5,000 to 9,999 | 2,469 | 65.6 | 1,295 | 34.4 | 3,764 | 100.0 |
| 2,500 to 4,999 | 2,935 | 60.3 | 1,933 | 39.7 | 4,868 | 100.0 |
| Under 2,500 | 6,418 | 46.7 | 7,332 | 53.3 | 13,750 | 100.0 |
| Total | 15,548 | 57.2 | 11,618 | 42.8 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,635 departments reporting on Question 17a. Numbers may not add to totals due to rounding.

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

## Table 22
## For Departments That Provide Technical Rescue Service
## How Many Personnel Who Perform This Duty Have Received Formal Training?
## by Community Size
## (Q. 17b)

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 8 | 53.3% | 6 | 40.0% | 1 | 6.7% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 24 | 63.2 | 6 | 15.8 | 8 | 21.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 21 | 40.4 | 6 | 11.5 | 24 | 46.2 | 1 | 1.9 | 52 | 100.0 |
| 100,000 to 249,999 | 74 | 36.3 | 45 | 22.1 | 85 | 41.6 | 0 | 0.0 | 204 | 100.0 |
| 50,000 to 99,999 | 132 | 33.6 | 85 | 21.6 | 176 | 44.8 | 0 | 0.0 | 394 | 100.0 |
| 25,000 to 49,999 | 199 | 22.8 | 274 | 31.3 | 393 | 45.0 | 7 | 0.9 | 873 | 100.0 |
| 10,000 to 24,999 | 361 | 16.8 | 627 | 29.2 | 1,123 | 52.2 | 40 | 1.9 | 2,151 | 100.0 |
| 5,000 to 9,999 | 355 | 14.4 | 714 | 28.9 | 1,349 | 54.7 | 50 | 2.0 | 2,469 | 100.0 |
| 2,500 to 4,999 | 281 | 9.6 | 791 | 27.0 | 1,788 | 60.9 | 74 | 2.5 | 2,934 | 100.0 |
| Under 2,500 | 437 | 6.8 | 1,586 | 24.7 | 3,988 | 62.1 | 408 | 6.4 | 6,418 | 100.0 |
| Total | 1,891 | 12.2 | 4,140 | 26.6 | 8,936 | 57.5 | 581 | 3.7 | 15,548 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,067 departments reporting yes to Question 17a and also reporting on this question. Numbers may not add to totals due to rounding.

Q. 17b: If [technical rescue 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 23
## Does Department Have a Program to Maintain Basic Firefighter Fitness and Health? by Community Size
## (Q. 18)

| | Yes | | No | | Total | |
|---|---|---|---|---|---|---|
| **Population of Community** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** |
| 1,000,000 or more | 13 | 86.7% | 2 | 13.3% | 15 | 100.0% |
| 500,000 to 999,999 | 33 | 86.8 | 5 | 13.2 | 38 | 100.0 |
| 250,000 to 499,999 | 34 | 63.0 | 20 | 37.0 | 54 | 100.0 |
| 100,000 to 249,999 | 143 | 65.9 | 74 | 34.1 | 217 | 100.0 |
| 50,000 to 99,999 | 247 | 55.1 | 201 | 44.9 | 448 | 100.0 |
| 25,000 to 49,999 | 565 | 52.7 | 508 | 47.3 | 1,073 | 100.0 |
| 10,000 to 24,999 | 1,045 | 35.6 | 1,894 | 64.4 | 2,939 | 100.0 |
| 5,000 to 9,999 | 1,034 | 27.5 | 2,730 | 72.5 | 3,764 | 100.0 |
| 2,500 to 4,999 | 945 | 19.4 | 3,923 | 80.6 | 4,868 | 100.0 |
| Under 2,500 | 2,534 | 18.4 | 11,216 | 81.6 | 13,750 | 100.0 |
| Total | 6,594 | 24.3 | 20,572 | 76.4 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,636 departments reporting on Question 18. 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)?

## Table 24
## Does Department Have a Program for Infectious Disease Control? by Community Size
## (Q. 19)

| Population of Community | Yes Number Depts | Yes Percent | No Number Depts | No Percent | Total Number Depts | Total Percent |
|---|---|---|---|---|---|---|
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 100.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 53 | 98.1 | 1 | 1.9 | 54 | 100.0 |
| 100,000 to 249,999 | 209 | 96.3 | 8 | 3.7 | 217 | 100.0 |
| 50,000 to 99,999 | 431 | 96.2 | 17 | 3.8 | 448 | 100.0 |
| 25,000 to 49,999 | 981 | 91.4 | 92 | 8.6 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,523 | 85.8 | 416 | 14.2 | 2,939 | 100.0 |
| 5,000 to 9,999 | 2,946 | 78.3 | 818 | 21.7 | 3,764 | 100.0 |
| 2,500 to 4,999 | 3,329 | 68.4 | 1,539 | 31.6 | 4,868 | 100.0 |
| Under 2,500 | 7,192 | 52.3 | 6,558 | 47.7 | 13,750 | 100.0 |
| Total | 17,717 | 65.2 | 9,449 | 34.8 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,588 departments reporting on Question 19. Numbers may not add to totals due to rounding.

Q. 19: Does your department have a program for infectious disease control?

## FIRE PREVENTION AND CODE ENFORCEMENT

Some of the greatest value delivered by the US fire services comes in activities that prevent fires and other emergencies from occurring or that moderate their severity when they do occur.

Questions 20-22 provide information on a number of such programs, all of which were recognized as candidates for Federal assistance under the Assistance to Firefighters program.

Table 25 (p. 56) indicates what percentage of fire departments, by community size, reported having each of six specific fire prevention or code enforcement programs.

Table J indicates the number of fire departments lacking these programs and estimates the number of people living in communities protected by fire departments that do not conduct such programs.

### Table J. Number of Fire Departments and Estimated Total Population Protected by Those Fire Departments Where Selected Fire Prevention or Code Enforcement Programs Are NOT Provided, by Size of Community Protected (Q. 20)

### 1. Plans Review

| Population Protected | Number of Departments Without Program | Population Protected by Departments Without Program |
|---|---|---|
| 1,000,000 or more | 5 | 9,500,000 |
| 500,000 to 999,999 | 3 | 1,800,000 |
| 250,000 to 499,999 | 1 | 400,000 |
| 100,000 to 249,999 | 17 | 2,600,000 |
| 50,000 to 99,999 | 26 | 1,800,000 |
| 25,000 to 49,999 | 115 | 4,000,000 |
| 10,000 to 24,999 | 644 | 10,300,000 |
| 5,000 to 9,999 | 1,415 | 10,200,000 |
| 2,500 to 4,999 | 2,638 | 11,800,000 |
| Under 2,500 | 8,690 | 14,700,000 |
| Total | 13,553 | 67,000,000 |
| Percent of US total | 50% | 23% |

The above projections are based on 4,213 departments reporting on Question 20. Population estimates are shown to the nearest 100,000 and may not add to totals due to rounding. See Table 25.

**2. Permit Approval**

| Population Protected | Number of Departments Without Program | Population Protected by Departments Without Program |
|---|---|---|
| 1,000,000 or more | 5 | 9,500,000 |
| 500,000 to 999,999 | 4 | 2,600,000 |
| 250,000 to 499,999 | 6 | 2,000,000 |
| 100,000 to 249,999 | 36 | 5,600,000 |
| 50,000 to 99,999 | 87 | 6,100,000 |
| 25,000 to 49,999 | 364 | 12,600,000 |
| 10,000 to 24,999 | 1,525 | 24,400,000 |
| 5,000 to 9,999 | 2,687 | 19,400,000 |
| 2,500 to 4,999 | 3,992 | 17,800,000 |
| Under 2,500 | 11,124 | 18,800,000 |
| Total | 19,830 | 118,900,000 |
| Percent of US total | 73% | 40% |

The above projections are based on 4,213 departments reporting on Question 20. Population estimates are shown to the nearest 100,000 and may not add to totals due to rounding. See Table 25.

**3. Routine Testing of Active Systems (e.g., sprinkler, detection/alarm, smoke control)**

| Population Protected | Number of Departments Without Program | Population Protected by Departments Without Program |
|---|---|---|
| 1,000,000 or more | 5 | 9,500,000 |
| 500,000 to 999,999 | 5 | 3,500,000 |
| 250,000 to 499,999 | 12 | 4,100,000 |
| 100,000 to 249,999 | 67 | 10,400,000 |
| 50,000 to 99,999 | 126 | 8,800,000 |
| 25,000 to 49,999 | 376 | 13,000,000 |
| 10,000 to 24,999 | 1,593 | 25,500,000 |
| 5,000 to 9,999 | 2,627 | 18,900,000 |
| 2,500 to 4,999 | 3,778 | 16,900,000 |
| Under 2,500 | 10,863 | 18,400,000 |
| Total | 19,451 | 128,900,000 |
| Percent of US total | 72% | 44% |

The above projections are based on 4,213 departments reporting on Question 20. Population estimates are shown to the nearest 100,000 and may not add to totals due to rounding. See Table 25.

### 4. Free Distribution of Home Smoke Alarms

| Population Protected | Number of Departments Without Program | Population Protected by Departments Without Program |
|---|---|---|
| 1,000,000 or more | 5 | 9,500,000 |
| 500,000 to 999,999 | 4 | 2,600,000 |
| 250,000 to 499,999 | 7 | 2,400,000 |
| 100,000 to 249,999 | 50 | 7,800,000 |
| 50,000 to 99,999 | 126 | 8,800,000 |
| 25,000 to 49,999 | 313 | 10,800,000 |
| 10,000 to 24,999 | 1,220 | 19,500,000 |
| 5,000 to 9,999 | 1,905 | 13,700,000 |
| 2,500 to 4,999 | 2,906 | 13,000,000 |
| Under 2,500 | 9,075 | 15,300,000 |
| Total | 15,611 | 103,600,000 |
| Percent of US total | 57% | 35% |

The above projections are based on 4,213 departments reporting on Question 20. Population estimates are shown to the nearest 100,000 and may not add to totals due to rounding. See Table 25.

### 5. Juvenile Firesetter Program

| Population Protected | Number of Departments Without Program | Population Protected by Departments Without Program |
|---|---|---|
| 1,000,000 or more | 0 | 0 |
| 500,000 to 999,999 | 0 | 0 |
| 250,000 to 499,999 | 9 | 3,300,000 |
| 100,000 to 249,999 | 49 | 7,600,000 |
| 50,000 to 99,999 | 114 | 7,900,000 |
| 25,000 to 49,999 | 406 | 14,000,000 |
| 10,000 to 24,999 | 1,734 | 27,700,000 |
| 5,000 to 9,999 | 2,887 | 20,800,000 |
| 2,500 to 4,999 | 4,128 | 18,400,000 |
| Under 2,500 | 12,416 | 21,000,000 |
| Total | 21,743 | 120,800,000 |
| Percent of US total | 80% | 41% |

The above projections are based on 4,213 departments reporting on Question 20. Population estimates are shown to the nearest 100,000 and may not add to totals due to rounding. See Table 25.

### 6. School Fire Safety Education Program Based on a National Model Curriculum

| Population Protected | Number of Departments Without Program | Population Protected by Departments Without Program |
|---|---|---|
| 1,000,000 or more | 6 | 12,700,000 |
| 500,000 to 999,999 | 8 | 5,300,000 |
| 250,000 to 499,999 | 14 | 4,900,000 |
| 100,000 to 249,999 | 46 | 7,200,000 |
| 50,000 to 99,999 | 122 | 8,500,000 |
| 25,000 to 49,999 | 249 | 8,600,000 |
| 10,000 to 24,999 | 770 | 12,300,000 |
| 5,000 to 9,999 | 1,080 | 7,800,000 |
| 2,500 to 4,999 | 1,460 | 6,500,000 |
| Under 2,500 | 5,803 | 9,800,000 |
| Total | 9,558 | 83,600,000 |
| Percent of US total | 35% | 28% |

The above projections are based on 4,213 departments reporting on Question 20. Population estimates are shown to the nearest 100,000 and may not add to totals due to rounding. See Table 25.

Q. 20: Which of the following programs or activities does your department conduct?

The program with the highest reported participation was school fire safety education programs based on a national model curriculum, where roughly two-thirds (65%) of US fire departments reported conducting such a program. This is one of the few programs in this section where there is some independent information regarding participation, and that information would suggest that implementation of a school-based fire safety curriculum following a national model is closer to 5-10% of fire departments than the reported 65%.

This large discrepancy may be a matter of interpretation. For example, many fire departments provide presentations to schools (e.g., puppet shows) in which the content is based on the content of some national model fire safety curriculum. Such presentations would qualify as a program of the sort asked about, but they would in practice have little educational value. Therefore, considerable caution should be shown when considering the reported practices for this particular program.

Table 26 (p. 57) indicates which of several groups conduct fire-code inspections in the community. For communities of 50,000 population or more, at least 91% report the use of full-time fire department inspectors. The percentage drops to 74% for communities of 25,000 to 49,999 population, to 48% for communities of 10,000 to 24,999 population, to 20% for communities of 5,000 to 9,999 population, to 10% for communities of 2,500 to 4,999 population, and to 4% for communities with less than 2,500 population.

The next most commonly cited resource for conducting fire-code inspections was firefighters in-service. About 70% of departments protecting communities of 1 million or more population cited the use of in-service firefighters. Then, 64% of communities of 500,000 to 999,999 population cited their use, falling to 46-54% for communities of 25,000 to 499,999, to 38% for communities of 10,000 to 24,999, to 23% for communities of 5,000 to 9,999, and to 12-17% for communities with less than 5,000 population.

Building department inspectors were cited by 4-25% of departments by community size, and separate inspection departments were cited by 0-15%. "Other" inspectors – such as those from a state fire marshal's office – were cited mostly by smaller communities and were the principal inspection resource for communities with less than 10,000 population.

Of greatest concern were those departments that reported no one conducted fire-code inspections in their community. Roughly 6,900 fire departments reported this situation, nearly all of them departments serving rural communities (less than 2,500 population). These 6,900 departments protect an estimated 20.3 million people, with two-fifths of that population located in rural communities.

Table 27 (p. 58) indicates which of several parties determines that a fire was deliberately set. Multiple answers were permitted. For communities of 50,000 population or more, fire department arson investigators were cited by at least 89% of departments in each population interval, and no one else was cited by more than 46% of departments.

In communities of 25,000 to 49,999 population, 81% of departments cited fire department arson investigators, 50% cited state arson investigators, 30% cited incident commanders, 26% cited the police department, and 22% cited regional arson task force investigators. Multiple agency involvement is commonplace for these communities.

Communities of 10,000 to 24,999 population were the only ones in which two different agencies were each cited by a majority of departments – fire department arson investigators (63%) and state arson investigators (60%). Also, incident commanders were cited by 34% of departments and police departments by 25% of departments.

For communities of less than 10,000 population, state arson investigators were cited by at least 71% of departments in each population interval and were by far the principal resource for determination of intentional firesetting in those communities. Incident commanders were still frequently cited in those communities as well. Fire department arson investigators were cited by 42% of departments in communities of 5,000 to 9,999 population, by 29% of departments in communities of 2,500 to 4,999 population, and by 16% of departments in communities of less than 2,500 population.

## Table 25
## Which Programs or Activities Does Department Conduct?
## by Community Size
## (Q. 20)

| Population of Community | Plans Review | Permit Approval | Routine Testing of Active Systems | Free Distribution of Smoke Alarms | Juvenile Firesetter Program | School Fire Safety Education Program | Other Prevention Program |
|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 70.0% | 70.0% | 70.0% | 70.0% | 100.0% | 60.0% | 20.0% |
| 500,000 to 999,999 | 92.9 | 89.3 | 85.7 | 89.3 | 100.0 | 78.6 | 21.4 |
| 250,000 to 499,999 | 97.8 | 89.1 | 78.3 | 87.0 | 82.6 | 73.9 | 30.4 |
| 100,000 to 249,999 | 92.3 | 83.4 | 69.2 | 76.9 | 77.5 | 78.7 | 22.5 |
| 50,000 to 99,999 | 94.3 | 80.5 | 71.8 | 71.8 | 74.5 | 72.8 | 22.8 |
| 25,000 to 49,999 | 89.3 | 66.1 | 65.0 | 70.8 | 62.2 | 76.8 | 21.6 |
| 10,000 to 24,999 | 78.1 | 48.1 | 45.8 | 58.5 | 41.0 | 73.8 | 21.5 |
| 5,000 to 9,999 | 62.4 | 28.6 | 30.2 | 49.4 | 23.3 | 71.3 | 23.7 |
| 2,500 to 4,999 | 45.8 | 18.0 | 22.4 | 40.3 | 15.2 | 70.0 | 21.3 |
| Under 2,500 | 36.8 | 19.1 | 21.0 | 34.0 | 9.7 | 57.8 | 20.9 |
| Total | 50.1 | 27.0 | 28.4 | 42.6 | 20.0 | 64.0 | 21.5 |

Source: FEMA U. S. Fire Administration 2005
Survey of the Needs of the US Fire Service

The above table breakdown is based on 4,213 departments reporting on Question 20. Departments were asked to circle all that apply, so departments could select multiple responses. Numbers may not add to totals due to rounding.

Q. 20: Which of the following programs or activities does your department conduct? Plans review; permit approval; routine testing of active systems (e.g., fire sprinkler, detection/alarm, smoke control); free distribution of home smoke alarms; juvenile firesetter program; school fire safety education program based on a national model curriculum; other prevention program.

## Table 26
## Who Conducts Fire-Code Inspections in the Community?
## by Community Size
## (Q. 21)

| Population of Community | Full-Time Fire Department Inspectors | In-Service Firefighters | Building Department | Separate Inspection Department | Other | No One |
|---|---|---|---|---|---|---|
| 1,000,000 or more | 100.0% | 70.0% | 10.0% | 0.0% | 0.0% | 0.0% |
| 500,000 to 999,999 | 92.9 | 64.3 | 3.6 | 3.6 | 0.0 | 0.0 |
| 250,000 to 499,999 | 100.0 | 54.3 | 10.9 | 0.0 | 2.2 | 0.0 |
| 100,000 to 249,999 | 97.0 | 49.7 | 12.4 | 2.4 | 1.2 | 0.0 |
| 50,000 to 99,999 | 91.0 | 51.8 | 14.7 | 4.0 | 4.0 | 1.0 |
| 25,000 to 49,999 | 74.0 | 46.0 | 19.3 | 3.4 | 13.6 | 1.6 |
| 10,000 to 24,999 | 47.6 | 37.9 | 22.3 | 7.9 | 19.5 | 4.3 |
| 5,000 to 9,999 | 20.4 | 22.8 | 24.6 | 10.3 | 28.7 | 13.8 |
| 2,500 to 4,999 | 9.6 | 17.3 | 19.7 | 14.3 | 28.3 | 23.7 |
| Under 2,500 | 4.0 | 11.6 | 13.0 | 14.5 | 25.2 | 36.6 |
| Total | 17.3 | 19.5 | 17.1 | 12.4 | 24.5 | 25.2 |

Source: FEMA U. S. Fire Administration 2005
Survey of the Needs of the US Fire Service

The above table breakdown is based on 4,610 departments reporting on Question 21. Departments were asked to circle all that apply, so departments could select multiple responses. Numbers may not add to totals due to rounding.

