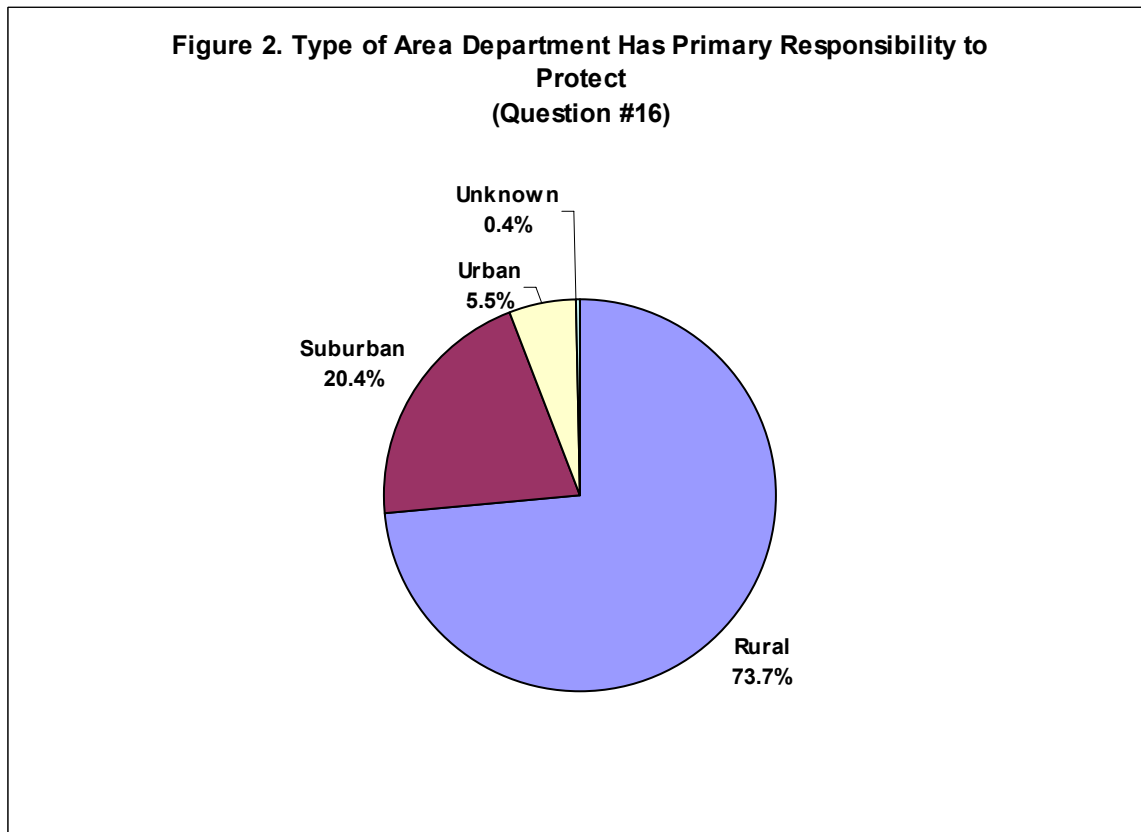


Chapter 2 - Survey Results

Survey Section II - General Department Information

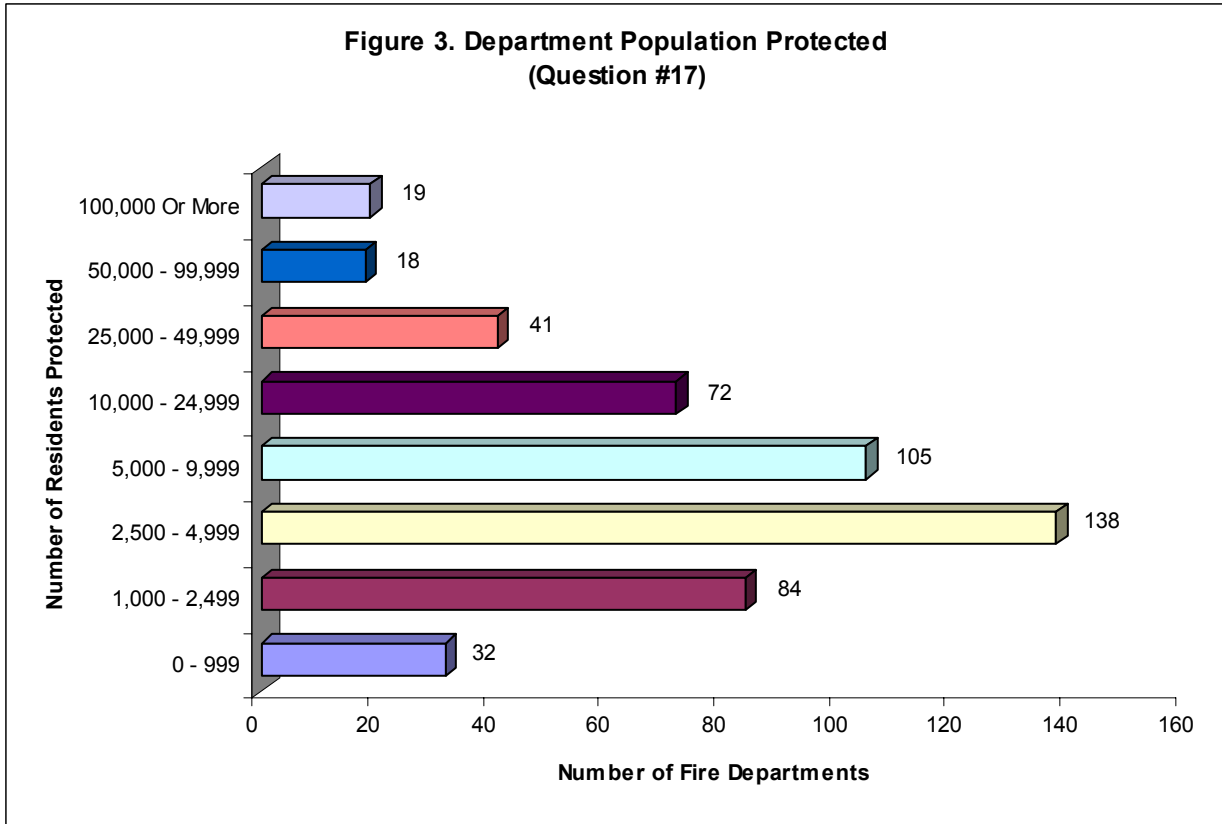
Type of Area Protected

Fire departments in Virginia reported that they are primarily responsible for protecting rural type areas (73.7%) in the Commonwealth. The remaining fire departments protected areas that are located in more populated areas and are classified as suburban (20.4%) and urban (5.5%). (See Figure 2.)



Department Population Protected

Similarly, the number of fire departments responsible for protecting permanent residents in Virginia are located in lower populated areas. The largest number (138) of fire departments protect between 2,500 and 4,999 residents. Seventy-one percent of fire departments protect between 0 - 9,999 residents, the normal population range representative of small towns and county areas. (See Figure 3.)



Department Coverage Area

Fire departments vary greatly on the number of square miles that they are expected to protect in Virginia. The majority of departments (59%) cover areas between 0 and 74 square miles. (See Figure 4.) When departments are protecting up to 25,000 residents, the coverage area varies with departments. When fire departments are protecting more than 25,000 residents, their coverage area increases. (See Figure 5.)

**Figure 4. Department Coverage Area
(Question #18)**

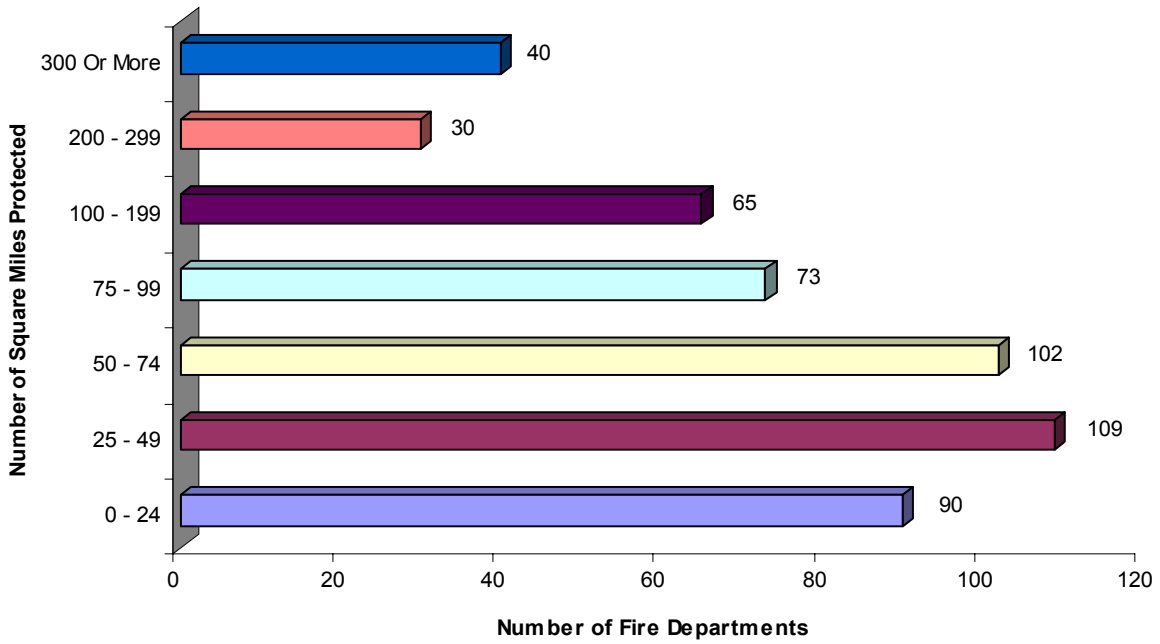
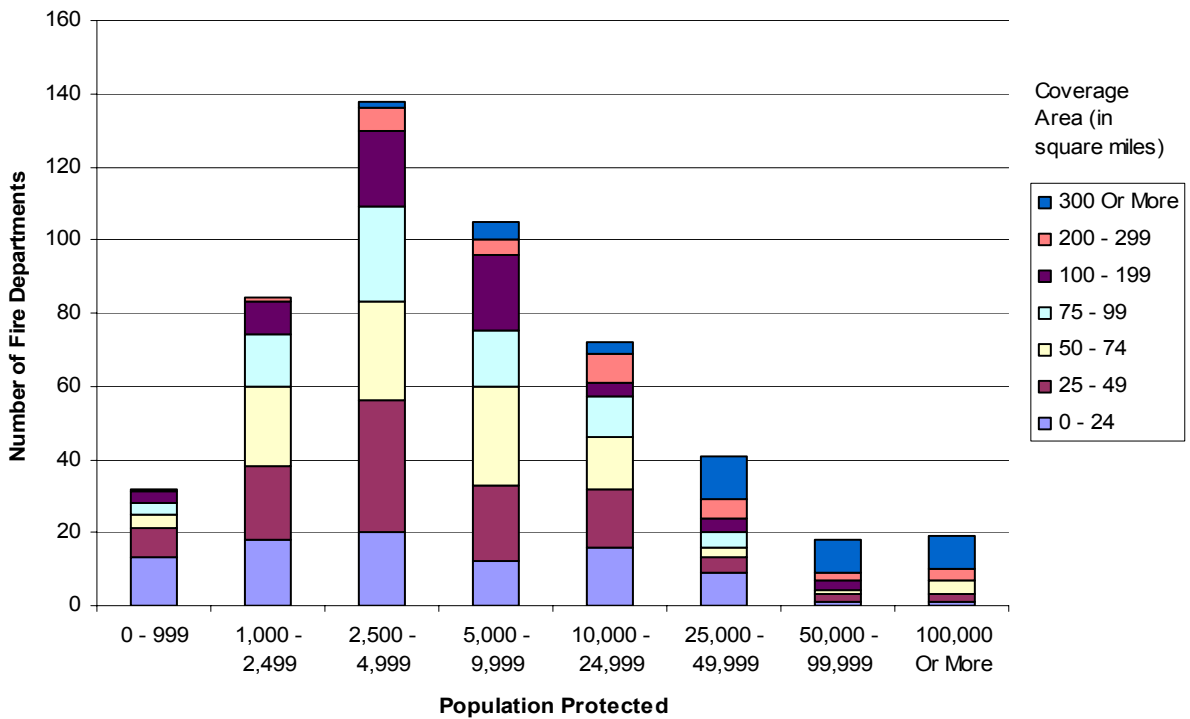


Figure 5. Population Protected By Coverage Area



Survey Section III - Department Personnel

On Duty Staffing

Providing safe and effective handling of emergency incidents of all types depends on the timely response of adequate personnel with appropriate training, apparatus, and equipment. The number of personnel needed to deal with an incident depends on variables such as the type of incident, location of the incident, size of the building or affected area, building construction features, weather conditions, available water supply, presence and status of victims, transportation issues, time of day communication capabilities, and the presence of exposures.¹

A fire's intensity/heat release rate, resulting smoke and toxic gases, and degree of property damage generally increase over time. As a result, there are numerous tasks that must be performed simultaneously at all fires to maximize safety and effectiveness. These tasks include incident command, forcible entry, fire attack, ventilation, search, rescue/removal, utility control, rapid intervention, and salvage.

The number of personnel needed to handle a given incident varies according to the variables listed above, but national standards and "best practices" exist to provide guidelines for fire departments. These include the following:²

- *National Fire Protection Association (2001). Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Department, 2001 Edition.* Quincy, MA.
- *National Fire Protection Association (2001). Standard for the Organization and Deployment of Fire suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments, 2001 Edition.* Quincy, MA.
- Insurance Services Office (1998). *Fire Suppression Rating Schedule.* Jersey City, NJ.
- Commission on Fire Accreditation International (2003). *Creating and Evaluating Standards of Response Coverage for Fire Departments, 4th Ed.* Chantilly, VA

Fire department staffing and deployment decisions are also affected by federal regulations such as the OSHA "Two-in, Two-out Rule"³, which requires the assembly of at least four firefighters before entering a hazardous environment and includes wearing Self-Contained Breathing Apparatus (SCBA), to provide an immediate back-up rescue team if the initial entrants become incapacitated.

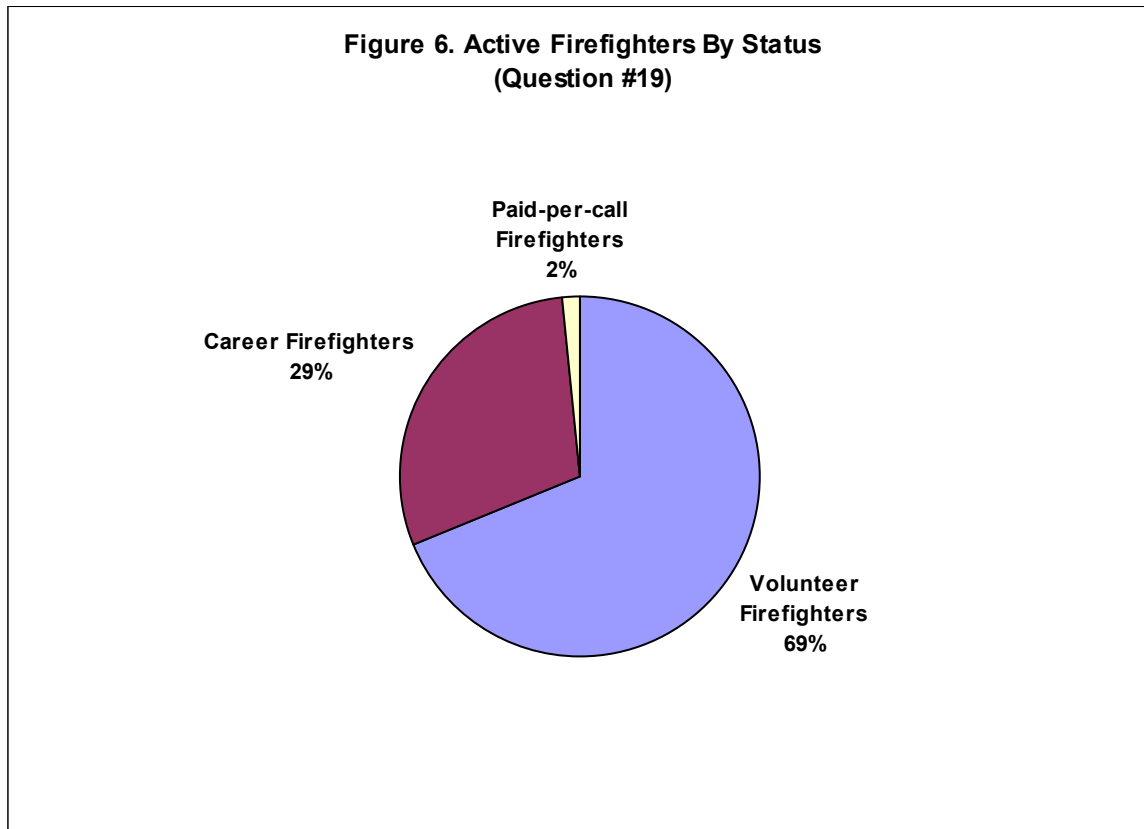
¹ Norman, John (1991). *Fire Officer's Handbook of Tactics.* Fire Engineering, Pennwell Publishing: Saddle Brook, NJ.

² These references are not intended to provide comprehensive treatment of this subject, which is beyond the scope of this report.

³ NFPA 1710. *A Standard for Every Professional Fire Department.*

Firefighters By Status

Fire departments are staffed by career firefighters (full-time paid), volunteer firefighters (receive no financial compensation for services), and paid-per-call firefighters. Sixty-nine percent of all active firefighters were reported as being classified as volunteer firefighters. Career firefighters accounted for 29 percent of the active personnel, while paid-per-call firefighters made up the remaining 2 percent. (See Figure 6.) Survey results from the 2006 Needs Assessment survey show that volunteer firefighters made up 53 percent of the personnel, accounting for a 30 percent increase with respondents, when compared to the current numbers in 2007.



Average Firefighters on Duty

The overall average number of firefighters on duty and available to respond to a call is 18. For volunteer fire departments, the average number on duty is 14, while for combination fire and career fire departments, the average amount on duty is 37 and 46, respectively.

Civilian Personnel By Type

Volunteer civilian personnel accounted for 80 percent of the non-fire service workers, while 20 percent were paid civilian employees. (See Figure 7.) Civilian personnel are an important part of fire departments since they provide support for the many different required administrative duties as well as providing assistance in implementing fundraising activities.

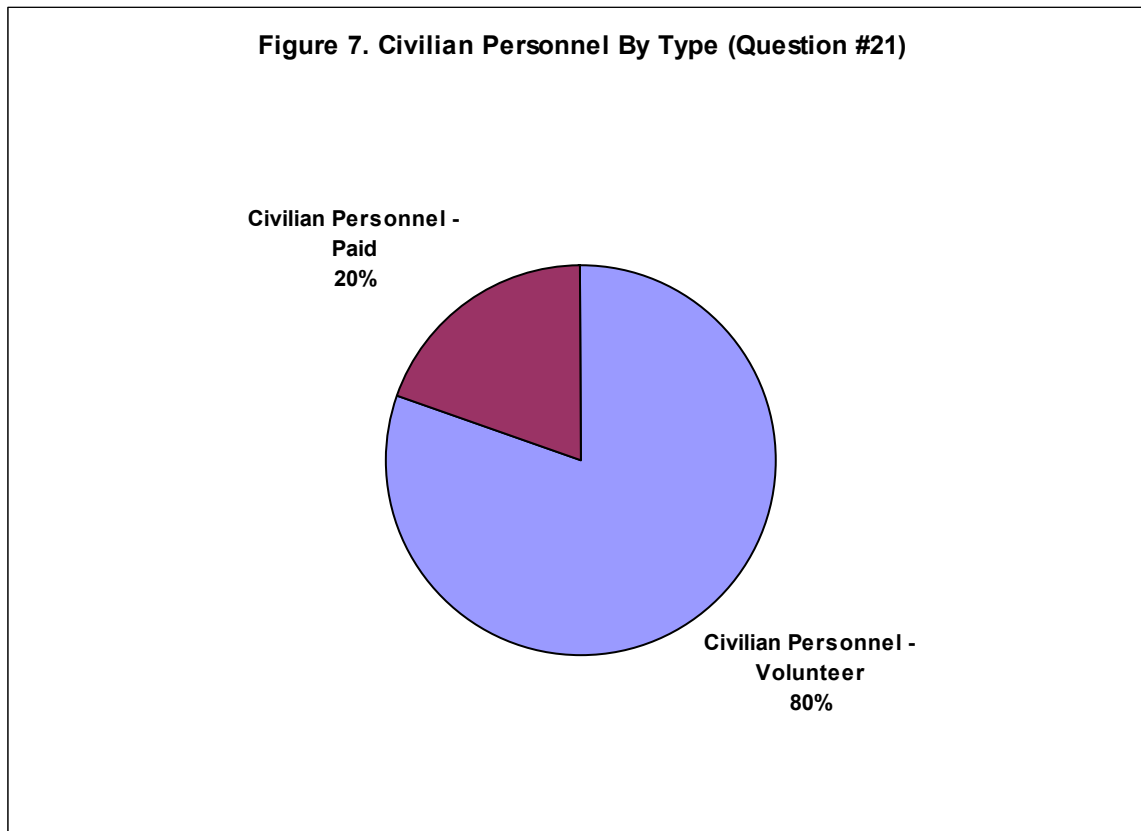


Table 5. Fire Department Personnel Data Reported By Virginia Region *

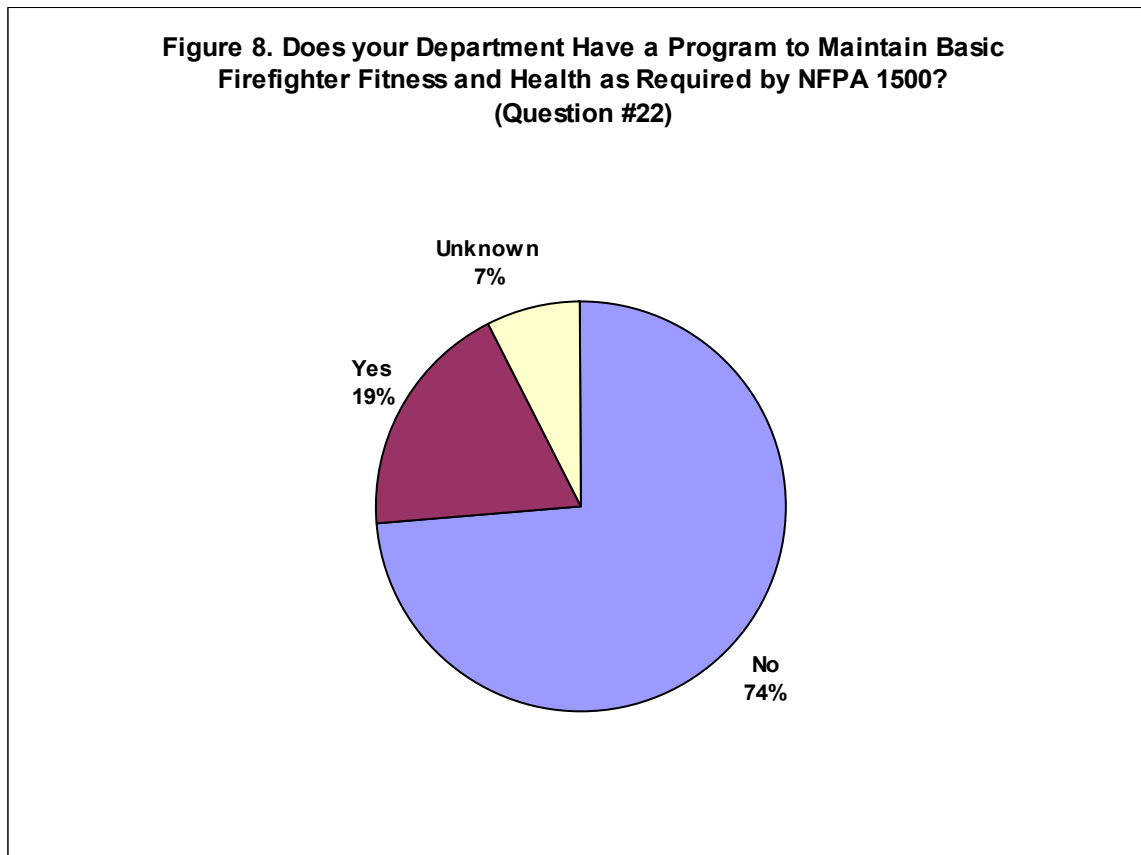
Region	Career Firefighters	Volunteer Firefighters	Paid-per-call Firefighters	Average Firefighters on Duty Available	Civilian Personnel - Paid	Civilian Personnel - Volunteer
Central	2,312	6,290	223	17.9	165	1,022
Coastal	2,772	2,906	54	23.5	183	560
Mountain	120	2,690	177	13.5	32	419
Northern	3,114	3,040	0	34.0	676	691
Valley	913	3,104	74	14.2	41	274
Grand Total	9,231	18,030	528	18.3	1,097	2,966

An additional report on personnel can be found under Supplemental Table 1 at the end of this section.

