

FINAL REPORT

THE ROLE OF THE VOLUNTEER FIRE SERVICE IN THE SEPTEMBER 11, 2001 TERRORIST ATTACKS

AUGUST 1, 2002



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Submitted To:
Heather Schafer, Executive Director
National Volunteer Fire Council
1050 17th Street, NW, Suite 490
Washington, DC 20036

Submitted By:
TriData Corporation
1000 Wilson Boulevard
Arlington, VA 22209

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PREFACE

The men and women of America's volunteer fire service who responded to the attacks of September 11 have brought honor upon themselves and the entire fire service community through their heroic actions and commitment to duty.

This report is dedicated to volunteer fire-rescue personnel throughout the country. For those that have made the supreme sacrifice in the course of their duties, may their souls rest in peace.

Philip C. Stittleburg, Chairman of the National Volunteer Fire Council, wrote the following piece on September 16, 2001. It speaks to the sentiments and fortitude of the volunteer fire service as well as its direction for the future after the tragic events of September 11.

Thoughts for the Fire Service

The events of September 11, 2001 are indelibly etched on our memories, leaving us startled and pained. We mourn the loss of so many and so much, but most of all the loss of so many of our fire service colleagues. There is little I can say that hasn't already been said. Still, I will try to share some thoughts that I hope will enable us to place our grief and anger in a positive context.

The fire service epitomizes that which is noble in humankind. Above all else, it requires and champions the twin virtues of dedication and perseverance. While the statement that the fire service protects the lives and property of its neighbors may be overused, it is no less accurate for that. However, dedication to that mission sometimes comes at an awful cost. We have seen our fire service brothers and sisters pay the ultimate price for their dedication with unflinching courage.

So we ask, "What can we do?" It would seem that there is so little that we can do directly. We probably can't go to NY City and help sift through the rubble. We can donate to various memorial funds, but that seems so inadequate in relationship to the magnitude of these overwhelming events. And so we are left to ask again, "what can we do?"

We can do what the fire service has always done - we can persevere. We can and will do that because that's what we've been trained for and what we believe in. We know from our training that if we're part of the incident response, we work to mitigate the damage. We also know

that if we're not part of the response, we stay out of the way and get on with our business.

So we carry on. We persevere. We learn what lessons there are to be learned from this tragedy that may make us, and those we command, safer and more effective in the future. We apply this newfound knowledge purchased at such an awful cost to improve the safety of those we are bound to protect.

Our fallen colleagues will be honored in all sorts of ways. There will be funerals and fund drives. Memorials will be constructed. However, there is one memorial that only the fire service can provide. This is the memorial created by continuing the work that they have started. They believed in their work and gave their lives in pursuit of that belief. The ultimate tribute to their sacrifice is to carry forward the torch that they have passed to us.

Mere words can provide but little comfort. The true memorial, the lasting recognition that we can give to those who have too soon departed our ranks is to save the lives and property in the future that they will not be there to protect. Only we can carry on their dream. That's how we honor them. That's what we can do.

ACKNOWLEDGEMENTS

This document would not have been possible without the assistance of hundreds of volunteer firefighters throughout the country who responded to requests for information. We thank them for their time, their candor, and their insight. In addition, the National Volunteer Fire Council (NVFC) gratefully acknowledges the invaluable contributions of the following individuals and groups in the preparation of this report:

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EXECUTIVE SUMMARY

On September 11, 2001, volunteers were among the first to respond to the terrorist attacks on the United States in New York City, NY, Arlington, VA, and Somerset County, PA. Within minutes of the attacks, volunteer emergency responders from fire departments and rescue squads mobilized to render aid.

Approximately 800,000 of the nation's estimated 1.1 million firefighters are volunteers;¹ these men and women stand ready to place themselves in harm's way and serve the citizens of their communities every day. Rural areas and small communities across the United States such as Somerset County, PA rely on all-volunteer departments day-in and day-out to be their first line of defense against fires, medical emergencies, hazardous material incidents, and even terrorist attacks. Suburban and urban areas are often protected by "combination" fire departments that are staffed by volunteer and career firefighters. In such departments, volunteer fire-rescue personnel provide critical staffing and contribute to the depth of available emergency response coverage.

While the majority of the initial responders to the attacks on the World Trade Center and Pentagon were career firefighters, volunteer firefighters and emergency medical technicians (EMTs) were critical participants in the fire-rescue response. Over the course of research effort, 375 volunteer departments were identified as having responded to one of the three attacks. The study team successfully contacted 279 departments and was unable to make contact (despite repeated attempts) with the remaining 93 departments. Three departments declined to participate.

New York City and Arlington County, VA are urban areas that staff their fire departments with a full complement of career personnel at all times. However, both the Fire Department of the City of New York (FDNY) and the Arlington County Fire Department (ACFD) are supported by various volunteer agencies. Within minutes of the attacks, the on-duty career staff in both communities were completely committed to the operations at the World Trade Center and the Pentagon. Neither department could have handled another major emergency on its own. In Arlington County, VA, coverage was so thin initially that smaller scale emergency calls, such as vehicle accidents, received a delayed response from the fire department. However, within one hour, a large contingent

¹ *NVFC Fact Sheet 2002.*

of volunteer firefighters and EMTs mobilized and were dispatched to the scene or to staging areas in and around New York City and Arlington, VA.

Immediately after the first attack on the World Trade Center, firefighters from the 10 New York City volunteer fire departments began mobilizing to respond to the scene. At the same time, volunteer firefighters from Long Island, Upstate New York, New Jersey, Connecticut, and Delaware geared up to assist the FDNY. Some of the volunteers were requested to respond directly to the scene while others were staged outside of the City awaiting further assignment. It is estimated that approximately 285 departments participated, including 2,613 volunteers that provided over 43,700 hours of service.

When the Pentagon was attacked a short while later, volunteer fire-rescue personnel in Arlington County mobilized to assist the career department since nearly the entire on-duty career shift was deployed to the scene. Concurrently, volunteer and career firefighters throughout the metropolitan Washington, D.C. area prepared to assist the ACFD and many were deployed to the scene or to backfill fire stations in Northern Virginia and Washington, D.C. Over 100 departments participated in the response to the Pentagon attack with some 1,930 volunteers participating in nearly 30,000 hours of service.

In Somerset County, PA, the all-volunteer fire-rescue service mobilized and responded to the crash of United Airlines (UAL) Flight 93. Volunteers from departments throughout the County participated in the response to the crash site. Over 55 volunteers from 10 departments participated, providing over 1,500 hours of service.

In total, at least 3,000 volunteer firefighters and EMTs from nearly 400 departments provided in excess of 75,000 hours service in response to the attacks.²

Long Term Effects

Over the course of the research process, representatives from fire departments throughout the country voiced the opinion that the events of September 11 have forever changed the fabric of the American fire service. Whether this has happened remains to

² Estimates from NVFC research using averages for each incident.

be seen. However, a number of areas were identified as having changed tangibly since September 11. These include:

STAFFING NEEDS – Staffing in the volunteer fire service is a chronic and controversial problem. Many departments expressed their frustration at their inability to maintain daily staffing levels, much less staffing for response to a terrorist incident.

RECRUITMENT AND RETENTION – Though many in the volunteer fire service expected to see a surge in volunteer recruitment after September 11, this has not been the case. While some departments, particularly those in and around the affected metropolitan areas, have seen some minor increase in membership, it has not been enough to counteract a 20-year downward trend. Nor is there an apparent increase in volunteerism in general.

EQUIPMENT AND TRAINING NEEDS – For many volunteer departments, the terrorist attacks of September 11 and the anthrax incidents of Fall 2001 highlighted their need for a variety of specialized equipment and training. The majority of departments participating in the research process reported areas of particular need are hazardous materials incident mitigation, weapons of mass destruction (WMD), and high-rise firefighting.

Lessons Learned

The volunteer fire service has sought to learn from the events of September 11 to improve response in the event of a future terrorist incident. The following are some of the lessons learned.

SIGNIFICANCE OF VOLUNTEERS – From New York to Virginia to Pennsylvania, volunteers were critical to the successful mitigation of the terrorist attacks on the United States. Volunteers are an integral part of the first-responder community and are a valuable asset in our quest to protect our homeland from future attack.

INCIDENT COMMAND – The importance of command and control on the fireground cannot be overemphasized. All personnel, career and volunteer, must be aware of and conform to standard operating procedures for response to major incidents. It is imperative that the Incident Commander knows what units and which personnel are

operating on the scene of an emergency incident. Self-dispatching by fire service personnel is dangerous and should be actively discouraged.

TRAINING – In addition to specialized training on hazardous materials and WMD, mutual aid jurisdictions must train together on regular basis to build trust and become familiar with one another's operating procedures.

September 11 Timeline³ and Map

Tuesday, September 11, 2001

- 0759 American Airlines Flight 11, carrying 92 people, leaves Boston's Logan International Airport for Los Angeles.
- 0801 United Airlines Flight 93, carrying 45 people, leaves Newark, NJ, International Airport for San Francisco.
- 0810 American Airlines Flight 77, carrying 64 people, leaves Dulles International Airport in Loudoun County, VA for Los Angeles.
- 0814 United Airlines Flight 175, carrying 65 people, leaves Boston for Los Angeles.
- 0845 American Flight 11 crashes into north tower of the World Trade Center.
- 0903 United Flight 175 crashes into south tower of the World Trade Center.
- 0917 The FAA shuts down all New York City area airports.
- 0921 The Port Authority of New York and New Jersey orders all bridges and tunnels in the New York area closed.
- 0931 President Bush calls the crashes an "apparent terrorist attack on our country."
- 0940 The FAA halts all flight operations at U.S. airports, the first time in U.S. history that air traffic nationwide has been halted.
- 0940 American Airlines Flight 77, carrying 64 people from Washington to Los Angeles, crashes into Pentagon. Trading on Wall Street is called off.
- 0949 The Federal Aviation Administration bars aircraft takeoffs across the country. International flights in progress are told to land in Canada.
- 0950 Two World Trade Center – the south tower – collapses.
- 1008 Secret Service agents armed with automatic rifles are deployed into Lafayette Park across from the White House.
- 1010 A portion of the Pentagon collapses.
- 1010 United Airlines Flight 93 crashes 80 miles southeast of Pittsburgh in Somerset County, PA.
- 1013 The United Nations building evacuates, including 4,700 people from the headquarters building and 7,000 total from UNICEF and U.N. development programs.

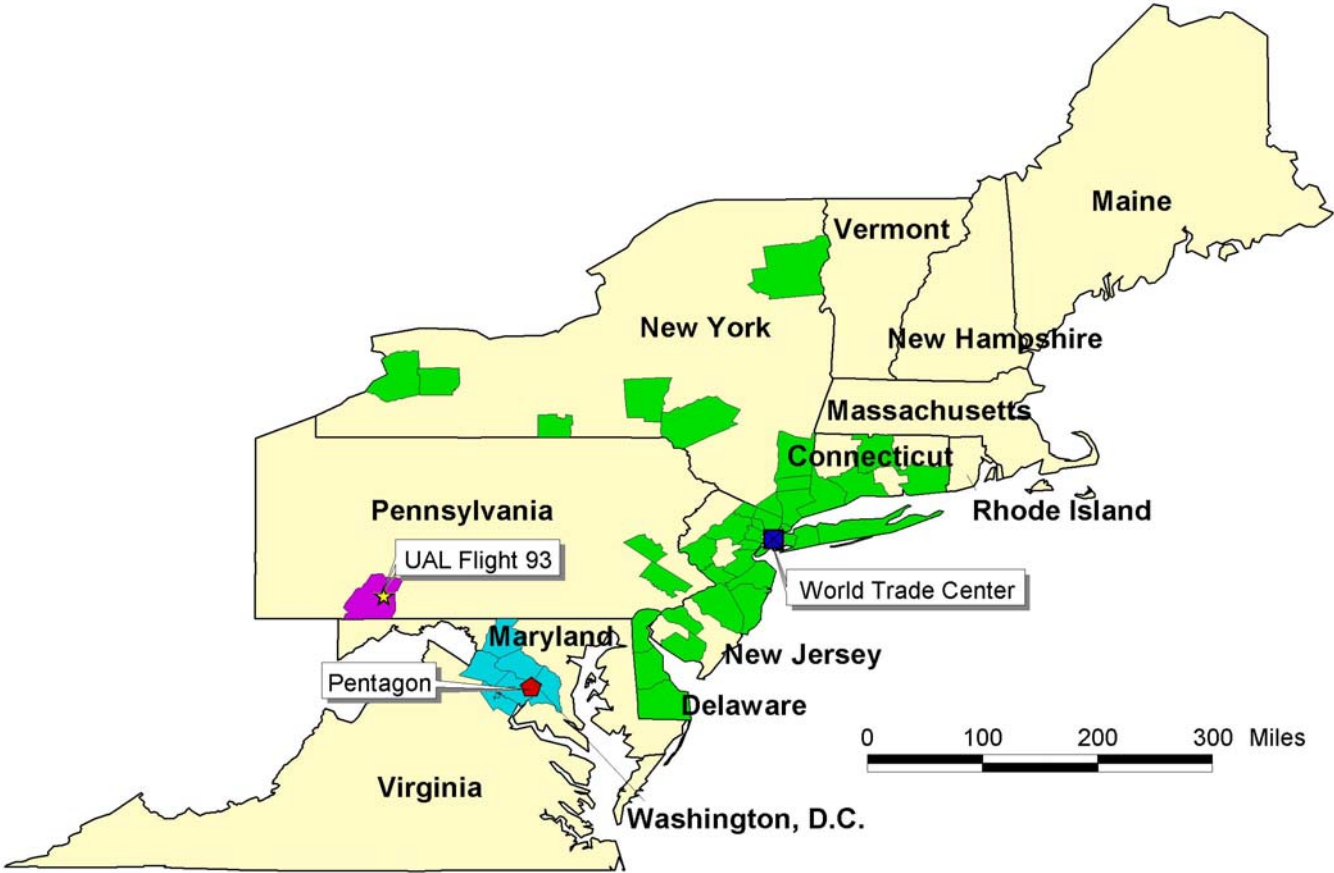
³ NVFC Research; *Firehouse Magazine*; "September 11: Chronology of Terror, CNN.com;" Associated Press.

- 1022 In Washington, D.C., the State and Justice departments are evacuated, along with the World Bank.
- 1024 The FAA reports that all inbound transatlantic aircraft flying into the United States are being diverted to Canada.
- 1029 One World Trade Center – the north tower – collapses.
- 1045 All federal office buildings in Washington are evacuated.
- 1046 U.S. Secretary of State Colin Powell cuts short his trip to Latin America to return to the United States.
- 1053 New York City’s primary elections, scheduled for September 11, are postponed.
- 1054 Israel evacuates all of its diplomatic missions worldwide.
- 1057 New York Gov. George Pataki says all state government offices are closed.
- 1100 New York City Mayor Rudolph Giuliani urges New Yorkers to stay at home and orders an evacuation of the area south of Canal Street.
- 1116 CNN reports that the Centers for Disease Control and Prevention is preparing emergency-response teams in a precautionary move.
- 1118 American Airlines reports it has lost two aircraft. American Flight 11, a Boeing 767 flying from Boston to Los Angeles, slammed into the north tower of the World Trade Center. Flight 77, a Boeing 757 en route from Washington's Dulles International Airport to Los Angeles, hit the Pentagon.
- 1126 United Airlines reports that United Flight 93, en route from Newark, NJ, to San Francisco, California, has crashed in Pennsylvania. The airline also says that it is "deeply concerned" about United Airlines Flight 175.
- 1130 Arlington County, VA declares a state of emergency.
- 1159 United Airlines confirms that Flight 175, from Boston to Los Angeles, has crashed.
- 1204 Los Angeles International Airport, the destination of three of the crashed airplanes, is evacuated.
- 1215 San Francisco International Airport is evacuated and shut down. The airport was the destination of United Airlines Flight 93.
- 1215 The Immigration and Naturalization Service says U.S. borders with Canada and Mexico are on the highest state of alert, but no decision has been made about closing borders.
- 1230 The FAA says 50 flights are in U.S. airspace, but none are reporting any problems.
- 1304 Bush, speaking from Barksdale Air Force Base in Louisiana, says that all appropriate security measures are being taken, including putting the U.S. military on high alert worldwide. He asks for prayers for those killed or wounded in the attacks and says, "Make no mistake, the United States will hunt down and punish those responsible for these cowardly acts."
- 1320 Bush leaves Barksdale Air Force Base, Louisiana, for Offutt Air Force Base, Nebraska.
- 1327 A state of emergency is declared by the city of Washington.
- 1344 The Pentagon says five warships and two aircraft carriers will leave the U.S. Naval Station in Norfolk, VA, to protect the East Coast from further attack and to reduce the number of ships in port. The two carriers, the USS George Washington and the USS John F. Kennedy, are headed for the New York coast. The other ships headed to sea are frigates and guided missile destroyers capable of shooting down aircraft.

- 1400 Senior FBI sources tell CNN they are working on the assumption that the four airplanes that crashed were hijacked as part of a terrorist attack.
- 1430 The FAA announces there will be no U.S. commercial air traffic until noon EDT Wednesday at the earliest.
- 1449 At a news conference, Giuliani says that subway and bus service are partially restored in NY City. Asked about the number of people killed, Giuliani says, "I don't think we want to speculate about that – more than any of us can bear."
- 1555 Giuliani now says the number of critically injured in New York City is up to 200 with 2,100 total injuries reported.
- 1600 CNN National Security Correspondent David Ensor reports that U.S. officials say there are "good indications" that Saudi militant Osama bin Laden, suspected of coordinating the bombings of two U.S. embassies in 1998, is involved in the attacks, based on "new and specific" information developed since the attacks.
- 1606 California Gov. Gray Davis dispatches urban search-and-rescue (USAR) teams to New York.
- 1610 Building 7 of the World Trade Center complex is reported on fire.
- 1620 U.S. Sen. Bob Graham, D-Florida, chairman of the Senate Intelligence Committee, says he was "not surprised there was an attack (but) was surprised at the specificity." He says he was "shocked at what actually happened – the extent of it."
- 1625 The American Stock Exchange, the NASDAQ and the New York Stock Exchange say they will remain closed Wednesday.
- 1630 The President leaves Offutt Air Force Base in Nebraska aboard Air Force One to return to Washington, D.C.
- 1715 CNN Military Affairs Correspondent Jamie McIntyre reports fires are still burning in part of the Pentagon. No death figures have been released yet.
- 1720 The 47-story Building 7 of the World Trade Center complex collapses. The evacuated building is damaged when the twin towers across the street collapse earlier in the day. Other nearby buildings in the area remain ablaze.
- 1730 CNN Senior White House Correspondent John King reports that U.S. officials say the plane that crashed in Pennsylvania could have been headed for one of three possible targets: Camp David, the White House or the U.S. Capitol building.
- 1800 Explosions are heard in Kabul, Afghanistan shortly after the attacks on the United States (the attacks occurred at 0230 local time). Afghanistan is believed to be where bin Laden, who U.S. officials say is possibly behind Tuesday's deadly attacks, is located. U.S. officials say later that the United States had no involvement in the incident whatsoever. The attack is credited to the Northern Alliance, a group fighting the Taliban in the country's ongoing civil war.
- 1810 Giuliani urges New Yorkers to stay home Wednesday if they can.
- 1840 Rumsfeld, the U.S. defense secretary, holds a news conference in the Pentagon, noting the building is operational. "It will be in business tomorrow," he says.
- 1854 Bush arrives back at the White House aboard Marine One and is scheduled to address the nation at 2030. The President earlier landed at Andrews Air Force Base in Maryland with a three-fighter jet escort. CNN's John King reports Laura Bush arrived earlier by motorcade from a "secure location."
- 1922 CNN's Paula Zahn reports the Marriott Hotel near the World Trade Center is on the verge of collapse and says some New York bridges are now open to outbound traffic.

- 1945 The New York Police Department says that at least 78 officers are missing. The city also says that as many as half of the first 400 firefighters on the scene were killed.
- 2030 President Bush addresses the nation, saying, "thousands of lives were suddenly ended by evil" and asks for prayers for the families and friends of Tuesday's victims. "These acts shattered steel, but they cannot dent the steel of American resolve," he says. The President stated the following: the U.S. government will make no distinction between the terrorists who committed the acts and those who harbor them. He adds that government offices in Washington are reopening for essential personnel Tuesday night and for all workers Wednesday.
- 2122 CNN's McIntyre reports the fire at the Pentagon is still burning and is considered contained but not under control.
- 2157 Giuliani says New York City schools will be closed Wednesday and no more volunteers are needed for Tuesday evening's rescue efforts. He says there is hope that there are still people alive in rubble. He also says that power is out on the West side of Manhattan and that health department tests show there are no airborne chemical agents about which to worry.
- 2249 CNN Congressional Correspondent Jonathan Karl reports that Attorney General Ashcroft told members of Congress that there were three to five hijackers on each plane armed only with knives.
- 2256 CNN's Paula Zahn reports that New York City police believe there are people alive in buildings near the World Trade Center.
- 2354 CNN Washington Bureau Chief Frank Sesno reports that a government official told him there was an open microphone on one of the hijacked planes and that sounds of discussion and "duress" were heard. Sesno also reports a source says law enforcement has "credible" information and leads and is confident about the investigation.
- NA The five New York City counties – Bronx, Kings, New York, Queens, and Richmond – are declared federal disaster areas.

Figure 1: Overview of Attack Sites and Volunteer Response Jurisdictions



I. INTRODUCTION

Approximately 800,000 of the nation's estimated 1.1 million firefighters are volunteers.⁴ Every day, rural areas and small communities across the United States rely on all-volunteer fire-rescue departments as their first line of defense against fires, medical emergencies, hazardous material incidents, and even terrorist attacks. Suburban and urban areas are often protected by "combination" fire departments that are staffed by both volunteer and career firefighters.

In response to the September 11 terrorist attacks, the National Volunteer Fire Council (NVFC) asked TriData Corporation to assist in the study of the immediate and continuing effects of the terrorist attacks on America's volunteer fire service. The goal of the effort was to provide, to the extent possible, a portrait of the many important roles played by the volunteer fire service during this unprecedented attack. These roles give insights to improving volunteer preparedness for the future.

The study team was given two months to collect and analyze data and to complete the draft report of the research findings. The total project from inception to final report was completed in less than three months. This timeframe limited the scope and detail of the study team's efforts. The excellent cooperation of many volunteer fire departments, however, enabled the team to develop a fairly comprehensive representation of the issues even with the limited time available.

Methodology

The study team focused primarily on identifying the principal volunteer fire-rescue organizations involved in the response to and recovery from the September 11 attacks. The study team also addressed three priority issues while collecting data from these principal departments: initial notification procedures; volunteer fire service resource deployment, utilization, and depletion during the operations on and after September 11; and ongoing efforts of the volunteer fire service to address crisis management, personnel, operational and other long-term issues.

⁴ NVFC *Fact Sheet 2002*.

During discussions with these principal departments, the study team also placed emphasis on determining the financial impact of the September 11 attacks, operations performed on September 11, personnel issues stemming from the response to the September 11 attacks, training issues after the attacks, and other topics as raised by those contacted.

At the beginning of the project, the study team determined how to separate out the volunteer fire departments that were considered “affected” or principal and those that were not, as discussed below.

Principal Departments –The study team first identified the principal volunteer fire service organizations involved in the response to and recovery from the September 11 attacks. These departments were defined as those that either responded to the initial attacks, provided mutual aid response (initially or post-September 11), or backfilled fire stations (initially or during the recovery efforts).⁵ Data from other, non-principal departments gave the study team insight on the effect of the September 11 attacks on the rest of the volunteer fire service nationwide.

Affected (or principal) departments and their points of contact were determined from a number of official sources. The NVFC provided a list of directors of the state volunteer firefighters’ associations. State volunteer directors from New York, New Jersey, Connecticut, Massachusetts, Delaware, and Rhode Island, Virginia, and Maryland were contacted. Each director pointed the study team to other contacts within their respective states. The director of the Delaware State Fire School provided the study team with an operational narrative of the 33 Delaware volunteer organizations that sent ambulances as part of the World Trade Center response (one of these organizations responded via the web as well.)

Representatives from New York, New Jersey, Delaware, and Connecticut each provided the study team with a list of volunteer fire departments who were officially involved in the response to and recovery from the September 11 attacks.

Some of the sources had complete contact information; others did not. For those departments lacking official contact information, the study team gathered the information

through an online phonebooks, directory assistance, and the NVFC. A total of 375 volunteer fire-rescue organizations were identified as having played principal roles in the response to and recovery from the September 11 terrorist attacks.

Several avenues were used to collect data from affected departments:

- Telephone contacts
- Email
- In-person discussions
- Faxed responses
- Information collected from state offices
- Online responses

Principal departments were given several opportunities to be included in the study. Initial attempts to contact each of the 375 identified volunteer departments were conducted by telephone. Where email addresses were available, the departments were also emailed (some on more than one occasion.) In some cases, contacted departments requested and received faxes of the data request. Requests for information and departmental experience were posted on the NVFC website as well as two popular trade websites (Firehouse.com and FireEngineering.com.)

TELEPHONE, EMAIL, FAX, AND IN-PERSON CONTACTS – The study team initiated contact by calling the chiefs or line officers for all of the known principal departments. Individuals were interviewed using an internal research guide as a basis for consistent data collection. The research guide consisted of questions that dealt with the principal departments' role in the September 11 attacks, the immediate effects of the September 11 attacks on the department, and the long-term effects they anticipate as a result of the September 11 attacks on their department.

Telephone contacts began on May 22, 2002. Fire chiefs or line officers that were unavailable on the first contact were called a second time. Messages were left on each contact attempt. At least two follow-up calls were made for each of these departments – once during the day and once at night. Most of the departments where chief or line officers were unavailable on the initial contact were subsequently called three to four times. The contact information for Somerset County, PA also included personal (home)

⁵ Generally, these departments responded through standing first-due response guidelines, official mutual

telephone numbers for the chiefs of the Somerset County departments involved in the response. The study team also attempted to contact these individuals at their homes on three separate occasions.

Telephone, email, fax, and in-person responses and inputs from a total of 163 department interviews were gathered between May 22 and July 23, 2002. The study team had direct contact with 85 departments about their department's response to the World Trade Center. Three departments responded concerning their response to the crash of United Airlines Flight 93 in Somerset County, PA. Another 75 departments were contacted directly regarding their department's responses to and recovery from the crash of Flight 77 into the Pentagon. Research guides were also faxed to the departments that requested them to complete the data collection on their own rather than by telephone. The study team received three responses from the 14 faxes that were sent to requesting departments (these faxes are included in the contact statistics above).

ONLINE RESPONSES – Simultaneous to the telephone and in-person contacts, an online research guide with five general questions was created and placed on the NVFC website on May 22, 2002. The replies to the online research guide were sent via email directly to a member of the study team. The information was entered in a database to facilitate data analysis.

A weekly email sent to NVFC members on May 24, 2002 included a link to the website. The deadline for submission of the web-based research guide was June 7, 2002. In that timeframe the website yielded a total of 177 responses. Not all of these were from principal departments or volunteer departments, however. The project team decided to extend the deadline to a month so that the principal September 11 volunteer departments would have additional time to respond to the request.

A second email was sent to solicit responses to the website on June 25, 2002. This email was sent to NVFC members, as well as to the state firefighter association directors and other key individuals involved in America's volunteer fire service. The email included the list of organizations from which the study team had heard and those it had not. The email also asked for organizations that were involved with the September 11 response but not identified on either list to respond. The second round of emails

aid agreements, or other official requests for assistance.

yielded 130 web responses. As with the earlier web responses, not all were from volunteer departments. The online research guide was removed from the NVFC website on July 8, 2002. In total, the online research guide yielded 253 valid responses from volunteer fire departments, 116 of which were involved in the September 11 attacks. The remainder of the responses was from fire departments across the nation.

DECLINES –Three principal departments declined to be interviewed or provide written inputs. One department (Elizabeth Fire Department, Union County, NJ) cited concerns about unauthorized individuals seeking information about the structure and operations of emergency response organizations.

TOTAL RESPONDING DEPARTMENTS CONTACTED – Table 1 illustrates by state and county the number volunteer fire-rescue departments that participated in operations on September 11. For those departments nationwide that participated in the research, only the state is noted. Members of the research team had direct contact (telephone, state contact, email, fax, or in-person) with 163 departments and received 116 web-based responses for a total of 279 departments. Three departments declined to be interviewed and 93 did not respond to repeated efforts to make contact. This results in a 74 percent successful contact rate.

Total Contacts – An additional 137 volunteer departments from across the nation provided web-based inputs to the study. Combined with the 279 responding principal departments, a total of 512 departments nationwide participated in the development of this document.

