



## **COST OF OPERATING DIFFERENT TYPES OF FIRE DEPARTMENTS**

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### **COST TO OPERATE FIRE DEPARTMENTS**

Research suggests that volunteer fire departments cost less to operate than paid departments.

But some research also suggests that if the costs of training, recruiting, and keeping volunteer firefighters rise above a certain level, it may cost less to operate a paid department.

### **QUESTION**

How does the cost of operating a volunteer fire department compare with that of operating a paid fire department?

### **SUMMARY**

We were unable to locate any current study on the relative cost of operating various types of fire departments. But a widely cited 1992 study by Brudney and Duncombe concluded that if annual costs per volunteer firefighter are (1) \$835 or less, volunteer fire departments are least costly; (2) between \$835 and \$1,500, combination departments

(those using a mix of paid and volunteer firefighters) are least costly; and (3) more than \$1,500, career (also called paid or professional) departments are least costly.

The research and anecdotal evidence suggest that volunteer and career departments differ primarily in the pay, recruitment, training, and administrative costs. But the cost difference may be attributed to other factors as well. Another widely cited 2001 study concluded that volunteer departments cost less to operate than career departments where less fire protection is demanded. The study authors concluded that volunteer fire departments are likely to cost less than career departments where (1) longer response times, fewer emergency services, and lower insurance ratings are acceptable to the community; (2) the firefighting environment is less difficult; and (3) volunteers are more readily available.

According to the study, as more fire protection is demanded, the relative cost of volunteer protection rises relative to professional protection.

A Mansfield, Connecticut, study that compared the costs of operating different types of fire departments in 11 Connecticut towns generally found that volunteer departments cost less to operate than paid departments, but we believe the sample was too small to be conclusive.

In February 2014, OLR surveyed Connecticut fire department chiefs statewide to determine how much it costs them to operate their fire departments. Appendix 2 presents the data on the 12 towns that responded to the survey. We include the data for information purposes, but because of the small number of respondents, we have not drawn any conclusions from the responses.

## **FIRE DEPARTMENT COSTS**

The three major types of fire departments are career, volunteer, and combination departments. Career departments employ firefighters full-time and pay them regular compensation. Volunteer departments employ volunteers who typically get some benefits but do not receive regular compensation. Combination departments use a mix of paid and volunteer firefighters.

The cost of running any type of fire department depends on a wide variety of factors. These include the demographics and size of the service area, population size and density, type of services provided (for example, fire, emergency medical services (EMS), or both); number of calls and responses; recruiting and training costs; proximity to highways; environment (for example, proportion of multi story or industrial buildings in the service area); and wage and compensation rates.

The literature and anecdotal evidence indicate that the major savings from operating a volunteer, as opposed to a paid, fire department are from personnel expenses, including wages and compensation benefits. Volunteer departments do not pay wages and whatever they provide to attract volunteers generally appear to cost less than compensation provided to paid firefighters.

## **NEW YORK STATE STUDY**

The authors of a 2002 study compared the costs of paid, volunteer, and combination fire departments based on data for 1984 through 1986 on 306 New York State fire departments in communities with populations between 3,500 and 25,000. The average paid department served a population of 14,550 and employed 38 full-time firefighters; the average volunteer department served a population less than half that size and employed 133 volunteers.

The study looked at the costs of recruiting, training, keeping, and managing volunteers. The authors reasoned that because volunteer firefighters are available only part time, a department needs several volunteers to equal the hours provided by one full-time paid firefighter. As a result of the greater number of volunteers required, the cost of recruitment, training, and administration can quickly increase. They concluded that:

If annual costs per volunteer are less than \$835, then the volunteer department should remain exclusively staffed by volunteers. If annual costs per volunteer average between \$835 and \$1,500, then it may be cost effective to supplement volunteers with paid firefighters, particularly during day-time hours, the most difficult shift to cover. Finally, in those localities where volunteer recruitment has become so difficult that costs exceed \$1,500 per-volunteer, the municipality should consider switching to a paid department (Brudney, Jeffrey and Duncombe, William., *An Economic Evaluation of Paid, Volunteer, and Mixed Staffing Options for Public Services*, *Public Administration Review*, September/October: p. 480).

## **INDIANA STUDY**

The authors of a 2001 study used data for Indiana counties in 1991 to measure community demand for fire protection and the relative cost of volunteer and career departments (Brunet, Alexia, et al., *Community Choice Between Volunteer and Professional Fire departments Nonprofit and Voluntary Sector Quarterly*, vol 30, No 1, March 2001 pp. 26-50).

The authors drew the following conclusions.

Volunteer fire departments are a lower cost alternative to professional departments where less fire protection is demanded. Where longer response times, fewer emergency services (in both fire and EMS) and lower insurance ratings are acceptable to the community, volunteer fire departments are likely to cost less than professional departments. Lower communities are among those that demand less fire protection, probably because they have a lesser ability to pay for the service and perhaps because they have less valuable property to protect (*id.* at p. 47-48).

Volunteer fire departments are also a lower cost alternative where the fire fighting environment is less difficult and perhaps where volunteers are more readily available. Communities that are less densely

populated have less industrial development, and have more farming place fewer demands on firefighters. Even where buildings may be older, they are shorter, smaller, and further apart, traffic and congestion is less of a problem, and there may be little need to handle hazardous materials or medical emergencies. In such environments, volunteer fire departments may have a cost advantage (*id.*, at p. 48).