Q. 21: Who conducts fire code inspections in your community?

## Table 27
## Who Determines That a Fire Was Deliberately Set?
## by Community Size
## (Q. 22)

| Population of Community | Fire Department Arson Investigator | Regional Arson Task Force Investigator | State Arson Investigator | Incident Commander | Police Department | Contract Investigator | Insurance Investigator | Other |
|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 100.0% | 10.0% | 0.0% | 40.0% | 0.0% | 0.0% | 20.0% | 0.0% |
| 500,000 to 999,999 | 89.3 | 10.7 | 17.9 | 35.7 | 10.7 | 3.6 | 0.0 | 3.6 |
| 250,000 to 499,999 | 91.3 | 19.6 | 34.8 | 45.7 | 10.9 | 0.0 | 8.7 | 0.0 |
| 100,000 to 249,999 | 95.2 | 13.2 | 22.8 | 19.8 | 0.0 | 0.0 | 5.4 | 1.2 |
| 50,000 to 99,999 | 95.3 | 19.7 | 35.8 | 34.8 | 24.1 | 1.3 | 7.0 | 1.3 |
| 25,000 to 49,999 | 81.3 | 19.6 | 50.1 | 30.3 | 26.3 | 1.6 | 9.0 | 6.9 |
| 10,000 to 24,999 | 62.7 | 21.9 | 59.7 | 33.9 | 25.0 | 1.7 | 12.1 | 8.7 |
| 5,000 to 9,999 | 41.9 | 19.1 | 70.5 | 36.0 | 18.9 | 1.4 | 14.7 | 9.0 |
| 2,500 to 4,999 | 29.2 | 14.4 | 76.9 | 33.5 | 16.1 | 0.0 | 15.3 | 9.0 |
| Under 2,500 | 15.6 | 12.4 | 77.2 | 30.6 | 13.5 | 1.4 | 14.1 | 8.8 |
| Total | 31.6 | 15.1 | 71.9 | 32.1 | 16.1 | 1.4 | 13.8 | 8.6 |

Source: FEMA U. S. Fire Administration 2005
Survey of the Needs of the US Fire Service

The above table breakdown is based on 4,659 departments reporting on Question 22. Departments were asked to circle all that apply, so departments could select multiple responses. Numbers may not add to totals due to rounding.

Q. 22: Who determines that a fire was deliberately set? “Incident commander” includes other first-in fire officer.

## FACILITIES, APPARATUS AND EQUIPMENT

### Fire Stations

Table 28 (p. 73) 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 28 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 K converts these figures to total numbers of fire stations with those needs, by size of community and overall.

**Table K. 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 |
| 1,000,000 or more | 485 | 578 | 10 |
| 500,000 to 999,999 | 462 | 466 | 566 |
| 250,000 to 499,999 | 340 | 375 | 573 |
| 100,000 to 249,999 | 724 | 667 | 877 |
| 50,000 to 99,999 | 713 | 568 | 829 |
| 25,000 to 49,999 | 1,102 | 1,037 | 1,633 |
| 10,000 to 24,999 | 2,281 | 2,056 | 3,571 |
| 5,000 to 9,999 | 2,157 | 2,721 | 4,376 |
| 2,500 to 4,999 | 2,490 | 4,141 | 6,029 |
| Under 2,500 | 6,524 | 13,388 | 16,481 |
| Total | 17,279 | 25,999 | 34,944 |
| Percent of US total | 36% | 54% | 72% |

The above projections are based on 3,721 departments reporting on all four parts of Question 23. Numbers may not add to totals due to rounding. See Table 28.

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.

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.

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.***

* *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 $\pi r^2$, 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.

*** 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.

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:

$$A - \tfrac{1}{2}(n)(D_{max})^2/(k^2) < 0$$

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

Table L gives the estimates of need based on the four calculations (i.e., two possible maximums for travel distance times two possible location protocols for fire stations). 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. If these two

approaches are used, then Table L suggests that in every population interval, roughly three-fifths 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 Table L indicates that 61-75% of departments have too few stations, except for communities of at least 500,000 population, where the percentage is 82-90%.)

**Table L. Estimated Percent of Fire Departments Lacking Sufficient Fire Stations to Achieve Specified Maximum Travel Distance by Size of Community Protected, Maximum Travel Distance Specified, and Assumption Regarding Optimality of Fire Station Placement (Q. 2, 23)**

| | Estimated Percent of Departments With Too Few Stations | | | |
|---|---|---|---|---|
| | Random station location | | Optimal station location | |
| Population Protected | Maximum distance of 1.5 miles | Maximum distance of 2.5 miles | Maximum distance of 1.5 miles | Maximum distance of 2.5 miles |
| 1,000,000 or more | 100.0% | 60.0% | 90.0% | 20.0% |
| 500,000 to 999,999 | 89.3% | 64.3% | 82.1% | 25.0% |
| 250,000 to 499,999 | 87.4% | 54.3% | 69.6% | 39.1% |
| 100,000 to 249,999 | 91.1% | 34.3% | 68.0% | 18.9% |
| 50,000 to 99,999 | 88.6% | 30.2% | 60.7% | 14.4% |
| 25,000 to 49,999 | 91.5% | 56.2% | 74.8% | 30.5% |
| 10,000 to 24,999 | 91.4% | 61.9% | 73.9% | 45.2% |
| 5,000 to 9,999 | 93.7% | 76.5% | 82.6% | 65.4% |
| 2,500 to 4,999 | 94.4% | 83.1% | 86.5% | 74.3% |
| Under 2,500 | 92.5% | 81.5% | 84.4% | 73.9% |

The above projections are based on 4,652 departments reporting on Questions 2 and 23.

Q. 2: Area (in square miles) your department has primary responsibility to protect (exclude mutual aid areas)
Q. 23: Number of fire stations

Remember the many limitations of this calculation procedure, however; a more complete calculation should be performed before drawing conclusions with regard to any particular community.

## Apparatus

Table 29 (p. 74) characterizes the size of the engine/pumper fleet inventory, overall and by age of vehicle. Using the statistics from Table 2 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 M in terms of the number of apparatus.

Figure 4 indicates that in larger communities, those with at least 50,000 population, one-sixth to one-fourth (17-25%) of engines are at least 15 years old, except for communities of 500,000 to 999,999 population, where the percentage is only 12%. In smaller communities, those with less than 5,000 population, roughly one-half to two-thirds (52-65%) of engines are at least 15 years old. Table M indicates there are more than 40,000 engines in use that are at least 15 years old, including nearly 11,000 that are at least 30 years old. Most of these engines aged 15 years old or more are in use in smaller communities, with less than 5,000 population, but hundreds are in use in departments for every community size.

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**

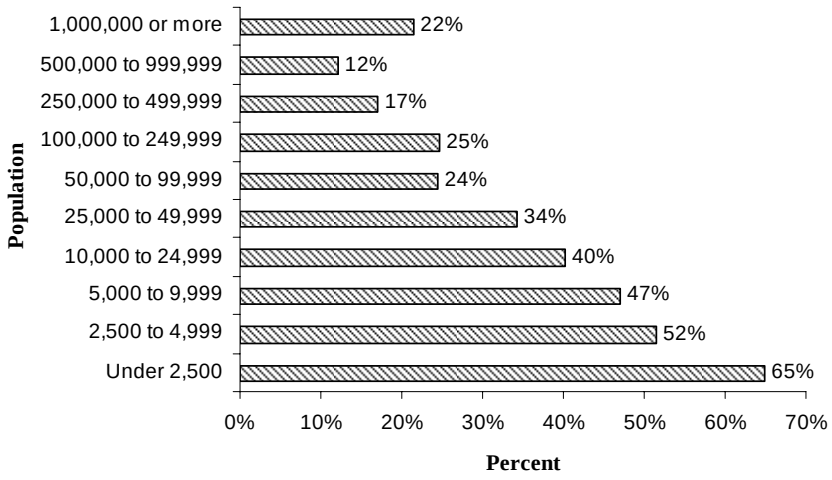



Table 29 also indicates the average number of ambulances or other patient transport vehicles per department, by community size. Communities of less than 25,000 population average less than one such vehicle per department; and communities with 25,000 to 99,999 population average less than two. Averages are calculated over all departments, but larger shares of small communities have departments that do not provide EMS; this partially explains their lower numbers of ambulances per department.

**Table M. 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 |
| 1,000,000 or more | 135 | 131 | 2 |
| 500,000 to 999,999 | 166 | 18 | 0 |
| 250,000 to 499,999 | 141 | 47 | 15 |
| 100,000 to 249,999 | 523 | 109 | 61 |
| 50,000 to 99,999 | 511 | 202 | 22 |
| 25,000 to 49,999 | 1,073 | 579 | 139 |
| 10,000 to 24,999 | 2,057 | 1,470 | 588 |
| 5,000 to 9,999 | 2,033 | 2,108 | 1,129 |
| 2,500 to 4,999 | 2,142 | 2,775 | 1,606 |
| Under 2,500 | 5,225 | 8,250 | 7,288 |
| Total | 14,006 | 15,688 | 10,851 |
| Percent of US total | 17% | 19% | 13% |

The above projections are based on 4,545 departments reporting on all parts of Question 24. Numbers may not add to totals due to rounding. See Table 29.

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

Table 30 (p. 75) provides information on the percentage of departments with ladder/aerial apparatus. This type of apparatus is of use for buildings at least four stories in height, although it can also be used for shorter buildings with access problems for ground ladders.

Therefore, it is useful to compare the percentage of departments, by community size, having no ladder/aerial apparatus with the percentage having buildings 4 stories high or higher. (See Table 31, p. 76.) If the percentage of departments without ladder/aerial apparatus is greater than the percentage of departments with no buildings of at least 4 stories in height, then the difference is a measure of the minimum percentage of departments that could justify acquiring a ladder/aerial apparatus but do not have one. Table N provides that comparison.

Table N indicates that at least 2% of departments (4% minus 2%) protecting communities of 250,000 to 499,999 population have ladder/aerial apparatus but have no building tall

enough to justify such apparatus. This is also true for at least 1% of departments protecting communities of 100,000 to 249,999 population and at least 1% of departments protecting communities of 25,000 to 49,999. These percentage differences are too small to be given much significance. In the other direction, the minimum percentage of departments having no ladder/aerial apparatus but having at least one building tall enough to justify such apparatus is 2% for departments protecting communities of 50,000 to 99,999 population; 2% for departments protecting communities of 10,000 to 24,999 population; 14% of departments protecting communities of 5,000 to 9,999 population; 13% of departments protecting communities of 2,500 to 4,999 population; and 14% of departments protecting communities of less than 2,500 population.

**Table N. Departments With No Ladder/Aerial Apparatus vs. Departments With No Buildings of At Least 4 Stories in Height Percent of Departments, by Size of Community Protected (Q. 25)**

| Population Protected | No Ladder/Aerial Apparatus | No Buildings At Least 4 Stories in Height |
|---|---|---|
| 1,000,000 or more | 0% | 0% |
| 500,000 to 999,999 | 0% | 0% |
| 250,000 to 499,999 | 2% | 4% |
| 100,000 to 249,999 | 2% | 3% |
| 50,000 to 99,999 | 7% | 5% |
| 25,000 to 49,999 | 11% | 12% |
| 10,000 to 24,999 | 28% | 26% |
| 5,000 to 9,999 | 62% | 48% |
| 2,500 to 4,999 | 84% | 71% |
| Under 2,500 | 95% | 81% |
| Total | 75% | 64% |

The above projections are based on 4,601 departments reporting on the first part of Question 25 and 3,884 reporting on the second part. See Tables 30-31.

Q. 25: Number of ladders/aerials in service. Number of buildings in community that are 4 or more stories in height. None, 1-5, 6-10, 11 or more

**Personal Protective Equipment and Clothing**

Table 32 (p. 77) indicates what percentage of emergency responders on a single shift are equipped with portable radios. Tables 33 and 34 (pp. 78-79) indicate what fractions of those radios are water-resistant and intrinsically safe in an explosive atmosphere, respectively. Finally, Table 35 (p. 80) indicates whether departments have reserve radios at least equal to 10% of the in-service radios.

Figure 5 and Table O translate the results of Tables 32-34 into estimated percentages of departments where not all emergency responders on a shift have radios and where not all radios have water-resistance or intrinsic safety in an explosive atmosphere.

For communities of 1 million population, only 7% of departments do not have radios for all emergency responders on a shift. For communities of 10,000 to under 1 million population, roughly one-third to two-fifths (29-43%) of departments do not have radios for all emergency responders on a shift. The percentage rises to three-fourths for communities with less than 2,500 population.

**Figure 5. Percent of Departments Where Not All Emergency Responders on a Shift Have Radios**

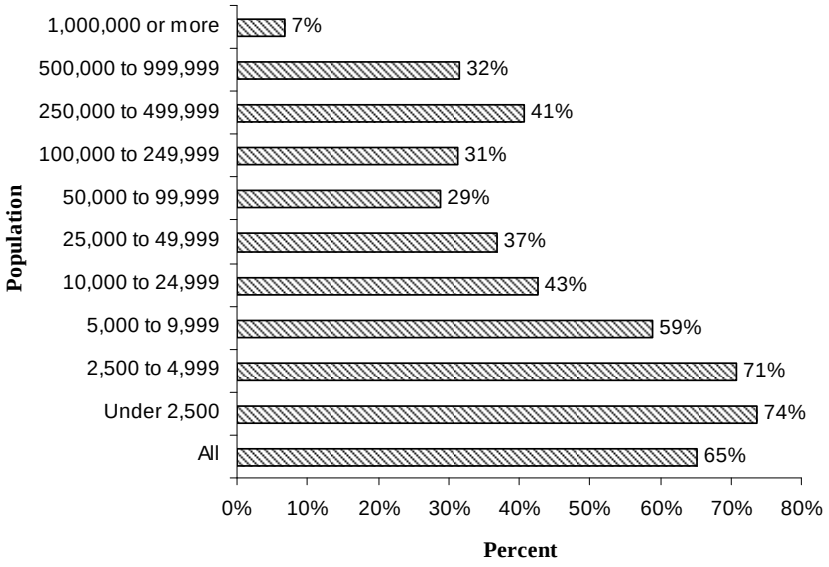



Table 35 is considered to speak for itself, without conversion.

Overall, 71-75% of departments have some radios that are not water-resistant and 75-82% have some radios that are not intrinsically safe in an explosive atmosphere. From Table 35, two-fifths to three-fifths of departments in communities with at least 25,000 population have sufficient reserve radios to replace at least 10% of in-service radios. This fraction falls with community size, reaching one-fifth for communities with less than 5,000 population.

Table 36 (p. 81) estimates how many emergency responders on a shift or otherwise on-duty are equipped with self-contained breathing apparatus (SCBA).

Table 37 (p. 82) estimates what fraction of the SCBA units are at least 10 years old.

The breakdown of need by community size is given in Figure 6 and Table P, in terms of percent of departments where not all personnel on a shift have SCBA and percent where some SCBA units are at least 10 years old, both by size of community protected.

**Table O. Departments Where Not All Emergency Responders on a Shift Have Radios and Radios Lacking Water-Resistance or Intrinsic Safety in an Explosive Atmosphere by Size of Community Protected (Q. 27a, 27b, 27c)**

| Population Protected | Departments Where Not All Emergency Responders on a Shift Have Radios | Departments Where Only Some or None of Radios | |
|---|---|---|---|
| | | Have Water Resistance | Have Intrinsic Safety in Explosive Atmosphere |
| 1,000,000 or more | 2% | 40% | 27% |
| 500,000 to 999,999 | 12% | 38% | 42% |
| 250,000 to 499,999 | 19% | 40% | 41% |
| 100,000 to 249,999 | 13% | 51% | 51% |
| 50,000 to 99,999 | 12% | 42% | 45% |
| 25,000 to 49,999 | 17% | 51% | 61% |
| 10,000 to 24,999 | 20% | 58% | 65% |
| 5,000 to 9,999 | 30% | 67% | 71% |
| 2,500 to 4,999 | 39% | 74% | 77% |
| Under 2,500 | 43% | 77% | 83% |
| Total | 36% | 71% | 75% |

The above projections are based on 4,664 departments reporting on Question 27a, 4,637 reporting on Question 27b, and 4,619 reporting on Question 27c. See Tables 32-34.

Q. 27a: How many of your emergency responders on-duty on a single shift can be equipped with portable radios? All, Most, Some, None
Q. 27b: How many of your portable radios are water-resistant? All, Most, Some, None
Q. 27c: How many of your portable radios are intrinsically safe in an explosive atmosphere? All, Most, Some, None

For communities with at least 50,000 population, at most 5% of departments do not have enough SCBA units to equip all emergency responders on a shift.

This percentage rises to three-fourths for departments protecting communities with less than 2,500 population.

For larger communities, roughly one-fourth to one-third of departments have at least some SCBA units that are at least 10 years old. For smaller communities, the percentage rises to two-thirds. Overall, the percentage of departments with at least some SCBA units that are at least 10 years old is three-fifths (59%).

**Figure 6. Percent of Departments Where Not All Firefighters on a Shift Have Self-Contained Breathing Apparatus (SCBA)**

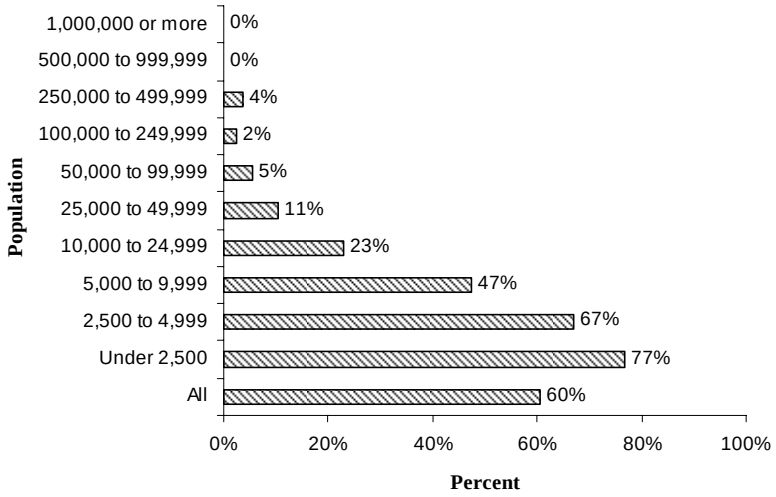


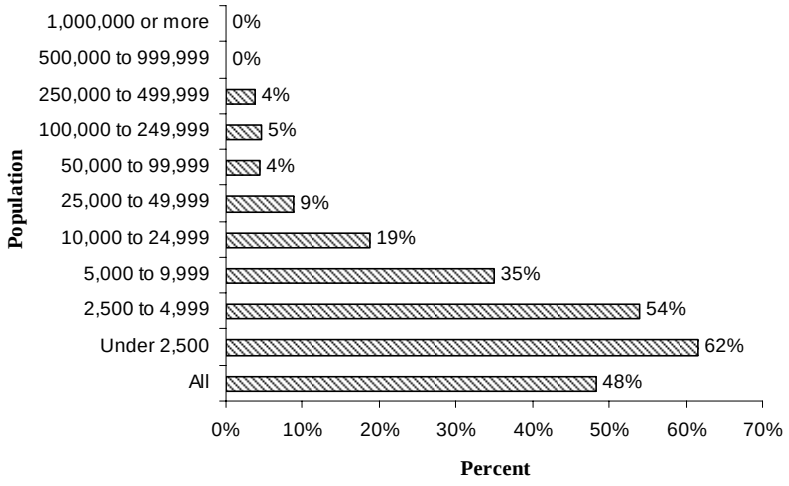

**Table P. Departments Where Not All Firefighters on a Shift Have SCBA and Where At Least Some SCBA Units At Least 10 Years Old, by Size of Community (Q. 28a, 28b)**

| Population Protected | Departments Where Not All Firefighters on a Shift Are Equipped With SCBA | Departments Where At Least Some SCBA Units Are At Least 10 Years Old |
|---|---|---|
| 1,000,000 or more | 0% | 27% |
| 500,000 to 999,999 | 0% | 18% |
| 250,000 to 499,999 | 4% | 26% |
| 100,000 to 249,999 | 2% | 31% |
| 50,000 to 99,999 | 5% | 32% |
| 25,000 to 49,999 | 11% | 40% |
| 10,000 to 24,999 | 23% | 45% |
| 5,000 to 9,999 | 47% | 53% |
| 2,500 to 4,999 | 67% | 60% |
| Under 2,500 | 77% | 67% |
| Total | 60% | 59% |

The above projections are based on 4,662 departments reporting on Question 28a and 4,617 reporting on Question 28b. "Don't Know" responses to Question 28b are proportionally allocated. See Tables 36-37.