Fitness Program

A majority of the services provided by volunteer and career firefighters occur in severe environmental conditions involving extreme physical and mental stress. Beyond the emergency incident scene, responding to and returning from alarms, performing practical training evolutions, and even “living” in a fire station while on duty can expose firefighters to hazards.⁴ Regardless of the duty type (e.g., firefighting, responding to or returning from an alarm, training, etc.), the leading cause of firefighter fatalities over the past twenty years⁵ was cardiac arrest/heart attack, with approximately half of all firefighter deaths attributed to this cause annually.⁶

The data indicates that only 19 percent of reporting Virginia fire departments are maintaining a basic firefighter fitness and health program. (See Figure 8.) This represents a 3 percent increase from 2006, when 16 percent of reporting fire departments had such programs. Virginia’s figures are similar to national estimates, which indicate that only 20 percent of all fire departments nationwide have fitness and health programs.⁷



⁴ An extensive body of occupational safety and health literature has direct relevance to the fire/rescue service and illustrates the multi-faceted nature of the risks firefighters face while on and off duty.

⁵ Excluding the September 11, 2001 terrorist attack on the World Trade Center in New York City that killed 343 firefighters.

⁶ United States Fire Administration (2002). *Firefighter Fatality Retrospective Study*.

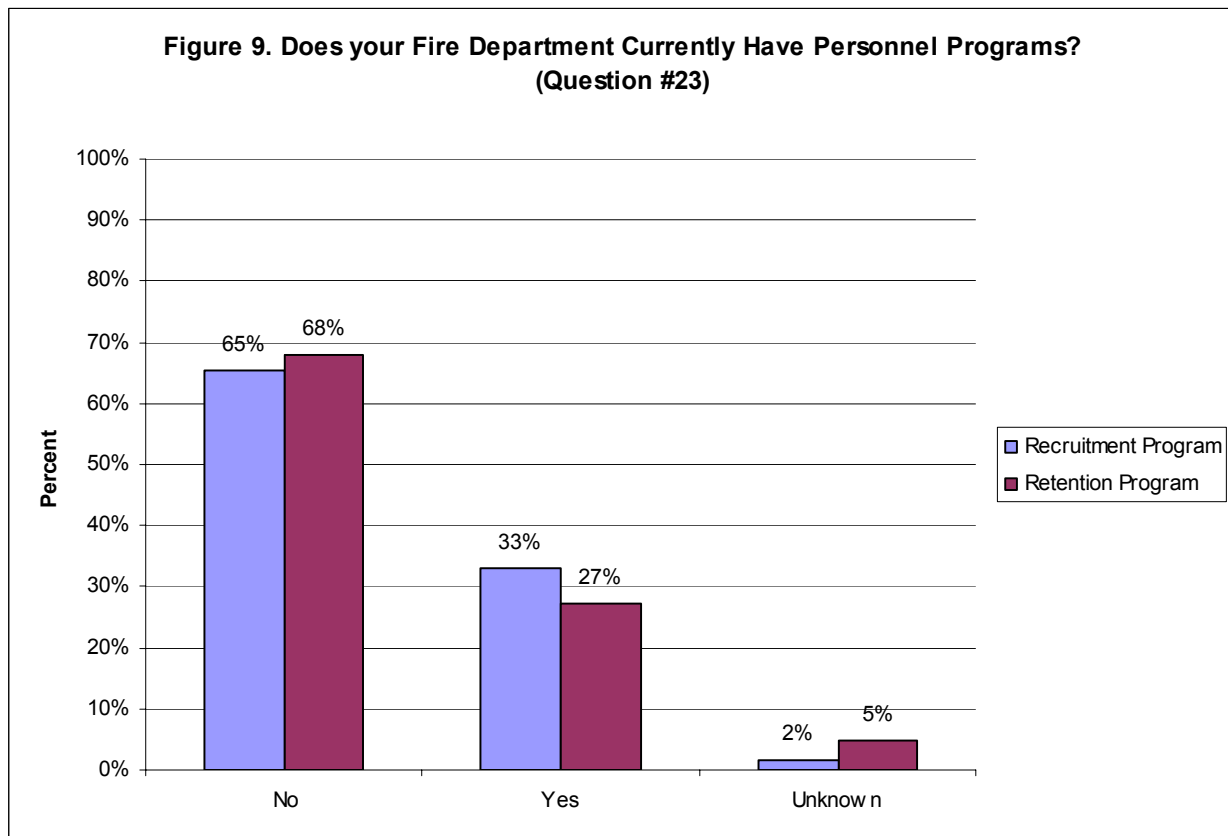
⁷ USFA/NFPA (2002). *A Needs Assessment of the U.S. Fire Service*.

The lack of firefighter health and fitness programs has long been recognized as a severe problem, and several national fire service groups, including the International Association of Fire Chiefs (IAFC), International Association of Fire Fighters (IAFF), National Fire Protection Association (NFPA)⁸, and the National Volunteer Fire Council (NVFC), have developed or are developing major initiatives to help remedy this problem.

On June 21, 2005, the first ever “National Stand Down for Firefighter Safety” was held in order to raise the level of awareness toward firefighter safety and call attention to the unacceptable number of Line of Duty deaths and injuries. Fire departments nationwide were urged to suspend all non-emergency activity and focus entirely on firefighter safety.

Personnel Programs

Managing the recruitment and retention of fire service staff is essential to the operation of a fire department and ensures an effective department response. Thirty-three percent of fire departments that responded on the survey currently have a recruitment program and 27 percent of departments have retention programs, suggesting a need for more implementation of personnel programs. (See Figure 9.)



⁸ National Fire Protection Association (2002). *NFPA 1500 Standard on Fire Department Occupational Safety and Health Program, 2002 Edition*. Quincy, MA.

Survey Section IV - Facilities & Apparatus

The number and location of fire stations in a given community depends on many variables, including community demographics, geography, transportation infrastructure, population density, service demand, and desired protection levels, which vary widely across the state. Generally, as the population served increases, the number of fire stations must also increase to ensure reasonable response times for fire and other emergency service calls.⁹ Fire departments serving smaller populations spread over larger land areas may also require additional fire stations.

A complete description of accepted standards and practices for fire service resource deployment is beyond the scope of this report.¹⁰ While it is not possible to determine a specific number of additional “needed” fire stations in Virginia from the data presented in this report, information developed by USFA/NFPA suggests that, in every population category, two-thirds to three-fourths of fire departments nationwide do not have enough fire stations to meet benchmarks established by the insurance and fire protection industries.¹¹

Fire stations and the land on which they sit are usually owned by local governments, independent corporate entities (such as a volunteer fire department), or a combination of both. As with fire station location and deployment, the expected lifecycle of a given fire station also depends on a range of community and even department-specific variables.

Some fire stations, particularly those serving larger communities, are staffed 24 hours per day, 365 days per year. Other stations, usually those with low service demand or located in more rural areas, are used primarily to store fire apparatus and equipment between emergency calls. In these stations, most firefighters respond from various locations (home, work, etc.) to the fire station.

Fire Stations Over 40 Years of Age

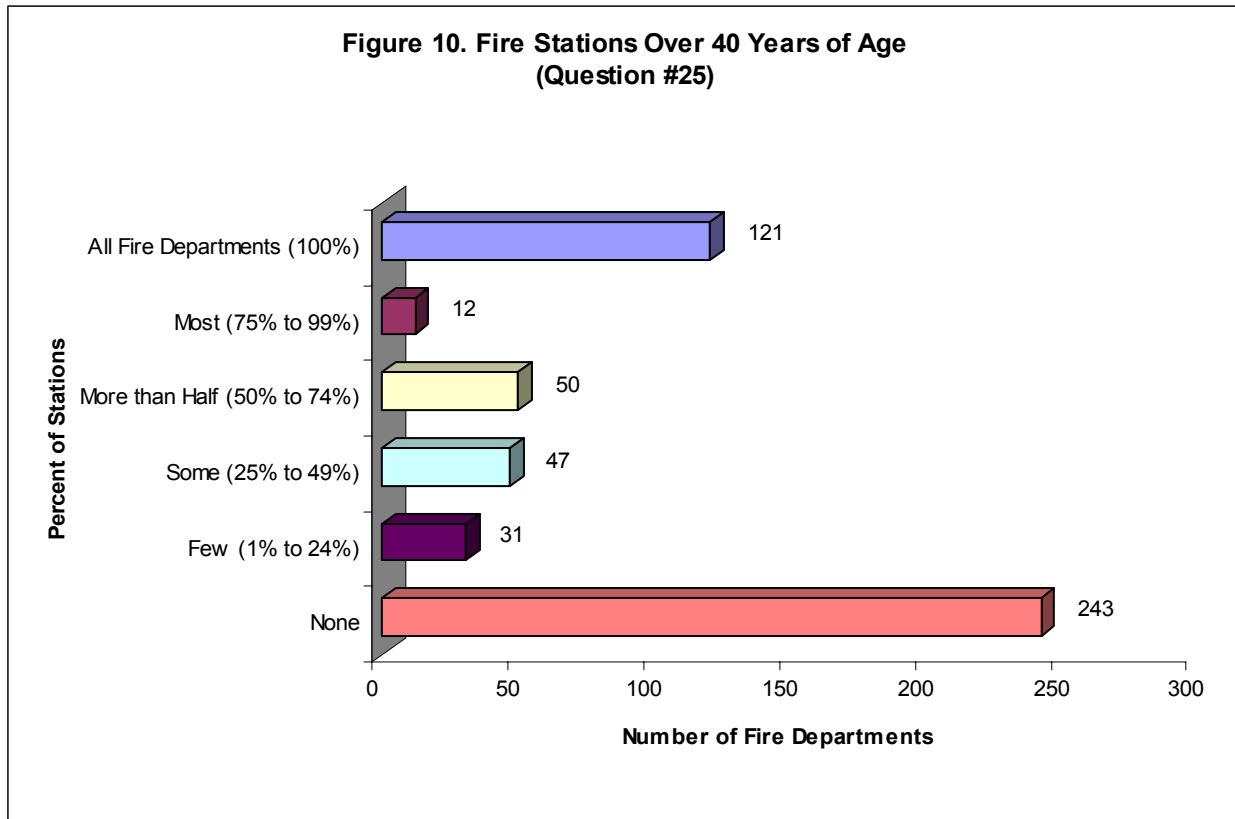
Twenty-four percent of respondents reported that all of their fire stations are over 40 years of age. Nearly half of reporting departments have no fire stations over 40 years of age. (See Figure 10.) In the 2006 Needs Assessment Report, 35 percent of the departments reported

⁹ While national benchmarks and standards of cover exist, the selection of response time goals is ultimately a local policy decision. Beyond the number and location of fire stations, local issues such as whether or not they are “staffed” (by career or on-duty volunteers), as well as community demographics, and transportation infrastructure will determine fire department response times.

¹⁰ See also: National Fire Protection Association (2001). *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*. Quincy, MA; National Fire Protection Association (2001) *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to The Public by Volunteer Fire Departments, 2001 Edition*. Quincy, MA; Insurance Services Office (1998). *Fire Suppression Rating Schedule*. Jersey City, NJ. Commission on Fire Accreditation International (2003). *Creating and Evaluating Standards of Response Coverage for Fire Departments, 4th Edition*. Chantilly, VA.

¹¹ USFA/NFPA (2002). *A Needs Assessment of the U.S. Fire Service*, p. 60.

that their stations are more than 40 years old, while national estimates suggest that 32 percent of all fire stations in the U.S. were over 40 years old in 2002.¹²



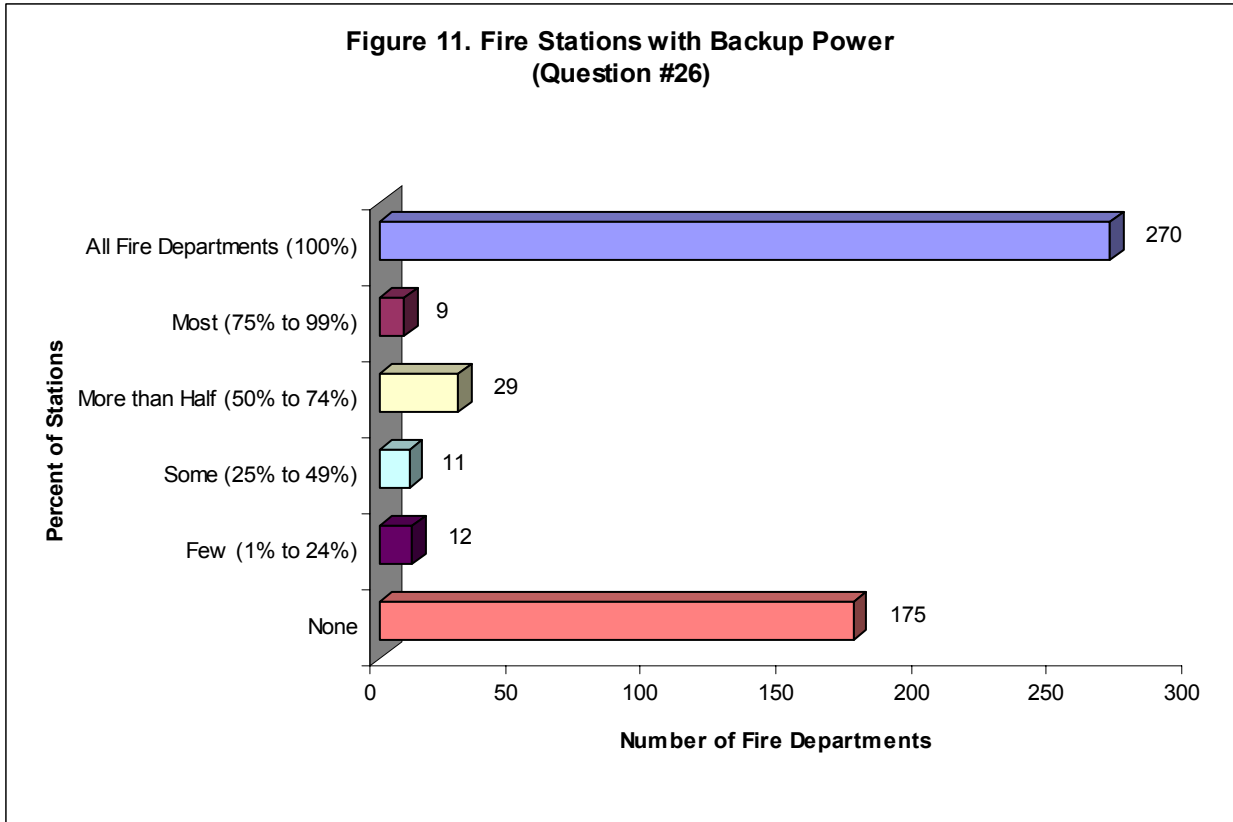
Note: Data for Question #25 is based on 504 completed survey responses out of a total of 509 respondents. Some fire departments skipped this question.

Fire Stations with Backup Power

All fire stations, regardless of age and staffing, must remain fully operational during emergency conditions, as demonstrated by Virginia’s experience with Hurricane Isabel and nationally with Hurricanes Katrina and Rita. Having backup electrical power is very important in maintaining full fire protection for a community during an emergency. Fifty-three percent of fire departments documented that all fire stations have backup power during an emergency. However, 34 percent of the respondents stated that they have no backup power available. (See Figure 11.) The USFA/NFPA estimate that 57 percent of all fire stations nationwide lack backup power.¹³

¹² USFA/NFPA (2002). *A Needs Assessment of the U.S. Fire Service*, p. 57.

¹³ USFA/NFPA (2002). *A Needs Assessment of the U.S. Fire Service*, p.71.



Note: Data for Question #26 is based on 506 completed survey responses out of a total of 509 respondents. Some fire departments skipped this question.

Apparatus Currently Owned

Fire engines (also called “pumpers”) are the primary fire apparatus used by all fire departments to transport, access, and apply pressurized water or other extinguishing agent to fires. Fire engines today, however, are equipped and used for much more than firefighting. Many fire engines carry an array of emergency medical gear, hazardous materials equipment, portable ladders, basic vehicle extrication tools, and water rescue gear. While age alone does not always indicate a need for replacement, older apparatus often do not incorporate modern safety features or efficiency improvements that are found on newer apparatus.

Fire department aerial apparatus (also called “ladders” or “trucks”) mount an aerial ladder or platform typically extending from 55’ to 135’ high. Aerials also usually carry an extensive array of portable ladders, power tools/saws, exhaust fans, and blowers. The duties assigned to aerials include critical support roles such as victim search and rescue, access above and below ground level, utility control, and ventilation of smoke and toxic gases. Some aerials are also equipped for vehicle extrication, technical rescue, and hazardous materials response. As with fire engines, the age of the apparatus is not the sole determining factor of whether the apparatus is in need of replacement. It is, however, important to consider the benefits of advances that have been made in apparatus design in the past several decades, particularly regarding safety features.

Table 6. Average Number of Apparatus Owned By Population Protected *

Population Protected	Aerial Apparatus	Aircraft Rescue and Fire Fighting (ARFF) Vehicle	Ambulance / Other Patient Transport	Command Vehicle	Engine / Pumper	Quint Combination Vehicle	Rescue / Fire Boat	Tanker	Technical Rescue Vehicle	Wildland Brush Truck	Other Apparatus
0 - 999	0.00	0.00	0.33	0.22	1.70	0.04	0.00	0.93	0.11	0.78	0.41
1,000 - 2,499	0.03	0.00	0.38	0.17	1.80	0.08	0.11	1.17	0.21	1.09	0.58
2,500 - 4,999	0.12	0.00	0.58	0.43	2.16	0.05	0.27	1.11	0.34	1.14	0.80
5,000 - 9,999	0.18	0.00	0.49	0.54	2.46	0.10	0.13	1.00	0.34	1.15	1.27
10,000 - 24,999	0.49	0.00	1.13	1.15	3.31	0.33	0.55	1.16	0.58	1.38	1.62
25,000 - 49,999	0.93	0.03	2.57	1.87	4.73	0.20	0.53	1.20	0.33	1.97	2.73
50,000 - 99,999	1.00	0.00	5.94	4.88	5.88	0.82	0.53	2.12	1.41	1.94	7.18
100,000 Or More	4.47	0.12	15.88	5.12	20.82	2.12	2.53	2.88	2.71	5.18	6.76
Grand Total	0.46	0.01	1.68	1.02	3.50	0.24	0.37	1.23	0.49	1.43	1.64

Table 7. Total Number of Apparatus Owned By Virginia Region *

Region	Aerial Apparatus	Aircraft Rescue and Fire Fighting (ARFF) Vehicle	Ambulance / Other Patient Transport	Command Vehicle	Engine / Pumper	Quint Combination Vehicle	Rescue / Fire Boat	Tanker	Technical Rescue Vehicle	Wildland Brush Truck	Other Apparatus
Central	50	2	157	130	430	36	32	184	72	207	207
Coastal	43	0	142	54	260	23	40	68	24	77	83
Mountain	16	0	49	64	255	12	25	124	37	122	97
Northern Valley	41	1	194	90	209	7	25	38	36	63	125
	24	0	92	47	168	14	19	50	17	70	109
Grand Total	174	3	634	385	1,322	92	141	464	186	539	621

Fire tankers (also called “water tenders”) are the primary fire apparatus used by most rural fire departments to transport large volumes of water to the scene of a fire, where water hydrant systems are not available. Tankers today, however, are equipped and used for much more than firefighting. Many fire tankers carry an array of extinguishing agents and portable water tanks (drop tanks) to combat the need for additional water sources to adequately extinguish large fires.

Based on the information reported with the survey for 2007, fire departments in Virginia have on average two (2) ambulances / other patient transport, one (1) command vehicle, four (4) engines / pumpers, one (1) tanker, and one (1) wildland brush truck. (See Table 6.) As the population protected increases for a fire department, the fire service demands increase as well as the average apparatus owned.

Equipment Currently Owned

Specialized protective clothing is required for structural firefighting and other emergency incidents to protect responders from thermal, mechanical, and other hazards. To achieve optimal effectiveness, structural firefighter protective clothing (SFPC) must be properly fitted, maintained and stored, regularly cleaned, and repaired or replaced when no longer capable of protecting the wearer.¹⁴

The thermal and toxic hazards to which firefighters are exposed during “routine” incidents make self-contained breathing apparatus (SCBA) an absolute necessity for safe and effective emergency operations. Without SCBA, firefighters are unable to enter hazardous environments (including a “typical” residential structural fire) to fight fires, search for and rescue victims, or conduct salvage operations. The increasing threat potential from hazardous materials and terrorist acts makes it important that *all* emergency responders, not just those assigned to operations in the “hot zone”, have access to SCBA.

The environmental hazards of firefighting are magnified by the fact that most interior firefighting operations occur in low to zero visibility. For this reason, personal alert safety system (PASS) devices were developed to help rescuers locate lost, trapped, injured, or otherwise “downed” firefighters. PASS devices incorporate a motion sensor and alarm to emit a loud warbling sound when a firefighter is immobile for longer than 30 seconds.¹⁵

The application of new and emerging technology – in some cases transferred from military, university, or private sector research – to fire department equipment and operational practices is a growing trend. Several technologies that are becoming relevant to Virginia’s fire departments include thermal imaging cameras (TICs), mobile data terminals with Mapping Coordination Systems GIS (MDTs), and chemical/biological sampling equipment.

¹⁴ National Fire Protection Association (2001). *NFPA Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles, 2001 Edition*. Quincy, MA.

¹⁵ National Fire Protection Association (1998). *NFPA 1982 Standard on Personal Alert Safety Systems, 1998 Edition*. Quincy, MA.