Table 1: Study Responses

State	Jurisdiction*	Direct Contact**	Web Responses	No Contact	Total
PRINCIPAL DEPARTMENTS					
Connecticut					
	Fairfield	0	4	3	7
	Hartford	0	1	0	1
	New Haven	0	2	0	2
	New London	0	1	0	1
	TOTAL	0	8	3	11

State	Jurisdiction*	Direct Contact**	Web Responses	No Contact	Total
Delaware					
	Kent	6	0	0	6
	New Castle	14	0	0	14
	Sussex	12	1	0	13
	TOTAL	32	1	0	33
Maryland					
	Frederick	0	1	0	1
	Montgomery	19	0	1	20
	Prince George's	5	0	0	5
	TOTAL	24	1	1	26
New Jersey					
	Bergen	1	11	4	16
	Burlington	1	1	2	4
	Cumberland	0	1	0	1
	Essex	0	8	2	10
	Hunterdon	0	1	0	1
	Mercer	0	0	2	2
	Middlesex	0	20	0	20
	Monmouth	0	3	0	3
	Morris	0	2	0	2
	Ocean	0	1	2	3
	Passaic	0	2	1	3
	Union	2	3	3	8
	TOTAL	4	53	16	73
New York					
	Bronx	1	0	0	1
	Chemung	0	1	0	1
	Chenango	4	1	0	5
	Delaware	0	2	0	2
	Dutchess	0	1	0	1
	Erie	0	5	0	5
	Nassau	6	11	8	25
	Putnam	2	1	2	5
	Queens	0	2	0	2
	Richmond	0	1	0	1
	Rockland	3	0	4	7
	Saratoga	0	1	0	1
	Suffolk	18	10	27	55
	Westchester	15	12	27	54
	Wyoming	0	1	0	1
	TOTAL	49	49	68	166

State	Jurisdiction*	Direct Contact**	Web Responses	No Contact	Total
Pennsylvania					
	Cambria	0	1	0	1
	Lehigh	0	1	0	1
	Montgomery	0	1	0	1
	Somerset	3	0	7	10
	TOTAL	3	3	7	13
Virginia					
	Alexandria (City)	1	0	0	1
	Arlington	6	0	0	6
	Fairfax (City)	1	0	0	1
	Fairfax (County)	12	0	0	12
	Falls Church (City)	1	0	0	1
	Loudoun	17	0	0	17
	Manassas (City)	1	0	0	1
	Manassas Park (City)	0	0	1	1
	Prince William	12	1	0	13
	TOTAL	51	1	1	53
Total Principal Response		163	116	96	375

NATIONAL RESPONSES

Alabama	1
Alaska	1
Arkansas	1
California	1
Connecticut	4
Florida	2
Georgia	2
Idaho	2
Illinois	4
Indiana	4
Iowa	2
Kentucky	5
Louisiana	2
Maine	1
Maryland	2
Massachusetts	1
Michigan	5
Minnesota	9
Missouri	2
Montana	3
Nebraska	1
New Hampshire	1
New Jersey	6

State	Jurisdiction*	Direct Contact**	Web Responses	No Contact	Total
New Mexico			1		
New York			6		
North Carolina			1		
North Dakota			1		
Ohio			7		
Oklahoma			4		
Pennsylvania			13		
South Carolina			20		
South Dakota			3		
Tennessee			1		
Texas			3		
Utah			2		
Vermont			2		
Virginia			5		
Washington			3		
West Virginia			2		
Wisconsin			1		
Total National Response			137		
GRAND TOTAL		163	253	96	512

* Unless noted, the jurisdictions listed are counties.

** Direct contact includes information received via telephone, email, fax, or from local, county, or state representatives.

Open Source Literature Search – A literature search was conducted using a broad range of sources to seek articles relating to the September 11 incidents and America’s volunteer fire service. The study team used a variety of search mediums to collect such articles. Among these were: Google.com; Yahoo.com; Lexis-Nexis; the University of Maryland, Baltimore County’s (UMBC) VICTORWeb (Main Catalog system); the Albin O. Kuhn Library & Gallery at UMBC; ingenta; BioMed; Medline; and the Maryland Institute Emergency Medical Services Systems serials and card catalog searches. The study team found more than 85 reference articles.

Study team members sought copyright permission from each of the publishers of the literature found; 28 were obtained.

Draft and Final Report – The draft and final report were written using data collected from each of the mediums – telephone, fax, email, in-person contact, online responses, and information received from state offices – and from the articles found

during the literature search. Response statistics were calculated by using database queries of information from the research guides and web-based responses.

II. ROLE OF VOLUNTEERS IN THE OPERATIONAL RESPONSE TO THE WORLD TRADE CENTER

Volunteer responders were among the critical players in the response to and recovery from the attacks on the World Trade Center. As the day unfolded, volunteer fire-rescue personnel backfilled stations in New York City and the surrounding counties, participated in fire suppression efforts, worked on rescue bucket brigades at the scene, and provided apparatus and other equipment. Volunteers continued to support the rescue and recovery operations for weeks after September 11.

In 1993, six people were killed and hundreds were injured when a terrorist bomb exploded in an underground parking garage. It took 16 alarms to extinguish the fires and evacuate the affected buildings. At the time, it was FDNY's largest response to a single incident ever. In contrast, the events of September 11 required the equivalent of nearly 25 alarms.

On September 11, FDNY provided the primary fire-rescue response to the World Trade Center incident, without assistance from mutual aid agencies. Within minutes of the first plane crash, multiple alarms were dispatched to the World Trade Center. Once the Towers collapsed, firefighters from throughout the City and beyond bypassed procedures to respond to the World Trade Center in a desperate attempt to save the civilians and firefighters trapped by the debris.

These personnel rapidly emptied dozens of firehouses in Manhattan and the outer boroughs of the City that had not been on the initial dispatch to the World Trade Center. Volunteers backfilled many of the empty stations. They provided response for "regular" incidents occurring in the City and acted as a critical safety net in the event of a secondary incident at the World Trade Center or elsewhere in the region.

Research for this project suggests that approximately 2,600 volunteers from nearly 300 departments participated in 43,700 hours of service in response to the attacks at the World Trade Center.⁶ This figure includes scene response, backfilling of fire stations, and standby at fire stations in preparation for secondary attacks. However, unlike the operations at the Pentagon and United Airlines Flight 93, it was difficult to

⁶ This figure was developed using estimates from contacted departments, as explained in the Methodology.

determine all of the volunteer agencies that participated in the response and recovery efforts at the World Trade Center. In part, this is because not all departments operated through established mutual aid agreements. Many FDNY and volunteer units and personnel did not check in with command posts at the scene; also, the primary command posts were destroyed and the Incident Commanders were killed when the Towers collapsed. In the chaos that followed the collapse of the World Trade Center, there seemed to be higher priorities than recording each of the departments on scene. In hindsight, the loss of command and control is considered a factor contributing to the loss of life, and could have contributed to additional fatalities during the rescue efforts. For the above reasons, not all jurisdictions that responded are known. As is discussed in the section on the methodology for this report, attempts were made to contact as many departments from as many jurisdictions as possible.

The estimates here should be considered the lower bound for volunteer participation; in reality, the numbers of both volunteers and hours participated are probably much higher.

World Trade Center Timeline of Events⁷ and Map of Area

The following timeline provides an overview of the events at the World Trade Center on September 11, 2001 and significant happenings since then. For context, Figure 2 provides an illustration of the area in Lower Manhattan where the World Trade Center was located. Figure 3 illustrates some of the jurisdictions that participated in the response and recovery efforts at the World Trade Center.

Tuesday, September 11

- 0845 American Flight 11 crashes into the North tower of the World Trade Center Tower 1
- 0846 Initial FDNY Alarm called in by Battalion Chief Pfiefer – Second Alarm to the World Trade Center.
- 0846 Chief Pfiefer requests a third alarm stage at Vessey and West Streets.
- 0847 FDNY Box 8087 – Fifth alarm, 33 units to World Trade Center Tower 1
- 0851 FDNY Box 9031 – Additional units
- 0851 FDNY Box 1377 – Third alarm stages at Brooklyn-Battery Tunnel
- 0903 United Flight 175 crashes into the south tower of the World Trade Center Tower 2.

⁷ NVFC Research; *Firehouse Magazine*, April 2002; “Chronology of Terror,” CNN.com; FEMA Press Releases; Associated Press.

- 0908 FDNY Box 9998 – Fifth alarm, 33 units to World Trade Center Tower 2
- 0921 Port Authority of New York and New Jersey closes all bridges and tunnels into New York.
- 0932 Assistant Chief Joseph Callan issues an evacuation order for Tower 1.
- 0944 FDNY Box 0050 – Second alarm to staging area, 18 units
- 0950 Tower 2 collapses (South Tower).
- 0954 FDNY Box 2033 – Fifth alarm, 33 units to World Trade Center Tower 1
- 1029 Tower 1 collapses (North Tower).
- 1053 New York City’s primary elections are cancelled.
- 1057 Gov. George Pataki closes all state government offices.
- 1100 Mayor Giuliani urges New Yorkers to stay home and orders an evacuation of Manhattan below Canal Street.
- 1111 FDNY Box 0320 – Staging
- 1610 World Trade Center Building 7, the 47-story building that housed New York City’s Office of Emergency Management, is reported to be on fire.
- 1720 World Trade Center Building 7 collapses.
- 2157 Mayor Rudolph Giuliani announces that New York City public schools will be closed Wednesday and that no more volunteers are needed for Tuesday evening’s rescue efforts. He says there is hope that people are still alive in the rubble.
- NA The five New York City counties – Bronx, Kings, New York, Queens, and Richmond – are declared federal disaster areas.

Tuesday, September 25, 2001⁸

- NA Rescue efforts at the World Trade Center are completed and operations move into a recovery mode.

Thursday, September 27, 2001⁹

- NA 10 additional counties are designated eligible for assistance by FEMA – Delaware, Dutchess, Nassau, Orange, Putnam, Rockland, Suffolk, Sullivan, Ulster and Westchester. Five of these counties are also declared eligible for Public Assistance to state and local governments, to include: debris removal, emergency protective measures, public buildings and contents, and public utilities. All 62 counties in the state of New York were approved for emergency protective measures to reimburse the cost of search and rescue, fire, and police personnel who responded to the attack.

Wednesday, December 19, 2001¹⁰

- NA Fires at the World Trade Center are officially deemed extinguished.

⁸ “Mayor: Finding Survivors Not Likely.” *Associated Press*, September 25, 2001.

⁹ “Ten Additional New York Counties Now Eligible to Receive Disaster Assistance.” *FEMA Press Release*, September 28, 2001.

¹⁰ “WTC Fires Out.” *ABCNews.Com*, December 19, 2001.

Thursday, May 30, 2002

NA Recovery efforts at the World Trade Center are officially concluded. Approximately 3,000 people are confirmed or presumed dead, including 343 FDNY firefighters, 37 members of the Port Authority Police Department, 23 New York Police Department (NYPD) personnel, and 4 hospital-based EMS workers.

The World Trade Center complex comprised seven buildings. Buildings 1 and 2 were known as the Twin Towers. Building 3 was the Marriott Hotel; Buildings 4 and 5 were office buildings; Building 6 was the Customs House; and, Building 7 housed the City’s Office of Emergency Management (OEM) and the Securities and Exchange Commission (SEC).

All seven World Trade Center buildings either collapsed or partially collapsed as a result of the terrorist attacks. The destroyed buildings included the Twin Towers; the Marriott Hotel; 5 World Trade Center, and 7 World Trade Center. The partially collapsed buildings are 4 World Trade Center and 6 World Trade Center. Five other buildings had structural damage, including the American Express building in the World Financial Center and the Bankers Trust building. As many as 13 other buildings in the vicinity suffered less serious damage.¹¹

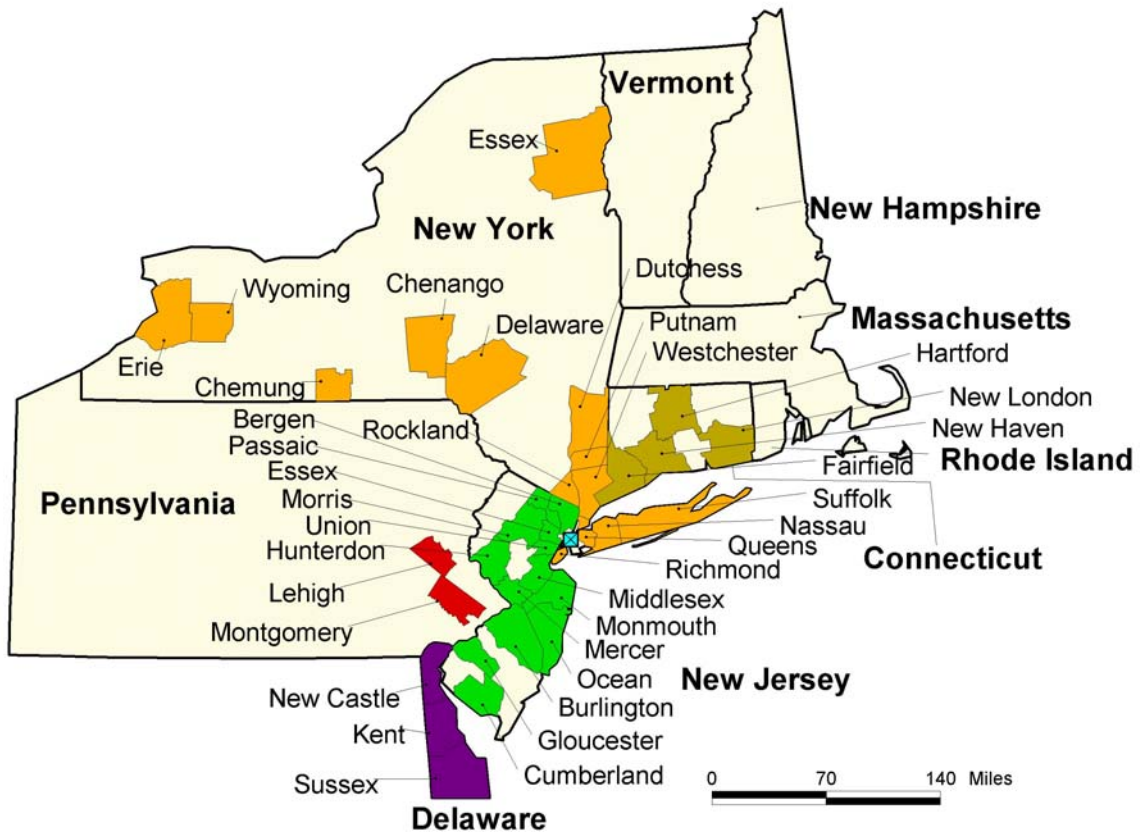
Figure 2: Map of Lower Manhattan¹²



¹¹ “Recovery Effort Moves Ahead.” *CNN.com*, September 19, 2001.

¹² “September 11: Minutes of Mayhem.” *New York Times on the Web*.

Figure 3: Volunteer Response Jurisdictions, Attack on the World Trade Center¹³



The Structure of Fire-Rescue Services in New York City

In general, fire suppression and emergency medical services in New York City are provided by the Fire Department of the City of New York (FDNY), an all-career agency with 13,000 uniformed personnel. FDNY operates 203 engine companies, 143 ladder companies, five rescue companies, seven squad companies, three fireboats, and a variety of others. Firefighters work a rotating shift schedule of two day shifts (0900 to 1800), two days off, and two night shifts (1800-0900).

There are also ten volunteer fire departments (VFDs) in the outer boroughs:

- Aviation VFD (Bronx);
- Broad Channel VFD (Queens);
- Edgewater Park Volunteer Hose Co. (Bronx);

¹³ Developed from research and interviews with affected departments. Not all jurisdictions may be illustrated.

- Gerritsen Beach VFD (Brooklyn);
- Oceanic Hook and Ladder Company (Staten Island);
- Point Breeze VFD (Queens);
- Richmond VFD (Staten Island);
- Rockaway Point VFD (Queens);
- Roxbury VFD (Queens); and,
- West Hamilton Beach VFD (Queens).

In some cases, people who live near the volunteer departments will call them directly instead of 911 to request emergency assistance. The volunteers also listen to radio dispatches by the FDNY, and if the call is dispatched in their neighborhood, they respond in addition.

Each volunteer department raises money to purchase fire trucks and equipment to serve their communities. For example, Rockaway Point, Point Breeze, and Roxbury Volunteer Fire Departments each own a fire engine and an ambulance. The availability of volunteer apparatus on September 11 was essential to provide additional assistance at the World Trade Center collapse and for backfilling some of the empty FDNY stations, as will be discussed later.

Nearly 48 volunteer ambulance corps throughout all five boroughs of the City work with hospital-based units and FDNY to provide a tiered Advanced/Basic Life Support (ALS/BLS) EMS response system. The corps are community-based and respond to calls from citizens in their neighborhoods, many of whom elect to call the volunteer units directly instead of 911.

FDNY and the volunteer agencies operate in conjunction with a network of career, volunteer, and combination fire-rescue agencies throughout the surrounding counties in New York, New Jersey, Connecticut, and beyond. There are numerous mutual and automatic aid agreements, which make resources available in the event of a large-scale incident. In accordance with these agreements, nearly all of the counties surrounding New York City modified their operations to support rescue efforts at the World Trade Center.

Initial Hours of the Incident

On the morning of September 11, FDNY Battalion Chief Joseph Pfiefer was operating on the scene of a natural gas leak at Church and Lispenard Streets with the crews from E7, E6, L8, and L1. They witnessed a low-flying plane strike the North Tower of the World Trade Center. Chief Pfiefer, along with the units operating on the scene, immediately began responding to the World Trade Center. While en route, Chief Pfiefer called the incident in to the Manhattan dispatchers.

When the first plane struck Tower 1 at 0845, FDNY shifts were changing throughout the City and personnel from both shifts responded to the World Trade Center, meaning that many units responded with more personnel than usual. Further, the decision was made early in the incident to recall the entire department to provide personnel for rescue efforts and station staffing. All members of the FDNY were ordered to respond to their stations. These factors combined make it nearly impossible to determine exactly how many FDNY personnel responded to the World Trade Center or what those personnel did while there. The huge response by two shifts later made it more critical to use other department resources to fill in stations, as will be discussed.

Over the next 30 to 45 minutes, while the Towers were still standing, FDNY established a command post for both Towers and various Chiefs worked to coordinate the efforts of responding companies. However, they could not be sure exactly who had responded to the scene. Further, they were plagued by serious radio communication problems, in part because the repeaters installed after the 1993 bombing were not functioning properly, nor were portable units in the Battalion Chief's cars. The Incident Commanders were not able to communicate effectively with companies operating above them in the Towers, nor were companies able to communicate with one another. There was also a lack of communication between the NYPD, who had helicopters surveying the buildings' integrity from the air, and the FDNY.¹⁴

Once the Towers collapsed, emergency responders from throughout the City flocked to the World Trade Center in even greater numbers, desperate to find survivors. These responders included off duty firefighters,¹⁵ retired firefighters, volunteer firefighters (some of whom worked in buildings adjacent to the World Trade Center),

¹⁴ "9/11 Exposed Deadly Flaws in Rescue Plan." *New York Times*, July 7, 2002.

doctors, nurses, and police officers. The onslaught of responders made it impossible to maintain accountability, command, and control of emergency personnel at the scene.

Volunteer firefighters from New York City volunteer departments left their jobs and responded to their stations to await assignment. Volunteer ambulance corps members did the same. Volunteer firefighters throughout the tri-state area also responded to their stations in anticipation of requests from the FDNY for outside assistance.

Activation, Notification and Dispatching Of Volunteers

Initially, most volunteers became aware of the situation at the World Trade Center via media reports, pagers, and announcements from dispatchers. Activation and dispatching methods depended largely on the location of the volunteer agency. Most counties in surrounding jurisdictions ordered volunteers to report to their stations and once staffing levels were determined, departments were alerted to respond with particular apparatus to various staging points to await further instruction for deployment.

For example, in New Jersey, the State OEM dispatched volunteer and career firefighters to two staging points just outside of New York City. One staging area was for fire apparatus, the other for EMS units. The New Jersey OEM maintained contact with the New York City OEM and FDNY and deployed units into New York City from staging as requested. This helped to maintain some level of control and accountability over resources and firefighters. However, communications broke down between New York City and outside agencies when personnel in the New York City OEM were forced to evacuate their offices shortly into the incident when the towers collapsed. (The New York City OEM was located adjacent in 7 World Trade Center and was heavily damaged in the Towers' collapse.)

The New York City volunteer fire departments and ambulance corps were deployed through a variety of methods. Some responded to the scene directly in anticipation of the need for additional resources. Others were dispatched to a staging area by the FDNY or by direct order from an FDNY officer. Some of the volunteer fire trucks and ambulances were directed by FDNY Battalion Chiefs to fill empty FDNY stations in order to maintain emergency coverage in the city. For example, the 47th

¹⁵ Of the 343 FDNY firefighters killed that day, some 60 were off-duty when the Towers were attacked.

FDNY Battalion requested the volunteer departments that cover the Rockaway Peninsula to relocate their engines to nearby FDNY stations.

Some volunteer firefighters and EMTs “self-dispatched” by virtue of the fact that they worked in offices adjacent to the World Trade Center. These individuals felt a duty to respond given the catastrophic nature of the incident and number of victims. There were reports of many off-duty volunteers who were in the area and rendered aid. Unfortunately, some of these volunteers were injured in the process, and one was killed. A volunteer firefighter/EMT from the Dumfries-Triangle Rescue Squad (VA) was working one block away from the World Trade Center. He left work and responded to assist FDNY paramedics. When one of the towers collapsed, he was killed, and his body was found several days later in one of the initial triage and treatment areas. Another volunteer from the Jamaica Estates Ambulance Corps located in New York City responded from a nearby office and suffered a broken femur and arm while assisting victims after the first plane crash.

Many of the departments contacted during the research for this report expressed frustration with existing structured mutual aid response plans. With the massive destruction at the World Trade Center and seemingly obvious need for help, many felt that the system reacted too slowly and that their resources were ignored. Some departments reported that while they were initially told to stage in preparation for deployment to New York City, they never received instructions to deploy. In frustration, some chose on to respond their own directly to the World Trade Center without waiting to be called. The emergency services organizations in New York and New Jersey are a close-knit community and, in some cases, personnel operating at the scene bypassed the chain of command and personally called individuals or departments for specific resources without necessarily considering mutual aid resources first. Self-dispatch and notification procedures are discussed in more detail in Chapter VIII, Lessons Learned.

During the interview process, several people noted that law enforcement officers controlled the bridges in and out of New York City. Those officers were instructed not to allow apparatus across the bridges that had not been approved by the Office of Emergency Management. Though an excellent idea in theory, in reality many people and fire department vehicles were able to gain access to the World Trade Center site without approval from the FDNY or OEM.

Roles of Volunteers in Response to the Attack on the World Trade Center

Table 2 shows the counties that reported volunteer departments that responded on September 11, the approximate number of personnel that responded, and the approximate number of hours volunteer personnel spent operating at the World Trade Center or backfilling stations.¹⁶

The table is based on discussions with 85 departments that responded to the World Trade Center on September 11. These data may be biased towards departments that responded through official channels, as the study team was more likely to be able to identify and contact such departments from the official data available. Despite the potential bias, these data are useful in that they provide a picture of the volunteer response to the World Trade Center, and a minimum estimate of the level of participation.

¹⁶ This number includes hours at the scene, backfilling at fire stations, and providing other support. It is derived from interviews with fire departments across the New York metropolitan area. Researchers were unable to get total hours from all of the volunteer fire departments that were involved, nor were they able to determine all of the agencies that responded, so this figure is considered a low estimate of volunteer participation.

Table 2: Jurisdictions with Volunteers that Responded to the World Trade Center

County	Types of Department	Estimated # of Volunteers Activated on Sept. 11	Estimated # of Hours Logged by Volunteers	Primary Duties Performed by Volunteers
NEW YORK (14 Counties, 166 Departments)				
Bronx	Volunteer	6	90	One volunteer engine, 1 volunteer chief's car and 1 volunteer light rescue responded to the World Trade Center on September 11. Personnel assisted injured and dazed victims who were primarily coming out of the subway. Members were about to enter the World Trade Center towers when the collapse began. They escaped by going down to the subway. The engine was severely damaged and the chief's car and light rescue were destroyed.
Chemung	Volunteer	23*	552*	One heavy rescue was deployed to World Trade Center for lighting. One engine, 1 ladder, and 1 ambulance were sent to a staging area and one ladder backfilled a FDNY station in Queens.
Chenango	Volunteer	17	408	Five departments sent personnel and a contingent of 4 ambulances to World Trade Center on two days.
Delaware	Volunteer	Unknown	Unknown	Fire and EMS response to World Trade Center. Assisted with search, rescue and recovery.
Dutchess	Volunteer	3	21	One ambulance sent to backfill ambulance company located along the Putnam/Westchester line.
Erie	Volunteer	12*	288*	Four departments sent ambulances to standby at World Trade Center.
Nassau	Volunteer	203	1,846	Units staged at the Belmont Racetrack, Shea Stadium, Aqueduct Racetrack in Jamaica, and in the Rockaways. Some units were assigned to backfill firehouses in Queens and Manhattan while others operated at the World Trade Center.
Putnam	Volunteer	Unknown	Unknown	EMS units were sent to World Trade Center while fire apparatus and personnel staged at the Westchester County Training Academy.
Queens	Volunteer	15*	360*	Ambulances sent to World Trade Center. Engine backfilled E331 in Queens. Members sent to World Trade Center to assist in recovery efforts during subsequent days.
Richmond	Volunteer	5*	840*	Members were involved in the "bucket brigade" search and rescue efforts

County	Types of Department	Estimated # of Volunteers Activated on Sept. 11	Estimated # of Hours Logged by Volunteers	Primary Duties Performed by Volunteers
				at World Trade Center for about 2 weeks.
Rockland	Volunteer	77	1,006	Apparatus and personnel staged at the Westchester County Training Academy. Technical Rescue Team was placed on standby but not activated.
Suffolk	Volunteer	1,000	10,710	County volunteers were sent to staging areas at the Belmont Racetrack in Queens and the Rockaways. Volunteers were deployed to the World Trade Center and to backfill FDNY stations in Queens. Several heavy rescue squads were assigned to the World Trade Center and provided lighting and extrication capabilities.
Westchester	Volunteer	340	6,280	Units staged at the Valhalla Training Center and in Yonkers. Some were deployed to the World Trade Center while others backfilled fire stations in the Bronx.
Wyoming	Volunteer	21	504*	Five ambulances responded to World Trade Center.
NEW JERSEY (12 Counties, 73 Departments)				
Bergen	Volunteer	Unknown	Unknown	The East Bergen Mutual Aid Association ¹⁷ responded as a task force to a staging area at Battalion 16 (248 W. 143rd St.). The task force of five heavy rescues and five ladder companies included units from Fort Lee, Leonia, Tenafly, Edgewater, Englewood, Ridgefield, Fairview, Cliffside, and Palisades Park. Others staged at the George Washington Memorial Bridge before being sent to the World Trade Center or backfilled FDNY stations. Several were involved in World Trade Center operations and operations on the New Jersey side, which included decontamination of victims at Hoboken. One rescue squad was deployed to the World Trade Center on September 12 for search & rescue operations. Eight rescue squads assisted FBI agents for the following week at the Fresh Kills Landfill.

¹⁷ The Association was founded in 1947 and the departments involved provide mutual aid to one another on an as-needed basis.

County	Types of Department	Estimated # of Volunteers Activated on Sept. 11	Estimated # of Hours Logged by Volunteers	Primary Duties Performed by Volunteers
Burlington	Volunteer	8	80	Hanesport and Burlington Townships' light units were sent to the World Trade Center. Southampton's light trailer was sent to staging at the Holland Tunnel. EMS crews were involved in response to World Trade Center.
Cumberland	Volunteer	3*	24*	One EMS support unit responded to World Trade Center.
Essex	Volunteer	500*	12,000*	Units were involved in responses to the World Trade Center, backfilling of FDNY stations in Brooklyn and Staten Island (including FDNY Rescue 5), and decontamination operations at the train stations as victims escaped the city. Eight task forces (consisting of 2 engines and 1 truck company each) were sent to backfill stations in Upper Manhattan at 1359 on September 11. An additional task force was sent to World Trade Center at this time and another sent to George Washington Bridge. Seven engines and 5 trucks backfilled FDNY stations on September 12. Eight engines, 3 trucks, 1 heavy rescue, and 1 D/C backfilled FDNY stations on September 13.
Hunterdon	Volunteer	5*	120*	One heavy rescue truck with an onboard cascade system and onboard generator and lighting system responded to the World Trade Center at the request of the Jersey City Fire Department.
Mercer	Volunteer	5*	60*	West Windsor hazardous materials unit was staged at the Meadowlands. De Cou's lighting unit was sent to the scene.
Middlesex	Volunteer	125*	3,000*	Apparatus were primarily used to backfill FDNY stations on September 11. Convoy from Union and Middlesex Counties consisting of 15 engines, 5 trucks, and 5 rescues responded to New York City on September 11. Units were involved in backfilling FDNY stations in Brooklyn and Staten Island as well as search and rescue operations at World Trade Center.
Monmouth	Volunteer	Unknown	Unknown	Assisted with decontamination operations at Middletown train station and the Hoboken ferry station. Evacuated close to 1,000 people from the ferries. One air unit was sent to the World Trade Center.

