

# **Fire Departments and Emergency Medical Services in Delaware**

**2014-2017**



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## INTRODUCTION

Municipalities utilize different types of fire departments: career, call, volunteer, and combination departments. Career fire departments employ their personnel on a full-time basis and receive regular compensation. Call fire departments receive nominal benefits and are paid when called out. Volunteer fire departments receive no compensation. A combination department usually has a limited number of personnel who are paid on a full-time basis that is augmented with a call force. Generally, career departments will be more expensive than combination departments, which will be more expensive than call departments, which will be more expensive than volunteer departments. Career departments are also known as full-time departments. Some fire departments are full-time by day but call by night and/or on weekends.

There are almost 29,800 fire departments in the United States of which only about 15% are full-time departments<sup>1</sup> but protect almost 2/3rds of the population. There are a total of 62 local fire departments in Delaware of which one (1) is considered a full-time department with career firefighters exclusively. The other “full-time” fire departments are combination departments using career, per-diem and/or volunteer firefighters. The US Fire Administration Census shows that 98% of Delaware fire departments are comprised of volunteer fire fighters and nationwide, 67% of all fire departments are volunteer fire departments

Delaware has 54 incorporated municipalities, 3 villages which are considered to be municipalities, and 43 unincorporated towns. Delaware is divided into three counties and each county is subdivided into “hundreds” which are equivalent to townships such as those in Maine. Delaware is the only state that still uses “hundreds”.

In Delaware, there is one municipal fire department and all the other local fire departments are private corporations providing a volunteer fire service which is partially funded by the County and State. The State of Delaware Auditor’s office has estimated that the Delaware Volunteer Fire Service saves the taxpayers of Delaware an estimated \$238 million dollars. In other words, if a paid fire service were employed Statewide, each property owner would see an increase in their tax bill of roughly \$10.59.<sup>2</sup>

### **Municipal Fire Departments**

A municipal fire department is part of a city or town funded by the city’s or town’s general fund budget which is paid for primarily through property taxes. There is only one municipal department in Delaware and that is the Wilmington fire department.

### **Private Fire Departments**

Most municipalities in Delaware do not have a municipal fire department. Instead, they get fire services from a private fire department residing in a geographic fire district defined by the State. Many of these geographic fire districts include a city or town as well as unincorporated areas. Some fire districts include just unincorporated areas (i.e., Christiana, Clayton, Gumboro, Hockessin, Indian River, Marydel, and Roxanna). Appendix A shows when these fire companies were established.

In many ways, Delaware has regionalized its fire service. For a map showing the fire districts in Kent County, please go to this link: <http://www.co.kent.de.us/Departments/PublicSafety/documents/FireDistrictMap.pdf>. For a map showing the fire districts in New Castle County, please use the eParceDellViewer at: <http://gismaps.nccde.org/NCCPortal/index.jsp> and use the Map Layers on the right margin to enable the fire districts.

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<sup>1</sup> U.S. Fire Department Profile Through 2015. April 2017. Hylton J.G. Haynes and Gary P. Stein.

<sup>2</sup> Delaware Volunteer Fire Service 2017 Annual Report. September 2017. State of Delaware Office of Auditor of Accounts

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- The Aetna Hose Hook, and Ladder Company provides fire protection and emergency ambulance service to the city of Newark as well as Brookside, Ogleton, the western part of Glasgow, and other unincorporated areas.
- The Bethany Beach Fire Company provides fire protection and emergency ambulance service to the towns of Bethany Beach, Fenwick Island, and South Bethany.
- The Brandywine Hundred Fire Company provides fire protection and emergency ambulance service to the town of Bellefonte as well as some unincorporated areas.
- The Camden-Wyoming Fire Company provides fire protection and emergency ambulance service to the towns of Camden and Wyoming and to the unincorporated community of Woodside.
- The Carlisle Vol. Fire Co provides fire protection and emergency ambulance service to the town of Carlisle as well as Lincoln and other unincorporated areas.
- The Christiana Fire Company covers the unincorporated areas of Bear, Christiana, and the Eastern part of Glasgow.
- The Delmar Fire Company provides fire protection and emergency ambulance service to certain areas of Wicomico County in Maryland and Sussex County in Delaware.
- The Delaware City Fire Company provides fire protection and emergency ambulance service to the town of Delaware City as well as Kirkwood and Saint Georges, and other unincorporated areas.
- The Felton Community Fire Company provides fire protection and emergency ambulance service to the towns of Felton and Viola as well as some unincorporated areas.
- The Ellendale Fire Co. provides fire protection and emergency ambulance service to the town of Ellendale as well as Cedar Creek, Fleatown, Greentop, Lincoln City, New Market, Oakley, Redden, Slaughter Neck, Staytonville, and other unincorporated areas.
- The Georgetown Fire Co. provides fire protection and emergency ambulance service to the town of Georgetown as well as Redden and other unincorporated areas.
- The Hockessin Fire Company provides fire protection and emergency ambulance service to Hockessin, Yorklyn, and other unincorporated areas.
- The Indian River Volunteer Fire Company provides fire protection and emergency ambulance service to Oak Orchard, Long Neck, Warwick, and other unincorporated areas.
- The Laurel Fire Company provides fire protection and emergency ambulance service to the town of Laurel and Bethel as well as some unincorporated areas.
- The Lewes Fire Company is responsible for providing fire protection and emergency ambulance service to the town of Lewes as well as Angola, Nassau and other unincorporated areas.
- The Mill Creek Fire Company provides fire protection and emergency ambulance service to Pike Creek, Stanton, and other unincorporated areas.
- The Millsboro Volunteer Fire Company provides fire protection and emergency ambulance service to the town of Millsboro as well as Riverview and other unincorporated areas.
- The Millville Fire Company provides fire protection and emergency ambulance service to the town of Millville and Ocean View as well as Clarksville and other unincorporated areas.
- The Milton Fire Company provides fire protection and emergency ambulance service to the town of Milton as well as Broadkill Beach, Harbeson and other unincorporated areas.
- The Minquas Fire Company provides fire protection to the town of Newport.

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- The Rehoboth Beach Fire Company provides fire protection and emergency ambulance service to the towns of Dewey Beach, Henlopen Acres, and Rehoboth Beach as well as Angola and other unincorporated areas.
- South Bowers provides fire protection to the unincorporated town of Thompsonville.
- The Talleyville Fire Company is responsible for providing fire protection and emergency ambulance service to the Talleyville, Montchanin, Winterthur, and other unincorporated areas.

### **National Standards**

The National Fire Protection Association (NFPA) developed a standard, known as NFPA 1710, to guide full-time fire departments on the minimum number of personnel needed for safe and effective firefighting. To provide EMS care (including transport), the State of Delaware and NFPA 1710 requires at a minimum 2 personnel. With the majority of the call volume increasingly becoming EMS related, I choose two (2) in-house EMTs and/or firefighters to be the minimum staffing level as the requirement for a fire department to be deemed capable of providing immediate coverage.

Two represents the minimum number of personnel to respond to an EMS call not to a structure fire. The Occupational Safety and Health Administration (OSHA) 29 CFR 1910.134(g) (4) defines a "2-in/2-out" rule for fighting interior structure fires. Responding to a structure fire with less than four firefighters prevents the first responding unit from complying with OSHA's "2-in/2-out" standard, and places the lives of those firefighters in jeopardy. Whether the towns listed in this document comply with this regulation is not known nor is that the purpose of this document.

The coverage information is provided in four tables. The first table lists those fire departments that provide immediate coverage 24/7. The second table lists those fire departments that provide immediate coverage for some portion of the day. All provide immediate coverage during the weekday because of the difficulty getting call firefighters to respond during the day. The coverage end time varies anywhere from 5PM to 10PM. Each table lists the town, its last known population, who dispatches the fire department, who provides BLS and ALS services, staffing information, and call volume.

The third table lists those fire departments that provide 24/7 coverage but it is not immediate coverage as there is no staff in-house when the call first comes in. In other words, it lists the call and volunteer fire departments. NFPA 1720 guides volunteer fire departments on the minimum number of personnel needed for safe and effective firefighting. It also requires that, for places of densities greater than 1,000 people per square mile, 90 percent of all response times must be nine minutes or less. While this document will not provide staffing information for the call/volunteer departments, it should be noted that the number of people able to participate as firefighters has dropped significantly in many towns for several reasons: time demands, increased training requirements, increase in call volume requiring more time commitments, changes in sociological conditions, fire leadership problems, and increasing use of combination departments<sup>3</sup>. As a result, many volunteer or on-call fire departments are starting to hire two daytime firefighters as this is considered to be the time period of greatest need (i.e., Bowers, Bridgeville, Five Points, Frederica, Greenwood, Harrington, Milton, Roxanna, and Townsend).