Table 8. Average Number of Equipment Owned By Population Protected *

Population Protected	Chemical / Biological Sample Analysis Equipment	Map Coordinate System - GPS	Mobile Data Terminals	Personal Alert Safety Systems (PASS)	Personal Protective Equipment (PPE)	Radios	Self-Contained Breathing Apparatus (SCBA)	Technical Rescue Equipment	Thermal Imaging Cameras	Other Equipment
0 - 999	0.07	0.81	0.00	8.85	20.63	13.52	9.85	0.33	0.33	1.00
1,000 - 2,499	0.12	0.97	0.00	11.79	27.09	18.80	12.76	0.62	0.74	0.09
2,500 - 4,999	0.15	0.68	0.21	15.76	30.83	29.28	15.77	1.21	1.01	0.10
5,000 - 9,999	0.10	0.79	0.15	18.64	35.73	23.46	18.48	1.00	1.34	0.00
10,000 - 24,999	0.80	1.49	1.44	28.47	50.05	47.00	54.95	1.84	1.91	0.47
25,000 - 49,999	1.57	2.20	1.77	46.67	90.17	66.67	45.20	1.93	3.13	0.00
50,000 - 99,999	3.00	4.18	2.71	80.59	147.71	89.82	67.65	7.47	5.82	0.00
100,000 Or More	7.76	25.18	72.88	283.06	710.88	437.06	350.82	18.35	22.12	2.94
Grand Total	0.81	2.26	3.83	34.32	73.66	51.90	40.74	2.21	2.44	0.31

Table 9. Total Number of Equipment Owned By Virginia Region *

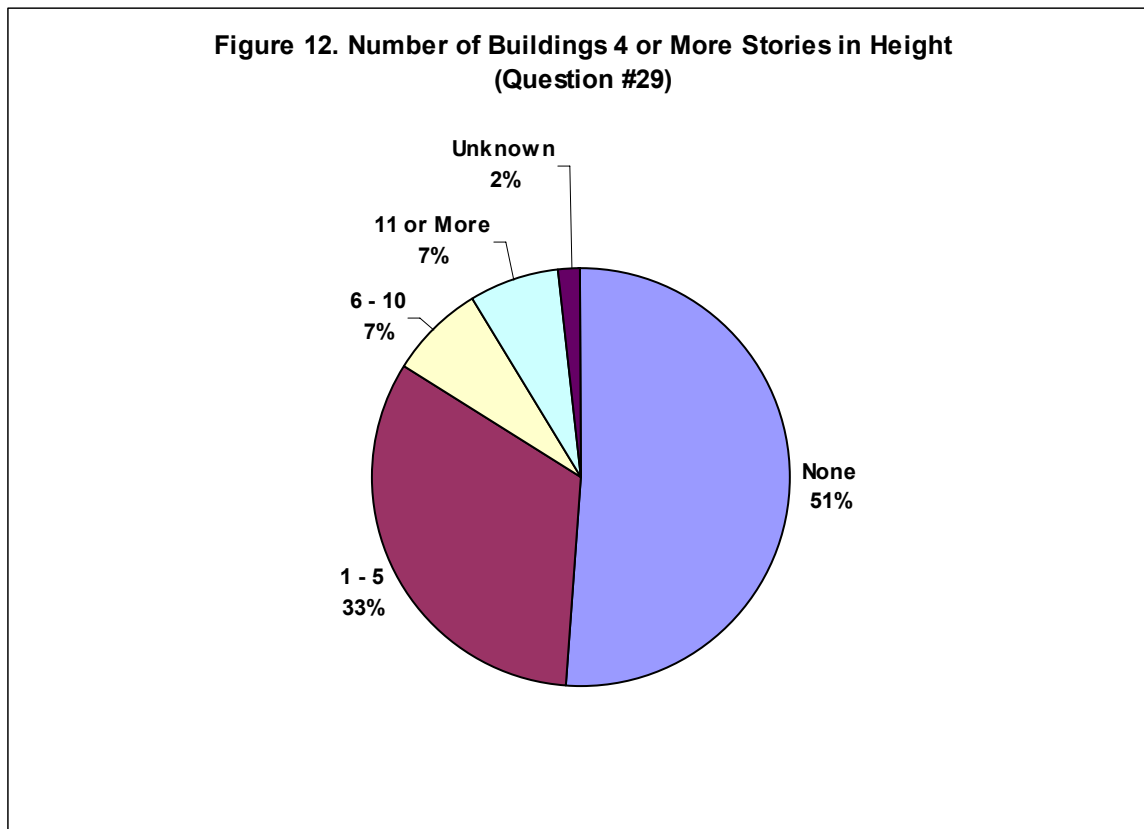
Region	Chemical / Biological Sample Analysis Equipment	Map Coordinate System - GPS	Mobile Data Terminals	Personal Alert Safety Systems (PASS)	Personal Protective Equipment (PPE)	Radios	Self-Contained Breathing Apparatus (SCBA)	Technical Rescue Equipment	Thermal Imaging Cameras	Other Equipment
Central	81	338	267	4,062	8,123	4,782	3,953	184	322	4
Coastal	80	77	278	2,449	4,838	3,590	4,032	56	167	70
Mountain	28	83	8	1,629	2,874	3,169	1,672	192	118	15
Northern Valley	98	295	881	3,517	9,307	6,099	4,350	347	222	4
Valley	19	60	14	1,317	2,703	1,979	1,392	56	93	26
Grand Total	306	853	1,448	12,974	27,845	19,619	15,399	835	922	119

On average, fire departments responded for 2007 that they maintain and own (1) one chemical / biological sample analysis unit, two (2) map coordinate GPS devices, four (4) mobile data terminals, 34 personal alert safety systems (PASS), 74 personal protective equipment (PPE), 52 radios, 41 self-contained breathing apparatus (SCBA), two (2) pieces of technical rescue equipment, and two (2) thermal imaging cameras. (See Table 8.)

Please see Supplemental Table 2 and Supplemental Table 3 at the end of this section for additional information on the apparatus owned and equipment owned by fire departments in Virginia.

Buildings 4 or More Stories

A little more than half of all survey respondents reported that there were no buildings in their area that are four stories or more in height. One-third of fire departments have local buildings between one and five stories in height. (See Figure 12.)



Survey Section V - Operating Budget Information

Budget Funding

Fire departments obtain funding for their operating expenses from many different sources such as fire district taxes, payments per call, local government funding, state government funding, fundraising, and other sources. Eighty-two percent of fire departments responded that their normal budget does not cover the costs associated with apparatus replacement.

The largest part of the funding sources for fire departments is from local government funding which accounted for an average of 56 percent of department's budgets. Fundraising generated on average 28 percent of the income for fire departments. (See Figure 13.)

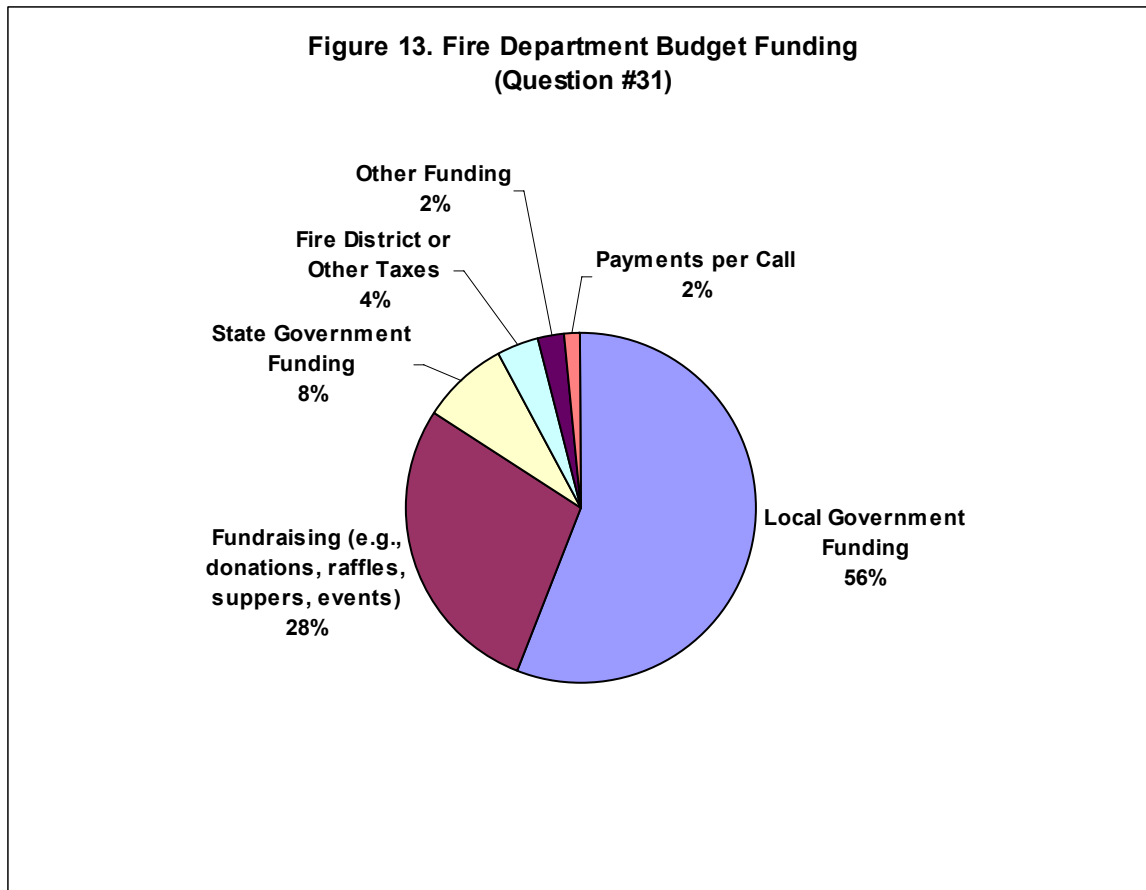


Table 10. Average Percent of Fire Department Budget Funding By Population Protected

Population Protected	Fire District or Other Taxes	Payments per Call	Local Government Funding	State Government Funding	Fundraising (e.g., donations, raffles, suppers, events)	Other Funding
0 - 999	4.38	1.41	51.75	13.16	26.28	3.03
1,000 - 2,499	2.99	0.00	49.61	10.58	34.68	2.14
2,500 - 4,999	3.51	1.92	48.53	8.62	34.66	2.77
5,000 - 9,999	3.36	2.54	54.25	6.42	30.15	3.28
10,000 - 24,999	4.93	0.99	59.53	6.01	27.43	1.11
25,000 - 49,999	6.51	1.17	68.61	6.24	16.10	1.37
50,000 - 99,999	6.11	2.17	78.22	9.61	3.89	0.00
100,000 Or More	5.26	1.53	87.37	1.11	4.11	0.63
Grand Total	4.05	1.50	55.76	7.97	28.46	2.26

Table 11. Average Percent of Fire Department Budget Funding By Virginia Region

Region	Fire District or Other Taxes	Payments per Call	Local Government Funding	State Government Funding	Fundraising (e.g., donations, raffles, suppers, events)	Other Funding
Central	0.94	0.75	57.55	8.54	30.06	2.15
Coastal	9.28	2.62	53.51	5.79	26.78	2.01
Mountain	2.39	1.46	57.68	12.89	22.67	2.92
Northern	17.23	0.44	57.31	3.37	20.63	1.02
Valley	0.86	2.72	50.77	4.73	38.43	2.49
Grand Total	4.05	1.50	55.76	7.97	28.46	2.26

Apparatus Replacement

Sixty-three percent of fire departments in the survey replied that they regularly schedule and plan for the replacement of apparatus and equipment. Twenty-one percent of fire departments expect the need to replace a command vehicle in the next five years. Departments that anticipate the replacement of engines/pumpers within the next five years accounted for 40 percent, while a similar schedule of replacing wildland brush trucks within five years made up 27 percent. Twenty-seven percent of departments responded that they don't expect the need to replace tanker apparatus until 10 years from now. (See Table 12.)

Table 12. Percent of Fire Departments Reporting Expected Need to Replace Apparatus

Apparatus	Within 1 Year	Within 5 Years	Within 10 Years	No Need To Replace
Aerial Apparatus	4.52%	9.63%	10.41%	75.44%
Aircraft Rescue and Fire Fighting (ARFF) Vehicle	0.20%	0.79%	1.96%	97.05%
Ambulance / Other Patient Transport	14.73%	14.93%	4.72%	65.62%
Command Vehicle	14.34%	20.83%	11.00%	53.83%
Engine / Pumper	23.58%	40.28%	22.99%	13.16%
Quint Combination Vehicle	0.98%	3.14%	6.88%	89.00%
Rescue / Fire Boat	2.75%	3.54%	5.70%	88.02%
Tanker	9.63%	21.61%	27.11%	41.65%
Technical Rescue Vehicle	6.48%	8.64%	7.86%	77.01%
Wildland Brush Truck	12.57%	27.31%	23.18%	36.94%

Equipment Replacement

The highest concentration of departments that displayed the need to replace equipment within the next five years is found in personal alert safety systems (46%), personal protective equipment (43%), radios (43%), self-contained breathing apparatus (49%), and thermal imaging cameras (36%). (See Table 13.)

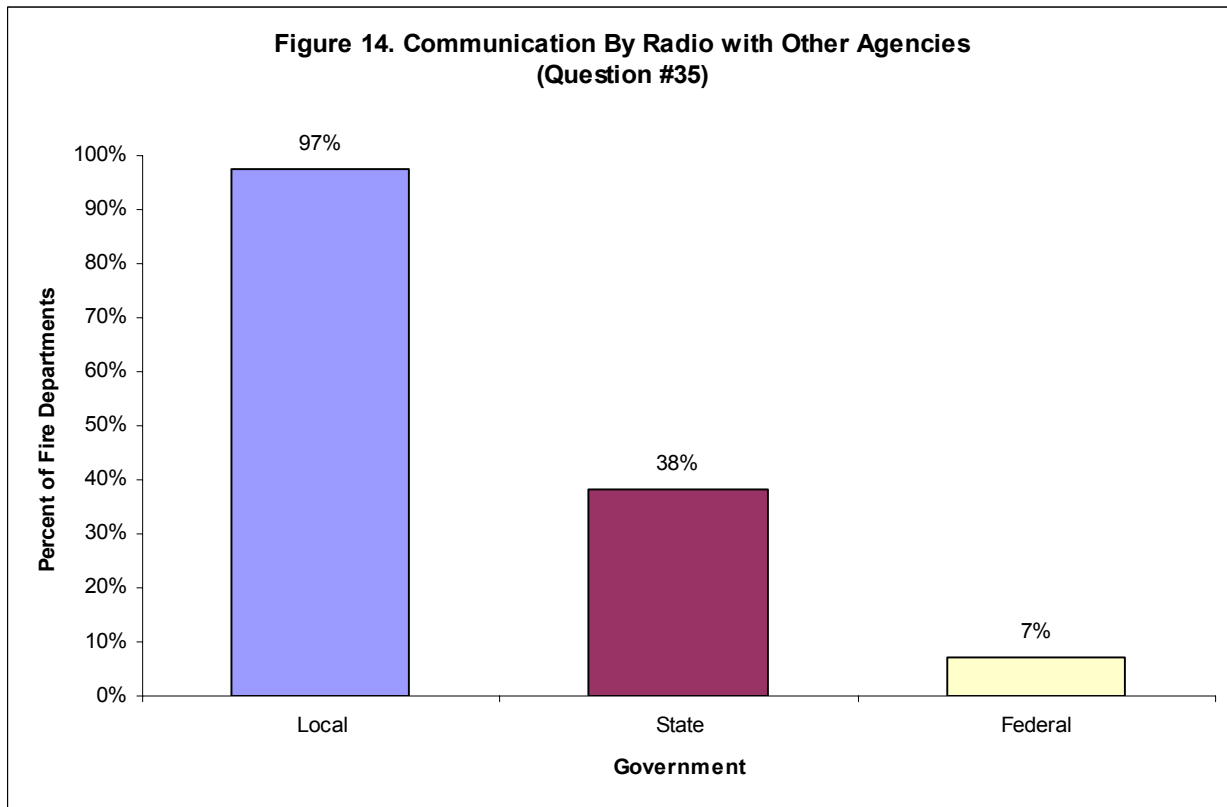
Table 13. Percent of Fire Departments Reporting Expected Need to Replace Equipment

Equipment	Within 6 Months	Within 1 Year	Within 5 Years	No Need To Replace
Chemical / Biological Sample Analysis Equipment	0.98%	6.88%	11.79%	80.35%
Map Coordinate System - GPS	4.13%	12.38%	20.24%	63.26%
Mobile Data Terminals	2.16%	7.66%	10.22%	79.96%
Personal Alert Safety Systems (PASS)	3.54%	11.79%	45.58%	39.10%
Personal Protective Equipment (PPE)	10.02%	24.95%	42.63%	22.40%
Radios	8.06%	20.43%	43.42%	28.09%
Self-Contained Breathing Apparatus (SCBA)	5.50%	12.18%	48.72%	33.60%
Technical Rescue Equipment	1.18%	8.64%	18.07%	72.10%
Thermal Imaging Cameras	4.13%	14.93%	35.76%	45.19%

Survey Section VI - Communications

The ability of fire departments to establish and maintain effective and reliable communications through all phases of an emergency incident (i.e., notification, dispatch, response, operations, and termination) is critical. Since the September 11, 2001 terrorist attack, public safety communications have received a great deal of attention, particularly with respect to “interoperability”, which is the degree to which local, state, and federal responders can communicate with each other.¹⁶

Reports from Virginia fire departments show that the vast majority of departments (97%) can communicate with local emergency response partners by radio on an incident scene. Thirty-eight percent can communicate with state responders and only seven percent can communicate with federal responders, suggesting that communications interoperability is still a challenge for many fire departments. (See Figure 14.)



¹⁶ For more information regarding the FY 2008 Virginia Statewide Strategic Plan for Communications Interoperability, please visit www.interoperability.publicsafety.virginia.gov.

Frequency Spectrum

The frequency in which fire departments operate can greatly affect how they communicate with other agencies. Fifty-five percent of departments operate using High Band (147-174 MHz) frequency, while 38 percent of departments use either Ultra Band (450-470 MHz) or 800 MHz radios. (See Figure 15.)

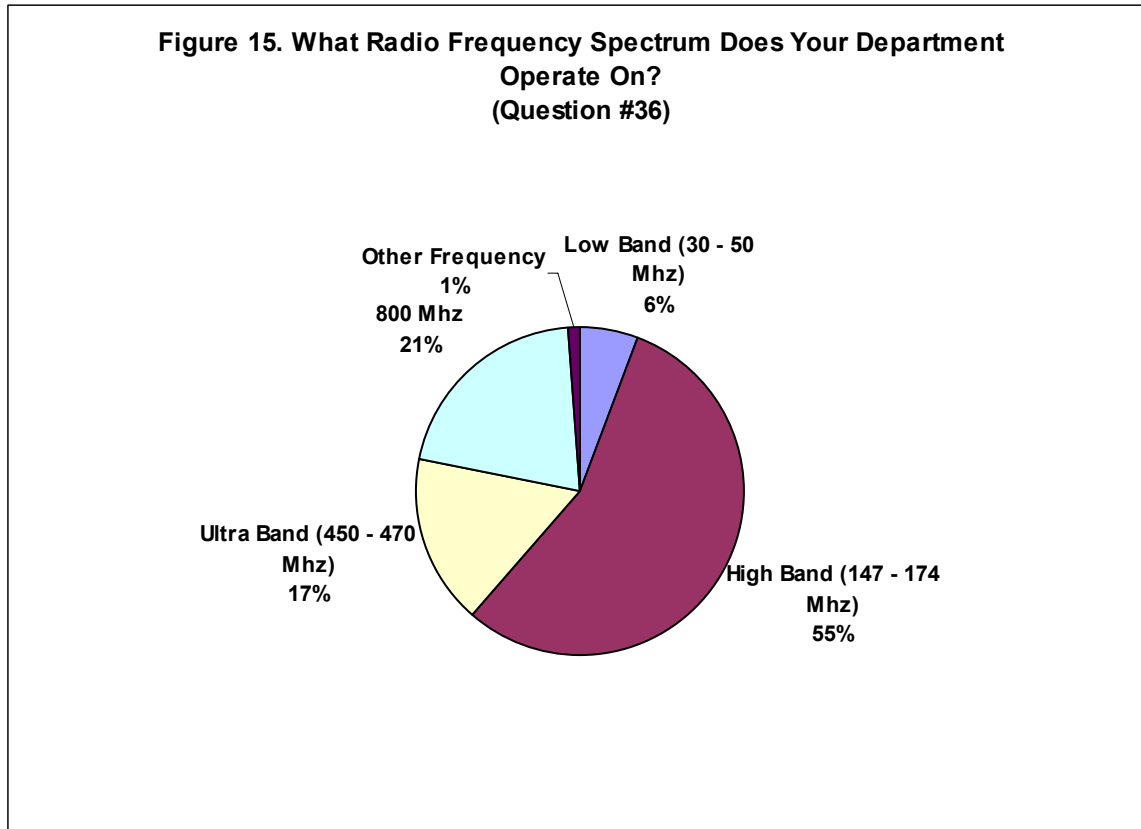


Table 14. Radio Operating Frequency Reported By Population Protected

Population Protected	Low Band (30 - 50 Mhz)	High Band (147 - 174 Mhz)	Ultra Band (450 - 470 Mhz)	800 Mhz	Other Frequency	Grand Total
0 - 999	1.18%	3.34%	1.38%	0.20%	0.20%	6.29%
1,000 - 2,499	0.98%	11.00%	1.96%	2.36%	0.20%	16.50%
2,500 - 4,999	2.36%	16.31%	5.11%	3.34%	0.00%	27.11%
5,000 - 9,999	0.98%	12.77%	3.34%	3.34%	0.20%	20.63%
10,000 - 24,999	0.00%	8.45%	2.16%	3.34%	0.20%	14.15%
25,000 - 49,999	0.20%	2.95%	1.96%	2.95%	0.00%	8.06%
50,000 - 99,999	0.00%	0.98%	0.39%	2.16%	0.00%	3.54%
100,000 Or More	0.00%	0.00%	0.20%	3.34%	0.20%	3.73%
Grand Total	5.70%	55.80%	16.50%	21.02%	0.98%	100.00%

Table 15. Radio Operating Frequency Reported By Virginia Region

Region	Low Band (30 - 50 Mhz)	High Band (147 - 174 Mhz)	Ultra Band (450 - 470 Mhz)	800 Mhz	Other Frequency	Grand Total
Central	0.98%	22.99%	2.16%	8.06%	0.20%	34.38%
Coastal	0.79%	9.04%	0.79%	2.75%	0.00%	13.36%
Mountain	2.16%	16.50%	4.52%	0.00%	0.39%	23.58%
Northern	0.59%	0.98%	0.79%	7.66%	0.20%	10.22%
Valley	1.18%	6.29%	8.25%	2.55%	0.20%	18.47%
Grand Total	5.70%	55.80%	16.50%	21.02%	0.98%	100.00%

Assigned Radios

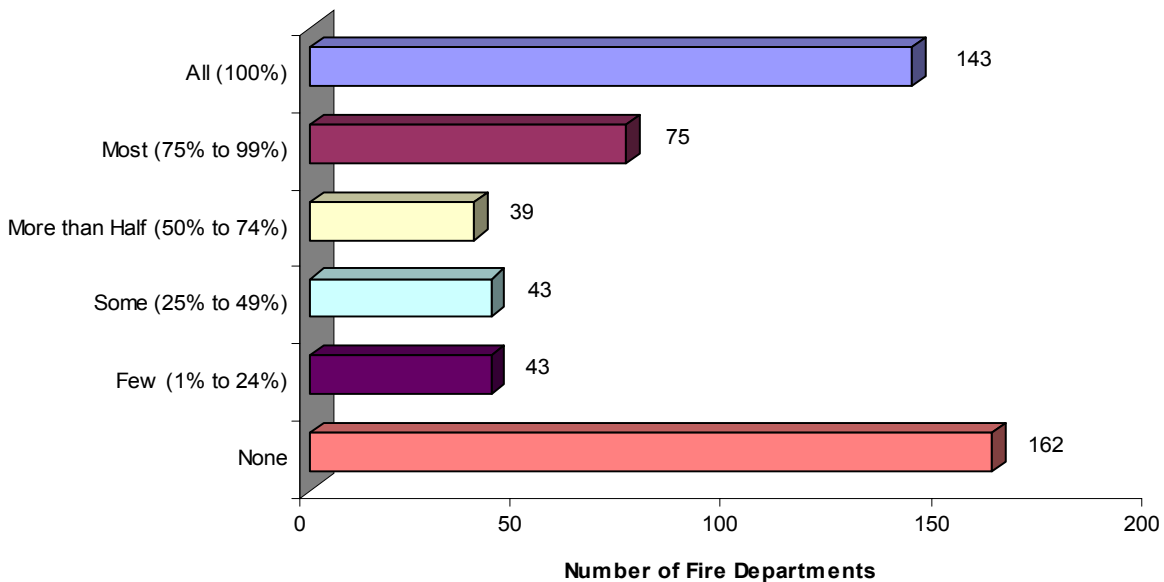
Fifty-seven percent of respondents answered that all of their apparatus have portable radios assigned, while only 14 percent of departments showed that their apparatus all have a portable radio assigned to each riding position.