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
Q. 28b: How many of your SCBA are 10 years old or older? All, Most, Some, None

**Figure 7. Percent of Departments Where Not All Emergency Responders on a Shift Have Personal Alert Safety System (PASS) Devices**




## Table Q. 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 |
|---|---|
| 1,000,000 or more | 0% |
| 500,000 to 999,999 | 0% |
| 250,000 to 499,999 | 4% |
| 100,000 to 249,999 | 5% |
| 50,000 to 99,999 | 4% |
| 25,000 to 49,999 | 9% |
| 10,000 to 24,999 | 19% |
| 5,000 to 9,999 | 35% |
| 2,500 to 4,999 | 54% |
| Under 2,500 | 62% |
| Total | 48% |

The above projections are based on 4,664 departments reporting on Question 29. See Table 38.

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 38 (p.83) indicates what percentage 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 Q, in terms of percent of departments where not all emergency responders on a shift have PASS devices, by size of community protected.

For communities with populations of 50,000 or more, at most 5% of departments have insufficient PASS devices to equip all emergency responders on a shift. This rises to one in five for communities with 10,000 to 24,999 population, one-third for communities with 5,000 to 9,999 population, over half for communities with 2,500 to 4,999 population, and three-fifths in the departments protecting communities with less than 2,500 population.

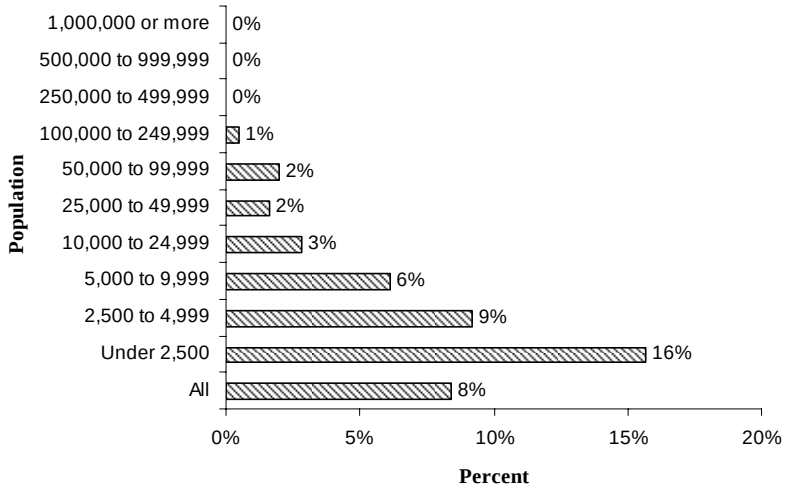
Table 39 (p. 84) indicates how many emergency responders are equipped with their own personal protective clothing.

For communities with at least 10,000 population, 3% or less of departments are estimated not to have personal protective clothing for all firefighters.

For communities of less than 2,500 population, the percentage is 16%.

The overall percentage is 8%.

**Figure 8. Estimated Percent of Departments Where Not All Firefighters Have Personal Protective Clothing**




Nearly all of the firefighters in departments estimated not to have personal protective clothing for all firefighters serve in fire departments that protect communities with less than 10,000 population. Seven out of ten are in communities with less than 2,500 population.

Two-thirds of departments have at least some personal protective clothing that is at least 10 years old. (See Table R.) For departments protecting at least 25,000 population, fewer than half of departments have at least some personal protective clothing that is at least 10 years old.

Table 41 (p. 86) describes the extent to which departments have reserve protective clothing sufficient to equip 10% of responders.

Half or more of departments protecting communities of 10,000 or more population have reserve clothing sufficient to equip 10% of responders.

This falls to just over one-third for communities with less than 5,000 population.

**Table R. Firefighters in Departments Where Not All Firefighters Are Equipped With Personal Protective Clothing and Percent of Personal Protective Clothing That Is At Least 10 Years Old by Size of Community (Q. 30a, 30b)**

| Population Protected | Estimated Firefighters in Departments That Do Not Have Personal Protective Clothing for All Firefighters | Estimated Percent of Departments With At Least Some Personal Protective Clothing That Is At Least 10 Years Old |
|---|---|---|
| 1,000,000 or more | 0 | 20% |
| 500,000 to 999,999 | 0 | 16% |
| 250,000 to 499,999 | 0 | 41% |
| 100,000 to 249,999 | 0* | 32% |
| 50,000 to 99,999 | 1,000 | 32% |
| 25,000 to 49,999 | 1,000 | 45% |
| 10,000 to 24,999 | 4,000 | 53% |
| 5,000 to 9,999 | 8,000 | 63% |
| 2,500 to 4,999 | 15,000 | 68% |
| Under 2,500 | 64,000 | 72% |
| Total | 93,000 | 66% |

* Rounds to zero but is not zero

The above projections are based on 4,682 departments reporting on Question 30a and 4,655 reporting on Question 30b. Numbers are shown to nearest 1,000 and may not sum to totals because of rounding. See Tables 39-40.

Q. 30a: How many of your emergency responders are equipped with personal protective clothing? All, Most, Some, None
Q. 30b: How much of your personal protective clothing is at least 10 years old? All, Most, Some, None

## Table 28
## 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 |
|---|---|---|---|---|
| 1,000,000 or more | 75.83 | 42.6% | 49.2% | 99.1% |
| 500,000 to 999,999 | 35.89 | 33.9 | 65.8 | 58.5 |
| 250,000 to 499,999 | 20.20 | 31.2 | 65.6 | 47.5 |
| 100,000 to 249,999 | 10.83 | 30.8 | 71.6 | 62.7 |
| 50,000 to 99,999 | 5.49 | 29.0 | 76.9 | 66.3 |
| 25,000 to 49,999 | 3.39 | 30.3 | 71.5 | 55.1 |
| 10,000 to 24,999 | 2.07 | 37.5 | 66.2 | 41.3 |
| 5,000 to 9,999 | 1.50 | 38.2 | 51.8 | 22.5 |
| 2,500 to 4,999 | 1.39 | 36.8 | 38.8 | 10.9 |
| Under 2,500 | 1.30 | 36.5 | 25.1 | 7.8 |
| Total | 1.78 | 36.5 | 38.9 | 17.5 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,721 departments answering all four parts of Question 23. Numbers may not add to totals due to rounding.

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 29
## Average Number of Engines/Pumpers and Ambulances* in Service and Age of Engine/Pumper Apparatus by Community Size
## (Q. 24, 26)

| 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 | Average Number of Ambulances* |
|---|---|---|---|---|---|---|
| 1,000,000 or more | 83.13 | 65.25 | 9.00 | 8.75 | 0.13 | 24.20 |
| 500,000 to 999,999 | 39.67 | 34.81 | 4.37 | 0.48 | 0.00 | 10.93 |
| 250,000 to 499,999 | 22.28 | 18.51 | 2.62 | 0.87 | 0.28 | 4.98 |
| 100,000 to 249,999 | 12.88 | 9.71 | 2.41 | 0.50 | 0.28 | 3.23 |
| 50,000 to 99,999 | 6.73 | 5.10 | 1.14 | 0.45 | 0.05 | 1.84 |
| 25,000 to 49,999 | 4.87 | 3.20 | 1.00 | 0.54 | 0.13 | 1.16 |
| 10,000 to 24,999 | 3.49 | 2.09 | 0.70 | 0.50 | 0.20 | 0.80 |
| 5,000 to 9,999 | 2.98 | 1.59 | 0.54 | 0.56 | 0.30 | 0.40 |
| 2,500 to 4,999 | 2.60 | 1.27 | 0.44 | 0.57 | 0.33 | 0.17 |
| Under 2,500 | 2.33 | 0.83 | 0.38 | 0.60 | 0.53 | 0.07 |
| Total | 2.99 | 1.50 | 0.51 | 0.58 | 0.40 | 0.34 |

* “Ambulances” include other patient transport vehicles.

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above table breakdown, except for the last column, is based on 4,545 departments answering all parts of Question 24. The last column is based on 7,968 departments answering Question 26.

Numbers may not add to totals due to rounding.

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

## Table 30
## Number of Ladders/Aerials In-Service, by Community Size
## (Q. 25)

### For Departments Protecting Populations of 250,000 or More, Percent of Departments With

| Population of Community | No Ladders/ Aerials | 1-5 Ladders/ Aerials | 6-9 Ladders/ Aerials | 10-19 Ladders/ Aerials | 20 or More Aerials/ Ladders | Total |
|---|---|---|---|---|---|---|
| 1,000,000 or more | 0.0% | 0.0% | 0.0% | 60.0% | 40.0% | 100.0% |
| 500,000 to 999,999 | 0.0 | 17.9 | 32.1 | 42.9 | 7.1 | 100.0% |
| 250,000 to 499,999 | 2.3 | 63.5 | 29.5 | 4.5 | 0.0 | 100.0% |

### For Departments Protecting Populations of Less Than 250,000, Percent of Departments With

| Population of Community | No Ladders/ Aerials | 1 Ladder/ Aerial | 2 Ladders/ Aerials | 3-4 Ladders/ Aerials | 5 or More Ladders/ Aerials | Total |
|---|---|---|---|---|---|---|
| 100,000 to 249,999 | 2.4% | 17.7% | 27.4% | 39.6% | 12.8% | 100.0% |
| 50,000 to 99,999 | 7.1 | 35.7 | 34.6 | 21.9 | 0.7 | 100.0% |
| 25,000 to 49,999 | 11.4 | 64.4 | 21.4 | 2.9 | 0.0 | 100.0% |
| 10,000 to 24,999 | 28.2 | 64.9 | 6.5 | 0.5 | 0.0 | 100.0% |
| 5,000 to 9,999 | 61.7 | 36.9 | 1.5 | 0.0 | 0.0 | 100.0% |
| 2,500 to 4,999 | 84.4 | 14.9 | 0.3 | 0.3 | 0.0 | 100.0% |
| Under 2,500 | 94.7 | 4.3 | 0.9 | 0.1 | 0.0 | 100.0% |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above table breakdown is based on 4,601 departments reporting on Question 25. Numbers may not add to totals due to rounding.

Q. 25: Number of ladders in service

## Table 31
## Number of Buildings in Community That Are 4 or More Stories in Height by Community Size
## (Q. 25)

| Population of Community | None | | 1 to 5 | | 6 to 9 | | 10 or more | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% | 15 | 100.0% |
| 500,000 to 999,999 | 0 | 0.0 | 1 | 2.6 | 0 | 0.0 | 37 | 97.4 | 38 | 100.0 |
| 250,000 to 499,999 | 2 | 3.7 | 5 | 9.3 | 3 | 5.6 | 44 | 81.5 | 54 | 100.0 |
| 100,000 to 249,999 | 7 | 3.2 | 19 | 8.8 | 26 | 12.0 | 165 | 76.0 | 217 | 100.0 |
| 50,000 to 99,999 | 24 | 5.4 | 81 | 18.0 | 60 | 13.3 | 284 | 63.4 | 448 | 100.0 |
| 25,000 to 49,999 | 133 | 12.4 | 365 | 34.0 | 205 | 19.1 | 370 | 34.5 | 1,073 | 100.0 |
| 10,000 to 24,999 | 777 | 26.4 | 1,081 | 36.8 | 579 | 19.7 | 502 | 17.1 | 2,939 | 100.0 |
| 5,000 to 9,999 | 1,793 | 47.6 | 1,261 | 33.5 | 387 | 10.3 | 323 | 8.6 | 3,764 | 100.0 |
| 2,500 to 4,999 | 3,446 | 70.8 | 1,103 | 22.7 | 208 | 4.3 | 111 | 2.3 | 4,868 | 100.0 |
| Under 2,500 | 11,142 | 81.0 | 2,164 | 15.7 | 303 | 2.2 | 141 | 1.0 | 13,750 | 100.0 |
| Total | 17,323 | 63.8 | 6,081 | 22.4 | 1,771 | 6.5 | 1,991 | 7.3 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,884 departments reporting on Question 25. Numbers may not add to totals due to rounding.

## Table 32
## 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 14 | 93.3% | 1 | 6.7% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 26 | 68.4 | 10 | 26.3 | 2 | 5.3 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 32 | 59.3 | 14 | 25.9 | 8 | 14.8 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 149 | 68.7 | 51 | 23.5 | 17 | 7.8 | 0 | 0.0 | 217 | 100.0 |
| 50,000 to 99,999 | 319 | 71.2 | 99 | 22.1 | 30 | 6.7 | 0 | 0.0 | 448 | 100.0 |
| 25,000 to 49,999 | 678 | 63.2 | 248 | 23.1 | 145 | 13.5 | 2 | 0.2 | 1,073 | 100.0 |
| 10,000 to 24,999 | 1,687 | 57.4 | 725 | 24.7 | 521 | 17.7 | 7 | 0.2 | 2,939 | 100.0 |
| 5,000 to 9,999 | 1,544 | 41.0 | 1,100 | 29.2 | 1,091 | 29.0 | 29 | 0.8 | 3,764 | 100.0 |
| 2,500 to 4,999 | 1,418 | 29.1 | 1,339 | 27.5 | 2,032 | 41.8 | 79 | 1.6 | 4,868 | 100.0 |
| Under 2,500 | 3,585 | 26.0 | 3,182 | 23.1 | 6,551 | 47.6 | 432 | 3.1 | 13,750 | 100.0 |
| Total | 9,450 | 34.8 | 6,769 | 24.9 | 10,398 | 38.3 | 549 | 2.0 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,664 departments reporting on Question 27a. 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 33
## What Fraction of Department's Portable Radios Are Water-Resistant?
## by Community Size
## (Q. 27b)

| Population of Community | All Number Depts | All Percent | Most Number Depts | Most Percent | Some Number Depts | Some Percent | None Number Depts | None Percent | Don't Know Number Depts | Don't Know Percent | Total Number Depts | Total Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 9 | 60.0% | 0 | 0.0% | 1 | 6.7% | 5 | 33.3% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 23 | 60.5 | 7 | 18.4 | 5 | 13.2 | 2 | 5.3 | 1 | 2.6 | 38 | 100.0 |
| 250,000 to 499,999 | 31 | 57.4 | 9 | 16.7 | 7 | 13.0 | 5 | 9.3 | 2 | 3.7 | 54 | 100.0 |
| 100,000 to 249,999 | 99 | 45.6 | 31 | 14.3 | 25 | 11.5 | 47 | 21.7 | 16 | 7.4 | 217 | 100.0 |
| 50,000 to 99,999 | 242 | 54.0 | 59 | 13.2 | 44 | 9.8 | 73 | 16.3 | 29 | 6.5 | 448 | 100.0 |
| 25,000 to 49,999 | 500 | 46.6 | 145 | 13.5 | 150 | 14.0 | 225 | 21.0 | 53 | 4.9 | 1,073 | 100.0 |
| 10,000 to 24,999 | 1,120 | 38.1 | 514 | 17.5 | 404 | 13.7 | 639 | 21.7 | 262 | 8.9 | 2,939 | 100.0 |
| 5,000 to 9,999 | 1,129 | 30.0 | 625 | 16.6 | 592 | 15.7 | 1,030 | 27.4 | 389 | 10.3 | 3,764 | 100.0 |
| 2,500 to 4,999 | 1,098 | 22.6 | 824 | 16.9 | 856 | 17.6 | 1,413 | 29.0 | 677 | 13.9 | 4,868 | 100.0 |
| Under 2,500 | 2,638 | 19.2 | 1,903 | 13.8 | 2,537 | 18.5 | 4,295 | 31.2 | 2,378 | 17.3 | 13,750 | 100.0 |
| Total | 6,888 | 25.4 | 4,117 | 15.2 | 4,621 | 17.0 | 7,732 | 28.5 | 3,808 | 14.0 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,637 departments reporting on Question 27b. Numbers may not add to totals due to rounding.

Q. 27b: How many of your portable radios are water-resistant?

## Table 34
## What Fraction of Department's Portable Radios Are Intrinsically Safe in an Explosive Atmosphere? by Community Size
## (Q. 27c)

| Population of Community | All | | Most | | Some | | None | | Don't Know | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 11 | 73.3% | 0 | 0.0% | 0 | 0.0% | 4 | 26.7% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 21 | 55.3 | 4 | 10.5 | 7 | 18.4 | 4 | 10.5 | 2 | 5.3 | 38 | 100.0 |
| 250,000 to 499,999 | 31 | 57.4 | 4 | 7.4 | 10 | 18.5 | 8 | 14.8 | 1 | 1.9 | 54 | 100.0 |
| 100,000 to 249,999 | 96 | 44.2 | 31 | 14.3 | 34 | 15.7 | 36 | 16.6 | 20 | 9.2 | 217 | 100.0 |
| 50,000 to 99,999 | 219 | 48.9 | 49 | 10.9 | 56 | 12.5 | 73 | 16.3 | 50 | 11.2 | 448 | 100.0 |
| 25,000 to 49,999 | 377 | 35.1 | 160 | 14.9 | 170 | 15.8 | 265 | 24.7 | 102 | 9.5 | 1,073 | 100.0 |
| 10,000 to 24,999 | 891 | 30.3 | 366 | 12.4 | 521 | 17.7 | 772 | 26.3 | 389 | 13.3 | 2,933 | 100.0 |
| 5,000 to 9,999 | 885 | 23.5 | 499 | 13.3 | 590 | 15.7 | 1,039 | 27.6 | 751 | 20.0 | 3,764 | 100.0 |
| 2,500 to 4,999 | 817 | 16.8 | 522 | 10.7 | 764 | 15.7 | 1,391 | 28.9 | 1,375 | 28.3 | 4,868 | 100.0 |
| Under 2,500 | 1,450 | 10.6 | 1,291 | 9.4 | 1,464 | 10.7 | 4,178 | 30.4 | 5,367 | 39.0 | 13,750 | 100.0 |
| Total | 4,798 | 17.7 | 2,924 | 10.8 | 3,617 | 13.3 | 7,770 | 28.6 | 8,058 | 29.7 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,619 departments reporting on Question 27c. Numbers may not add to totals due to rounding.