### **Fire Budgets**

Municipalities are free to use any format for internal financial reporting such as for budgeting or cost accounting. For example, some municipalities roll up health insurance, dental insurance, life insurance,

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<sup>3</sup> "Retention and Recruitment in the Volunteer Fire Service: Problems and Solutions", December 1998

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disability insurance, workers comp, and unemployment insurance into the employee benefits section and Property & liability insurance into the insurance section of the general government account.

Full-cost budgeting has all costs allocated to each department so it is clear what it costs to run that department. As such, a full-cost budget for the fire department has wages, benefits, insurance, legal fees, utilities, fuel, equipment repairs, mechanic, and hydrant rentals (if appropriate) in its departmental operating budget.

Since all but one of the local fire departments are private corporations partially funded by the County and State through grants-in-aid from the State, from a portion of the State's insurance tax which is also known as the premium tax (see Delaware Insurance Code, Title 18, Chapter 7), from the County, and in most cases, from the local municipality within the fire district. As such, these private fire companies provide a full-cost budget. Most, if not all, of these fire companies must work for their own funding as well and do fundraisers throughout the year to help pay for the fire service.

The 2012 Delaware Volunteer Fire Service Annual Report estimates that the cost of the volunteer fire departments to become paid departments would be about \$324M saving the taxpayers about \$289M. In appreciation for their voluntary service, members are provided a \$400 tax credit on their state income tax, a pension plan, life insurance, and worker's compensation which are outlined on the Delaware Volunteer Firefighter's Association ([www.dvfassn.com/deathbenefits.cfm](http://www.dvfassn.com/deathbenefits.cfm)).

### **Ambulance Service**

In Delaware, there is a two-tiered EMS system with BLS services overseen by the State Fire Prevention Commission (per Title 16, Chapter 67, § 6717 of the Delaware code) and paramedic services overseen by the State's Department of Public Health, specifically the Office of EMS. Both are overseen by the Delaware Emergency Medical Services Oversight Council per Title 16, Chapter 97 of the Delaware Code.

According to the Delaware Emergency Medical Services Oversight Council, there are 56 BLS ambulances providing 911 services, the majority of which are fire-based ambulances. ALS services are provided at the county level as each county provides dispatch and paramedic services.

There are three (3) counties in Delaware and hence, three county-based EMS services providing ALS services. So, ALS services are regionalized. The county pays 70% of the ALS costs with the State paying 30% per Title 16, chapter 98 of the Delaware Code.

Delaware has three levels of staffing: Emergency Medical Responder (EMR), EMT-B, and EMT-P. For ambulance service, Delaware has two levels: BLS and ALS paramedic. The state requires two (2) licensed personnel to be in a transporting ambulance at all times with the only requirement that one of the licensed providers be at least an EMT-B.

The ambulance member fees, patient receipts, and paramedic intercepts are combined into ambulance revenue and it is a significant revenue source. The fees and patient receipts are revenue deposited in the General Fund. Some also use a subscription service which residents pay yearly and in return, if they have need of an ambulance, they are not required to pay anything not covered by insurance. Bethany Beach and Aetna Hose both use a subscription service.

### **Estimating Ambulance Service Costs**

For towns that don't break out the cost of their ambulance and fire services separately due to having cross-trained personnel, how can one estimate the cost of the ambulance service? A generally accepted costing model on how to estimate the cost of EMS services for such a fire department has the following formula:

- A. Personnel Costs = average on-call time x average hourly labor rate x average number of personnel on the call x number of incidents prior year. (Hourly rate includes benefits)
- B. Vehicle = (Operating cost per mile x annual call miles) + annual cost for ambulance replacement.

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- C. Supplies = Actual Cost of Medical Supplies per year + costs of billing service.
- D. Indirect Costs = 25% (A+B+C). 25% is used as a factor to address other benefits and training costs.

Several fire departments in the state use this formula in determining the fee to charge towns contracting for ambulance service. There is some merit to taking the formula in part A and multiplying it by the number of shifts but that is not considered part of the formula at this time.

### **Staffing Levels**

The National Institute of Standards and Technology published a report in 2010 entitled “Report on Residential Fireground Field Experiments”. This report found that a four person crew completed all tasks on the fire ground 30% faster than a two person crew and 25% faster than a three person crew. Similar results were seen with laddering and ventilation. Interestingly, four person crews completed primary search and rescue operations 6% faster than three person crews but 30% faster than two person crews. Two person crews took almost a minute longer than three person crews to stretch a hose line and almost 90 seconds longer than four person crews. With this in mind, it might be interesting to see what the staffing levels are in Delaware fire departments.

The first line in the staffing levels column shows full-time and on-call. Full-time personnel are career firefighters, chief officers, and any full-time civilians (i.e., executive secretary). The second line in the staffing levels column reflects the number of shifts using full-time personnel. The fourth line is the number of fire stations in the municipality or fire district. You will notice that the majority of the fire departments do not have the manpower to put out a structure fire. So, they rely heavily on volunteers to augment the full-time staff and mutual aid from the nearby fire departments.

Firefighters are trained for firefighting and for EMT duties. Emergency response has been consolidated into many fire departments such that the majority of the call volume for a fire department today is EMS-related not fire. In fact, over the last 20 years, the number of EMS responses has more than tripled while fires have decreased by almost 50%<sup>4</sup>. It is estimated that 66% of all fire department calls in 2011 were EMS-related<sup>5</sup>. As we have seen with Hurricane Sandy, fire departments are expected to respond to natural disasters. The Delaware fire departments responded by providing 24h station staffing until the hurricane danger was over. With the advent of 9/11, fire departments also are expected to respond to acts of terrorism. So, the role of a firefighter has changed dramatically from years ago. The fire department is also involved in fire prevention activities (such as public education and property inspections) and on-going training of its personnel.

### **Shifts**

The third line is the shift schedule (for those departments that provide 24/7 immediate coverage). A department with three shifts typically employs a 24/48 shift. This means one day (24-hour) on followed by two days off with one Kelly day every third week. A department with four shifts typically works 42 hours per week and the work shift is employed in a variety of ways. A 24/72 shift means one day (24-hour) on followed by three days off. A 12/12 shift means two 12-hour days followed by two 12-hour nights followed by four days off. All the different shifts are depicted in Appendix B at the end of this document.

### **Call Volume**

The calls for service (CFS) were taken from the State Fire Marshal’s Annual Report for fire and the Delaware Emergency Medical Services Oversight Committee’s Annual Report for EMS. The fifteenth edition of “Fire in the United States 2003-2007” by the US Fire Administration indicates that 98% of all Delaware fire department use NFIRS which is one of the highest of all the States.

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<sup>4</sup> Effective Fire Protection: A National Concern. A Study by the Insurance Service Office (ISO).

<sup>5</sup> Fire Loss in the United States During 2011. September 2012. Michael J. Karter, Jr.

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The calls for service are broken down into EMS and other calls. An EMS call is defined to be medical, motor vehicle accidents, and rescue related.

Keep in mind that the call volume does not reflect the call response time. For example, the call volume may go down by a few calls but the call response time may actually be higher. So, call volume alone is not necessarily the only indicator of measuring the “busyness” of a fire department. Another example is the number of EMS calls. While the number of EMS calls may represent 66% of all calls, it is important to remember that an EMS call typically requires on average about 45 minutes and two or three personnel. Fire calls frequently require most, if not all, on-duty personnel and take many hours to mitigate. When looking at it from this perspective, the number of hours spent performing EMS functions versus fire functions is more like 50% each. So, call volume alone is not necessarily the only indicator of measuring the “busyness” of a fire department.

A comparison of municipal call volume across the United States can be found in Appendix C to see if there are any trends in EMS and/or fire calls.

### **Mutual Aid**

An issue of growing concern for some fire departments is the increase in the number of simultaneous calls. This is not an area that much attention has been paid to but it puts additional stresses on a department. When an incident or multiple simultaneous incidents occur such that the available local fire department resources are overwhelmed, then additional help is summoned from other nearby fire departments. When fire departments help each other in this fashion, it is called Mutual Aid. In fact, a recent survey conducted for ISO<sup>6</sup> indicates that over 50% of fire departments call on mutual aid to respond to initial alarms for a structure fire due to lack of responders.

In some communities, a fire department in an adjacent municipality can provide a quicker response than the local fire department. Typically, these fire departments enter into an Automatic Mutual Aid agreement. Automatic Aid provides for a fire department in another municipality to immediately respond to reported fires because it is closer, thus providing the quickest response of manpower and equipment to incidents, and allowing more of the municipality to remain protected at all times. In the same ISO Survey, over 60% indicated that neighboring departments responded due to Automatic Aid agreements.