But where incomes are higher, home values relatively lower, where the firefighting environment is more difficult and volunteers harder to recruit professional departments have the cost advantage. Communities that demand more fire protection and more EMSs, because their incomes are higher or because more protection does not cause their tax bills to rise by much, are more likely to choose professional departments. Professional departments also may have lower costs relative to volunteer departments in communities where volunteers are harder to recruit (*id.*, at p. 49).

Some evidence implies that volunteer departments tend to have lower costs than professional departments for smaller levels of fire protection. Professional departments have lower costs for larger levels of fire protection. Professional departments also have relative cost advantages where the fire protection “environment” is more demanding—where buildings are taller, houses closer together, or industries exist that use hazardous materials, and where there are more medical emergencies. As the cost of recruiting volunteers rises, the relative cost of volunteer protection rises (*id.*, at p. 29).

## **MANSFIELD STUDY**

In 2000, the Connecticut Conference of Municipalities reviewed the Eagleville Fire Department and Mansfield Fire Volunteer Company, both of which provided fire services in Mansfield (see Attachment 1). The town subsequently undertook a follow-up review in 2001. As part of the review, it surveyed 11 towns similar to Mansfield in terms of population, form of government, or both to identify how successful these communities provide fire and EMS services (see Appendix 1 and Attachment 2).

Six of the 11 towns use paid and volunteer firefighters and five use volunteers only. The per capita costs in towns operating volunteer departments ranged from \$15.90 (Cheshire) to \$69.96 (Avon). The per capita costs in towns that used both volunteers and paid firefighters ranged from \$26.34 (Glastonbury) to \$84.16

(Mansfield). When EMS services are considered, the per capita costs for volunteer departments ranged from \$21.86 (Cheshire) to \$78.71 (Avon). The per capita costs for towns that use both paid and volunteer firefighters ranged from \$31.65 (Glastonbury) to \$94.54 (Mansfield).

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### Appendix 1: Fire and Ambulance Data

<i>Town</i>	<i>Pop.</i>	<i>Fire Service Provided by</i>	<i>EMS Service Provided by</i>	<i>Operating Fire Expend. (6/30/2000)</i>	<i>Per Capita Costs</i>	<i>Ambulance Expenditure</i>	<i>Capital Expend.</i>	<i>Total Expend.</i>	<i>Total Expend. Per Capita</i>
Avon	13,725	Vol.	AMR & UConn	\$889,578	\$69.96	\$70,670	\$120,000 (est)	\$1,080,248	78.71
Cheshire	25,986	Vol.	Private	323,378	15.90	90,000	150,000 (est)	563,278	21.67
Coventry	10,907	Vol.	Fire Dept.	244,884	22.45	0	25,000	269,884	24.74
Farmington	20,775	Paid and volunteer.	AMR & UConn	985,000	54.04	137,600	120,000 (est.)	1,242,600	59.81
Glastonbury	28,275	Paid and volunteer	Nonprofit entity	715,000	26.34	30,000 for units	150,000 (est.)	895,000	31.65
Mansfield	11,721*	Paid and volunteer	Fire Dept.	986,534	84.16	included		1,108,087	94.54
Newington	28,156	Vol.	Nonprofit entity	528,000	20.53	50,000	150,000	728,000	25.86
Suffield	11,128	Paid and volunteer	Nonprofit entity	451,876	45.10	50,000	75,000	576,876	51.84
Tolland	12,063	Paid and volunteer	Fire dept.	318,557	36.94	127,057	100,000	545,614	45.23
Wethersfield	24,985	Paid and volunteer	Private and separate entity	733,000	31.36	50,408	150,000	933,408	37.36
Windsor	27,446	Vol.	Nonprofit entity	558,000	24.52	115,000	115,000	823,000	29.28

\* Excludes UConn students

Source: Fire Department Management Study, Part II, June 25, 2001, by Martin Berliner

## Appendix 2: Fire Department Data

<i>Town</i>	<i>Fire Service Provided by</i>	<i>EMS provided by</i>	<i>Annual Operating Budget (FY 2013-14)</i>	<i>Number of Fire Calls in 2013</i>	<i>Number of EMS Calls in 2013</i>	<i>Number of Fire Stations</i>
Bloomfield (Bloomfield Center Fire Dist.)	Vol.	Police Dept.	\$1.2 m	478	NA	3
Bridgeport	Paid	Fire Dept. (City contracts with AMR for ALS and transport)	\$28,398,781	18,412	9,275	8
Manchester	Paid	Fire dept.	\$14 m	3,300	5,200	5
Mansfield (Mansfield Fire Dept.)	Paid and Volunteers	Fire Dept.	\$1,823,000	531	1,333	3
Meriden, City of	Paid and volunteer	Fire Dept.	\$8.6 m (paid) \$158,000 (vol.)	8,985	5,808	6
Naugatuck	Paid	Nonprofit entity	\$3.88 m	1,300	NA	2
Ridgefield	Comb.	Fire Dept.	\$3,887,009	1,280	2,094	2
Union	Vol.	Fire Dept.	\$42,000	22	75	1
West Haven (Allington Fire Dist.)	Comb.	Fire Dept.	\$5,497.956	876	1,353	2
Westport	Comb.*	Other entities	\$10 m (approx.)**	3,832 (in 2012)	910 (in 2012)	4
Willimantic	Paid and Volunteer	Fire Dept.	\$2,609,207	1,579	3,138	1
Windsor	Vol.	Contracted Service	\$835,380	1,000	300	4 (plus substation)

\* 67 sworn firefighters and approximately six volunteers

\*\* includes fire, fire marshal, building department, fire dispatch, and water and emergency management

Source: OLR Fire Department Survey, February 2014