Q. 27c: How many of your portable radios are intrinsically safe in an explosive atmosphere?

## Table 35
## Does Department Have Reserve Portable Radios Equal to or Greater Than 10% of In-Service Radios? by Community Size (Q. 27d)

| | Yes | | No | | Don't Know | | Total | |
|---|---|---|---|---|---|---|---|---|
| Population of Community | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 9 | 60.0% | 6 | 40.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 23 | 60.5 | 15 | 39.5 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 23 | 42.6 | 27 | 50.0 | 4 | 7.4 | 54 | 100.0 |
| 100,000 to 249,999 | 107 | 49.3 | 103 | 47.5 | 7 | 3.2 | 217 | 100.0 |
| 50,000 to 99,999 | 194 | 43.3 | 239 | 53.3 | 15 | 3.4 | 448 | 100.0 |
| 25,000 to 49,999 | 418 | 39.0 | 647 | 60.3 | 8 | 0.7 | 1,073 | 100.0 |
| 10,000 to 24,999 | 903 | 30.7 | 2,006 | 68.3 | 30 | 1.0 | 2,939 | 100.0 |
| 5,000 to 9,999 | 768 | 20.4 | 2,889 | 76.8 | 107 | 2.9 | 3,764 | 100.0 |
| 2,500 to 4,999 | 882 | 18.1 | 3,860 | 76.3 | 126 | 2.6 | 4,868 | 100.0 |
| Under 2,500 | 2,536 | 18.4 | 10,765 | 78.3 | 449 | 3.3 | 13,750 | 100.0 |
| Total | 5,862 | 21.6 | 20,559 | 75.7 | 745 | 2.7 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,646 departments reporting on Question 27d. Numbers may not add to totals due to rounding.

Q. 27d: Do you have reserve portable radios equal to or greater than 10% of your in-service radios?

## Table 36
## How Many Emergency Responders on a Single Shift Are Equipped With Self-Contained Breathing Apparatus (SCBA)? by Community Size
## (Q. 28a)

| | All | | Most | | Some | | None | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| Population of Community | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 52 | 96.3 | 2 | 3.7 | 0 | 0.0 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 212 | 97.7 | 5 | 2.3 | 0 | 0.0 | 0 | 0.0 | 217 | 100.0 |
| 50,000 to 99,999 | 424 | 94.6 | 21 | 4.7 | 3 | 0.7 | 0 | 0.0 | 448 | 100.0 |
| 25,000 to 49,999 | 960 | 89.5 | 88 | 8.2 | 25 | 2.3 | 0 | 0.0 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,267 | 77.1 | 538 | 18.3 | 127 | 4.3 | 7 | 0.2 | 2,939 | 100.0 |
| 5,000 to 9,999 | 1,980 | 52.6 | 1,335 | 35.5 | 449 | 11.9 | 0 | 0.0 | 3,764 | 100.0 |
| 2,500 to 4,999 | 1,603 | 32.9 | 2,187 | 44.9 | 1,062 | 21.8 | 16 | 0.3 | 4,868 | 100.0 |
| Under 2,500 | 3,204 | 23.3 | 5,718 | 41.6 | 4,612 | 33.5 | 215 | 1.6 | 13,750 | 100.0 |
| Total | 10,756 | 39.6 | 9,895 | 36.4 | 6,277 | 23.1 | 238 | 0.9 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,662 departments reporting on Question 28a. 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 37
## How Much of Department's
## SCBA Equipment Is At Least 10 Years Old?
## by Community Size
## (Q. 28b)

| Population of Community | All Number Depts | All Percent | Most Number Depts | Most Percent | Some Number Depts | Some Percent | None Number Depts | None Percent | Don't Know Number Depts | Don't Know Percent | Total Number Depts | Total Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 0 | 0.0% | 2 | 13.3% | 2 | 13.3% | 11 | 73.3% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 0 | 0.0 | 3 | 7.9 | 4 | 10.5 | 31 | 81.6 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 0 | 0.0 | 4 | 7.4 | 10 | 18.5 | 40 | 74.1 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 11 | 5.0 | 6 | 2.8 | 47 | 21.7 | 150 | 69.6 | 3 | 1.4 | 217 | 100.0 |
| 50,000 to 99,999 | 26 | 5.8 | 29 | 6.4 | 84 | 18.8 | 306 | 68.1 | 3 | 0.7 | 448 | 100.0 |
| 25,000 to 49,999 | 102 | 9.5 | 107 | 10.0 | 216 | 20.1 | 649 | 60.4 | 0 | 0.0 | 1,073 | 100.0 |
| 10,000 to 24,999 | 247 | 8.4 | 288 | 9.8 | 783 | 26.6 | 1,620 | 55.1 | 0 | 0.0 | 2,939 | 100.0 |
| 5,000 to 9,999 | 378 | 10.0 | 461 | 12.2 | 1,133 | 30.1 | 1,789 | 47.5 | 4 | 0.1 | 3,764 | 100.0 |
| 2,500 to 4,999 | 534 | 11.0 | 715 | 14.7 | 1,624 | 33.4 | 1,963 | 40.3 | 32 | 0.7 | 4,868 | 100.0 |
| Under 2,500 | 2,574 | 18.7 | 1,899 | 13.8 | 4,444 | 32.3 | 4,674 | 34.0 | 158 | 1.2 | 13,750 | 100.0 |
| Total | 3,873 | 14.3 | 3,512 | 12.9 | 8,347 | 30.7 | 11,234 | 41.4 | 200 | 0.7 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,617 departments reporting on Question 28b. Numbers may not add to totals due to rounding.

Q. 28b: How many of your self-contained breathing apparatus (SCBA) are 10 years old or older?

## Table 38
## What Fraction of Emergency Responders on a Single Shift Are Equipped With Personal Alert Safety System (PASS) Devices? by Community Size
## (Q. 29)

| | All | | Most | | Some | | None | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| Population of Community | Number of Depts | Percent | Number of Depts | Percent | Number of Depts | Percent | Number of Depts | Percent | Number of Depts | Percent |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 52 | 96.3 | 2 | 3.7 | 0 | 0.0 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 207 | 95.4 | 6 | 2.8 | 0 | 0.0 | 4 | 1.8 | 217 | 100.0 |
| 50,000 to 99,999 | 428 | 95.5 | 14 | 3.1 | 0 | 0.0 | 6 | 1.3 | 448 | 100.0 |
| 25,000 to 49,999 | 977 | 91.1 | 56 | 5.2 | 32 | 3.0 | 7 | 0.7 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,387 | 81.2 | 388 | 13.2 | 117 | 4.0 | 47 | 1.6 | 2,939 | 100.0 |
| 5,000 to 9,999 | 2,444 | 64.9 | 785 | 20.9 | 362 | 9.6 | 173 | 4.6 | 3,764 | 100.0 |
| 2,500 to 4,999 | 2,243 | 46.1 | 1,443 | 29.7 | 931 | 19.1 | 251 | 5.2 | 4,868 | 100.0 |
| Under 2,500 | 5,272 | 38.3 | 2,961 | 21.5 | 3,235 | 23.5 | 2,282 | 16.6 | 13,750 | 100.0 |
| Total | 14,063 | 51.8 | 5,656 | 20.8 | 4,676 | 17.2 | 2,770 | 10.2 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,664 departments reporting on Question 29. 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 39
## 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 |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 54 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 216 | 99.5 | 1 | 0.5 | 0 | 0.0 | 0 | 0.0 | 217 | 100.0 |
| 50,000 to 99,999 | 439 | 98.0 | 6 | 1.3 | 0 | 0.0 | 3 | 0.7 | 448 | 100.0 |
| 25,000 to 49,999 | 1,056 | 98.4 | 15 | 1.4 | 2 | 0.2 | 0 | 0.0 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,885 | 97.2 | 60 | 2.0 | 17 | 0.6 | 7 | 0.2 | 2,939 | 100.0 |
| 5,000 to 9,999 | 3,534 | 93.9 | 205 | 5.5 | 21 | 0.5 | 4 | 0.1 | 3,764 | 100.0 |
| 2,500 to 4,999 | 4,419 | 90.8 | 402 | 8.3 | 31 | 0.6 | 16 | 0.3 | 4,868 | 100.0 |
| Under 2,500 | 11,592 | 84.3 | 1,558 | 11.3 | 529 | 3.9 | 71 | 0.5 | 13,750 | 100.0 |
| Total | 24,219 | 89.1 | 2,247 | 8.3 | 600 | 2.2 | 101 | 0.4 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,682 departments reporting on Question 30a. Numbers may not add to totals due to rounding.

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

## Table 40
## How Much of Department's Personal Protective Clothing Is At Least 10 Years Old? by Community Size (Q. 30b)

| Population of Community | All | | Most | | Some | | None | | Don't Know | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 0 | 0.0% | 0 | 0.0% | 3 | 20.0% | 12 | 80.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 0 | 0.0 | 0 | 0.0 | 6 | 15.8 | 32 | 84.2 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 0 | 0.0 | 1 | 1.9 | 21 | 38.8 | 32 | 59.3 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 9 | 4.1 | 4 | 1.8 | 53 | 24.4 | 143 | 65.9 | 6 | 2.8 | 217 | 100.0 |
| 50,000 to 99,999 | 8 | 1.8 | 11 | 2.5 | 125 | 27.9 | 299 | 66.7 | 6 | 1.3 | 448 | 100.0 |
| 25,000 to 49,999 | 15 | 1.4 | 56 | 5.3 | 414 | 38.6 | 583 | 54.3 | 5 | 0.5 | 1,073 | 100.0 |
| 10,000 to 24,999 | 84 | 2.9 | 262 | 8.9 | 1,206 | 41.0 | 1,370 | 46.6 | 17 | 0.6 | 2,939 | 100.0 |
| 5,000 to 9,999 | 148 | 3.9 | 461 | 12.2 | 1,740 | 46.2 | 1,399 | 37.2 | 16 | 0.4 | 3,764 | 100.0 |
| 2,500 to 4,999 | 195 | 4.0 | 794 | 16.3 | 2,329 | 47.8 | 1,535 | 31.5 | 16 | 0.3 | 4,868 | 100.0 |
| Under 2,500 | 1,667 | 12.1 | 2,399 | 17.4 | 5,718 | 41.6 | 3,851 | 28.0 | 115 | 0.8 | 13,750 | 100.0 |
| Total | 2,125 | 7.8 | 3,991 | 14.7 | 11,614 | 42.7 | 9,257 | 34.1 | 180 | 0.7 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,655 departments reporting on Question 30b. Numbers may not add to totals due to rounding.

Q. 30b: How much of your personal protective clothing is at least 10 years old?

## Table 41
## Does Department Have Reserve Protective Clothing Sufficient to Equip 10% of Emergency Responders? by Community Size (Q. 30c)

| Population of Community | Yes Number Depts | Yes Percent | No Number Depts | No Percent | Don't Know Number Depts | Don't Know Percent | Total Number Depts | Total Percent |
|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 9 | 60.0% | 3 | 20.0% | 3 | 20.0% | 15 | 100.0% |
| 500,000 to 999,999 | 29 | 76.3 | 8 | 21.1 | 1 | 2.6 | 38 | 100.0 |
| 250,000 to 499,999 | 41 | 75.9 | 11 | 20.4 | 2 | 3.7 | 54 | 100.0 |
| 100,000 to 249,999 | 135 | 62.2 | 75 | 34.6 | 7 | 3.2 | 217 | 100.0 |
| 50,000 to 99,999 | 288 | 64.3 | 151 | 33.7 | 9 | 2.0 | 448 | 100.0 |
| 25,000 to 49,999 | 590 | 55.0 | 468 | 43.6 | 15 | 1.4 | 1,073 | 100.0 |
| 10,000 to 24,999 | 1,468 | 49.9 | 1,448 | 49.3 | 24 | 0.8 | 2,939 | 100.0 |
| 5,000 to 9,999 | 1,535 | 40.8 | 2,188 | 58.1 | 41 | 1.1 | 3,764 | 100.0 |
| 2,500 to 4,999 | 1,768 | 36.3 | 3,021 | 62.0 | 79 | 1.6 | 4,868 | 100.0 |
| Under 2,500 | 5,491 | 39.9 | 7,898 | 57.4 | 360 | 2.6 | 13,750 | 100.0 |
| Total | 11,353 | 41.8 | 15,271 | 56.2 | 542 | 2.0 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,637 departments reporting on Question 30c. Numbers may not add to totals due to rounding.

Q. 30c: Do you have reserve personal protective clothing sufficient to equip 10% of your emergency responders?

## COMMUNICATIONS AND COMMUNICATIONS EQUIPMENT

Table 42 (p. 89) indicates what fraction of departments can communicate by radio at incident scenes with their Federal, state or local partners. Interestingly, need does not steadily increase as community size decreases, unlike most other measures of need in this report. Specifically, three-fourths of departments serving communities of 100,000 or more population and of departments serving communities with less than 2,500 population can communicate with partners. This falls to two-thirds for communities with 5,000 to 49,999 population.

Table 43 (p. 90) indicates what fraction of partners departments can communicate with, for those departments that indicated in the previous question that they can communicate with partners. Responses were similar for all community sizes below 250,000 population, with 30-39% saying they can communicate with all partners, 42-50% saying they can communicate with most partners, and 13-23% saying they can communicate only with some partners. For larger communities, responses were much more volatile.

Tables 44 and 45 (pp. 91-92) collectively address the ability of fire departments to access a map coordinate system with sufficient standardization of format to provide effective functionality in directing the movements of emergency response partners.

Table 44 indicates that roughly half of all fire departments have no map coordinate system. This is a problem particularly for smaller communities, less than 50,000 population. About one-fifth of communities with at least 250,000 population have no map coordinate system. The overall percentage with no map coordinate system (after proportional allocation of "don't know" responses) was 50%. There are some indications that national authorities are more supportive of the need for standardization in this area, particularly in the aftermath of Hurricane Katrina, but there is no evidence of progress at the local level.

Table 45 indicates that the vast majority of departments with a map coordinate system have only a local system, which means the system they have is unlikely to be usable with global positioning systems (GPS) or familiar to, or easily used by, non-local emergency response partners, such as Urban Search and Rescue Teams, the National Guard, and state or national response forces. Moreover, interoperability of spatial-based plans, information systems, equipment, and procedures will likely be rendered impossible beyond the local community under these circumstances. This reliance almost exclusively on local systems exists across-the-board, in all sizes of communities.

The U. S. National Grid (USNG-NAD83) standard, based on the grid system used by U.S. military units and National Guard forces around the world, was adopted as the system best suited for eventual national standardization.
(http://www.fgdc.gov/usng/index.html)

Table 46 (p. 93) indicates the use of 911 type telephone communication systems. One-quarter (28%) of departments have 911 Basic (37% of rural fire departments, protecting less than 2,500 population). Between two-thirds and three-fourths (71%) have 911 Enhanced (61% of rural fire departments). Less than 1% have some other, unspecified 3-digit system. And 1% have no system with a special 3-digit number (2% of rural fire departments). The 1% of departments with no system represents a huge improvement (decrease) from the 6% reported in the 2001 survey.

Table 47 (p. 94) indicates who has primary responsibility for dispatch operations. Overall, only one department in 16 (7%) has that responsibility lodged with the fire department, but the percentage goes up sharply with the size of the community. It is only 5-6% for communities with less than 10,000 population but rises to 80% for communities of at least 1 million population.

Just under one-third (30%) have responsibility lodged with the police department, and that is fairly consistent for communities with less than 100,000 population. Overall, 1% have responsibility lodged with a private company.

Another two-fifths (39%) have responsibility lodged with a combined public safety agency, and that is fairly consistent until the size of community reaches 250,000 or more, where the percentage drops. And the other one-fourth of departments overall (24%) have some other arrangement.

Table 48 (p. 95) indicates whether there is a backup dispatch facility. Two of every five departments (39%) say no. The percentage without such a facility is 46% for departments protecting less than 2,500 population, 36% for departments protecting 2,500 to 4,999 population, 29-33% for departments protecting 5,000 to 99,999 population, and 24-29% for the larger communities, except for those protecting 1,000,000 or more population, where the percentage without was only 7%.

Table 49 (p. 96) indicates whether there is Internet access for the department. The overall percentage of departments with access is 76%, but the percentages are much higher for departments protecting 5,000 or more population.

Table 50 (p. 97) indicates what kind of access departments have. Roughly half (53%) of departments with access have it at the department's only fire station. Another 18% have individual access for all personnel. Another 9% have access at each of their several fire stations, and 12% have access only at headquarters despite having multiple fire stations. The rest (8%) have some other arrangement.

## Table 42
## Can Department Communicate by Radio at an Incident Scene With Federal, State or Local Partners? by Community Size (Q. 31a)

| | Yes | | No | | Don't Know | | Total | |
|---|---|---|---|---|---|---|---|---|
| Population of Community | Number of Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 11 | 73.3% | 1 | 6.7% | 3 | 20.0% | 15 | 100.0% |
| 500,000 to 999,999 | 27 | 71.1 | 10 | 26.3 | 1 | 2.6 | 38 | 100.0 |
| 250,000 to 499,999 | 41 | 75.9 | 13 | 24.1 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 168 | 77.4 | 47 | 21.7 | 2 | 0.9 | 217 | 100.0 |
| 50,000 to 99,999 | 321 | 71.7 | 109 | 24.3 | 18 | 4.0 | 448 | 100.0 |
| 25,000 to 49,999 | 688 | 64.1 | 348 | 32.4 | 37 | 3.5 | 1,073 | 100.0 |
| 10,000 to 24,999 | 1,965 | 66.9 | 864 | 29.4 | 110 | 3.8 | 2,939 | 100.0 |
| 5,000 to 9,999 | 2,558 | 68.0 | 947 | 25.1 | 259 | 6.9 | 3,764 | 100.0 |
| 2,500 to 4,999 | 3,415 | 70.2 | 1,165 | 23.9 | 288 | 5.9 | 4,868 | 100.0 |
| Under 2,500 | 10,621 | 77.2 | 2,282 | 16.6 | 847 | 6.2 | 13,750 | 100.0 |
| Total | 19,814 | 72.9 | 5,785 | 21.3 | 1,567 | 5.8 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,659 departments reporting on Question 31a. Numbers may not add to totals due to rounding.

Q. 31a: Can you communicate by radio on an incident scene with your federal, state and local emergency response partners (includes frequency compatability)?

## Table 43
## For Departments That Can Communicate With Partners at an Incident Scene What Fraction of Partners Can They Communicate With? by Community Size (Q. 31b)

| Population of Community | All Number Depts | All Percent | Most Number Depts | Most Percent | Some Number Depts | Some Percent | Total Number Depts | Total Percent |
|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 0 | 0.0% | 8 | 72.7% | 3 | 27.3% | 11 | 100.0% |
| 500,000 to 999,999 | 15 | 55.6 | 9 | 33.3 | 3 | 11.1 | 27 | 100.0 |
| 250,000 to 499,999 | 11 | 26.8 | 24 | 58.5 | 6 | 14.6 | 41 | 100.0 |
| 100,000 to 249,999 | 59 | 35.1 | 84 | 50.0 | 25 | 14.9 | 168 | 100.0 |
| 50,000 to 99,999 | 125 | 38.9 | 154 | 48.0 | 42 | 13.1 | 321 | 100.0 |
| 25,000 to 49,999 | 218 | 31.7 | 334 | 48.4 | 136 | 19.6 | 688 | 100.0 |
| 10,000 to 24,999 | 637 | 32.4 | 886 | 45.1 | 441 | 22.5 | 1,964 | 100.0 |
| 5,000 to 9,999 | 779 | 30.4 | 1,260 | 49.3 | 519 | 20.3 | 2,558 | 100.0 |
| 2,500 to 4,999 | 1,156 | 33.9 | 1,531 | 44.8 | 728 | 21.3 | 3,415 | 100.0 |
| Under 2,500 | 4,057 | 38.2 | 4,492 | 42.3 | 2,072 | 19.5 | 10,621 | 100.0 |
| Total | 7,056 | 35.6 | 8,782 | 44.3 | 3,976 | 20.0 | 19,814 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,258 departments reporting yes to Question 31a and also reporting on Question 31b. Numbers may not add to totals due to rounding.

Q. 31b: If [you can communicate by radio on an incident scene with your federal, state, and local emergency response partners], how many of your partners can you communicate with at an incident scene?