Automatic Mutual Aid is set up as agreements between participating fire departments. Mutual Aid is set up as Run cards and clearly defines which fire departments are to respond to a fire when requested at different fire alarm levels.

Mutual Aid is covered under Delaware Code Title 20, Chapter 20 for fire and EMS.

### **Fire Dispatch**

One of the keys to limiting damage caused by fire is the response time. NFPA 1710 sets a goal for all fire departments to respond to a fire within 6 minutes. Response time is defined as the time from when a 911 call is first received to the time a fire truck arrives on scene. Part of this 6-minute window is 1 minute for dispatch time. Fire and ambulance agencies are dispatched from a dispatch center. Some people believe that all 911 calls go directly to their local dispatch center rather than to a central location. Basic 911 Service is an emergency telephone system that automatically connects 911 callers to a Public Safety Answering Point (PSAP). Enhanced-911 service does the same plus shows the caller’s name, street address, and telephone number to the PSAP. This allows the PSAP to identify the caller’s location automatically if the caller is unable to communicate this information verbally to the PSAP call taker. Enhanced-911 services are provided by the E911 Emergency Service Board and are paid for by a monthly user fee on all telephones (land and wireless).

Delaware has nine (9) PSAP Centers and 911 are overseen by the E911 Emergency Service Board. All calls to 911 in Delaware are routed to the appropriate PSAP. Police and fire calls are immediately transferred to the

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<sup>6</sup> Fire Chief’s Opinion 2008. ISO, September 2008



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appropriate local dispatch center. For medical emergencies, the appropriate EMS responder is called but the PSAP stays on the line providing appropriate emergency medical instructions while waiting for the responder to arrive.

### Issues Facing Fire Departments

The biggest issue appears to be the aging apparatus and facilities and the lack of equipment.

- Roughly 33% of the existing fire stations are estimated to be over 40 years old, with 20% not equipped for exhaust emission control per NFPA 1500 2002 9.1.6.
- It is estimated that 42% of all engines in Delaware fire departments are at least 15 years old<sup>7</sup>. This is close to the national average. The industry standard for the life span of a fire engine is 15 years followed by 5 years of reserve status. Starting in 2007, the EPA's new emission standards go into effect to which the fire apparatus industry must comply. It is estimated that this will increase the cost of a new engine by as much as 50K. These new emission standards will significantly reduce the amounts of nitrous oxide, particulate matter, and non-methane hydrocarbon (NMHC) emissions.
- Providing firefighters with proper and up-to-date equipment such as portable radios, SCBA units, Personal Alert Safety System devices, and personal protective clothing. The protective clothing costs about 2,000 and the SCBA units cost about 4,500 on average.<sup>8</sup>

### CAVEAT EMPTOR

The personnel and number of stations initially came from the Fire Department Census Survey found on the US Fire Administration website and were cross-referenced with information from the Delaware EMS Oversight Annual Report and/or correspondence with the fire departments. The call volume data came from the Delaware State Fire Marshal Annual Report, the Delaware Emergency Medical Services Oversight committee Annual Report, and fire department web sites. The square miles for fire districts in Sussex County came from the Sussex County on-line web mapping application. The square miles for fire districts in the Kent and New Castle Counties came from a spreadsheet provided by each County's GIS Department.

The information in this document came from various sources (comprehensive plans and town officials) and the information was verified to the extent it was possible. While I tried to be as accurate as possible, there is the possibility for errors. Hopefully, if there are any errors, someone will be kind enough to point them out to me.

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<sup>7</sup> A Needs Assessment of the Fire Service: Delaware. June 2004. John R. Hall, Jr and Michael J. Karter, Jr.

<sup>8</sup> National Volunteer Fire Council 2005 Fact Sheet.

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## Fire Districts Providing 24/7 Immediate Coverage

Fire District	Pop/ Cover Area	Dispatch	Staffing FT/Call Shift Data	FD EMS Level	EMS Calls 14-17	Total Calls 14-17	BLS Transport	Paramedic Services
Bethany Beach	11,000 over 7 sq mi	Sussex County EOC	8/44 3 shifts of 2 + K 24/48 shift 2 stations	Rescue, FR, Amb	990 1018 1041 1032	1284 1365 1457 1382	Bethany Beach VFD	Sussex County EMS
Brandywine Hundred	21,300 over 7 sq mi	New Castle County EOC	10/15 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	2464 2651 2551 2679	3290 3512 3425 3654	Brandywine Hundred VFD	New Castle County EMS
Camden- Wyoming <sup>9</sup>	22,200 over 38 sq mi	Kent County EOC	7/60 3 shifts of 2 + K 24/48 shift 1 station	Rescue, FR, Amb	2644 3173 3361 3483	3182 3777 3994 4139	Camden- Wyoming VFC	Kent County EMS
Cheswold <sup>10</sup>	11,500 over 27 sq mi	Kent County EOC	5/53 2 persons/shift 6h shifts 1 station	Rescue, FR, Amb	1624 1814 1845 2030	1914 2122 2189 2345	Cheswold VFC	Kent County EMS
Christiana	90,000 over 36 sq mi	New Castle County EOC	10/100 4 shifts of 2 24/72 shift 3 stations	Rescue, FR, Amb	8873 10,232 10,248 10,722	11,697 13,651 13,611 14,296	Christiana Fire Company	New Castle County EMS
Claymont	16,000 over 12 sq mi	New Castle County EOC	9/45 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	3671 4101 4301 4137	4739 5295 5706 5498	Claymont Fire Company	New Castle County EMS
Cranston Heights <sup>11</sup>	15,200 over 9 sq mi	New Castle County EOC	7/45 2 per shift 12h or 24h shift 1 station	Rescue, FR, Amb	2714 2462 2409 2292	3576 3460 3352 3474	Cranston Heights Fire Company	New Castle County EMS
Dagsboro <sup>12</sup>	6,000 over 22 sq mi	Sussex County EOC	5/62 3 shifts of 2? 24/48 shift ? 1 station	Rescue, FR, Amb	519 537 542 513	677 724 712 686	Dagsboro VFD	Sussex County EMS
Delaware City <sup>12</sup>	12,500 over 32 sq mi	New Castle County EOC	6/45 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	1290 1463 1498 1253	1852 2013 2152 1909	Delaware City Fire Company	New Castle County EMS
Delmar	6,400 over 39 sq mi	Sussex County EOC	8/81 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	1555 1662 1451 1666	2043 2124 1967 2154	Delmar FD	Delmar FD
Ellendale <sup>12</sup>	12,000 over 64 sq mi	Sussex County EOC	3/52 4 shifts of 2 24/72 shift 2 stations	Rescue, FR, Amb	997 1101 1078 1288	1275 1370 1372 1563	Ellendale FC	Sussex County EMS
Elsmere <sup>12</sup>	20,000 over 4 sq mi	New Castle County EOC	4/150 4 shifts of 2? 24/72 shift? 1 station	Rescue, FR, Amb	1777 1690 2058 1834	2544 2623 2949 2827	Elsmere Fire Company	New Castle County EMS
Felton	12,400 over 68 sq mi	Kent County EOC	8/63 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	1240 1386 1516 1451	1641 1814 1990 1839	Felton Community Fire Co.	Kent County EMS

<sup>9</sup> Camden is switching to a 24/72 shift in January 2013 using per diem personnel and volunteers to augment the added shift.

<sup>10</sup> Shifts are staffed using per-diem and volunteer personnel.

<sup>11</sup> Cranston Heights FT personnel work 24h shift or a 12h shift. Per diem personnel work a 12h shift

<sup>12</sup> There is one career person partnered with a volunteer on each shift.

