




TAX SAVINGS GENERATED BY NEW YORK'S VOLUNTEER FIRE SERVICE

"INCLUDES AN ANALYSIS OF RESPONSE TIMES"



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The Firefighters Association of the State of New York (FASNY) commissioned Resolution Economics (ResEcon), a national firm of economists and policy analysts, to measure the economic value that volunteer firefighters provide to New York residents.

In completing this assignment, ResEcon analyzed both paid and volunteer fire departments throughout the state, excluding New York City. We employed economic models to measure firefighting requirements in each locality, using not only population but also geography, real property, service areas, and local experience. This multi-factor approach improves the accuracy of the calculations in a complex state like New York to account for its varied demographics and geography.

Volunteer firefighters reduce municipal government expenses by eliminating the need to pay for career firefighter wages, benefits and related costs. Volunteer organizations engage in extensive fundraising, which avoids tax levies for purchasing, maintaining, and operating firefighting equipment. Municipalities do not need to spend funds on fire stations with living quarters or other structures, which saves them a full range of annual operating expenses such as administration and utility costs.

- An additional 31,058 career firefighters would be necessary to go to an all-paid fire service;
- Currently, volunteer firefighters save New York taxpayers \$3.8 billion in salaries and benefits alone;
- The annual cost of an all-career fire service (salaries, benefits, operating costs and debt service) would be \$4.7 billion;
- In addition, there would be a one-time cost of \$8.2 billion to acquire existing stations/structures, vehicles and equipment;
- Approximately 1,500 fire stations would have to be built new or reconstructed;
- Property taxes would rise an average 28.4% statewide.



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I. Executive Summary

The Firefighters Association of the State of New York (FASNY) commissioned Resolution Economics (ResEcon), a national firm of economists and policy analysts, to measure the economic value that volunteer firefighters provide to New York residents. In completing this assignment, ResEcon analyzed both paid and volunteer fire departments throughout the state, excluding New York City. We employed economic models to measure firefighting requirements in each locality, using not only population but also geography, real property, service areas, and local experience. In a complex state like New York, this multi-factor approach improves the accuracy of the calculations by accounting for the state's varied demographics and geography.

Volunteer firefighters reduce municipal government expenses by eliminating the need to pay for career firefighter wages, benefits, and related costs. Volunteer organizations engage in extensive fundraising, which avoids tax levies for purchasing, maintaining, and operating firefighting equipment. Municipalities do not need to spend funds on fire stations with living quarters or other structures, which saves them a full range of annual operating expenses such as administration and utility costs.

To determine the amount of tax savings for households and businesses, ResEcon calculated how much additional tax would be necessary to cover the costs of an all-career fire department in every area of the state now using volunteers. The report studied the balance of career and volunteer fire departments across New York (outside New York City) and used economic models to measure firefighting requirements county by county, incorporating the unique features in each area.

Although no one is proposing such a drastic conversion to an all-career fire service, this analysis demonstrates the value of volunteers and shows the enormous increases in property tax required absent volunteers. This report also measures the concomitant economic value of volunteers to their communities. Households and businesses that save tax can spend those funds in their localities thus providing a multiplier effect.

In estimating the level of staffing and the cost of paid units, this report examined most career departments in the state to assess the factors that determine staffing and operations. Those results were then applied to all volunteer protection areas throughout the state. Thus, we estimated the number of full-time career firefighters needed in each area based on its unique characteristics. We then calculated the corresponding level of firefighting equipment, specialized vehicles, and fire stations that contain appropriate living quarters. Finally, we estimated the increased property tax required to pay the bill in each jurisdiction.

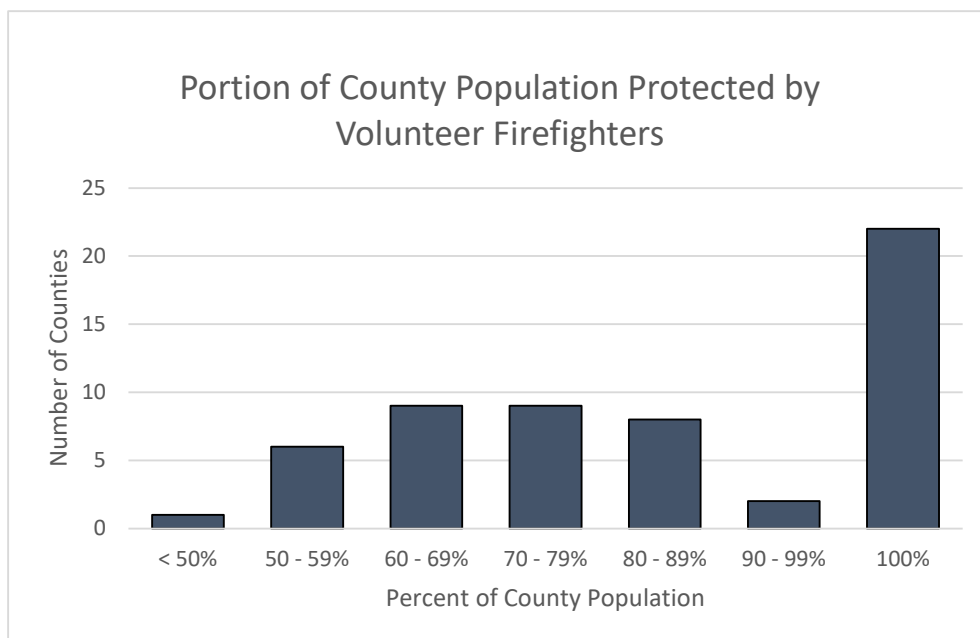
An important section of this report focuses on firefighting response times and the impact of federal SAFER grants. We examined millions of incident reports throughout the state for the years 2013 and 2021, using data provided by the New York State Office of Homeland Security. The report tabulates response times in each class of jurisdiction (urban, suburban rural and remote). Our analysis highlights the importance of increasing volunteer recruitment and retention. The results are clear: the larger the pool of volunteers to respond to an emergency, the faster the average response time.

The table below underscores how critically important to public safety are New York State’s volunteer firefighters. New York boasts a high percentage of active volunteer firefighters, volunteer departments, and stations within its 1,640 active fire departments. In total, these fire companies manage 2,413 fire stations distributed across the state. There are approximately 88,175 active firefighters of which the great majority, 81,231, are volunteers.

Summary of New York Fire Departments 2020				
Type Fire Dept.	Count of Fire Depts.	Active Volunteer Firefighters	Active Career Firefighters	Number of Stations
Career or Mostly Career	91	290	6,083	247
Volunteer or Mostly Volunteer	1,549	80,941	861	2,166
Total	1,640	81,231	6,944	2,413

Source: NFIRS NY FF Database

As demonstrated in the chart below, twenty-two counties of the 57 outside New York City have all-volunteer fire protection and are depicted in the 100% column at the far right of the chart. Westchester County is the only county where volunteer firefighters cover less than 50% of the population. Counties like Albany and Fulton populate the 50 – 59% column.



Fully paid career departments in place of volunteers would cost New York taxpayers an additional \$4.7 billion annually. This includes the pay, benefits, operating, maintenance and capital costs to support an additional 31,058 full-time paid firefighters. This consists of \$3.8 billion of pay and benefits plus \$187.9 million in general operating costs plus \$83.8 million annually to maintain equipment and structures. The table below shows these details.

Also included in the annual cost is the payment of interest and principal to finance the one-time \$8.2 billion cost of acquiring, rebuilding and equipping stations with sleeping and eating facilities, emergency equipment, vehicles, and related items. If bonds were used to finance these one-time requirements, the annual debt service for local government would be \$580.7 million. That number is included in the annual cost figure.

New York: Added Cost If All Fire Protection Services Performed by Paid Firefighters 2022	
	Statewide All Areas*
Additional career firefighters (38,002 total required less 6,944 existing)	31,058
	One-Time Acquisition Cost
Cost of fire houses/structures	\$4,858,411,742
Cost of vehicles & equipment	\$3,307,410,397
Total one-time cost**	\$8,165,822,139
	Annual Cost of Operations
Pay and benefits	\$3,834,721,144
General operating costs***	\$187,882,162
Equipment & structures (ann. maint. etc.)	\$83,823,169
Annual operating cost	\$4,106,426,475
Annual debt service / Replacement reserves (for acquired structures & equip.)	\$580,689,132
Total annual cost	\$4,687,115,607

* Excludes New York City

** Is assumed to be financed by borrowing covered by annual debt service.

*** Includes all normal outlays such as heating/cooling, electricity, communications, fuel, supplies, insurance, clothing, etc.

The table below summarizes the impact of higher taxes to fund an all-career fire service. This change would demand an average statewide 28.4% additional tax bill. The table shows that in 2022 New York local governments (excluding school districts) levied \$13.3 billion in property taxes in all areas protected by volunteer firefighters. The total additional annual cost of an all-career service is \$4.7 billion for pay and benefits, general operations, and the annual cost of maintaining and supporting firefighting equipment and structures.

This \$4.7 billion amount is reduced by \$912 million from existing fire funding¹ in now-volunteer areas. The net amount of \$3.8 billion would require an increase in the annual property tax levy of 28.4% on average in these localities.

Annual Real Property Tax Impact if All-Career Firefighters	
New York State 2022 estimated	
Pay & Benefits	3,834,721,143
Annual Operating Cost	187,882,162
Annual Outlay for Equipment & Structures	83,823,169
Annual Debt Service or Replacement Reserves	580,689,132
Total Additional Annual Cost	4,687,115,606
Offset for Current Fire Funding in Volunteer Areas	912,880,334
Net Additional Annual Cost	3,774,235,272
Existing Property Tax Levy in Volunteer Areas	13,276,181,250
Increase in Tax Levy if All-Career Fire Service	28.4%

Special Response Time Analysis

It is important to acknowledge that the year 2021 was heavily impacted by the COVID-19 pandemic. This public health event likely influenced the response times of volunteer fire departments. Therefore, it may not be appropriate to draw any conclusions about the effectiveness of SAFER grants based on response data from this unusual period as compared with other time periods.