## Table 44
## Does Department Have a Map Coordinate System to Help Direct Emergency Response Partners? by Community Size (Q. 32a)

| | Yes | | No | | Don't Know | | Total | |
|---|---|---|---|---|---|---|---|---|
| **Population of Community** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** |
| 1,000,000 or more | 14 | 93.3% | 1 | 6.7% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 30 | 78.9 | 8 | 21.1 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 42 | 77.8 | 12 | 22.2 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 157 | 72.4 | 59 | 27.2 | 1 | 0.5 | 217 | 100.0 |
| 50,000 to 99,999 | 266 | 59.4 | 177 | 39.5 | 5 | 1.1 | 448 | 100.0 |
| 25,000 to 49,999 | 492 | 45.9 | 564 | 52.5 | 17 | 1.6 | 1,073 | 100.0 |
| 10,000 to 24,999 | 1,157 | 39.4 | 1,732 | 58.9 | 50 | 1.7 | 2,939 | 100.0 |
| 5,000 to 9,999 | 1,545 | 41.0 | 2,115 | 56.2 | 104 | 2.8 | 3,764 | 100.0 |
| 2,500 to 4,999 | 2,274 | 46.7 | 2,463 | 50.6 | 131 | 2.7 | 4,868 | 100.0 |
| Under 2,500 | 7,363 | 53.6 | 5,970 | 43.4 | 416 | 3.0 | 13,750 | 100.0 |
| Total | 13,338 | 49.1 | 13,103 | 48.2 | 725 | 2.7 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,644 departments reporting on Question 32a. Numbers may not add to totals due to rounding.

Q. 32a: Do you have a map coordinate system you would use to help direct your emergency response partners to specific locations?

## Table 45
## For Departments That Have a Map Coordinate System
## What System Do They Use?
## by Community Size
## (Q. 32b)

| Population of Community | Longitude/ Latitude Number Depts | Longitude/ Latitude Percent | Local Number Depts | Local Percent | Military Grid Number Depts | Military Grid Percent | State Plane Coordinate Number Depts | State Plane Coordinate Percent | Other Number Depts | Other Percent | Total Number Depts | Total Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 3 | 21.4% | 9 | 64.3% | 0 | 0.0% | 2 | 14.3% | 0 | 0.0% | 14 | 100.0% |
| 500,000 to 999,999 | 7 | 23.3 | 22 | 73.3 | 0 | 0.0 | 1 | 3.3 | 0 | 0.0 | 30 | 100.0 |
| 250,000 to 499,999 | 8 | 19.0 | 30 | 71.4 | 1 | 2.4 | 1 | 2.4 | 2 | 4.8 | 42 | 100.0 |
| 100,000 to 249,999 | 15 | 9.6 | 131 | 83.4 | 0 | 0.0 | 4 | 2.5 | 7 | 4.5 | 157 | 100.0 |
| 50,000 to 99,999 | 21 | 7.9 | 234 | 88.0 | 0 | 0.0 | 2 | 0.8 | 9 | 3.4 | 266 | 100.0 |
| 25,000 to 49,999 | 51 | 10.4 | 378 | 76.8 | 8 | 1.6 | 10 | 2.0 | 46 | 11.4 | 492 | 100.0 |
| 10,000 to 24,999 | 96 | 8.3 | 945 | 81.7 | 10 | 0.9 | 14 | 1.2 | 92 | 8.0 | 1,157 | 100.0 |
| 5,000 to 9,999 | 146 | 9.4 | 1,280 | 82.8 | 12 | 0.8 | 21 | 1.4 | 86 | 5.5 | 1,545 | 100.0 |
| 2,500 to 4,999 | 202 | 8.9 | 1,886 | 82.9 | 38 | 1.6 | 42 | 1.9 | 106 | 4.7 | 2,274 | 100.0 |
| Under 2,500 | 480 | 6.5 | 6,243 | 84.8 | 58 | 0.8 | 131 | 1.8 | 451 | 6.1 | 7,363 | 100.0 |
| Total | 1,028 | 7.8 | 11,157 | 83.6 | 127 | 1.0 | 228 | 1.7 | 799 | 6.0 | 13,340 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 2,183 departments reporting yes to Questions 32a and also reporting on Question 32b. Numbers may not add to totals due to rounding.

Q. 32b: If [you have a map coordinate system you would use to help direct your emergency response partners to specific locations], what system do you use? "Local system" includes map grid, street address, and box alarm number.

## Table 46
## Does Department Have 911 or Similar System?
## by Community Size
## (Q. 33)

| Population of Community | Yes – 911 Basic Number Depts | Yes – 911 Basic Percent | Yes – 911 Enhanced Number Depts | Yes – 911 Enhanced Percent | Yes – Other 3-Digit System Number Depts | Yes – Other 3-Digit System Percent | No Number Depts | No Percent | Total Number Depts | Total Percent |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 0 | 0.0% | 15 | 100.0% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 0 | 0.0 | 38 | 100.0 | 0 | 0.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 4 | 7.4 | 50 | 92.6 | 0 | 0.0 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 22 | 10.1 | 194 | 89.4 | 0 | 0.0 | 1 | 0.4 | 217 | 100.0 |
| 50,000 to 99,999 | 47 | 10.5 | 401 | 89.5 | 0 | 0.0 | 0 | 0.0 | 448 | 100.0 |
| 25,000 to 49,999 | 115 | 10.7 | 948 | 88.4 | 0 | 0.0 | 10 | 0.9 | 1,073 | 100.0 |
| 10,000 to 24,999 | 407 | 13.8 | 2,512 | 85.5 | 0 | 0.0 | 20 | 0.7 | 2,939 | 100.0 |
| 5,000 to 9,999 | 695 | 18.5 | 3,024 | 80.3 | 4 | 0.1 | 41 | 1.1 | 3,764 | 100.0 |
| 2,500 to 4,999 | 1,175 | 24.1 | 3,625 | 74.5 | 10 | 0.2 | 58 | 1.2 | 4,868 | 100.0 |
| Under 2,500 | 5,119 | 37.2 | 8,373 | 60.9 | 57 | 0.4 | 201 | 1.5 | 13,750 | 100.0 |
| Total | 7,585 | 27.9 | 19,180 | 70.6 | 71 | 0.3 | 330 | 1.2 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,673 reporting on Question 33. Numbers may not add to totals due to rounding.

Q. 33: Do you have 911 or similar system?

## Table 47
## Who Has Primary Responsibility for Dispatch Operations?
## by Community Size
## (Q. 34a)

| | Fire Department | | Police Department | | Private Company | | Combined Public Safety Agency | | Other | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Population of Community | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 12 | 80.0% | 0 | 0.0% | 0 | 0.0% | 3 | 20.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 22 | 57.9 | 4 | 10.5 | 0 | 0.0 | 11 | 28.9 | 1 | 2.6 | 38 | 100.0 |
| 250,000 to 499,999 | 24 | 44.4 | 11 | 20.4 | 0 | 0.0 | 13 | 24.1 | 6 | 11.1 | 54 | 100.0 |
| 100,000 to 249,999 | 68 | 31.3 | 53 | 24.4 | 0 | 0.0 | 77 | 35.5 | 19 | 8.8 | 217 | 100.0 |
| 50,000 to 99,999 | 76 | 17.0 | 133 | 29.7 | 1 | 0.2 | 187 | 41.7 | 51 | 11.4 | 448 | 100.0 |
| 25,000 to 49,999 | 148 | 13.8 | 359 | 33.5 | 13 | 1.2 | 407 | 37.9 | 146 | 13.6 | 1,073 | 100.0 |
| 10,000 to 24,999 | 327 | 11.1 | 1,062 | 36.1 | 37 | 1.3 | 957 | 32.6 | 556 | 18.9 | 2,939 | 100.0 |
| 5,000 to 9,999 | 238 | 6.3 | 1,175 | 31.2 | 42 | 1.1 | 1,476 | 39.2 | 834 | 22.2 | 3,764 | 100.0 |
| 2,500 to 4,999 | 270 | 5.6 | 1,326 | 27.2 | 80 | 1.6 | 1,850 | 38.0 | 1,342 | 27.6 | 4,868 | 100.0 |
| Under 2,500 | 666 | 4.8 | 3,966 | 28.8 | 101 | 0.7 | 5,514 | 40.1 | 3,502 | 25.5 | 13,750 | 100.0 |
| Total | 1,851 | 6.8 | 8,089 | 29.8 | 273 | 1.0 | 10,495 | 38.6 | 6,457 | 23.8 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above table breakdown and projections are based on 4,613 reporting on Question 34a. Numbers may not add to totals due to rounding.

Q. 34a: Who has primary responsibility for dispatch operations?

## Table 48
## Does Department Have a Backup Dispatch Facility?
## by Community Size
## (Q. 34b)

| Population of Community | Yes Number Depts | Yes Percent | No Number Depts | No Percent | Total Number Depts | Total Percent |
|---|---|---|---|---|---|---|
| 1,000,000 or more | 14 | 93.3% | 1 | 6.7% | 15 | 100.0% |
| 500,000 to 999,999 | 27 | 71.1 | 11 | 28.9 | 38 | 100.0 |
| 250,000 to 499,999 | 40 | 74.1 | 14 | 25.9 | 54 | 100.0 |
| 100,000 to 249,999 | 164 | 75.6 | 53 | 24.4 | 217 | 100.0 |
| 50,000 to 99,999 | 317 | 70.8 | 131 | 29.2 | 448 | 100.0 |
| 25,000 to 49,999 | 721 | 67.2 | 352 | 32.8 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,091 | 71.1 | 848 | 28.9 | 2,939 | 100.0 |
| 5,000 to 9,999 | 2,591 | 68.8 | 1,173 | 31.2 | 3,764 | 100.0 |
| 2,500 to 4,999 | 3,128 | 64.3 | 1,740 | 35.7 | 4,868 | 100.0 |
| Under 2,500 | 7,456 | 54.2 | 6,294 | 45.8 | 13,750 | 100.0 |
| Total | 16,548 | 60.9 | 10,618 | 39.1 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,786 departments reporting on Question 34a. Numbers may not add to totals due to rounding.

Q. 34a: Who has primary responsibility for dispatch operations?

## Table 49
## Does Department Have Internet Access?
## by Community Size
## (Q. 35a)

| Population of Community | Yes Number Depts | Yes Percent | No Number Depts | No Percent | Total Number Depts | Total Percent |
|---|---|---|---|---|---|---|
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 100.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 54 | 100.0 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 217 | 100.0 | 0 | 0.0 | 217 | 100.0 |
| 50,000 to 99,999 | 446 | 99.5 | 2 | 0.5 | 448 | 100.0 |
| 25,000 to 49,999 | 1,068 | 99.5 | 5 | 0.5 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,856 | 97.2 | 83 | 2.8 | 2,939 | 100.0 |
| 5,000 to 9,999 | 3,409 | 90.6 | 355 | 9.4 | 3,764 | 100.0 |
| 2,500 to 4,999 | 4,010 | 82.4 | 858 | 17.6 | 4,868 | 100.0 |
| Under 2,500 | 8,533 | 62.0 | 5,217 | 38.0 | 13,750 | 100.0 |
| Total | 20,646 | 76.0 | 6,520 | 24.0 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above table breakdown and projections are based on 4,665 departments reporting on Question 35a. Numbers may not add to totals due to rounding.

Q. 35a: Does your department have Internet access?

## Table 50
## For Departments That Have Internet Access
## What Kind of Access Do They Have?
## by Community Size
## (Q. 35b)

| Population of Community | All Personnel Have Individual Access | | One Access Point per Station – Multiple Stations | | One Access Point at the Only Station | | Access at Headquarters – Multiple Stations | | Other | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 8 | 53.3% | 5 | 33.3% | 0 | 0.0% | 1 | 6.7% | 1 | 6.7% | 15 | 100.0% |
| 500,000 to 999,999 | 13 | 34.2 | 19 | 50.0 | 0 | 0.0 | 0 | 0.0 | 6 | 15.8 | 38 | 100.0 |
| 250,000 to 499,999 | 27 | 50.0 | 19 | 35.2 | 0 | 0.0 | 6 | 11.1 | 2 | 3.7 | 54 | 100.0 |
| 100,000 to 249,999 | 104 | 47.9 | 79 | 36.4 | 1 | 0.5 | 22 | 10.1 | 11 | 5.1 | 217 | 100.0 |
| 50,000 to 99,999 | 197 | 44.3 | 179 | 40.2 | 5 | 1.1 | 52 | 11.7 | 14 | 3.1 | 446 | 100.0 |
| 25,000 to 49,999 | 451 | 42.2 | 339 | 31.7 | 60 | 5.6 | 184 | 17.3 | 35 | 3.3 | 1,068 | 100.0 |
| 10,000 to 24,999 | 930 | 32.6 | 537 | 18.8 | 659 | 23.0 | 581 | 20.3 | 149 | 5.2 | 2,856 | 100.0 |
| 5,000 to 9,999 | 713 | 20.9 | 248 | 7.3 | 1,694 | 49.7 | 576 | 16.9 | 179 | 5.3 | 3,409 | 100.0 |
| 2,500 to 4,999 | 493 | 12.3 | 182 | 4.5 | 2,672 | 66.6 | 434 | 10.8 | 230 | 5.7 | 4,010 | 100.0 |
| Under 2,500 | 715 | 8.4 | 248 | 2.9 | 5,907 | 69.2 | 569 | 6.7 | 1,094 | 12.8 | 8,533 | 100.0 |
| Total | 3,649 | 17.7 | 1,852 | 9.0 | 10,997 | 53.3 | 2,425 | 11.7 | 1,722 | 8.3 | 20,646 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,939 departments reporting yes to Question 35a and also reporting on Question 35b. Numbers may not add to totals due to rounding.

Q. 35b: If [your department has Internet access], describe the access you have.

## 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 responsibility, 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 for a Building With 50 Occupants After Structural Collapse

Table 51 (p. 113) indicates whether a technical rescue with EMS at a structural collapse of a building with 50 occupants is within the responsibility of the department. Affirmative answers become less likely as the size of the community decreases, so that less than half the fire departments protecting rural communities (less than 2,500 population) answered affirmatively, while all of the largest departments (those protecting at least 500,000 population) did.

Tables 52-54 (pp. 114-116) address, for the departments that consider such a rescue within their responsibility, how far they have to go for specially trained people and specialized equipment and what type of plan they have for obtaining assistance, respectively.

By combining Table 51 with Tables 52-54, 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 responsibility" statistics from Table 51. The other columns are produced by multiplying the columns from Tables 52-54, respectively, by the "Yes, within responsibility" statistics from Table 51.

Overall, 11% of departments reported they were responsible for such an incident and had enough specially trained people locally. Another 55% said this was within their responsibility but they would need specially trained people from outside their local area, and 34% said such incidents were outside their responsibility. The 2001 survey reported 44% of departments considered such an incident outside their responsibility.

Only communities of 500,000 or more population had a majority of departments report both that they were responsible for such an incident and that they had enough local specially trained personnel. Among departments saying such incidents were within their responsibility protecting communities of less than 100,000 population, by population interval, the number of departments saying they did not have enough local specially

trained personnel outnumbered the number of departments saying they had enough local specially trained personnel by factors of 3-to-1 up to 6-to-1.

**Table S. Percentage of Departments by Whether Incident Type is Their Responsibility and Where They Obtain Necessary Personnel With Specialized Training, by Size of Community (Q. 36b)**

| Population Protected | Is Technical Rescue with EMS at Structural Collapse of a Building with 50 Occupants Within the Department's Responsibility? | | |
|---|---|---|---|
| | Responsible and Local Specially Trained People Would Be Enough | Responsible But Local Specially Trained People Would Not Be Enough | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 73% | 27% | 0% |
| 500,000 to 999,999 | 63% | 37% | 0% |
| 250,000 to 499,999 | 41% | 56% | 4% |
| 100,000 to 249,999 | 26% | 71% | 2% |
| 50,000 to 99,999 | 19% | 77% | 4% |
| 25,000 to 49,999 | 13% | 78% | 10% |
| 10,000 to 24,999 | 10% | 76% | 14% |
| 5,000 to 9,999 | 10% | 69% | 22% |
| 2,500 to 4,999 | 11% | 59% | 30% |
| Under 2,500 | 10% | 44% | 47% |
| Total | 11% | 55% | 34% |

The above projections are based on 4,661 departments reporting on Question 36a and 3,548 reporting on Question 36b. See Tables 51 and 52.

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

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

Overall, 10% of departments reported they were responsible for such an incident and had enough specialized equipment locally. Another 56% said this was within their responsibility but they would need specialized equipment from outside of their local community.

Relative to the 2001 survey, this represented a decrease from 44% to 34% in the percentage of departments declaring such incidents outside their responsibility, but no increase in the percentage of departments that said such incidents were within their responsibility and local specialized equipment would suffice. In other words, the increased percentage of departments saying such incidents were their responsibility all showed up under the percentage of departments saying local specialized equipment would not be enough. Only communities of 500,000 or more population had a majority of departments report both that they were responsible for such an incident and that local

specialized equipment would be enough. For departments saying such incidents were within their responsibility protecting communities of less than 100,000 population, the number of departments saying local specialized equipment would not be enough outnumbered the number saying local specialized equipment would be enough by factors of 5-to-1 up to 9-to-1, depending on the population interval.

**Table T. Percentage of Departments by Whether Incident Type is Their Responsibility and Where They Obtain Necessary Specialized Equipment, by Size of Community (Q. 36c)**

| | Is Technical Rescue with EMS at Structural Collapse of a Building with 50 Occupants Within the Department's Responsibility? | | |
|---|---|---|---|
| Population Protected | Responsible and Local Specialized Equipment Would Be Enough | Responsible But Local Specialized Equipment Would Not Be Enough | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 87% | 13% | 0% |
| 500,000 to 999,999 | 55% | 45% | 0% |
| 250,000 to 499,999 | 39% | 57% | 4% |
| 100,000 to 249,999 | 23% | 75% | 2% |
| 50,000 to 99,999 | 16% | 80% | 4% |
| 25,000 to 49,999 | 13% | 78% | 10% |
| 10,000 to 24,999 | 9% | 77% | 14% |
| 5,000 to 9,999 | 9% | 70% | 22% |
| 2,500 to 4,999 | 10% | 61% | 30% |
| Under 2,500 | 9% | 44% | 47% |
| Total | 10% | 56% | 34% |

The above table breakdown and projections are based on 4,661 departments reporting on Question 36a and 3,534 reporting on Question 36c. See Tables 51and 53.

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

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

Overall, including departments which reported local personnel and equipment were enough, 24% of departments reported such an incident was within their responsibility and they had a written agreement for obtaining non-local resources to respond.

Another 33% said this was within their responsibility and they had a plan but did not characterize the plan as a written agreement, and 7% said they had no plan though such incidents were within their responsibility.

Above 50,000 population, more departments with responsibility have written agreements than do not.

**Table U. Percentage of Departments by Whether Incident Type Is Their Responsibility and Type of Plan for Obtaining Assistance From Others, by Size of Community (Q. 36d)**

| Population Protected | Is Technical Rescue with EMS at Structural Collapse of a Building with 50 Occupants Within the Department's Responsibility? | | | |
|---|---|---|---|---|
| | Responsible With Written Agreement | Responsible With Informal or Other Plan | Responsible But With No Plan | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 100% | 0% | 0% | 0% |
| 500,000 to 999,999 | 84% | 16% | 0% | 0% |
| 250,000 to 499,999 | 87% | 9% | 0% | 4% |
| 100,000 to 249,999 | 68% | 26% | 4% | 2% |
| 50,000 to 99,999 | 60% | 33% | 4% | 4% |
| 25,000 to 49,999 | 54% | 32% | 4% | 10% |
| 10,000 to 24,999 | 39% | 42% | 5% | 14% |
| 5,000 to 9,999 | 34% | 37% | 8% | 22% |
| 2,500 to 4,999 | 25% | 38% | 8% | 30% |
| Under 2,500 | 18% | 28% | 7% | 47% |
| Total | 26% | 33% | 7% | 34% |

The above table breakdown and projections are based on 4,661 departments reporting on Question 36a and 3,495 reporting on Question 36d. See Tables 51 and 54.