County	Types of Department	Estimated # of Volunteers Activated on Sept. 11	Estimated # of Hours Logged by Volunteers	Primary Duties Performed by Volunteers
Morris	Volunteer	5*	120*	One air/light truck and other fire apparatus responded to assist with search and rescue and other services as needed.
Ocean	Volunteer	15*	360*	Berkley, Brick, and Jackson Townships' light units were sent to the World Trade Center. Brick Township's CISM team assisted with debriefing at World Trade Center.
Passaic	Volunteer	31*	744*	One engine and a Battalion Chief were deployed to the World Trade Center for water supply operations on September 12. Two engines, 1 truck, 1 tower, and 1 rescue backfilled FDNY stations on Staten Island on September 13.
Union	Volunteer	49	2,128	Ten engines, 5 ladders, and 5 rescue squads were sent to backfill stations on Staten Island on September 11. Five cascade units were also staged at the Meadowlands on September 11. Eleven engines, 5 ladders, 1 rescue and 8 chiefs backfilled FDNY stations on September 12. On September 13, 4 engines and 2 trucks backfilled Staten Island stations; 4 engines, one truck and 2 Battalion Chiefs covered Brooklyn stations; 2 engines, 1 truck, 1 rescue, 2 Battalion Chiefs, and a HazMat unit covered Manhattan stations; and dispatchers were sent to the Command Post.
CONNECTICUT (4 Counties, 11 Departments)				
Fairfield	Combination	Unknown	Unknown	US&R and technical rescue team sent with heavy rescue and collapse rescue unit responded to World Trade Center. One department provided decontamination of turnout gear. Joined a large task force of NY and CT departments with rescue capabilities that staged at Westchester County Training Academy and then staged at Yonkers Raceway.
Hartford	Volunteer	Unknown	Unknown	One engine responded to World Trade Center while fire and EMS crews responded to New York City to help as needed.
New Haven	Combination	13	312*	Thirteen volunteers responded to World Trade Center to help with search and rescue.
New London	Volunteer	Unknown	Unknown	Combination EMS department sent 30-40 spinal immobilization boards and other medical equipment to New York City.

County	Types of Department	Estimated # of Volunteers Activated on Sept. 11	Estimated # of Hours Logged by Volunteers	Primary Duties Performed by Volunteers
DELAWARE (3 Counties, 33 Departments)				
Kent	Volunteer	18*	216*	Six Ambulances to Staging at the Meadowlands as part of the Delaware State Ambulance Task Force.
New Castle	Volunteer	42*	504*	Fourteen Ambulances to Staging at the Meadowlands as part of the Delaware State Ambulance Task Force.
Sussex	Volunteer	42*	504*	Fourteen Ambulances to Staging at the Meadowlands as part of the Delaware State Ambulance Task Force.
PENNSYLVANIA (2 Counties, 2 Departments)				
Lehigh	Volunteer	20	480*	Hazardous Materials Response Team staged at the Meadowlands for potential New York City or Northern New Jersey deployment with one quick response unit and one full hazardous materials unit.
Montgomery	Volunteer	10*	120*	Two crews went to World Trade Center and assisted with logistics and supply operations from September 14 to September 16.
TOTALS				
35	284**	2,613*	43,677*	
<p>*.. Estimates made by the study team. Unless noted specifically by a department, fire apparatus are estimated to have an average of five personnel on-board. EMS units are estimated to have an average of three personnel. Unless specifically known, hours logged by volunteers were estimated as 12-hour shifts.</p> <p>** Total Number of Departments.</p>				

Of the 53 principal departments contacted, over 90 percent responded to the World Trade Center through mutual aid agreements. The remainder self-dispatched or were specially requested by agencies operating at the World Trade Center. Not surprisingly, the majority of volunteer departments were from elsewhere in the State of NY, particularly the outer boroughs of New York City as well as Suffolk, Nassau, and Westchester counties.

As shown in Table 3, the volunteer departments varied considerably in the number of personnel deployed to the World Trade Center. Some sent only an engine or ambulance with a crew; others sent significantly more personnel. The majority of departments, 67 percent, sent under 20 personnel to the World Trade Center. But 11 percent sent over 50 volunteers each. The departments that reported participation by large numbers of volunteers tended to stay involved in the operations for an extended period of time, ranging from several days to over two months. These numbers do not include volunteers that remained “in district” to provide first-due response while others were deployed to the World Trade Center.

Table 3: Degree of Participation in World Trade Center Operations

Number of Volunteers Deployed	Number of Contacted Departments	Percent of Contacted Departments
Under 10	18	35
11-20	17	32
21-30	9	17
31-40	1	2
41-50	2	4
51+	6	11
Total	51	100

Volunteer responders in and around New York City performed a variety of services in response to the attack on the World Trade Center. Their duties primarily included firefighting and rescue, emergency medical support, firefighting operations support, shuttling of equipment and personnel, backfilling of fire stations, and coordinating food donations.

Over half of the principal departments (55 percent) were involved only during the first two days of the incident. Another 25 percent were involved through the fourth day of the incident. Departments that participated in the first 12-24 hours tended to have been

involved in staging outside the City or in backfilling FDNY stations. Departments involved over a longer period of time tended to be those that lent specialty units (e.g., heavy rescue squads, aerial towers) to the World Trade Center, and they rotated crews through assignment to the site. Over the longer term, volunteer agencies were also involved in evidence recovery operations at the Fresh Kills Landfill on Staten Island. As shown in Table 2, volunteers provided at a minimum, 43,700 hours of service during the response to and recovery from the World Trade Center attack.¹⁸

Again, as in the Washington, D.C. area, volunteers in and around New York City served as a ready reserve force for career agencies, including FDNY.

The following discussion addresses the specific operational activities of volunteers on September 11.

Firefighting – Following the World Trade Center collapse, there were large fires in several buildings in the World Trade Center complex (e.g., Buildings 5 and 7), besides in the rubble itself. In addition to rescue efforts on the pile, personnel operating at the World Trade Center had to focus on standard fire suppression operations. Though there was little interior fire attack, personnel and apparatus were still required for defensive operations. After the destruction of FDNY apparatus in the collapse, volunteer fire engines were used extensively to provide water for suppression efforts. In one case, the Aviation VFD reported that while its engine was heavily damaged in the collapse, it was still functional enough to pump water for the suppression efforts at 7 World Trade Center. Departments also reported that small tools and other supplies were provided from their engines for use in debris removal and rescue efforts and often wound up donated to the cause.

Firefighting Support – Much of the FDNY's cache of specialized heavy rescue equipment was destroyed when the Towers collapsed. Also, many of its technical rescue specialists were killed. Volunteer agencies with heavy rescue squads and aerial apparatus were crucial in providing technical rescue equipment both at the World Trade Center and throughout the City. Departments reported that they assisted FDNY with cutting apart

¹⁸ This number includes hours at the scene, backfilling at fire stations, and providing other support. It comes from interviews with fire departments across the New York metropolitan area. Researchers were unable to get total hours from all of the volunteer fire departments that were involved, so this figure is considered a low estimate of volunteer participation.

cars and extinguishing vehicle fires ignited by falling debris from the Towers. Other volunteers helped refill breathing air bottles, shuttle personnel, run generators, and set up lighting. Numerous departments reported deploying their rescue trucks light towers to the World Trade Center to provide lighting on the evening of September 11. Several of these apparatus were detailed to the World Trade Center for several days while New York City OEM established more permanent light sources.

Emergency Medical Services – New York City has an extensive network of volunteer rescue squads and EMS agencies that work with FDNY to provide citywide EMS coverage. These agencies have a long history of working together through the NY Mutual Aid Radio System (MARS), a citywide emergency radio network that is used to notify ambulance companies when the City’s EMS system is overburdened with calls. Agencies can also call in to MARS and report whether they have units available and if so, the capabilities of those units (e.g., ALS vs. BLS). Depending on call volume in the City, MARS either dispatches the agency on a call or instructs them to remain in service. On September 11, many volunteer agencies called MARS to determine the need for their services. Some agencies were dispatched directly to the World Trade Center to provide patient triage and transport. Other agencies were asked to remain in their areas or relocate to other parts of the City to maintain response coverage.

At the World Trade Center, volunteers worked along side career firefighters and EMS personnel to develop and staff the triage, treatment, and transportation sectors. Volunteers from non-fire service agencies (e.g., the Red Cross) also provided first-aid and rehabilitation services to responders operating at the World Trade Center. MARS or the FDNY sent a large contingent of the volunteer ambulance corps in the City to the scene, staging areas, or to staff triage centers. The FDNY also requested that the volunteer ambulance corps bring additional medical equipment to the scene and to staging areas. For example, the Forest Hills Volunteer Ambulance Corps sent all of their spare supplies from their station to the scene.

Volunteers treated hundreds of patients as well as injured firefighters and transported them to area hospitals. Several of the corps, including Forest Hills and Broad Channel, had ambulances destroyed in the collapse of the towers. Other agencies reported losing equipment, ranging from oxygen cylinders to defibrillators, while operating at the World Trade Center.

As mentioned previously, an off-duty volunteer EMT from Virginia was killed when the Towers collapsed. He had been at work one block away and went to the scene to assist FDNY paramedics; his body was found several days later in a patient triage and treatment area. Some volunteers from the various volunteer ambulance corps in the city were injured in their response. Among those corps that had members hospitalized were the Jamaica Estates and Broad Channel Volunteer Rescue Corps.

Logistical Support – In response to requests for equipment from the New York City OEM, volunteers coordinated the collection of materials in the suburbs for transport to the City. These materials included bottled water, socks, gloves, flashlights, and batteries.

Recovery Operations Support – Volunteers worked on teams that dug through debris looking for victims and evidence. They worked with technical rescue teams and on USAR Teams to help shore-up the pile to prevent further collapse so that personnel could safely access the debris. Volunteers also helped initially with body recovery. As the incident progressed, other resources, including a Federal Disaster Mortuary Operational Response Team (DMORT), were assigned to body recovery.

Non-fire service volunteer agencies were also integral in supporting operations at the World Trade Center. In particular, the American Red Cross and Salvation Army responded to the disaster immediately, providing food, shelter and mass care for those affected. Volunteers in New York City were on-site 24 hours a day, 7 days a week, providing rescue workers and emergency workers with blankets, food and beverages. The Greater New York chapter of the Red Cross also operated several shelters in lower Manhattan, which were open to disaster workers and the general public. The Red Cross continued operations on the site until the conclusion of the recovery effort in May 2002.

Response by County – Since it is not possible to determine all of the individual agencies involved in World Trade Center operations, this section focuses on regional response, and includes examples of individual departments.

NEW YORK CITY VOLUNTEERS – New York City volunteers arrived on the scene prior to the collapse of Tower 1 of the World Trade Center. The Aviation Volunteer Fire Department, Broad Channel Volunteer Fire Department, and Richmond Volunteer Fire Department were the first volunteer departments to arrive on the scene. Their

assignments initially included rescue and emergency medical services. Eventually, all ten volunteer fire departments in the city backfilled FDNY firehouses for two days. Some backfilled FDNY stations for more than a week following September 11. This filled a very important role since so many FDNY engines were destroyed at the scene, as were an engine from Aviation VFD and an ambulance from Broad Channel.

Volunteers from the independent volunteer ambulance corps throughout New York City were also integral to the response. They provided additional EMTs, paramedics, ambulances, and emergency medical equipment to augment those of the FDNY. They also backfilled FDNY stations to ensure continuity of emergency services for several weeks after September 11. The *Queens Chronicle Newspaper* reported that these volunteers were “vital in augmenting overburdened city services.”

SUFFOLK COUNTY, NY – Suffolk County volunteers were sent to staging areas at the Belmont Racetrack in Queens and the Rockaways. Volunteers were deployed to the World Trade Center and to backfill FDNY stations in Queens. Several heavy rescue squads were assigned to the World Trade Center and provided lighting and extrication capabilities. Personnel response was large overall, with up to 80 members responding from Selden Fire Department and 60 members responding from Amityville Fire Department.

Suffolk County's Fire, Rescue and Emergency Services Commissioner Dave Fischler said that the county has a total of 109 fire departments and 27 emergency medical services agencies. Of that total, 81 fire departments – 80 percent of the total in the county – were involved in the rescue efforts in some way and 12 of the EMS agencies also participated. In addition to the volunteers themselves, the county sent 147 pieces of fire apparatus and 14 ambulances. An estimated 1,000 volunteer firefighters and EMS workers from virtually all of Suffolk's districts were on the scene with trucks and medical assistance within hours of the disaster, an enormous level of support.¹⁹

NASSAU COUNTY, NY – Like the Units from Suffolk County, Nassau units staged at the Belmont Racetrack, Shea Stadium, and in the Rockaways. Some units were assigned to backfill firehouses in Manhattan and Queens while others operated at the World Trade Center.

¹⁹ “Locals Rushed to the Rescue.” *Suffolk Journal*, September 19, 2001.

Approximately 100 members responded from the Manhasset-Lakeville Fire Department. Their efforts at Ground Zero included ventilating windows to prevent glass from falling on those assisting with the search efforts. Several departments including East Meadow Fire Department, Inwood Fire Department, Lawrence-Cedarhurst Fire Department, Malverne Fire Department, Manhasset-Lakeville Fire Department, and Meadowmere Park Fire Department backfilled stations in Queens. Woodmere Fire Department and Malverne Fire Department, among others, provided logistical support at the scene.

PUTNAM AND ROCKLAND COUNTIES, NY – Apparatus and personnel staged at the Westchester County Training Academy. In Rockland County, County officials picked from each station the rescue and utility trucks (with lighting, cascade, etc.) and other units to send to the Academy for staging.

WESTCHESTER COUNTY, NY – Units staged at the Valhalla Training Center and in Yonkers. Some were deployed to the World Trade Center while others backfilled fire stations in the Bronx.

Banksville Independent Fire Company responded to a basement fire while backfilling a station in the Bronx. The largest contribution in volunteer hours came from Lake Mohegan Fire Department and Mount Vernon Fire Department with 1,000 volunteer hours each over 6 days. Several departments including Greenville Fire Department, Katonah Fire Department, Millwood Fire Department, Pound Ridge Fire Department, Purchase Fire Department, South Salem Fire Department, Ossining Fire Department, Hastings-on-Hudson Fire Department, West Harrison Fire Department, Mamaroneck (Town) Fire Department, Fairview Fire Department, Pocantico Hills Fire Department, Banksville Independent Fire Company, and Hartsdale Fire Department all backfilled fire stations throughout the Bronx for as many as 8 days. Most, if not all, of the departments that backfilled for more than a day set up rotations of crewmembers with shifts lasting between 8 and 12 hours.

BERGEN COUNTY, NJ – Many apparatus staged at the George Washington Memorial Bridge before being sent to the World Trade Center. Other departments backfilled FDNY stations and several were involved in World Trade Center operations on the New Jersey side, which included decontamination of victims and searching through the debris at the Fresh Kills Landfills.

The East Bergen Mutual Aid Association²⁰ responded as a task force to a staging area at Battalion 16 (248 W. 143rd St.). The task force of five heavy rescues and five ladder companies included units from Fort Lee, Leonia, Tenafly, Edgewater, Englewood, Ridgefield, Fairview, Cliffside, and Palisades Park.

ESSEX COUNTY, NJ – Departments were involved in responses to the World Trade Center, backfilling of fire stations and decontamination operations at the train stations as victims made their exodus from the City that morning.

MIDDLESEX COUNTY, NJ – Middlesex apparatus was predominantly used to backfill FDNY stations throughout the City. Several departments including Arbor Hose Company, East Brunswick Fire District, Melrose Hose Company, Sayreville Fire Department, Perth Amboy Fire Department, New Market Volunteer Fire Company were all involved with operations at the World Trade Center to assist in search and rescue operations.

UNION COUNTY, NJ – Units staged and backfilled FDNY stations; others were deployed to the World Trade Center. Summit Fire Department decontaminated several hundred passengers arriving from Manhattan at the New Jersey Transit Rail Station.

OTHER NEW YORK AND NEW JERSEY DEPARTMENTS – Departments from throughout New York and New Jersey made their way to the World Trade Center disaster scene. Many of these departments were self-dispatched, while others were called for specific duties (e.g. the Brick Township Fire Department Critical Incident Stress Debriefing Team was called to the scene to assist FDNY, NYPD and Port Authority Police Department with grief counseling and Critical Incident Stress Management).

STATE OF DELAWARE – Governor Ruth Ann Minner declared a state of emergency for Delaware. Under a state of emergency, the Director of the Delaware State Fire School becomes the Fire Defense Coordinator and is to report to the Emergency Operations Center (EOC). The EOC was activated at approximately 1500 hours. Within the next half hour, the Delaware EOC was contacted by New Jersey Emergency Management, which requested ambulances to care for the large influx of injured parties from the World Trade Center collapse. Joe Muributo (Director of Delaware State Fire

²⁰ The Association was founded in 1947 and the departments involved provide mutual aid to one another on

School) received the request and contacted the three Delaware county emergency communications centers requesting they contact all ambulance providers to check on their availability to send ambulances to New Jersey to stage at the Meadowlands Sports Complex. All fire departments in the state were contacted and were advised not to provide an ambulance if the department only had one. (The State did not want to leave areas unprotected.) Many departments offered additional services, beyond providing ambulances (e.g., fire apparatus, firefighters, etc.) but New Jersey only requested ambulances and the departments were told not to send the additional services. In total, 47 ambulances from 35 volunteer departments and several private ambulance companies formed the Delaware ambulance task force; crews were assembled and responded in one-and-a-half hours.

Ambulances from departments in the two southern counties were told to assemble at the Delaware State Fire School (in Dover) where they would caravan to the hospital in New Castle County to join with the northern units. The ambulances had police escorts from the State Fire School to the hospital and again from the hospital to the Meadowlands. The caravan drove for 4 hours from New Castle County to the Meadowlands and arrived there at approximately 2300 hours. Muributo assembled relief crews that evening and worked with the state Department of Transportation to acquire several transit buses to have relief crews in New Jersey at 0700. It was arranged that these buses would be available for several days. The ambulances remained in staging until 0230 hours when it was determined that there would not be many more survivors crossing over to New Jersey (if any). The ambulances then returned to Delaware.

Use of Volunteer Equipment

In addition to the terrible human toll, the World Trade Center collapse destroyed over \$47 million in FDNY equipment alone. Numerous volunteer agencies also reported devastating equipment losses, ranging from entire units to small tools and medical equipment. FDNY equipment losses included the following:²¹

- 27 pumpers
- 18 ladders
- 10 ambulances
- 2 EMS Suburbans, used by roving supervisors, carry extra supplies

an as-needed basis.

²¹ "FDNY Suffers Huge Equipment Loss." *Firehouse.com*, October 5, 2001.

- 24 sedans, used by staff chiefs, Ford Crown Victoria or Chevrolet Caprice
- 17 Suburbans, used by battalion chiefs
- 2 heavy rescue units
- 1 tactical support rescue unit, provided a 9000-watt light tower, 25 KW generator, Stanley hydraulic system, 14 foot boat with motor
- 2 high-rise units, provided crash carts, electric light generators and one hour cylinders
- 4 step vans, provided Hazmat support
- 1 mask service unit containing 300 SCBA cylinders
- 2 road-side emergency trucks, provided truck repair capabilities
- 1 satellite unit with a 2000 gal/min pump and deck gun

Given the immediate need for extrication equipment in wake of the World Trade Center collapse, the volunteers' equipment as well as the volunteers themselves were crucial in World Trade Center operations. Numerous departments from all over the New York area reported deploying heavy rescue and technical rescue squads to staging areas and the World Trade Center. These included at least three heavy rescue squads from Nassau County and four from Suffolk County. Departments from throughout the region provided additional light trucks, engines, aerial devices, and other vehicles. Hanesport Fire Department and Burlington Township Fire Department provided lighting at the World Trade Center. Southampton Fire Department sent a lighting unit to stage at the Holland Tunnel. These units provided light for the rescue efforts on the evening of September 11 as well as tools for digging.

Long-Term Operations

Many volunteer departments in and around New York City remained "on alert" for up to a full week after the 11th, maintaining station staffing and providing emergency response.

As the World Trade Center site was secured and FDNY operations returned to "normal," volunteers were generally relieved by FDNY personnel or replaced by Federal assets. FDNY personnel were also assigned to the World Trade Center to continue rescue and later, recovery operations. However, volunteers continued to provide assistance to law enforcement at the Fresh Kills Landfill for several months after September 11. As mentioned previously, Red Cross volunteers continued to support operations through May 2002. The Red Cross will continue to provide support to victims' families for many months to come.

III. ROLE OF VOLUNTEERS IN THE OPERATIONAL RESPONSE TO THE PENTAGON

Volunteer firefighters and EMTs played an integral role in the response and recovery operations at the Pentagon. They contributed personnel, vehicles, and equipment to the early stages of the response, and many remained on the scene for over a week.

The role of volunteers was not limited to scene response. They also played a crucial role in backfilling fire stations that responded to the Pentagon to ensure continuity of emergency services around Arlington County and other jurisdictions neighboring the Pentagon. Within minutes of the attack, fire stations in Arlington County and other jurisdictions that neighbor the Pentagon were left empty, creating a temporary shortage of firefighters and EMTs in these areas. Volunteers left their jobs and reported to their fire stations to place additional fire engines, ambulances and special response vehicles into service.

Volunteer firefighters and EMTs were also deployed to fire stations around other high-risk targets such as federal buildings and military installations in case of secondary terrorist attacks. Due to the depletion of the resources of career firefighters and career firefighter department equipment in response to the Pentagon scene, many of the remaining firefighting units protecting the metropolitan Washington, D.C. area were owned and staffed by volunteers. Had there been other attacks, volunteer firefighters would have been the first responders.

Research during the course of this project found that 1,930 volunteer firefighters, EMTs, and administrative volunteers from approximately 80 volunteer fire and rescue organizations contributed nearly 30,000 hours of service²² in response to the September 11 attacks at the Pentagon.

Overall, the attack on the Pentagon demonstrated how a large scale incident or terrorist attack can rapidly deplete firefighting and emergency medical resources. Even though the Washington, D.C. area has a large number of career firefighters, it relied heavily on volunteer firefighters and volunteer-owned fire trucks and ambulances in both

scene response and backfilling of fire stations. Emergency managers found that while incidents of this magnitude do not happen often, they require the resources of both career and volunteer firefighters working jointly. By providing additional personnel on September 11, volunteer firefighters and EMTs in the Washington, D.C. area played a role somewhat similar to that of military reservists.

Pentagon Timeline of Events²³ and Map of Area

Tuesday, September 11, 2001

- 0810 American Airlines Flight 77 departs Washington Dulles Airport bound for Los Angeles.
- 0935 Air Force scrambles two F-16 fighters from Langley Air Force Base, VA.
- 0938 Arlington County Fire Department (ACFD) Engine 101 sees a plane in a steep descent.
- 0940 American Airlines Flight 77 crashes into the west side of the Pentagon.
- 0941 ACFD engine company radios to report airplane has hit Pentagon. ACFD initiates response to Pentagon.
- 0944 Page is sent to ACFD volunteer paging system requesting all available volunteers to report to their stations. Off-duty career firefighters also called back.
- 0945 Arlington County Emergency Communications Center (ECC) begins calling other jurisdictions to request additional fire and EMS support. Metropolitan Washington Airports Authority firefighting and foam units from Reagan National Airport respond to Pentagon.
- 0955 Scrambled fighter jets reach Washington, D.C. area.
- 1000 Arlington County and neighboring jurisdictions activate emergency operation centers. Federal Emergency Management Agency alerts USAR teams for imminent dispatch to terrorist attack scenes.
- 1010 A section of the west side of the Pentagon collapses.
- 1130 Arlington County declares a state of emergency.
- 1300 Rescuers are finally able to enter the impact area; USAR team from Fairfax County, VA reaches the scene.
- 1327 A state of emergency is declared by the city of Washington.
- 1400 USAR team from Montgomery County, MD arrives at Pentagon.

Wednesday, September 12, 2001

- 1500 Fires in the building are finally contained.
- 2115 Fire rekindles in the area of the collapse zone. ACFD dispatches full response to scene.

²² The total hours include scene response, backfilling of fire stations, and standby at fire stations in preparation for secondary attacks or possible scene deployment.

²³ NVFC Research; *Firehouse Magazine*; "Chronology of Terror," CNN.com; FEMA Press Releases; Associated Press.

Thursday, September 13, 2001

1200 USAR team from Virginia Beach/Tidewater, VA arrives at scene.

Friday, September 14, 2001

Early a.m. Both black boxes from aircraft are recovered at Pentagon and sent to National Transportation Safety Bureau lab for analysis.

Tuesday, September 18, 2001

NA USAR teams from Montgomery County, MD, Fairfax County, VA return home from Pentagon and are replaced by a USAR team from New Mexico.

Friday, September 21, 2002

0700 ACFD transfers authority of Pentagon incident scene to the FBI.

Figure 4: Map of Metropolitan Washington, D.C. Area



The Organization of Fire and Rescue Services at Pentagon and in Metropolitan Washington, D.C. Area

This section provides an overview of the organization of fire and emergency medical protection at the Pentagon and within the metropolitan Washington, D.C. area and how volunteers fit into the system. It focuses on the Arlington, VA, fire department as it was the jurisdiction in which the attack occurred. When Flight 77 crashed into the Pentagon, however, the regional system responded with volunteer and career firefighters and EMTs from Virginia, Maryland, and the District of Columbia.

The Pentagon sits on a 34-acre complex located in Arlington, VA, just one mile outside of Washington, D.C. Approximately 23,000 military and civilian personnel work there. Fire and emergency medical services are provided primarily by the Arlington County Fire Department (ACFD) and units from the Fort Myer Fire Department, which serves an army post adjacent to the Pentagon. The Pentagon has several internal strike teams to respond to emergencies, but relies on these fire departments to back them up.

The ACFD has 10 stations and 300 career personnel supplemented by 35 operational volunteers and approximately 35 administrative volunteers who function out of seven volunteer companies.²⁴ The volunteers ride on county-owned apparatus as supplemental firefighters and EMTs to augment the minimum assigned career staff. They also own several volunteer units, including an engine, two ambulances, a light and air unit, a canteen unit, and several utility vehicles, to augment the county's fleet. Volunteers staff these units to provide extra emergency response capabilities during periods of high emergency call demand or during major incidents. Volunteers in Arlington County and other jurisdictions throughout the Washington, D.C. area are trained to nationally recognized standards, and many are cross-trained as firefighters and EMTs.

ACFD has automatic and mutual aid agreements with other jurisdictions in Northern Virginia as well as with jurisdictions in the metropolitan Washington, D.C. area. These agreements allow it to summon additional resources as necessary. Through the agreements, Arlington was able to request the assistance of a large number of departments on September 11 from the jurisdictions listed in Table 4. Volunteer and

career firefighters from each of these jurisdictions were summoned to help at the scene and with backfilling of fire stations, though not all of the volunteer departments in each jurisdiction participated directly in Pentagon operations. The coordinated and cooperative effort of many individual fire departments from across the region enabled a comprehensive response to the Pentagon while ensuring that normal fire and EMS operations continued throughout the area.

Combination fire-rescue departments also protect most of the counties and cities in and around Arlington; an exception is the District of Columbia, which is all career. Combination departments can be found in Fairfax, Prince William, and Loudoun Counties in Virginia as well as in Montgomery, Prince George's, and Frederick counties in Maryland. There are also combination departments in the cities of Fairfax, Falls Church, and Alexandria. The level of volunteer participation varies by jurisdiction and by department. In some cases, volunteers are the primary providers of fire-rescue service. In others, as in Arlington, career personnel are the primary responders and are supplemented by volunteers. Even in these jurisdictions, however, there are individual departments that are staffed predominantly by volunteers.

²⁴ The seven volunteer companies in Arlington County include the volunteer company in the City of Falls Church, VA, which is an operational entity of the Arlington County Fire Department.

Table 4: Mutual Aid Jurisdictions with Volunteer Departments in the Washington, D.C. Metropolitan Area

State	Jurisdiction	Number of Volunteer Departments
Virginia	Arlington County	6
	Alexandria City	1
	Falls Church City	1
	Fairfax County	12
	Loudoun County	17
	Prince William County	12
	Fairfax City	1
	Metropolitan Washington Airports Authority	No Volunteers
Maryland	Prince George's County	40
	Montgomery County	19
	Frederick County	25
District of Columbia	–	No Volunteers
Totals		Virginia: 50 Maryland: 84

Note: This table lists all of the jurisdictions that were requested by Arlington County to send units to the Pentagon. Not all of the volunteer departments listed in this table were dispatched to the scene; however, volunteers from each of these jurisdictions were activated in preparation for possible deployment or in preparation for a possible secondary attack.