¹ Some tax dollars and subsidies used to partially support existing volunteer operations would become available to the new paid departments.

However, it is possible to determine if NFPA standards were met in 2021. The results below show clearly that the volunteer service in New York is, indeed, meeting the response standards.

In urban areas, the standard of responding to 90% of fires in 9 minutes or less was met 89.7% of the time. In suburban areas, the standard of responding to 80% of fires in 10 minutes or less was met 74.2% of the time. Rural areas also met their standard of responding to 80% of fires in 14 minutes or less. The table below summarizes the response including remote areas.

Effectiveness at Meeting Response Standards: 2021				
	Fire Department Classification			
	Urban	Suburban	Rural	Remote
Number of Fires	18,968	3,820	16,685	347
Fire Departments Reporting	322	137	932	44
Average response time	5.6	8.7	11.4	
Median Response time	5.0	6.0	7.0	
	9 min or less, 90% of fires	10 min or less, 80% of fires	14 min or less, 80% of fires	Depends on distance
Fires meeting standard or better	17,023	2,834	12,217	see below
Percent of Fires	89.7%	74.2%	73.2%	see below
Remote Areas				
	Number of Fires	Percent of Fires	Response Time (mins.)	
Average Response Time of All Fires	347	100%	Average 13.6	
Response Time for 90% of Fires	312	90%	Within 26.0	
Response Time for 80% of Fires	278	80%	Within 20.1	
Response Time for 70% of Fires	243	70%	Within 16.3	

To examine the importance of volunteer recruitment and retention, our analysis focuses on the pool of volunteers available in each department and their average response time. We recognize that other variables impact response time. These variables, which may vary significantly even within the same protection areas, include population density, geography, and land development patterns. Nonetheless, the data confirms a clear pattern: a greater number of volunteers reduces a department's response time to emergency calls.

Simply stated, the response time to an emergency is directly related to the pool of volunteers available to respond, other things equal.

Volunteer Department Staffing and Response Time						
Average Response in Minutes Fire Incidents Only - 2021						
Fire Department Classification						
	Urban (259 Depts)		Suburban (126 Depts)		Rural (869 Depts)	
Number Firefighters*	Avg FF Per Dept	Avg Response Time	Avg FF Per Dept	Avg Response Time	Avg FF Per Dept	Avg Response Time
Highest Third Depts.	157	5.8	86	8.1	66	10.9
Middle Third	75	6.4	44	9.8	38	12.6
Lowest Third	43	8.3	27	9.9	24	12.9

* Number of firefighters based on NFIRS New York Registry file

II. The Municipal Geography of New York Firefighting

A. Organization of New York’s fire service

New York has 1,640 active fire departments plus another 153 merged or inactive groups or stations which are counted as separate departments in some tallies. In total, these fire companies manage 2,413 fire stations distributed across the state. There are approximately 88,175 active firefighters including career and volunteer. This is summarized in Figure II-1. Not shown, paid departments have another 1,236 related staff, while 12,335 other volunteers engage in non-firefighting activity in the unpaid departments.

Figure II-1

Summary of New York Fire Departments 2020				
Type Fire Dept.	Count of Fire Depts.	Active Volunteer Firefighters	Active Career Firefighters	Number of Stations
Career or Mostly Career	91	290	6,083	247
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Source: NFIRS NY FF Database

All of New York’s fire departments operate in a territory that is part of a municipal government. Each department receives all or part of its budget from taxes, primarily from the local real estate levy. An all-career municipal fire department is generally an agency of a municipal government, while volunteer departments are generally their own entities. Still, some volunteer departments receive some funds directly from other municipal areas they serve or funds from neighboring municipalities that contract with them.

New York State (excluding New York City) has 57 counties and 61 cities and nearly 2,000 towns and villages. Cities, towns, and villages organize their firefighting capabilities into municipal fire departments, fire districts, and fire protection districts. These organizations may encompass firefighters who are all-paid, all-volunteer or a combination of both. Outside New York City, in 2020 there were 1,640 fire departments², each administering the operations of one or more fire stations within it. Single-station departments are the rule in the smaller towns and villages, but in cities and larger towns a fire department usually has two or more stations. A contiguous urban area is likely to contain more than one multi-station department.

² Complete listing of fire departments: New York State Office of Fire Prevention and Control and data from New York State Fire Reporting System, New York Office of Homeland Security.

Outside New York City, the state's counties are composed of cities, towns, and villages. Some towns contain one or more villages within their boundaries, and although a village is a separate municipal corporation, a town may function for the entire area, including the village proper. A classification used by the state, "town outside village," describes the area of a town that functions separately from one or more villages within the town. Often, districts and special districts provide school, water, sewer, fire, and other services and can levy taxes and incur debt.

In densely populated areas, the combined and overlapping jurisdictions may provide all the municipal services found in cities. The exact structure in any locality of the state has evolved over time as populations have grown and shifted, and governments consolidated or annexed areas as municipal services expanded. Formerly, cities embraced entire urban areas, and towns were largely rural. This distinction has become less rigid over the last few decades as residents have moved from the more densely populated cities to the suburbs. Clustered around large and medium-sized cities, heavily populated and separately-governed towns have developed. Today, New York State has both rural and urban counties and counties that include cities and towns. As areas become more urban, some towns grow into cities and some counties are split or annexed to give included cities more responsibility and taxing authority.

A department usually serves a particular city, town, or village. When a department is composed of more than one station, those stations apportion territories within their city or other service areas. However, station boundaries are not rigid; they often overlap, and units frequently come to each other's mutual aid when a station is overburdened with simultaneous incidents or a single extensive emergency or when it requires special equipment or apparatus.

To provide fire protection to their communities, the fire departments rely on highly trained personnel and specialized vehicles, fire apparatus, and equipment. Station equipment may include PPE, pumper equipment and vehicles, ladder and/or platform systems, and tanker equipment. Departments may own and operate other types of vehicles including staff vehicles for the fire chief and deputies, general utility and "bucket" vehicles, brush vehicles, rescue vehicles, HAZMAT control and decontamination vehicles, and boats and hovercraft. (In many departments, personal vehicles are used for the chief and other staff purposes.) Firefighters use additional apparatus such as fire-resistant clothing and self-contained breathing apparatus, as well as special tools and accessories. (Note that many departments have ambulances and emergency medical equipment. These are beyond the scope of this study and are not included in the calculated costs and staffing levels for paid departments.)

In New York, the structure of firefighting and the municipal structure of counties, cities, towns, villages and districts create a complex mosaic of both the distribution of fire services and the distribution of public funds to pay for them. These intricacies are delineated in the following sections.

City Firefighting

The state allows cities to levy taxes to support their fire departments: paying salaries and benefits for paid personnel as well as purchasing, repairing, and maintaining buildings, equipment, and vehicles. Cities that have volunteer departments, in addition to taxes, may depend upon other sources of revenue for their firefighting necessities. Additionally, these cities may offer volunteers limited insurance and death benefits. Remarkably, some of the

most densely populated areas in the state depend on all-volunteer departments, including Glen Cove in Nassau County.

Fire District

A fire district³ can be established as a separate public corporation. In this case, the district's operations are delegated to a separately elected five-member board of fire district commissioners, which has the power to levy taxes and issue debt. The board oversees procurement of goods and services; verification and approval of claims by fire departments and stations for equipment and uniforms; investment policy and management; funding of renovation projects for fire stations; travel advances for district and fire station personnel; payment to injured and retired firefighters; maintains and conserves fixed firefighting assets within the district; and general disbursement of funds. In addition, the board of fire commissioners of a district may ask the state comptroller for advice on financial matters to operate more efficiently or to save costs (e.g., on fuel costs, on using electronic wire transfers, etc.).

Town Firefighting

Towns differ from cities and villages in the funding and administration of firefighting activities. Towns are not allowed to levy taxes directly to support fire departments. Instead, they may create one or more fire protection districts. In turn, these districts are authorized to levy taxes and to borrow money for the sole purpose of funding fire protection. A fire protection district may have its own fire department or contract with a neighboring municipality or district.

Village Firefighting

As with cities, the state allows villages to raise taxes for firefighting. However, because some villages are not large enough to have a sufficient tax base to support their own departments, they often turn to all-volunteer departments. Villages may outsource their fire protection by contracting with one or more fire departments in neighboring municipalities. A village may also form a joint fire district with a neighboring town or village.

Many combined fire protection districts also exist in the state. The governing boards of towns and villages are authorized to establish combined fire protection districts by resolution after a public hearing and subject to a permissive referendum. Town law provides uniform procedures for extending, financing, and operating joint fire protection districts.

Wildland Firefighting

New York's Department of Environmental Conservation (DEC) is responsible for wildland fire protection on 4.5 million acres of forest and wildlands. It is a "support" agency depending upon local paid and volunteer fire departments, as well as their own forest rangers to help suppress wildland fires.

³ A "Fire District" as described herein is different from a "Fire Protection District" which is a creature of a town or village without its own funding.

B. New York's career and volunteer firefighters

New York State fire departments are grouped into major categories depending on the type of personnel involved: all-paid, all-volunteer or a combination of both. It is useful to note that, while volunteer departments are often thought of as rural, many all-volunteer departments are in urban or suburban communities, such as the Long Island communities of Hempstead, Oyster Bay, Brookhaven, Islip, Huntington, and Babylon.