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Fire District	Pop/ Cover Area	Dispatch	Staffing FT/Call Shift Data	FD EMS Level	EMS Calls 14-17	Total Calls 14-17	BLS Transport	Paramedic Services
Five Points <sup>13</sup>	20,000 over 2 sq mi	New Castle County EOC	2/25 2 shifts of 2 12h shifts 1 station	Rescue, FR, Amb	1502 1575 1420 1318	2187 2159 1780 2199	Five Points Fire Company	New Castle County EMS
Frankford	3,000 over 18 sq mi	Sussex County EOC	10/37 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	529 ND 492 523	543 ND 620 626	Frankford VFC	Sussex County EMS
Hockessin	25,800 over 23 sq mi	New Castle County EOC	10/23 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	1348 1479 1489 1454	1886 2177 2104 2292	Hockessin Fire Company	New Castle County EMS
Holloway Terrace <sup>14</sup>	7,000 over 6 sq mi	New Castle County EOC	0/25 4 shifts of 2 6h shift 1 station	Rescue, FR, Amb	1262 1639 1547 1671	1849 2386 2314 2462	Holloway Terrace VFC	New Castle County EMS
Laurel	7,000 over 75 sq mi	Sussex County EOC	7/4 3 shifts of 2 + K 24/48 shift 2 stations	Rescue, FR, Amb	1967 1931 1860 ND	2399 2351 2304 ND	Laurel FD	Sussex County EMS
Lewes	17,000 over 54 sq mi	Sussex County EOC	13/20 4 shifts of 2 24/72 shift 3 stations	Rescue, FR, Amb	3465 3553 3796 3934	4117 4250 4532 4631	Lewes VFD	Sussex County EMS
Magnolia <sup>15</sup>	9,400 over 18 sq mi	Kent County EOC	0/27 2 persons/shift 6h shift 1 station	Rescue, FR, Amb	1034 1193 1192 1342	1237 1443 1459 1579	Magnolia VFC	Kent County EMS
Middletown	31,000 over 56 sq mi	New Castle County EOC	9/20 4 shifts of 2 24/72 shift 2 stations	Rescue, FR, Amb	2538 2911 2995 2927	3319 3786 3878 3837	Volunteer Hose	New Castle County EMS
Milford <sup>12</sup>	10,000 over 42 sq mi	Sussex County EOC	5/19 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	2926 3101 2850 3172	3420 3618 3393 3707	Carlisle Fire Compnay	Sussex County EMS
Mill Creek	15,000 over 15 sq mi	New Castle County EOC	10/18 4 shifts of 2 24/72 shift 2 stations	Rescue, FR, Amb	5046 5200 5396 5658	6218 6047 6368 6784	Mill Creek Fire Company	New Castle County EMS
Millsboro <sup>16</sup>	13,000 over 63 sq mi	Sussex County EOC	10/16 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	1910 1435 ND 2180	2243 1897 ND 2648	Millsboro Fire Company	Sussex County EMS
Millville	13,000 over 37 sq mi	Sussex County EOC	15/23 4 shifts of 3 24/72 shift 2 stations	Rescue, FR, Amb	1874 2066 2370 2066	2248 2443 2785 2440	Millville Fire Company	Sussex County EMS
Milton <sup>17</sup>	15,000 over 65 sq mi	Sussex County EOC	5/15 2 shifts of 2 12h shift 1 station	Rescue, FR, Amb	1011 940 1145 1359	1291 1256 1476 1681	Milton FD	Sussex County EMS

<sup>13</sup> FT personnel work 12h weekday shifts on 4d on/4d off schedule. Other 12h shifts are covered by per-diem personnel.

<sup>14</sup> Holloway Terrace relies on volunteers to staff each shift

<sup>15</sup> Magnolia utilizes two per diem personnel during the weekdays and a per diem and volunteer weeknights and weekends.

<sup>16</sup> Shifts augmented with per-diem personnel or volunteers

<sup>17</sup> The 2FT personnel have the day shift while the night shift has one per diem and one volunteer. Both shifts are supplemented by volunteers as needed.

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Fire District	Pop/ Cover Area	Dispatch	Staffing FT/Call Shift Data	FD EMS Level	EMS Calls 14-17	Total Calls 14-17	BLS Transport	Paramedic Services
Minquadale	7,500 over 4 sq mi	New Castle County EOC	8/12 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	2163 2274 2121 1918	2912 3074 2995 2808	Minquadale Fire Company	New Castle County EMS
New Castle	5,300 over 19 sq mi	New Castle County EOC	9/10 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	2027 2043 1826 1992	2715 2860 2703 3280	Good-Will Fire Compnay	New Castle County EMS
Newport	18,000 over 7 sq mi	New Castle County EOC	1/18 4 shifts of 2 2d/2n/4off 1 station	Rescue, FR, Amb	1632 1799 1603 1647	2436 2833 2461 3119	Minquas Fire Company	New Castle County EMS
Newark	88,600 over 42 sq mi	New Castle County EOC	8/40 4 shifts of 2 24/72 shift 4 stations	Rescue, FR, Amb	8076 8543 9217 8988	10,266 10,967 11,742 11,704	Aetna Hose, Hook & Ladder	New Castle County EMS
Odessa <sup>10</sup>	12,900 over 53 sq mi	New Castle County EOC	0/20 2 persons/shift 12h/6h/6h shift 2 stations	Rescue, FR, Amb	438 1115 1049 1062	799 1636 1528 1581	Odessa Fire Company	New Castle County EMS
Port Penn <sup>18</sup>	5-8,000 over 23 sq mi	New Castle County EOC	4/30 4 shifts of 3/2 24/72 shift 1 station	Rescue, FR, Amb	342 466 427 371	517 677 695 697	Port Penn VFC	New Castle County EMS
Rehoboth Beach	12,400 over 38 sq mi	Rehoboth Beach PD	15/15 3 shifts of 4 + K 24/48 shift 3 stations	Rescue, FR, Amb	2581 3042 3454 3433	3208 3753 4147 4045	Rehoboth Beach VFC	Sussex County EMS
Seaford	17,000 over 65 sq mi	Seaford PD	10/23 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	3352 3435 3276 3499	3948 4095 3916 4242	Seaford VFD	Sussex County EMS
Talleyville	35,000 over 26 sq mi	New Castle County EOC	11/20 4 shifts of 2 24/72 shift 1 station	Rescue, FR, Amb	4184 4545 4395 4368	5507 5853 5867 5661	Talleyville Fire Company	New Castle County EMS
Wilmington	71,300 over 17 sq mi	wilmington PD (f) NCC (a)	161/0 4 shifts of 39 24/72 shift 7 stations	Rescue, FR		20,401 21,992 22,448 23,829	St. Francis Hospital	New Castle County EMS
Wilmington Manor <sup>16</sup>	8,000 over 7 sq mi	New Castle County EOC	10/26 4 shifts of 2 2d/2n/4off 2 stations	Rescue, FR, Amb	3042 3119 3191 3168	4208 4410 4336 4506	Wilmington Manor VFC	New Castle County EMS

DEMSOC report says this department provides on-duty staffing 24/7 but I have not been able to confirm.

Marydel	2,600 over 24 sq mi	Kent County EOC	0/55  1 station	Rescue, FR, Amb	419 464 455 526	612 616 602 687	Marydel Fire Company	Kent County EMS
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<sup>18</sup> There are two per diem personnel working a 12h shift so that there is a career and per-diem person on duty 24/7. During the day, there is one additional per diem person so there are three during the day and two at night.

## Fire Districts Providing Immediate Coverage by Day/On-call Nights (and/or Weekends)

Fire District	Pop/ Cover Area	Dispatch	FT/Call	FD EMS Level	EMS Calls 15-17	Total Calls 15-17	BLS Transport	Paramedic Services
Belvedere Fire Company	1,500 over 0.5 sq mi	New Castle County EOC	1/0/15 12 hour shift 1 station	Rescue, FR, Amb	476 548 465	913 890 1107	Belvedere VFC	New Castle County EMS
Blades VFC	7,500 over 22 sq mi	Sussex County EOC	4/0/60 12 hour shift 1 station	Rescue, FR, Amb	978 ND ND	1249 ND ND	Blades VFC	Sussex County EMS
Bowers VFD <sup>19</sup>	1,700 over 9 sq mi	Kent County EOC	2/0/50 12 hour shift 1 station	Rescue, FR, Amb	465 501 441	581 606 557	Bowers Beach VFD	Kent County EMS
Bridgeville VFC	7,800 over 64 sq mi	Sussex County EOC	2/0/50 12 hour shift 1 station	Rescue, FR, Amb	949 1014 1104	1218 1322 1398	Bridgeville VFC	Sussex County EMS
Frederica VFC	3,300 over 23 sq mi	Kent County EOC	2/0/60 12 hour shift 1 station	Rescue, FR, Amb	550 497 533	718 657 722	Frederica VFC	Kent County EMS
Greenwood VFC	2,500 over 48 sq mi	Sussex County EOC	2/0/60 12 hour shift 1 station	Rescue, FR, Amb	724 720 698	876 901 858	Greenwood VFC	Sussex County EMS
Gumboro VFC	3,000 over 57 sq mi	Sussex County EOC	6/0/66 12 hour shift 1 station	Rescue, FR, Amb	313 ND ND	415 ND ND	Gumboro VFC	Sussex County EMS
Harrington Fire Company	7,000 over 61 sq mi	Kent County EOC	2/0/73 12 hour shift 1 station	Rescue, FR, Amb	1630 1559 1604	1898 1884 1806	Harrington Fire Company	Kent County EMS
Hartly VFD	5,400 over 39 sq mi	Kent County EOC	1/0/60 8 hour shift 1 station	Rescue, FR, Amb	763 779 782	993 1008 1013	Hartly VFD	Kent County EMS
Memorial VFC - Slaughter Beach	2,000 over 25 sq mi	Sussex County EOC	5/0/30 12 hour shift 2 stations	Rescue, FR, Amb	No EMS Svc	36 40 56	Memorial VFC	Sussex County EMS
Roxanna VFD	6,000 over 26 sq mi	Sussex County EOC	2/0/0 12 hour shift 2 stations	Rescue, FR, Amb	946 1059 802	1257 1325 1063	Roxanna Fire Company	Sussex County EMS
Selbyville VFC	21,000 over 21 sq mi	Sussex County EOC	9/10/0 12 hour shift 1 station	Rescue, FR, Amb	498 480 480	665 630 639	Selbyville VFC	Sussex County EMS
Townsend Fire Company	10,000 over 54 sq mi	New Castle County EOC	2/0/55 10 hour shift 1 station	Rescue, FR, Amb	678 796 746	1003 1086 1138	Townsend Fire Company	New Castle County EMS

<sup>19</sup> Bowers includes a portion of Delaware Bay which is not included in the coverage area. If that is included then the fire district area is 41 square miles.