Initial Hours of Incident

At about 0938 on September 11, an ACFD engine company traveling down a road adjacent to the Pentagon witnessed American Airlines Flight 77 enter into a steep descent and disappear over the horizon. The engine company immediately radioed the county's Emergency Communications Center (ECC) to request a full response for a plane crash in the vicinity of the 14th Street Bridge.

A firefighting crew based at the Fort Myer Army military post witnessed the plane crash into the Pentagon while performing daily maintenance checks on their foam unit only several hundred away. The crew was assigned to the Pentagon on the morning of September 11 to stage for military helicopter landings. When the plane crashed, both firefighters narrowly escaped the ensuing fireball. Their firefighting vehicles were so damaged by the explosion on impact that the firefighters were unable to use them.

Within ten minutes, ACFD had deployed nearly all of its on-duty resources to the scene. It also dispatched units from neighboring jurisdictions through its automatic aid

system. Under an automatic aid agreement, the closest available units are sent to the scene, regardless of jurisdiction boundaries.

In the early stages of the incident, it was unclear how large a fire and EMS response would be necessary. Due to the size and layout of the Pentagon, which has five concentric rings of offices, firefighters had a difficult time sizing-up the extent of fire involvement. The Incident Commander from ACFD assumed the potential for many injuries and requested a large complement of EMS units. As a result, the Arlington County emergency communications center called several of the adjacent jurisdictions to request support. Support was also requested from farther out jurisdictions in Virginia and Maryland.

While most of the fire and EMS responders who arrived in the first hour were career personnel, there were some volunteers as well. These volunteers were riding as supplemental firefighters or EMTs on primarily career-staffed units. Several of the initial Arlington engine companies had volunteer firefighters aboard who augmented the career staff. Since the attack occurred during the workday, many volunteers were at their job sites; however, within an hour after the attack, many volunteers had reported to their fire stations.

ACFD continued to request additional support after the first hour, and in the ensuing 12 hours, approximately 100 volunteer firefighters and EMTs were dispatched to the scene.²⁵ Some of the volunteers responded along with career personnel on fire engines and ambulances, while others brought volunteer-owned firefighting and EMS apparatus that were staffed entirely by volunteers.

Activation, Notification and Dispatching Of Volunteers

Many volunteers in the Washington D.C. area were at work when Flight 77 crashed into the Pentagon and many first learned about the attack through television or radio reports. Volunteers also received word of the attack through alphanumeric paging

²⁵ Due to the size of the response by fire and EMS personnel from multiple jurisdictions to the scene, it was impossible during the course of research to determine the exact number of volunteer or career personnel who responded. This figure is an estimate from reports by volunteer departments. In actuality, the estimate may be low since some departments did not respond with information during the course of research.

systems. (Most of the volunteer fire departments in the area have alphanumeric paging systems that allow them to send out one page to a group of volunteers.)

The volunteers in Arlington County were immediately requested to report to their stations. Other jurisdictions also rapidly summoned volunteers to report to their fire stations even if they did not have a specific assignment for them, just to augment their capabilities and assume a higher readiness position.

The overall recall of volunteers throughout the metropolitan Washington, D.C. area was a proactive response by governments to both a potential need for additional responders to the Pentagon and the possibility of secondary attacks. In addition, there were reports of suspicious packages at various government installations, a car bomb at the State Department in D.C., and reports that additional aircraft were inbound toward the Pentagon.²⁶

In the interest of maintaining public safety and gearing up for other potential attacks, a “state of emergency” was declared in several jurisdictions, including Arlington County, VA, and Washington, D.C. Many of the jurisdictions in the Washington Metropolitan area activated their Emergency Operations Centers (EOCs). Emergency plans were implemented that automatically called for the notification and activation of all available volunteer firefighters and EMTs.

The official notification and dispatching of units to the scene generally occurred in an organized method by the Arlington County ECC (ACECC). Early in the incident, at about 0942, the ACECC Administrator contacted the Fairfax, Alexandria and District of Columbia fire departments. He requested each department stage a task force of 4 engines, 2 trucks, 1 rescue squad, 4 EMS units, and a Chief Officer just outside the Pentagon and await further instructions. Later in the incident, ACECC received requests from the Incident Commander for additional resources. Initially, companies from other jurisdictions were requested through the automatic aid system. Under this system, the closest fire department unit to the emergency scene is dispatched by the ACECC regardless of jurisdictional boundaries or type of emergency.

²⁶ Firefighters at the Pentagon were evacuated four times on September 11 following reports from federal law enforcement agencies of unidentified aircraft in the skies around the Pentagon. These evacuations hindered fire suppression efforts and adversely affected morale on the fireground.

As automatic aid resources were depleted, the ACECC worked to locate additional resources and send them to the scene. The ACECC requested support from departments that traditionally do not usually operate on a daily basis with Arlington (e.g., the District of Columbia, Loudoun and Prince William Counties in Virginia, and Montgomery and Prince George's Counties in Maryland), but which were available through the Metropolitan Washington Council of Governments' Mutual Aid Agreement. The ACECC called these jurisdictions' Emergency Operations Centers (EOCs) to request assistance. The EOCs determined what units it could provide and dispatched those units to staging area as requested by the ACECC (e.g., to the Pentagon, to backfill a particular station, etc.).

There were some volunteer firefighters and EMTs who "self-dispatched" to the scene by virtue of the fact that they worked at the Pentagon.²⁷ Several even had their firefighter's protective clothing in their personal vehicles parked at the Pentagon. These "off-duty" volunteers were among the first responders to the Pentagon and assisted in evacuation of the building and treatment of victims. Generally, however, volunteers did not self-dispatch to the Pentagon in their personal vehicles. Rather, the majority of volunteers responded on units that were requested by the Incident Commander through dispatch. As a result, there were many fewer vehicles to deal with on the congested roads and grounds surrounding the Pentagon.

Volunteers interviewed for this report also noted the importance of cellular phones and Nextel devices in the activation, notification, and deployment process. However, there were limitations to cellular phones at the scene due to an over demand on cellular antenna sites around the Pentagon. This situation was later resolved by the installation of portable cellular antenna sites around the Pentagon by various cellular carriers. Nextel devices (cellular phones that also function like two-way radios) also proved valuable for responders, as they were able to communicate directly with one another on the scene and coordinate with resources elsewhere in the region.

Volunteer units that were requested to backfill stations in and around Arlington County were subsequently dispatched to other emergency calls by Arlington County's ECC. This process, for the most part, went very smoothly because most of the jurisdictions in Northern Virginia use 800 MHz radio systems. This allows personnel to

simply change the channel or “talkgroup” on their radio to allow them to communicate with units or dispatchers from other jurisdictions. It also eliminates the lag associated with units waiting to receive instructions while dispatchers coordinate response between dispatch centers via telephone. A few of the volunteer units that backfilled or responded to the scene did not have 800 MHz radios. They either relied on messages relayed through dispatchers or over the telephone, or they borrowed spare portable 800 MHz radios from other jurisdictions.

Challenges – As at the World Trade Center, some units and jurisdictions bypassed standard operating procedures to respond to the Pentagon. In some cases, these units provided valuable personnel and equipment in the early minutes of the incident. In other cases, however, these personnel operated outside of the control of the Incident Commander, complicating the response effort. Also, the Arlington County After Action Report on the Pentagon cited radio communications as a serious problem in the first hours of the incident. Radio communications were “overloaded and ineffective,”²⁸ necessitating the use of alternative methods to relay information, including foot messengers, pagers, and Nextel phones. In part, this was a result of the Pentagon’s construction, which interfered with radio signals, as well as the sheer volume of radio traffic.

The activation and mobilization of volunteer firefighters and EMTs were hampered by traffic and security lockdowns around the city. The response of some volunteers who worked in Washington, D.C. was delayed by traffic congestion. Within minutes of the attack on the Pentagon, the White House and many other federal buildings were evacuated. As people left the city, volunteers found themselves in traffic, which was gridlocked in certain areas. Streets around some federal buildings were closed for security purposes, creating more traffic problems. Several volunteers who worked on military bases reported being unable to leave the bases because of security lockdowns. They had to work through traffic congestion on the base to reach military police officers. After identifying themselves, the officers let them leave the base. These impediments delayed the mobilization of some volunteers by as much as two or three hours.

²⁷ Because of their location at the time of the attack and the duty of firefighters to render aid at an emergency, they were considered an exception to the regional policies against self-dispatching.

²⁸ Titan Systems Corporation. *Arlington County After Action Report on the Response to the September 11 Terrorist Attack on the Pentagon*. July 2002.

The mobilization of volunteers was also affected by their job responsibilities. Some volunteers who worked for the FBI, military, law enforcement, or hospitals were required to remain on the job and were unable to respond. In one case, a volunteer Chief was unable to respond to his station for several days because he was needed at work. In a non-terrorist-related incident, many of these individuals would have been able to leave work; however, given the unique security issues and fears created by a terrorist attack of this scale, these individuals were required to remain at work.

Role of Volunteers in Response to the Attack on the Pentagon

Volunteer firefighters and EMTs performed a variety of services in response to the attack on the Pentagon. Their duties included firefighting, rescue, emergency medical support, overhaul, logistical support, command support, urban search and rescue, shuttling of equipment and personnel, backfilling of fire stations, setting up emergency shelters, operating emergency operations centers, and coordinating food donations. Two volunteer groups primarily participated in the effort: active firefighters/EMTs and support/administrative workers, who often are retired volunteer firefighters. Table 5 lists many of the volunteer units that responded and examples of the tasks they performed.

Volunteers served in these roles for anywhere from several hours to 10 days. Their roles were integral to the response at the Pentagon and essential to ensure the continuity of fire and emergency medical services in the metropolitan Washington, D.C. area while Pentagon incident operations continued. Volunteer firefighters and EMTs provided nearly 30,000 hours of service in response and recovery.²⁹

In many ways during the incident, volunteer firefighters and EMTs served as a ready reserve force to augment the services provided by career firefighters. Just as the military relies on its reserve personnel during times of war, the communities in the Washington, D.C. area relied on volunteers to provide additional manpower in the wake of this attack. For example, as the firefighting efforts continued on September 11, ACFD asked for additional support from the District of Columbia Department of Fire and Emergency Medical Services (DCFD). The DCFD had already sent a two-alarm

²⁹ This number includes hours at the scene, backfilling at fire stations, and providing other support. It is derived from interviews with fire departments across the metropolitan Washington, D.C. area. Researchers were unable to get total hours from all of the volunteer fire departments that were involved, so this figure is considered a lower bound estimate of volunteer participation.

response to the scene and was backfilled by volunteer companies from Maryland, so it was forced to send the volunteer and career companies from Maryland that were filling in.

Table 5: Jurisdictions with Volunteers that Responded to the Pentagon

County/City	Types of Department	Estimated # of Volunteers Activated ³⁰ on Sept. 11	Estimated # of Hours Logged by Volunteers	Primary Duties Performed by Volunteers
VIRGINIA (4 counties, 5 cities, 53 departments)				
Alexandria (City)	Combination	6; 2 to the Pentagon	200	Volunteers augmented career staff on medic units that responded to the Pentagon. One volunteer served as assistant emergency operations center director.
Arlington County and Falls Church (City) (one department serves both jurisdictions)	Combination	70; 38 to the Pentagon	1,755	Scene response to Pentagon and backfilling of Arlington fire stations. At Pentagon, performed firefighting, assisted with EMS triage/treatment/rehab. Supported fire operations and USAR teams with Light and Air Unit, shuttling of personnel and equipment. Provided all roof lighting. Set up and managed operations to remove thousands of gallons of water from the Pentagon. Provided food and shuttled supplies to scene. Volunteers remained on scene for 10 days. Also backfilled stations with volunteer-staffed ambulance and volunteers riding as additional firefighters on county fire apparatus.
Fairfax (City)	Combination	20; 5 to the Pentagon	200	Volunteers augmented career staffing on engines sent to backfill fire stations in Fairfax and Arlington Counties. The Arlington station was backfilled for 6 days. Volunteer members served as aide to career command level officer at Pentagon. Upstaffed all volunteer equipment in city in the event of further attacks.
Fairfax County	Combination	350; 30 to the Pentagon	4,137	Scene response to Pentagon and backfilling of fire stations in Arlington and Alexandria. At Pentagon, performed firefighting, assisted with EMS triage/treatment/rehab, logistics. Supported fire operations and USAR teams with canteens and light and air units. Backfilled 2 Arlington stations and 1 Alexandria station with volunteer engines for five days. In total, volunteers placed in service 11 engines, 7 ambulances, 1 medic unit, multiple utilities, 3 canteen units, 3 light/air units, one battalion chief. Augmented career staffing on front line units. Also provided administrative assistance and canteen at county EOC.

³⁰ Activated volunteers include those who responded to the Pentagon, backfilled fire stations, or who were placed on standby at their home fire stations in the event of a secondary attack.

County/City	Types of Department	Estimated # of Volunteers Activated ³⁰ on Sept. 11	Estimated # of Hours Logged by Volunteers	Primary Duties Performed by Volunteers
Loudoun County	Combination	400; 25 to the Pentagon	Approx. 9,000	Scene response to Pentagon and backfilling of fire stations in Arlington, Fairfax, Alexandria, and Dulles Airport. At Pentagon, performed firefighting, assisted with EMS triage/treatment/rehab. Volunteers remained on scene for 2.5 days. Backfilled stations with volunteer staffed ambulances; backfilled Arlington station with Heavy Rescue Squad. Upstaffed all volunteer equipment throughout county in the event of further attacks and to protect federal installations in county.
Prince William County (Including the cities of Manassas and Manassas Park)	Combination	800; 75 to the Pentagon	Approx. 1,500 at Pentagon; approx. 10,000 overall	Scene response to Pentagon and backfilling of fire stations in Arlington and Fairfax. Sent collapse task force comprising 1 squad, 1 ladder, 1 ambulance and 2 chiefs to Pentagon, plus other units to staging. At Pentagon, performed firefighting, roof ventilation, assisted with EMS triage/treatment/rehab (provided 4 ambulances on scene), logistics. Ten volunteers staffed logistics section for 4 nights. Supported fire operations and USAR teams with light and air unit for 5 days. Backfilled Arlington stations with 1 BLS and 4 ALS ambulances. Backfilled 6 stations in Fairfax with engines and ambulances for 4 days. Upstaffed all volunteer equipment throughout county in the event of further attacks.
MARYLAND (3 counties, 26 departments)				
Frederick County	Combination	6 to the Pentagon	100 at Pentagon	Scene response to Pentagon with 1 ladder truck from Woodsboro Volunteer Fire Dept. Assisted with firefighting operations.
Montgomery County	Combination	250; 29 to the Pentagon	Approx. 4,000	Scene response to Pentagon and backfilling of fire stations in Arlington and District of Columbia. Sent 2 BLS and 2 ALS ambulances, 1 engine, 1 air truck, 2 chiefs to the scene. At Pentagon, performed firefighting, roof ventilation, assisted with EMS triage/treatment/rehab, logistics. Supported fire operations and USAR team from Montgomery County for 7 days. Backfilled Rockville station (USAR station) with volunteers for 7 days while career personnel on USAR team were at Pentagon. Backfilled Arlington stations with 2 ALS ambulances; backfilled D.C. stations with 2 ALS ambulances, 2 BLS ambulances. Augmented career staffed units and volunteer equipment throughout county in the event of further attacks. Volunteer ALS ambulance did standby detail for landing of President Bush's helicopter at the White House on evening of Sept. 11.

County/City	Types of Department	Estimated # of Volunteers Activated ³⁰ on Sept. 11	Estimated # of Hours Logged by Volunteers	Primary Duties Performed by Volunteers
Prince George's County	Combination	30 to the Pentagon	300 at Pentagon	Scene response to Pentagon and backfilling of fire stations in District of Columbia. Sent 4 engines, 1 tower, and 2 chiefs to the scene. At Pentagon, performed firefighting in inner core section for 8 hours and roof ventilation. Backfilled D.C. stations with 5 engines. Upstaffed all volunteer equipment throughout county in the event of further attacks and to protect federal installations in county.
TOTALS				
7 Counties 5 Cities	79 Departments	240 Volunteers to the Pentagon; 1,932 Volunteers in Total*	29,692 Hours of Service	
*Estimates based on interviews with participants from the responding departments. It is possible, however, that additional volunteers could have been involved in operations at the Pentagon so this number should be considered a lower bound for volunteer participation. This number includes operational and administrative volunteer members who assisted with scene response, backfilling of fire stations, or in-station administrative duties such as coordinating donations or shuttling personnel to the scene.				

FIREFIGHTING – Approximately 300 career and volunteer firefighters initially teamed up to render medical aid and battle the blaze, which took over six hours to control and was particularly intense because of the jet fuel from the plane. Volunteer firefighters helped with exterior roof and interior fire attack. They assisted with ventilating the structure, opening up burning sections of the roof, and removal of burning debris from the building. They also helped establish water supply from the multiple hydrants that were used by hand-laying hose lines and operating pumpers. Thirty volunteers from Prince George’s County, MD were assigned by the incident commander to an interior sector of the Pentagon and battled the fire for over 6 hours. Suppression efforts continued well into September 12th, and units had to return to the scene on the evening of September 12 to extinguish a rekindle. Volunteers also served on rapid intervention teams, which are placed on standby to assist rescue firefighting crews who get trapped or injured.

FIREFIGHTING SUPPORT – Volunteers worked in a number of ways to support firefighting operations. They helped to refill breathing air bottles and set up lighting on the interior and exterior of the building, including all of the lights on the roof. Volunteers operated trucks that provided air power for pneumatic tools used to break up debris in search of victims and evidence. They helped to run generators, which powered the lights and many tools. Volunteers also worked to remove smoke from the structure using fans and other ventilation tools.

OVERHAUL – Volunteers assisted with the difficult task of removing burning debris from offices in the Pentagon, cutting holes in walls to search for hidden fires, and extinguishing small fires after the major body of fire was controlled.

COMMAND SUPPORT – Although most of the command of the incident was handled by career firefighters, volunteers supported the command staff in a number of ways. The volunteers from Arlington shuttled command staff to and from the scene. Several volunteers from the Fairfax City (VA) Volunteer Fire Department served as the aide to the Incident Commander when command was rotated to a Fairfax City Chief. Volunteer chief officers from various outlying jurisdictions including Prince William and Loudoun counties in Virginia also helped command officers with managing the distribution of incoming firefighting units and personnel.

EMERGENCY MEDICAL SERVICES – Volunteer firefighters and EMTs provided emergency medical support. Volunteers worked with career firefighters to staff the triage, treatment, and transportation sectors. On September 11, they brought ambulances and additional caches of EMS supplies to the scene. They also provided additional staffing on career medic units sent to the scene. As an example, several primarily career staffed medic units from Fairfax County, VA responded to the scene with two additional volunteer EMTs and paramedics on board. Volunteers also staffed rehabilitation areas where firefighters would go for rest and medical evaluation. For over one week after September 11, volunteers staffed first aid tents to support recovery operations.

LOGISTICAL SUPPORT – Volunteers provided a wide range of logistical support. This included helping with inventorying equipment at the scene, transporting equipment to the scene, and purchasing special equipment. On September 11, volunteers from Arlington purchased dry socks for firefighters and picked up additional radios and radio batteries since many of the batteries died as operations continued. They also helped to repair several vehicles that experienced mechanical problems. From September 11-14, 10 volunteers from Prince William County rotated with career personnel in the Logistics Division (the volunteers took the evening shifts while career personnel handled the daytime).

DECONTAMINATION – Volunteers participated in decontamination operations as firefighters exited the structure. There were conflicting reports over asbestos contamination during fire suppression as well as salvage and overhaul efforts. For those personnel (volunteer and career) that worked to recover bodies, there was additional concern over exposure to biohazards.

RECOVERY OPERATIONS SUPPORT – Volunteers worked on teams with career firefighters and military personnel that dug through debris looking for victims and evidence. They worked with technical rescue teams and with USAR teams to help shore-up the Pentagon structure to prevent further collapse to ensure evidence teams could safely gain access to sift through debris. Volunteers also helped initially with the removal of bodies of victims. This task was later assumed by the military.

STAGING – Arlington County Fire Department administrative volunteers helped staff and operate a remote staging center set up at a school for personnel who responded

to the Pentagon. This center was also a shelter with cots and food for personnel who were awaiting to be sent to the Pentagon or who had returned from service there.

Backfilling of Fire Stations

One of the most critical tasks performed by volunteers on September 11 was the backfilling of fire stations. Immediately following the attack and for several days thereafter, volunteer firefighters and EMTs staffed career fire stations in Arlington, Alexandria, and Fairfax in Virginia and the District of Columbia.

Each of the close-in jurisdictions' firefighting and EMS resources were depleted very quickly on September 11. To ensure continuity of services, volunteers from these jurisdictions (except the District of Columbia which does not have volunteers) responded to their stations to staff reserve apparatus. In addition, volunteers from outlying counties were shifted closer toward Arlington, Alexandria, Fairfax, and the District of Columbia to fill stations in these jurisdictions.

The ACFD was most affected by the attack since nearly its entire fleet was sent to the Pentagon. Arlington County fire stations were filled by a combination of volunteer and career units in what was called the "most unimaginable fill-ins ever in the history of the Washington, D.C. area." These units came from as far as 40 miles away from Fairfax City, Loudoun, Fairfax and Prince William Counties in Virginia, and Montgomery County, MD. Arlington County volunteer fire-rescue personnel served as guides for these fill-in units to provide directions to emergency calls. Backfilling continued through September 15.

Arlington County volunteers also worked with recalled career firefighters to provide staffing at some of the fire stations in Arlington for three to four days following the attacks. As a result of the contribution of volunteers, fire and emergency medical services were nearly uninterrupted in the jurisdictions closest to the Pentagon.

In Fairfax County, VA, 350 volunteers responded to their stations to staff the reserve volunteer units. They placed in service 11 engines, 7 ambulances, 1 medic unit, multiple utilities, 3 canteen units, 3 light and air units, and one battalion chief. They also augmented career staffing on front line units. This depth of coverage allowed Fairfax

County to send many of its career firefighters to the Pentagon and even to backfill stations in Arlington. Loudoun County, VA volunteers assisted Fairfax.

Alexandria, VA was backfilled by a combination of volunteer and career firefighters from Fairfax County, VA.

In Prince William County, VA, over 800 volunteers upstaffed stations, placing all 192 pieces of emergency apparatus in the county in service (all front line units plus reserves). All but two of the volunteer departments from Prince William provided apparatus to backfill Arlington and Fairfax County fire stations. They backfilled at some stations through September 14. Prince William and sent four ALS ambulances and one BLS ambulance to backfill Arlington County, VA fire stations. They also backfilled six Fairfax County, VA, fire stations with engines and ambulances.

In Loudoun County, VA, volunteers upstaffed their stations, sent units to the scene, and sent two ALS ambulances and one heavy rescue squad to Arlington County to backfill. They also activated a disaster task force in Fairfax County, VA, and filled several Fairfax County fire stations. Loudoun County volunteers also assisted with backfilling the fire station at Dulles International Airport (the airport of origin for Flight 77; Dulles Airport is located in Loudoun.) The volunteers teamed up with rookie career firefighters to staff the airport's fire stations because airport firefighters were deployed to the Pentagon and were also tied up in the days after September 11 responding to anthrax scares at the airport.

The District of Columbia relied heavily on volunteer companies from Montgomery and Prince George's counties in Maryland to backfill. In fact, at one point, companies in the District were so depleted that when Arlington requested additional assistance, the District could only deploy Maryland volunteer companies to the Pentagon.

When President Bush returned to the White House via helicopter on the evening of September 11, a volunteer paramedic unit from Wheaton Volunteer Rescue Squad in Montgomery County, MD served as the standby ambulance for landing. (Wheaton is approximately 20 miles from the White House.)

Use of Volunteer Vehicles and Equipment During Response

Volunteer fire departments across the Washington, D.C. area own a large number of emergency vehicles, both front-line and reserve, which are outfitted with highly specialized equipment. These vehicles were staffed by volunteers on September 11 and responded to the scene or were placed on standby in fire stations, ready to answer other emergency calls.

The availability of volunteer emergency response vehicles was integral to the Pentagon response and to maintaining public safety throughout the metropolitan Washington, D.C. area. Without these units, fire departments would not have been able to backfill stations as widely as they did, nor would they have been as prepared for possible secondary attacks or other emergencies.

Among the major jurisdictions in the Washington, D.C. area, Fairfax, Loudoun, Prince William, Prince George's, and Montgomery counties and the cities of Fairfax and Falls Church, all have a significant amount of equipment owned by volunteer corporations. For example, in Fairfax City, VA, the volunteers own all of the equipment, including engines, ambulances, and a foam unit. Montgomery County, MD volunteers own approximately one-third of the fire and EMS apparatus. Fairfax County, VA volunteers own 40 percent of the fire engines and 50 percent of the ambulances. Volunteers own nearly all of the fire engines, ambulances, and emergency support vehicles in Prince William and Loudoun counties. Volunteer departments also own nearly all of the canteen units in the metropolitan D.C. area. (These units are used for firefighter rehabilitation and to provide food and drinks for personnel operating on the scene of an incident).

Some of the volunteer fire departments found that they had more personnel available to assist on September 11 than vehicle seats that could carry them. Following the incident, some departments, such as the Kensington Volunteer Fire Department in Montgomery County, MD decided to expand their reserve fleets. One volunteer chief said, "I don't think it's a question of if D.C. will get attacked again, it's a question of when. And when that happens, I want to make sure that my department has enough vehicles to respond in."

During the firefighting operations at the Pentagon, there was a need for ladder trucks, particularly ladder trucks called “towers” that have cherry-picker style baskets at the end of the ladders. ACFD only had one tower. The others used were called in from career and volunteer departments across the area. The Woodsboro Volunteer Fire Department in Frederick County, MD, over 60 miles from the Pentagon, was requested to bring a special ladder truck to the scene which could fit through a tunnel into the inner courtyard of the Pentagon.

There was also a need for Light and Air units. The Cherrydale Volunteer Fire Department in Arlington and volunteer departments from Woodbridge, VA provided light and air trucks on the scene for many days. ACFD also needed additional heavy rescue squads, which carry equipment to stabilize structures that have collapsed. The Occoquan-Woodbridge-Lorton (OWL) Volunteer Fire Department provided a rescue squad and collapse task force for three days.

Utility vehicles (which are generally sport utility vehicles and pickup trucks) were in heavy demand to transport personnel, supplies, and equipment. The volunteer fire departments in the D.C. area tend to have a large number of utility vehicles. Volunteer fire companies in Arlington supplied three utilities, including one that was used as a frontline EMS supervisor’s vehicle for five days.

Had Flight 77 struck a different section of the Pentagon that was not partially closed for renovation, there would have been more injuries and a greater need for ambulances. Had this happened, many more of the volunteer units would have been summoned to the scene. Fortunately, volunteers were standing by in fire stations throughout the D.C. area staffing ambulances, many within an hour of the attack. From an emergency medical standpoint, the availability of volunteer ambulances demonstrated a high level of readiness and depth of resources.

IV. ROLE OF VOLUNTEERS IN THE OPERATIONAL RESPONSE TO THE CRASH OF UNITED AIRLINES FLIGHT 93

The third terrorist attack on September 11, 2001 was the crash of United Airlines Flight 93 (UAL 93) in Stoneycreek Township, Somerset County, PA. Unlike the New York City and metropolitan Washington, D.C. area, the crash of UAL 93 occurred in an area almost exclusively protected by volunteer fire-rescue personnel. Differing from the events at the Pentagon and the World Trade Center, the crash of UAL 93 in Stoneycreek Township did not occur in a large population center with the attendant loss of life and property. The response to the crash and the loss of life of the airline employees and passengers nonetheless required significant resources from the surrounding volunteer fire departments.

Following the attacks at the World Trade Center and the Pentagon, air traffic controllers and officials at the John Murtha Johnstown-Cambria County Municipal Airport quickly ascertained that another plane was off-course and not responding to radio communications. The aircraft, UAL Flight 93, was headed toward the small airport in rural Pennsylvania; officials quickly moved to lock down the airport and evacuated the air traffic control tower for fear UAL Flight 93 would hit it.

Volunteer firefighters and EMTs were the primary responders in the UAL 93 incident and fulfilled all fire-rescue roles in the initial response to the crash. They contributed personnel, vehicles, and equipment from the early stages of the response, and many remained on the scene after Federal personnel arrived.

Research during the course of this project found that over 55 volunteer firefighters, EMTs, and administrative volunteers from 10 volunteer fire and rescue organizations contributed at least 1,500 hours of service³¹ in response to the UAL 93 incident.

³¹ The total hours include scene response, backfilling of fire stations, and standby at fire stations in preparation for secondary attacks or possible scene deployment.