Safe Radios

Radios that work properly in extreme conditions are an important part of a firefighter's needed equipment. Twenty-eight percent of all departments are fully equipped with water-resistant radios. Thirty-two percent of departments reported that they have no water-resistant radios. (See Figure 16.)

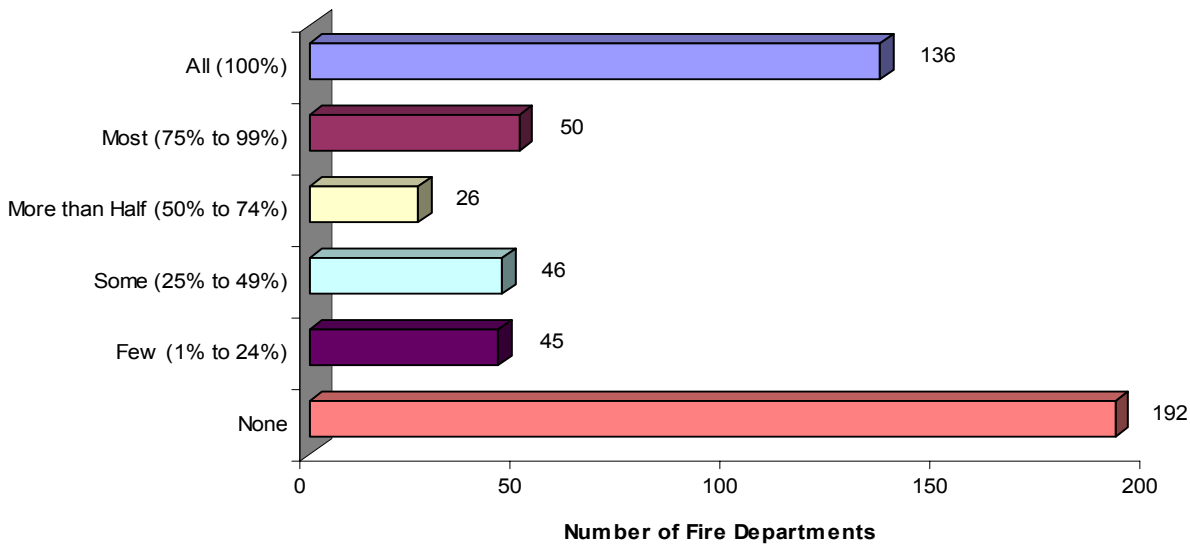
Fire Departments that have radio systems that are all intrinsically safe in an explosive atmosphere accounted for 27 percent of the respondents. Thirty-nine percent of fire departments reported that they have no radios that are safe in an explosive environment. (See Figure 17.)

**Figure 16. What Percentage of Your Radios Are Water-Resistant?
(Question #39)**



Note: Data for Question #39 is based on 505 completed survey responses out of a total of 509 respondents. Some fire departments skipped this question.

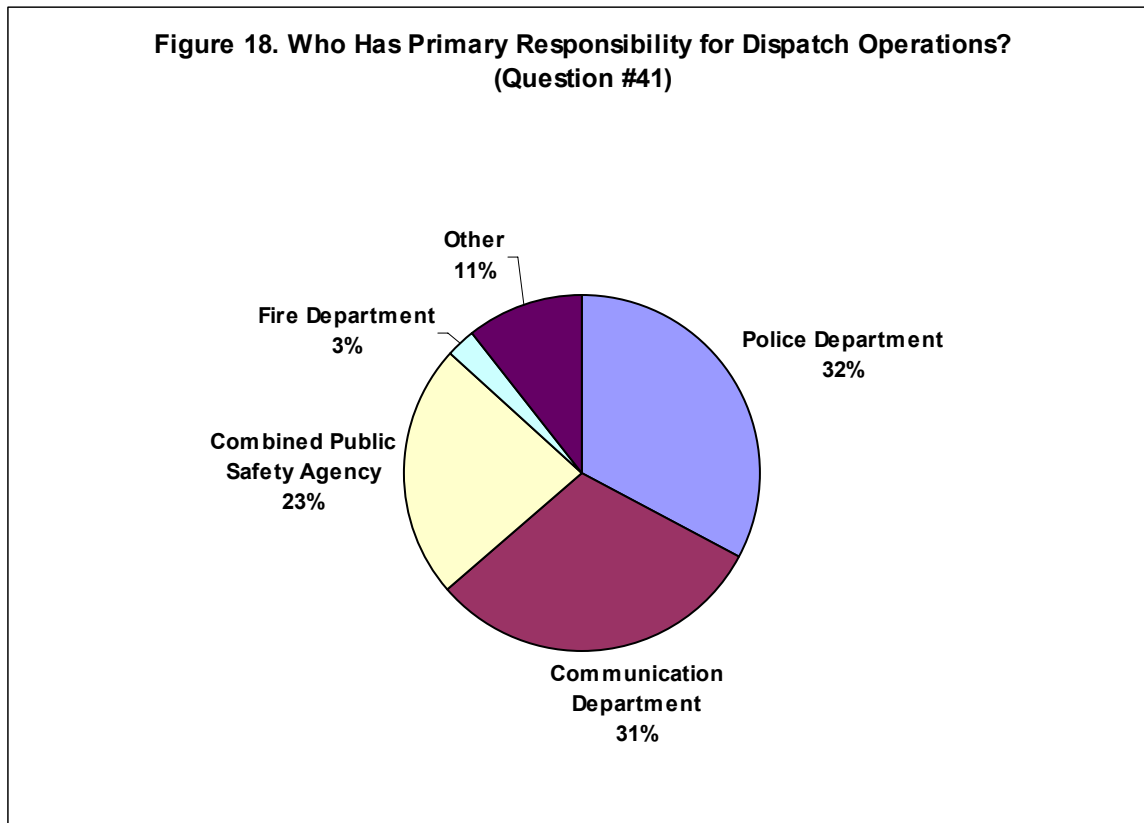
**Figure 17. What Percentage of Your Radios Are Intrinsically Safe in an
Explosive Atmosphere?
(Question #40)**



Note: Data for Question #40 is based on 495 completed survey responses out of a total of 509 respondents. Some fire departments skipped this question.

Dispatch Operations

Nearly one-third of all fire departments responded that a police department is primarily responsible for their dispatch operations. Thirty-one percent employ a communications department for their incident calls and 23 percent utilize a combined public safety agency. (See Figure 18.)

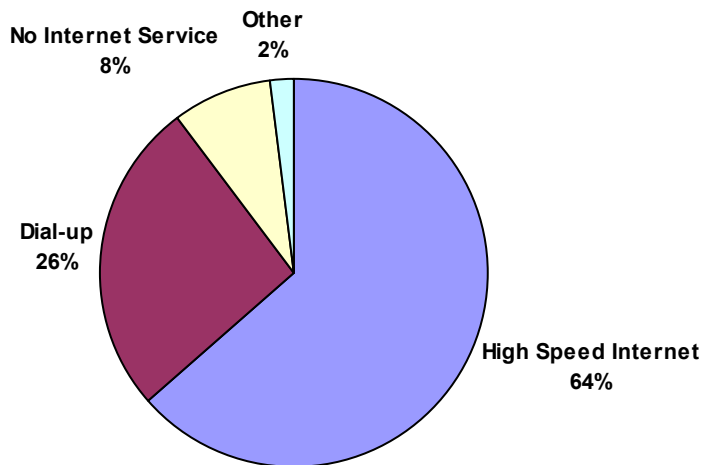


Note: Data for Question #41 is based on 506 completed survey responses out of a total of 509 respondents. Some fire departments skipped this question.

Internet Access

Fire departments use the internet for a wide variety of purposes, such as accessing information, submitting incident reports, and participating in online training activities. Some departments make extensive use of email and other productivity-related software to manage routine daily business. A majority of fire departments have internet access (90%) at their organization. High speed internet accounted for 64 percent of the internet access and dial-up made up 26 percent of the internet service used in the state. (See Figure 19.) Slow internet speeds can inhibit the productivity of departments when managing activities on-line. Switching over to higher speed internet would definitely help the efficiency with a department's internet communication.

**Figure 19. What Type of Internet Access Do You Currently Have At Your Department?
(Question #42)**



Survey Section VII - Fire Department Roles / Training

Department Roles

Fire departments have specific roles in which they perform in responding to an incident. Fire service personnel are trained in different specialized fields that enable them to take action during situations where they are needed.

Ninety-eight percent of fire departments in Virginia are prepared for responding to structural firefighting calls. Departments are also well prepared to handle situations involving wildland firefighting (88%), technical rescue - vehicle (84%), and hazardous materials response (78%). There is some need for personnel with the ability to answer emergency medical services calls since only 64 percent perform this role. (See Figure 20.) Specialized areas of technical rescue training such as in confined space, rope, structural collapse, trench, and water could be more utilized in fire departments so that they are prepared for any type of incident.

Even if a department is prepared for certain fire service roles, all personnel may not have received formal training in a specialized field. Having all personnel trained in a particular area will guarantee proper response during an emergency situation as well as ensure their safety.

**Figure 20. Percent of Fire Departments that Perform Specific Fire Service Role
(Question #44)**

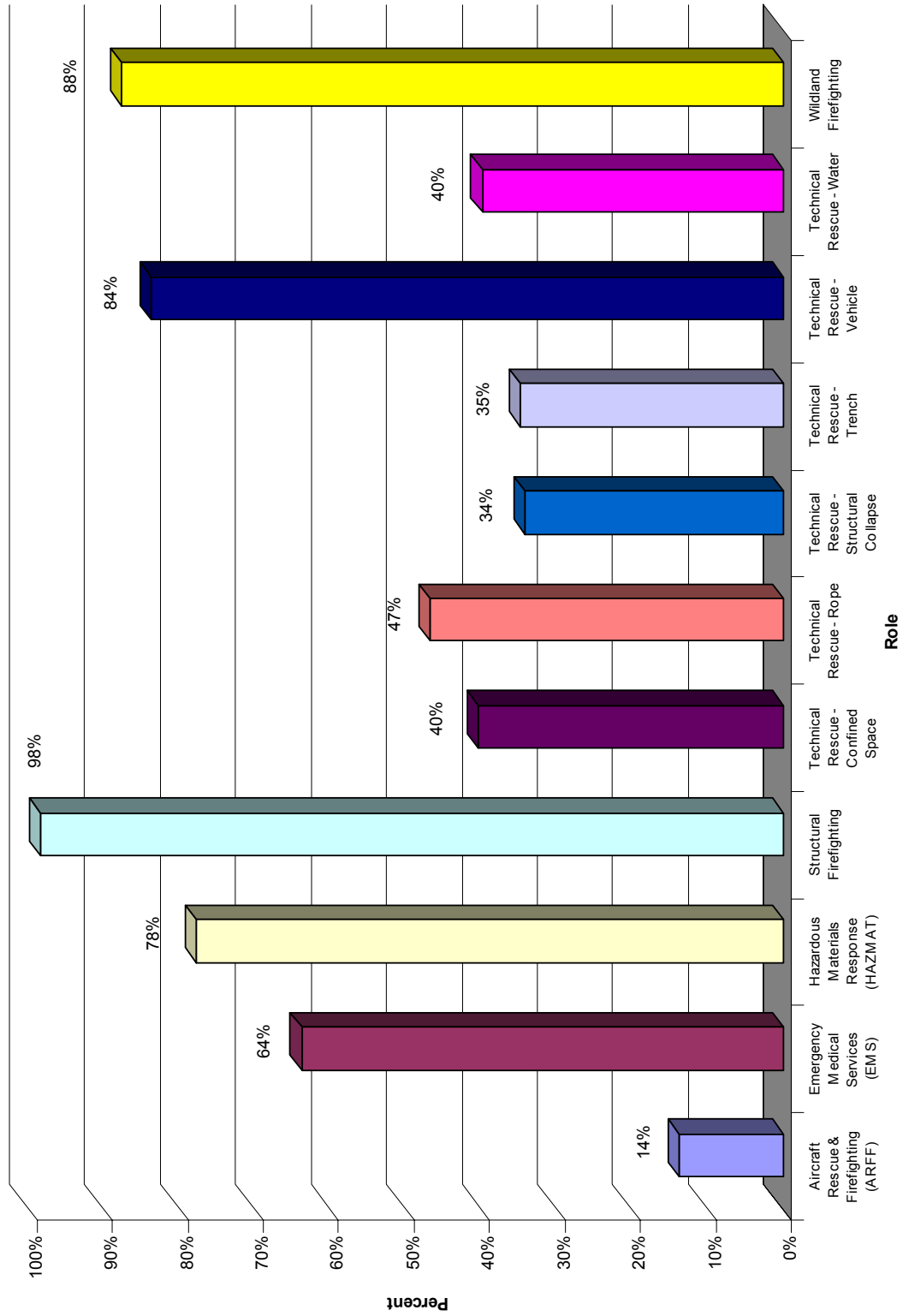
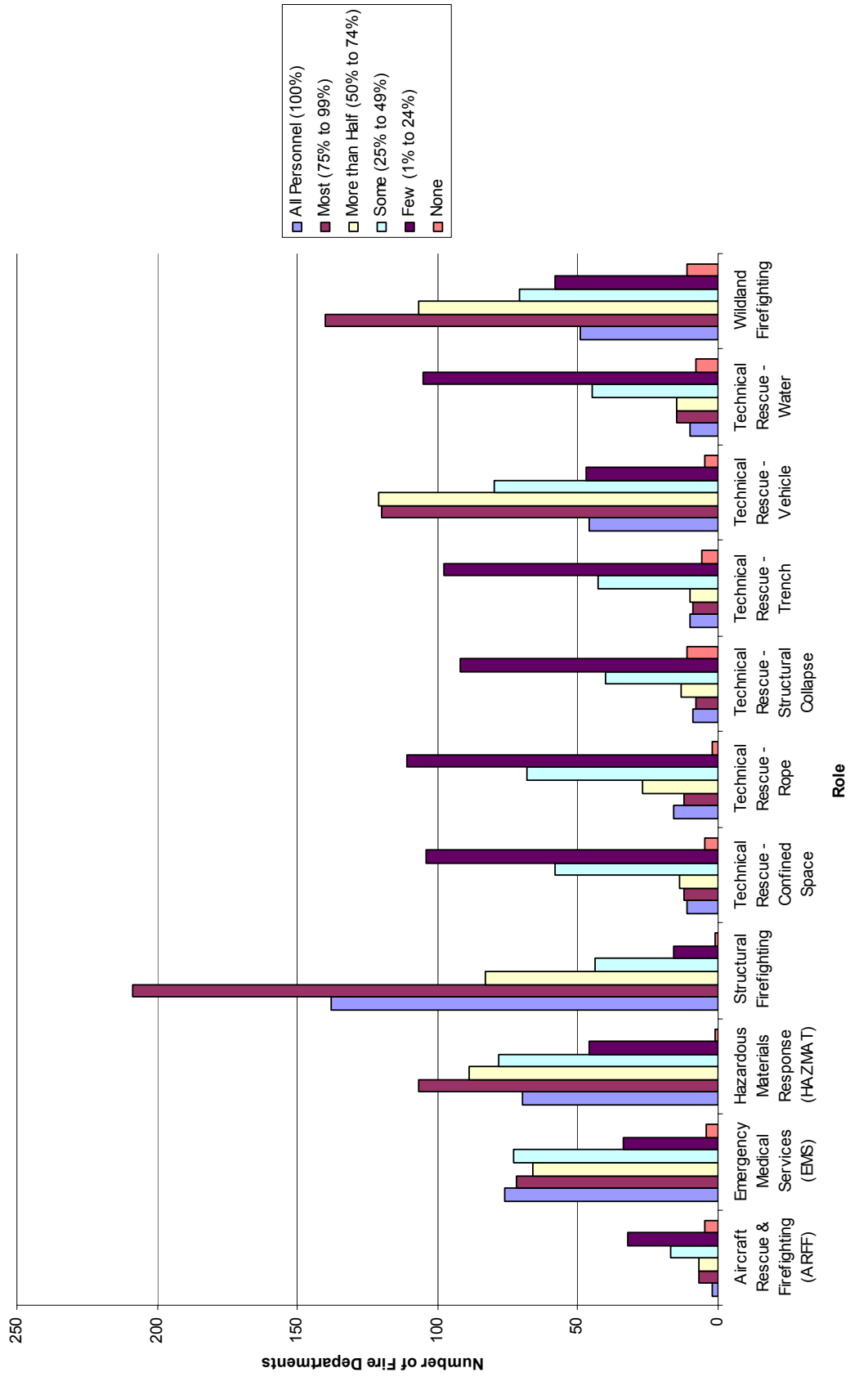


Figure 21. Percent of Personnel That Have Received Formal Training By Department Role (Question #44)



Firefighter Certification

When fire service personnel are additionally certified in specific areas, fire departments are able to respond more effectively to incidents in Virginia. They have received more intensive coursework on how to appropriately handle a situation. Fire departments reported with the survey that they have very few personnel that are certified in certain fire service areas. Fifty-six percent of departments responded that they have few (1% to 24%) personnel trained and certified in advanced life-support. Concurrently, departments with most (75% to 99%) of their staff certified were in the areas of emergency vehicle operations (46%), firefighter level I (37%) and HAZMAT Awareness (36%). The amount of specialized certifications with fire investigator, fire prevention inspector, HAZMAT specialist, HAZMAT technician, and public fire & life safety educator showed large deficiencies among the reported survey results. (See Table 16.)

Table 16. Percent of Fire Service Personnel Reported By Certification Type

Certification	All Personnel (100%)	Most (75% to 99%)	More than Half (50% to 74%)	Some (25% to 49%)	Few (1% to 24%)	None
Advanced Life-Support (EMT-Enhanced, EMT-Intermediate, or EMT-Paramedic)	0.59%	2.55%	2.95%	11.59%	55.80%	22.40%
Basic Life Support (First Responder or EMT-B)	5.11%	12.38%	14.73%	26.72%	33.99%	5.70%
Emergency Vehicle Operations	17.49%	46.17%	20.04%	10.81%	3.93%	0.39%
Fire Apparatus Driver / Operator	4.52%	20.24%	23.77%	26.33%	19.25%	3.93%
Fire Investigator	0.20%	0.00%	0.00%	1.77%	33.60%	55.60%
Fire Officer	0.20%	1.18%	3.54%	18.27%	50.10%	23.58%
Fire Prevention Inspector	0.39%	0.20%	0.59%	1.77%	31.24%	56.39%
Firefighter Level I	14.34%	36.54%	21.02%	15.91%	11.00%	0.39%
Firefighter Level II	7.27%	27.50%	21.22%	21.81%	19.25%	1.57%
HAZMAT Awareness	19.45%	35.76%	18.27%	14.93%	10.02%	0.79%
HAZMAT Operational	9.43%	22.79%	20.04%	20.63%	19.65%	5.89%
HAZMAT Specialist	0.39%	0.00%	0.79%	2.75%	29.27%	58.15%
HAZMAT Technician	0.20%	0.00%	0.79%	3.54%	32.61%	54.81%
Public Fire & Life Safety Educator	0.00%	0.20%	0.20%	2.36%	32.61%	56.78%

Regional Technical Rescue Response

Eighty-seven percent of responding fire departments reported that they do not participate in a regional technical rescue response team. The departments that currently participate have an average of 18 members per team.

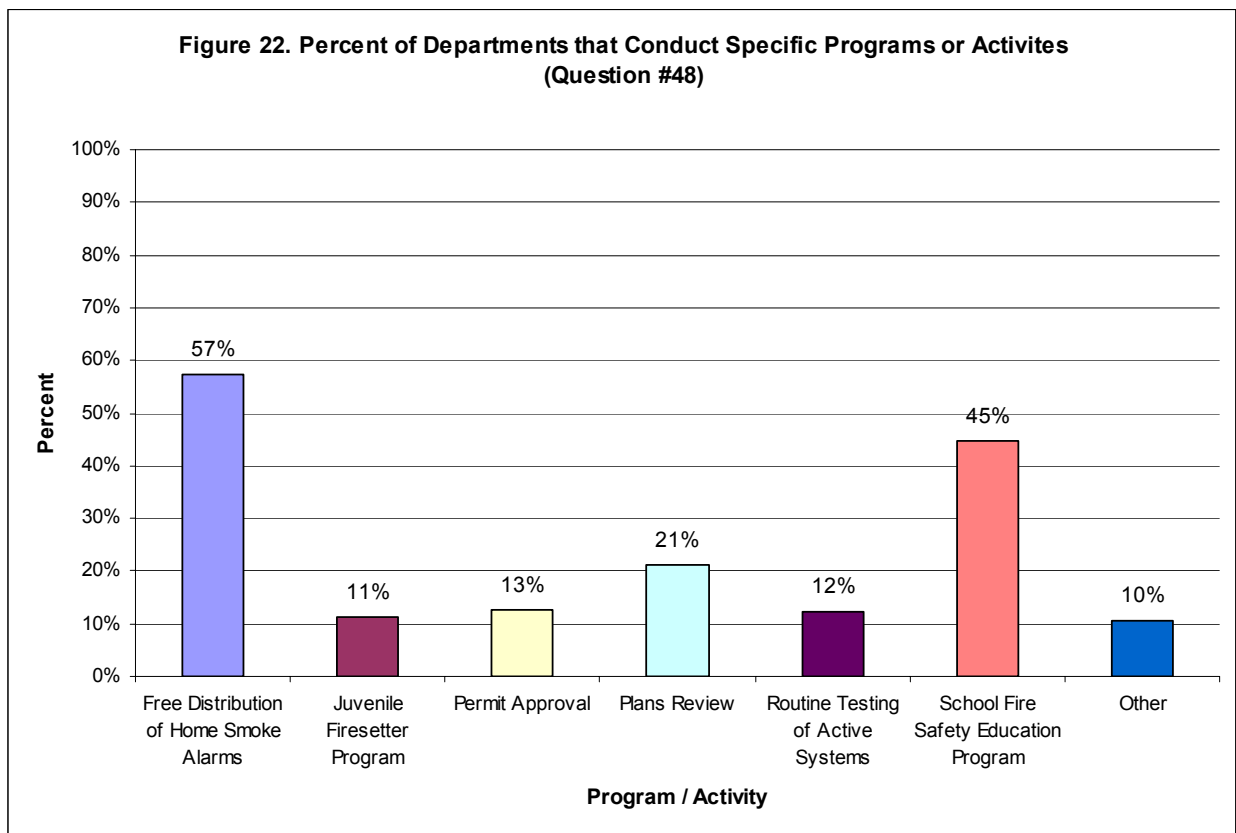
Emergency Medical Services (EMS)

Fire departments that are licensed by the Virginia Department of Health, Office of Emergency Medical Services accounted for 57 percent of the survey respondents. Since emergency medical services (EMS) incidents make up a large part of the overall calls, fire service departments would benefit from being licensed as an EMS agency.