## Fire Districts Not Providing Immediate Coverage

This table lists the fire districts that do not provide immediate coverage. This means the fire stations are not staffed with career or part-time firefighters but are all volunteer fire departments.

Fire District	Pop/ Cover Area	Dispatch	FD EMS Level	EMS Calls 15-17	Total Calls 15- 17	BLS Transport	Paramedic Services
Citizens Hose Fire Co. (Smyrna)	15,200 over 34 sq mi	Kent County EOC	Rescue	No EMS Svc	562 605 587	Smyrna American Legion Amb	Kent County EMS
Clayton Fire Company	8,100 over 34 sq mi	Kent County EOC	Rescue	No EMS Svc	271 271 294	Smyrna American Legion Amb	Kent County EMS
Farmington VFC	2,100 over 33 sq mi	Kent County EOC	Rescue	No EMS Svc	241 195 216	Harrington (n) Greenwood (s)	Kent County EMS
Georgetown Fire Company	18,200 over 90 sq mi	Sussex County EOC	Rescue	No EMS Svc	490 533 499	Sussex Post American Legion Amb	Sussex County EMS
Houston VFD	4,400 over 24 sq mi	Kent County EOC	Rescue, FR	689 850 850	895 1055 1054	Carlisle FD (e) Harrington (w)	Kent County EMS
Indian River VFC <sup>20</sup>	15,000 over 34 sq mi	Sussex County EOC	Rescue	No EMS Svc	425 517 479	Mid-Sussex Rescue	Sussex County EMS
Leipsic VFC	1,000 over 50 sq mi	Kent County EOC	Rescue, FR, Amb	394 433 436	531 579 561	Leipsic VFC	Kent County EMS
Little Creek VFC	900 over 33 sq mi	Kent County EOC	Rescue, FR	121 142	244 275 327	Leipsic FD (n) Magnolia (s)	Kent County EMS
Robbins Hose Fire Co. (Dover)	43,900 over 40 sq mi	Dover PD	Rescue	No EMS Svc	1345 1288 1241	Prime Care Ambulance	Kent County EMS
South Bowers Fire Company	500 over 28 sq mi	Kent County EOC	Rescue, FR	No EMS Svc	139 117 118	Frederica (w) Carlisle FD (e)	Kent County EMS

Leipsic, Little Creek, Smyrna, and South Bowers include portions of Delaware Bay which are not included in the coverage area shown above. If the Delaware Bay acreage is included then the fire district area is 78 square miles, 91 square miles, 43 square miles, and 96 square miles, respectively.

<sup>20</sup> Population increases to 30,000 during the summer months.

## Appendix A – Establishment of Delaware Fire Companies

Fire Dept Name	Est.	Fire Dept Name	Est.
Aetna Hose Hook and Ladder Co	1888	Harrington Fire Company	1902
Belvedere Fire Company	1949	Hartly VFD Inc.	1926
Bethany Beach VFC	1948	Hockessin Fire Company	1936
Blades VFC	1934	Holloway Terrace Fire Company	1921
Bowers VFD	1938	Houston VFD	1926
Brandywine Hundred Fire Co	1924	Indian River VFC Inc.	1953
Bridgeville VFC Inc.	1909	Laurel Fire Department Inc.	1899
Camden-Wyoming Fire Company	1890	Leipsic VFC Inc.	1947
Carlisle Fire Company Inc.	1892	Lewes VFD	1796
Cheswold VFC	1928	Little Creek VFC Inc.	1943
Christiana Fire Company	1921	Magnolia VFC Inc.	1927
Citizens' Hose Company Inc.	1886	Memorial VFC	1954
Claymont Fire Company	1928	Mill Creek Fire Company	1927
Clayton Fire Company Inc.	1891	Millsboro Fire Company	1924
Cranston Heights Fire Company	1922	Millville VFC	1936
Dagsboro VFD	1943	Milton Fire Department	1902
Delaware City Fire Company	1887	Minquadale Fire Company	1925
Delmar Fire Department	1921	Minquas Fire Company	1907
Dover Fire Department	1869	Odessa Fire Company Inc.	1926
Ellendale VFC Inc.	1920	Port Penn VFC	1951
Elsmere Fire Company	1921	Rehoboth Beach VFC	1906
Farmington VFC	1951	Roxana VFD	1960
Felton Community Fire Company	1883	Seaford VFD Inc.	1901
Five Points Fire Company Inc.	1921	Selbyville VFC Inc.	1923
Frankford VFC	1933	South Bowers Fire Company	
Frederica VFC	1932	Talleyville Fire Company Inc.	1928
Georgetown Fire Company Inc.	1903	Townsend Fire Company	1927
Good-Will Fire Company	1907	Vol unteer Hose Company	1887
Greenwood VFC	1923	Wilmington Fire Department	1921
Gumboro VFC	1954	Wilmington Manor VFC Inc.	1945

## Appendix B – Work Shift Schedule Examples

In discussing shift schedules in this document, it may be difficult at times for the reader to understand these different schedules. So, here are examples of the different shifts for those department deploying four shifts. The different shifts are labeled A, B, C, and D.

24/72 (1 day on/3 days off) shift						
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
A	B	C	D	A	B	C
D	A	B	C	D	A	B
C	D	A	B	C	D	A
B	C	D	A	B	C	D
A	B	C	D	A	B	C

24/48 (1 day on/2 days off) shift						
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
A	B	C	A	B	C	A
B	C	A	B	C	A	B
C	A	B	C	A	B	C
A	B	C	A	B	C	A
B	C	A	B	C	A	B

12/12 shift													
Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
B	A	B	A	C	B	C	B	D	C	D	C	A	D
A	D	B	A	B	A	C	B	C	B	D	C	D	C
A	D	A	D	B	A	B	A	C	B	C	B	D	C
D	C	A	D	A	D	B	A	B	A	C	B	C	B
D	C	D	C	A	D	A	D	B	A	B	A	C	B

2 days on/1 day off/2 nights on/3 days off													
Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
A	C	A	D	B	D	B	A	C	A	C	B	D	B
D	C	A	C	A	D	B	D	B	A	C	A	C	B
D	B	D	C	A	C	A	D	B	D	B	A	C	A
C	B	D	B	D	C	A	C	A	D	B	D	B	A
C	A	C	B	D	B	D	C	A	C	A	C	A	D



## Appendix C - EMS and Fire Emergency Calls across New England

Using information from the State Fire Marshal Office Annual Reports, we can look at the number of municipal fire and EMS calls to determine if any trends can be observed. These statistics reflect only those fire departments that reported data. The reporting percentages vary greatly from one state to the next and an attempt was made to provide that information following the name of the State.