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

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

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

Table 55 (p. 117) indicates whether hazmat and EMS for an incident involving chemical/ biological agents and 10 injuries is within the responsibility of the department. (Note that casualty counts of 100 to 1,000 are not unusual in chemical/biological agent weapons of mass destruction.)

Affirmative answers become less likely as the size of the department shrinks, so that only 56% of the fire departments protecting rural communities (less than 2,500 population) indicated that such incidents were within their responsibility, while nearly all of the largest departments (those protecting at least 250,000 population) did.

Tables 56-58 (pp. 118-120) address, for the departments that consider such a rescue within their responsibility, how far they have to go for specially trained people and specialized equipment and what type of plan they have for obtaining assistance, respectively.

By combining Table 55 with Tables 56-58, one can obtain an even better indication of different types of department needs to address such incidents, as seen in Tables V to X. In Tables V to X, the rightmost column reproduces the "No, not within responsibility" statistics from Table 55. The other columns are produced by multiplying the columns from Tables 56-58, respectively, by the "Yes, within responsibility" statistics from Table 55.

**Table V. Percentage of Departments by Whether Incident Type is Their Responsibility and Where They Obtain Necessary Personnel With Specialized Training, by Size of Community (Q. 37b)**

| | Is Hazmat and EMS for an Incident Involving Chemical/Biological Agents and 10 Injuries Within the Department's Responsibility? | | |
|---|---|---|---|
| Population Protected | Responsible and Local Specially Trained People Would Be Enough | Responsible But Local Specially Trained People Would Not Be Enough | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 93% | 7% | 0% |
| 500,000 to 999,999 | 76% | 21% | 4% |
| 250,000 to 499,999 | 76% | 24% | 0% |
| 100,000 to 249,999 | 48% | 49% | 2% |
| 50,000 to 99,999 | 35% | 63% | 2% |
| 25,000 to 49,999 | 24% | 68% | 8% |
| 10,000 to 24,999 | 16% | 71% | 13% |
| 5,000 to 9,999 | 13% | 66% | 21% |
| 2,500 to 4,999 | 12% | 61% | 27% |
| Under 2,500 | 7% | 48% | 44% |
| Total | 12% | 56% | 32% |

The above table breakdown and projections are based on 4,661 departments reporting on Question 37a and 3,619 reporting on Question 37b. See Tables 55 and 56.

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

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

Overall, 12% of departments reported they were responsible for such an incident and had enough specially trained people locally. Another 56% said this was within their responsibility but they would need specially trained people from outside their local area, and 32% said such incidents were outside of their responsibility. The 2001 survey reported that 42% of departments considered such an incident outside their responsibility.

Only communities of 250,000 or more population had a majority of departments report both that they were responsible for such an incident and that local specially trained

people would be enough. For departments saying such incidents were within their responsibility protecting communities of less than 50,000 population, the number of departments saying local specially trained people would not be enough outnumbered the number saying local specially trained people would be enough by factors of 3-to-1 up to 7-to-1, depending on the population interval.

**Table W. Percentage of Departments by Whether Incident Type is Their Responsibility and Where They Obtain Necessary Specialized Equipment, by Size of Community (Q. 37c)**

| | Is Hazmat and EMS for an Incident Involving Chemical/Biological Agents and 10 Injuries Within the Department's Responsibility? | | |
|---|---|---|---|
| Population Protected | Responsible and Local Specialized Equipment Would Be Enough | Responsible But Local Specialized Equipment Would Not Be Enough | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 93% | 7% | 0% |
| 500,000 to 999,999 | 76% | 21% | 4% |
| 250,000 to 499,999 | 76% | 24% | 0% |
| 100,000 to 249,999 | 47% | 50% | 2% |
| 50,000 to 99,999 | 31% | 67% | 2% |
| 25,000 to 49,999 | 24% | 68% | 8% |
| 10,000 to 24,999 | 14% | 73% | 13% |
| 5,000 to 9,999 | 11% | 68% | 21% |
| 2,500 to 4,999 | 10% | 63% | 27% |
| Under 2,500 | 6% | 50% | 44% |
| Total | 10% | 58% | 32% |

The above projections are based on 4,661 departments reporting on Question 37a and 3,609 reporting on Question 37c. See Tables 55 and 57.

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

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

Overall, 10% of departments reported they were responsible for such an incident and had enough specialized equipment locally. Another 58% said this was within their responsibility but they would need specialized equipment from outside of their local community.

Only communities of 250,000 or more population had a majority of departments report both that they were responsible for such an incident and that local specialized equipment would be enough. For departments saying such incidents were within their responsibility protecting communities of less than 100,000 population, the number of departments saying local specialized equipment would not be enough outnumbered the number saying

local specialized equipment would be enough by factors of 2-to-1 up to 8-to-1, depending on the population interval.

Overall, including departments which reported local personnel and equipment were enough, 30% of departments reported such an incident was within their responsibility and they had a written agreement for obtaining non-local resources to respond. Another 33% said this was within their responsibility and they had a plan but did not characterize the plan as a written agreement, and 5% said they had no plan though such incidents were within their responsibility.

**Table X. Percentage of Departments by Whether Incident Type Is Their Responsibility and Type of Plan for Obtaining Assistance From Others, by Size of Community (Q. 37d)**

| Population Protected | Is Hazmat and EMS for an Incident Involving Chemical/Biological Agents and 10 Injuries Within the Department's Responsibility? | | | |
|---|---|---|---|---|
| | Responsible With Written Agreement | Responsible With Informal or Other Plan | Responsible But With No Plan | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 93% | 7% | 0% | 0% |
| 500,000 to 999,999 | 89% | 8% | 0% | 4% |
| 250,000 to 499,999 | 91% | 9% | 0% | 0% |
| 100,000 to 249,999 | 79% | 18% | 1% | 2% |
| 50,000 to 99,999 | 75% | 22% | 1% | 2% |
| 25,000 to 49,999 | 68% | 23% | 2% | 8% |
| 10,000 to 24,999 | 46% | 38% | 3% | 13% |
| 5,000 to 9,999 | 37% | 37% | 5% | 21% |
| 2,500 to 4,999 | 29% | 38% | 7% | 27% |
| Under 2,500 | 19% | 31% | 6% | 44% |
| Total | 30% | 33% | 5% | 32% |

The above projections are based on 4,661 departments reporting on Question 37a and 3,570 reporting on Question 37d. See Tables 55 and 58.

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

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

## Wildland/Urban Interface Fire Affecting 500 Acres

Table 59 (p. 121) indicates whether a wildland/urban interface fire affecting 500 acres is within the responsibility of the department. A majority of all sizes of communities say such incidents are within their responsibility. It is not possible to determine from

available data which departments among those declaring such incidents outside their responsibility have no nearby wildland/urban interface areas in their communities.

Tables 60-62 (pp. 122-124) address, for the departments that consider such a rescue within their responsibility, how far they have to go for specially trained people and specialized equipment and what type of plan they have for obtaining assistance, respectively.

By combining Table 59 with Tables 60-62, one can obtain an even better indication of different types of department needs to address such incidents, as seen in Tables Y to AA.

In Tables Y to AA, the rightmost column reproduces the "No, not within responsibility" statistics from Table 59. The other columns are produced by multiplying the columns from Tables 60-62, respectively, by the "Yes, within responsibility" statistics from Table 59.

**Table Y. Percentage of Departments by Whether Incident Type is Their Responsibility and Where They Obtain Necessary Personnel With Specialized Training, by Size of Community (Q. 38b)**

| Population Protected | Is a Wildland/Urban Interface Fire Affecting 500 Acres Within the Department's Responsibility? | | |
|---|---|---|---|
| | Responsible and Local Specially Trained People Would Be Enough | Responsible But Local Specially Trained People Would Not Be Enough | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 27% | 53% | 20% |
| 500,000 to 999,999 | 24% | 34% | 42% |
| 250,000 to 499,999 | 24% | 46% | 30% |
| 100,000 to 249,999 | 18% | 42% | 40% |
| 50,000 to 99,999 | 14% | 32% | 55% |
| 25,000 to 49,999 | 12% | 41% | 47% |
| 10,000 to 24,999 | 16% | 44% | 40% |
| 5,000 to 9,999 | 21% | 49% | 30% |
| 2,500 to 4,999 | 24% | 51% | 25% |
| Under 2,500 | 29% | 51% | 21% |
| Total | 24% | 49% | 27% |

The above projections are based on 4,658 departments reporting on Question 38a and 3,128 reporting on Question 38b. See Tables 59 and 60.

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

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

Wildland/urban interface fires have a much different profile from the first two types of major incidents. A large share of departments in every community-population interval do not consider such incidents to be their responsibility.

Overall, 24% of departments reported they were responsible for such an incident and had enough specially trained people locally. Another 49% said this was within their responsibility but they would need specially trained people from outside their local area, and 27% said such incidents were outside of their responsibility.

**Table Z. Percentage of Departments by Whether Incident Type is Their Responsibility and Where They Obtain Necessary Specialized Equipment, by Size of Community (Q. 38c)**

| | Is a Wildland/Urban Interface Fire Affecting 500 Acres Within the Department's Responsibility? | | |
|---|---|---|---|
| Population Protected | Responsible and Local Specialized Equipment Would Be Enough | Responsible But Local Specialized Equipment Would Not Be Enough | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 27% | 53% | 20% |
| 500,000 to 999,999 | 18% | 39% | 42% |
| 250,000 to 499,999 | 20% | 50% | 30% |
| 100,000 to 249,999 | 12% | 47% | 40% |
| 50,000 to 99,999 | 12% | 33% | 55% |
| 25,000 to 49,999 | 11% | 42% | 47% |
| 10,000 to 24,999 | 15% | 46% | 40% |
| 5,000 to 9,999 | 17% | 53% | 30% |
| 2,500 to 4,999 | 20% | 55% | 25% |
| Under 2,500 | 26% | 54% | 21% |
| Total | 21% | 52% | 27% |

The above projections are based on 4,658 departments reporting on Question 38a and 3,122 reporting on Question 38c. See Tables 59 and 61.

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

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

Overall, 21% of departments reported they were responsible for such an incident and had enough specialized equipment locally. Another 52% said this was within their responsibility but they would need specialized equipment from outside of their local community.

The US Forest Service has applied considerable effort to create formal networks through written agreements to move resources to wherever they are needed if a major

wildland/urban interface fire occurs. Their efforts appear to have borne fruit, because the current state of planning is also much different for these incidents – and specifically much better.

**Table AA. Percentage of Departments by Whether Incident Type Is Their Responsibility and Type of Plan for Obtaining Assistance From Others, by Size of Community (Q. 38d)**

| Population Protected | Is a Wildland/Urban Interface Fire Affecting 500 Acres Within the Department's Responsibility? | | | |
|---|---|---|---|---|
| | Responsible With Written Agreement | Responsible With Informal or Other Plan | Responsible But With No Plan | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 73% | 7% | 0% | 20% |
| 500,000 to 999,999 | 55% | 3% | 0% | 42% |
| 250,000 to 499,999 | 57% | 13% | 0% | 30% |
| 100,000 to 249,999 | 47% | 12% | 1% | 40% |
| 50,000 to 99,999 | 32% | 12% | 1% | 55% |
| 25,000 to 49,999 | 36% | 15% | 2% | 47% |
| 10,000 to 24,999 | 36% | 22% | 2% | 40% |
| 5,000 to 9,999 | 41% | 27% | 2% | 30% |
| 2,500 to 4,999 | 39% | 33% | 3% | 25% |
| Under 2,500 | 41% | 35% | 3% | 21% |
| Total | 40% | 31% | 3% | 27% |

The above projections are based on 4,658 departments reporting on Question 38a and 3,099 reporting on Question 38d. See Tables 59 and 62.

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

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

Overall, including departments which reported local personnel and equipment were enough, 40% of departments reported such an incident was within their responsibility and they had a written agreement for obtaining non-local resources to respond. Another 31% said this was within their responsibility and they had a plan but did not characterize the plan as a written agreement, and 3% said they had no plan though such incidents were within their responsibility.

### Mitigation of a Developing Major Flood

Table 63 (p. 125) indicates whether mitigation of a developing major flood is within the responsibility of the department. Tables 64-66 (pp. 126-128) address, for the departments that consider such a rescue within their responsibility, how far they have to

go for specially trained people and specialized equipment and what type of plan they have for obtaining assistance, respectively. By combining Table 63 with Tables 64-66, one can obtain an even better indication of different types of department needs to address such incidents, as seen in Tables AB to AD. In Tables AB to AD, the rightmost column reproduces the "No, not within responsibility" statistics from Table 63. The other columns are produced by multiplying the columns from Tables 64-66, respectively, by the "Yes, within responsibility" statistics from Table 63.

**Table AB. Percentage of Departments by Whether Incident Type is Their Responsibility and Where They Obtain Necessary Personnel With Specialized Training, by Size of Community (Q. 39b)**

| Population Protected | Can the Department Handle Mitigation of a Developing Major Flood? | | |
|---|---|---|---|
| | Responsible and Local Specially Trained People Would Be Enough | Responsible But Local Specially Trained People Would Not Be Enough | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 53% | 33% | 13% |
| 500,000 to 999,999 | 24% | 21% | 55% |
| 250,000 to 499,999 | 19% | 57% | 24% |
| 100,000 to 249,999 | 11% | 56% | 33% |
| 50,000 to 99,999 | 10% | 50% | 40% |
| 25,000 to 49,999 | 9% | 56% | 34% |
| 10,000 to 24,999 | 9% | 47% | 44% |
| 5,000 to 9,999 | 10% | 46% | 44% |
| 2,500 to 4,999 | 11% | 41% | 48% |
| Under 2,500 | 11% | 30% | 59% |
| Total | 11% | 38% | 52% |

The above projections are based on 4,622 departments reporting on Question 39a and 2,472 reporting on Question 39b. See Tables 63 and 64.

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

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

It is not possible to determine from available data which departments declaring such incidents outside their responsibility have no nearby body of water capable of a major flood.

Overall, 11% of departments reported they were responsible for such an incident and had enough specially trained people locally.

Another 38% said this was within their responsibility but they would need specially trained people from outside their local area, and 52% said such incidents were outside of their responsibility.

**Table AC. Percentage of Departments by Whether Incident Type is Their Responsibility and Where They Obtain Necessary Specialized Equipment, by Size of Community (Q. 39c)**

| Population Protected | Can the Department Handle Mitigation of a Developing Major Flood? | | |
|---|---|---|---|
| | Responsible and Local Specialized Equipment Would Be Enough | Responsible But Local Specialized Equipment Would Not Be Enough | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 53% | 33% | 13% |
| 500,000 to 999,999 | 24% | 21% | 55% |
| 250,000 to 499,999 | 15% | 61% | 24% |
| 100,000 to 249,999 | 7% | 60% | 33% |
| 50,000 to 99,999 | 9% | 51% | 40% |
| 25,000 to 49,999 | 8% | 58% | 34% |
| 10,000 to 24,999 | 7% | 49% | 44% |
| 5,000 to 9,999 | 8% | 48% | 44% |
| 2,500 to 4,999 | 9% | 43% | 48% |
| Under 2,500 | 9% | 31% | 59% |
| Total | 9% | 39% | 52% |

The above projections are based on 4,622 departments reporting on Question 39a and 2,464 reporting on Question 39c. See Tables 63 and 65.

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

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

Overall, 9% of departments reported they were responsible for such an incident and had enough specialized equipment locally. Another 39% said this was within their responsibility but they would need specialized equipment from outside of their local community.

Overall, including departments which reported local personnel and equipment were enough, 18% of departments reported such an incident was within their responsibility and they had a written agreement for obtaining non-local resources to respond. Another 24% said this was within their responsibility and they had a plan but it wasn't written, and 6% said they had no plan though such incidents were within their responsibility.

Combined with the results on local resources, this suggests that, of the four reference major incidents included on the Needs Assessment Survey, mitigation of a major flood is the one that most combines a high percentage of departments with responsibility but without enough local specially trained people and/or enough local specialized equipment with a high percentage of departments with responsibility but without a written agreement for obtaining assistance of others.

**Table AD. Percentage of Departments by Whether Incident Type Is Their Responsibility and Type of Plan for Obtaining Assistance From Others, by Size of Community (Q. 39d)**

| Population Protected | Can the Department Handle Mitigation of a Developing Major Flood? | | | |
|---|---|---|---|---|
| | Responsible With Written Agreement | Responsible With Informal or Other Plan | Responsible But With No Plan | Incident Not Within Department's Responsibility |
| 1,000,000 or more | 87% | 0% | 0% | 13% |
| 500,000 to 999,999 | 45% | 0% | 0% | 55% |
| 250,000 to 499,999 | 54% | 22% | 0% | 24% |
| 100,000 to 249,999 | 43% | 20% | 4% | 33% |
| 50,000 to 99,999 | 37% | 18% | 5% | 40% |
| 25,000 to 49,999 | 35% | 26% | 4% | 34% |
| 10,000 to 24,999 | 22% | 26% | 8% | 44% |
| 5,000 to 9,999 | 21% | 27% | 8% | 44% |
| 2,500 to 4,999 | 17% | 28% | 7% | 48% |
| Under 2,500 | 15% | 22% | 4% | 59% |
| Total | 18% | 24% | 6% | 52% |

The above projections are based on 4,622 departments reporting on Question 39a and 2,422 reporting on Question 39d. See Tables 63 and 66.

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

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

## Table 51
## Is Technical Rescue and EMS for a Building With 50 Occupants After Structural Collapse Within the Responsibility of Department? by Community Size
## (Q. 36a)

| | Yes | | No | | Total | |
|---|---|---|---|---|---|---|
| **Population of Community** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 38 | 100.0 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 52 | 96.3 | 2 | 3.7 | 54 | 100.0 |
| 100,000 to 249,999 | 212 | 97.7 | 5 | 2.3 | 217 | 100.0 |
| 50,000 to 99,999 | 431 | 96.2 | 17 | 3.8 | 448 | 100.0 |
| 25,000 to 49,999 | 970 | 90.4 | 103 | 9.6 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,528 | 86.0 | 411 | 14.0 | 2,939 | 100.0 |
| 5,000 to 9,999 | 2,953 | 78.5 | 811 | 21.5 | 3,764 | 100.0 |
| 2,500 to 4,999 | 3,424 | 70.3 | 1,444 | 29.7 | 4,868 | 100.0 |
| Under 2,500 | 7,323 | 53.3 | 6,427 | 46.7 | 13,750 | 100.0 |
| Total | 17,945 | 66.1 | 9,220 | 33.9 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,661 departments reporting on Question 36a. 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 responsibility?