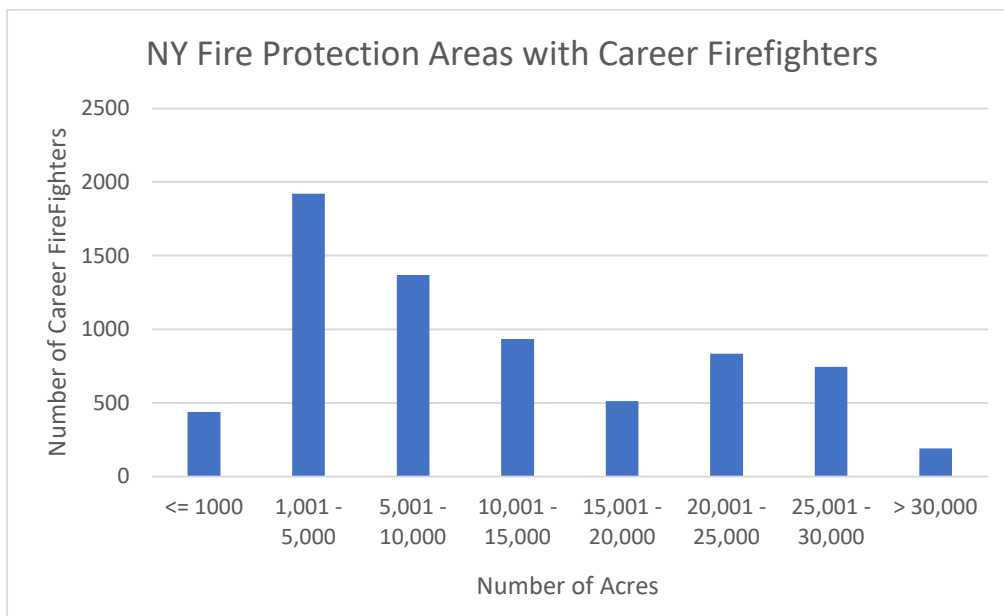
These municipalities have populations and densities, as well as property values and revenue, which exceed, or are on par with, large urban, all-paid communities. Although not formally cities, some have larger populations than Buffalo, the largest city with an all-paid fire department outside New York City. Even smaller municipalities, such as Great Neck Plaza and South Floral Park, have population densities many times that of Buffalo. The successful reliance of these crowded communities on volunteer fire departments testifies to the ability of volunteer firefighters to handle the rigorous responsibilities arising in high-density urban-residential areas.

The smallest all-volunteer municipalities have official populations of less than 100. These villages and towns are a small fraction of the size of the smallest all-paid municipalities and have population densities of less than 10 people per square mile.

Paid Firefighters

Paid fire departments comprise personnel who are full-time or part-time onsite staff. Outside New York City, 91 departments (5.5% of all departments), have paid firefighters. These departments generally operate in the larger urban centers, which have high population density and a sufficient tax base to support them.

Figure II-2



Shown in Figure II-2, the largest three areas have between 900 and 1,900 firefighters while the smallest all-career units (representing more than 30,000 acres) have just under 200 firefighters. Career firefighters are sizably represented in areas between 20,000 and 30,000 acres (1,580 firefighters).

As employees, career fire personnel receive salaries and benefits. Within a typical department, paid officers may include chief, deputy chief, battalion chief, captains, fire marshals, lieutenants, sergeants, and firefighters. Base salaries for upper-level personnel generally range from about \$80,000 to over \$150,000, not including benefits. Base salaries for firefighting personnel depend on experience, rank, and level of authority. These salaries generally range from \$35,000 to over \$75,000. In addition, career firefighters receive various benefits as part of their compensation and frequently earn overtime pay. Standard benefits include Social Security, health, retirement, disability and may average about 40% of total compensation. Full compensation, including all benefits, seniority steps & longevity (which count as benefits in some municipal budgets, wages in others) add to total cost.

The costs of paid departments and a small part of volunteer department costs are covered or supported by taxes assessed by the municipality, county or district. Most of the taxes collected for career fire departments, about 91%, cover salaries and benefits and are raised by a property tax levy. While communities do collect sales and other taxes in addition to real property taxes, the property tax is the final tax adjusted to balance the municipal budget each year⁴ and are the first to be increased or decreased in response to changing fiscal needs. Thus, the mainstay of funding for career fire departments comes from real property taxes assessed against residential, industrial, commercial, utility, farm, and vacant property. If the state were to move to an all-career fire service, it would be funded predominately by the real property tax.

Regardless of the composition of their equipment and other capital items, paid departments have an added fire station expense not found in volunteer departments. They usually provide sleeping, bathing, eating and exercising facilities for paid personnel. Paid personnel often work 24-hour shifts, while their volunteer counterparts typically respond from home and go to the station or directly to the emergency site. Regulatory requirements often impose additional costs on paid departments, particularly federal OSHA standards and working-hour limitations.

Volunteer Firefighters

New York State relies heavily on volunteer fire departments. Of its 1,640 fire departments, 94.5% are all-volunteer or mostly volunteer. Volunteer firefighters are most prevalent in suburban and rural communities that have a lesser tax base than larger towns and cities. These communities rely on volunteers and conversion to paid departments would be a particularly severe burden for them and would require a massive increase in property taxes.

By definition, volunteer firefighters do not receive full-time salaries or benefits, although they handle the full range of fire-related duties. For obvious reasons, volunteer firefighters do not spend as much time as paid personnel at the fire station, as they are called to fires and other emergencies from their home or work. Typically, volunteers live in the community

⁴ Thus, real property taxes are referred to as the “balancing residual” revenue source in a budget, the final revenue source adjusted to cover expenditures.

and, like other residents, have full-time jobs. They receive their wages and benefits from non-fire-related employers and pay federal, state, and local taxes on this income and property taxes on their homes. With enough active members strategically distributed throughout a community, volunteer departments can respond quickly and efficiently. Volunteer fire departments conduct fire-fighting activities and complex emergency responses under the same training regulations as their paid counterparts elsewhere.

In addition to not having to pay wages and benefits, volunteer fire departments do not require living or eating quarters, and often purchase used vehicles and equipment at reduced costs or receive equipment donations from the state, other fire departments, or a variety of other sources. Nevertheless, most volunteer departments usually have the full range of vehicles, equipment, and apparatus required to handle any sort of fire or other emergency likely to be found in their jurisdiction. Volunteers have the reputation of maintaining their vehicles and facilities at high operating levels and must adhere to the same maintenance standards as paid personnel, typically exceeding these standards.

Training requirements vary across departments, but usually consist of regular training drills, extensive emergency operations exercises, and on-site experience. Highly active volunteers have proven to be as intensively prepared as paid personnel. In fact, government recommendations include minimum requirements for volunteer firefighters, special training tailored to various firefighting and emergency operations, and additional OSHA-related training. Overall, volunteers and paid firefighters are expected to receive similar training, as indicated by the Insurance Service Office's rating of volunteers on the same level as paid firefighters for type and intensity of training.

Although volunteer departments do receive some federal, state and local government subsidies, they do not burden the taxpayer with taxes to pay wages and benefits, expenditures that account for most of the operating budgets in all-career departments. Volunteer departments receive their funds from a variety of sources, including local governments, fire districts, federal grant programs, state grants, county subsidies, tax-exempt government bonds and certain insurance premiums.

Also, volunteer departments are highly effective in fundraising to buy, repair, and maintain facilities, vehicles, apparatus, and equipment and to conduct other department activities. These departments may sell unneeded equipment and vehicles to other departments and solicit corporate and foundation donations from local, state, and national organizations. They generate money through door-to-door and phone solicitations; sales of products (calendars, photos, toys); rental of firehouse facilities to the public; and a host of local fundraising activities such as food sales, fish fries, special breakfasts and dinners, raffles, car washes, entertainment and sports events.

C. Real property tax levies for fire services

New York local government units, including counties, cities, towns, villages, fire districts and others use the real estate tax as the primary source of revenue for their budgets. These levies are administered by local government officials with the assistance of the state’s Department of Local Government Finance. New York has a complex tax system that involves county assessments, municipal budgeting, tax district aggregations and state-level certification. One must recognize the real property tax⁵ as the mainstay of funding career fire departments and a significant source of revenue for volunteer and combination departments throughout the state.

Figure II-3 demonstrates the significance of the property tax for funding the fire service throughout New York. In 2022 approximately \$1.74 billion of fire-related expenditures by cities, towns, counties⁶, and special districts was raised primarily by the real property tax. The largest share of this, approximately \$512 million, was spent by municipalities other than Fire Districts and was used to pay for departments’ personal services. Moving to an entirely career fire service statewide would mean huge increases in property taxes throughout New York and is measured in this report.

Figure II-3

New York 2022 Certified Budgets: certified fire-related expenditures					
Type of Expenditure	Fire District		County, City, Town, and Village		Total
Fire, Personal Service	\$	183,984,537	\$	511,724,972	\$ 695,709,509
Fire, Equipment and Capital Outlay	\$	238,287,696	\$	66,209,853	\$ 304,497,549
Fire, Contractual	\$	237,469,103	\$	114,027,384	\$ 351,496,487
Fire, Employee Benefits	\$	18,059,789	\$	371,261,092	\$ 389,320,882
Total	\$	677,801,125	\$	1,063,223,302	\$ 1,741,024,427

**Excludes NYC*

⁵ In fire districts this can appear as a separate fire tax, although it is levied on real property.

⁶ While counties do not operate general fire departments as such, they may have fire-related expenditures for such items as alarms, hydrants, and other purposes.

III. Measuring Tax Savings from Volunteer Firefighters

A. Simple methods and rules-of-thumb understate the impact

The direct way to calculate the tax savings created by volunteer firefighters is first to calculate the cost of a statewide all-career fire service. The cost difference between the all-career service and the limited number of career departments that now exist equals the cost savings from volunteers and thus measures the economic benefit of volunteers and the savings to taxpayers.