Survey Section VIII - Fire Prevention & Code Enforcement

Programs / Activities

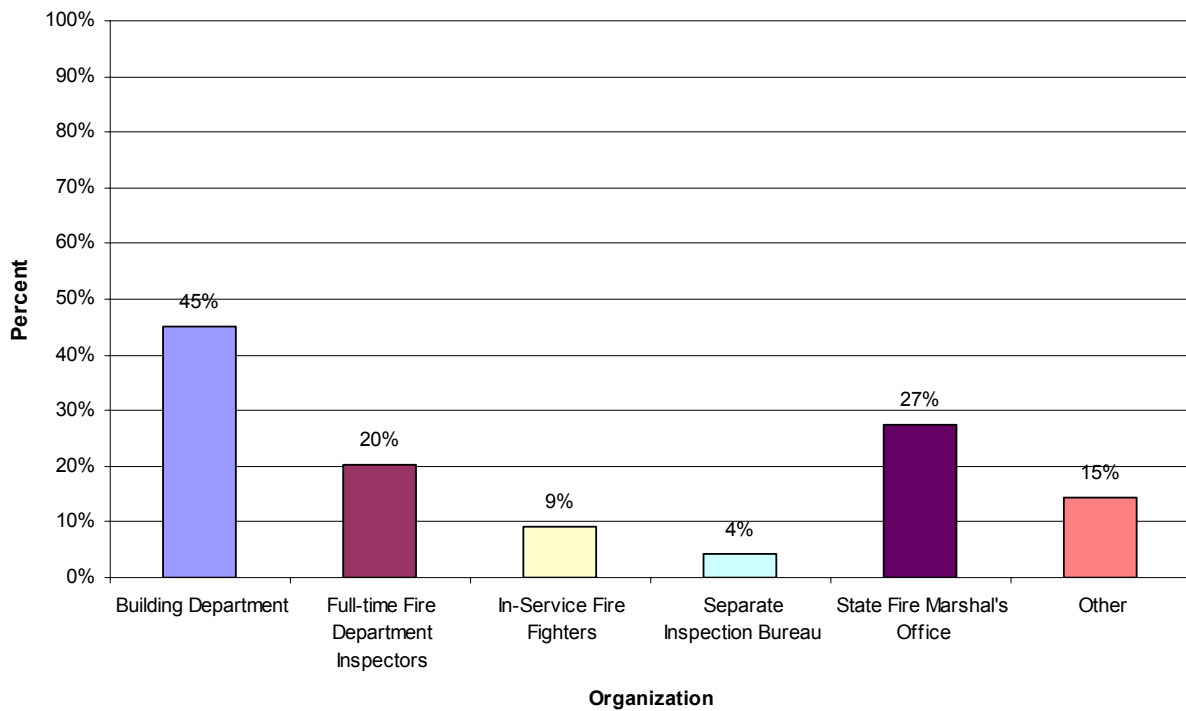
Fire departments provide services to the public concerning prevention activities that can help preclude the occurrence of many fire service incidents in the future. These programs are usually conducted by public fire & life safety educators and follow the NFPA 1035 guidelines. Fifty-seven percent of departments reported that they participate in the free distribution of home smoke alarms and 45 percent conducted school fire safety education programs. (See Figure 22.)



Fire Code Inspections

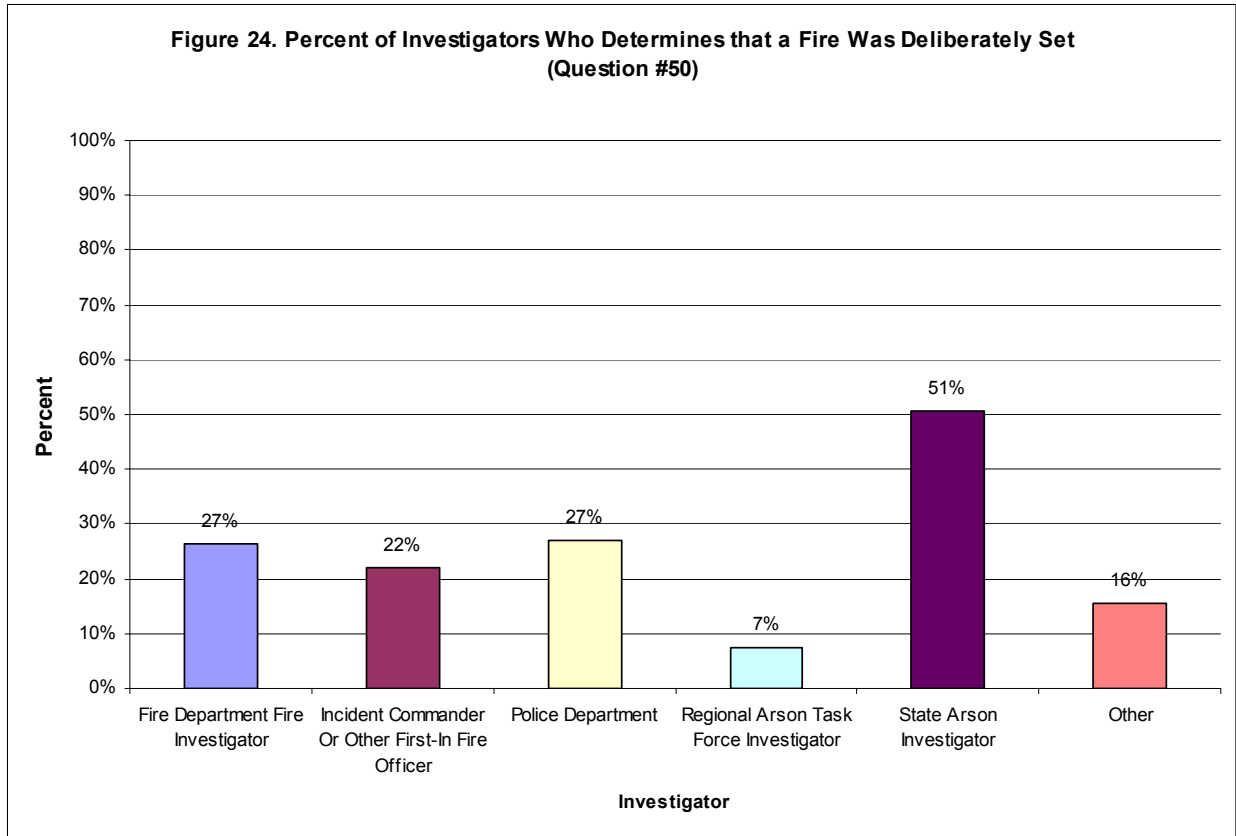
Fire code inspections are conducted by different organizations and the availability of resources affects the amount of code enforcement in an area. The largest number of fire departments reported that building departments (45%) handle inspections in their community. (See Figure 23.)

**Figure 23. Percent of Organizations that Conduct Fire Code Inspections
(Question #49)**



Fire Investigation

Several types of investigators will determine if a suspicious fire was deliberately set in an area. A little more than half of the departments reported that state arson investigators analyze fires to conclude the cause of ignition. (See Figure 24.)



Survey Section IX - Unusually Challenging Incidents

Fire departments were surveyed to find out how well they would respond to unusually challenging incidents. Hurricane producing wind and rain damage, multiple area power outages and substantial flooding, as well as, major flooding (not associated with ocean surge or hurricane) were generally within a department's scope of ability accounting for 65 percent and 53 percent, respectively. The remaining type of incidents were less likely to be within the department scope of responding; HAZMAT & EMS for an accident involving chemical/biological agents with 10 or more injuries (20%), technical rescue & EMS for a building with 50 occupants after structural collapse (15%) and wildland fire greater than 500 acres (22%). (See Table 17.)

Virginia can be divided into specific regional areas when determining if an area can respond to challenging situations. The Central Region of Virginia had an overall higher ability to handle challenging situations. More populated areas, such as the Northern Region, showed that their capability would not allow them to effectively respond and, therefore, would require added support from other local, regional, state, and national agencies.

Table 17. Ability to Handle Unusually Challenging Incidents Reported Within Department Scope By Virginia Region

Region	HAZMAT & EMS for an accident involving chemical/biological agents with 10 or more injuries	Hurricane producing wind and rain damage, multiple area power outages and substantial flooding	Major flooding (not associated with ocean surge or hurricane)	Technical Rescue & EMS for a building with 50 occupants after structural collapse	Wildland Fire greater than 500 acres
Central	6.29%	24.95%	17.09%	4.91%	7.66%
Coastal	2.95%	10.22%	7.66%	2.36%	2.36%
Mountain	3.73%	10.81%	11.79%	3.73%	5.89%
Northern Valley	3.54%	6.88%	5.11%	1.77%	2.36%
Total	20.04%	65.42%	53.24%	14.73%	22.40%

Survey Section X - Your Fire Department's Top Needs

Top Needs

Survey respondents were asked to rank their department's top needs from 1 to 5 in order of importance. The most important need would be ranked #1, the next important need would be ranked #2, etc. and the least important need would be #5. The five ranking categories were apparatus, equipment, facilities, personnel, and training.

Overall, in Virginia, the top need generated from the response was (#1) personnel. Thirty-seven percent of fire departments replied that personnel was their most important need at their department. The second most important need among reporting Virginia fire departments was (#2) training which was selected by 32 percent of the departments. There was no specific trend with rank data with apparatus and equipment. Facilities was ranked the least important need among fire departments. (See Table 18.)

Table 18. Top Fire Service Needs By Virginia Region

Region	#1	#2	#3	#4	#5
Central	Personnel	Training	Equipment	Apparatus	Facilities
Coastal	Personnel	Equipment	Training	Apparatus	Facilities
Mountain	Apparatus	Training	Equipment	Personnel	Facilities
Northern	Personnel	Training	Facilities	Equipment	Apparatus
Valley	Personnel	Training	Equipment	Apparatus	Facilities
Virginia	Personnel	Training	Equipment	Apparatus	Facilities

When comparing how different regions in Virginia ranked their top needs, the Mountain Region selected apparatus for their top need which may give insight into the variations among fire service in the state. The western area of Virginia has different needs than other parts of the state.

Costs

Fire departments were also surveyed concerning the estimated costs associated with each specific need for 2008. Departments selected from a range of monetary amounts and estimates were generated from the results. Overall, fire departments reported that their estimated costs for 2008 would be \$496,012,071. (See Table 19 and Table 20.)

The costs for fire departments to maintain their facilities (\$170,924,920) accounted for the highest amount of funding needed in Virginia. Personnel had the second highest costs, amounting to \$139 million. Apparatus costs ranked third and totaled \$129 million.

Table 19. Total Estimated Costs with Reporting Departments By Population Protected *

Population Protected	Apparatus Costs	Equipment Costs	Facilities Costs	Personnel Costs	Training Costs	Total
0 - 999	\$2,524,994	\$637,496	\$2,299,996	\$224,999	\$437,499	\$6,124,983
1,000 - 2,499	\$8,012,480	\$1,849,987	\$11,762,489	\$462,498	\$1,274,997	\$23,362,451
2,500 - 4,999	\$24,562,465	\$4,799,971	\$17,162,481	\$7,074,995	\$2,412,490	\$56,012,402
5,000 - 9,999	\$14,374,974	\$3,712,481	\$10,374,989	\$2,087,494	\$1,399,993	\$31,949,930
10,000 - 24,999	\$24,187,476	\$9,124,979	\$43,837,486	\$17,299,989	\$6,537,493	\$100,987,423
25,000 - 49,999	\$8,462,490	\$3,012,490	\$28,949,991	\$16,824,989	\$1,737,492	\$58,987,451
50,000 - 99,999	\$10,124,992	\$3,199,992	\$15,074,994	\$28,587,494	\$2,024,992	\$59,012,464
100,000 Or More	\$36,799,993	\$7,999,992	\$41,462,495	\$66,912,497	\$6,399,992	\$159,574,969
Total	\$129,049,863	\$34,337,387	\$170,924,920	\$139,474,954	\$22,224,947	\$496,012,071

Note: Numbers for estimated costs may not add to totals due to rounding.

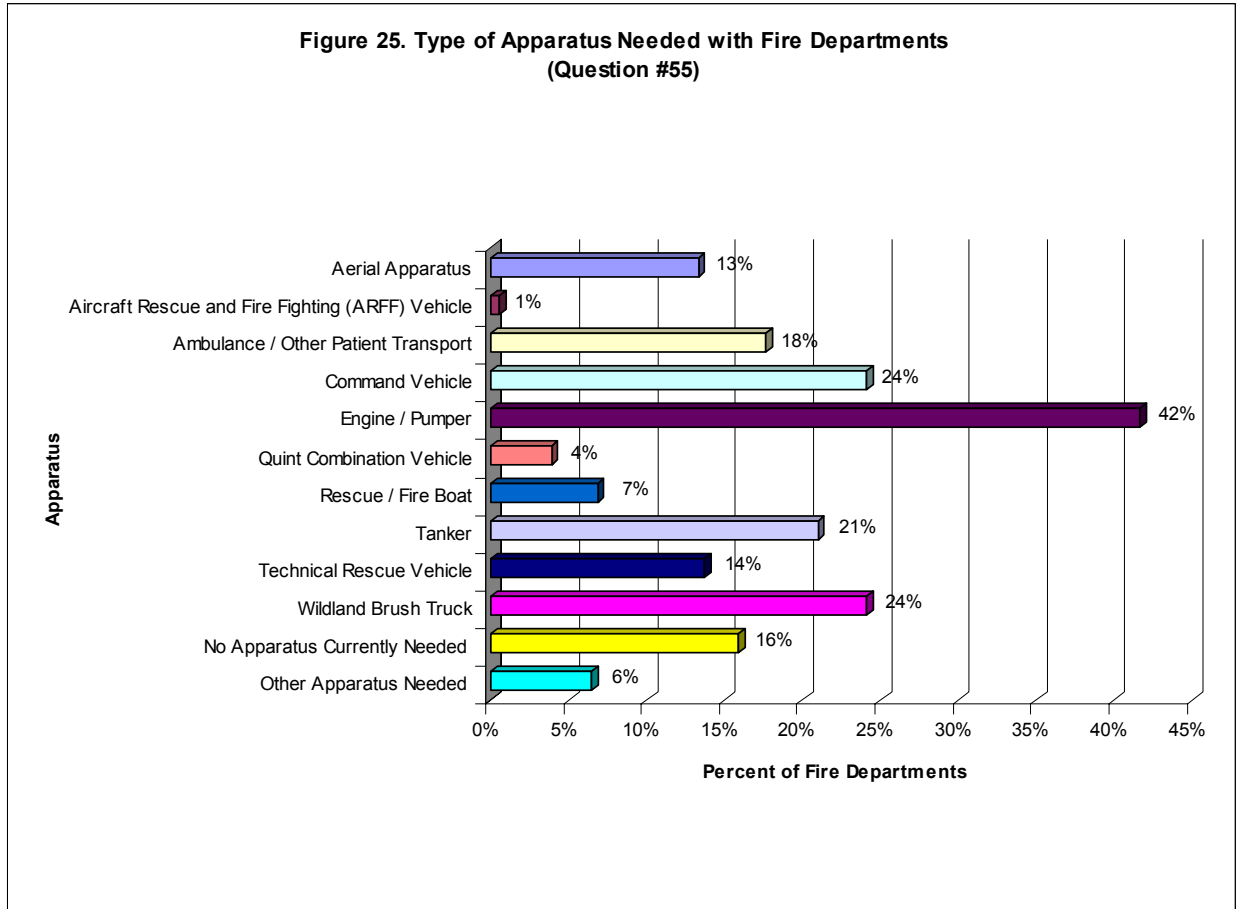
Table 20. Total Estimated Costs with Reporting Departments By Virginia Region *

VA Region	Apparatus	Equipment	Facilities	Personnel	Training	Total
Central	\$45,199,948	\$10,887,460	\$52,649,974	\$37,899,987	\$4,562,484	\$151,199,851
Coastal	\$28,037,479	\$9,199,984	\$43,687,485	\$37,762,493	\$9,674,990	\$128,362,430
Mountain	\$19,262,466	\$5,462,468	\$15,287,481	\$2,624,990	\$2,062,492	\$44,699,896
Northern	\$26,149,988	\$5,937,488	\$43,512,493	\$38,274,993	\$4,274,991	\$118,149,951
Valley	\$10,399,984	\$2,849,988	\$15,787,488	\$22,912,493	\$1,649,992	\$53,599,944
Total	\$129,049,863	\$34,337,387	\$170,924,920	\$139,474,954	\$22,224,947	\$496,012,071

Note: Numbers for estimated costs may not add to totals due to rounding.

Apparatus Needed

Apparatus are needed when fire departments dispatch to different types of situations. Forty-two percent of all responding departments noted that they require an engine/pumper. Wildland brush trucks and command vehicles were both listed as an apparatus need and each accounted for 24 percent of the response from departments. Sixteen percent of departments responded that they currently have no apparatus need. (See Figure 25.)



A table containing additional data on the apparatus needed can be found under Supplemental Table 4 at the end of this section.

Equipment Needed

Fire service personnel rely on adequate equipment to perform their duties as a firefighter. Departments showed their largest equipment need was for thermal imaging cameras (53%), radios (49%), and personal protective equipment (47%). Map Coordinate System - GPS was

selected by 35 percent of departments. Only six percent of fire departments reported that they have no equipment currently needed. (See Figure 26.)

Please see Supplemental Table 5 for more detailed information on the type of equipment needed.

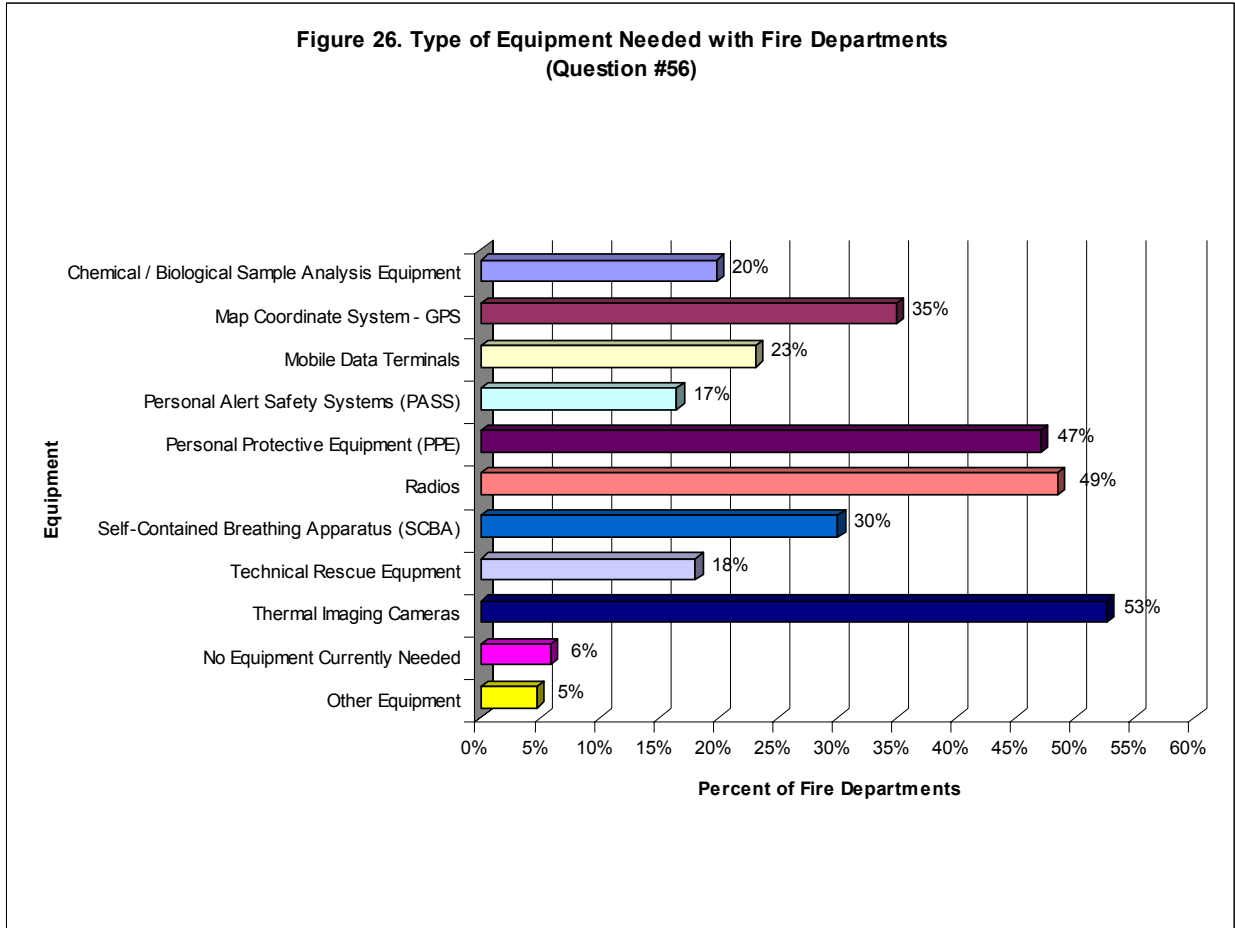


Table 21. Number of Apparatus Needed Reported By Fire Departments By Virginia Region *

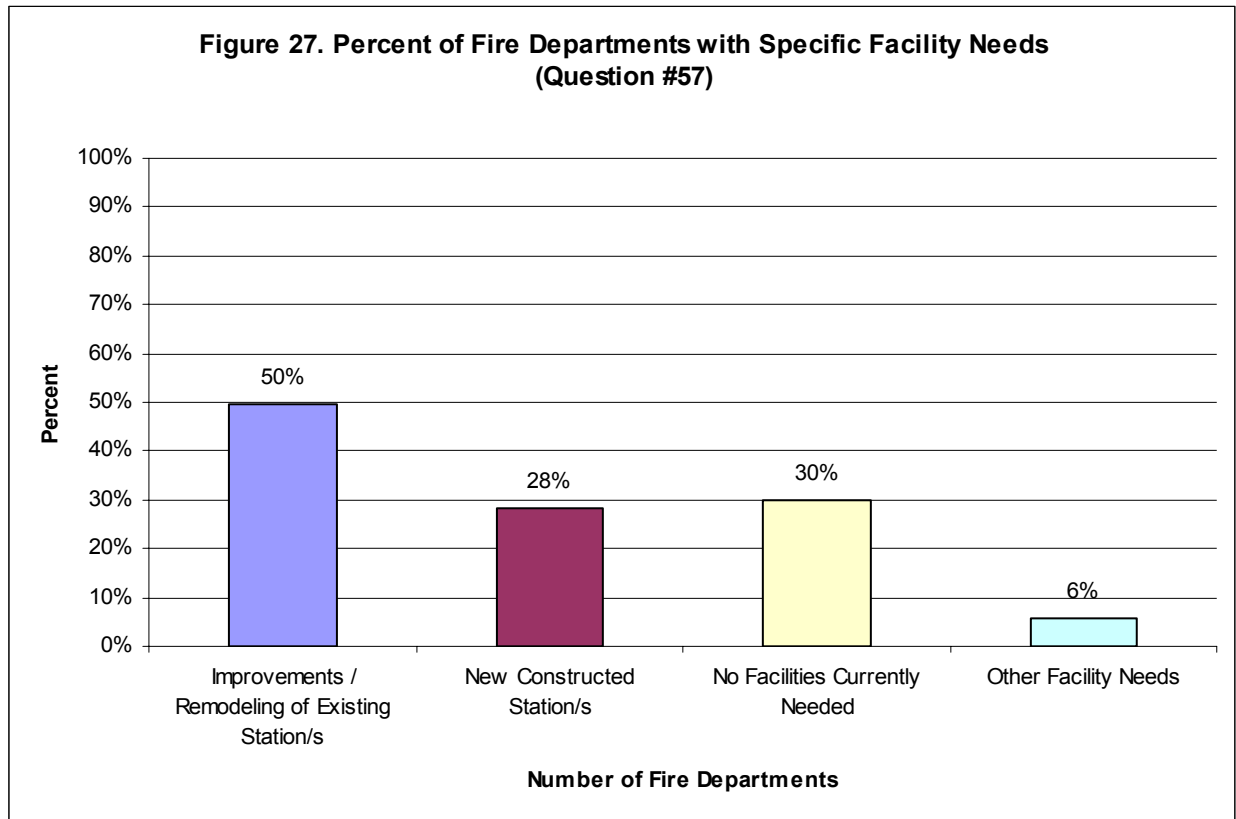
Region	Aerial Apparatus	Aircraft Rescue and Fire Fighting (ARFF) Vehicle	Ambulance / Other Patient Transport	Command Vehicle	Engine / Pumper	Quint Combination Vehicle	Rescue / Fire Boat	Tanker	Technical Rescue Vehicle	Wildland Brush Truck	Other Apparatus
Central	24	0	32	40	74	4	8	27	18	52	4
Coastal	10	1	26	12	41	5	9	14	11	11	3
Mountain	12	0	6	31	43	5	10	39	13	32	10
Northern	7	0	38	15	21	0	2	4	8	2	7
Valley	3	0	8	7	19	2	1	7	4	9	7
Grand Total	56	1	110	105	198	16	30	91	54	106	31

Table 22. Number of Equipment Needed Reported By Fire Departments By Virginia Region *

Region	Chemical / Biological Analysis Equipment	Map Coordinate System - GPS	Mobile Data Terminals	Personal Alert Safety Systems (PASS)	Personal Protective Equipment (PPE)	Radios	Self-Contained Breathing Apparatus (SCBA)	Technical Rescue Equipment	Thermal Imaging Cameras	Other Equipment
Central	71	192	190	211	1,494	876	737	47	138	4
Coastal	10	81	160	156	622	773	502	31	97	1
Mountain	36	124	104	289	712	727	498	61	76	7
Northern	48	75	238	130	1,578	154	109	18	46	1
Valley	15	72	73	106	295	304	178	28	42	4
Grand Total	180	544	765	892	4,701	2,834	2,024	185	399	17

Facilities Needed

Facilities was the least reported top need. Half of the departments responded that they needed improvements /remodeling to the existing stations. Thirty percent of departments showed no current need with their facilities. (See Figure 27.)