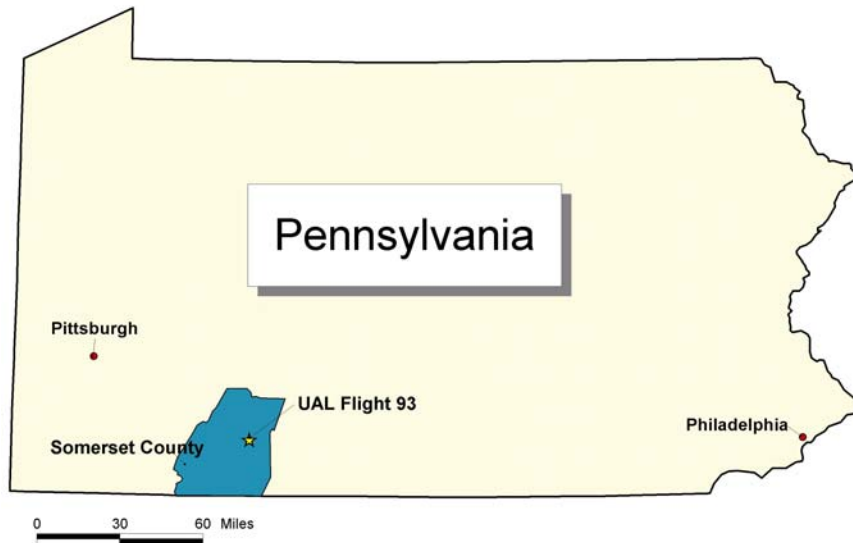
UAL 93 Timeline of Events^{32,33} and Map of Area

Tuesday, September 11, 2001

- 0842 UAL Flight 93 – a Boeing 757 – takes off from Newark, NJ for San Francisco, CA with 45 people (38 passengers, 2 pilots and 5 crew members) aboard, after being delayed 41 minutes from its scheduled 0802 take-off.
- 0900 United Airlines warns all aircraft of the potential of cockpit intrusion. It advised all pilots to take precautions and barricade cockpit doors.
- 0916 FAA informs NORAD that UAL Flight 93 may have been hijacked
- 0920 Passenger Tom Burnett calls wife and reports that UAL Flight 93 has just been hijacked.
- 0930 Pilot Jason Dahl radios air traffic controllers requesting information about reports of trouble on the East Coast. Moments later, screams are heard in the cockpit.
- 0932 Hijackers gain control of the aircraft and announce they have a bomb.
- 0938 The aircraft makes a U-Turn to head east. The hijackers remind the passengers to remain seated and again claim to have a bomb.
- 0940 UAL Flight 93’s radar transponder ceases.
- 0941 Marion Britton calls friend and tells him that two people have been killed and the plane has been turned around.
- 0945 GTE operator Lisa Jefferson receives a phone call from Todd Beamer. He tells her about the passengers’ plan to overtake the hijackers.
- 0948 The aircraft loses altitude.
- 0950 Sandra Bradshaw calls her husband and tells him that passengers are filling pitchers with hot water to pour on the hijackers.
- 0958 Todd Beamer’s cell phone call ends.
- 1005 People on the ground witness the plane flying low.
- 1010 UAL Flight 93 crashes into an old coalfield in Stoneycreek Township, Somerset County, PA, approximately 80 miles southeast of Pittsburgh and 124 miles northwest of Washington, D.C. There are no survivors.

³² “Terrorism Hits - Somerset County Township Recalls Fateful Day of Flight 93.” *Pennsylvania Township News*, January 2002.

³³ “From Takeoff to Takeover: Putting it all Together” *Pittsburgh-Post Gazette*, October 29, 2001.

Figure 5: Somerset County, Crash of Flight UAL Flight 93

The Structure of Fire and EMS Protection in Somerset County, Pennsylvania

Located in Southwestern Pennsylvania, Somerset County is approximately 80 miles from Pittsburgh and is home to 80,000 people. Thirty volunteer fire departments provide fire suppression services to the mostly rural County. Some of these departments provide EMS support in conjunction with 14 ambulance companies.

There are no countywide mutual aid agreements in Somerset County. Individual departments have mutual aid agreements with neighboring departments. The chiefs and their designees determine emergency response assignments in their company's first due areas.

Activation, Notification and Dispatching of Volunteers

Most residents and others in the vicinity of the crash site reported hearing the impact, but were not sure where exactly the crash had occurred.

Somerset County Control (911 communications) received multiple reports of explosions and of a large commercial airliner down. Emergency calls to Somerset

County Control provided a more specific location for fire-rescue personnel and others. In creating the incident response, Somerset County Control activated the pager tones and requested available units to respond from the following fire departments and EMS agencies:

- Shanksville Volunteer Fire Company,
- Stoystown Volunteer Fire Company,
- Central City Fire Department,
- Berlin Fire Department,
- Friedens Volunteer Fire Department,
- Listie Volunteer Fire Company,
- Somerset Volunteer Fire Department,
- Somerset Ambulance Association,
- Hooversville Volunteer Fire Department, and the
- Hooversville Rescue Squad.

Shanksville Volunteer Fire Company Assistant Fire Chief Rick King and three firefighters were the first responders on the scene with an engine and a tanker. Shanksville Fire Chief Terry Shaffer also responded from 10 minutes away.

While enroute to the scene, there was a concern for the potential of large numbers of casualties. Chief Shaffer requested additional ambulances and EMS units dispatched to the scene. Two ambulances from outside the county were also alerted but were placed in service while responding.

Upon arrival, firefighters found small pieces of the plane, spot fires, and a large quantity of fuel scattered across a wide debris field. A quick survey of the scene found no survivors. Additional resources were requested from County Control, which included additional suppression companies and the Somerset Fire Company's hazardous materials team. Federal authorities, including the FBI and NTSB, arrived relatively quickly to secure the site and begin the evidence collection and body recovery process.

Roles of Volunteers in Response to the Crash of UAL Flight 93

Unlike the World Trade Center and the Pentagon, volunteers were the primary first-responders to this incident. Initially, volunteers were involved at all levels of response, from fire suppression to hazardous material mitigation to incident command. However, operations were relatively limited due to the devastation of the aircraft. Personnel reported most of their activities were focused on extinguishing spot fires and securing the site. Once Federal agencies arrived on the scene, volunteers shifted their operations to support the evidence collection and body recovery efforts.

Table 6 illustrates the estimated number of volunteers that participated in the response to the crash of UAL 93 and the hours of services they provided.

Table 6: Volunteer Response to UAL 93

Agency	Types of Department	Estimated # of Volunteers Activated on Sept. 11	Hours Logged by Volunteers	Primary Duties Performed by Volunteers
PENNSYLVANIA (1 County, 10 Departments)				
Shanksville Volunteer Fire Company	Volunteer	25	1,250*	Units responded to sounds of explosions and reports of a large commercial airliner down in an open field. Somerset County 911 communications activated pager tones for available units to respond from eight volunteer fire departments and two volunteer EMS departments to respond. Volunteers were primary first responders and were involved in all levels of the response, from fire suppression to hazardous materials mitigation to incident command. Involved in operations for as many as 18 days after the crash.
Somerset Volunteer Fire Department	Volunteer	30	260	
Somerset Ambulance Association	Volunteer	**	**	
Berlin Volunteer Fire Department	Volunteer	**	**	
Central City Fire Department	Volunteer	**	**	
Friedens Volunteer Fire Company	Volunteer	**	**	
Hooversville Rescue Squad	Volunteer	**	**	
Hooversville Volunteer Fire Department	Volunteer	**	**	
Listie Volunteer Fire Company	Volunteer	**	**	
Stoystown Volunteer Fire Company	Volunteer	**	**	
TOTALS				
1 County	10 Departments	55 + Volunteers	1,510 + Hours	

* Hours estimated by the study team as 50 hours per volunteer that responded.

** There were 10 volunteer departments involved in the response to the crash of UAL Flight 93. The study team successfully contacted 2 of these departments but attempts to contact the remaining 8 departments were unsuccessful. The number of apparatus, number of personnel, and hours logged by volunteers were unavailable for these 8 departments.

Long-Term Operations

The two volunteer fire departments that participated in the research process indicated that a total of 55 volunteers spent between 10 and 18 days on-site. Over the long-term, Federal officials and resources were primarily responsible for continuing evidence collection and body recovery at the site. At the request of the Federal Bureau of Investigation, a Disaster Mortuary Operational Response Team (DMORT) was used to assist in victim identification and body recovery. Over the course of the recovery operation, volunteer agencies in and around the site were requested on an as-needed basis. Volunteers also provided support to victims' families who wanted to view the scene.

V. NEW YORK AND WASHINGTON, D.C. VOLUNTEER ACTIVITIES AWAY FROM THE SCENE

While much national and international attention has focused on the operations at the World Trade Center, Pentagon, and UAL 93, volunteers were also integral participants in a variety of operational activities outside of the terrorist attacks.

Fire Suppression/EMS

While the nation was engrossed in the television coverage of the terrorist attacks, fire and EMS incidents continued to occur, which required “regular” incident responses throughout the country as well as in the New York City and Washington, D.C. areas. Volunteers served as a ready reserve force with personnel and apparatus.

As discussed in Chapters II and III, volunteers were crucial in backfilling stations throughout the New York City and Washington, D.C. regions to provide incident response and coverage. Elsewhere across the nation, departments, state firefighters’ associations, and Offices of Emergency Management developed lists of personnel available, if necessary, for deployment to the World Trade Center. While the overwhelming majority of out-of-state personnel were not used, some with specialized equipment or training were deployed, primarily to New York City. At the Pentagon, Federal USAR Teams provided most of the technical rescue expertise.

Protection of High-Risk Target Facilities

In Fairfax County, VA volunteer units were deployed with career units to fire stations around government installations such as the Central Intelligence Agency. There was great concern among emergency planners that a secondary attack could be carried out somewhere. The combination of volunteer and career units again proved vital to ensuring the safety of personnel working at these installations and citizens who live around them.

In Loudoun County, VA, volunteer firefighters maintained full staffing on apparatus for 36 hours after the attack. The county’s emergency operations center was concerned about the potential for secondary attacks at the Regional Air Traffic Control

Center located in Loudoun and at a federal presidential evacuation site just outside of the County.

Preparation for Secondary Events

Given the uncertain situation on September 11, most fire-rescue departments (career and volunteer) operated under the assumption that a secondary terrorist event could happen at any time. Personnel were advised to maintain a high level of suspicion while responding to incidents, to take note of situations that were atypical, and when in doubt, to call for additional resources. Had additional events occurred, volunteer participation would have varied depending on the location of the incident, as was the case at the World Trade Center, Pentagon, and UAL 93. At both the World Trade Center and the Pentagon there were numerous false reports of additional incoming planes, secondary devices, and other hazards. Had a secondary event occurred at either the World Trade Center or the Pentagon, volunteers would likely have played a significant role in the response.

Washington, D.C. – Volunteer firefighters in the Washington, D.C. area responded en masse to their fire stations, so much to the point that many volunteer chiefs reported having more personnel available than room for them to ride on the apparatus. This depth of coverage would have been vital had a secondary or other attacks occurred, and particularly had the airplane that crashed in Somerset County, PA had reached the metropolitan Washington, D.C. area.

Secondary response capabilities were also limited by the amount of equipment carried on fire trucks. Some trucks had an insufficient number of breathing apparatus for the number of firefighters who were ready to respond. For example, volunteer personnel in Arlington, VA wanted to place a reserve engine in service to backfill a fire station, but could not do so for lack of breathing apparatus.

Many of the reserve fire trucks in the Washington, D.C. area are also “stripped” of equipment. Many jurisdictions carry just enough equipment for front line units so that if a reserve unit must be used, the front line unit is stripped and its equipment placed on the reserve. Fairfax and Arlington counties in Virginia and Montgomery County, MD fire departments reported problems placing reserve engines in service on September 11, when volunteer and career personnel arrived at the stations. Firefighters either had to

scrounge for extra equipment pooled from several fire stations to equip a reserve apparatus, or they simply could not place the reserve apparatus in service.

New York City – Had a secondary event occurred in New York City, even with the 100 percent callback for FDNY personnel, the cadre of available career fire-rescue personnel would likely have been depleted quickly. Moreover, were there available personnel, it is not certain that there would have been sufficient FDNY apparatus and equipment for them to use. Volunteers from Nassau, Suffolk, Westchester, and other counties were providing staffing for FDNY stations in the outer boroughs. Had there been another attack, these volunteers would have responded, along with additional FDNY resources. Still more volunteer departments, from other counties in New York (e.g., Dutchess, Sullivan, Ulster, and Orange) or further north (e.g., Connecticut, Massachusetts, Rhode Island, and Vermont) would have been called to backfill stations and provide incident coverage.

Emergency Operations Centers

Volunteers across the metropolitan Washington, D.C. area served another critical role in helping to staff emergency operations centers. The volunteers performed many functions, including answering phones, running errands, and providing other administrative support. Volunteers in Fairfax County, VA provided personnel at the operations centers with food and drinks from the fire department canteen vehicles.

The Alexandria City, VA Emergency Operations Center was run by a volunteer who rotated this responsibility with a career emergency operations manager. The volunteer has been active in the fire department for years and has helped with emergency management planning.

Administrative Support

Many fire stations in New York City and Washington, D.C. were left empty as firefighters were summoned to the scene. However, citizens still were turning to fire stations for assistance and to seek answers to questions in a time of uncertainty. Citizens also came to fire stations to drop off donations of food and supplies for workers at the Pentagon and World Trade Center after the media directed them to do so instead of trying to go to the scene. To address the problem of empty firehouses, administrative volunteers

and retired personnel were posted. Administrative volunteers are typically retired volunteers who no longer serve as active firefighters, but still have an extensive knowledge of firefighting. These individuals received the donations, answered phones, and provided updates about the incident to concerned family members of firefighters at the scene. In New York City, retired FDNY personnel who had returned to their old stations to help often provided these services.

Shelters

Volunteers set up shelters at some fire stations around the Washington, D.C. area. This was done at the direction of fire chiefs or emergency operations centers when states of emergency were declared or in preparation for the possibility of secondary attacks.

Shuttling

In the Washington D.C metropolitan area, volunteers shuttled personnel and equipment from staging areas and fire stations to the scene. This was important because the incident commander wanted to limit the number of personal vehicles of non-essential vehicles at the Pentagon. In the initial hours, volunteer shuttle operators also picked up equipment needed at the scene from hardware stores.

Food Support/Canteens

In New York City, most of the long-term food support duties were handled by the Red Cross and Salvation Army volunteers; for the first 24 hours of operations at the Pentagon, volunteers from the fire departments provided all food and drinks to firefighters at the scene. Volunteers from fire departments across the Washington, D.C. area brought canteen units to the scene, and some stayed for over a week. Volunteers also supplied food to emergency operations centers and staging areas.

VI. NATIONAL VOLUNTEER RESPONSE ON SEPTEMBER 11

Nationally, volunteer fire-rescue departments from coast-to-coast modified their operations on September 11 to provide emergency response and prepare for secondary incidents. Information gleaned from over 200 email responses from volunteer departments nationwide and from media reports suggest that primary areas of response included: higher alert status generally, concern for protecting high-risk installations, and general support.

“Alert”

Volunteer departments nationwide placed their members on alert, to ensure personnel availability for incident response in the event of another terrorist attack. Many states (e.g., Vermont, Oklahoma, Kentucky, Pennsylvania, and Connecticut) established lists for volunteers to make themselves available for deployment to the World Trade Center. The Pennsylvania Emergency Management Agency collected a list of 7,500 volunteer firefighters and health care professionals willing to deploy to New York City.³⁴

Volunteer firefighters from Pennsylvania, Rhode Island, and New Hampshire responded to the World Trade Center after requests from the OEM for assistance with technical rescue. These efforts were conducted in conjunction with Federal USAR resources. Volunteer departments from other states, including California, Ohio, and Indiana reported that members were activated in conjunction with Federal USAR Teams. The departments mentioned that other personnel had to “step up” on September 11 and beyond to fill the void these departures created.

On September 11, volunteers were generally requested to report to the station either by the local Office of Emergency Management or the Fire Chief. Most departments stood down in the early afternoon, as it appeared that there would be no further terrorist incidents that day. Generally, the departments contacted³⁵ reported that call volume on September 11 was somewhat lighter than usual. Several mentioned that although call volume was relatively light, they ran more unusual calls (e.g., bomb threats)

³⁴ Seibel, Susan. “Emergency Workers Anxious to Join Effort.” *Pittsburgh Post-Gazette*, September 16, 2001.

³⁵ Departments that responded via the NVFC website.

than normal. Some departments, particularly those on the Eastern seaboard, reported maintaining a higher level of readiness, using rotating crews, for several days.

While “on alert,” the vast majority of departments also increased station security, to include locking doors, paying closer attention to people entering/exiting the station, and securing apparatus. A small minority reported staging their apparatus on the station’s apron to reassure the public that they were, in fact, staffed and ready to respond. Most departments also attempted to increase their level of situational awareness while operating on incidents that day (e.g., noting people loitering around fire apparatus, etc.).

High-Risk Installations and Mutual Aid

For much of the day on September 11 it was uncertain whether there would be additional plane crashes or whether institutions such as schools, dams, water treatment facilities, hospitals, military installations, and government installations were at risk for some type of terrorist incident. Many of these facilities went into a “lock down” mode after the scope of the terrorist attacks became clear. Some volunteers were not immediately able to leave their workplaces and respond to the fire station.

Some government and military installations (e.g., the National Institutes of Health in Bethesda, MD; Quantico Marine Base in Quantico, VA; and the United States Military Academy at West Point, NY) have their own fire-rescue departments. These departments often depend on the surrounding jurisdiction to support them in the event of an emergency incident. However, while such facilities were locked down, mutual aid companies could not immediately gain access to the facility/base. Also, base units were generally prohibited from leaving the facility for any reason, even to provide mutual aid to the surrounding jurisdiction, as noted by the Dupont Fire Department (Dupont, WA).

During an emergency incident in a locked down facility, most departments were required to have a military or law enforcement escort, which extended response times. In some communities, military or government hospitals provided critical or specialty care for the surrounding civilian population. When these hospitals were locked down, emergency response agencies had to find ways to work with the installation’s security to gain access for ambulances, or had to transport patients to alternate medical facilities.

Many of these facilities remained under lock down for weeks after September 11 and some installations have instituted permanent security changes, including perimeter fences, access at guarded points only, and 100 percent identification checks.

Departments along the Canadian and Mexican borders raised another interesting mutual aid concern. For example, in New England, the Northeast International Mutual Aid District includes 12 towns in Vermont and two communities in Quebec. For over 30 years, these communities have responded across the border to provide mutual aid assistance.³⁶ There are also departments in Maine, New Hampshire, and New York that rely on Canadian departments for mutual aid.

Both on and after September 11, departments on both sides of the border were concerned that tightening security along the border could adversely affect response times for mutual aid. So far, however, it appears that border officials have been supportive of allowing emergency vehicles to cross the border while responding.

Support Functions

Many departments acted as collection sites for donated supplies, equipment, and money collected for rescuers in New York City and at the Pentagon as well as the FDNY Widows and Orphans Fund. (Fundraising is discussed in more detail in Chapter VII.)

Summary

While many departments nationwide geared up for additional attacks and increased staffing, especially those near high-risk sites (military installations, major population centers, airports, etc.), most departments reported that they were not entirely sure how to react to the events of September 11. A department in South Carolina reflects these sentiments, saying: “Actually, we didn’t have a clue as to what to do other than wait and see what happened next.” Despite the uncertainty, however, volunteer departments across the nation were prepared to respond to emergencies and protect the communities they serve.

³⁶ “Border Doesn’t Slow Down Firefighters on Way to Emergencies,” *Associated Press*, March 10, 2002.

VII. POSSIBLE LONG-TERM EFFECTS OF SEPTEMBER 11 ON THE VOLUNTEER FIRE SERVICE

Over the course of the research for this project, one overarching sentiment emerged: the fire service has changed in the wake of September 11. While there were differing opinions as to the nature and severity of these changes, there was near universal agreement that the fabric and perceptions of the American fire service have been changed in myriad intangible ways, both positive and negative.

Recruitment and Retention

Immediately after September 11, many in the volunteer fire service had predicted that there would be a national increase in volunteer recruitment.³⁷ The majority of departments contacted³⁸ during the research process mentioned that they were hesitant to use September 11 in recruitment campaigns for fear of being perceived as opportunistic or ghoulish.

Nearly nine months later, the anticipated spike in national recruitment has generally not manifested itself. In fact, most (about two-thirds) of the volunteer departments that participated in this study report recruitment efforts have remained relatively static or even declined somewhat post-September 11. This is not particularly surprising however, given that volunteer recruitment has fallen steadily over the past 20 years.³⁹ Departments reported that many prospective volunteers were attracted by the nobility of the volunteer fire service, but were put off the by time commitments necessary for training, standbys, etc.

A minority of contacted departments reported seeing an increase in membership post-September 11. However, it is not clear whether these volunteers will remain active over the long-term. In Long Island, there was a 4 percent to 5 percent increase in new recruits for the first two months after the World Trade Center attack, but interest "leveled off," said Walter Monestere, ex-chief of the Freeport Fire Department.⁴⁰

³⁷ McCaffrey, Shannon. "Ranks of Volunteer Firefighters Understaffed Despite September 11." *The Associated Press*, April 3, 2002.

³⁸ As discussed in the Methodology, 512 departments were contacted, either via telephone, Fax, email, or through the NVFC website.

³⁹ *NVFC Fact Sheet 2002*.

⁴⁰ Kadison, Dan. "NY Volunteers New Rallying Cry Include Me Out!" *New York Post*, February 25, 2002.

Some of the volunteer fire departments and ambulance corps in New York City have also seen an increase in new members. The West Hamilton Volunteer Fire Department has enlisted 15 new members since September 11 compared with two or three in a typical year. The Edgewater Park Volunteer Fire Department in the Bronx has nearly doubled the size of its ranks from 35 to 60.

In Arlington County, VA where the Pentagon is located, volunteer fire departments have seen a dramatic increase in the number of new volunteers. Arlington's seven volunteer departments had approximately 35 active volunteers on September 11. Nine months after the incident, they have nearly doubled the number of volunteers. Some of the new volunteers there said they were inspired by the events of September 11 to join. The Fairfax County, VA Fire and Rescue Department also saw an increase in members and then had to deal with the "fortunate" problem of running out of money to purchase firefighter's protective clothing.

Another minority of departments reported having members resign due to the events of September 11. Though some personnel have left and will continue to leave the volunteer fire-rescue service because of the trauma caused by that day, there has been no large-scale resignation of volunteers nationwide.

Several volunteers contacted during the research process mentioned that they were grateful to be a volunteer on September 11 because unlike their neighbors, they were actually able to do something constructive (staff a unit) and not merely watch the news unfold on TV. That type of sentiment might be promoted in future recruiting as well as the idea that the volunteer fire service is now an acknowledged part of homeland security.

Physical and Psychological Injuries

Physical Injuries – Based on interviews conducted for this project, approximately 25 percent of volunteer departments operating at the incident sites reported that personnel sustained physical injuries while on the scene. Most were minor – burns, lacerations, sprains, strains, etc., with no long-term ill effects.

A major concern for responders at the World Trade Center is the so-called "World Trade Center cough," caused by inhaling the dust and other particulate matter dispersed

after the Towers collapsed. World Trade Center cough is described as a persistent, dry cough and sore throat. Other symptoms include chest irritation, wheezing, and shortness of breath, as well as gastrointestinal irritation and heartburn from swallowing the irritants. Some 4,000 of the 10,000 or so firefighters and rescuers who have worked the World Trade Center have complained of a chronic cough.⁴¹

It has been recommended that personnel who operated at the World Trade Center and/or at the Pentagon be monitored for exposure to various toxins. FDNY has announced that its personnel will be monitored through blood and urine tests to determine exposure to dioxins, PCBs, asbestos, and other hazardous materials.⁴² Volunteers operating at the World Trade Center were also exposed to potentially dangerous particulate matter and should be monitored as well. For those volunteers that responded to the Pentagon and may have been exposed to asbestos, some departments have required their members to obtain baseline pulmonary function tests.

Psychological Injuries – It is difficult to identify specific psychological injuries sustained as a result of participation in operations on September 11. Many of the departments contacted during the research process indicated that at least some personnel were adversely affected emotionally by the events of September 11. Two volunteer departments that responded to the Pentagon reported that several members required follow-up counseling beyond that of the basic critical incident stress debriefing. These members suffered from symptoms of depression and anxiety.

As of July 2002, one member of the FDNY, an EMT who had operated at the World Trade Center, had committed suicide. The extent to which his involvement in operations at the World Trade Center influenced his death is not clear. While the EMT was a career employee with the FDNY, concerns over psychological trauma suffered at the World Trade Center, Pentagon, and UAL 93 cross the boundaries of pay status. As there is no predictive model for the experience of September 11 responders, the full extent of the psychological impact on the fire-rescue service, both volunteer and career, will not be known for many years.

⁴¹ “Health & Science: Research Planned on World Trade Center Firefighters’ Cough,” *Associated Press*, November 7, 2001.

⁴² “Health & Science: Research Planned on World Trade Center Firefighters’ Cough,” *Associated Press*, November 7, 2001.

The Oklahoma City National Memorial Institute for the Prevention of Terrorism and the National Institute of Justice are conducting a survey to learn more about the effects of September 11 on the fire service, including volunteers. That team will interview responders to each of the three terrorist attacks at multiple points over the next several years.

POST TRAUMATIC STRESS DISORDER (PTSD) – One particular disorder that may affect September 11 first-responders, volunteer and career, is PTSD. PTSD is a psychiatric disorder that can occur following the experience or witnessing of life-threatening events such as military combat, natural disasters, terrorist incidents, serious accidents, or violent personal assaults. Patients often relive the experience through nightmares and flashbacks, have difficulty sleeping, and feel detached or estranged, and these symptoms can be severe enough and last long enough to significantly impair the person’s daily life. PTSD is marked by clear biological changes as well as psychological symptoms. PTSD is complicated by the fact that it frequently occurs in conjunction with related disorders such as depression, substance abuse, problems of memory and cognition, and other problems of physical and mental health.⁴³

Emergency responders often delay treatment for symptoms of PTSD, which can allow symptoms to worsen and negatively impact their daily lives. Whether significant numbers of volunteers will be diagnosed with PTSD remains to be seen.

CRITICAL INCIDENT STRESS MANAGEMENT (CISM)/CRITICAL INCIDENT STRESS DEBRIEFING (CISD) – CISM represents a wide range of programs and intervention strategies, which have been designed to prevent stress in emergency responders and to assist in managing and recovering from significant stress should they encounter it in their work. CISD is a form of structured psychological debriefing conducted in small groups. It was originally developed as a direct, action oriented crisis intervention program to prevent or mitigate traumatic stress.⁴⁴

CISM/CISD is a highly controversial topic in the fire service. Some in the industry believe that implementing a structured CISM/CISD program provides a

⁴³ “What is Post-Traumatic Stress Disorder?” *Fact Sheet*, National Association for Post-Traumatic Stress Disorder, http://www.ncptsd.org/facts/general/fs_what_is_ptsd.html, July 1, 2002.

necessary structure to ensure the mental health of responders involved in major or traumatic incidents (e.g., multiple fatality, firefighter fatality, etc.). Others, however, have argued that requiring personnel to participate in a process they are not psychologically ready for can have more damaging effects than the incident itself.

Following the bombing of the Alfred Murrah Building in Oklahoma City, OK personnel were required to participate in the Department's CISM program. Prior to beginning a shift on the site, personnel had to attend a pre-briefing. While operating, crews were monitored and defused by mental health experts on an as-needed basis. Before being released, at the end of a shift, responders had to attend demobilizations at a nearby building. Finally, mental health professionals were available, responders' spouses attended family briefings at a local church, and debriefings were held once the incident concluded.

Research revealed that only about 10 percent of Oklahoma City firefighters found CISD sessions helpful. However, two-thirds of personnel reported that they were satisfied with the sessions and would recommend participation to their colleagues.⁴⁵ Many Oklahoma City firefighters reported that community support, religious faith, and family relationships were important in their recovery process. While the Oklahoma City incident primarily involved career personnel, the lessons learned from their experiences can also be applied to volunteer personnel.

Of the 53 departments contacted that responded on September 11, only about 25 percent required personnel to participate in structured CISD sessions. Far more, over half, made CISD and other mental health resources available to members on a voluntary basis, probably the better strategy.

During the research for this report, participants reported that members greatly appreciated the increase in community support after September 11. Few of the participants mentioned whether September 11 had an impact on volunteers' spouses and families. However, this is a critical area of concern for the future. One of the lessons learned from Oklahoma City was that special attention should be paid to responders'

⁴⁴ Mitchell, Jeffrey and Everly, George. *Critical Incident Stress Debriefing: An Operations Manual for the Prevention of Traumatic Stress Among Emergency Services And Disaster Workers*, Chevron Publishing: 1993.