A common, but flawed, rule-of-thumb to estimate the statewide all-career cost is to assume that a fire station is needed for every fixed number of residents and that each fire station has a fixed number of paid firefighters. Let's take Delaware, which is a small state geographically, as an example. The Delaware state auditor prepared a report calculating taxpayer savings from volunteer firefighters in that state. In *Delaware Volunteer Fire Service 2013 Annual Report*, the methodology assumed that the situation in the City of Wilmington, the state's only paid department, would be similar everywhere else in the state if volunteer departments were converted to career ones. That approach does not make sense for New York due to its widely varying population densities and huge differences in urban versus rural land areas plus a large variety of structures with varied fire protection needs.

It is easy to see why the simple firefighter-to-population approach fails in New York. Consider a rural area with a population of 10,000. Under Delaware's methodology only one fire station with 24 paid firefighters would be needed. Unfortunately, Delaware's method does not take full account of geography. For example, if an area's population were split between two towns miles apart, two stations might be needed.

Consider another example of two town areas, one 95% residential and the other 95% industrial property. While Delaware's population method might adequately service the first, it would dramatically underserve the second.

Location and Response Time⁷ are Important in Locating Fire Stations

Firefighting exists to protect lives and prevent the destruction of property. Assuming responding firefighters have the appropriate equipment and training, the single most important factor in their success is how fast firefighters respond to alarms. Many emergencies require immediate response. For example, a fire can flashover and involve large areas of a structure in less than 10 minutes. Therefore, it is essential to process an incoming alarm expeditiously, quickly dispatch firefighters and arrive on the scene with appropriate equipment. Fire propagation speed underscores the importance of a fast response.

Other things equal, the closer a fire station is to a fire and the sooner firefighters are available, the shorter will be the response time. Thus, there is an inherent difference between career firefighters on duty at the station 24/7 and volunteer firefighters who must respond from work, home, or other places in, say, a rural community.

⁷ Firefighters respond to many types of emergencies including fires, medical, rescues, explosions, spills, unauthorized burnings, false alarms, and other calls for assistance.

There are several elements in measuring response time. Once a fire begins someone must notice it, alert the fire department and then equipment must be dispatched. NFPA standards are set for department notification time, turn-out time, and firefighter response time. These area standards vary according to several factors which may intervene, such as the difference between population density and distance to potential fires. That combination marks another contrast between career and volunteer fire departments: many of the latter are in rural or less dense suburban areas with concomitant longer distances among the location of firefighting equipment, firefighters, and the scene of the fire in general. This fact must be considered to estimate cost differences between volunteer and career fire departments.

Response standards⁸ are promulgated nationally in NFPA 1710 for career and NFPA 1720 for volunteer departments. These include fire recognition and notification time, firefighter turn-out time, and firefighter response time. The standards incorporate the various factors noted above which may intervene.

This report is concerned with the segment of total response that measures the time between notification of the local fire department and the time the first equipment arrives at the scene of the fire. For paid firefighters, the NFPA standard includes firefighter turnout time of 80 seconds plus four minutes to arrive on scene. This is a total of 5.3 minutes from the moment the station receives notification until the first unit reaches the scene.

The response standard for volunteers is quite different, recognizing the contrast in paid versus volunteer locations. There is no standard for turnout in NFPA 1720, and the response time between firefighters and equipment leaving the station to arrive on scene varies by the population and distances in the area protected. Standards are promulgated for four classifications: urban, suburban, rural, and remote areas. Accepted volunteer response time is 9 minutes for high-density areas but increases to 14 minutes in low-density areas or when travel distance is 8 miles or more. These standards are listed in Section VI of this report, "Special Response Time Analysis."

For volunteer fire departments, it makes sense that an increased number of members provides a larger pool of firefighters available at any given time to respond to an emergency. A greater number of volunteers makes it more likely that a critical number will be available sufficiently close to fire stations to get essential equipment to the scene within the expected response time. A large volunteer pool also makes it more likely that supplementary apparatus can deploy from the station.

While firefighting incidents are about 10% of all responses, they typically are more severe and require greater response than other incidents because of their engulfing nature and the higher risk to life and property. For example, in one incident, a few fire department personnel may perform a vital service resuscitating and transporting a single accident victim. In another incident, numerous firefighters may rescue multiple persons from a burning structure, deploying significant apparatus and equipment.

⁸ The National Fire Protection Association publishes NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*. It has a companion publication for volunteer departments, NFPA 1720.

The Multi-Factor Approach

As part of our analysis, we measured the level of firefighting staffing and equipping across New York's career jurisdictions, and we evaluated the multiple factors that determine it. We then applied the results to all volunteer areas in the state to estimate the number of stations and firefighters needed, given the unique characteristics of each volunteer area. This approach goes well beyond the previously mentioned rule-of-thumb by recognizing that the characteristics of each local area dictate the number of stations and firefighters, the amount of equipment, the annual operating cost, and the cost of capital equipment. There is no "one-size-fits-all" model to justify a simple rule-of-thumb approach.

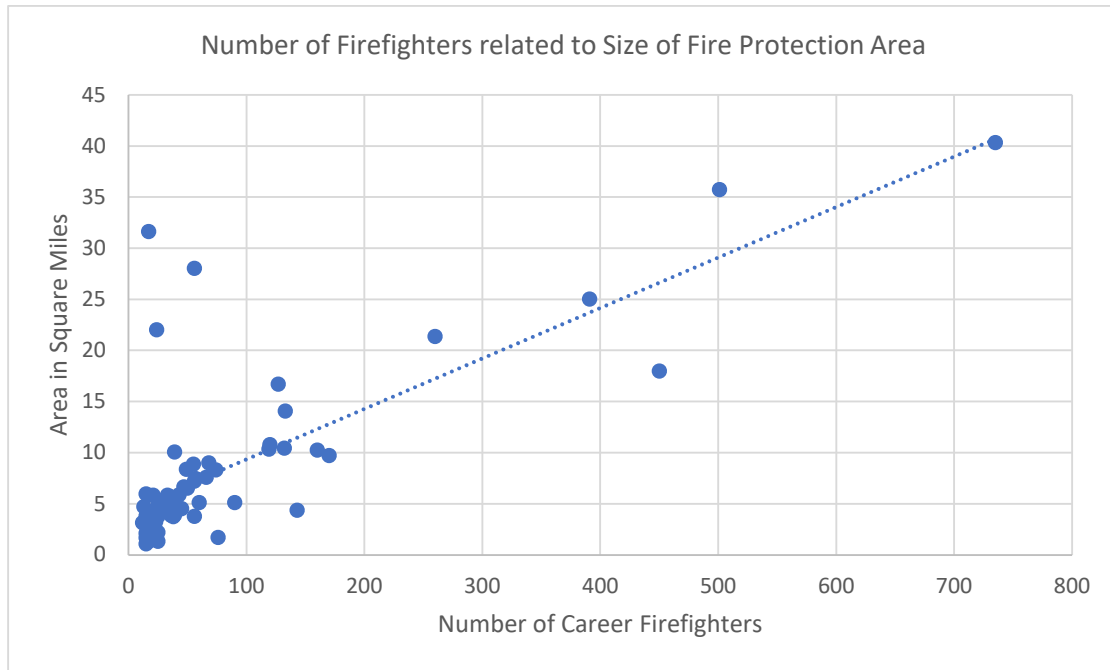
Research shows that over 90% of the variability among career fire departments in their level of staffing and their operating costs is explained by relative differences among them in four attributes: land area, population, median household income, and the fiscal capacity to raise tax revenue. By evaluating these factors simultaneously in career jurisdictions, we created a formula to apply to volunteer areas if they were to convert to paid departments. There is one overarching assumption in such a conversion: the newly paid departments will operate at the average level of efficiency and with the average level of resources and practices found in existing paid departments, after accounting for differences in the local conditions and minimum response standards.

The Diversity across New York

Across New York there are large variations in population size, geographic area size and density for both career departments and volunteer departments. In general, there is a strong positive relationship between the number of firefighters and stations required and the size of the population protected. Other things equal, the greater the population the larger must be the fire service. However, population density intervenes in that calculation, often requiring more fire stations if a given population is spread across a larger area.

Figure III-1 highlights the relationship between the size of an area and the number of career firefighters required by each of the major career firefighting departments in the state. The straight line represents the average relationship between a protection area's size and the number of firefighters required to cover it. The dots do not line up perfectly because there are other factors such as population and types of property protected that also impact the number of firefighters needed. For example, the right end of the straight line represents a department with about 735 firefighters, covering 40 square miles. At the other extreme there are departments of about 16 firefighters that cover 1.62 square miles. Note there is a significant overlap in the size and population of some areas protected by career firefighters and those of volunteers.

Figure III-1



In areas not covered by all-career departments, volunteer departments virtually blanket the state. In rural areas such coverage is quite remarkable. It is important to note that in converting from a volunteer to an all-career fire service there would be many redrawing of districts and relocation of fire stations. This “starting fresh” approach would be necessary to reduce budgets while maintaining protection. Recognizing that there are historic and political reasons for some existing locations, many stations would otherwise be combined or moved. (This report is not a proposal to relocate any stations, but merely a state-wide cost projection for an all-career fire service.)

Figure III-2 describes the total area in each county covered by fire departments both volunteer and paid. As would be expected, there are large variations among counties. Note the wide range of population and population density. Hamilton County has both the lowest population at 4,454 and the lowest density of 2.5 persons per square mile, with residents spread over 1,717.4 square miles.

Nassau County’s population of 1,355,683 is packed into 284.5 square miles, giving it a much higher density of 4,764 persons per square mile. Suffolk County, however, has a larger population at 1,481,364, but because of its larger area, 911 square miles, its density is lower at 1,626. These figures represent resident populations; many areas of the state also have significant seasonal populations that also require fire protection.