State	2009	2010	2011	State	2009	2010	2011
Alaska: 151/160 FDs				Nevada: 138/165 FDs			
Muni EMS calls	36,406	36,886	35,678	Muni EMS calls	230,650	270,101	221,431
Fire Calls	3,053	3,195	3,166	Fire Calls	8,242	9,432	8,117
False Alarms	4,009	4,218	4,691	False Alarms	9,413	9,256	8,476
Non-fire calls	11,174	12,154	12,773	Non-fire calls	54,648	44,287	74,721
Total Muni Calls	54,642	56,453	56,308	Total Muni Calls	302,953	333,076	312,745
% Muni EMS calls	66.6%	65.3%	63.4%	% Muni EMS calls	76.1%	81.1%	70.8%
% Muni Fire Calls	5.6%	5.7%	5.6%	% Muni Fire Calls	2.7%	2.8%	2.6%
California				New Hampshire: 172/227 FDs			
Muni EMS calls	932,743	1,063,243	1,358,261	Muni EMS calls	69,660	75,540	81,403
Fire Calls	51,487	52,262	64,084	Fire Calls	5,173	6,614	5,755
False Alarms	92,652	98,702	82,883	False Alarms	11,812	16,159	17,896
Non-fire calls	240,177	278,020	442,892	Non-fire calls	29,442	34,159	36,833
Total Muni Calls	1,317,059	1,492,227	1,948,120	Total Muni Calls	116,087	132,472	141,887
% Muni EMS calls	70.8%	71.3%	69.7%	% Muni EMS calls	60.0%	57.0%	57.4%
% Muni Fire Calls	3.9%	3.5%	3.3%	% Muni Fire Calls	4.5%	5.0%	4.1%
Colorado: 239/325 FDs				New Jersey: 658/730 FDs			
Muni EMS calls	291,502	255,045	186,122	Muni EMS calls	99,946	116,603	117,262
Fire Calls	13,412	12,052	9,224	Fire Calls	37,893	40,202	34,698
False Alarms	41,675	34,625	25,132	False Alarms	108,795	115,437	122,094
Non-fire calls	95,230	83,554	61,509	Non-fire calls	141,097	166,233	184,644
Total Muni Calls	441,819	385,276	281,987	Total Muni Calls	387,731	438,475	458,698
% Muni EMS calls	66.0%	66.2%	66.0%	% Muni EMS calls	25.8%	26.6%	25.6%
% Muni Fire Calls	3.0%	3.1%	3.3%	% Muni Fire Calls	9.8%	9.2%	7.6%
Connecticut: 218/256 FDs				New York			
Muni EMS calls	183,757	193,191	173,638	Muni EMS calls	605,673		
Fire calls	13,460	15,596	12,450	Fire Calls	88,077		
False Alarms	40,711	40,566	42,566	False Calls	175,808		
Non-fire calls	71,210	81,579	93,215	Non-fire calls			
Total Muni Calls	309,138	330,932	321,869	Total Muni Calls	1,629,638		
% Muni EMS calls	59.4%	58.4%	53.9%	% Muni EMS calls			
% Muni Fire Calls	4.4%	4.7%	3.9%	% Muni Fire Calls			
Delaware: 59/62 FDs				No. Carolina - 1134/1261 FDs			
DEMSOC Calls	105683	112749	117499	Muni EMS calls	338,475	388,653	323,198
Muni EMS calls	22,751	24,136	23,522	Fire Calls	43,802	52,478	48,684
Fire Calls	4,872	5,307	4,674	False Alarms	59,872	68,354	54,606
False Alarms	5,629	5,399	5,608	Non-fire calls	152,973	171,386	142,518
Non-fire calls	16,893	16,893	11,652	Total Muni Calls	595,122	680,871	569,006
Total Muni Calls	44,221	46,336	45,456	% Muni EMS calls	55.4%	55.4%	55.4%
% Muni EMS calls	51.4%	52.1%	51.7%				

**Fire Departments and Emergency Medical Services in Delaware**

% Muni Fire Calls	11.0%	11.5%	10.3%	% Muni Fire Calls	8.3%	8.3%	8.3%
Florida: 549/576 FDs				North Dakota: 174/374 FDs			
Muni EMS calls	1,605,378	1,764,526	1,836,875	Muni EMS calls	6,637	8,143	
Fire Calls	58,902	60,358	60,479	Fire Calls	1,796	1,700	
False Alarms	130,767	144,687	137,092	False Alarms	2,618	2,926	
Non-fire calls	355,027	390,075	404,039	Non-fire calls	3,383	3,836	
Total Muni Calls	2,150,074	2,359,646	2,438,485	Total Muni Calls	14,434	16,605	
% Muni EMS calls	74.7%	74.8%	75.3%	% Muni EMS calls	46.0%	49.0%	
% Muni Fire Calls	2.7%	2.6%	2.5%	% Muni Fire Calls	12.4%	10.2%	
Georgia: 345/446 FDs				Ohio: 1122/1207 FDs			
Muni EMS calls	385,939	432,909	459,564	Muni EMS calls	449,379	474,155	489,950
Fire Calls	34,530	42,555	43,612	Fire Calls	48,762	48,003	40,558
False Alarm Calls	55,417	55,128	51,343	False Alarms	63,070	64,904	67,614
Non-fire calls	138,421	157,603	171,295	Non-fire calls	153,328	156,430	162,920
Total Muni Calls	614,307	688,195	725,814	Total Muni Calls	714,539	743,492	761,042
% Muni EMS calls	62.8%	62.9%	63.3%	% Muni EMS calls	62.9%	63.8%	64.4%
% Muni Fire Calls	5.6%	6.2%	6.0%	% Muni Fire Calls	6.8%	6.5%	5.3%
Idaho: 190/246 FDs				Oregon: 251/319 FDs			
Muni EMS calls	51,671	53,343	56,693	Muni EMS calls	155,414	178,390	183,674
Fire Calls	6,090	6,016	5,929	Fire Calls	13,163	11,940	12,457
False Alarm Calls	6,295	5,719	5,937	False Alarms	12,057	11,699	10,623
Non-fire calls	20,464	20,610	22,224	Non-fire calls	42,821	57,179	61,905
Total Muni Calls	84,520	85,688	90,783	Total Muni Calls	223,455	259,208	268,659
% Muni EMS calls	61.1%	62.3%	62.4%	% Muni EMS calls	69.6%	68.8%	68.4%
% Muni Fire Calls	7.2%	7.0%	6.5%	% Muni Fire Calls	5.9%	4.6%	4.6%
Illinois: 873/1079 FDs				Pennsylvania: 851/2300 FDs			
Muni EMS calls	674,308	731,888	695,684	Muni EMS calls		248,932	250,479
Fire Calls	58,469	62,321	52,218	Fire Calls		36,377	34,503
False Alarms	139,465	141,978	128,314	False Alarms		55,660	63,571
Non-fire calls	196,232	205,445	194,040	Non-fire calls		105,748	118,103
Total Muni Calls	1,068,474	1,141,632	1,070,256	Total Muni Calls		446,717	466,656
% Muni EMS calls	63.1%	64.1%	65.0%	% Muni EMS calls		55.7%	53.7%
% Muni Fire Calls	5.5%	5.5%	4.9%	% Muni Fire Calls		8.1%	7.4%
Iowa: 481/843 FDs				South Carolina: 349/445 FDs			
Muni EMS calls		73,474	94,518	Muni EMS calls	98,501	142,062	131,202
Fire Calls		8,306	11,859	Fire Calls	20,596	29,363	26,515
False Alarm Calls		10,462	11,838	False Alarms	25,741	34,427	28,288
Non-fire calls	No Data	23,390	27,102	Non-fire calls	42,554	59,350	54,524
Total Muni Calls		115,632	145,317	Total Muni Calls	187,392	265,202	240,529
% Muni EMS calls		63.5%	65.0%	% Muni EMS calls	52.6%	53.6%	54.5%
% Muni Fire Calls		7.2%	8.2%	% Muni Fire Calls	11.0%	11.1%	11.0%