⁴⁵ Boudreaux, Angela, et al. "Shoulders to Lean On," *Fire Chief*, June 2002.

relationships with their spouses and significant others. Researchers suggest that public safety agencies consider providing educational programs for spouses prior to disasters so that they are more prepared to deal with the impact of such an event on their families.⁴⁶

SUBSTANCE ABUSE – Critical incidents often bring standing substance abuse issues to light, though that abuse is rarely directly a result of the incident. Substance abuse is a serious issue among emergency responders, and over the long-term, volunteer fire departments should seriously consider implementing screening and treatment programs for their members.

Financial and Economic Impacts

The national economic downturn after September 11 may impact the municipal funding available to the fire service. In addition, of responding departments contacted, (particularly those at the World Trade Center), the majority reported having lost or damaged equipment, which the volunteers were responsible for replacing or repairing.⁴⁷ Several contacted departments also reported rising insurance costs for workers' compensation and liability. On the other hand, the public is more supportive of the fire service as a whole and there are new or increased federal and state funds available to the fire service generally.

Federal Reimbursement – A Presidential or Major Disaster declaration makes available the entire federal array of disaster response services, including grants, loans, counseling services, etc. On September 11, President Bush signed a major disaster declaration for the five boroughs of New York City. The declaration was later amended to include Individual and Public Assistance for ten additional New York counties. Subsequently, Public Assistance to reimburse the cost of emergency services was granted to all counties in the state. On September 19, President Bush signed a major disaster declaration for the State of New Jersey. On September 21, President Bush signed a major disaster declaration for Arlington County, VA. These declarations have made it possible for some departments to recoup some of their expenditures from September 11. Generally, only departments that responded through official channels are eligible for reimbursement. For those departments eligible to receive funds, requests for allowable

⁴⁶ Boudreaux, Angela, et al. "Shoulders to Lean On," *Fire Chief*, June 2002.

⁴⁷ Martinez, Jose. "Volunteers Fight Back; Firefighters Seek to Rebuild After 9/11 Loss." *New York Daily News*, December 26, 2001.

emergency equipment costs are consolidated at the county level, forwarded to the appropriate State OEM, and then sent to FEMA.

The federal government has released millions of dollars in aid to New York City and surrounding jurisdictions. However, only a small portion of these monies has gone to volunteers. For example, on June 14, 2002, FEMA released \$56.4 million dollars to assist first responders at the World Trade Center. Only \$1.8 million of those funds went to Suffolk County, to reimburse Long Island emergency personnel who responded to the World Trade Center.⁴⁸

In and around the Pentagon, Federal aid has also been approved for only those departments that incurred overtime expenses for career personnel that responded on September 11 or in the days after.

Municipal Funding and Grants – While many of the fire departments contacted had initially hoped that September 11 would encourage politicians to funnel needed funding to the fire service, in many cases, this has not happened. Instead of receiving additional municipal funding, some participants reported cuts in fire department budgets (in some cases, in anticipation of federal homeland security grants). Of the departments contacted, only a small percentage (five) experienced a budget increase; most cited September 11 as a contributing factor.

The majority of departments nationwide⁴⁹ reported spending increases for additional training and equipment related to weapons of mass destruction, terrorism, and hazardous materials. Funding for these areas has not yet been forthcoming, but is expected.

For departments contacted, grant funding was generally viewed as a desirable but elusive commodity. While many departments reported applying to the Assistance to Firefighters Grant Program in 2002, most were not optimistic about actually receiving

⁴⁸ *FEMA Releases \$56.4 Million to Help First Responders to World Trade Center Attacks, Federal Emergency Management Agency Press Release, June 14, 2002.*

⁴⁹ Departments that responded through the NVFC website.

funding.⁵⁰ Many expressed frustration over the lack of urgency in developing and distributing Federal grants for homeland security.

Fundraising and Donations – On September 11 and during the following weeks, departments throughout the country organized fundraising drives for the New York Police & Fire Widows' & Children's Benefit Fund. Several volunteer fire departments in Montgomery County, MD and elsewhere in the country reported collecting tens of thousands of dollars each for the Fund by having fill-the-boot drives at intersections.

Over the longer-term, there was a significant difference between fundraising efforts in states in and around the attack sites (such as New York, New Jersey, Connecticut, Maryland, Virginia, and Pennsylvania), and efforts nationally. About 15 percent of departments responding from states in an around the attack site reported an increase in fundraising and donations after September 11; this is in contrast to less than 10 percent of departments elsewhere in the country. Of departments that actually responded to one of the attacks, over half reported an increase in non-solicited financial donations. The following are some examples of donations to responding departments:

- Eight volunteer departments in Somerset County, PA were the recipients of an \$80,000 donation from the Somerset County Builders Association, the Pennsylvania Builders Association, and the National Association of Home Builders.⁵¹
- The Shanksville Fire Department received nearly \$59,000 from the Organization for the Promotion and Advancement of Small Telephone Companies.
- The Aviation Volunteer Fire Department in New York City received a 1988 E-One pumper from the Franconia Volunteer Fire Department in Springfield, VA. Aviation's engine was heavily damaged in the World Trade Center collapse.⁵²

⁵⁰ Commonly known as the FIRE Act, the purpose of this FEMA program is to award one-year grants directly to fire departments of a State to enhance their abilities with respect to fire and fire-related hazards. The program seeks to identify departments that lack the basic tools and resources necessary to protect the health and safety of the public and their firefighting personnel. In 2002, the FIRE Act program was funded at \$360 million, with Congress approving the potential for an additional \$150 million on July 24, 2002.

⁵¹ "Home Builders Give Thanks to Somerset County Firefighters," PR Newswire Association, Inc., November 19, 2001.

⁵² "Helping a Friend in Need: Franconia Fire Station Donates Engine to Bronx Counterpart." *Springfield Times*, February 21, 2002.

Equipment Needs

For many volunteer fire departments, September 11 reiterated the need for basic firefighting equipment and apparatus, such as structural firefighting Personal Protective Equipment (PPE), additional Self-Contained Breathing Apparatus (SCBA), and extra air bottles. Many also realized the need for more specialized equipment such as:

- Disposable protective suits (e.g., Tyvek)
- Respirators to protect against chemical and biological agents
- Hazmat Trailers or units
- Gas masks
- Gas meters
- Universal adapters and fittings for use with mutual aid companies (interoperability is discussed at length in Chapter VIII, Lessons Learned)
- Keyed ignition (rather than push-button)
- Mass casualty trailers equipped with extra medical supplies
- Command vehicles
- Radios that are compatible with other jurisdictions
- Inoculations or antidotes for emergency responders against biological agents (for pre or post-exposure)
- Technical rescue and collapse rescue equipment
- Additional equipment for spare or “reserve” fire engines, which often are un-stocked, so they can be “ready” reserves

Unfortunately, many of the volunteer departments contacted mentioned that they cannot afford to purchase this equipment, and in some cases, can hardly afford to keep basic supplies on fire engines.

Communication and Radio Equipment – Firefighter communications have long been a contributing factor to firefighter fatalities. As discussed previously, radios and communication were a serious problem for career and volunteer personnel both at the World Trade Center and the Pentagon.

In New York City, the repeater installed on the roof of 5 World Trade Center to alleviate communications issues discovered in 1993 may have malfunctioned, hampering communication efforts on September 11.⁵³ There are also numerous reports of difficulties communicating information, including evacuation orders, between the companies in the

⁵³ “9/11 Exposed Deadly Flaws in Rescue Plan.” *New York Times*, July 7, 2002.

Towers and the Command Post and vice versa. Similar communication problems were reported at the Pentagon, where personnel used cellular and Nextel phones to facilitate the transfer of information. Issues were also caused by the massive mutual aid response to the World Trade Center (including mutual aid departments and off-duty FDNY personnel) and at the Pentagon because not all responders had radios at all or had radios that were compatible.

Firefighter communications have also been identified as a contributing factor in firefighter fatality investigations nationwide (for incidents involving the deaths of career and volunteer personnel). Current communications issues, coupled with those highlighted on September 11, reemphasize the need for the fire service to continue to work with the communications industry to improve the communications technology available to first-responders.

Training Needs

Following September 11, nearly two-thirds of contacted departments reported increasing their training requirements to include instruction on hazardous materials, weapons of mass destruction (WMD), terrorism, high-rise firefighting tactics, and firefighter rescue. Of those departments that reported increasing training, several used National Fire Academy courses such as Emergency Response to Terrorism.

Of the remainder of departments, a minority did not report any changes in training at all. Some mentioned that increasing such training might not be cost-effective, given that most volunteer fire departments continue to respond primarily to residential and low-rise structure fires.

Additional training in the volunteer fire service is a double-edged sword. On one hand, personnel must be made aware of the threats they face, given the knowledge to mitigate those hazards, and taught how to protect themselves or rescue others if need be. However, the burden of increased training requirements and time commitments are major reasons why prospective volunteers do not follow through and actually join a department, and why some current volunteers let their memberships lapse. Going into the future, the volunteer fire service will need to continue to find ways to balance effective training with the time constraints of its members.

Standard Operating Procedures

Prior to September 11, many career and volunteer fire-rescue agencies did not have a fully developed emergency operations plan or a set of standard operating procedures for terrorist incidents. Post-September 11, volunteer fire-rescue agencies are working in conjunction with local jurisdictions and emergency managers to develop comprehensive emergency response plans to address multiple hazards and contingencies (e.g., large numbers of casualties, fire suppression considerations, public health emergencies, etc.). While it is unfortunate that the tragedies of September 11 provided the impetus for this planning, it is nonetheless excellent practice for communities to address hazard mitigation and emergency response prior to an incident. New York City and the Port Authority of New York and New Jersey revised their response plans for the World Trade Center following the 1993 bombing and made physical changes to speed evacuation. Many thousands of lives were said to have been saved because of improved evacuation corridors, occupant training, and other procedures modified since 1993.

Following September 11, volunteer fire-rescue departments nationwide reported an increase in bomb scares and anthrax investigations. Many departments had no policies or procedures for dealing with suspicious packages generally or anthrax specifically. Most agencies initially responded to such incidents with a full hazardous materials team, bomb squad, or other specialized team. However, due to the enormous increase in call volume, fire service and law enforcement agencies revised their procedures to allow for alternate deployment scenarios. New deployment options included a single engine or single person response for low-risk investigations; specialty teams are generally only called in for credible threats or, at the discretion of the first-responder. Given that many of these policies were developed “on the fly,” volunteer and career departments are in the process of revising these procedures to refine deployment in the future and ensure adequate response.

Mutual Aid Policies

In addition to revising operational SOPs, many jurisdictions are revisiting their mutual aid policies to address new threats and possibilities. Jurisdictions have come to realize that no single agency, even one as large and well equipped as the FDNY, can independently mitigate a large-scale terrorist incident. Rather, jurisdictions will have to work together to provide emergency response and support operations.

As with operational SOPs, while it is tragic that September 11 provided the impetus for the revision of mutual aid policies, formal automatic and mutual aid policies are sometimes overlooked in the volunteer fire service in favor of informal agreements between departments. These informal agreements are typically adequate for structural firefighting response, but may not suffice in the event of a large-scale natural disaster or terrorist incident. During response to an incident is not the time to negotiate for the deployment of mutual aid resources. Rather, these policies and procedures need to be determined in advance, which will improve daily operations as well as response to extraordinary events. Further, for incidents where Federal reimbursement is available, volunteer fire departments without formal (signed) mutual aid agreements may not be eligible to receive funds.

It is also critical that those volunteer departments that enter into formal automatic and mutual aid agreements implement training programs to ensure that personnel operate as a unified force on emergency incidents. Interjurisdictional mutual aid agreements are strengthened when career and volunteer firefighters from the jurisdictions listed in the agreements regularly work together. The fact that the fire departments in Maryland and Northern Virginia regularly train together and respond to incidents on a daily basis greatly enhanced their ability to respond to an incident the scale of the Pentagon attack.

Self-Dispatch – As has been discussed, self-dispatch, both by departments and personnel, was cited as a significant concern by many of the departments contacted. In some instances, the structured mutual aid response plan was perceived as slow to respond or ineffective. As a result, some departments and units bypassed policies and procedures or were unaware of the mutual aid policies and self-dispatched to both the World Trade Center and the Pentagon. Also, some personnel (including volunteers and off-duty FDNY firefighters) made their way to the World Trade Center independently.

It is doubtful that self-dispatch and freelancing can be completely eliminated. However, through training and education it is possible to demonstrate to the fire service the hazards of self-dispatch and at least make personnel think twice about doing so. Stronger incident command and control and the use of law enforcement to control the perimeter from early in an incident can help to limit freelancing.

Staffing Needs

Volunteers comprise approximately 73 percent of the nation's fire service;⁵⁴ of the total 26,354 fire departments in the country, 19,224 are all volunteer; 3,845 are mostly volunteer; 1,407 are mostly career; and 1,878 are all career.⁵⁵

During the research process, participants expressed concern about their departments' ability to respond to structural fires on a daily basis, much less a terrorist event. These participants mentioned that September 11 had reiterated their departments' need for additional staffing, either volunteer or career. Moreover, most said that they could not have even begun to mitigate an incident like the World Trade Center or the Pentagon because they would not have had enough available personnel to respond. In fact, one of the departments contacted reported it was not able to provide personnel to respond to the World Trade Center because it simply did not have the available members.

In addition to normal daily staffing shortages, about one-third of contacted volunteer departments reported having military reservists called up to active duty after September 11. This call up depleted an already limited supply of personnel.

No volunteer firefighters were killed as a result of operating under the auspices of a volunteer agency on September 11. Some career FDNY firefighters killed were also volunteers and some on the planes or civilians working in and around the World Trade Center or Pentagon may also have been volunteers but none were working in that capacity when they were killed. As mentioned, one off-duty volunteer firefighter/EMT from Virginia died at the World Trade Center. He was working about a block away from the site at the time of the first plane crash and was killed when the Towers collapsed.⁵⁶

The deaths of members can be quite traumatic and have myriad effects on departments in which the personnel served. Post-September 11, a few departments have had to cope with the loss of active volunteers among the personnel killed, many of whom

⁵⁴ *NVFC Fact Sheet 2002.*

⁵⁵ *U.S. Fire Department Profile Through 2000.* National Fire Protection Association, Quincy, Massachusetts, December 2001.

⁵⁶ His death has not officially been classified as a line-of-duty fatality by the Department of Justice (which disburses line-of-duty death benefit payments to family members) because he was operating out of state, but the fire department has appealed this decision since he was rendering emergency medical services and assisting FDNY paramedics at the time of his death.

held leadership positions in the volunteer fire service. In at least one instance, a fire department (Levittown Volunteer Fire Department, NY) lost its Chief when he was killed while serving in the FDNY.⁵⁷ In the short-term, departments have worked to ensure staffing needs are met and provide operational response. The long-term effects of these deaths, if any, will not be known for many years to come.

Public Perception of Fire Service

Almost all of the volunteer departments contacted, regardless of geographic location, reported that their communities had rallied around them following September 11; for a time, the media was inundated with the heroic stories of firefighters and other public safety responders. While many individuals have shied away from “hero” status, firefighters throughout the country said they were grateful for the outpouring of support, acceptance, and appreciation from the community after September 11. Many, however, expressed concern that this support and acceptance would be fleeting and, that as a nation we are gradually returning to the status quo. Nationally, career and volunteer fire-rescue departments are attempting to maintain the public’s support by improving their visibility and providing public education programs. Without public support, the fire service as a whole cannot expect to attain necessary increases in funding, training, and equipment.

Career-Volunteer Relations

Many of the departments contacted expressed the opinion that September 11 had improved relations between career and volunteer firefighters. While interpersonally and at the level of individual departments, career and volunteer firefighters may have more appreciation for one another, longstanding institutional issues remain.

⁵⁷ “The Lost.” *Newsday*, November 25, 2001.

VIII. LESSONS LEARNED

The events of September 11 have taught the volunteer fire service many lessons. In the process of researching this report, volunteer firefighters, EMTs, and fire chiefs shared information about lessons learned as well as personal observations about the volunteer fire service's response.

Significance of Volunteers

Terrorist attacks are too consuming of personnel, vehicles, and equipment for any one or two jurisdictions to handle on their own. At both the Pentagon and the World Trade Center, the incidents required the response of fire departments from multiple jurisdictions.

In the 20th century, combination or all-career departments replaced many volunteer fire departments in urban areas. In some cases, volunteer entities were eliminated because of the adequate size of the career ranks. *However, the events of September 11 demonstrated that volunteer firefighters and EMTs are still essential to the homeland security of the United States.* The FDNY, which is one of the largest career fire departments in the world, was overwhelmed by the attack of September 11 and needed assistance from many other departments with many volunteers. The ACFD also depended upon the assistance of volunteers. While the incidents were ongoing, both New York City and the greater metropolitan Washington, D.C. area were protected by a combination of volunteer and career personnel. In Somerset County, PA, volunteers alone provided fire-rescue incident response and were not relieved by any type of career personnel (e.g., the FBI, DMORT, etc.) until later in the incident.

Following the attacks, volunteer departments in an around New York and Washington, D.C. mobilized quickly to support the FDNY and ACFD. Many participants in the research process mentioned that they were themselves astonished at how quickly volunteers assembled and were ready for deployment. Most volunteers in Virginia, Maryland, New York, New Jersey, Connecticut, and Delaware were in their stations and ready for response within one hour; in Pennsylvania, the response to the crash of Flight 93 was virtually immediate.

Nationally, volunteer firefighters and volunteer EMS personnel filled significant roles at both sites of the terrorist attacks and within the communities affected by these attacks. These volunteers serve as an essential ready reserve force to augment their career counterparts.

Significance of Volunteer Fire Department Vehicles and Equipment

The terrorist attacks demonstrated that the equipment and resources of the volunteer fire service are essential to homeland security. Firefighting and emergency medical equipment and vehicles purchased by volunteer fire departments were utilized at all three terrorist attack sites. These vehicles were purchased, for the most part, by funds raised by local volunteer fire departments. Apparatus owned by volunteers was used extensively by career and volunteer personnel in Washington, D.C. and New York City. In New York City, the apparatus was used because a significant portion of the FDNY fleet was destroyed in the Towers' collapse. In Washington, D.C., many jurisdictions rely on volunteer equipment to supplement their reserve fleets. In Somerset County, volunteer fire-rescue apparatus were used exclusively during operations at the crash site.

One of the lessons learned from the Pentagon was that the primary factor limiting response capabilities was not the number of firefighters but rather the number of vehicles. Many areas of the country face the opposite problem, having sufficient equipment and vehicles but insufficient number of personnel to staff them.

Reserve Apparatus

Both volunteer and career fire-rescue departments learned on September 11 about the importance of keeping some reserve apparatus fully equipped at all times. Many fire departments carry just enough equipment for front line units so that if a reserve unit must be used, the front line unit is stripped and its equipment is placed on the reserve. Fairfax and Arlington Counties in Virginia and Montgomery County, MD fire departments reported problems placing reserve engines in service on September 11, when volunteer and career personnel arrived at the stations. Firefighters either had to scrounge for extra equipment pooled from many fire stations to equip a reserve apparatus, or they simply could not place the reserve apparatus in service.

Interoperability

Large-scale incidents such as the terrorist attacks require fire-rescue departments to work together and in conjunction with outside agencies (e.g., law enforcement, the military, Office of Emergency Management, etc.). Sometimes, however, the departments have trouble working together because they use equipment such as radios or hose connections that are incompatible with one another. For example, there were problems with firefighters from varying response agencies not being able to talk to one other because their radio systems used different frequencies. The attacks of September 11 underscored the importance of fire departments having interoperability between their equipment.

The problems with interoperability appear to have been greater in New York City than in Arlington, VA. This is because FDNY tends not to rely on response from outside agencies and these agencies have never had a great impetus to move toward equipment interoperability. At the World Trade Center, there were issues with the interoperability of hose couplings. Several departments noted that on September 11, they had to scramble to find adaptors to use their equipment with FDNY's or other agencies. Similarly, departments at the Pentagon reported problems finding spare SCBA cylinders they could use when theirs were empty. Also, respirators used by the various agencies operating at the World Trade Center and Pentagon required particular refill cartridges, which were not readily available. Standardization would increase the odds that a responder would be able to quickly find a replacement cartridge, full SCBA cylinder, or hose coupling.

Communications – As mentioned previously, radio and communication problems impacted operations at both the World Trade Center and the Pentagon. In New York City, radio communications failures have been cited as a contributing factor in the deaths of fire department personnel. While radio communications were a problem at the Pentagon, interoperability was less of an issue than in New York. Most of the fire departments in the metropolitan Washington, D.C. area work with each other at emergency scenes on a daily basis and have worked together to achieve interoperability over the past 25 years. Most Northern Virginia fire departments use an 800 MHz radio system and there was a large cache of spare radios available for distribution to units from other jurisdictions, which did not have this radio system (e.g., Montgomery County, MD).

Also, terrorist incidents are inherently criminal acts, which involve the active participation of law enforcement agencies. Officials from these law enforcement agencies must have the ability to communicate easily with EMS providers and firefighters. In many jurisdictions, fire-rescue departments and law enforcement agencies use separate radio systems to communicate and must rely on dispatchers to relay messages back and forth. Ideally, one would not need multiple radios to communicate with other jurisdictions or agencies. In some radio systems, this is as easy as programming a talkgroup or frequency into a radio; in other instances, units may need to be equipped with new radio equipment to support communications.

To prepare for future large-scale incidents, neighboring jurisdictions must ensure that units are able to communicate with one another on the incident scene, and that equipment such as hoses and SCBA are compatible.

Standard Operating Procedures – Interoperability is not just limited to equipment, but also to operations as dictated by standard operating procedures (SOPs). Operations at the Pentagon were facilitated because, years ago, many of the responders from Northern Virginia jurisdictions and from the Washington Metropolitan Airports Authority implemented similar SOPs for incident command, personnel accountability, and response. While these agencies continue to try to make their procedures more uniform, there was great benefit in having this standardization.

Incident Command

Joint Operation Command (JOC) centers are essential to successfully managing and coordinating the response to a large-scale incident. A JOC was established in the initial stages of response to the Pentagon and proved to be essential to coordinate all of the agencies that responded, as well as the military personnel. By incorporating as many agencies and departments as possible, management was able to effect change and consider the needs of each stakeholder operating on the incident.

In New York City, however, a JOC was not established until well into the incident and after the towers had collapsed. Early in the incident, the FDNY established a command post in the lobby of each Tower,⁵⁸ the NYPD established their command post

⁵⁸ *Firehouse Magazine*, April 2002.

several blocks away from the World Trade Center.⁵⁹ This lack of communication between the Police and Fire Departments has been cited as a serious flaw in September 11 operations.⁶⁰

Training

The attacks of September 11 exposed many training needs for the fire and rescue service. Among the greatest is the need for greater education about terrorists, weapons of mass destructions, and biological and chemical agents. Prior to the attacks, there was limited training in these areas, in part because they were not deemed as a major concern, but also due to a lack of resources or funding to provide the training.

Other areas of training needs that volunteer fire departments mentioned in the course of the research for this project include: hazardous materials response, collapse/technical rescue response and incident command.

Fire departments also cited a need to train more with other government agencies and with fire departments from other jurisdictions. The attacks demonstrated the need for all agencies within the government to work together, however, very few training incidents bring together multiple agencies. Several of the volunteer fire chiefs in the Washington, D.C. area mentioned that, while they had not participated in multi-agency training exercises, their experience in working together at large events (such as the Marine Corps Marathon) was beneficial in preparing them for the September 11 attacks.

Site Security

Due to the criminal nature of terrorist attacks, the incident scene is also a crime scene, which requires personnel to maintain the integrity of evidence for future collection by law enforcement.

Further, in the initial days of the World Trade Center operation, it was difficult for the incident management team to establish a perimeter to control access to the site. This allowed for large-scale freelancing of individuals and units. Quickly establishing perimeter control, and use of identification badges for firefighters and EMTs are very

⁵⁹ “9/11 Exposed Deadly Flaws in Rescue Plan.” *New York Times*, July 7, 2002.

important, particularly at a site of a terrorist attack or other crime scenes. In the coming years, the fire service will work with other public safety agencies to develop new procedures for site security and access control.

Self-Dispatch and Freelancing

Self-dispatch and freelancing are a double-edged sword. On one hand, some responders mentioned that when personnel perceive that the authorities in charge are taking too long to deploy resources, self-dispatch was seen as an effective way to get personnel to the scene and functioning. Also, by working outside of established agreements, it may be possible to gain access to a specific piece of specialty equipment that would take many hours to acquire through the chain of command. But many others disagreed, saying that freelancing by off-duty career personnel or self-dispatch by mutual aid companies lends to chaos on the incident scene. Though it is clear that massive numbers of personnel are required to mitigate a large-scale terrorist attack, for everyone's safety, those personnel must adhere to SOPs and orders from the incident management team. The following are some of the myriad problems associated with self-dispatch and freelancing:

LACK OF ACCOUNTABILITY – Generally, Incident Commanders (ICs) must be aware of the number of personnel operating on the scene and their rough assignments to ensure safe operations. For example, it is not possible to determine whether a responder is missing if the IC didn't know the person was there to begin with.

INAPPROPRIATE PPE – Off-duty personnel responding to an incident may not have the proper PPE to protect them from debris, chemicals, or other hazards. By operating at the scene without appropriate PPE, they may be exposed to dangerous levels of hazardous materials, some of which can cause serious long-term health problems.

INABILITY TO COMMUNICATE – Personnel responding independently are likely not equipped with radios or other communications devices. As such, they are not able to communicate their activities to the Incident Commander.

⁶⁰ "9/11 Exposed Deadly Flaws in Rescue Plan." *New York Times*, July 7, 2002.

Conclusions

Hundreds of volunteer fire departments and thousands of volunteer firefighters responded to the terrorist attacks of September 11. Volunteers made a major contribution to both scene response and backfilling of fire stations. The personnel and equipment provided by volunteer fire departments was essential to operations at the attack sites and to maintaining a continuity of emergency services in communities surrounding them. Subsequently, there have been many effects on the volunteer fire service, and more to come, some positive and some negative. The events of September 11 demonstrated that the volunteer fire service is a major component of homeland security. However, the volunteer fire service, and the fire service as a whole, has major needs involving training, equipment, and operations to address to better prepare for the future.