The value of property also varies widely and creates great variability in the capacity to pay for fire protection and in the tax burden that fully paid fire departments would place on residents, should a conversion occur. For example, because of its low population and high value of property, Hamilton County has a property tax base of \$777,061 behind every resident. On the other hand, Allegheny County has only \$47,092 behind each person.

Figure III-2

Characteristics Related to Scope of Fire Protection Services
(County Totals 2020)

County	Land Area (square miles)	Pop. Density (persons/sq. mile)	Population (persons)	Property Base (X \$1,000)	Property Base per Person
Albany	523	586	306,165	27,163,833	88,723
Allegany	1,029	45	46,304	2,180,562	47,092
Broome	706	272	192,042	10,012,271	52,136
Cattaraugus	1,308	59	76,750	4,499,128	58,621
Cayuga	692	111	76,958	4,991,308	64,858
Chautauqua	1,060	120	127,584	7,627,441	59,784
Chemung	407	207	84,115	4,471,124	53,155
Chenango	894	53	47,527	2,481,247	52,207
Clinton	1,038	77	80,320	5,037,583	62,719
Columbia	635	95	60,016	8,595,459	143,219
Cortland	499	95	47,618	2,543,369	53,412
Delaware	1,443	31	44,676	5,841,903	130,762
Dutchess	796	369	293,524	32,247,945	109,865
Erie	1,043	881	918,873	64,771,315	70,490
Essex	1,794	21	37,281	7,078,225	189,861
Franklin	1,629	31	50,389	3,755,492	74,530
Fulton	495	108	53,452	3,562,114	66,641
Genesee	493	117	57,554	3,070,629	53,352
Greene	647	73	47,335	5,999,359	126,743
Hamilton	1,717	3	4,454	3,461,034	777,062
Herkimer	1,411	44	61,738	4,950,088	80,179
Jefferson	1,268	88	111,454	8,192,066	73,502
Lewis	1,276	21	26,456	2,257,062	85,314
Livingston	632	100	63,218	3,769,367	59,625
Madison	655	108	70,990	4,336,930	61,092
Monroe	657	1,131	743,084	45,953,610	61,842
Montgomery	403	122	49,294	2,543,178	51,592
Nassau	285	4,764	1,355,683	248,347,531	183,190
Niagara	522	402	210,145	12,431,036	59,155
Oneida	1,212	189	229,074	11,900,896	51,952
Onondaga	778	593	461,591	28,985,937	62,796
Ontario	644	170	109,774	9,790,926	89,192
Orange	812	470	382,077	35,052,313	91,741
Orleans	391	104	40,624	1,845,755	45,435
Oswego	952	124	117,630	5,765,981	49,018
Otsego	1,002	59	59,593	4,680,868	78,547
Putnam	230	429	98,714	14,430,632	146,186
Rensselaer	652	244	159,013	11,311,103	71,133
Rockland	174	1,872	325,213	41,503,730	127,620
St. Lawrence	2,679	40	108,352	5,922,140	54,656
Saratoga	810	283	229,313	27,721,792	120,891
Schenectady	205	758	155,086	10,357,246	66,784
Schoharie	622	50	31,189	2,332,463	74,785
Schuyler	328	54	17,845	1,577,409	88,395
Seneca	324	106	34,295	2,289,384	66,756
Steuben	1,390	69	95,843	6,114,423	63,796
Suffolk	911	1,626	1,481,364	320,643,133	216,451
Sullivan	968	78	75,329	8,199,831	108,854
Tioga	519	93	48,431	2,688,015	55,502
Tompkins	475	215	102,237	8,120,517	79,428
Ulster	1,124	159	178,371	19,198,626	107,633
Warren	867	74	64,187	11,377,731	177,259
Washington	831	74	61,304	4,985,927	81,331
Wayne	604	149	90,103	5,342,034	59,288
Westchester	431	2,249	968,738	183,547,563	189,471
Wyoming	593	68	40,027	2,439,986	60,958
Yates	338	74	24,981	2,756,087	110,327
Statewide	46,823	362	11,135,297	1,333,054,655	119,714

*Excludes New York City

Figure III-3 Volunteer Areas

**Volunteer Areas: Characteristics Related to Scope of Fire Protection Services
(County Totals 2020)**

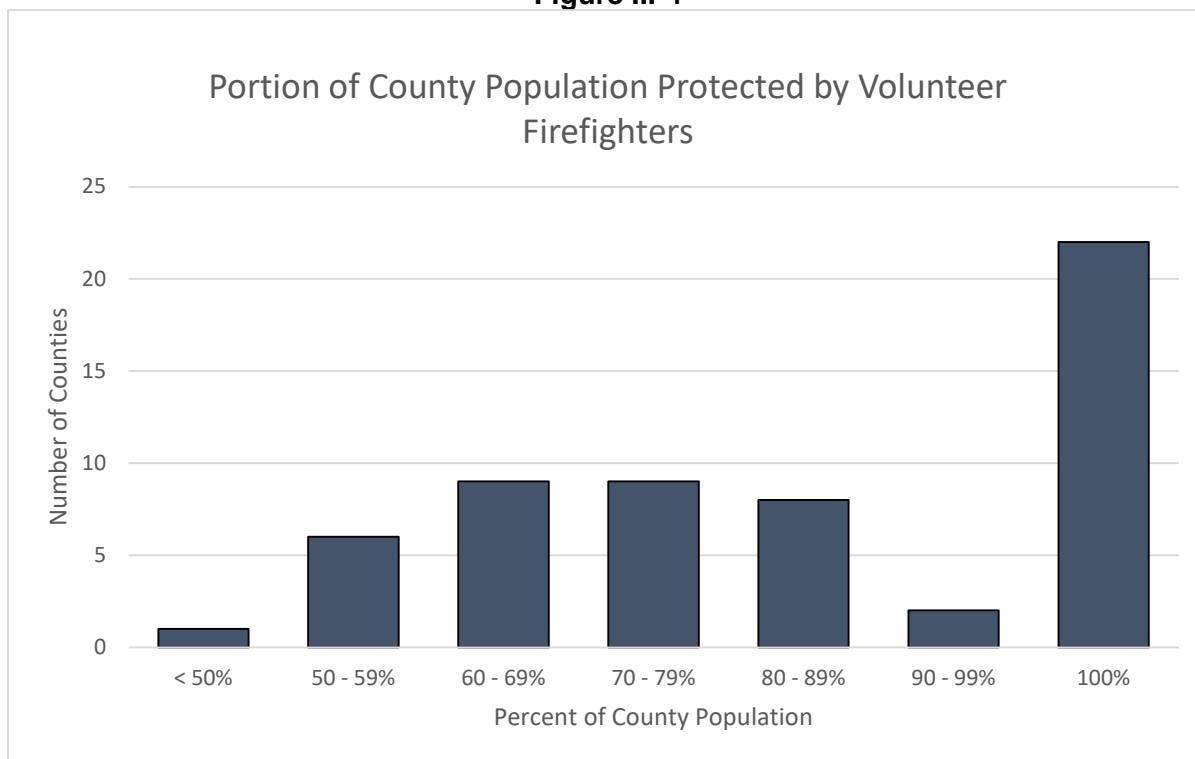
County	Land Area (square miles)	Pop. Density (persons/sq. mile)	Population (persons)	Property Base (X \$1,000)	Property Base per Person
Albany	496	368	182,621	20,921,082	114,560
Allegany	1,029	45	46,304	2,180,562	47,092
Broome	691	192	132,894	7,796,889	58,670
Cattaraugus	1,296	45	57,704	3,904,620	67,666
Cayuga	683	74	50,575	3,945,019	78,003
Chautauqua	1,042	73	76,171	6,115,851	80,291
Chemung	400	142	56,879	3,796,275	66,743
Chenango	891	46	40,898	2,259,242	55,241
Clinton	1,033	59	60,977	4,047,714	66,381
Columbia	633	85	53,913	7,877,167	146,109
Cortland	495	59	28,985	1,949,605	67,263
Delaware	1,443	31	44,676	5,841,903	130,762
Dutchess	786	317	249,460	30,923,042	123,960
Erie	992	636	630,527	53,051,912	84,139
Essex	1,794	21	37,281	7,078,225	189,861
Franklin	1,629	31	50,389	3,755,492	74,530
Fulton	486	63	30,445	2,704,541	88,834
Genesee	488	88	43,064	2,484,319	57,689
Greene	647	73	47,335	5,999,359	126,743
Hamilton	1,717	3	4,454	3,461,034	777,062
Herkimer	1,373	29	39,639	4,191,119	105,732
Jefferson	1,259	68	86,230	7,016,152	81,366
Lewis	1,276	21	26,456	2,257,062	85,314
Livingston	632	100	63,218	3,769,367	59,625
Madison	633	95	60,072	3,849,450	64,081
Monroe	620	855	530,197	38,688,680	72,970
Montgomery	397	79	31,471	2,047,071	65,046
Nassau	273	4,652	1,269,478	229,978,978	181,160
Niagara	490	227	111,409	8,165,979	73,297
Oneida	1,121	122	136,873	9,015,271	65,866
Onondaga	749	412	308,586	23,471,191	76,060
Ontario	635	137	87,101	8,605,307	98,797
Orange	803	406	325,913	32,546,497	99,863
Orleans	391	104	40,624	1,845,755	45,435
Oswego	940	95	89,050	4,619,575	51,876
Otsego	997	46	45,738	4,191,483	91,641
Putnam	230	429	98,714	14,430,632	146,186
Rensselaer	639	157	100,537	8,873,470	88,261
Rockland	174	1,872	325,213	41,503,730	127,620
St. Lawrence	782	257	201,257	22,506,893	111,832
Saratoga	192	427	82,102	7,680,175	93,544
Schenectady	622	50	31,189	2,332,463	74,785
Schoharie	328	54	17,845	1,577,409	88,395
Schuyler	324	106	34,295	2,289,384	66,756
Seneca	2,679	40	108,352	5,922,140	54,656
Steuben	1,384	56	76,927	5,169,946	67,206
Suffolk	902	1,616	1,457,914	319,246,328	218,975
Sullivan	968	78	75,329	8,199,831	108,854
Tioga	519	93	48,431	2,688,015	55,502
Tompkins	475	215	102,237	8,120,517	79,428
Ulster	1,117	139	155,417	17,568,276	113,040
Warren	863	58	49,865	10,343,437	207,429
Washington	831	74	61,304	4,985,927	81,331
Wayne	604	149	90,103	5,342,034	59,288
Westchester	367	1,313	481,438	113,411,389	235,568
Wyoming	593	68	40,027	2,439,986	60,958
Yates	338	74	24,981	2,756,087	110,327
Statewide	46,190	191	8,841,084	1,171,740,859	132,534

*Excludes New York City

For about one half of the state, the countywide characteristics in Figure III-3 are not very much different from those in Figure III-2. That is because in most counties only small areas or none are protected by paid firefighters. In some counties, however, there are significant differences. These can be seen, county by county, in Figure III-3, which contains the same information as III-2 but only for the areas in each county protected by volunteers.