**Fire Departments and Emergency Medical Services in Delaware**

Kansas: 77/644 FDs				Tennessee: 558/784 FDs			
Muni EMS calls	112,250	117,807	127,291	Muni EMS calls	198,724	219,927	224,920
Fire Calls	16,856	14,650	20,378	Fire Calls	30,875	35,446	31,693
False Alarms	11,674	11,955	12,148	False Alarms	43,770	45,480	43,448
Non-fire calls	40,574	41,892	47,589	Non-fire calls	70,485	75,055	80,210
Total Muni Calls	181,354	186,304	207,406	Total Muni Calls	343,854	375,908	380,271
% Muni EMS calls	61.9%	63.2%	61.4%	% Muni EMS calls	57.8%	58.5%	59.1%
% Muni Fire Calls	9.3%	7.9%	9.8%	% Muni Fire Calls	9.0%	9.4%	8.3%
Kentucky: 482/837 FDs				Texas: 1038/2118 FDs			
Muni EMS calls	68,301	74,526	81,687	Muni EMS calls	926,879	966,713	1,043,961
Fire Calls	20,196	23,283	19,329	Fire Calls	80,961	76,781	102,799
False Alarms	19,929	20,523	20,603	False Alarms	128,976	133,514	138,687
Non-fire calls	50,011	46,487	46,541	Non-fire calls	379,990	388,447	446,465
Total Muni Calls	158,437	164,819	168,160	Total Muni Calls	1,516,806	1,565,455	1,731,912
% Muni EMS calls	43.1%	45.2%	48.6%	% Muni EMS calls	61.1%	61.8%	60.3%
% Muni Fire Calls	12.7%	14.1%	11.5%	% Muni Fire Calls	5.3%	4.9%	5.9%
Louisiana: 358/597 FDs				Utah: 169/269 FDs			
Muni EMS calls	108,485	122,310		Muni EMS calls	39,237	40,411	40,889
Fire Calls	16,360	21,377		Fire Calls	4,852	4,732	4,585
False Alarms	18,863	21,403		False Alarms	11,447	10,827	11,313
Non-fire calls	56,000	59,039		Non-fire calls	19,820	19,936	20,509
Total Muni Calls	199,708	224,129		Total Muni Calls	75,356	75,906	77,296
% Muni EMS calls	54.3%	54.6%		% Muni EMS calls	52.1%	53.2%	52.9%
% Muni Fire Calls	8.2%	9.5%		% Muni Fire Calls	6.4%	6.2%	5.9%
Maine: 176/478 FDs				Vermont: 191/223 FDs			
Muni EMS calls	54,086	53,144	56,096	Muni EMS calls	20,005	19,575	22,819
Fire calls	5,217	4,937	4,542	Fire Calls	3,268	3,089	3,235
False Alarms	7,301	6,951	7,832	False Alarms	5,435	5,049	6,637
Non-fire calls	18,229	17,601	17,884	Non-fire calls	12,151	11,608	14,434
Total Muni Calls	84,833	82,633	86,354	Total Muni Calls	40,859	39,321	47,125
% Muni EMS calls	63.8%	64.3%	65.0%	% Muni EMS calls	49.0%	49.8%	49.8%
% Muni Fire Calls	6.1%	6.0%	5.3%	% Muni Fire Calls	8.0%	7.9%	7.9%
Massachusetts: 349/366 FDs				Virginia: 384/463 FDs			
Muni EMS calls	392,989	406,253		Muni EMS calls	424,182	430,683	451,988
Fire calls	30,070	34,527		Fire Calls	26,139	28,198	25,906
False Alarms	105,193	107,743		False Alarms	54,580	54,061	53,753
Non-fire calls	156,792	179,103		Non-fire calls	140,218	143,247	152,553
Total Muni Calls	685,044	727,626		Total Muni Calls	645,119	656,189	684,200
% Muni EMS calls	57.4%	55.8%		% Muni EMS calls	65.8%	65.6%	66.1%
% Muni Fire Calls	4.4%	4.7%		% Muni Fire Calls	4.1%	4.3%	3.8%
Minnesota: 767/789 FDs				Washington: 411/488 FDs			
Muni EMS calls	124,511	130,798	138,635	Muni EMS calls	438,101	443,008	
Fire Calls	15,447	14,561	14,814	Fire Calls	25,325	20,019	No Data
False Alarms	24,514	25,792	25,999	False Alarms	42,220	40,284	due to
Non-fire calls	46,102	52,026	52,547	Non-fire calls	114,385	112,157	budget
Total Muni Calls	210,574	223,177	231,995	Total Muni Calls	620,031	615,468	cuts in
% Muni EMS calls	59.1%	58.6%	59.8%	% Muni EMS calls	70.7%	72.0%	FMO

**Fire Departments and Emergency Medical Services in Delaware**

% Muni Fire Calls	7.3%	6.5%	6.4%	% Muni Fire Calls	4.1%	3.3%	
Missouri: 506/887 FDs				West Virginia: 196/408 FDs			
Muni EMS calls	217,449	233,575	221,777	Muni EMS calls	45,055	55,911	62,221
Fire Calls	31,828	30,239	27,617	Fire Calls	8,202	8,470	14,099
False Alarms	28,058	31,512	27,728	False Alarms	8,091	8,601	9,651
Non-fire calls	88,629	94,384	92,508	Non-fire calls	27,494	33,243	40,619
Total Muni Calls	365,964	389,710	369,630	Total Muni Calls	88,842	106,225	126,590
% Muni EMS calls	59.4%	59.9%	60.0%	% Muni EMS calls	50.7%	52.6%	49.2%
% Muni Fire Calls	8.7%	7.8%	7.5%	% Muni Fire Calls	9.2%	8.0%	11.1%
Nebraska: 187/495 FDs				Wyoming: 102/135 FDs			
Muni EMS calls	42,377	43,207	45,652	Muni EMS calls		21,981	22,567
Fire Calls	5,086	4,691	4,801	Fire Calls		2,966	2,985
False Alarms	6,753	7,058	6,905	False Alarms		2,279	2,626
Non-fire calls	10,243	12,787	18,233	Non-fire calls		7,688	7,239
Total Muni Calls	64,459	67,743	75,591	Total Muni Calls	33,810	34,914	35,417
% Muni EMS calls	65.7%	63.8%	60.4%	% Muni EMS calls		63.0%	63.7%
% Muni Fire Calls	7.9%	6.9%	6.4%	% Muni Fire Calls		8.5%	8.4%

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## Appendix D – Delaware Fire Department Fire Apparatus

Fire District	Engine	Ladder	Tanker	Rescue	Ambulance
Aetna Hose & Ladder	2006 Pierce 2005 Pierce Dash 2004 Pierce 1997 Seagrave 1997 Seagrave 1991 KME	Pierce Sqrt 7 2011 Pierce Arrow XT		2010 Pierce Arrow	2010 Chevy PL Custom 2006 Freightliner Horton
Belvedere Fire Company	1989 Pierce Lance 1982 Seagrave	1993 Pierce Lance Sqrt		2006 LaFrance	2000 Ford MedTec
Bethany Beach VFC	1993 Pierce Lance 1987 Pierce Arrow 1988 Pierce Arrow	2012 Pierce Arrow 2012 Pierce Quint		1996 Pierce Quantum	2008 Ford Horton 2008 Ford Horton
Blades VFC	1991 Pierce Lance 1985 Pierce Arrow 1970 Hahn International		2008 Pierce Velocity	2002 Pierce Lance	2007 Chevy PL Custom 2004 Ford PL Custom
Bowers VFD	1999 Pierce Dash	2008 Ferrara Quint	1988 American Eagle		2007 Horton
Brandywine Hundred Fire Co./	2006 E-One 1998 Spartan Gladiator	1993 Simon-Duplex		1997 Simon Duplex	
Bridgeville VFC	2006 Pierce Lance 2002 Pierce Int'l 1994 Pierce Dash 1995 Spartan			1991 Pierce Dash	2006 Int'l Horton 2001 Int'l Horton
Camden-Wyoming Fire Company	1997 KME Firefox 1999 KME Firefox 1984 LaFrance Eagle		1989 Intl Navistar	1994 Pierce Lance	2002 Ford Horton 2007 GMC Horton
Carlisle Fire Company	2007 Pierce 1997 Seagrave	1992 Simon Duplex	2007 Pierce	2004 Seagrave	2003 Ford Horton 2006 Ford PL Custom
Cheswold VFC	2002 Pierce Dash 1991 LaFrance Century 1978 LaFrance Century			2010 Pierce 2005 Spartan	2006 Ford Horton 2008 Ford Horton
Christiana Fire Company	2009 Seagrave Marauder II 2009 Seagrave Marauder II 2009 Seagrave Marauder II 2009 Seagrave Marauder II 2009 Seagrave Marauder II	2006 Seagrave			2010 Chevy Lifeline 2008 Ford Lifeline 2008 Chevy Lifeline 2008 Ford Lifeline 2007 Ford Lifeline
Citizens Hose Fire Co.	2009 KME Predator 2006 KME Predator 1991 KME Firefox	1999 KME ArielCat	1989 Kenworth T800	1997 KME Renegade	
Claymont Fire					
Clayton Fire Company	2000 Ferrara 1998 Ferrara	2006 LaFrance		2003 Ferrara	
Cranston Heights Fire Company	2008 Seagrave Marauder II 2008 Seagrave Marauder II			2012 Pierce	2008 Ford Lifeline 2003 Chevy Lifeline
Dagsboro VFD	2010 Sutphen Custom 1991 Sutphen Custom 1983 Sutphen Custom		1993 Kenworth	1999 Sutphen	2009 Chevy Lifeline 2011 Int'l Horton
Delaware City Fire Company	2006 E-One Cyclone II 1993 E-One Cyclone	1994 Eone Cyclone		2002 E-One Cyclone II	2009 Ford Lifeline 2005 Chevy Lifeline
Delmar FD	2004 Spartan 2002 Spartan 1994 Pierce Sabre	1994 Pierce Lance	1985 Mack/4	2012 4Guys/Spartan Gladiator	2007 GMC/Horton 2007 GMC/Horton
Ellendale VFC	2005 Spartan 1996 Sutphen 1994 Sutphen		1968 Maxim 1989 Mack	2001 Sutphen 2006 Spartan Advantage	2008 Chevy Horton 2002 Ford Horton