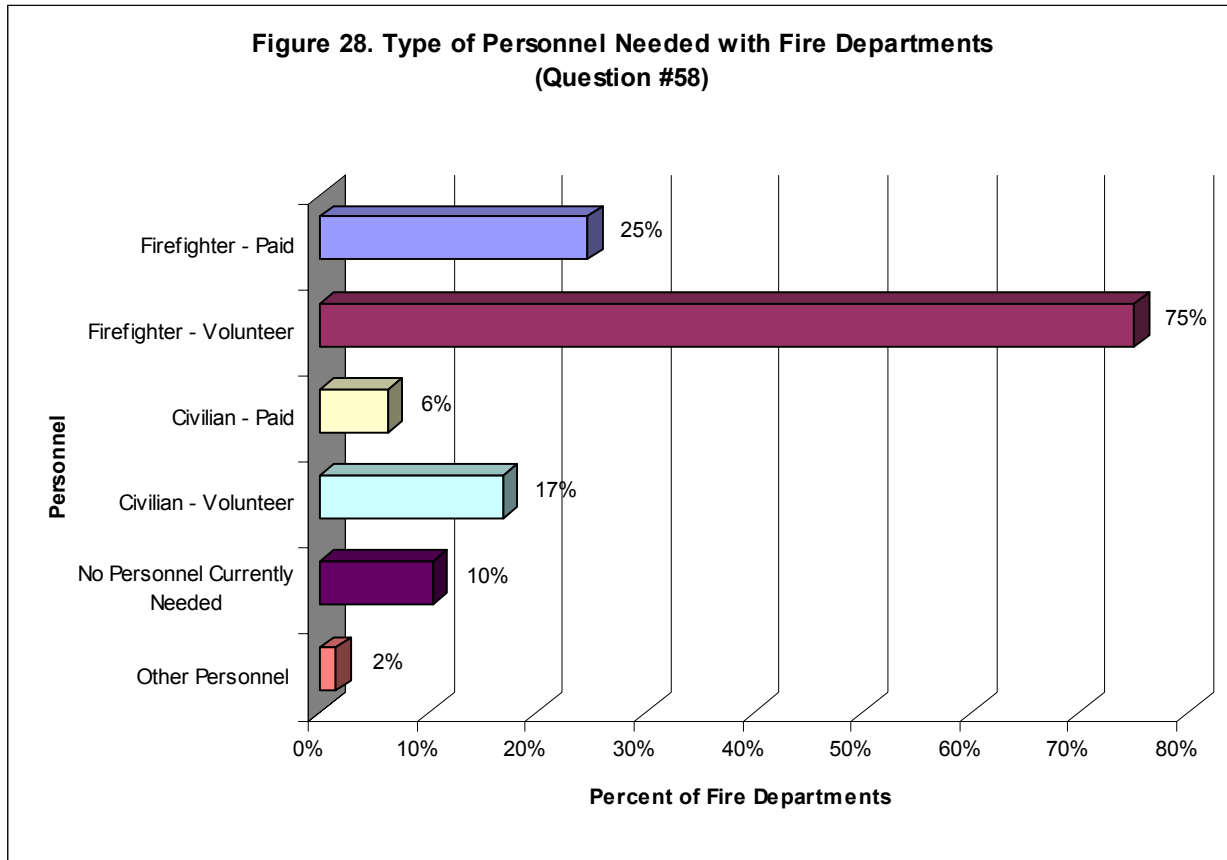
Personnel Needed

Personnel was the overall (#1) top need in the state for fire departments. Three-fourths of all departments responded that they need volunteer firefighters and one-fourth showed a need for paid firefighters. Ten percent of departments reported that they have no personnel currently needed. (See Figure 28.)

An additional table on personnel needed by locality is located in the end of this section under Supplemental Table 6.

Table 23. Number of Personnel Needed Reported By Fire Departments By Virginia Region *

Region	Firefighter - Paid	Firefighter - Volunteer	Civilian - Paid	Civilian - Volunteer	Other Personnel
Central	616	1,716	31	205	28
Coastal	215	492	31	34	0
Mountain	65	595	20	147	10
Northern	443	619	82	31	0
Valley	214	405	18	74	0
Grand Total	1,553	3,827	182	491	38



Training Needed

Training is essential in keeping firefighters prepared for an emergency crisis. Eighty-three percent of fire departments requested the need for fire fighter training. Fire apparatus driver / operator training accounted for 69 percent of the survey response and emergency vehicle operations made up 68 percent of needed training. Since fire service personnel have to be trained in many different areas, an added supply of training resources would help support the need in the state. (See Figure 29.)

Figure 29. Percent of Fire Departments Requesting Specific Training Needs
(Question #59)

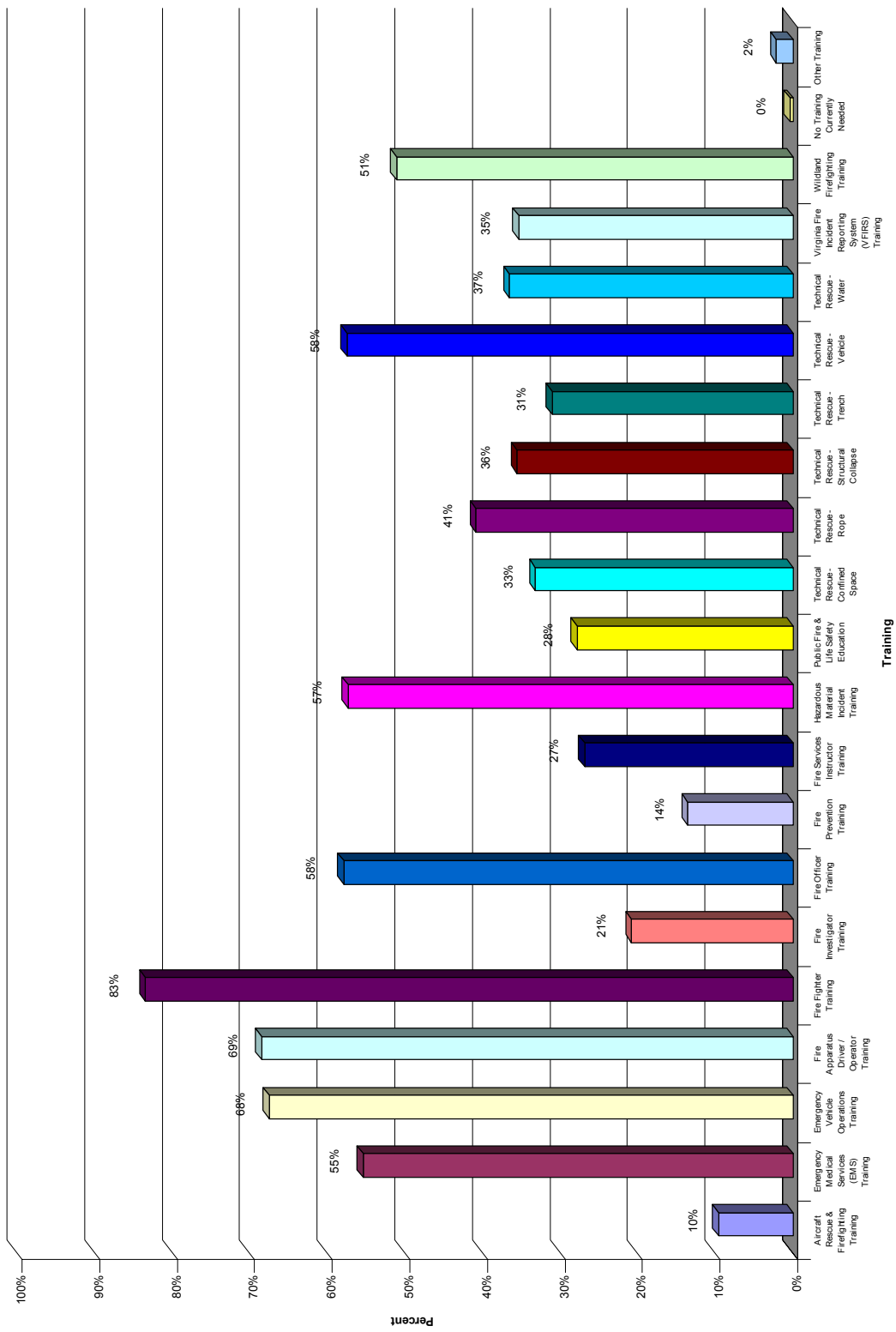


Table 24. Percent of Fire Departments Requesting Specific Training Needs By Virginia Region

Training	Central	Coastal	Mountain	Northern	Valley	Grand Total
Aircraft Rescue & Firefighting Training	3.14%	1.38%	1.18%	2.36%	1.57%	9.63%
Emergency Medical Services (EMS) Training	19.45%	7.47%	6.48%	9.23%	12.77%	55.40%
Emergency Vehicle Operations Training	24.36%	8.64%	12.77%	8.04%	13.16%	67.58%
Fire Apparatus Driver / Operator Training	25.15%	7.86%	12.57%	8.84%	14.15%	68.57%
Fire Fighter Training	28.49%	10.02%	19.84%	9.04%	16.11%	83.50%
Fire Investigator Training	7.86%	2.16%	4.52%	2.75%	3.54%	20.83%
Fire Officer Training	20.04%	6.68%	10.61%	8.45%	12.18%	57.96%
Fire Prevention Training	4.52%	1.77%	3.54%	1.77%	1.96%	13.56%
Fire Services Instructor Training	9.04%	3.34%	4.13%	5.50%	4.91%	26.92%
Hazardous Material Incident Training	19.84%	6.48%	13.56%	7.47%	10.02%	57.37%
Public Fire & Life Safety Education	8.84%	2.55%	8.45%	3.14%	4.91%	27.90%
Technical Rescue - Confined Space	9.82%	3.93%	7.86%	5.30%	6.29%	33.20%
Technical Rescue - Rope	12.38%	4.32%	7.86%	7.07%	9.23%	40.86%
Technical Rescue - Structural Collapse	11.00%	4.52%	7.86%	5.30%	6.88%	35.56%
Technical Rescue - Trench	10.02%	3.54%	6.09%	5.89%	5.50%	31.04%
Technical Rescue - Vehicle	19.65%	7.07%	12.38%	7.66%	10.81%	57.56%
Technical Rescue - Water	11.20%	4.72%	8.64%	5.11%	6.88%	36.54%
Virginia Fire Incident Reporting System (VFIRS) Training	13.75%	3.73%	7.86%	4.72%	5.30%	35.36%
Wildland Firefighting Training	19.84%	5.30%	11.39%	5.11%	9.43%	51.08%
No Training Currently Needed	0.00%	0.20%	0.00%	0.00%	0.20%	0.39%
Other Training	0.59%	0.39%	0.59%	0.39%	0.20%	2.16%

Technical Notes

Unknown includes both 'Don't Know' and 'blank' responses for a survey question. Percentages may not add to totals due to rounding.

* Data denoted with an asterisk in this section was compiled from adjusted survey data to account for possible duplicate responses received from localities that reported for all career and volunteer personnel and for volunteer departments that also responded in their locality.

Supplemental Table 1. Fire Department Personnel Data Reported By Locality *

FIPS	County/City	Career Firefighters	Volunteer Firefighters	Paid-per-call Firefighters	Average Firefighters on Duty Available	Civilian Personnel - Paid	Civilian Personnel - Volunteer
001	Accomack County	30	792	0	40.0	2	20
003	Albemarle County	75	650	0	150.0	4	100
005	Alleghany County	3	215	0	12.8	0	0
007	Amelia County	0	44	0	10.5	0	0
009	Amherst County	14	75	0	9.5	1	35
011	Appomattox County	0	65	0	19.5	0	0
013	Arlington County	308	0	0	73.0	13	0
015	Augusta County	43	800	0	2.0	1	0
017	Bath County	0	22	0	22.0	0	12
019	Bedford County	12	725	22	300.0	2	0
021	Bland County	0	73	0	7.0	0	17
023	Botetourt County	14	183	0	10.6	0	55
025	Brunswick County	0	172	0	9.4	0	56
027	Buchanan County	1	159	0	10.3	0	18
029	Buckingham County	0	106	0	7.8	0	30
031	Campbell County	3	287	0	16.6	4	93
033	Caroline County	37	60	0	6.0	4	3
035	Carroll County	0	67	0	15.0	0	7
036	Charles City County	0	18	0	5.0	0	0
037	Charlotte County	0	175	0	11.0	0	28
041	Chesterfield County	411	0	176	107.0	48	2
043	Clarke County	1	146	0	12.0	0	64
045	Craig County	0	83	0	10.2	0	32
047	Culpeper County	0	179	0	10.2	0	75
049	Cumberland County	0	60	0	10.5	0	32
051	Dickenson County	0	87	0	17.5	0	5
053	Dinwiddie County	2	200	0	0.0	2	0
057	Essex County	0	60	0	20.0	1	0
059	Fairfax County	1,395	313	0	335.0	361	251
061	Fauquier County	33	300	0	5.0	4	0
063	Floyd County	0	57	0	8.7	0	20
065	Fluvanna County	0	100	0	0.0	0	0
067	Franklin County	23	178	0	8.0	0	0
069	Frederick County	77	187	15	25.0	8	0
071	Giles County	0	183	0	12.6	0	26
073	Gloucester County	0	175	0	14.5	0	137
075	Goochland County	4	225	0	10.0	4	33
077	Grayson County	0	103	0	11.5	0	48
079	Greene County	0	26	0	4.0	0	4
083	Halifax County	8	382	0	14.1	0	103
085	Hanover County	145	352	0	50.0	10	2
087	Henrico County	520	14	0	160.0	20	0
089	Henry County	9	218	0	13.4	0	32
091	Highland County	0	48	0	8.5	0	18
093	Isle of Wight County	6	300	0	35.0	1	0
095	James City County	95	10	0	28.0	7	2
097	King and Queen County	2	112	0	7.8	0	11
099	King George County	25	70	10	8.0	35	100
101	King William County	0	82	0	17.5	0	0
103	Lancaster County	0	127	0	37.3	0	1
105	Lee County	0	130	0	12.8	0	40
107	Loudoun County	338	844	0	105.0	68	213
109	Louisa County	12	129	0	5.0	2	56
111	Lunenburg County	0	90	0	16.0	0	20
113	Madison County	0	30	0	12.0	0	2
115	Mathews County	0	95	0	15.0	0	0
117	Mecklenburg County	34	150	0	13.7	2	33
119	Middlesex County	0	120	0	13.5	0	15
121	Montgomery County	3	160	0	24.6	0	26
125	Nelson County	21	183	7	8.4	0	96
127	New Kent County	17	60	27	7.0	5	37

Supplemental Table 1. Fire Department Personnel Data Reported By Locality *

FIPS	County/City	Career Firefighters	Volunteer Firefighters	Paid-per-call Firefighters	Average Firefighters on Duty Available	Civilian Personnel - Paid	Civilian Personnel - Volunteer
131	Northampton County	0	106	0	8.4	0	68
133	Northumberland County	0	102	0	13.5	0	0
135	Nottoway County	0	116	0	22.0	0	14
137	Orange County	30	127	0	8.0	2	42
139	Page County	3	119	5	11.3	3	16
141	Patrick County	0	200	0	8.0	0	6
143	Pittsylvania County	0	478	0	9.9	5	150
145	Powhatan County	0	125	0	15.0	1	0
147	Prince Edward County	0	189	0	17.0	0	30
149	Prince George County	11	250	0	3.0	2	0
153	Prince William County	489	569	0	38.3	55	58
155	Pulaski County	13	185	24	14.1	0	19
157	Rappahannock County	0	112	0	7.0	0	39
159	Richmond County	0	45	0	25.0	0	45
161	Roanoke County	132	120	0	51.0	8	0
163	Rockbridge County	0	164	0	7.3	0	56
165	Rockingham County	65	350	29	2.0	0	0
167	Russell County	0	173	0	9.3	0	36
169	Scott County	0	94	0	19.8	0	0
171	Shenandoah County	33	350	10	30.0	1	1
173	Smyth County	2	179	3	16.0	0	7
175	Southampton County	1	166	0	10.2	0	18
177	Spotsylvania County	103	267	0	48.0	8	0
179	Stafford County	82	300	0	35.0	7	7
181	Surry County	0	84	0	8.0	0	24
183	Sussex County	0	148	0	12.6	0	1
185	Tazewell County	3	160	27	13.7	0	41
187	Warren County	20	125	0	30.0	1	0
191	Washington County	12	218	0	13.3	0	44
193	Westmoreland County	1	119	0	7.8	0	65
195	Wise County	1	120	63	13.3	30	49
197	Wythe County	7	104	25	14.2	0	10
199	York County	132	11	0	49.0	6	13
510	Alexandria	141	10	0	36.0	143	25
515	Bedford	0	40	0	10.0	0	0
520	Bristol	45	0	0	9.0	2	0
530	Buena Vista	0	62	0	25.0	0	0
540	Charlottesville	87	30	0	19.0	3	0
550	Chesapeake	418	0	0	95.0	14	4
570	Colonial Heights	43	18	6	12.0	3	1
580	Covington	0	66	0	17.0	1	0
590	Danville	122	0	0	30.0	1	0
595	Emporia	0	44	0	44.0	0	0
600	Fairfax	69	40	0	20.0	9	10
610	Falls Church	30	36	0	10.0	0	10
620	Franklin	14	83	0	7.5	1	0
630	Fredericksburg	54	10	0	12.0	3	0
640	Galax	0	38	0	15.0	0	0
650	Hampton	257	150	5	62.0	24	0
660	Harrisonburg	76	1	0	17.0	5	0
670	Hopewell	40	0	0	9.0	1	0
680	Lynchburg	170	0	0	55.0	16	0
683	Manassas	7	0	0	4.0	0	0
685	Manassas Park	28	0	0	5.0	1	0
690	Martinsville	29	18	12	10.0	2	9
700	Newport News	350	0	0	86.0	22	0
710	Norfolk	506	0	0	114.0	14	0
720	Norton	0	0	35	20.0	0	0
730	Petersburg	80	0	0	19.0	17	0
735	Poquoson	36	20	0	9.0	0	0
740	Portsmouth	226	0	0	50.0	12	0

Supplemental Table 1. Fire Department Personnel Data Reported By Locality *

FIPS	County/City	Career Firefighters	Volunteer Firefighters	Paid-per-call Firefighters	Average Firefighters on Duty Available	Civilian Personnel - Paid	Civilian Personnel - Volunteer
750	Radford	10	22	0	15.0	0	0
760	Richmond	415	0	0	101.0	12	0
770	Roanoke	266	0	0	67.0	7	0
775	Salem	65	0	0	20.0	2	0
790	Staunton	31	8	15	9.0	0	0
800	Suffolk	195	203	0	16.2	4	17
810	Virginia Beach	440	25	0	110.0	35	0
820	Waynesboro	31	15	0	10.0	1	0
830	Williamsburg	36	20	12	12.0	1	1
840	Winchester	53	40	0	15.0	3	20
Grand Total		9,231	18,030	528	18.3	1,097	2,966

Supplemental Table 2. Number of Apparatus Owned Reported By Fire Departments By Locality *

FIPS	County/City	Aerial Apparatus	Aircraft Rescue and Fire Fighting (ARFF) Vehicle	Ambulance / Other Patient Transport	Command Vehicle	Engine / Pumper	Quint Combination Vehicle	Rescue / Fire Boat	Tanker	Technical Rescue Vehicle	Wildland Brush Truck	Other Apparatus
001	Accomack County	0	0	0	0	0	0	0	0	0	0	4
003	Albemarle County	0	0	15	18	15	2	2	11	4	7	10
005	Alleghany County	1	0	5	0	14	0	1	4	2	6	11
007	Amelia County	0	0	0	0	2	0	0	2	0	2	1
009	Amherst County	1	0	0	4	6	0	0	3	1	3	2
011	Appomattox County	0	0	1	1	6	1	0	2	1	3	2
013	Arlington County	4	0	11	1	15	0	0	0	1	0	2
015	Augusta County	0	0	0	3	3	1	0	1	1	0	4
017	Bath County	0	0	0	0	4	1	0	0	1	2	0
019	Bedford County	1	0	0	4	0	0	0	0	2	0	0
021	Bland County	0	0	0	1	6	0	0	6	0	5	3
023	Botetourt County	0	0	7	6	11	4	2	6	2	9	8
025	Brunswick County	0	0	1	0	15	3	1	9	1	4	6
027	Buchanan County	1	0	4	0	16	1	2	10	3	2	3
029	Buckingham County	0	0	0	0	6	0	0	4	4	8	1
031	Campbell County	3	0	0	10	19	1	1	10	4	10	5
033	Caroline County	1	0	0	1	3	0	0	1	1	2	2
035	Carroll County	1	0	0	3	8	0	0	4	1	4	1
036	Charles City County	0	0	1	1	6	0	0	1	1	2	3
037	Charlotte County	0	0	0	1	10	0	0	7	0	6	5
041	Chesterfield County	6	1	15	1	31	0	6	3	2	10	0
043	Clarke County	1	0	7	2	6	0	3	3	1	4	3
045	Craig County	0	0	2	1	9	0	0	3	0	4	0
047	Culpeper County	0	0	8	5	9	0	5	5	2	5	6
049	Cumberland County	0	0	0	1	4	0	0	3	1	3	1
051	Dickenson County	0	0	0	0	8	0	0	4	2	3	3
053	Dinwiddie County	1	0	5	2	6	0	0	5	2	4	14
057	Essex County	0	0	0	1	3	0	0	2	1	4	1
059	Fairfax County	14	1	41	20	56	0	2	4	14	8	25
061	Fauquier County	0	0	0	6	0	0	0	0	0	0	3
063	Floyd County	0	0	0	3	6	0	0	3	0	5	1
065	Fluvanna County	0	0	0	1	4	0	0	4	1	4	5
067	Franklin County	0	0	19	7	14	2	2	13	10	7	12
069	Frederick County	1	0	0	0	1	0	0	0	0	0	16
071	Giles County	0	0	1	4	15	0	0	4	0	7	5
073	Gloucester County	1	0	9	1	11	0	3	1	2	5	3
075	Goochland County	1	0	10	5	9	0	3	6	6	7	9
077	Grayson County	0	0	5	0	6	0	1	5	4	6	2
079	Greene County	0	0	0	1	2	0	0	0	0	1	14
083	Halifax County	1	0	10	4	19	1	0	8	3	13	7
085	Hanover County	3	0	19	10	19	0	2	8	1	15	11
087	Henrico County	6	0	12	1	20	0	2	5	6	4	0