Figure III-4, below, summarizes the mix of paid versus volunteer firefighters in all counties. Twenty-two counties of the 57 outside New York City have all-volunteer fire protection and are depicted in the 100% column at the far right of the chart. Westchester County is the only county where volunteer firefighters cover less than 50% of the population. Counties like Albany and Fulton populate the 50 – 59% column.

Figure III-4



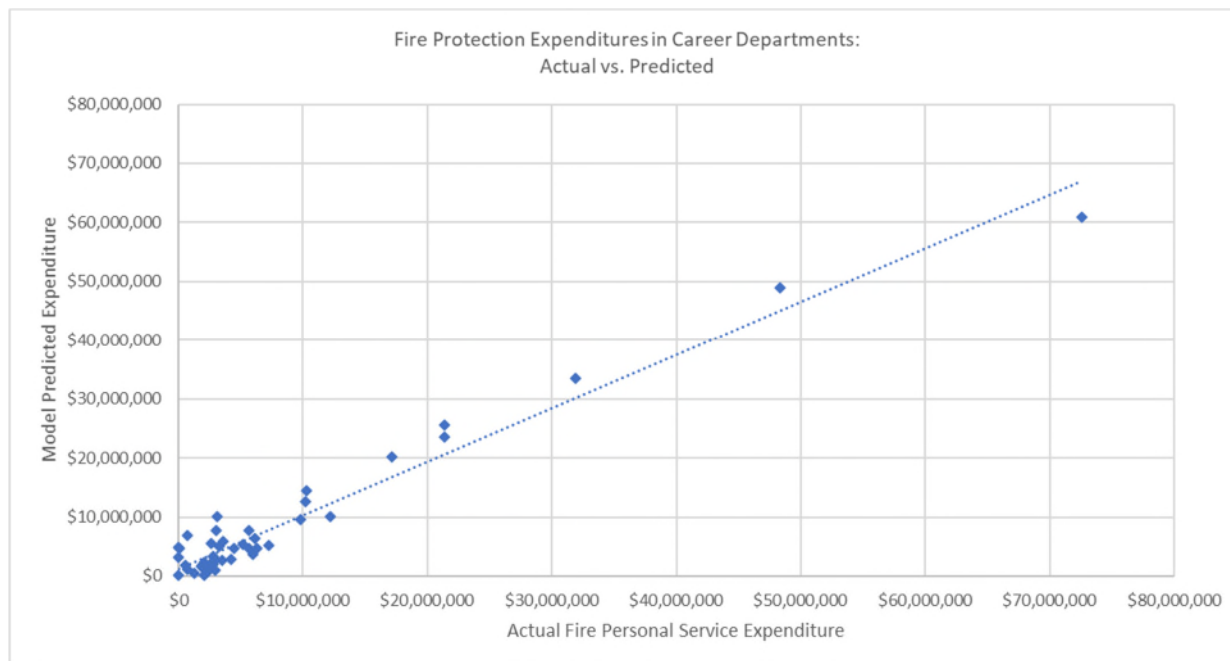
Looking back at the tables in Figures III-3 and III-4, it is easy to see that the large variations in New York’s population and geographic areas would make the Delaware approach, which is based on population alone, inapplicable to New York. And the large variation in the property tax base would make the added tax burden of a paid fire department, also highly variable, an important negative factor in moving to an all-paid force.

As noted earlier, 90% of the variability among paid fire departments in their level of staffing and operating costs is explained by differences in land area, population, and the fiscal capacity to raise tax revenue. The Delaware approach would have ignored the complexity found in New York.

The scatter graph in Figure III-5 attests to the accuracy of our multi-factor approach developed from statistical analysis of career departments throughout New York State. The horizontal axis shows the value of each municipality's actual spending on firefighter wages and benefits in 2021, the last year for which data was available. The vertical axis shows the predicted value from the simulation model we constructed. Each dot represents a single paid department.

If all our predicted values exactly matched the actual values, the dots would form a straight line exactly over the dotted line drawn on the graph. The closer the dots are to the line, the more accurate the formula. The graph and the statistical results of the analysis underscore the accuracy of our approach in predicting spending in paid jurisdictions. Even though a specific department's spending might be above or below the predicted amount, the pluses and minuses balance each other and produce a highly accurate estimate for all departments taken together. The model explains over 90% of the variation among communities.

Figure III-5



To summarize the approach: For each fire department with paid firefighters, we calculated the relationship among population, geography and community fiscal characteristics adjusted for special conditions. To estimate the cost of converting volunteers to paid departments, the resulting formula was applied to the same characteristics in each area volunteers now protect. Thus, we simulated the conversion of volunteer departments to paid departments, and we estimated the cost of all pay, benefits, maintenance and capital expenses for structures, vehicles and equipment that would be required. The approach embodied a change in response standards from NFPA 1720 (volunteer) to NFPA 1710 (career).

B. Calculating the cost of statewide all-career firefighters

Avoiding False Comparisons between Volunteer and Paid Departments

Comparisons of the number of paid firefighters needed to “replace” volunteers in an area can be highly misleading. When a community has to impose taxes to pay firefighters, it has a strong incentive to keep the number of firefighters as low as possible while maintaining standards. This manpower discipline is absent in volunteer departments and is inappropriate to the task of building community support and strong volunteer membership. As noted earlier, there are many good reasons to expect the number of volunteers to greatly exceed the number of paid firefighters necessary to cover a given area, and they have nothing to do with the volunteers' skill or efficiency at fighting fires.

The number of volunteers relative to firefighting needs varies greatly among communities for many reasons. Some communities have a stronger volunteering tradition than others, some have a stronger recruitment outreach, some are centers of a community's social life, and some have leadership or training programs that attract a large membership. Huge differences among volunteer organizations have less to do with the size of the population they serve, the square miles they must cover, or the number of emergencies to which they respond than unique circumstances in their communities.

A paid department's success is partly measured by keeping its staffing lean, while a volunteer department's success is partly measured by building a large membership and expanding the number of people in the community who have firefighting skills. The cliché that one paid firefighter replaces several volunteers is meaningless.

No direct relationship exists between the number of volunteers in an area and the number of paid firefighters required to staff 24-7 operations adequately and to handle the equipment and respond to the number of expected emergencies. In fact, the most successful volunteer departments would have the highest ratio of volunteers to paid firefighters in such a comparison. A high ratio shows that the department is effective in attracting members and spreading firefighting skills throughout their community, not that they are less efficient than paid departments.

Accounting for Firefighter Pay, Operating Cost, and Equipment

A word on accounting may help in understanding the figures below. There are two main categories of cost that must be treated differently when thinking about the value of volunteers and their savings to taxpayers. One, the cost of operations, deals with annual *recurring costs* (such as pay, benefits, fuel, upkeep, etc.). The other, the cost of capital, deals with *infrequent costs* for large items (such as trucks, buildings and equipment).⁹

Differences between operating and capital costs invokes a complex realm of accounting. Basically, calculating an annual charge that represents an appropriate portion of a capital item's useful life related to a year can be based upon debt service payments or upon some pro

⁹ An annual municipal budget (and the taxes to pay for it) includes the full amount of operating costs, but only the annual value of capital costs. The latter may be the portion of its life span used up in the year or the portion of its cost paid in the year, or the debt service required. Thus, a \$150,000 piece of equipment with a 10-year life might include only \$15,000 per year in the budget (under a straight-line method) or about \$18,500 per year to repay a loan used for its purchase.

rata division of the cost of the equipment over its remaining useful life. A used piece of equipment, even if donated to the fire company, should have some accounting for the need to replace it eventually, and to account for the use of its services during the year and the funds to bring it to standard at the time of transfer.

Calculating the Cost of Pay and Benefits

Annual costs of career departments are dominated by pay and benefits. Including base pay, all employer-paid benefits, longevity, and overtime pay, these payroll-related costs average nearly 80 % of the annual operating budget of New York’s paid departments.

Figure III-6 shows representative pay and benefits in New York’s career departments. In practice, staffing varies from place to place and the ratio of firefighters to command level staff varies as well. The median base pay for a chief is approximately \$108,005 annually and ranges from \$77,693 at the lowest decile to \$124,954 at the highest. Moving down to firefighters, the decile range is from \$51,795 to \$83,302 with a median of about \$72,070. This analysis uses an annual weighted average wage and all benefits of \$123,470 across ranks to calculate average department wages and benefits. This reflects both average pay levels and an average staffing mix. (Of course, if statewide all-career departments were implemented, pay would vary by size of department and pay practices in each area of the state.)