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APPENDIX A: KNOWN PRINCIPAL DEPARTMENTS

Department	County	Status of Contact	Role	City	State	Incident
CONNECTICUT (4 Counties, 11 Departments)						
Greenwich Fire Department	Fairfield	Responded Online	Staging at Westchester Training Center/ Yonkers	Greenwich	CT	World Trade Center
New Hope (Glenbrook) Fire Company, Inc.	Fairfield	Info Received from State	Staging at Westchester Training Center/ Yonkers	Stamford	CT	World Trade Center
New Milford Fire Department	Fairfield	Responded Online	Staging at Westchester Training Center/ Yonkers	New Milford	CT	World Trade Center
Noroton Heights Fire Department	Fairfield	Info Received from State	Staging at Westchester Training Center/ Yonkers	Darien	CT	World Trade Center
Sound Beach Volunteer Fire Department	Fairfield	Responded Online	Staging at Westchester Training Center/ Yonkers	Old Greenwich	CT	World Trade Center
Turn of River	Fairfield	Info Received from State	Staging at Westchester Training Center/ Yonkers	Stamford	CT	World Trade Center
Town of Farmington Fire Department	Hartford	Responded Online	Engine to World Trade Center	Farmington	CT	World Trade Center
Derby Fire Department	New Haven	Responded Online	Personnel to World Trade Center	Derby	CT	World Trade Center
East Haven Fire Department	New Haven	Responded Online	Personnel to World Trade Center	East Haven	CT	World Trade Center
North Branford Fire Department	New Haven	Responded Online	Personnel to World Trade Center	North Branford	CT	World Trade Center
Groton Ambulance Association, Inc.	New London	Responded Online	Equipment/Support	Groton	CT	World Trade Center
DELAWARE (3 Counties, 33 Departments)						
Cheswold Fire Company	Kent	Info Received from State	Ambulance to Staging at Meadowlands	Cheswold	DE	World Trade Center
Citizen Hose Fire Company	Kent	Info Received from State	Ambulance to Staging at Meadowlands	Smyrna	DE	World Trade Center
Harrington Fire Company	Kent	Info Received from State	Ambulance to Staging at Meadowlands	Harrington	DE	World Trade Center
Hartly Fire Company	Kent	Info Received from State	Ambulance to Staging at Meadowlands	Hartly	DE	World Trade Center
Leipsic Fire Company	Kent	Info Received from State	Ambulance to Staging at Meadowlands	Dover	DE	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Marydel Fire Company	Kent	Info Received from State	Ambulance to Staging at Meadowlands	Marydel	DE	World Trade Center
Aetna Hose Hook & Ladder	New Castle	Info Received from State	Ambulance to Staging at Meadowlands	Newark	DE	World Trade Center
Christiana Fire Company	New Castle	Info Received from State	2 Ambulances to Staging at Meadowlands	Bear	DE	World Trade Center
Delaware City Fire Company	New Castle	Info Received from State	Ambulance to Staging at Meadowlands	Delaware City	DE	World Trade Center
Hockessin Fire Company	New Castle	Info Received from State	Ambulance to Staging at Meadowlands	Hockessin	DE	World Trade Center
Mill Creek Fire Company	New Castle	Info Received from State	2 Ambulances to Staging at Meadowlands	Wilmington	DE	World Trade Center
Minquas Fire Company	New Castle	Info Received from State	Ambulance to Staging at Meadowlands	Newport	DE	World Trade Center
Odessa Fire Company	New Castle	Info Received from State	Ambulance to Staging at Meadowlands	Odessa	DE	World Trade Center
Port Penn Fire Company	New Castle	Info Received from State	Ambulance to Staging at Meadowlands	Port Penn	DE	World Trade Center
Talleyville Fire Company	New Castle	Info Received from State	Ambulance to Staging at Meadowlands	Talleyville	DE	World Trade Center
Townsend Fire Company	New Castle	Info Received from State	Ambulance to Staging at Meadowlands	Townsend	DE	World Trade Center
Volunteer Hose Fire Company	New Castle	Info Received from State	Ambulance to Staging at Meadowlands	Middletown	DE	World Trade Center
Wilmington Manor Fire Company	New Castle	Info Received from State	Ambulance to Staging at Meadowlands	New Castle	DE	World Trade Center
Blades Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Seaford	DE	World Trade Center
Bridgeville Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Bridgeville	DE	World Trade Center
Dagsboro Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Dagsboro	DE	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Frankford Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Frankford	DE	World Trade Center
Georgetown Fire Company	Sussex	Responded Online	Ambulance to Staging at Meadowlands	Georgetown	DE	World Trade Center
Greenwood Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Greenwood	DE	World Trade Center
Gumboro Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Millsboro	DE	World Trade Center
Laurel Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Laurel	DE	World Trade Center
Lewes Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Lewes	DE	World Trade Center
Millsboro Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Millsboro	DE	World Trade Center
Millville Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Millville	DE	World Trade Center
Milton Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Milton	DE	World Trade Center
Rehoboth Beach Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Rehoboth Beach	DE	World Trade Center
Roxana Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Frankford	DE	World Trade Center
Seaford Fire Company	Sussex	Info Received from State	Ambulance to Staging at Meadowlands	Seaford	DE	World Trade Center
MARYLAND (3 Counties, 26 Departments)						
Woodsboro Volunteer Fire Company 16	Frederick	Responded Online	Truck Company to Pentagon	Woodsboro	MD	Pentagon
Bethesda Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Bethesda	MD	Pentagon
Bethesda Chevy Chase Rescue Squad	Montgomery	Interviewed	Backfilled DCFD and Arlington Stations/2 Medic Units to Pentagon	Bethesda	MD	Pentagon

Department	County	Status of Contact	Role	City	State	Incident
Burtonsville Volunteer Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Burtonsville	MD	Pentagon
Cabin John Park Volunteer Fire Department	Montgomery	Interviewed	One ALS Unit to Pentagon	Potomac	MD	Pentagon
Chevy Chase Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Chevy Chase	MD	Pentagon
Damascus Volunteer Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Damascus	MD	Pentagon
Gaithersburg-Wash Grove Vol. Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Gaithersburg	MD	Pentagon
Germantown Volunteer Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Germantown	MD	Pentagon
Glen Echo Volunteer Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Glen Echo	MD	Pentagon
Hillandale Volunteer Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Hillandale	MD	Pentagon
Hyattstown Volunteer Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Hyattstown	MD	Pentagon
Kensington Volunteer Fire Department	Montgomery	Interviewed	Backfilled DCFD Station/Ambulance to Pentagon	Kensington	MD	Pentagon
Laytonsville Volunteer Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Laytonsville	MD	Pentagon
Montgomery County Division of Volunteer Fire & Rescue Services	Montgomery	Interviewed	Scene Response	Rockville	MD	Pentagon
Rockville Volunteer Fire Department	Montgomery	Info Received from County	US&R Apparatus to Pentagon	Rockville	MD	Pentagon

Department	County	Status of Contact	Role	City	State	Incident
Sandy Spring Volunteer Fire Department	Montgomery	Info Received from County	One ambulance to scene	Sandy Spring	MD	Pentagon
Silver Spring Volunteer Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Silver Spring	MD	Pentagon
Takoma Park Volunteer Fire Department	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Takoma Park	MD	Pentagon
Upper Montgomery County Volunteer Fire Dept.	Montgomery	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Montgomery	MD	Pentagon
Wheaton Volunteer Rescue Squad	Montgomery	Interviewed	Backfilled DCFD Station/Ambulance to Pentagon	Wheaton	MD	Pentagon
Branchville Volunteer Fire Department	Prince George's	Interviewed	Backfilled DCFD Station/Engine to Scene	Branchville	MD	Pentagon
Cottage City Volunteer Fire Department	Prince George's	Info from Branchville Chief	Backfilled DCFD Station/Ladder Truck to Scene	Cottage City	MD	Pentagon
Greenbelt Volunteer Fire Department	Prince George's	Info from Branchville Chief	Backfilled DCFD Station/Engine to Scene	Greenbelt	MD	Pentagon
Kentland Volunteer Fire Department	Prince George's	Info from Branchville Chief	Backfilled DCFD Station/Engine to Scene	Landover	MD	Pentagon
Morningside Volunteer Fire Department	Prince George's	Info from Branchville Chief	Backfilled DCFD Station/Engine to Scene	Morningside	MD	Pentagon
NEW JERSEY (12 Counties, 73 Departments)						
Cresskill Volunteer Fire Department	Bergen	Unable to Contact	Unknown	Cresskill	NJ	World Trade Center
East Rutherford Fire Department	Bergen	Responded Online	Self-Dispatched Personnel to World Trade Center	East Rutherford	NJ	World Trade Center
Garfield Fire Department	Bergen	Responded Online	Backfilled FDNY Stations	Garfield	NJ	World Trade Center
Hillsdale Fire Department	Bergen	Unable to Contact	Unknown	Hillsdale	NJ	World Trade Center
New Milford Fire Department	Bergen	Responded Online	Engine to staging at GW Bridge	New Milford	NJ	World Trade Center
North Arlington Fire Department	Bergen	Unable to Contact	Unknown	North Arlington	NJ	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Northvale Fire Department	Bergen	Responded Online	Heavy Rescue to Staging at GW Bridge/Personnel to Fresh Kills Landfill	Northvale	NJ	World Trade Center
Norwood Fire & Rescue	Bergen	Responded Online	Heavy Rescue to World Trade Center and to Fresh Kills Landfill	Norwood	NJ	World Trade Center
Paramus Volunteer Fire Department	Bergen	Responded Online	Apparatus to World Trade Center	Paramus	NJ	World Trade Center
Ramsey Volunteer Fire Department	Bergen	Responded Online	Staging at Meadowlands	Ramsey	NJ	World Trade Center
Ridgefield Park Fire Department	Bergen	Responded Online	Ladder to Staging at GW Bridge/Engine to Decon at Hoboken	Ridgefield	NJ	World Trade Center
River Edge Fire Department	Bergen	Responded Online	Staging at Fort Lee	River Edge	NJ	World Trade Center
Rutherford Fire Department	Bergen	Responded Online	Personnel to World Trade Center	Rutherford	NJ	World Trade Center
Teaneck Volunteer Ambulance Corps	Bergen	Interviewed	Staging/Scene Response	Teaneck	NJ	World Trade Center
Wood-Ridge Fire Department	Bergen	Unable to Contact	Unknown	Wood Ridge	NJ	World Trade Center
Wyckoff Township Fire Department	Bergen	Responded Online	Heavy Rescue to World Trade Center and Fresh Kills Landfill	Wyckoff	NJ	World Trade Center
Burlington Township Fire Department	Burlington	Interviewed	Lighting at Staging Area	Burlington Twp	NJ	World Trade Center
Endeavor Emergency Squad	Burlington	Responded Online	Heavy Rescue to Staging at the Meadowlands/EMS crews to World Trade Center	Burlington	NJ	World Trade Center
Hainesport Volunteer Fire Company # 1	Burlington	Messages Left; No Response	Unknown	Hainesport	NJ	World Trade Center
Southampton Fire Department	Burlington	Unable to Contact	Unknown	Southampton	NJ	World Trade Center
Rosenhayn Fire and Rescue	Cumberland	Responded Online	EMS to World Trade Center	Rosenhayn	NJ	World Trade Center
Bloomfield Fire Department	Essex	Responded Online	Backfilled FDNY Stations	Bloomfield	NJ	World Trade Center
Caldwell Fire Department	Essex	Messages Left; No Response	Unknown	Caldwell	NJ	World Trade Center
Cedar Grove Fire Department	Essex	Responded Online	Engine to Staging/Backfilled FDNY E279 - L131	Cedar Grove	NJ	World Trade Center
Fairfield Fire Department	Essex	Responded Online	Ladder Backfilled in Brooklyn and Staten Island	Fairfield	NJ	World Trade Center
Fairfield Fire Department	Essex	Responded Online	Backfilled FDNY Stations in Brooklyn and Staten Island	Fairfield	NJ	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Livingston Fire Department	Essex	Responded Online	Backfilled FDNY E231 (Brooklyn); Heavy Rescue Backfilled FDNY R5 (Staten Island)	Livingston	NJ	World Trade Center
North Caldwell Volunteer Fire Company	Essex	Responded Online	Support: Moved Bottled Water to Hazmat Teams on NJ Side	North Caldwell	NJ	World Trade Center
Nutley Fire Department	Essex	Responded Online	Decon Operations at Hoboken, Jersey City, Newark Penn Station, and Newark UMDNJ/Personnel and EMS to World Trade Center/Backfilled FDNY Station in Staten Island	Nutley	NJ	World Trade Center
Pequanook Engine Company # 1	Essex	Responded Online	Staged	Pompton Plains	NJ	World Trade Center
Verona	Essex	Unable to Contact	Unknown	Verona	NJ	World Trade Center
Quakertown Fire Company	Hunterdon	Responded Online	Heavy Rescue to World Trade Center	Pittstown	NJ	World Trade Center
De Cou Fire Company	Mercer	Information from state; Messages Left	Lighting unit to World Trade Center	Hamilton	NJ	World Trade Center
West Windsor Volunteer Fire Company	Mercer	Messages Left; No Response	Unknown	Princeton Junction	NJ	World Trade Center
Arbor Hose Company # 1	Middlesex	Responded Online	Apparatus to World Trade Center	Piscataway	NJ	World Trade Center
Brookview Volunteer Fire Company	Middlesex	Responded Online	Engine to FDNY Stations in Brooklyn	East Brunswick	NJ	World Trade Center
Colonia Volunteer Fire Department	Middlesex	Responded Online	Backfilled FDNY E249 (Brooklyn)	Colonia	NJ	World Trade Center
Dunellen Fire Department	Middlesex	Responded Online	Staging at Sayerville/Backfilled FDNY E219-L105 (Brooklyn) and FDNY E216-L108 (Brooklyn)	Dunellen	NJ	World Trade Center
East Brunswick Fire Department	Middlesex	Responded Online	2 Engines, Ladder, Heavy Rescue Backfilled FDNY Stations at Staten Island and Brooklyn/Apparatus to World Trade Center	East Brunswick	NJ	World Trade Center
Iselin Fire Department District # 11	Middlesex	Responded Online	Backfilled FDNY E276 (Brooklyn)	Iselin	NJ	World Trade Center
Keasbey Fire Department	Middlesex	Responded Online	Backfilled FDNY Stations	Keasbey	NJ	World Trade Center
Melrose Hose Company	Middlesex	Responded Online	Engine to World Trade Center	South Amboy	NJ	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Metuchen Fire Department	Middlesex	Responded Online	Heavy Rescue to Staging at Goethals Bridge and Minor League Ball Park on Staten Island	Metuchen	NJ	World Trade Center
Milltown Fire Department	Middlesex	Responded Online	Backfilled FDNY E225 - L107 (Brooklyn)	Milltown	NJ	World Trade Center
New Market Fire Department	Middlesex	Responded Online	Heavy Rescue to World Trade Center	Piscataway	NJ	World Trade Center
North Brunswick Engine Company Number One	Middlesex	Responded Online	Backfilled FDNY E231 (Brooklyn)	North Brunswick	NJ	World Trade Center
North Brunswick Engine & Truck 2	Middlesex	Responded Online	Backfilled FDNY E257 (Brooklyn)	North Brunswick	NJ	World Trade Center
North Brunswick Volunteer Fire Company # 3	Middlesex	Responded Online	Backfilled FDNY E214 (Brooklyn)	North Brunswick	NJ	World Trade Center
North Stelton Volunteer Fire Company	Middlesex	Responded Online	Ambulance to Liberty State Park	Piscataway	NJ	World Trade Center
Perth Amboy Fire Department	Middlesex	Responded Online	Engine to New York City	Perth Amboy	NJ	World Trade Center
Plainsboro Fire Company	Middlesex	Responded Online	Backfilled at FDNY Station in Staten Island	Plainsboro	NJ	World Trade Center
River Road Fire Company	Middlesex	Responded Online	Aerial Platform Backfilled FDNY Stations in Brooklyn	Piscataway	NJ	World Trade Center
Sayreville Fire Department	Middlesex	Responded Online	Backfilled FDNY Stations in Brooklyn	Parlin	NJ	World Trade Center
South Plainfield Fire Department	Middlesex	Responded Online	Truck to Staging at Middlesex/Backfilled FDNY Station in Brooklyn	South Plainfield	NJ	World Trade Center
Atlantic Highlands Fire Aid Squad	Monmouth	Responded Online	Decontamination at SeaStreak ferry	Atlantic Highlands	NJ	World Trade Center
Middletown Twp. Fire Department	Monmouth	Responded Online	Air Unit to World Trade Center/Decon at Middletown Train Station and at Ferry Station/Personnel to World Trade Center	Leonardo	NJ	World Trade Center
West Belmar Fire Department	Monmouth	Responded Online	Apparatus to Allaire Airport (used as MedEVAC landing zone/Heavy Rescue to World Trade Center)	Township of Wall	NJ	World Trade Center
Boonton Fire Department	Morris	Responded Online	Search and Rescue at World Trade Center	Boonton	NJ	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Roxbury Fire Department	Morris	Responded Online	Rescue, Ambulance, Air/Light Truck to World Trade Center	Succasunna	NJ	World Trade Center
Berkeley Township	Ocean	Unable to Contact	Unknown	Bayville	NJ	World Trade Center
Brick Township Fire Department	Ocean	Responded Online	CISM and Lighting at World Trade Center	Brick	NJ	World Trade Center
Jackson Township Fire Bureau	Ocean	Unable to Contact	Unknown	Jackson	NJ	World Trade Center
North Haledon Fire Department	Passaic	Responded Online	Responded to Standby in Staten Island –Returned Enroute	North Haledon	NJ	World Trade Center
Ringwood Fire Department	Passaic	Unable to Contact	Unknown	Ringwood	NJ	World Trade Center
Wayne Fire Department	Passaic	Responded Online	Staging at Meadowlands	Wayne	NJ	World Trade Center
Clark Fire Department	Union	Responded Online	Ladder Backfilled FDNY E249-L109 (Staten Island)/Personnel to Fresh Kills Landfill	Clark	NJ	World Trade Center
Elizabeth Fire Department	Union	Declined	Department is refusing to release information about operations.	Elizabeth	NJ	World Trade Center
Hillside Fire Department	Union	Unable to Contact	Unknown	Hillside	NJ	World Trade Center
Merck Industrial Volunteer Fire Department	Union	Responded Online	Heavy Rescue Team Staging at Staten Island	Rahway	NJ	World Trade Center
Roselle Park Fire Department	Union	Interviewed/Online Response	Engine, Ladder Backfilled FDNY Stations in Staten Island and Brooklyn	Roselle Park	NJ	World Trade Center
Scotch Plains Fire Department	Union	Responded Online	Backfilled FDNY E155 - L78	Scotch Plains	NJ	World Trade Center
Summit Fire Department	Union	Interviewed	Backfill/Decon on NJ side	Summit	NJ	World Trade Center
Union Fire Department	Union	Unable to Contact	Unknown	Union	NJ	World Trade Center
NEW YORK (14 Counties, 166 Departments)						
Aviation Volunteer Fire Department	Bronx	Interviewed	Fire Suppression, Search and Rescue at World Trade Center	Bronx	NY	World Trade Center
Baldwin Fire Department	Chemung	Responded Online	Heavy Rescue to World Trade Center/Engine, Ladder, Ambulance to Staging/Ladder Backfilled in Queens/Support and Logistical Operations	Baldwin	NY	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Afton Fire Department Emergency Squad	Chenango	List Received	EMS Provider to World Trade Center	Afton	NY	World Trade Center
Greene Fire Department	Chenango	Responded Online	Ambulance to World Trade Center	Greene	NY	World Trade Center
Norwich Fire Department EMS	Chenango	List Received	Ambulance to World Trade Center	Norwich	NY	World Trade Center
Oxford Fire Department Emergency Squad	Chenango	List Received	Ambulance to World Trade Center	Oxford	NY	World Trade Center
Sherburne Fire Department Emergency Squad	Chenango	List Received	Ambulance to World Trade Center	Sherburne	NY	World Trade Center
Gerritsen Beach Fire Department	Delaware	Responded Online	Backfilled FDNY E321/Ambulance to World Trade Center	Brooklyn	NY	World Trade Center
Hancock Fire Department	Delaware	Responded Online	EMS to World Trade Center	Hancock	NY	World Trade Center
Beacon Volunteer Ambulance Corps	Dutchess	Responded Online	Backfilled in Garrison (Putnam/Westchester Border)	Beacon	NY	World Trade Center
Colden Fire Company	Erie	Responded Online	Ambulance to World Trade Center	Colden	NY	World Trade Center
East Amherst Fire Department	Erie	Responded Online	Ambulance to World Trade Center	East Amherst	NY	World Trade Center
Getzville Fire Company	Erie	Responded Online	Ambulance to World Trade Center	Getzville	NY	World Trade Center
Main-Transit Fire Department	Erie	Responded Online	Ambulance to World Trade Center	Williamsville	NY	World Trade Center
West Falls Fire Company	Erie	Responded Online	Ambulance to World Trade Center	West Falls	NY	World Trade Center
Bellerose Fire Department	Nassau	Responded Online	Staging at Belmont Raceway/Personnel to World Trade Center	Bellerose Village	NY	World Trade Center
East Meadow Fire Department	Nassau	Responded Online	Engine and Truck Backfilled in Queens; 2 Ambulances to Manhattan	East Meadow	NY	World Trade Center
Elmont Fire Department	Nassau	Messages Left; No Response	Unknown	Elmont	NY	World Trade Center
Floral Park Centre Fire Department	Nassau	Messages Left; No Response	Unknown	Floral Park Centre	NY	World Trade Center
Franklin Square & Munson Fire Department	Nassau	Responded Online	Staging at Belmont Racetrack/ Backfilled FDNY L165; Ambulance to Belmont, Shea, and Chelsea Piers, and then to South Street HQ/Heavy Rescue, Ambulance to World Trade Center		NY	World Trade Center
Great Neck Vigilant Fire Department	Nassau	Messages Left; No Response	Unknown	Great Neck	NY	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Hicksville Fire Department	Nassau	Responded Online	Truck, Ambulance, 2 Engines to World Trade Center	Hicksville	NY	World Trade Center
Inwood Fire Department	Nassau	Interviewed	Staging at Shea Stadium	Inwood	NY	World Trade Center
Jericho Fire Department	Nassau	Responded Online	Engine, Heavy Rescue, Ambulance to Staging at Shea Stadium/Ambulance to Lower Manhattan/Engine to Queens/Heavy Rescue to World Trade Center	Jericho	NY	World Trade Center
Lawrence-Cedarhurst Fire Department	Nassau	Interviewed	Staging/Scene Response	Lawrence-Cedarhurst	NY	World Trade Center
Lynbrook Fire Department	Nassau	Faxed RG	Unknown	Lynbrook	NY	World Trade Center
Malverne Fire Department	Nassau	Received Faxed RG	Heavy Rescue to World Trade Center/ Engine backfilled FDNY E293 (Queens)	Malverne	NY	World Trade Center
Manhasset-Lakeville Fire Department	Nassau	Interviewed	Backfill/Search & Rescue at World Trade Center	Manhasset	NY	World Trade Center
Massapequa Fire District	Nassau	Responded Online	Special Ops Team to World Trade Center/Tower Ladder, Engine to Staging at Belmont Racetrack/Heavy Rescue to Fresh Kills Landfill	Massapequa	NY	World Trade Center
Meadowmere Park Fire Department	Nassau	Interviewed	Staging/Backfill	Lawrence	NY	World Trade Center
New Hyde Park Fire Department	Nassau	Messages Left; No Response	Unknown	New Hyde Park	NY	World Trade Center
North Bellmore Fire Department	Nassau	Responded Online	Ambulance, Heavy Rescue to World Trade Center/Engine to Staging	North Bellmore	NY	World Trade Center
Plainview Fire Department	Nassau	Responded Online	Staging/Backfill in Brooklyn/Search & Rescue at World Trade Center	Plainview	NY	World Trade Center
Rescue Hook & Ladder Company # 1	Nassau	Responded Online	Power and Light Unit to World Trade Center/Backfilled in Queens	Roslyn	NY	World Trade Center
Rockville Center Fire Department	Nassau	Messages Left; No Response	Unknown	Rockville Center	NY	World Trade Center
South Farmingdale	Nassau	Responded Online	Engine to Staging at Aqueduct Racetrack in Jamaica, Queens/Ambulance to Manhattan (Chelsea Street Pier for EMS)	South Farmingdale	NY	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Uniondale Fire Department	Nassau	Messages Left; No Response	Unknown	Uniondale	NY	World Trade Center
Valley Stream Fire Department	Nassau	Responded Online	Engine, Tower Ladder, Ambulance Backfilled/Ambulance to World Trade Center	Valley Stream	NY	World Trade Center
Williston Park Fire Department	Nassau	Messages Left; No Response	Unknown	Williston Park	NY	World Trade Center
Woodmere Fire Department	Nassau	Interviewed	Scene Response	Woodmere	NY	World Trade Center
Carmel Fire Department	Putnam	Interviewed	Staging at Westchester Training Center/	Carmel	NY	World Trade Center
Lake Carmel Fire Department	Putnam	Interviewed	Staging at Westchester Training Center/	Carmel	NY	World Trade Center
Mahopac Falls Fire Department	Putnam	Messages Left; No Response	Unknown	Mahopac Falls	NY	World Trade Center
Mahopac Volunteer Fire Department	Putnam	Messages Left; No Response	Unknown	Mahopac	NY	World Trade Center
Patterson Fire Department No. 1, Inc.	Putnam	Responded Online	Backfilled in Yonkers/EMS to New York City	Patterson	NY	World Trade Center
Broad Channel Volunteer Fire Department	Queens	Responded Online	Ambulance to World Trade Center (Destroyed in Collapse)/Engine Backfilled FDNY E331 and FDNY E276	Queens	NY	World Trade Center
West Hamilton Beach Volunteer Fire Department and Ambulance Corps.	Queens	Responded Online	Ambulance and Personnel to World Trade Center/Backfilled FDNY E331	Howard Beach	NY	World Trade Center
Oceanic Hook & Ladder Co. 1	Richmond	Responded Online	Personnel to World Trade Center	Staten Island	NY	World Trade Center
Congers Fire Department	Rockland	Messages Left; No Response	Unknown	Congers	NY	World Trade Center
Nyack Fire Department	Rockland	Messages Left; No Response	Unknown	Nyack	NY	World Trade Center
Pearl River Fire Department	Rockland	Messages Left; No Response	Unknown	Pearl River	NY	World Trade Center
Stony Point Fire Department	Rockland	Interviewed	Staging at Westchester Training Center/	Stony Point	NY	World Trade Center
Tappan Fire Department	Rockland	Interviewed	Staging at Westchester Training Center/	Tappan	NY	World Trade Center
Thiells Fire Department	Rockland	Faxed RG	Unknown	Thiells	NY	World Trade Center
West Nyack Fire Department	Rockland	Interviewed	Staging at Westchester Training Center/	West Nyack	NY	World Trade Center
Amagansett Fire Department	Suffolk	Messages Left; No Response	Unknown	Amagansett	NY	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Amityville Fire Department	Suffolk	Interviewed	Ambulance/Engine to Staging	Amityville	NY	World Trade Center
Babylon Fire Department	Suffolk	Messages Left; No Response	Unknown	Babylon	NY	World Trade Center
Bellport Fire Department	Suffolk	Faxed RG	Unknown	Bellport	NY	World Trade Center
Blue Point Fire Department	Suffolk	Interviewed	Staging at Belmont Racetrack/Scene Response	Blue Point	NY	World Trade Center
Bohemia Fire Department	Suffolk	Interviewed	Backfill/Scene Response	Bohemia	NY	World Trade Center
Brookhaven Fire Department	Suffolk	Responded Online	Apparatus and Personnel to World Trade Center/Backfilled FDNY Stations	Brookhaven	NY	World Trade Center
Center Moriches Fire Department	Suffolk	Responded Online	Apparatus to World Trade Center	Center Moriches	NY	World Trade Center
Centereach Fire Department	Suffolk	Messages Left; No Response	Unknown	Centereach	NY	World Trade Center
Copiague Fire Department	Suffolk	Messages Left; No Response	Unknown	Copiague	NY	World Trade Center
Coram Fire Department	Suffolk	Messages Left; No Response	Unknown	Coram	NY	World Trade Center
Cutchogue Fire Department	Suffolk	Interviewed	Scene Response	Cutchogue	NY	World Trade Center
Deer Park Volunteer Fire Department	Suffolk	Interviewed	Staging/Backfill	Deer Park	NY	World Trade Center
Flanders Fire Department	Suffolk	Interviewed	Scene Response	Flanders	NY	World Trade Center
Greenport Fire Department	Suffolk	Responded Online	Heavy Rescue and Floodlight Unit to World Trade Center; Tower Ladder to Staging	Greenport	NY	World Trade Center
Hagerman Fire Department	Suffolk	Responded Online	Dept. members responded to World Trade Center	East Patchogue	NY	World Trade Center
Hampton Bays Fire Company	Suffolk	Messages Left; No Response	Unknown	Hampton Bays	NY	World Trade Center
Hauppague Volunteer Fire Department	Suffolk	Messages Left; No Response	Unknown	Hauppague	NY	World Trade Center
Holbrook Fire Department	Suffolk	Messages Left; No Response	Unknown	Holbrook	NY	World Trade Center
Islip Terrace Fire Department	Suffolk	Interviewed	Station Backfill	Islip Terrace	NY	World Trade Center
Jamesport Fire Department	Suffolk	Unable to Contact	Unknown	Jamesport	NY	World Trade Center
Kings Park Fire Department	Suffolk	Messages Left; No Response	Unknown	Kings Park	NY	World Trade Center
Lindenhurst Fire Department	Suffolk	Unable to Contact	Unknown	Lindenhurst	NY	World Trade Center
Manorville Fire Department	Suffolk	Messages Left; No Response	Unknown	Manorville	NY	World Trade Center
Mastic Beach Fire Department	Suffolk	Interviewed	Scene Response	Mastic Beach	NY	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Mattituck Fire Department	Suffolk	Messages Left; No Response	Unknown	Mattituck	NY	World Trade Center
Middle Island Fire Department	Suffolk	Responded Online	Search and Rescue at World Trade Center	Middle Island	NY	World Trade Center
Miller Place Fire District	Suffolk	Messages Left; No Response	Unknown	Miller Place	NY	World Trade Center
Montauk Fire Department	Suffolk	Interviewed	Scene Response	Montauk	NY	World Trade Center
Mount Sinai Fire Department	Suffolk	Responded Online	Heavy Rescue to World Trade Center	Mount Sinai	NY	World Trade Center
Nesconsett Fire Department	Suffolk	Responded Online	Heavy Rescue to World Trade Center/Engine to Staging at Belmont Racetrack/Tower Ladder Backfilled in Queens	Nesconsett	NY	World Trade Center
North Amityville Fire Company	Suffolk	Messages Left; No Response	Unknown	Amityville	NY	World Trade Center
North Babylon Volunteer Fire Company	Suffolk	Faxed RG	Unknown	North Babylon	NY	World Trade Center
North Lindenhurst Fire Department	Suffolk	Interviewed	Backfill/Scene Response	North Lindenhurst	NY	World Trade Center
North Sea Fire Department	Suffolk	No Answer	Unknown	Southampton	NY	World Trade Center
Patchogue Fire Department	Suffolk	Interviewed	Backfill/Scene Response	Patchogue	NY	World Trade Center
Riverhead Fire Department	Suffolk	Interviewed	Scene Response	Riverhead	NY	World Trade Center
Saint James Fire Department	Suffolk	Messages Left; No Response	Unknown	Saint James	NY	World Trade Center
Sayville Fire Department	Suffolk	Interviewed	Engine Backfilled/Light Truck to World Trade Center	Sayville	NY	World Trade Center
Selden Fire Department	Suffolk	Interviewed	Staging/Scene Response	Selden	NY	World Trade Center
Setauket Fire Department	Suffolk	Messages Left; No Response	Unknown	East Setauket	NY	World Trade Center
Smithtown Fire Department	Suffolk	Responded Online	Engine, Ambulance, Tower Ladder, Heavy Rescue, and Transport Vehicle Backfilled in Queens and Manhattan	Smithtown	NY	World Trade Center
Sound Beach Fire Department	Suffolk	Responded Online	Heavy Rescue to World Trade Center for Lighting	Sound Beach	NY	World Trade Center
Southampton Fire Department	Suffolk	Messages Left; No Response	Unknown	Southampton	NY	World Trade Center
Southold Fire Department	Suffolk	Interviewed	Lack of Manpower to Respond	Southold	NY	World Trade Center
Stony Brook Fire Department	Suffolk	Faxed RG	Unknown	Stony Brook	NY	World Trade Center
Terryville Fire Department	Suffolk	Messages Left; No Response	Unknown	Port Jefferson Station	NY	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Town of Brookhaven Division of Fire Prevention	Suffolk	Interviewed	Scene Response	Medford	NY	World Trade Center
Wading River Fire Department	Suffolk	Faxed RG	Unknown	Wading River	NY	World Trade Center
Wales Center Volunteer Fire Company	Suffolk	Responded Online	EMS crews to World Trade Center	Wales Center	NY	World Trade Center
West Babylon Volunteer Fire Department	Suffolk	Messages Left; No Response	Unknown	West Babylon	NY	World Trade Center
West Islip Fire Department	Suffolk	Declined	Unknown	West Islip	NY	World Trade Center
West Sayville Fire Department	Suffolk	Interviewed	Staging/Scene Response	West Sayville	NY	World Trade Center
Wyandance Fire Department	Suffolk	Unable to Contact	Scene Response	Wyandance	NY	World Trade Center
Yaphank Fire Department	Suffolk	Messages Left; No Response	Unknown	Yaphank	NY	World Trade Center
Archville Fire Department	Westchester	Messages Left; No Response	Unknown	Archville	NY	World Trade Center
Ardsley Fire Department	Westchester	Responded Online	Backfilled in the Bronx/Personnel to Manhattan	Ardsley	NY	World Trade Center
Armonk Fire Department	Westchester	Faxed RG	Unknown	Armonk	NY	World Trade Center
Banksville Independent Fire Company	Westchester	Interviewed	Staging/Backfill	Banksville	NY	World Trade Center
Bedford Hills Fire Department	Westchester	Messages Left; No Response	Unknown	Bedford Hills	NY	World Trade Center
Bedford Village Fire Department	Westchester	Messages Left; No Response	Unknown	Bedford	NY	World Trade Center
Briarcliff Manor Fire Department	Westchester	Interviewed	Backfill/Scene Response	Briarcliff Manor	NY	World Trade Center
Buchanon Engine Company 1	Westchester	Messages Left; No Response	Unknown	Buchanon	NY	World Trade Center
Chappaqua Fire Department	Westchester	Messages Left; No Response	Unknown	Chappaqua	NY	World Trade Center
Continental Village Fire Department	Westchester	Unable to Contact	Scene Response	Continental Village	NY	World Trade Center
Croton Falls Fire Department	Westchester	Messages Left; No Response	Unknown	Croton Falls	NY	World Trade Center
Croton-on-Hudson Volunteer Fire Department	Westchester	Responded Online	Engine Backfilled FDNY E89 (Bronx)/Engine and crew to World Trade Center	Croton	NY	World Trade Center
Dobbs Ferry Fire Department	Westchester	Declined	Unknown	Dobbs Ferry	NY	World Trade Center
Eastchester Fire Department	Westchester	Messages Left; No Response	Unknown	Eastchester	NY	World Trade Center
Elmsford Fire Department	Westchester	Responded Online	Backfilled in the Bronx	Elmsford	NY	World Trade Center
Fairview Fire Department	Westchester	Interviewed	Staging/Scene Response	White Plains	NY	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Farmingdale Fire Department	Westchester	Responded Online	Pumper staged at Belmont Racetrack/Heavy Rescue to World Trade Center	Farmingdale	NY	World Trade Center
Goldens Bridge Fire Department	Westchester	Messages Left; No Response	Unknown	Goldens Bridge	NY	World Trade Center
Greenville Fire Department	Westchester	Interviewed	Scene Response	Scarsdale	NY	World Trade Center
Harrison Fire Department	Westchester	Messages Left; No Response	Unknown	Harrison	NY	World Trade Center
Hartsdale Fire Department	Westchester	Interviewed	Station Backfill	Hartsdale	NY	World Trade Center
Hastings-on-Hudson Fire Department	Westchester	Interviewed	Staging at Valhalla	Hastings-on-Hudson	NY	World Trade Center
Hawthorne Fire District	Westchester	Messages Left; No Response	Unknown	Hawthorne	NY	World Trade Center
Irvington Fire Department	Westchester	Messages Left; No Response	Unknown	Irvington	NY	World Trade Center
Katonah Fire Department	Westchester	Responded Online	Staging in the Bronx/2 Crews to World Trade Center	Katonah	NY	World Trade Center
Lake Mohegan Fire Department	Westchester	Interviewed	Backfill/Scene Response	Mohegan Lake	NY	World Trade Center
Larchmont Fire Department	Westchester	Responded Online	Engine Backfilled FDNY E90 (Bronx)/Tower Ladder and Rescue to Staging in the Bronx/Tower Ladder Backfilled in Bronx	Larchmont	NY	World Trade Center
Mamaroneck (Town) Fire Department	Westchester	Interviewed	Station Backfill	Larchmont	NY	World Trade Center
Mamaroneck (Village) Fire Department	Westchester	Responded Online	2 Engines, Ladder Backfilled in Northern Bronx	Mamaroneck	NY	World Trade Center
Millwood Fire Company No 1	Westchester	Interviewed	Staging at Valhalla	Millwood	NY	World Trade Center
Montrose Fire Department	Westchester	Responded Online	Heavy Rescue and Pumper Backfilled	Montrose	NY	World Trade Center
Mount Kisco Fire Department	Westchester	No Answer	Unknown	Mount Kisco	NY	World Trade Center
Mount Vernon Fire Department	Westchester	Interviewed	Backfill/Scene Response	Mount Vernon	NY	World Trade Center
North White Plains Fire Department	Westchester	Messages Left; No Response	Unknown	North White Plains	NY	World Trade Center
Ossining Fire Department	Westchester	Interviewed	Staging at Valhalla	Ossining	NY	World Trade Center
Peekskill Fire Department	Westchester	Messages Left; No Response	Unknown	Peekskill	NY	World Trade Center
Pelham Manor Fire Department	Westchester	Responded Online	Engine to Staging/Search & Rescue at World Trade Center	Pelham Manor	NY	World Trade Center