## Table 52
## For Departments Where Technical Rescue and EMS For a Building With 50 Occupants After Structural Collapse Is Within Their Responsibility, 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 |
| 1,000,000 or more | 11 | 73.3% | 3 | 20.0% | 1 | 6.7% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 24 | 63.2 | 13 | 34.2 | 1 | 2.6 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 22 | 42.3 | 25 | 48.1 | 5 | 9.6 | 0 | 0.0 | 52 | 100.0 |
| 100,000 to 249,999 | 57 | 26.9 | 119 | 56.1 | 31 | 14.6 | 5 | 2.4 | 212 | 100.0 |
| 50,000 to 99,999 | 85 | 19.7 | 255 | 58.9 | 84 | 19.5 | 7 | 1.6 | 431 | 100.0 |
| 25,000 to 49,999 | 135 | 13.9 | 607 | 62.6 | 213 | 22.0 | 15 | 1.5 | 970 | 100.0 |
| 10,000 to 24,999 | 292 | 11.5 | 1,552 | 61.4 | 654 | 25.9 | 30 | 1.2 | 2,528 | 100.0 |
| 5,000 to 9,999 | 368 | 12.5 | 1,809 | 61.2 | 735 | 24.9 | 41 | 1.4 | 2,953 | 100.0 |
| 2,500 to 4,999 | 559 | 16.3 | 2,036 | 59.5 | 791 | 23.1 | 37 | 1.1 | 3,424 | 100.0 |
| Under 2,500 | 1,331 | 18.2 | 4,356 | 59.5 | 1,564 | 21.3 | 72 | 1.0 | 7,323 | 100.0 |
| Total | 2,882 | 16.1 | 10,776 | 60.0 | 4,079 | 22.7 | 208 | 1.2 | 17,945 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,548 departments reporting yes to Question 36a and also reporting on Question 36b. 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 responsibility], how far would you have to go to obtain enough people with specialized training for this incident?

## Table 53
## For Departments Where Technical Rescue and EMS For a Building With 50 Occupants After Structural Collapse Is Within Their Responsibility, How Far Do They Have to Go to Obtain Sufficient Specialized Equipment to Handle Such an Incident? by Community Size (Q. 36c)

| | Local | | Regional | | State | | National | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| Population of Community | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 13 | 86.7% | 1 | 6.7% | 1 | 6.7% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 21 | 55.3 | 15 | 39.5 | 2 | 5.3 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 21 | 40.4 | 25 | 48.1 | 6 | 11.5 | 0 | 0.0 | 52 | 100.0 |
| 100,000 to 249,999 | 49 | 23.1 | 118 | 55.7 | 37 | 17.5 | 8 | 3.8 | 212 | 100.0 |
| 50,000 to 99,999 | 73 | 16.9 | 247 | 57.3 | 100 | 23.2 | 11 | 2.5 | 431 | 100.0 |
| 25,000 to 49,999 | 138 | 14.2 | 561 | 57.8 | 251 | 25.9 | 20 | 2.0 | 970 | 100.0 |
| 10,000 to 24,999 | 275 | 10.9 | 1,430 | 56.6 | 745 | 29.5 | 78 | 3.0 | 2,528 | 100.0 |
| 5,000 to 9,999 | 324 | 11.0 | 1,593 | 53.9 | 977 | 33.1 | 58 | 2.0 | 2,953 | 100.0 |
| 2,500 to 4,999 | 471 | 13.8 | 1,958 | 57.2 | 958 | 28.0 | 37 | 1.1 | 3,424 | 100.0 |
| Under 2,500 | 1,281 | 17.5 | 4,004 | 54.7 | 1,893 | 25.8 | 146 | 2.0 | 7,323 | 100.0 |
| Total | 2,666 | 14.9 | 9,952 | 55.4 | 4,971 | 27.7 | 356 | 2.0 | 17,945 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,534 departments reporting yes to Question 36a and also reporting on Question 36c. 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 responsibility], how far would you have to go to obtain enough specialized equipment to handle this incident?

## Table 54
## For Departments Where Technical Rescue and EMS for a Building With 50 Occupants After Structural Collapse Is Within Their Responsibility, Do They Have a Plan for Obtaining Assistance From 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 |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 32 | 84.2 | 4 | 10.5 | 2 | 5.3 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 47 | 90.4 | 4 | 7.7 | 1 | 1.9 | 0 | 0.0 | 52 | 100.0 |
| 100,000 to 249,999 | 147 | 69.3 | 46 | 21.7 | 10 | 4.7 | 9 | 4.2 | 212 | 100.0 |
| 50,000 to 99,999 | 267 | 61.9 | 116 | 26.9 | 30 | 7.0 | 18 | 4.2 | 431 | 100.0 |
| 25,000 to 49,999 | 577 | 59.4 | 282 | 29.1 | 64 | 6.6 | 47 | 4.9 | 970 | 100.0 |
| 10,000 to 24,999 | 1,147 | 45.4 | 1,004 | 39.7 | 217 | 8.6 | 159 | 6.3 | 2,528 | 100.0 |
| 5,000 to 9,999 | 1,261 | 42.7 | 1,167 | 39.5 | 233 | 7.9 | 292 | 9.9 | 2,953 | 100.0 |
| 2,500 to 4,999 | 1,199 | 35.0 | 1,516 | 44.3 | 322 | 9.4 | 387 | 11.3 | 3,424 | 100.0 |
| Under 2,500 | 2,461 | 33.6 | 3,168 | 43.3 | 692 | 9.5 | 1,002 | 13.7 | 7,323 | 100.0 |
| Total | 7,152 | 39.8 | 7,307 | 40.7 | 1,572 | 8.8 | 1,915 | 10.7 | 17,945 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,495 departments reporting yes to Question 36a and also reporting on Question 36d. Numbers may not add to totals due to rounding.

Q. 36d: [If such incidents are within department responsibility] do you have a plan for obtaining assistance from others on [technical rescue and EMS for a building with 50 occupants after structural collapse]?

## Table 55
## Is a Hazmat and EMS Incident Involving Chemical/Biological Agents and 10 Injuries Within the Responsibility of Department? by Community Size
## (Q. 37a)

| | Yes | | No | | Total | |
|---|---|---|---|---|---|---|
| **Population of Community** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 37 | 96.4 | 1 | 3.6 | 38 | 100.0 |
| 250,000 to 499,999 | 54 | 100.0 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 212 | 97.7 | 5 | 2.3 | 217 | 100.0 |
| 50,000 to 99,999 | 439 | 98.0 | 9 | 2.0 | 448 | 100.0 |
| 25,000 to 49,999 | 985 | 91.8 | 88 | 8.2 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,560 | 87.1 | 379 | 12.9 | 2,939 | 100.0 |
| 5,000 to 9,999 | 2,970 | 78.9 | 794 | 21.1 | 3,764 | 100.0 |
| 2,500 to 4,999 | 3,574 | 73.4 | 1,294 | 26.6 | 4,868 | 100.0 |
| Under 2,500 | 7,661 | 55.7 | 6,089 | 44.3 | 13,750 | 100.0 |
| Total | 18,507 | 68.1 | 8,659 | 31.9 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,661 departments reporting on Question 37a. 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 responsibility?

## Table 56
## For Departments Where a Hazmat and EMS Incident Involving Chemical/Biological Agents and 10 Injuries Is Within Their Responsibility 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 |
| 1,000,000 or more | 14 | 93.4% | 1 | 6.7% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 29 | 78.4 | 7 | 18.9 | 1 | 2.7 | 0 | 0.0 | 37 | 100.0 |
| 250,000 to 499,999 | 41 | 75.9 | 12 | 22.2 | 1 | 1.9 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 105 | 49.5 | 94 | 44.3 | 10 | 4.7 | 3 | 1.4 | 212 | 100.0 |
| 50,000 to 99,999 | 158 | 36.0 | 231 | 52.6 | 44 | 10.0 | 6 | 1.4 | 439 | 100.0 |
| 25,000 to 49,999 | 260 | 26.4 | 597 | 60.6 | 120 | 12.2 | 7 | 0.8 | 985 | 100.0 |
| 10,000 to 24,999 | 469 | 18.3 | 1,618 | 63.2 | 449 | 17.5 | 24 | 0.9 | 2,560 | 100.0 |
| 5,000 to 9,999 | 499 | 16.8 | 1,760 | 59.3 | 694 | 23.4 | 17 | 0.6 | 2,970 | 100.0 |
| 2,500 to 4,999 | 598 | 16.7 | 2,060 | 57.6 | 868 | 24.3 | 48 | 1.3 | 3,574 | 100.0 |
| Under 2,500 | 1,018 | 13.3 | 4,536 | 59.2 | 2,021 | 26.4 | 87 | 1.1 | 7,661 | 100.0 |
| Total | 3,191 | 17.2 | 10,915 | 59.0 | 4,209 | 22.7 | 191 | 1.0 | 18,507 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,619 departments reporting yes to Question 37a and also reporting on Question 37b. 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 responsibility], how far would you have to go to obtain enough people with specialized training for this incident?

## Table 57
## For Departments Where a Hazmat and EMS Incident Involving Chemical/Biological Agents and 10 Injuries Is Within Their Responsibility 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 |
| 1,000,000 or more | 14 | 93.3% | 1 | 6.7% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 29 | 78.4 | 7 | 18.9 | 1 | 2.7 | 0 | 0.0 | 37 | 100.0 |
| 250,000 to 499,999 | 41 | 75.9 | 12 | 22.2 | 1 | 1.9 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 103 | 48.6 | 98 | 46.2 | 8 | 3.8 | 4 | 1.9 | 212 | 100.0 |
| 50,000 to 99,999 | 137 | 31.2 | 243 | 55.3 | 52 | 11.8 | 8 | 1.8 | 439 | 100.0 |
| 25,000 to 49,999 | 254 | 25.8 | 568 | 57.8 | 148 | 15.0 | 15 | 1.5 | 985 | 100.0 |
| 10,000 to 24,999 | 426 | 16.6 | 1,547 | 60.4 | 564 | 22.0 | 24 | 0.9 | 2,560 | 100.0 |
| 5,000 to 9,999 | 420 | 14.1 | 1,757 | 59.2 | 748 | 25.2 | 46 | 1.5 | 2,970 | 100.0 |
| 2,500 to 4,999 | 512 | 14.3 | 2,006 | 56.1 | 987 | 27.6 | 69 | 1.9 | 3,574 | 100.0 |
| Under 2,500 | 813 | 10.6 | 4,382 | 57.2 | 2,351 | 30.7 | 116 | 1.5 | 7,661 | 100.0 |
| Total | 2,746 | 14.8 | 10,621 | 57.4 | 4,859 | 26.2 | 281 | 1.5 | 18,507 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,609 departments reporting yes to Question 37a and also reporting on Question 37c. 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 responsibility], how far would you have to go to obtain enough specialized equipment to handle this incident?

## Table 58
## For Departments Where a Hazmat and EMS Incident Involving Chemical/Biological Agents and 10 Injuries Is Within Their Responsibility Do They Have a Plan for Obtaining Assistance From 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 |
| 1,000,000 or more | 14 | 93.3% | 1 | 6.7% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 34 | 91.9 | 3 | 8.1 | 0 | 0.0 | 0 | 0.0 | 37 | 100.0 |
| 250,000 to 499,999 | 49 | 90.7 | 3 | 5.6 | 2 | 3.7 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 171 | 80.7 | 34 | 16.0 | 4 | 1.9 | 2 | 0.9 | 212 | 100.0 |
| 50,000 to 99,999 | 336 | 76.5 | 75 | 17.1 | 25 | 5.7 | 3 | 0.7 | 439 | 100.0 |
| 25,000 to 49,999 | 725 | 73.6 | 205 | 20.9 | 37 | 3.8 | 17 | 1.8 | 985 | 100.0 |
| 10,000 to 24,999 | 1,339 | 52.3 | 886 | 34.6 | 237 | 9.3 | 98 | 3.8 | 2,560 | 100.0 |
| 5,000 to 9,999 | 1,378 | 46.4 | 1,176 | 39.6 | 232 | 7.8 | 185 | 6.2 | 2,970 | 100.0 |
| 2,500 to 4,999 | 1,410 | 39.4 | 1,528 | 42.8 | 313 | 8.8 | 324 | 9.0 | 3,574 | 100.0 |
| Under 2,500 | 2,578 | 33.7 | 3,794 | 49.5 | 469 | 6.1 | 821 | 10.7 | 7,661 | 100.0 |
| Total | 8,033 | 43.4 | 7,705 | 41.6 | 1,318 | 7.1 | 1,451 | 7.8 | 18,507 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,570 departments reporting yes to Question 37a and also reporting on Question 37d. Numbers may not add to totals due to rounding.

Q. 37d: [If such incidents are within department responsibility] do you have a plan for obtaining assistance from others on [hazmat and EMS for an incident involving chemical/biological agents and 10 injuries]?

## Table 59
## Is a Wildland/Urban Interface Fire Affecting 500 Acres Within the Responsibility of Department? by Community Size (Q. 38a)

| | Yes | | No | | Total | |
|---|---|---|---|---|---|---|
| **Population of Community** | **Number Depts** | **Percent** | **Number Depts** | **Percent** | **Number Depts** | **Percent** |
| 1,000,000 or more | 12 | 80.0% | 3 | 20.0% | 15 | 100.0% |
| 500,000 to 999,999 | 22 | 57.9 | 16 | 42.1 | 38 | 100.0 |
| 250,000 to 499,999 | 38 | 70.4 | 16 | 29.6 | 54 | 100.0 |
| 100,000 to 249,999 | 130 | 59.9 | 87 | 40.1 | 217 | 100.0 |
| 50,000 to 99,999 | 204 | 45.5 | 244 | 54.5 | 448 | 100.0 |
| 25,000 to 49,999 | 570 | 53.1 | 503 | 46.9 | 1,073 | 100.0 |
| 10,000 to 24,999 | 1,773 | 60.3 | 1,166 | 39.7 | 2,939 | 100.0 |
| 5,000 to 9,999 | 2,649 | 70.4 | 1,115 | 29.6 | 3,764 | 100.0 |
| 2,500 to 4,999 | 3,654 | 75.1 | 1,214 | 24.9 | 4,868 | 100.0 |
| Under 2,500 | 10,888 | 79.2 | 2,862 | 20.8 | 13,750 | 100.0 |
| Total | 19,940 | 73.4 | 7,226 | 26.6 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,658 departments reporting on Question 38a. Numbers may not add to totals due to rounding.

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

## Table 60
## For Departments Where a Wildland/Urban Interface Fire Affecting 500 Acres Is Within Their Responsibility 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 | Percen | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 4 | 33.3% | 8 | 66.7% | 0 | 0.0% | 0 | 0.0% | 12 | 100.0% |
| 500,000 to 999,999 | 9 | 40.9 | 9 | 40.9 | 4 | 18.2 | 0 | 0.0 | 22 | 100.0 |
| 250,000 to 499,999 | 13 | 34.2 | 16 | 42.1 | 9 | 23.7 | 0 | 0.0 | 38 | 100.0 |
| 100,000 to 249,999 | 39 | 30.0 | 63 | 48.5 | 27 | 20.8 | 1 | 0.8 | 130 | 100.0 |
| 50,000 to 99,999 | 61 | 29.9 | 98 | 48.0 | 43 | 21.1 | 2 | 1.0 | 204 | 100.0 |
| 25,000 to 49,999 | 133 | 23.3 | 260 | 45.6 | 165 | 28.9 | 12 | 2.1 | 570 | 100.0 |
| 10,000 to 24,999 | 474 | 26.8 | 838 | 47.3 | 434 | 24.5 | 27 | 1.5 | 1,773 | 100.0 |
| 5,000 to 9,999 | 797 | 30.1 | 1,208 | 45.6 | 623 | 23.5 | 21 | 0.8 | 2,649 | 100.0 |
| 2,500 to 4,999 | 1,174 | 32.1 | 1,564 | 42.8 | 869 | 23.8 | 47 | 1.3 | 3,564 | 100.0 |
| Under 2,500 | 3,940 | 36.2 | 4,885 | 44.9 | 1,919 | 17.6 | 145 | 1.3 | 10,888 | 100.0 |
| Total | 6,645 | 33.3 | 8,948 | 44.9 | 4,092 | 20.5 | 256 | 1.3 | 19,940 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,128 departments reporting yes to Question 38a and also reporting on Question 38b. Numbers may not add to totals due to rounding.

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

## Table 61
## For Departments Where a Wildland/Urban Interface Fire Affecting 500 Acres Is Within Their Responsibility How Far Do They Have to Go to Obtain Sufficient Specialized Equipment to Handle Such An Incident? by Community Size (Q. 38c)

| | Local | | Regional | | State | | National | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| Population of Community | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 4 | 33.3% | 8 | 66.7% | 0 | 0.0% | 0 | 0.0% | 12 | 100.0% |
| 500,000 to 999,999 | 7 | 31.8 | 11 | 50.0 | 4 | 18.2 | 0 | 0.0 | 22 | 100.0 |
| 250,000 to 499,999 | 11 | 28.9 | 15 | 39.5 | 12 | 31.6 | 0 | 0.0 | 38 | 100.0 |
| 100,000 to 249,999 | 27 | 20.8 | 70 | 53.8 | 30 | 23.1 | 4 | 3.1 | 130 | 100.0 |
| 50,000 to 99,999 | 54 | 26.5 | 101 | 49.5 | 48 | 23.5 | 1 | 0.5 | 204 | 100.0 |
| 25,000 to 49,999 | 114 | 20.0 | 260 | 45.6 | 183 | 32.1 | 13 | 2.3 | 570 | 100.0 |
| 10,000 to 24,999 | 427 | 24.1 | 811 | 45.7 | 505 | 28.5 | 30 | 1.7 | 1,773 | 100.0 |
| 5,000 to 9,999 | 648 | 24.5 | 1,188 | 44.8 | 776 | 29.3 | 37 | 1.4 | 2,649 | 100.0 |
| 2,500 to 4,999 | 982 | 26.9 | 1,558 | 42.6 | 1,056 | 28.9 | 58 | 1.6 | 3,654 | 100.0 |
| Under 2,500 | 3,513 | 32.3 | 5,029 | 46.2 | 2,186 | 20.1 | 160 | 1.5 | 10,888 | 100.0 |
| Total | 5,787 | 29.0 | 9,048 | 45.4 | 4,801 | 24.1 | 304 | 1.5 | 19,940 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,122 departments reporting yes to Question 38a and also reporting on Question 38c. Numbers may not add to totals due to rounding.

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

## Table 62
## For Departments Where a Wildland/Urban Interface Fire Affecting 500 Acres Is Within Their Responsibility Do They Have a Plan for Obtaining Assistance From Others? by Community Size (Q. 38d)

| | 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 |
| 1,000,000 or more | 11 | 91.7% | 0 | 0.0% | 1 | 8.3% | 0 | 0.0% | 12 | 100.0% |
| 500,000 to 999,999 | 21 | 95.5 | 1 | 4.5 | 0 | 0.0 | 0 | 0.0 | 22 | 100.0 |
| 250,000 to 499,999 | 31 | 81.6 | 6 | 15.8 | 1 | 2.6 | 0 | 0.0 | 38 | 100.0 |
| 100,000 to 249,999 | 102 | 78.5 | 22 | 16.9 | 3 | 2.3 | 3 | 2.3 | 130 | 100.0 |
| 50,000 to 99,999 | 145 | 71.1 | 50 | 24.5 | 6 | 2.9 | 3 | 1.5 | 204 | 100.0 |
| 25,000 to 49,999 | 391 | 68.6 | 140 | 24.6 | 22 | 3.9 | 17 | 3.0 | 570 | 100.0 |
| 10,000 to 24,999 | 1,059 | 59.7 | 528 | 29.8 | 122 | 6.9 | 64 | 3.6 | 1,773 | 100.0 |
| 5,000 to 9,999 | 1,539 | 58.1 | 880 | 33.2 | 138 | 5.2 | 92 | 3.5 | 2,649 | 100.0 |
| 2,500 to 4,999 | 1,894 | 51.8 | 1,359 | 37.2 | 235 | 6.4 | 166 | 4.5 | 3,654 | 100.0 |
| Under 2,500 | 5,678 | 52.2 | 4,098 | 37.6 | 761 | 7.0 | 351 | 3.2 | 10,888 | 100.0 |
| Total | 10,870 | 54.5 | 7,084 | 35.5 | 1,289 | 6.5 | 696 | 3.5 | 19,940 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 3,099 departments reporting yes to Question 38a and also reporting on Question 38d. Numbers may not add to totals due to rounding.