Supplemental Table 2. Number of Apparatus Owned Reported By Fire Departments By Locality *

FIPS	County/City	Aerial Apparatus	Aircraft Rescue and Fire Fighting (ARFF) Vehicle	Ambulance / Other Patient Transport	Command Vehicle	Engine / Pumper	Quint Combination Vehicle	Rescue / Fire Boat	Tanker	Technical Rescue Vehicle	Wildland Brush Truck	Other Apparatus
089	Henry County	1	0	0	5	18	1	0	8	3	8	12
091	Highland County	0	0	0	0	4	2	0	3	2	5	1
093	Isle of Wight County	2	0	8	4	13	1	5	5	0	5	0
095	James City County	2	0	7	6	5	1	2	1	1	2	2
097	King and Queen County	0	0	0	1	7	0	0	5	1	5	0
099	King George County	1	0	6	4	6	0	3	2	1	3	2
101	King William County	1	0	6	0	4	1	2	3	1	3	1
103	Lancaster County	1	0	0	0	7	0	0	6	0	3	2
105	Lee County	1	0	0	1	10	0	0	5	1	5	1
107	Loudoun County	4	0	36	12	35	3	5	12	6	15	33
109	Louisa County	2	0	4	6	10	1	1	4	0	8	8
111	Lunenburg County	0	0	3	2	5	0	0	4	3	2	1
113	Madison County	0	0	0	1	2	0	0	1	0	2	1
115	Mathews County	0	0	0	0	7	0	0	0	1	1	0
117	Mecklenburg County	2	0	0	4	16	0	0	8	2	6	21
119	Middlesex County	1	0	0	1	9	2	0	6	2	3	1
121	Montgomery County	3	0	2	12	17	2	5	7	1	13	9
125	Nelson County	0	0	5	2	15	1	0	9	3	11	5
127	New Kent County	0	0	8	2	5	1	2	1	2	4	4
131	Northampton County	2	0	3	2	7	0	0	8	0	3	0
133	Northumberland County	0	0	0	2	4	0	0	4	0	4	1
135	Nottoway County	1	0	1	1	8	0	0	4	3	3	5
137	Orange County	1	0	9	6	10	0	1	4	2	6	2
139	Page County	1	0	0	3	9	0	1	5	2	3	4
141	Patrick County	1	0	0	0	18	0	1	9	0	10	0
143	Pittsylvania County	1	0	17	3	28	0	1	20	2	15	7
145	Powhatan County	0	0	0	1	6	0	0	5	1	4	9
147	Prince Edward County	2	0	0	2	12	1	0	8	0	6	5
149	Prince George County	2	0	5	5	10	1	1	4	1	11	8
153	Prince William County	4	0	30	19	24	1	4	3	3	8	18
155	Pulaski County	1	0	0	7	17	1	1	6	3	10	8
157	Rappahannock County	0	0	5	0	5	0	0	3	0	6	5
159	Richmond County	0	0	0	0	4	0	0	3	0	1	0
161	Roanoke County	4	0	24	13	17	0	0	7	1	9	17
163	Rockbridge County	1	0	0	1	12	0	2	6	0	7	8
165	Rockingham County	0	0	0	1	1	0	2	0	1	0	1
167	Russell County	0	0	3	4	14	0	1	10	1	7	6
169	Scott County	0	0	0	1	9	0	0	3	0	4	5
171	Shenandoah County	3	0	12	5	23	0	3	3	0	8	15
173	Smyth County	0	0	3	3	19	3	4	7	2	8	3
175	Southampton County	0	0	4	1	12	0	0	3	2	2	1
177	Spotsylvania County	2	0	26	12	18	0	2	5	3	8	10

Supplemental Table 2. Number of Apparatus Owned Reported By Fire Departments By Locality *

FIPS	County/City	Aerial Apparatus	Aircraft Rescue and Fire Fighting (ARFF) Vehicle	Ambulance / Other Patient Transport	Command Vehicle	Engine / Pumper	Quint Combination Vehicle	Rescue / Fire Boat	Tanker	Technical Rescue Vehicle	Wildland Brush Truck	Other Apparatus
179	Stafford County	4	0	20	1	18	1	3	5	3	11	9
181	Surry County	0	0	0	1	9	0	0	4	0	4	3
183	Sussex County	1	0	1	1	11	0	0	4	2	7	2
185	Tazewell County	1	0	4	4	19	0	1	10	1	4	9
187	Warren County	2	0	12	1	11	1	4	8	0	10	0
191	Washington County	1	0	4	5	17	1	1	8	2	9	8
193	Westmoreland County	0	0	0	0	8	1	3	6	0	4	8
195	Wise County	1	0	3	5	16	0	1	2	4	2	4
197	Wythe County	1	0	0	0	10	0	0	7	0	7	3
199	York County	1	0	9	1	8	1	1	1	1	2	38
510	Alexandria	4	0	7	6	10	0	3	0	1	0	5
515	Bedford	1	0	0	1	3	0	0	1	1	2	0
520	Bristol	1	0	0	1	2	1	0	0	0	0	4
530	Buena Vista	0	0	0	1	3	1	1	1	1	1	3
540	Charlottesville	2	0	0	4	7	0	0	0	0	0	0
550	Chesapeake	5	0	14	1	21	0	1	0	1	4	2
570	Colonial Heights	1	0	5	4	4	1	1	0	1	1	4
580	Covington	0	0	0	3	4	1	0	0	0	0	3
590	Danville	3	1	0	1	9	0	0	1	0	1	5
595	Emporia	1	0	0	1	3	0	1	1	1	1	1
600	Fairfax	1	0	4	2	4	0	1	0	1	0	1
610	Falls Church	1	0	3	0	2	0	0	0	0	0	3
620	Franklin	1	0	0	3	5	0	2	1	1	2	5
630	Fredericksburg	1	0	1	1	4	1	0	0	1	0	0
640	Galax	1	0	1	1	3	1	2	1	1	2	0
650	Hampton	3	0	16	1	18	1	4	0	0	1	4
660	Harrisonburg	3	0	0	0	7	0	0	0	1	1	0
670	Hopewell	1	0	2	1	4	0	1	0	0	0	2
680	Lynchburg	3	0	9	2	11	0	2	1	2	1	1
683	Manassas	1	0	0	2	4	0	0	0	0	0	1
685	Manassas Park	0	0	2	2	2	1	0	0	0	0	2
690	Martinsville	0	0	2	1	3	1	0	0	1	0	3
700	Newport News	0	0	15	4	13	8	5	0	4	2	0
710	Norfolk	9	0	20	8	18	1	2	0	1	1	3
720	Norton	1	0	0	1	2	0	0	0	1	1	2
730	Petersburg	1	0	2	2	5	1	1	0	1	1	1
735	Poquoson	1	0	4	1	3	0	2	0	0	1	0
740	Portsmouth	3	0	8	2	12	2	2	0	0	1	0
750	Radford	1	0	0	1	3	0	3	0	0	1	5
760	Richmond	0	0	0	6	20	20	3	3	1	3	5
770	Roanoke	2	0	13	3	11	3	0	0	1	0	1
775	Salem	1	0	4	3	5	0	0	0	0	0	1

Supplemental Table 2. Number of Apparatus Owned Reported By Fire Departments By Locality *

FIPS	County/City	Aerial Apparatus	Aircraft Rescue and Fire Fighting (ARFF) Vehicle	Ambulance / Other Patient Transport	Command Vehicle	Engine / Pumper	Quint Combination Vehicle	Rescue / Fire Boat	Tanker	Technical Rescue Vehicle	Wildland Brush Truck	Other Apparatus
790	Staunton	1	0	0	0	3	0	0	0	1	1	3
800	Suffolk	1	0	5	6	21	2	1	5	1	4	0
810	Virginia Beach	8	0	0	1	28	0	1	4	2	5	1
820	Waynesboro	1	0	0	0	4	0	0	0	0	0	1
830	Williamsburg	1	0	3	3	3	1	1	0	1	0	0
840	Winchester	2	0	6	1	6	0	0	0	0	0	9
	Grand Total	174	3	634	385	1,322	92	141	464	186	539	621

Supplemental Table 3. Number of Equipment Owned Reported By Fire Departments By Locality *

FIPS	County/City	Biological Sample Analysis Equipment	Map Coordinate System - GPS	Mobile Data Terminals	Personal Alert Safety Systems (PASS)	Personal Protective Equipment (PPE)	Radios	Self-Contained Breathing Apparatus (SCBA)	Technical Rescue Equipment	Thermal Imaging Cameras	Other Equipment
001	Accomack County	0	5	0	0	30	50	4	0	0	0
003	Albemarle County	15	15	3	100	500	300	85	10	18	0
005	Alleghany County	0	10	0	75	200	201	96	10	6	0
007	Amelia County	0	1	0	27	44	21	17	5	2	0
009	Amherst County	0	2	0	49	74	335	52	0	8	0
011	Appomattox County	2	5	0	45	66	86	33	1	1	0
013	Arlington County	17	0	63	308	308	378	308	250	12	0
015	Augusta County	1	5	0	30	43	43	43	4	2	0
017	Bath County	0	1	0	4	15	20	6	1	0	1
019	Bedford County	1	2	0	12	24	12	12	1	16	0
021	Bland County	0	7	0	31	70	74	32	0	2	4
023	Botetourt County	0	7	1	143	219	203	145	13	12	0
025	Brunswick County	1	2	0	114	157	98	88	2	4	0
027	Buchanan County	0	2	0	54	117	128	74	12	1	0
029	Buckingham County	0	2	0	42	122	67	53	8	1	0
031	Campbell County	1	7	0	200	293	277	181	16	12	0
033	Caroline County	3	8	3	59	114	63	59	0	3	0
035	Carroll County	0	1	0	60	80	65	52	6	4	4
036	Charles City County	0	0	0	15	30	25	15	0	0	20
037	Charlotte County	0	3	0	58	157	131	58	3	3	0
041	Chesterfield County	10	129	154	387	600	305	387	7	42	0
043	Clarke County	1	0	0	69	134	62	69	3	3	0
045	Craig County	0	2	0	44	99	58	44	1	2	25
047	Culpeper County	0	2	0	125	191	110	116	0	3	2
049	Cumberland County	0	3	0	31	30	15	31	1	0	1
051	Dickenson County	0	3	0	64	111	78	49	3	3	0
053	Dinwiddie County	0	0	0	105	225	125	105	15	6	0
057	Essex County	0	1	0	30	60	30	30	1	2	0
059	Fairfax County	5	50	350	37	3,620	3,000	1,009	4	98	0
061	Fauquier County	0	5	0	6	45	6	6	0	0	0
063	Floyd County	2	8	2	42	57	79	45	0	3	0
065	Fluvanna County	0	2	1	30	100	38	30	1	3	0
067	Franklin County	3	12	4	140	201	150	122	0	9	0
069	Frederick County	2	0	0	40	80	150	40	0	0	0
071	Giles County	1	5	0	99	206	120	102	1	7	0
073	Gloucester County	0	2	0	56	215	85	56	13	6	0
075	Goochland County	0	10	0	90	275	125	90	0	6	0
077	Grayson County	0	3	1	39	115	50	43	13	5	0
079	Greene County	0	0	0	0	26	15	8	1	1	0
083	Halifax County	0	27	0	181	404	219	175	4	12	0
085	Hanover County	0	5	4	241	500	0	241	0	16	0
087	Henrico County	1	1	37	200	500	200	200	1	28	0
089	Henry County	0	7	2	140	269	95	140	0	8	0

Supplemental Table 3. Number of Equipment Owned Reported By Fire Departments By Locality *

FIPS	County/City	Biological Sample Analysis Equipment	Chemical /	Map Coordinate System - GPS	Mobile Data Terminals	Personal Alert Safety Systems (PASS)	Personal Protective Equipment (PPE)	Radios	Self-Contained Breathing Apparatus (SCBA)	Technical Rescue Equipment	Thermal Imaging Cameras	Other Equipment
091	Highland County	0		0	0	12	48	48	27	0	3	0
093	Isle of Wight County	0		0	0	0	0	0	0	0	0	0
095	James City County	0		3	0	100	120	70	100	1	6	0
097	King and Queen County	0		4	0	41	110	65	55	1	3	0
099	King George County	0		5	11	50	100	40	50	4	2	0
101	King William County	1		2	0	48	78	52	48	4	3	0
103	Lancaster County	0		3	0	55	137	53	63	0	2	0
105	Lee County	0		0	0	47	104	58	61	4	4	0
107	Loudoun County	1		150	150	480	750	800	500	6	25	0
109	Louisa County	2		3	0	66	125	93	83	2	8	0
111	Lunenburg County	0		2	0	70	90	94	56	3	1	0
113	Madison County	0		0	0	19	30	24	19	0	1	0
115	Mathews County	0		0	0	32	110	30	32	0	0	0
117	Mecklenburg County	1		6	0	94	203	115	85	3	19	0
119	Middlesex County	2		4	0	59	120	872	1,559	1	4	0
121	Montgomery County	5		7	0	145	232	361	154	52	15	0
125	Nelson County	1		12	0	147	241	200	150	3	4	2
127	New Kent County	7		7	10	83	90	83	83	1	4	0
131	Northampton County	1		2	0	44	125	57	48	3	3	0
133	Northumberland County	2		4	0	50	93	55	34	0	3	0
135	Notoway County	0		3	0	63	128	56	63	8	4	0
137	Orange County	0		11	0	196	199	87	198	8	6	0
139	Page County	0		3	0	70	130	80	70	0	3	0
141	Patrick County	0		1	0	0	0	0	0	0	0	0
143	Pittsylvania County	2		13	0	227	451	447	227	7	12	0
145	Powhatan County	0		5	0	35	140	50	35	1	6	0
147	Prince Edward County	11		2	1	82	200	110	96	1	8	1
149	Prince George County	0		5	0	125	200	100	125	1	12	0
153	Prince William County	57		34	130	1,589	2,655	647	1,589	53	24	0
155	Pulaski County	1		10	1	144	206	151	154	17	9	1
157	Rappahannock County	0		2	0	75	119	62	65	3	4	2
159	Richmond County	0		0	0	20	40	12	20	0	2	0
161	Roanoke County	0		8	5	175	250	125	175	4	11	0
163	Rockbridge County	0		9	0	53	190	143	77	1	4	0
165	Rockingham County	1		2	0	10	65	20	10	0	1	0
167	Russell County	3		4	0	67	167	139	65	8	6	0
169	Scott County	0		0	0	68	120	76	60	0	3	0
171	Shenandoah County	0		4	0	125	325	204	125	0	10	0
173	Smyth County	1		4	0	128	198	1,013	116	2	11	1
175	Southampton County	0		5	0	81	171	91	76	2	5	0
177	Spotsylvania County	0		12	14	235	400	300	235	5	12	0
179	Stafford County	0		14	97	450	450	500	150	1	14	0
181	Surry County	1		2	0	30	84	53	36	0	1	0

Supplemental Table 3. Number of Equipment Owned Reported By Fire Departments By Locality *

FIPS	County/City	Biological Sample Analysis Equipment	Map Coordinate System - GPS	Mobile Data Terminals	Personal Alert Safety Systems (PASS)	Personal Protective Equipment (PPE)	Radios	Self-Contained Breathing Apparatus (SCBA)	Technical Rescue Equipment	Thermal Imaging Cameras	Other Equipment
183	Sussex County	2	3	0	70	148	73	73	6	2	0
185	Tazewell County	0	3	0	111	196	76	135	7	5	3
187	Warren County	0	1	0	150	150	200	150	0	4	0
191	Washington County	9	3	0	109	240	188	126	17	8	0
193	Westmoreland County	0	0	0	60	140	74	60	0	4	0
195	Wise County	1	7	0	88	169	121	89	49	6	0
197	Wythe County	0	1	0	79	134	122	79	0	4	0
199	York County	21	1	0	103	143	225	103	6	3	0
510	Alexandria	12	6	40	0	300	90	160	20	12	0
515	Bedford	0	0	2	30	40	50	30	1	2	0
520	Bristol	0	0	0	38	45	27	38	0	4	0
530	Buena Vista	1	2	0	21	52	20	21	1	1	0
540	Charlottesville	16	6	3	75	175	87	75	24	10	0
550	Chesapeake	1	1	6	150	450	500	450	15	21	50
570	Colonial Heights	1	1	16	45	80	36	45	20	4	0
580	Covington	0	0	0	29	70	40	29	0	2	0
590	Danville	1	0	0	56	122	57	56	1	3	0
595	Emporia	0	0	0	14	44	60	14	4	2	0
600	Fairfax	2	10	15	50	200	50	50	4	7	0
610	Falls Church	0	0	4	33	70	23	33	0	2	0
620	Franklin	2	5	0	43	100	63	43	8	4	0
630	Fredericksburg	1	0	7	50	50	50	50	1	3	0
640	Galax	0	0	0	28	38	50	28	0	5	0
650	Hampton	0	10	11	159	412	133	159	0	7	0
660	Harrisonburg	6	0	0	50	85	60	50	5	6	0
670	Hopewell	1	0	0	40	40	40	30	0	2	0
680	Lynchburg	2	1	20	75	200	95	75	2	8	0
683	Manassas	0	2	0	0	0	0	0	0	2	0
685	Manassas Park	0	0	8	20	35	20	20	0	1	0
690	Martinsville	3	1	1	35	50	75	36	2	2	0
700	Newport News	6	0	72	120	350	175	120	0	21	0
710	Norfolk	2	2	120	192	530	260	192	2	15	0
720	Norton	1	1	0	18	35	18	18	0	2	0
730	Petersburg	5	8	0	97	80	90	52	0	2	0
735	Poquoson	10	2	0	30	50	35	30	0	3	0
740	Portsmouth	24	0	8	128	300	150	128	0	15	0
750	Radford	1	1	0	30	33	25	30	1	2	2
760	Richmond	0	23	23	225	500	125	225	1	8	0
770	Roanoke	1	0	0	66	273	118	66	1	8	0
775	Salem	2	3	0	28	75	40	28	0	4	0
790	Staunton	1	0	8	28	54	40	28	10	3	0
800	Suffolk	1	14	0	331	406	131	109	0	7	0
810	Virginia Beach	1	0	40	388	440	200	388	0	27	0

Supplemental Table 3. Number of Equipment Owned Reported By Fire Departments By Locality *

FIPS	County/City	Chemical/ Biological Sample Analysis Equipment	Map Coordinate System - GPS	Mobile Data Terminals	Personal Alert Safety Systems (PASS)	Personal Protective Equipment (PPE)	Radios	Self- Contained Breathing Apparatus (SCBA)	Technical Rescue Equipment	Thermal Imaging Cameras	Other Equipment
820	Waynesboro	1	3	0	45	46	40	45	0	5	0
830	Williamsburg	0	3	0	75	75	75	60	4	3	0
840	Winchester	2	0	0	50	100	64	48	2	3	0
Grand Total		306	853	1,448	12,974	27,845	19,619	15,399	835	922	119

Supplemental Table 4. Number of Apparatus Needed Reported By Fire Departments By Locality *

FIPS	County/City	Aerial Apparatus	Aircraft Rescue and Fire Fighting (ARFF) Vehicle	Ambulance / Other Patient Transport	Command Vehicle	Engine / Pumper	Quint Combination Vehicle	Rescue / Fire Boat	Tanker	Technical Rescue Vehicle	Wildland Brush Truck	Other Apparatus
001	Accomack County	0	0	0	0	0	0	0	0	0	0	0
003	Albemarle County	1	0	3	4	3	0	0	1	0	0	0
005	Alleghany County	1	0	0	1	1	0	0	0	0	1	1
007	Amelia County	0	0	0	1	0	0	0	0	0	1	0
009	Amherst County	3	0	0	0	2	0	0	0	1	1	0
011	Appomattox County	0	0	0	1	0	0	0	0	1	1	0
013	Arlington County	0	0	2	0	7	0	0	0	0	0	1
015	Augusta County	0	0	0	0	1	0	0	0	1	0	0
017	Bath County	0	0	0	0	0	0	0	0	0	0	0
019	Bedford County	1	0	2	0	2	0	2	1	0	4	0
021	Bland County	0	0	0	2	0	0	0	0	0	1	2
023	Botetourt County	1	0	0	1	2	0	0	0	1	3	2
025	Brunswick County	0	0	0	2	3	0	2	3	1	4	1
027	Buchanan County	1	0	0	0	6	0	0	6	4	0	1
029	Buckingham County	0	0	0	0	2	0	0	2	0	0	0
031	Campbell County	1	0	0	3	3	1	1	4	2	4	0
033	Caroline County	0	0	1	3	0	0	0	0	0	0	2
035	Carroll County	1	0	0	0	1	0	0	1	0	1	0
036	Charles City County	0	0	0	0	0	1	0	0	0	0	0
037	Charlotte County	1	0	0	5	4	1	0	0	1	3	0
041	Chesterfield County	1	0	3	0	4	0	0	0	1	2	0
043	Clarke County	0	0	0	1	2	0	0	1	1	0	0
045	Craig County	0	0	0	0	2	0	0	3	0	2	0
047	Culpeper County	0	0	4	2	1	0	0	1	0	0	1
049	Cumberland County	0	0	0	0	1	0	0	0	0	0	0
051	Dickenson County	1	0	2	2	2	1	1	1	1	3	0
053	Dinwiddie County	0	0	0	1	0	0	0	0	1	1	0
057	Essex County	1	0	0	0	1	0	0	1	0	0	0
059	Fairfax County	1	0	7	0	2	0	0	0	2	0	0
061	Fauquier County	0	0	3	1	0	0	0	0	0	0	1
063	Floyd County	0	0	0	1	1	0	0	0	0	0	0
065	Fluvanna County	0	0	0	0	1	0	0	0	0	0	0
067	Franklin County	0	0	0	1	0	0	2	1	0	2	0
069	Frederick County	0	0	0	0	0	0	0	0	0	0	0
071	Giles County	0	0	0	2	3	2	2	4	0	3	0
073	Gloucester County	1	0	2	0	1	0	0	1	0	0	0
075	Goochland County	1	0	2	2	0	0	0	0	0	0	0
077	Grayson County	0	0	0	0	2	0	0	1	0	2	0
079	Greene County	0	0	0	0	0	0	0	1	0	0	0
083	Halifax County	0	0	3	2	7	1	0	2	0	5	0
085	Hanover County	0	0	2	1	4	0	0	0	0	2	0
087	Henrico County	0	0	2	0	3	0	0	0	0	0	0

Supplemental Table 4. Number of Apparatus Needed Reported By Fire Departments By Locality *