Department	County	Status of Contact	Role	City	State	Incident
Plesantville Fire Department	Westchester	Messages Left; No Response	Unknown	Plesantville	NY	World Trade Center
Pocantico Hills Fire Department	Westchester	Interviewed	Staging at Bronx then Yonkers	Pocantico Hills	NY	World Trade Center
Port Chester Fire Department	Westchester	Messages Left; No Response	Unknown	Port Chester	NY	World Trade Center
Pound Ridge Fire Department	Westchester	Interviewed	Station Backfill	Pound Ridge	NY	World Trade Center
Purchase Fire Department	Westchester	Interviewed	Station Backfill	Purchase	NY	World Trade Center
Rye Fire Department	Westchester	Faxed RG	Unknown	Rye	NY	World Trade Center
Scarsdale Fire Department	Westchester	Faxed RG	Unknown	Scarsdale	NY	World Trade Center
Somers Volunteer Fire Department	Westchester	Responded Online	Engine Backfilled in the Bronx/Ambulance to Staging	Somers	NY	World Trade Center
South Salem Fire Department	Westchester	Received Faxed RG	Staging/Scene Response	South Salem	NY	World Trade Center
Tarrytown Fire Department	Westchester	Messages Left; No Response	Unknown	Tarrytown	NY	World Trade Center
Thornwood Fire District	Westchester	Responded Online	Backfilled in the Bronx/Responded to World Trade Center	Thornwood	NY	World Trade Center
Valhalla Fire Department	Westchester	Responded Online	Staging at Valhalla/Backfilled FDNY E63 for 3 Days	Valhalla	NY	World Trade Center
Verplanck Fire Department	Westchester	Messages Left; No Response	Unknown	Verplanck	NY	World Trade Center
Vista Fire Department	Westchester	Messages Left; No Response	Unknown	South Salem	NY	World Trade Center
West Harrison Fire Department No 1	Westchester	Interviewed	Staging at Valhalla	East White Plains	NY	World Trade Center
White Plains Fire Department	Westchester	Messages Left; No Response	Unknown	White Plains	NY	World Trade Center
Yonkers Fire Department	Westchester	Faxed RG	Unknown	Yonkers	NY	World Trade Center
Yorktown Fire Department	Westchester	Messages Left; No Response	Unknown	Yorktown Heights	NY	World Trade Center
Wyoming County Emergency Services	Wyoming	Responded Online	5 Ambulances to World Trade Center	Strykersville	NY	World Trade Center
PENNSYLVANIA (4 Counties, 13 Departments)						
Upper Yoder Volunteer Fire Company	Cambria	Responded Online	Ambulance to UAL Flight 93	Johnstown	PA	UAL 93
Lehigh County Hazardous Materials Response Team	Lehigh	Responded Online	Staging at Meadowlands	Allentown	PA	World Trade Center
Wyndmoor Hose Company Number 1	Montgomery	Responded Online	Personnel to World Trade Center/ Logistics and Supply Operations	Wyndmoor	PA	World Trade Center
Berlin Volunteer Fire Department	Somerset	Messages Left; No Response	Scene Response	Berlin	PA	UAL 93
Central City Fire Department	Somerset	Unable to Contact	Scene Response	Central City	PA	UAL 93

Department	County	Status of Contact	Role	City	State	Incident
Friedens Volunteer Fire Company	Somerset	Messages Left; No Response	Scene Response	Friedens	PA	UAL 93
Hooversville Rescue Squad	Somerset	Faxed RG	Scene Response	Hooversville	PA	UAL 93
Hooversville Volunteer Fire Department	Somerset	Unable to Contact	Scene Response	Hooversville	PA	UAL 93
Listie Volunteer Fire Company	Somerset	Interviewed	Engine and Tanker to Scene; Crews on scene for several days after attack	Listie	PA	UAL 93
Shanksville Volunteer Fire Company	Somerset	Interviewed	Scene Response	Shanksville	PA	UAL 93
Somerset Area Ambulance Association	Somerset	Unable to Contact	Scene Response	Somerset	PA	UAL 93
Somerset Volunteer Fire Department	Somerset	Interviewed	Scene Response	Somerset	PA	UAL 93
Stoystown Volunteer Fire Company	Somerset	Messages Left; No Response	Scene Response	Stoystown	PA	UAL 93
VIRGINIA (4 Counties, 5 Cities, 53 Departments)						
Arlington Volunteer Fire Department	Arlington	Interviewed	Scene Response	Arlington	VA	Pentagon
Ballston Volunteer Fire Department	Arlington	Interviewed	Scene Response	Arlington	VA	Pentagon
Cherrydale Volunteer Fire Department	Arlington	Interviewed	Light/Air Unit and Utility Responded to Pentagon	Arlington	VA	Pentagon
Clarendon Volunteer Fire Department	Arlington	Interviewed	Scene Response	Arlington	VA	Pentagon
Fairlington Volunteer Fire Department	Arlington	Interviewed	Scene Response	Arlington	VA	Pentagon
Jefferson Volunteer Fire Department	Arlington	Interviewed	Scene Response	Arlington	VA	Pentagon
Alexandria Volunteer Fire Department	Alexandria (City)	Interviewed	Scene Response	Alexandria	VA	Pentagon
Falls Church Volunteer Fire Department	Falls Church (City)	Interviewed	Canteen and Utility Responded to Pentagon	Falls Church	VA	Pentagon
Annandale Volunteer Fire Department	Fairfax	Info Received from County	Backfilled Fire Stations	Annandale	VA	Pentagon
Bailey's Crossroads Volunteer Fire Department	Fairfax	Info Received from County	Upstaffed apparatus at station	Bailey's Crossroads	VA	Pentagon
Burke Volunteer Fire Department	Fairfax	Info Received from County	Backfilled Fire Stations	Burke	VA	Pentagon
Centreville Volunteer Fire Department	Fairfax	Interviewed/Responded Online	Truck and ALS Unit Responded to Pentagon/Backfilled Fire Stations	Centreville	VA	Pentagon
Dunn Loring Volunteer Fire Department	Fairfax	Info Received from County	Backfilled Fire Stations	Dunn Loring	VA	Pentagon
Fair Oaks Volunteer Fire Department	Fairfax	Info Received from County	Backfilled Fire Stations	Fair Oaks	VA	Pentagon

Department	County	Status of Contact	Role	City	State	Incident
Fairfax County Fire and Rescue Department	Fairfax	Interviewed	Scene Response/Backfilled ACFD and Alexandria Stations	Fairfax	VA	Pentagon
Franconia Volunteer Fire Department	Fairfax	Info Received from County	Backfilled Fire Stations	Franconia	VA	Pentagon
Greater Springfield Volunteer Fire Department	Fairfax	Info Received from County	Backfilled Fire Stations	Springfield	VA	Pentagon
Great Falls Volunteer Fire Department	Fairfax	Info Received from County	Backfilled Fire Stations	Great Falls	VA	Pentagon
Lorton Volunteer Fire Department	Fairfax	Info Received from County	Backfilled Fire Stations	Lorton	VA	Pentagon
McLean Volunteer Fire Department	Fairfax	Info Received from County	Backfilled Fire Stations	McLean	VA	Pentagon
Fairfax City Fire Department	Fairfax (City)	Interviewed	Scene Response, Backfilled Falls Church station	Fairfax City	VA	Pentagon
Loudoun County Fire and Rescue Services	Loudoun	Interviewed	Scene Response, Backfilled ACFD and FCFR Stations	Leesburg	VA	Pentagon
Aldie Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Aldie	VA	Pentagon
Arcola-Pleasant Valley Vol. Fire Dept	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Arcola	VA	Pentagon
Ashburn Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Ashburn	VA	Pentagon
Hamilton Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Hamilton	VA	Pentagon
Hamilton Volunteer Rescue Squad	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Hamilton	VA	Pentagon
Leesburg Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Leesburg	VA	Pentagon
Lovettsville Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Lovettsville	VA	Pentagon

Department	County	Status of Contact	Role	City	State	Incident
Lucketts Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Lucketts	VA	Pentagon
Middleburg Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Middleburg	VA	Pentagon
Neersville Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Neersville	VA	Pentagon
Philomont Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Philomont	VA	Pentagon
Purcellville Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Purcellville	VA	Pentagon
Purcellville Volunteer Rescue	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Purcellville	VA	Pentagon
Round Hill Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Round Hill	VA	Pentagon
Sterling Volunteer Fire Department	Loudoun	Info Received from County	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Sterling	VA	Pentagon
Sterling Volunteer Rescue Squad	Loudoun	Interviewed	Ambulance, Heavy Rescue, Technical Rescue Trailer to Fairfax County for Staging/Heavy Rescue Backfilled ACFD R104	Sterling	VA	Pentagon
Manassas Volunteer Fire Department	Manassas (City)	Interviewed	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Manassas	VA	Pentagon
Manassas Park Fire Department	Manassas Park (City)	Messages Left; No Response	Unknown	Manassas Park	VA	Pentagon
Buckhall Volunteer Fire Department	Prince William	Info from Nokesville Chief	ALS Unit Backfilled ACFD Station	Manassas	VA	Pentagon

Department	County	Status of Contact	Role	City	State	Incident
Coles District Volunteer Fire Department	Prince William	Info from Nokesville Chief	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment	Manassas	VA	Pentagon
Dale City Volunteer Fire and Rescue Department	Prince William	Responded Online	Engine, Ambulance, Battalion Chief to Pentagon Staging/Engine Backfilled FCFR Station	Dale City	VA	Pentagon
Dumfries-Triangle Volunteer Rescue Squad	Prince William	Interviewed	Upstaffed apparatus at their station in preparation for possible scene/backfill deployment; Engine Backfilled FCFR Station	Dumfries	VA	Pentagon
Evergreen Volunteer Fire Department	Prince William	Info from Nokesville Chief	ALS Unit Backfilled FCFR Station; Chief staffed County EOC	Haymarket	VA	Pentagon
Gainesville District Volunteer Fire Department	Prince William	Info from Nokesville Chief	Backfilled Fairfax County with Engine	Gainesville	VA	Pentagon
Lake Jackson Volunteer Fire Department	Prince William	Info from Nokesville Chief	ALS Unit Backfilled ACFD Station	Lake Jackson	VA	Pentagon
Nokesville Volunteer Fire Department	Prince William	Interviewed	Personnel to scene to assist with Logistics Division	Nokesville	VA	Pentagon
Occoquan-Woodbridge-Lorton (OWL) Volunteer Fire Department	Prince William	Interviewed	Engine, Ambulance, Light/Air Unit Responded to Pentagon/Backfilled FCFR and ACFD Stations	Woodbridge	VA	Pentagon
Prince William County Fire and Rescue Department	Prince William	Interviewed	Scene Response, Backfilling	Prince William	VA	Pentagon
Stonewall Jackson Volunteer Fire Department	Prince William	Info from Nokesville Chief	Engine and ALS Unit Backfilled FCFR Station	Manassas	VA	Pentagon
Yorkshire Volunteer Fire Department	Prince William	Info from Nokesville Chief	Engine Backfilled FCFR Station	Manassas	VA	Pentagon
TOTAL: 375 DEPARTMENTS						

APPENDIX B: WORKS CITED

- Aberback, Brian. "They'll Never Forget: Memorial Planned For Firefighter." *The Record* (Bergen County, NJ), February 22, 2002.
- Anderson, Kevin. "Plane Crash Touches Pennsylvania." *BBC News Online*, September 18, 2001.
- "Area Firefighters Pay Tribute To New York Firefighters." *The Associated Press*, September 23, 2001.
- Bouchelle, Bill. "Somers 9-1-1 News." *Somers Volunteer Fire Department Spring 2002 Newsletter* (http://somersnow.com/Fire/Newsletter_4_01.pdf), Spring 2002.
- Boudreaux, Angela, Sara Jo Nixon, John K. Schorr, Robert D. Vincent. "Shoulders To Lean On." *Fire Chief Magazine*, June 2002.
- Brecker, Ken. "Flight 93 Pilgrimage; People Keep Coming to Site of Sept. 11 Tragedy." *Hamilton Spectator*, June 22, 2002.
- Bryant, R.A. and A.G. Harvey. "Posttraumatic Stress In Volunteer Firefighters – Predictors Of Distress." *Journal of Nervous Mental Disorders*, April 1995.
- Christopoulos, Zefy. "Community Stands Tall United in Grief, Support and Hope." *Record-Pilot*, September 21, 2001.
- Cornell, W., et. al. "Exposure to Traumatic Incidents and Prevalence of Posttraumatic Stress Symptomatology in Urban Firefighters in Two Countries." *Occupational Health Psychology*, April 1999.
- Curran, John. "NJ Firemen Gather to Mourn Comrades Lost in Trade Center Attacks." *The Associated Press*, September 13, 2001.
- Downey, Tom. "A Voice From the Rubble." *The New York Times Magazine*, Sept 23, 2001.
- Emergency Response to Terrorism Self-Study*, U.S Department of Justice: Office of Justice Programs – Bureau of Justice Assistance; FEMA: US Fire Administration, June, 1999.
- "FDNY Suffers Huge Equipment Loss." *Firehouse.com*, October 5, 2001.
- "FEMA Releases \$56.4 Million to Help First Responders to World Trade Center Attacks." *Federal Emergency Management Agency Press Release*, June 14, 2002.

- “15 Firefighters Working in N.Y.” *Providence Journal-Bulletin* (Providence, RI), September 13, 2001.
- “Flight 93 Timeline.” http://www.flight93crash.com/flight93_timeline.html.
- Ford, Pamela. “Donation Helps Buy Infrared Camera for Firefighters.” *The Pittsburgh Post-Gazette*, February 6, 2002.
- “From Takeoff to Takeover: Putting it All Together.” *Pittsburgh-Post Gazette*, October 29, 2001.
- Gist, R. and S.J. Woodall. “Occupational Stress In Contemporary Fire Service,” *Occupational Medicine*, Oct-Dec 1995.
- Gyulai, Linda. “Our Firefighters Set to Go: Many in Quebec Knew Those Who Were Killed in New York.” *The Gazette* (Montreal), September 14, 2001.
- “The Hartford's Employees to Donate Over \$3,000 to Shanksville Fire Company Tomorrow.” *PR Newswire Association, Inc.*, November 16, 2001.
- “Health & Science: Research Planned on World Trade Center Firefighters’ Cough.” *The Associated Press*, November 7, 2001.
- “Helping a Friend in Need: Franconia Fire Station Donates Engine to Bronx Counterpart.” *Springfield Times*, February 21, 2002.
- “Hijacked United Airlines Flight was Targeting Camp David.” *The Associated Press*, September 12, 2001.
- “Home Builders Give Thanks to Somerset County Firefighters.” *PR Newswire Association, Inc.*, November 19, 2001.
- “Home Builders Observe a Day of Remembrance for Pittsburgh Air Search Rescue; Pennsylvania Home Builders Donate \$10,000 to Air Search Rescue.” *PR Newswire Association, Inc.*, April 23, 2002.
- “How to Help.” *The Pittsburgh Post-Gazette*, September 24, 2001.
- Kadison, Dan. “NY Volunteers New Rallying Cry Include Me Out!” *The New York Post*, February 24, 2002.
- Lempinen, Edward W., Erik Holm, and Valerie Burgher. “Terrorist Attacks; Across LI, Doing All They Can.” *Newsday* (New York, NY), September 13, 2001.

- Lauer-Williams, Kathy and Bill Tattersall. "Firefighters Go the Extra Mile to Assist in Rescue – A Group of 15 From Bethlehem Twp. Rushed to New York in Time of Need." *The Morning Call* (Allentown, PA), September 13, 2001.
- Lenkowitz, Eric and Gill Smith. "WTC' Medic Hangs Himself." *The New York Post*, June 12, 2002.
- "Locals Rushed to the Rescue." *Suffolk Journal*, September 19, 2001.
- Long, Cindy. "Pennsylvania Disaster Workers Respond to Flight 93 Tragedy," *American Red Cross Website* <http://www.redcross.org/news/ds/0109wtc/010913penn.html>, September 13, 2001.
- Martinez, Jose. "Volunteers Fight Back: Firefighters Seek to Rebuild After 9/11 Loss," *Daily News* (New York), December 26, 2001.
- "Mayor: Finding Survivors Not Likely." *The Associated Press*, September 25, 2001.
- McCaffrey, Shannon. "FEMA Report: Engineers Study WTC Collapse." *The Associated Press*, April 30, 2002.
- McCaffrey, Shannon. "Ranks of Volunteer Firefighters Understaffed Despite September 11." *The Associated Press*, April 3, 2002.
- Mitchell, Jeffrey and Everly, George. *Critical Incident Stress Debriefing: An Operations Manual for the Prevention of Traumatic Stress Among Emergency Services And Disaster Workers*. Chevron Publishing: 1993.
- Moore, Elizabeth. "In Nassau: Getting Ready for a Blaze of Glory; Fire Official Will Use Statewide Position to Recruit Volunteers." *Newsday* (Nassau Edition), September 9, 2001.
- National Volunteer Fire Council, *Fact Sheet 2002*.
http://www.nvfc.org/pdf/fact_sheet_2002.pdf
- Navarro, Mireya. "After the Attacks: The Suburbs; Candles and Hope Burn for Those Who Did Not Return on Tuesday." *The New York Times*, September 15, 2001.
- "New FCC Rules to Help 911 Response." *The Associated Press*, April 29, 2002.
- "9/11 Exposed Deadly Flaws in Rescue Plan." *New York Times*, July 7, 2002.
- North, Carol S., M.D. "Trauma Anonymous." *Fire Chief Magazine*, June 2002.
- O'Shaughnessy, Patrice. "Tight-Knit Breezy Point Hit Hard by Disaster." *New York Daily News*, September 23, 2001.

- Parry, Wayne. "High-Rise Firefighting Discussed." *The Associated Press*, April 28, 2002.
- "Recovery Effort Moves Ahead." *CNN.com*, September 19, 2001.
- Regehr, C., D. Hemsworth, and J. Hill. "Individual Predictors of Posttraumatic Distress: A Structural Equation Model." *Canadian Journal of Psychiatry*, March 2001.
- Ring, Wilson. "Border Doesn't Slow Down Firefighters on Way to Emergencies." *The Associated Press*, March 10, 2002.
- Seibel, Susan. "Emergency Workers Anxious to Join Effort." *Pittsburgh-Post Gazette*, September 16, 2001.
- Schwach, Howard. "Broad Channel Volies Lose Ambulance in WTC Collapse." *The Wave of Long Island*, September 15, 2001.
- Schweigert, Mary Beth. "Volunteers Here Ready to Give NYC Their Help." *Lancaster New Era* (Lancaster, PA), September 12, 2001.
- "September 11: Minutes of Mayhem." *New York Times on the Web*.
- Spangler, Todd. "United Airlines Jetliner Crashes." *The Associated Press*, September 11, 2001.
- "Ten Additional New York Counties Now Eligible to Receive Disaster Assistance." *Federal Emergency Management Agency Press Release*, September 28, 2001.
- "Terrorism Hits – Somerset County Township Recalls Fateful Day of Flight 93." *Pennsylvania Township News*, January 2002.
- "The Lost." *Newsday* (Nassau and Suffolk Edition), November 25, 2001.
- Thys, John, Thomas J. McCormick, and George Psychojos. "Supplement to the Monthly Minutes of Pioneer Engine Company #1 Chronicle of the Events of September 11, 2001." pleasantvillefiredept.org/history_sept11.htm.
- "Timeline of Attacks." *The Associated Press*, September 11, 2001.
- Titan Systems Corporation. *Arlington County After Action Report on the Response to the September 11 Terrorist Attack on the Pentagon*. July 2002.
- U.S. Fire Department Profile Through 2000*. National Fire Protection Association: Quincy, Massachusetts, December 2001.
- Weiss, D.S., et. al. "Predicting a Symptomatic Distress in Emergency Services Personnel." *Journal of Consulting and Clinical Psychology*, June 1995.

“What is Post-Traumatic Stress Disorder?” *Fact Sheet*, National Association for Post-Traumatic Stress Disorder,
http://www.ncptsd.org/facts/general/fs_what_is_ptsd.html, July 1, 2002

Wlazelek, Ann and Bob Wittman. “Many Ready But Few Called – Thousands Offer to Help Rescuers; Only a Handful Are Asked So Far.” *The Morning Call* (Allentown, PA), September 13, 2001.

“WTC Fires Out.” *ABCNews.com*, December 19, 2001.

Zapf, Karen. “Rally, Legislation Put Focus on State's Volunteer Firefighters.” *Tribune-Review*. October 13, 2001.

**ERRATA FOR THE FINAL REPORT,
THE ROLE OF THE VOLUNTEER FIRE SERVICE IN THE
SEPTEMBER 11, 2001 TERRORIST ATTACKS**

Page 6, Erie row, Web Responses column: *For 5, read 6.*

Page 6, Erie row, Total column: *For 5, read 6.*

Page 6, Suffolk row, Web Responses column: *For 10, read 9.*

Page 6, Suffolk row, Web Responses column: *For 55, read 54.*

Page 20, Erie row, Estimated # of Volunteers Activated on Sept. 11 column: *For 12*,
read 18*.*

Page 20, Erie row, Estimated # of Hours Logged by Volunteers column: *For 288*, read
432*.*

Page 20, Erie row: *For* Four departments sent ambulances to standby at World Trade
Center, *read* Six departments sent ambulances and EMS personnel to standby at
World Trade Center.

Page 24, Totals row, Estimated # of Volunteers Activated on Sept. 11 column: *For
2,613*, read 2,619*.*

Page 24, Totals row, Estimated # of Hours Logged by Volunteers column: *For 43,677*,
read 43,821*.*

Page 24, Footnote: *For* Unless specifically known, hours logged by volunteers were
estimated as 12-hour shifts, *read* Unless specifically known, hours logged by
volunteers were estimated as 24-hour shifts.

Page 103, between Main-Transit Fire Department and West Falls Fire Company rows:
Insert: Wales Center Volunteer Fire Company; Erie; Responded Online; EMS
crews to World Trade Center; Wales Center; NY; World Trade Center.

Page 108, Wales Center Volunteer Fire Company row: Delete row.