Q. 38d: [If such incidents are within department responsibility] do you have a plan for obtaining assistance from others on [wildland/urban interface fire affecting 500 acres]?

## Table 63
## Is Mitigation of a Developing Major Flood Within the Responsibility 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 |
|---|---|---|---|---|---|---|
| 1,000,000 or more | 13 | 86.7% | 2 | 13.3% | 15 | 100.0% |
| 500,000 to 999,999 | 17 | 44.7 | 21 | 55.3 | 38 | 100.0 |
| 250,000 to 499,999 | 41 | 75.9 | 13 | 24.1 | 54 | 100.0 |
| 100,000 to 249,999 | 145 | 66.8 | 72 | 33.2 | 217 | 100.0 |
| 50,000 to 99,999 | 268 | 59.8 | 180 | 40.2 | 448 | 100.0 |
| 25,000 to 49,999 | 706 | 65.8 | 367 | 34.2 | 1,073 | 100.0 |
| 10,000 to 24,999 | 1,642 | 55.9 | 1,297 | 44.1 | 2,939 | 100.0 |
| 5,000 to 9,999 | 1,119 | 56.3 | 1,645 | 43.7 | 3,764 | 100.0 |
| 2,500 to 4,999 | 2,529 | 52.0 | 2,339 | 48.0 | 4,868 | 100.0 |
| Under 2,500 | 5,605 | 40.8 | 8,145 | 59.2 | 13,750 | 100.0 |
| Total | 13,084 | 48.2 | 14,082 | 51.8 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,622 departments reporting yes on Question 39a. 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 responsibility?

## Table 64
## For Departments Where Mitigation of a Major Flood Is Within Their Responsibility 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 |
| 1,000,000 or more | 8 | 61.5% | 5 | 38.5% | 0 | 0.0% | 0 | 0.0% | 13 | 100.0% |
| 500,000 to 999,999 | 9 | 52.9 | 5 | 29.4 | 2 | 11.8 | 1 | 5.9 | 17 | 100.0 |
| 250,000 to 499,999 | 10 | 24.4 | 12 | 29.3 | 14 | 34.1 | 5 | 12.2 | 41 | 100.0 |
| 100,000 to 249,999 | 24 | 16.6 | 65 | 44.8 | 46 | 31.7 | 10 | 6.9 | 145 | 100.0 |
| 50,000 to 99,999 | 44 | 16.4 | 106 | 39.6 | 106 | 39.6 | 12 | 4.5 | 268 | 100.0 |
| 25,000 to 49,999 | 101 | 14.3 | 331 | 46.9 | 244 | 34.6 | 30 | 4.2 | 706 | 100.0 |
| 10,000 to 24,999 | 262 | 16.0 | 685 | 41.7 | 635 | 38.9 | 60 | 3.7 | 1,642 | 100.0 |
| 5,000 to 9,999 | 387 | 18.3 | 887 | 41.9 | 765 | 36.1 | 80 | 3.8 | 2,119 | 100.0 |
| 2,500 to 4,999 | 541 | 21.4 | 1,066 | 42.1 | 827 | 32.7 | 95 | 3.8 | 2,529 | 100.0 |
| Under 2,500 | 1,493 | 26.7 | 2,485 | 44.3 | 1,464 | 26.1 | 163 | 2.9 | 5,605 | 100.0 |
| Total | 2,879 | 22.0 | 5,645 | 43.1 | 4,104 | 31.4 | 457 | 3.5 | 13,085 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 2,472 departments reporting yes to Question 39a and also reporting on Question 39b. 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 responsibility], how far would you have to go to obtain enough people with specialized training for this incident?

## Table 65
## For Departments Where Mitigation of a Major Flood Is Within Their Responsibility How Far Do They Have to Go to Obtain Sufficient Specialized Equipment to Handle Such An Incident? by Community Size (Q. 39c)

| | Local | | Regional | | State | | National | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| Population of Community | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 8 | 61.5% | 5 | 38.5% | 0 | 0.0% | 0 | 0.0% | 13 | 100.0% |
| 500,000 to 999,999 | 9 | 52.9 | 2 | 11.8 | 5 | 29.4 | 1 | 5.9 | 17 | 100.0 |
| 250,000 to 499,999 | 8 | 19.5 | 12 | 29.3 | 16 | 39.0 | 5 | 12.2 | 41 | 100.0 |
| 100,000 to 249,999 | 15 | 10.3 | 67 | 46.2 | 51 | 35.2 | 12 | 8.3 | 145 | 100.0 |
| 50,000 to 99,999 | 40 | 14.9 | 106 | 39.6 | 106 | 39.6 | 16 | 6.0 | 268 | 100.0 |
| 25,000 to 49,999 | 87 | 12.4 | 297 | 42.0 | 282 | 39.9 | 40 | 6.7 | 706 | 100.0 |
| 10,000 to 24,999 | 212 | 12.9 | 668 | 40.7 | 684 | 41.7 | 78 | 4.7 | 1,642 | 100.0 |
| 5,000 to 9,999 | 317 | 14.9 | 853 | 40.2 | 844 | 39.8 | 106 | 5.0 | 2,119 | 100.0 |
| 2,500 to 4,999 | 447 | 17.7 | 1,012 | 40.0 | 969 | 38.3 | 101 | 4.0 | 2,529 | 100.0 |
| Under 2,500 | 1,283 | 22.9 | 2,449 | 43.7 | 1,696 | 30.3 | 177 | 3.2 | 5,605 | 100.0 |
| Total | 2,427 | 18.5 | 5,469 | 41.8 | 4,654 | 35.6 | 535 | 4.1 | 13,085 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 2,464 departments reporting yes to Question 39a and also reporting on Question 39c. 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 responsibility], how far would you have to go to obtain enough specialized equipment to handle this incident?

## Table 66
## For Departments Where Mitigation of a Major Flood Is Within Their Responsibility Do They Have a Plan for Obtaining Assistance From 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 |
| 1,000,000 or more | 13 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 13 | 100.0% |
| 500,000 to 999,999 | 17 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 17 | 100.0 |
| 250,000 to 499,999 | 29 | 70.7 | 10 | 24.4 | 2 | 4.9 | 0 | 0.0 | 41 | 100.0 |
| 100,000 to 249,999 | 94 | 64.8 | 39 | 26.9 | 4 | 2.8 | 8 | 5.5 | 145 | 100.0 |
| 50,000 to 99,999 | 165 | 61.6 | 69 | 25.7 | 12 | 4.5 | 22 | 8.2 | 268 | 100.0 |
| 25,000 to 49,999 | 380 | 53.8 | 243 | 34.4 | 35 | 5.0 | 48 | 6.8 | 706 | 100.0 |
| 10,000 to 24,999 | 649 | 39.5 | 635 | 38.7 | 137 | 8.3 | 222 | 13.5 | 1,642 | 100.0 |
| 5,000 to 9,999 | 802 | 37.8 | 874 | 41.3 | 158 | 7.4 | 286 | 13.5 | 2,119 | 100.0 |
| 2,500 to 4,999 | 819 | 32.4 | 1,193 | 47.2 | 159 | 6.3 | 357 | 14.1 | 2,529 | 100.0 |
| Under 2,500 | 1,933 | 35.6 | 2,593 | 46.3 | 420 | 7.5 | 599 | 10.7 | 5,605 | 100.0 |
| Total | 4,959 | 37.9 | 5,656 | 43.2 | 927 | 7.1 | 1,543 | 11.8 | 13,085 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 2,422 departments reporting yes to Question 39a and also reporting on Question 39d. Numbers may not add to totals due to rounding.

Q. 39d: [If such incidents are within department responsibility] do you have a plan for obtaining assistance from others on [mitigation (confining, slowing, etc.) of a developing major flood]?

## NEW AND EMERGING TECHNOLOGY

Tables 67-70 (pp. 131-134) address the ownership and planned purchase of four types of relatively new technologies.

A majority (55%) of fire departments now own thermal imaging cameras, and another one-fourth have plans to acquire them. (See Table 67.) The 2001 survey reported 24% of departments had such cameras, and the majority of those without such cameras said they had no plans to acquire one.

Only one department in 17 has mobile data terminals (6% of departments, up from 4% in 2001), though the majority of fire departments protecting at least 100,000 population have them. Most departments without mobile data terminals (69% overall) still have no plans to acquire them. (See Table 68.)

Only one department in 31 has advanced personnel location equipment, though one-fourth of the fire departments protecting communities of at least 500,000 population have them. Plans to acquire them vary considerably by department size, but three-fourths of departments overall have no plans. The survey did not provide details on what constituted advanced personnel location equipment, which raises the possibility that departments differed in their views of the kind of equipment that would qualify as such. (See Table 69.)

Only one department in 18 has equipment to collect chemical or biological samples for remote analysis, though most of the fire departments protecting communities of at least 100,000 population have such equipment. Only one department in 14 overall has plans to acquire such equipment. (See Table 70.)

## Table 67
## Plans to Acquire Thermal Imaging Cameras
## by Community Size
## (Q. 40)

| Population of Community | Now Own Number Depts | Now Own Percent | Plan to Have in One Year Number Depts | Plan to Have in One Year Percent | Plan to Have in Five Years Number Depts | Plan to Have in Five Years Percent | No Plans to Acquire Number Depts | No Plans to Acquire Percent | Total Number Depts | Total Percent |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 37 | 97.4 | 0 | 0.0 | 1 | 2.6 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 53 | 98.1 | 1 | 1.9 | 0 | 0.0 | 0 | 0.0 | 54 | 100.0 |
| 100,000 to 249,999 | 213 | 98.2 | 1 | 0.5 | 3 | 1.4 | 0 | 0.0 | 217 | 100.0 |
| 50,000 to 99,999 | 434 | 96.9 | 9 | 2.0 | 2 | 0.5 | 3 | 0.7 | 448 | 100.0 |
| 25,000 to 49,999 | 1,044 | 97.3 | 7 | 0.7 | 15 | 1.4 | 7 | 0.7 | 1,073 | 100.0 |
| 10,000 to 24,999 | 2,604 | 88.6 | 116 | 4.0 | 126 | 4.3 | 93 | 3.2 | 2,939 | 100.0 |
| 5,000 to 9,999 | 2,836 | 75.4 | 275 | 7.3 | 402 | 10.7 | 250 | 6.7 | 3,764 | 100.0 |
| 2,500 to 4,999 | 2,818 | 57.9 | 413 | 8.5 | 988 | 20.3 | 648 | 13.3 | 4,868 | 100.0 |
| Under 2,500 | 4,798 | 34.9 | 845 | 6.2 | 3,452 | 25.1 | 4,655 | 33.9 | 13,750 | 100.0 |
| Total | 14,852 | 54.7 | 1,668 | 6.1 | 4,989 | 18.4 | 5,657 | 20.8 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,681 departments reporting on Question 40. Numbers may not add to totals due to rounding.

Q. 40: Do you have any [thermal imaging cameras] now or plan to acquire any?

## Table 68
## Plans to Acquire Mobile Data Terminals
## by Community Size
## (Q. 41)

| Population of Community | Now Own | | Plan to Have in One Year | | Plan to Have in Five Years | | No Plans to Acquire | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 14 | 93.3% | 1 | 6.7% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 31 | 81.6 | 1 | 2.6 | 6 | 15.8 | 0 | 0.0 | 38 | 100.0 |
| 250,000 to 499,999 | 30 | 55.6 | 11 | 20.4 | 12 | 22.2 | 1 | 1.9 | 54 | 100.0 |
| 100,000 to 249,999 | 118 | 54.4 | 34 | 15.7 | 46 | 21.2 | 19 | 8.8 | 217 | 100.0 |
| 50,000 to 99,999 | 186 | 41.5 | 91 | 20.3 | 111 | 24.8 | 60 | 13.4 | 448 | 100.0 |
| 25,000 to 49,999 | 240 | 22.3 | 200 | 18.7 | 398 | 37.1 | 235 | 21.9 | 1,073 | 100.0 |
| 10,000 to 24,999 | 337 | 11.5 | 417 | 14.2 | 1,000 | 34.0 | 1,186 | 40.4 | 2,939 | 100.0 |
| 5,000 to 9,999 | 220 | 5.9 | 337 | 8.9 | 1,047 | 27.8 | 2,160 | 57.4 | 3,764 | 100.0 |
| 2,500 to 4,999 | 158 | 3.2 | 268 | 5.5 | 921 | 18.9 | 3,521 | 72.3 | 4,868 | 100.0 |
| Under 2,500 | 273 | 2.0 | 331 | 2.4 | 1,697 | 12.3 | 11,449 | 83.3 | 13,750 | 100.0 |
| Total | 1,606 | 5.9 | 1,691 | 6.2 | 5,237 | 19.3 | 18,632 | 68.6 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,653 departments reporting on Question 41. Numbers may not add to totals due to rounding.

Q. 41: Do you have any [mobile data terminals] now or plan to acquire any?

## Table 69
## Plans to Acquire Advanced Personnel Location Equipment by Community Size (Q. 42)

| Population of Community | Now Own | | Plan to Have in One Year | | Plan to Have in Five Years | | No Plans to Acquire | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 4 | 26.7% | 3 | 20.0% | 3 | 20.0% | 5 | 33.3% | 15 | 100.0% |
| 500,000 to 999,999 | 9 | 23.7 | 0 | 0.0 | 10 | 26.3 | 19 | 76.3 | 38 | 100.0 |
| 250,000 to 499,999 | 8 | 14.8 | 7 | 13.0 | 13 | 24.1 | 26 | 48.1 | 54 | 100.0 |
| 100,000 to 249,999 | 29 | 13.4 | 16 | 7.4 | 67 | 30.9 | 105 | 48.4 | 217 | 100.0 |
| 50,000 to 99,999 | 32 | 7.1 | 25 | 5.6 | 153 | 34.2 | 238 | 53.1 | 448 | 100.0 |
| 25,000 to 49,999 | 62 | 5.8 | 60 | 5.6 | 326 | 30.3 | 626 | 58.3 | 1,073 | 100.0 |
| 10,000 to 24,999 | 139 | 4.7 | 115 | 3.9 | 807 | 27.5 | 1,879 | 63.9 | 2,939 | 100.0 |
| 5,000 to 9,999 | 130 | 3.4 | 134 | 3.6 | 949 | 25.2 | 2,551 | 67.8 | 3,764 | 100.0 |
| 2,500 to 4,999 | 143 | 3.0 | 133 | 2.7 | 893 | 18.3 | 3,699 | 76.0 | 4,868 | 100.0 |
| Under 2,500 | 306 | 2.2 | 350 | 2.5 | 2,068 | 15.0 | 11,026 | 80.2 | 13,750 | 100.0 |
| Total | 861 | 3.2 | 842 | 3.1 | 5,290 | 19.5 | 20,173 | 74.3 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,593 departments reporting on Question 42. Numbers may not add to totals due to rounding.

Q. 42: Do you have any [advanced personnel location equipment] now or plan to acquire any?

## Table 70
## Plans to Acquire Equipment to Collect Chemical/Biological Samples for Analysis Elsewhere by Community Size
## (Q. 43)

| Population of Community | Now Own | | Plan to Have in One Year | | Plan to Have in Five Years | | No Plans to Acquire | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent | Number Depts | Percent |
| 1,000,000 or more | 15 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 15 | 100.0% |
| 500,000 to 999,999 | 35 | 92.1 | 2 | 5.3 | 0 | 0..0 | 1 | 2.6 | 38 | 100.0 |
| 250,000 to 499,999 | 43 | 79.6 | 2 | 3.7 | 4 | 7.4 | 5 | 9.3 | 54 | 100.0 |
| 100,000 to 249,999 | 132 | 60.8 | 16 | 7.4 | 15 | 6.9 | 54 | 24.9 | 217 | 100.0 |
| 50,000 to 99,999 | 222 | 49.6 | 20 | 4.5 | 40 | 8.9 | 166 | 37.1 | 448 | 100.0 |
| 25,000 to 49,999 | 299 | 27.9 | 74 | 6.9 | 96 | 9.0 | 603 | 56.2 | 1,073 | 100.0 |
| 10,000 to 24,999 | 340 | 11.6 | 94 | 3.2 | 296 | 10.1 | 2,209 | 75.2 | 2,939 | 100.0 |
| 5,000 to 9,999 | 147 | 3.9 | 75 | 2.0 | 428 | 11.4 | 3,114 | 82.7 | 3,764 | 100.0 |
| 2,500 to 4,999 | 100 | 2.1 | 58 | 1.2 | 269 | 5.5 | 4,441 | 91.2 | 4,868 | 100.0 |
| Under 2,500 | 175 | 1.3 | 29 | 0.2 | 655 | 4.8 | 12,892 | 93.8 | 13,750 | 100.0 |
| Total | 1,508 | 5.5 | 371 | 1.4 | 1,801 | 6.6 | 23,485 | 86.5 | 27,166 | 100.0 |

Source: FEMA US Fire Administration 2005
Survey of the Needs of the US Fire Service

The above projections are based on 4,612 departments reporting on Question 43. Numbers may not add to totals due to rounding.

Q. 43: Do you have any [equipment to collect chem/bio samples for analysis elsewhere] now or plan to acquire any?

## APPENDIX: 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.

O.M.B. NO. 3067-0294
Expires February 28, 2006

# DEPARTMENT OF HOMELAND SECURITY
# FEDERAL EMERGENCY MANAGEMENT AGENCY
# U.S. FIRE ADMINISTRATION
# SECOND 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 survey form to:

FEMA

NFPA®

Fire Analysis and Research Division
1 Batterymarch Park
Quincy, MA 02169-7471 USA
Fax: (617) 984-7478

If you fax the form back, please reduce it first to 8½" × 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)/EMTIntermediate (EMTI) C. Advanced Life Support (ALS)/EMTIntermediate (EMTI) 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)? *(Check one)* ❑ Yes ❑ No ❑ Don't know

b. If yes, how many of your partners can you communicate with at an incident scene?
*(Check one)* ❑ 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? *(Check one)* ❑ Yes ❑ No ❑ Don't know

b. If yes, what system do you use? *(Check one)* ❑ Local system—Map Grid/Street Address/Box Alarm Number
❑ Based on longitude/latitude ❑ Based on Military Grid Reference System (MGRS) or US National Grid (USNG)
❑ State Plane Coordinate System ❑ Other (specify) _____

**33. Telephone communication.**

Do you have 911 or similar system? *(Check one)* ❑ 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? *(Check one)* ❑ Yes ❑ No

**35. Internet access.**

a. Does your department have Internet access? *(Check one)* ❑ 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 responsibility? *(Check one)* ❑ Yes ❑ No *(If no, go to Question 37)*

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. If yes, do you have a plan for obtaining assistance from 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 responsibility? *(Check one)* ❑ Yes ❑ No *(If no, go to Question 38)*

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. If yes, do you have a plan for obtaining assistance from 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 responsibility? *(Check one)* ❑ Yes ❑ No *(If no, go to Question 39)*

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. If yes, do you have a plan for obtaining assistance from 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 responsibility? *(Check one)* ❑ Yes ❑ No *(If no, go to Question 40)*

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. If yes, do you have a plan for obtaining assistance from 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.** _____