Figure III-6

Estimated Firefighter Annual Base Wages & Benefits 2022				
(Representative 50 Firefighter Unit)				
	Lowest Decile	Median	Highest Decile	Weight
Chief	\$77,693	\$108,105	\$124,954	1
Deputy Chief	\$67,852	\$94,412	\$109,126	1
Captain	\$62,672	\$87,205	\$100,796	5
Lieutenant	\$59,565	\$82,881	\$95,798	10
Firefighter*	\$51,795	\$72,070	\$83,302	50
Admin Assistant*	\$29,510	\$46,210	\$59,760	2
Weighted Average Wages		\$74,830		
Fringe benefits		\$26,507		
Annual Average Wage and Benefits		\$101,338		
Labor-related training, OT, and other benefits		\$22,132		
Total representative wages and all benefits		\$123,470		

Source: Bureau of Labor Statistics, OEWS - Occupation = Firefighters (SOC Code 332011)
 Various municipal budget, all adjusted to 2022 dollars using CPI

Firefighter Compensation by Region of The State

Figure III-7 summarizes the levels of compensation paid to firefighters throughout New York State, outside New York City. The estimates are for 2022 and are based upon data from the U.S. Bureau of Labor Statistics.

Figure III-7

Estimated Annual Firefighter Base Wages 2022			
Area	Median	Lowest 10%	Highest 10%
Albany-Schenectady-Troy, NY(0010580)	\$67,152	\$47,120	\$85,529
Binghamton, NY(0013780)	\$79,312	\$53,794	\$87,025
Buffalo-Cheektowaga-Niagara Falls, NY(0015380)	\$68,489	\$49,836	\$87,025
Kingston, NY(0028740)	\$68,489	\$53,762	\$84,001
Rochester, NY(0040380)	\$80,267	\$54,346	\$88,012
Syracuse, NY(0045060)	\$80,956	\$54,250	\$84,935
Utica-Rome, NY(0046540)	\$64,224	\$63,842	\$82,219
Watertown-Fort Drum, NY(0048060)	\$67,672	\$37,412	\$67,672
Average of Areas	\$72,070	\$51,795	\$83,302

Source: Bureau of Labor Statistics, OEWS - Occupation = Firefighters (SOC Code 332011)
Adjusted to 2022 dollars using CPI

Calculating the Cost of Capital Equipment

Taxpayers rarely pay for large capital purchases all at once. Thus, even if replacing volunteers with paid firefighters necessitated purchasing billions of dollars of new equipment immediately, the taxes required for this would reflect only the annual payments to be made purchasing the equipment. Typically, this is the amount of annual debt service a fire department might pay for financing capital equipment and apparatus through a municipal bond issue or loan. (Not unlike purchasing a family car on an installment plan.)

Figure III-8 lists the common equipment a fire department may purchase, its cost new, its useful life, and the annual payment necessary to service the bonds that might be sold to make the purchase. Thus, a \$1,015,805 aerial truck fully equipped would require only the tax revenue needed to pay the \$71,383 in debt service per year during its useful life, not its full cost in any single year. The cost of station construction is estimated to average about \$3.8 million per unit, but with variation around the state.

The initial acquisition cost of structures and all apparatus and major equipment repeats (with inflation) after an item’s useful life is exhausted. In Figure III-8 useful life is seen to vary from about 8 years for a light vehicle to 18 years for an aerial truck and 20 years before a fire station requires major rehabilitation. It is important to note that shifting from volunteers to paid departments would inevitably mean transfer of substantial existing equipment to the career operations. However, a proper accounting of the transfer would not reduce annual charges for equipment (or indeed structures) if full replacement reserves were established, along with expenditures to bring all items to their appropriate standard.

Figure III-8¹⁰

Approximate Cost of Typical Capital Items 2022			
<u>Single Item of This Type</u>	<u>Cost of Apparatus & Equipment</u>	<u>Years of Useful Life</u>	<u>Annual Debt Service</u>
Engine	\$650,000	20	\$42,091
Aerial Truck	\$1,015,805	18	\$71,383
Tanker	\$528,961	15	\$43,037
Light Rescue Truck	\$250,000	8	\$35,016
Brush Truck	\$75,581	10	\$8,680
Staff Car	\$60,000	8	\$8,404
Heavy Rescue Truck	\$754,313	15	\$61,372
Protective Clothing and Apparatus	\$10,104	10	\$1,160
Structure (avg. for 24 firefighters, 3 shifts)	\$3,754,327	20	\$243,110

**Annual 2.6% interest & principal payments to finance purchase*

To fully understand these financial dynamics, one enters a complex realm of accounting. Basically, calculating an annual charge that represents an appropriate portion of a capital item's useful life, related to a year, can be based upon debt service payments (for, say, bonds to acquire the structure/equipment) or upon some pro rata depreciation of the cost of the equipment over its remaining useful life. A used piece of equipment, even if donated to the fire company, might have a reserve established for the need to replace it eventually, and to account for the use of its services during the year and the funds to bring it to standard at the time of transfer.

¹⁰ In the post-COVID world of high inflation and supply bottlenecks, these prices are rising rapidly. We hear of some engines selling for over one million dollars and aerial trucks approaching three million dollars, both having long delivery periods. To the extent future costs are above those in the table, the volunteer fire service is saving taxpayers even more compared to a paid fire service.

IV. Volunteer Firefighters Save New York Taxpayers \$4.7 Billion Annually

A. High cost of all-paid fire departments

New York State taxpayers realize significant savings because volunteer firefighters are not paid wages and benefits and because fundraising by volunteer organizations reduces tax levies for fire equipment and operations. To determine the amount of tax savings to households and businesses, we calculated how much additional taxes would be necessary to cover the costs of all-career departments in every area now using volunteers.

These savings include: the wages and benefits that municipal governments do not have to pay firefighters; their lower expenses by not purchasing and maintaining equipment; the avoided cost of fire stations and other structures; a full range of annual operating expenses from administration to HVAC equipment and utilities.

ResEcon calculated the statewide cost of an all-career fire service and subtracted the amount government now pays for fire protection. This offset includes the cost of career fire departments in some cities and towns and the fractional support of volunteer departments elsewhere. To complete this assignment, we analyzed career and volunteer fire departments throughout the state. We calculated the cost and the increased taxes if a paid department replaced volunteers. We applied economic models to measure firefighting requirements by county, using not only population but also density, protection area characteristics and local experience. In a complex state such as New York, this multi-factor approach improves the accuracy of the calculations as compared to estimates based solely on population as done, for example, in Delaware, which has less varied demographics and geography.

The calculations incorporate potential efficiencies in the relocation of firefighters and fire stations that would almost surely follow if tax funding of career firefighters were required throughout the state. No one is seriously suggesting such an enormous conversion. However, the specter of conversion provides relevance to the huge increases in property taxes that would be required and thus is one dimension of measuring the economic value of volunteers to their communities. (Of course, this is separate from the enormous lifesaving and related value of the volunteer fire service.)

In our approach, we statistically evaluated the factors that determine the actual level of staffing and the cost of paid units and applied the results to all volunteer protection areas throughout the state. We incorporated the unique characteristics of each area that would dictate the number of full-time career firefighters needed. We then estimated the matching level of firefighting equipment, specialized vehicles, and fire stations with appropriate living quarters. From this we calculated annual operating and capital cost and the resulting taxes to support them.

Also included in the annual cost is the payment of interest and principal to finance the one-time \$8.17 billion cost of acquiring, rebuilding, and equipping stations with sleeping and eating facilities, emergency equipment, vehicles, and related items. If bonds were used to finance these one-time requirements, the annual debt service for local government would be \$581 million and is included in the cost.

Figure IV-1 shows these details. New York State would have to add 31,058 additional paid firefighters if it moved to an all-career fire service¹¹. Fully paid career departments in place of volunteers would cost New York taxpayers an additional \$4.7 billion annually. This totals the pay, benefits, operating, maintenance and capital costs to support the additional 31,058 full-time paid firefighters. This consists of \$3.8 billion of pay and benefits plus \$187.9 million in general operating costs plus \$83.8 million annually to maintain equipment and structures and \$580 million in annual debt service.

Figure IV-1

<i>New York: Added Cost If All Fire Protection Services Performed by Paid Firefighters 2022</i>	
	Statewide All Areas*
Additional career firefighters (38,002 total required less 6,944 existing)	31,058
	One-Time Acquisition Cost
Cost of fire houses/structures	\$4,858,411,742
Cost of vehicles & equipment	\$3,307,410,397
Total one-time cost**	\$8,165,822,139
	Annual Cost of Operations
Pay and benefits	\$3,834,721,144
General operating costs***	\$187,882,162
Equipment & structures (ann. maint. etc.)	\$83,823,169
Annual operating cost	\$4,106,426,475
Annual debt service / Replacement reserves (for acquired structures & equip.)	\$580,689,132
Total annual cost	\$4,687,115,607

* Excludes New York City

** Is assumed to be financed by borrowing covered by annual debt service.

*** Includes all normal outlays such as heating/cooling, electricity, communications, fuel, supplies, insurance, clothing, etc.

¹¹ It might be expected that the 31,058 additional firefighters needed for a statewide career fire service would have increased significantly more than the 30,822 reported in FASNY's 2015 economic study. However, staffing requirements depend upon population and property protected as well as current practices among existing career departments. Over that period, New York's population fell by 0.6%, real property increased only slightly, and municipal fire budgets tried to reduce costs and increase efficiency. While the number of firefighters rose only by 236, the related pay and operating costs rose by over 20%.

These 31,058 career firefighters would staff stations 24 hours-per-day, seven-days-per week. They would follow practices prevalent in paid departments and meet requirements such as the two-in, two-out rule.¹² In general, NFPA standard 1710 would be met in most stations. If 1710's minimum staffing was implemented statewide, there may be additional firefighters needed in some stations, but such determination would require added study beyond the scope of this report. (Note that EMT and ambulance services personnel are not included in the 31,058 firefighters required.)