FIPS	County/City	Aerial Apparatus	Aircraft Rescue and Fire Fighting (ARFF) Vehicle	Ambulance / Other Patient Transport	Command Vehicle	Engine / Pumper	Quint Combination Vehicle	Rescue / Fire Boat	Tanker	Technical Rescue Vehicle	Wildland Brush Truck	Other Apparatus
089	Henry County	2	0	0	1	2	1	0	1	1	1	1
091	Highland County	0	0	0	0	0	0	0	1	0	2	0
093	Isle of Wight County	0	0	2	1	1	0	0	0	0	0	0
095	James City County	0	1	1	0	0	0	0	0	1	0	0
097	King and Queen County	0	0	0	1	0	0	0	1	0	0	0
099	King George County	0	0	2	0	0	0	0	0	1	0	0
101	King William County	0	0	3	0	1	1	0	1	0	0	0
103	Lancaster County	0	0	0	0	2	0	1	1	0	1	0
105	Lee County	0	0	0	2	1	0	0	0	2	0	0
107	Loudoun County	1	0	1	1	3	0	0	1	2	0	0
109	Louisa County	0	0	1	2	1	0	0	1	1	2	0
111	Lunenburg County	0	0	0	1	1	0	0	0	1	0	0
113	Madison County	0	0	0	0	0	0	0	0	0	1	0
115	Mathews County	0	0	0	0	1	0	0	0	0	1	0
117	Mecklenburg County	1	0	0	1	5	0	0	3	1	2	0
119	Middlesex County	1	0	0	1	1	0	1	2	2	1	0
121	Montgomery County	1	0	0	2	3	1	0	1	0	0	2
125	Nelson County	0	0	1	0	4	0	1	1	0	2	0
127	New Kent County	1	0	1	3	3	1	0	3	2	0	0
131	Northampton County	0	0	0	1	1	0	1	0	2	2	0
133	Northumberland County	0	0	0	0	1	0	1	0	0	0	0
135	Nottoway County	0	0	0	0	2	0	0	0	0	1	0
137	Orange County	4	0	4	0	1	0	0	1	0	2	0
139	Page County	1	0	0	1	1	0	0	0	0	0	0
141	Patrick County	0	0	0	0	3	0	0	3	0	0	0
143	Pittsylvania County	3	0	1	3	4	0	1	5	1	5	1
145	Powhatan County	1	0	0	0	1	0	0	0	0	1	0
147	Prince Edward County	0	0	0	2	1	0	0	0	0	1	0
149	Prince George County	0	0	0	0	0	0	0	0	0	0	0
153	Prince William County	1	0	5	3	2	0	1	0	1	0	0
155	Pulaski County	1	0	0	4	5	0	2	0	2	0	2
157	Rappahannock County	0	0	2	0	1	0	0	2	1	1	0
159	Richmond County	0	0	0	0	0	0	0	0	0	0	0
161	Roanoke County	0	0	2	2	0	0	0	0	1	0	0
163	Rockbridge County	0	0	0	0	3	0	0	1	0	0	1
165	Rockingham County	0	0	0	0	0	0	0	0	0	0	0
167	Russell County	0	0	1	2	1	0	0	7	1	4	0
169	Scott County	1	0	0	1	1	0	0	2	0	1	1
171	Shenandoah County	0	0	2	0	1	0	0	0	0	1	1
173	Smyth County	0	0	1	2	3	1	0	4	0	5	0
175	Southampton County	0	0	2	3	4	0	0	0	1	4	0
177	Spotsylvania County	0	0	3	1	2	0	0	0	1	1	1

Supplemental Table 4. Number of Apparatus Needed Reported By Fire Departments By Locality *

FIPS	County/City	Aerial Apparatus	Aircraft Rescue and Fire Fighting (ARFF) Vehicle	Ambulance / Other Patient Transport	Command Vehicle	Engine / Pumper	Quint Combination Vehicle	Rescue / Fire Boat	Tanker	Technical Rescue Vehicle	Wildland Brush Truck	Other Apparatus
179	Stafford County	1	0	5	0	1	0	1	0	1	0	0
181	Surry County	0	0	0	0	3	0	1	2	1	1	0
183	Sussex County	0	0	0	1	1	0	0	1	0	1	0
185	Tazewell County	2	0	0	2	3	0	1	5	1	3	0
187	Warren County	0	0	0	0	0	0	0	0	0	0	0
191	Washington County	2	0	2	3	3	0	1	1	0	4	1
193	Westmoreland County	1	0	0	2	4	1	1	0	1	2	0
195	Wise County	0	0	0	2	2	0	1	1	1	0	0
197	Wythe County	1	0	0	2	3	0	0	1	0	2	0
199	York County	0	0	2	0	4	1	1	1	0	0	0
510	Alexandria	1	0	1	2	0	0	0	0	0	0	0
515	Bedford	1	0	0	1	1	0	0	0	0	1	0
520	Bristol	0	0	0	0	0	0	0	0	1	0	1
530	Buena Vista	0	0	0	0	1	0	1	0	0	0	0
540	Charlottesville	0	0	2	0	1	0	0	0	0	0	1
550	Chesapeake	1	0	4	1	4	0	0	0	0	2	0
570	Colonial Heights	0	0	0	0	0	0	0	0	0	0	0
580	Covington	0	0	0	0	0	0	0	1	0	0	0
590	Danville	1	0	0	0	0	0	0	0	1	0	0
595	Emporia	0	0	0	0	1	0	1	0	1	0	0
600	Fairfax	0	0	1	0	1	0	0	0	0	0	0
610	Falls Church	1	0	1	0	0	0	0	0	0	0	1
620	Franklin	0	0	0	0	0	0	0	0	1	0	0
630	Fredericksburg	1	0	1	1	0	0	0	0	0	0	0
640	Galax	0	0	0	0	0	0	0	0	0	0	0
650	Hampton	0	0	1	0	1	0	0	0	0	0	0
660	Harrisonburg	0	0	0	1	0	0	0	0	0	0	0
670	Hopewell	1	0	1	0	0	0	0	0	0	0	0
680	Lynchburg	1	0	1	2	0	0	0	0	0	0	0
683	Manassas	0	0	0	1	1	0	0	0	0	0	0
685	Manassas Park	0	0	1	0	0	0	0	0	0	0	0
690	Martinsville	0	0	1	1	1	0	0	0	1	0	0
700	Newport News	0	0	1	0	0	0	0	0	0	1	0
710	Norfolk	1	0	5	0	2	0	2	0	0	0	0
720	Norton	0	0	0	1	0	0	0	0	0	1	0
730	Petersburg	0	0	1	0	2	0	0	0	0	0	0
735	Poquoson	0	0	0	0	0	0	0	0	0	0	1
740	Portsmouth	1	0	1	1	3	0	0	0	1	0	0
750	Radford	1	0	0	0	0	0	0	0	0	0	0
760	Richmond	0	0	0	0	2	0	0	0	0	0	0
770	Roanoke	0	0	2	0	2	2	0	0	0	0	1
775	Salem	0	0	1	0	0	0	0	0	0	0	1

Supplemental Table 4. Number of Apparatus Needed Reported By Fire Departments By Locality *

FIPS	County/City	Aerial Apparatus	Aircraft Rescue and Fire Fighting (ARFF) Vehicle	Ambulance / Other Patient Transport	Command Vehicle	Engine / Pumper	Quint Combination Vehicle	Rescue / Fire Boat	Tanker	Technical Rescue Vehicle	Wildland Brush Truck	Other Apparatus
790	Staunton	0	0	0	0	1	0	0	0	0	0	0
800	Suffolk	1	0	1	0	5	0	0	0	0	0	2
810	Virginia Beach	1	0	0	1	1	0	0	1	0	0	0
820	Waynesboro	0	0	0	0	1	0	0	0	0	0	0
830	Williamsburg	0	0	0	0	1	0	0	0	0	0	0
840	Winchester	0	0	1	0	1	0	0	0	0	0	0
	Grand Total	56	1	110	105	198	16	30	91	54	106	31

Supplemental Table 5. Number of Equipment Needed Reported By Fire Departments By Locality *

FIPS	County/City	Chemical / Biological Analysis Equipment	Map Coordinate System - GPS	Mobile Data Terminals	Personal Alert Safety Systems (PASS)	Personal Protective Equipment (PPE)	Radios	Self- Contained Breathing Apparatus (SCBA)	Technical Rescue Equipment	Thermal Imaging Cameras	Other Equipment
001	Accomack County	0	0	0	0	0	0	0	0	0	0
003	Albemarle County	3	0	0	0	0	0	0	0	3	0
005	Alleghany County	0	2	0	8	0	19	8	0	2	0
007	Amelia County	0	6	0	10	10	16	7	0	2	0
009	Amherst County	5	0	8	0	0	0	0	0	4	0
011	Appomattox County	0	0	0	12	12	12	12	1	4	0
013	Arlington County	5	15	15	25	25	15	25	15	5	0
015	Augusta County	0	0	0	0	6	43	0	10	3	0
017	Bath County	0	0	0	0	0	5	0	3	0	0
019	Bedford County	0	0	0	0	0	0	0	0	6	0
021	Bland County	0	0	0	15	23	25	49	0	2	0
023	Botetourt County	2	12	3	0	53	20	35	9	4	0
025	Brunswick County	2	4	14	10	40	24	10	0	7	0
027	Buchanan County	2	4	2	23	29	55	34	7	5	0
029	Buckingham County	0	4	0	10	10	15	20	0	4	0
031	Campbell County	0	6	3	0	51	61	30	7	10	2
033	Caroline County	1	0	6	4	16	9	4	0	5	0
035	Carroll County	1	0	1	0	25	32	5	6	1	4
036	Charles City County	0	6	0	10	0	10	7	0	3	0
037	Charlotte County	3	11	12	30	85	90	24	2	4	0
041	Chesterfield County	0	8	15	0	100	0	22	0	1	0
043	Clarke County	0	0	0	18	30	0	43	0	4	0
045	Craig County	0	2	0	4	16	52	13	0	3	3
047	Culpeper County	0	19	0	65	59	18	40	0	6	0
049	Cumberland County	0	0	0	16	25	0	16	0	2	0
051	Dickenson County	2	7	10	20	35	32	29	3	4	1
053	Dinwiddie County	0	0	0	0	25	0	0	0	0	0
057	Essex County	0	1	0	1	10	0	0	1	1	0
059	Fairfax County	0	1	3	0	142	11	0	0	5	0
061	Fauquier County	0	3	11	0	0	0	0	0	3	0
063	Floyd County	0	5	0	0	7	20	0	0	1	0
065	Fluvanna County	0	7	0	0	10	3	5	0	1	0
067	Franklin County	0	0	2	10	40	10	15	0	1	0
069	Frederick County	0	0	16	0	0	50	0	0	0	1
071	Giles County	3	8	1	23	49	32	24	0	6	1
073	Gloucester County	0	0	0	0	15	50	4	0	1	0
075	Goochland County	0	10	0	0	0	0	100	0	6	0
077	Grayson County	3	4	0	0	66	31	3	0	2	0
079	Greene County	0	0	0	16	5	4	0	0	0	0
083	Halifax County	3	6	5	10	68	42	58	0	5	0
085	Hanover County	3	40	35	0	200	0	0	3	3	0
087	Henrico County	0	0	0	0	0	0	250	0	0	0
089	Henry County	0	1	0	0	25	102	0	8	7	0

Supplemental Table 5. Number of Equipment Needed Reported By Fire Departments By Locality *

FIPS	County/City	Chemical / Biological Analysis Equipment	Map Coordinate System - GPS	Mobile Data Terminals	Personal Alert Safety Systems (PASS)	Personal Protective Equipment (PPE)	Radios	Self-Contained Breathing Apparatus (SCBA)	Technical Rescue Equipment	Thermal Imaging Cameras	Other Equipment
091	Highland County	0	2	0	30	5	5	0	1	0	0
093	Isle of Wight County	0	0	30	0	100	0	75	0	5	0
095	James City County	1	2	26	25	40	15	25	1	2	0
097	King and Queen County	0	1	0	10	15	13	23	0	2	0
099	King George County	0	0	0	15	20	0	15	0	3	0
101	King William County	0	6	0	0	15	5	38	0	0	0
103	Lancaster County	1	1	0	12	27	0	30	0	2	0
105	Lee County	1	4	4	10	40	40	15	1	3	0
107	Loudoun County	5	0	0	0	0	0	0	0	0	0
109	Louisa County	2	13	5	0	16	15	4	2	1	0
111	Lunenburg County	3	2	3	0	10	20	0	0	2	0
113	Madison County	0	7	0	0	0	0	0	0	1	0
115	Mathews County	0	0	0	0	10	0	0	0	1	0
117	Mecklenburg County	2	2	10	15	55	63	19	1	4	0
119	Middlesex County	0	6	0	25	37	0	25	13	2	0
121	Montgomery County	4	6	14	15	20	60	30	0	10	0
125	Nelson County	0	8	0	25	71	42	54	4	5	0
127	New Kent County	0	0	10	0	75	0	0	3	2	0
131	Northampton County	1	7	6	8	40	6	18	11	2	0
133	Northumberland County	1	0	0	0	8	10	15	0	1	0
135	Notoway County	0	1	0	25	16	10	0	0	0	0
137	Orange County	4	9	0	0	21	10	0	2	6	0
139	Page County	0	2	0	30	25	20	30	0	3	0
141	Patrick County	2	1	1	15	15	0	15	1	8	0
143	Pittsylvania County	17	6	7	0	70	158	32	5	10	0
145	Powhatan County	0	20	7	0	0	0	0	1	0	0
147	Prince Edward County	0	4	0	0	15	35	0	0	6	0
149	Prince George County	0	0	12	0	0	50	0	0	0	0
153	Prince William County	35	21	7	6	1,106	7	10	0	4	0
155	Pulaski County	1	6	2	28	5	25	53	7	4	0
157	Rappahannock County	2	10	7	20	15	34	0	3	4	1
159	Richmond County	0	2	0	0	10	0	0	0	0	0
161	Roanoke County	1	16	16	0	0	0	0	2	1	0
163	Rockbridge County	1	1	0	6	48	15	13	1	5	0
165	Rockingham County	0	0	0	0	35	0	0	0	0	0
167	Russell County	4	21	12	51	75	75	61	3	7	1
169	Scott County	2	10	10	20	22	36	18	10	2	0
171	Shenandoah County	0	0	0	0	0	0	0	0	0	0
173	Smyth County	2	3	0	15	75	70	69	0	6	0
175	Southampton County	4	8	0	10	18	9	10	2	7	2
177	Spotsylvania County	0	0	75	0	50	50	0	0	10	0
179	Stafford County	0	0	97	0	125	0	0	0	0	0
181	Surry County	0	0	0	0	0	10	5	0	4	1

Supplemental Table 5. Number of Equipment Needed Reported By Fire Departments By Locality *

FIPS	County/City	Chemical / Biological Analysis Equipment	Map Coordinate System - GPS	Mobile Data Terminals	Personal Alert Safety Systems (PASS)	Personal Protective Equipment (PPE)	Radios	Self- Contained Breathing Apparatus (SCBA)	Technical Rescue Equipment	Thermal Imaging Cameras	Other Equipment
183	Sussex County	8	0	2	5	31	20	18	2	7	0
185	Tazewell County	6	9	10	44	50	75	32	5	7	0
187	Warren County	0	0	0	0	25	25	20	0	5	0
191	Washington County	0	10	4	0	73	42	14	4	2	0
193	Westmoreland County	0	8	0	14	69	26	14	0	6	0
195	Wise County	0	13	12	0	45	12	10	12	2	0
197	Wythe County	1	12	10	0	10	20	22	0	3	0
199	York County	0	0	0	0	0	0	0	0	7	0
510	Alexandria	0	0	0	0	0	0	0	0	0	0
515	Bedford	1	0	0	0	0	25	0	0	2	0
520	Bristol	1	1	5	0	0	0	0	1	0	0
530	Buena Vista	1	1	0	10	10	10	10	0	1	0
540	Charlottesville	0	0	6	0	0	0	0	0	0	0
550	Chesapeake	0	0	45	0	0	0	0	0	0	0
570	Colonial Heights	2	2	2	5	10	5	5	5	2	0
580	Covington	1	1	5	0	0	0	0	0	0	0
590	Danville	0	0	15	0	0	40	0	1	6	0
595	Emporia	0	0	0	0	0	0	0	1	0	0
600	Fairfax	0	0	0	0	20	0	0	0	3	0
610	Falls Church	0	3	0	0	0	0	0	0	0	0
620	Franklin	0	0	0	0	10	0	0	0	1	0
630	Fredericksburg	0	3	7	10	10	10	10	0	0	0
640	Galax	0	0	0	0	0	0	0	0	0	0
650	Hampton	1	11	11	0	0	30	0	2	12	0
660	Harrisonburg	0	0	0	0	0	0	0	0	0	0
670	Hopewell	1	0	0	0	0	5	10	0	0	0
680	Lynchburg	0	0	10	0	50	0	25	0	6	0
683	Manassas	0	0	10	0	0	0	20	0	1	0
685	Manassas Park	0	0	0	0	10	0	0	0	0	0
690	Martinsville	6	7	7	12	20	0	6	0	0	0
700	Newport News	0	0	0	0	0	156	0	0	0	0
710	Norfolk	0	0	0	0	0	191	0	0	5	0
720	Norton	0	0	3	0	8	35	0	1	0	0
730	Petersburg	0	0	12	0	0	0	0	0	3	0
735	Poquoson	0	0	0	0	0	0	0	0	0	0
740	Portsmouth	0	15	10	0	0	0	128	0	3	0
750	Radford	1	0	1	0	0	0	0	0	0	0
760	Richmond	2	0	0	0	415	0	0	0	0	0
770	Roanoke	0	26	26	0	0	18	0	2	8	0
775	Salem	0	0	0	0	0	12	6	0	0	0
790	Staunton	0	3	0	0	9	0	0	0	0	0
800	Suffolk	1	10	16	36	131	51	30	0	3	0
810	Virginia Beach	1	1	0	0	0	200	0	0	27	0

Supplemental Table 5. Number of Equipment Needed Reported By Fire Departments By Locality *

FIPS	County/City	Chemical / Biological Analysis Equipment	Map Coordinate System - GPS	Mobile Data Terminals	Personal Alert Safety Systems (PASS)	Personal Protective Equipment (PPE)	Radios	Self- Contained Breathing Apparatus (SCBA)	Technical Rescue Equipment	Thermal Imaging Cameras	Other Equipment
820	Waynesboro	1	4	7	0	25	10	0	0	1	0
830	Williamsburg	3	4	6	0	0	0	50	0	3	0
840	Winchester	8	0	0	0	8	0	0	0	2	0
	Grand Total	180	544	765	892	4,701	2,834	2,024	185	399	17

Supplemental Table 6. Number of Personnel Needed Reported By Fire Departments By Locality *

FIPS	County/City	Firefighter - Paid	Firefighter - Volunteer	Civilian - Paid	Civilian - Volunteer	Other Personnel
001	Accomack County	10	0	0	0	0
003	Albemarle County	24	50	0	0	0
005	Alleghany County	0	50	0	0	0
007	Amelia County	0	16	0	0	0
009	Amherst County	6	69	0	0	0
011	Appomattox County	0	12	0	0	10
013	Arlington County	14	0	0	0	0
015	Augusta County	10	0	2	0	0
017	Bath County	0	0	0	0	0
019	Bedford County	24	0	0	0	0
021	Bland County	0	25	0	10	0
023	Botetourt County	8	40	1	0	0
025	Brunswick County	2	63	0	27	0
027	Buchanan County	2	43	0	0	0
029	Buckingham County	0	20	0	8	0
031	Campbell County	1	35	0	0	10
033	Caroline County	16	16	3	12	0
035	Carroll County	0	30	0	15	0
036	Charles City County	0	10	0	0	0
037	Charlotte County	5	63	0	6	0
041	Chesterfield County	14	20	5	1	0
043	Clarke County	2	32	0	20	0
045	Craig County	0	20	0	20	0
047	Culpeper County	0	70	0	5	0
049	Cumberland County	0	15	0	0	0
051	Dickenson County	3	20	0	0	0
053	Dinwiddie County	20	50	0	0	0
057	Essex County	0	10	1	0	0
059	Fairfax County	92	68	58	0	0
061	Fauquier County	18	0	2	0	0
063	Floyd County	5	4	20	0	0
065	Fluvanna County	0	0	0	0	0
067	Franklin County	7	0	0	22	0
069	Frederick County	50	100	5	0	0
071	Giles County	0	44	0	0	0
073	Gloucester County	0	25	0	0	0
075	Goochland County	11	40	0	5	0
077	Grayson County	0	30	0	10	0
079	Greene County	0	6	0	0	0
083	Halifax County	11	101	12	15	0
085	Hanover County	300	500	1	0	0
087	Henrico County	5	0	12	0	0
089	Henry County	11	140	0	10	0
091	Highland County	0	15	0	5	0
093	Isle of Wight County	10	100	2	0	0
095	James City County	6	0	0	0	0
097	King and Queen County	0	32	0	0	0
099	King George County	8	25	0	0	0
101	King William County	0	15	0	0	0
103	Lancaster County	0	20	0	0	0
105	Lee County	0	44	0	30	0
107	Loudoun County	30	0	5	0	0
109	Louisa County	19	32	0	6	0
111	Lunenburg County	0	14	0	10	0
113	Madison County	0	10	0	0	0
115	Mathews County	0	10	0	0	0
117	Mecklenburg County	9	35	1	25	0
119	Middlesex County	0	36	0	0	0
121	Montgomery County	2	37	0	0	0
125	Nelson County	3	62	0	32	0

Supplemental Table 6. Number of Personnel Needed Reported By Fire Departments By Locality *

FIPS	County/City	Firefighter - Paid	Firefighter - Volunteer	Civilian - Paid	Civilian - Volunteer	Other Personnel
127	New Kent County	7	32	0	0	0
131	Northampton County	12	25	0	10	0
133	Northumberland County	0	10	0	0	0
135	Nottoway County	2	15	0	10	0
137	Orange County	9	66	0	0	0
139	Page County	10	16	0	5	0
141	Patrick County	0	25	0	0	0
143	Pittsylvania County	29	130	0	35	0
145	Powhatan County	6	0	0	0	0
147	Prince Edward County	0	32	0	0	0
149	Prince George County	10	50	0	15	0
153	Prince William County	30	220	0	0	0
155	Pulaski County	3	41	0	5	0
157	Rappahannock County	6	35	0	5	0
159	Richmond County	0	10	0	0	0
161	Roanoke County	18	0	0	0	0
163	Rockbridge County	3	58	0	8	0
165	Rockingham County	24	0	0	0	0
167	Russell County	0	45	0	16	10
169	Scott County	0	24	0	0	0
171	Shenandoah County	13	0	1	0	0
173	Smyth County	4	10	0	10	0
175	Southampton County	0	39	0	0	0
177	Spotsylvania County	155	0	10	0	0
179	Stafford County	60	150	3	4	0
181	Surry County	0	0	0	0	0
183	Sussex County	1	21	0	0	0
185	Tazewell County	3	53	0	6	0
187	Warren County	20	30	2	0	0
191	Washington County	16	55	0	0	0
193	Westmoreland County	2	26	0	20	0
195	Wise County	0	23	0	23	0
197	Wythe County	12	24	0	0	0
199	York County	5	0	0	0	0
510	Alexandria	0	0	0	0	0
515	Bedford	0	10	0	0	0
520	Bristol	3	0	0	0	0
530	Buena Vista	0	0	0	0	0
540	Charlottesville	8	0	0	0	0
550	Chesapeake	30	0	4	2	0
570	Colonial Heights	6	0	0	0	0
580	Covington	0	0	0	0	0
590	Danville	0	0	0	0	6
595	Emporia	0	0	0	0	0
600	Fairfax	3	10	1	0	0
610	Falls Church	0	20	0	5	0
620	Franklin	1	0	0	0	0
630	Fredericksburg	12	0	0	0	0
640	Galax	0	5	0	0	0
650	Hampton	24	50	0	0	0
660	Harrisonburg	12	0	0	0	0
670	Hopewell	10	0	0	0	0
680	Lynchburg	0	0	0	0	0
683	Manassas	4	30	0	0	0
685	Manassas Park	3	0	0	0	0
690	Martinsville	7	0	0	0	0
700	Newport News	12	0	0	0	0
710	Norfolk	12	0	10	0	0
720	Norton	2	3	0	0	0
730	Petersburg	12	0	0	0	2

Supplemental Table 6. Number of Personnel Needed Reported By Fire Departments By Locality *

FIPS	County/City	Firefighter - Paid	Firefighter - Volunteer	Civilian - Paid	Civilian - Volunteer	Other Personnel
735	Poquoson	0	0	0	0	0
740	Portsmouth	20	0	0	0	0
750	Radford	3	10	0	0	0
760	Richmond	50	0	0	0	0
770	Roanoke	0	0	4	0	0
775	Salem	15	0	0	0	0
790	Staunton	9	10	1	0	0
800	Suffolk	21	46	2	2	0
810	Virginia Beach	30	0	10	0	0
820	Waynesboro	8	10	0	0	0
830	Williamsburg	6	10	2	0	0
840	Winchester	12	24	2	16	0
Grand Total		1,553	3,827	182	491	38