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<b>Fire District</b>	<b>Engine</b>	<b>Ladder</b>	<b>Tanker</b>	<b>Rescue</b>	<b>Ambulance</b>
Elsmere Fire Co.	2007 Pierce Dash	1998 Pierce Quantum		2004 Pierce Dash	2003 Chevy Life Line 2009 GMC Horton
Farmington VFC	472-1993 474-2004 475-1979		T47-1995	R47-1983	
Felton Fire Company	2010 Spartan 1986 Hahn 1976 Hahn		1997 Pierce Dash	2001 Pierce Dash	1998 Horton 2006 LaFrance Medic Master
Five Points Fire Co.	1009 Pierce PUC	2006 Pierce Lance			2012 Horton
Frankford VFC	1998 E-One 1991 Pierce Lance		1986 Pierce		2009 Ford/Horton 2003 Ford/Horton
Frederica VFC	491-1990 492-2000 493-1983	L49-2008	T49-1975	R49-2000	A49-1995 B49-2000
Georgetown Fire Company	2006 Pierce Enforcer 2001 Pierce Lance 1978 Mack CF600	2007 Seagrave Aerialscope	2013 Pierce Arrow	2001 Pierce Lance	
Good-Will Fire Co.	1989 Pierce Arrow 1991 Pierce Dash	1996 Pierce Lance		1991 Pierce Dash	2004 Chevy Lifeline
Greenwood VFC	2008 Pierce Velocity 2001 Kenworth T600 1994 Pierce Lance		1985 Freightliner	1996 Pierce Lance	2012 Intl Horton 2012 Intl Horton
Gumboro VFC	1994 Pierce Dash 1992 Pierce Dash		1998 Mack/Pierce 1979 Intl	2002 Pierce Dash	1993 Ford Gold Medallion 2003 Ford Gold Medallion
Harrington Fire Company	505-2005 501-1997 502-1984 504-1984	L50-2003	T50-1987	R50-2003	A50-1997 B50-2008 C50-2002
Hartly VFD	2006 KME Predator 1975 Hahn	1990 Pierce Lance	1990 Spartan 4-Guys	2001 Pierce Quantum	A51-2007 B51-2000 C51-2003
Hockessin Fire Co.		2 1997 Spartan Gladiator		2002 4-Guys	2
Holloway Terrace Fire Company	1995 E-One Cyclone	1992 Pierce Squrt	1995 E-One Cyclone	1999 E-One	2005 Lifeline
Houston VFD	2003 Ferrara 1993 Pierce 1982 Pierce		1979 International	2008 Chevy Suburban	
Indian River VFC	2007 Spartan 4-Guys 2001 Spartan 4-Guys 1994 Spartan 4-Guys	1990 Pierce Lance	1986 Mack R-Model	1997 4-Guys	
Laurel FD	2006 Pierce Dash 1994 Pierce Saber 1994 Pierce Lance 1988 Pierce Lance	2005 Pierce Dash			2011 Intl'l Horton 2011 Int'l Horton
Leipsic VFC	2001 Intl New Lexington 1986 Kenworth/4 Guys		1973 White Road Boss/4-Guys	1993 Spartan Gladiator	1985 Ford Coach 2000 Ford LaFrance
Lewes VFD	2010 Pierce Velocity 2005 Seagrave 1994 Pierce Saber	2001 Pierce Quantum	1999 Pierce	2004 Seagrave	2010 Road Rescue 1995 Ford/Horton 1998 Ford/Horton 1995 Ford/Horton
Little Creek VFC	542-1998 544-1991 545-2008			R54-2001	
Magnolia VFC	2006 LaFrance Eagle 1997 Freightliner FL112 1973 Imperial		2006 Freightliner/4-Guys	1995 Freightliner FL70	2011 Freightliner
Marydel	2004 LaFrance 1983 Hahn		1994 Kenworth DPC	2011 Ferrara	2000 Ford Horton

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<b>Fire District</b>	<b>Engine</b>	<b>Ladder</b>	<b>Tanker</b>	<b>Rescue</b>	<b>Ambulance</b>
Memorial VFC	1988 Spartan 4-Guys 1978 Hahn		1988 GMC	1996 Pierce	2004 Chevy
Mill Creek Fire Compnay	1992 Seagrave Commander II 1972 Seagrave	1996 E-One 1996 E-One		2006 E-One	2009 Chevy Horton 2007 Chevy Horton 2005 Chevy Horton 2000 Ford Horton
Millsboro Fire Co.	2008 Spartan Diamond 1991 Spartan 4-Guys 1994 International 4800 4x4	2012 E-One Quint	1998 4-Guys	1996 4-Guys	2012 Intl Lifeline 2009 Chevy Lifeline 2008 Chevy Lifeline
Millville VFC	2005 E-One 2004 LaFrance 1983 E-One	1999 E-One	1992 Int'l 4-Guys	1997 E-One Cyclone II	2011 Freightliner Excellance 2004 Intl Horton 2002 Intl Horton
Milton FD	2007 American LaFrance 2001 Spartan/Quality 1989 Grumman Firecat	1994 Spartan Quint	1986 Mack	1993 Spartan	2005 Ford Horton
Minquadale Fire Co.	1993 Pierce Lance 1993 Pierce Lance			2012 Pierce PUC	
Minquas Fire Co.	2006 Pierce Dash 1999 Pierce Dash			1993 Mack	
Odessa Fire Co.	2012 Pierce Arrow XT 2012 Pierce Arrow XT 1991 Grumman Firecat		1991 Grumman	2007 LaFrance	2011 Freightliner 2005 Duramax
Port Penn VFC	1993 Simon Duplex		1995 Simon Duplex	1973 Saulsbury	2009 Chevy Osage
Rehoboth Beach	2010 Pierce Contender 1995 International 4800 LTI 1989 Grumman Firecat	1995 Simon-Duplex LTI	1989 Grumman	1989 Saulsbury	2010 Horton Ford/Medtech
Robbins Hose Fire Co.	2008 Pierce Impel 2003 Pierce Lance 2005 Pierce Lance 2003 Pierce Lance 1997 Pierce Dash	2011 Pierce Quantum 2005 Pierce Lance		1997 Pierce Lance	
Roxana VFD	1995 Pierce Saber 1989 Pierce Lance	2010 Pierce	1989 Freightliner	2009 4-Guys	2011 Intl Horton 2003 Type III Horton 2007 GMC Horton
Seaford VFD	2009 Pierce Dash 2004 Pierce Dash 1992 Pierce Lance	2002 Pierce Lance	1995 Pierce Lance	1986 Pierce Arrow	2012 Intl Horton 2006 Ford/PL Custom 2006 Ford/PL Custom
Selbyville VFC	2004 Spartan	1995 Sutphen	2001 4 Guys	1997 Saulsbury	2007 Ford Horton 2010 Ford Horton
South Bowers Fire Company	572-1989 575-2005		T57-1994	R57-1994	
Talleyville Fire Company	2001 Dodge Mini 1998 E-One 1998 E-One	2004 E-One Quint		2005 E-One	2005 Chevy Osage
Townsend Fire Company	2004 Pierce Enforcer 1994 Mack MC		1988 Mack MC	2007 Pierce Dash	2005 Ford Horton 2003 Ford Horton
Volunteer Hose	2010 Pierce Arrow 1995 Pierce Saber 1986 Pierce Arrow	2008 Pierce Arrow XT 1992 Pierce Lance Quint	2007 Ford Mini	2005 Pierce Dash	2007 Ford Horton 2005 Ford Horton 2002 Ford Horton 1999 Ford Horton
Wilmington FD	2012 Pierce Dash 2007 Pierce Dash 2006 Pierce Dash 2006 Pierce Dash 2004 Pierce Dash 2002 KME 1996 KME 1996 KME	2006 Pierce Dash Skyboom 2006 Pierce Dash Ladder 2006 Pierce Squrt 2006 Pierce Dash 1998 KME		1992 Pierce Lance	

**Fire Departments and Emergency Medical Services in Delaware**

<b>Fire District</b>	<b>Engine</b>	<b>Ladder</b>	<b>Tanker</b>	<b>Rescue</b>	<b>Ambulance</b>
Wilmington Manor VFC	2004 Pierce Dash 2004 Pierce Dash 1987 Pierce Arrow	1995 Pierce Lance HD		2009 Rosenbauer	

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