Please note also, as discussed previously, these paid firefighters are not "replacing" volunteers on a one-to-one basis, but rather providing fire protection services for the areas now covered by volunteers at standards found in existing paid areas.

It is important to point out that in the *New York Fire Service Needs Assessment* conducted by NFPA in 2015, there is inadequate or aging equipment in a substantial number of fire stations. Presumably, these would all be brought to standard upon conversion to paid departments.

As noted earlier, a paid department's success is partly measured by keeping its staffing lean and costs down relative to its firefighting requirements. In contrast, a volunteer department's success is partly measured by building a large membership and expanding the number of people in the community who have firefighting skills. The more volunteers, the quicker the response, other things equal. In contrast, all-career departments must meet their response requirements with staffing to cover stations 24-7, rather than racing to fires from home and work as needed. This fact gives them an incentive to locate fire stations in ways that minimize response time while also minimizing staffing and recruitment.

Local Government property taxes would rise 28.4% absent volunteer firefighters.

Local governments levy taxes to pay for a wide variety of public goods and services. Two main distinctions are taxes for general government purposes and, separately, taxes for schools. Generally, school districts in New York State outside New York City operate with budgets and taxes that are set by school boards, while in cities, counties, towns and villages other elected officials determine their own budgets and tax levies. See figure IV-2 for a breakdown of general government taxes versus those of school districts.

Presumably, the tax levy to support a statewide all-career fire services would be imposed by general government, not school districts, and become part of their local budget.

¹² The two-in, two-out rule established by OSHA requires two firefighters within a burning structure to have direct visual contact or voice communication between each other and with firefighters outside.

Figure IV-2

New York Property Tax Levy by Class of Government 2022		
Government Level	Property Tax Levy 2022	Percent of Total
County	\$ 5,919,300,866	15.7%
City	\$ 1,309,181,179	3.5%
Town	\$ 4,373,490,292	11.6%
Village	\$ 1,539,486,902	4.1%
Fire District	\$ 949,146,281	2.5%
Subtotal non-school	\$ 14,090,605,520	37.3%
School	\$ 23,649,259,042	62.7%
Grand Total	\$ 37,739,864,562	100.0%

Source: NYS Comptroller (Excludes New York City)

The non-school portion of the property tax levy totaled \$14.1 billion in 2022, that is 37.3% of total property taxes outside New York City. Schools required another \$23.6 billion, which is 62.7% of the total.

Without volunteer firefighters, non-school property tax would rise across the state in volunteer fire service areas. The tax increase for general governmental units would rise an average of 28.4%. This large increase in the property tax would require a detailed re-examination of other spending and may feature a substantial public reaction when local budgets would be presented and described in the press.

Taxpayers would undoubtedly have a strong reaction to any such local budget increases. Granted, this affects only the local government's tax levy and not the total tax paid by households and businesses, (which includes school tax.) However, it is hard to imagine taxpayers would be assuaged by hearing that the percent increase in a town or village budget related to a new "career-fire tax" excludes school districts.

Figure IV-3, below, summarizes the impact of higher taxes to fund an all-career fire service. It shows that in 2022 New York local governments (excluding school districts) levied \$13.3 billion in property taxes in all areas protected by volunteer firefighters. The total additional annual cost of an all-career service is \$4.7 billion for pay and benefits, general operations, the annual cost of maintaining and supporting firefighting equipment and structures, and debt service or replacement reserves.

This \$4.7 billion amount is reduced by \$912 million from existing fire funding¹³ in now-volunteer areas. The net amount of \$3.8 billion would require an increase in the annual property tax levy of 28.4% on average in these localities.

Figure IV-3

Annual Real Property Tax Impact if All-Career Firefighters	
New York State 2022 estimated	
Pay & Benefits	3,834,721,143
Annual Operating Cost	187,882,162
Annual Outlay for Equipment & Structures	83,823,169
Annual Debt Service or Replacement Reserves	580,689,132
Total Additional Annual Cost	4,687,115,606
Offset for Current Fire Funding in Volunteer Areas	912,880,334
Net Additional Annual Cost	3,774,235,272
Existing Property Tax Levy in Volunteer Areas	13,276,181,250
Increase in Tax Levy if All-Career Fire Service	28.4%

B. Tax Savings of Volunteers by County

Having calculated the cost of shifting from existing volunteer departments to paid ones, the question arises of the amount by which taxes in each county would have to be raised to pay the bill. Arguably, federal and state revenues might be loosened to some extent, but these also rest upon taxpayers', even if spread differently among them.

Because real property taxes are typically the final adjustment to balance local budgets, the additional demand for funds will likely fall squarely on property owners. Each community has a different mix of residential, commercial, industrial, utility, farm, and vacant real estate. Thus, the added burden will shift among the owners of these from place to place

¹³ Some tax dollars and subsidies used to partially support existing volunteer operations would become available to the new paid departments.

depending upon the relative mix and value of property types and the extent the property tax is already supporting government spending. Also, a county's separate fire protection areas and various sub-county taxing jurisdictions will bear the all-career burden differently depending on their existing taxing and spending situations.

To get an overview of the impact on each county, it is useful to calculate the net percent increase in the property tax required to raise the additional funds to support an all-career fire service in the volunteer areas of each county. The average rate throughout a county may vary significantly from area to area, but that depends upon local decisions of how to tax and how to share the burden across villages, towns cities, and fire districts within each county. This report focuses on the average tax increase across all areas of each county that currently have volunteer service.

Admittedly, other spending may be reduced to offset the new costs to a degree, but reducing other government goods and services means a shift of burden to someone else, not its elimination. Thus, the measure of burden is best reflected by showing the net increase in fire protection costs as an increase in the average property tax.

There would be great tax variability in the new tax burden among local areas. For example, some counties would average tax increases that exceed 100% because they have large fire protection areas, a low tax base and have operated with conservative budgets. Other counties would average increases under 10% because they have higher tax levies already. Plus, within each county there would be differences among communities, some above and some below the average.

Figure V-4 shows the tax increases county by county. The rows reveal for each county its relative portion of statewide amounts previously described in summary tables. Column two lists the number of currently active career firefighters in each county, totaling 6,944 statewide outside New York City. Column three is the net new career firefighters required for an all-paid fire service. This sums to 31,058, statewide, as seen in previous summary tables.

The next two columns are in the middle section of the table, and show the additional pay, benefits, and all other operating costs plus debt service needed to support the increase in career firefighters. These are added together in the next column and then reduced by the amount of existing fire funding that can be used to support the new all-paid fire service. The statewide total net additional cost for an all-career service is \$3.8 billion, which is the \$4.7 billion total cost reduced by funds from other fire-related sources.

The right section of the table shows how this added cost would affect the property tax in each county. The second-to-last column is the general property tax levy in each county (exclusive of any school taxes). Finally, the last column shows the average percent increase in that county's tax levy to pay the additional cost of an all-career fire service. For each county, this is an average county-wide percentage which can vary significantly up or down in sub-county tax jurisdictions.

The overall statewide average tax increase would be 28.4%. to fund an all-career fire service. Notice the wide variation among counties. The highest tax increase is in Cattaraugus County, an increase of 133.8%. The lowest increase is in Suffolk County, 5.8%. If a locality has a large volunteer fire protection area coupled with a low tax base or a small levy for non-fire

spending, it will require a large tax increase to support an all-career approach. Other localities with already high taxes or a large tax base relative to its fire protection requirements will have smaller tax increases.

Thus, without volunteers there would be significant and difficult increases in the levels of taxation throughout most of the state. These truly attest to the value of the volunteer fire service and to its strong presence throughout New York.

The extremely high tax increase in some counties underscores the difficulty of supporting the entire cost of the fire service with the property tax. There would certainly be a call for state or federal subsidies. There might also be a need to allow some mix of paid and volunteer firefighters in remote communities where the sparse population could not support sufficient nearby stations to meet response standards.

Finally, there are some cautions necessary in interpreting the number of career firefighters required in each local area. The number in the table is not necessarily the number of firefighters (with fire stations and equipment, etc.) that would physically exist in the county. Rather it is the number that is needed to protect the area and who may be physically located in the locality or in a neighboring one under contract. The efficient location of fire stations around the state might mean one locality has more firefighters than needed and may contract their services to neighboring jurisdictions that have few or no stations within their borders.

**Figure V-4: Significantly Higher Property Taxes if No Volunteer Fire Departments:
New York State Counties 2022**

County	Active Career Firefighters	Additional Active Career FFs Required	Additional Pay and Benefits	All Other Annual Operating & Debt Costs	Total Additional Annual Cost less Available Fire Funding	Existing General Property Tax Levy Volunteer Areas	Average Increase in Existing Property Tax
Albany	372	772	95,318,589	21,187,730	101,606,313	223,643,014	45.4%
Allegany	-	210	25,928,632	5,763,502	29,769,982	56,519,647	52.7%
Broome	220	434	53,585,839	11,911,237	63,584,167	140,516,979	45.3%
Cattaraugus	58	763	94,207,361	20,940,723	112,359,630	83,951,729	133.8%
Cayuga	86	232	28,644,964	6,367,297	32,542,437	67,617,181	48.1%
Chautauqua	84	338	41,732,750	9,276,493	46,570,103	113,025,209	41.2%
Chemung	80	251	30,990,888	6,888,757	34,756,877	68,593,806	50.7%
Chenango	15	191	23,582,708	5,242,042	24,196,335	47,876,928	50.5%
Clinton	57	431	53,215,430	11,828,901	61,035,526	58,099,152	105.1%
Columbia	2	256	31,608,237	7,025,983	33,495,409	75,223,952	44.5%
Cortland	36	128	15,804,118	3,512,992	17,070,572	57,003,362	29.9%
Delaware	-	472	58,277,686	12,954,156	67,819,186	72,719,136	93.3%
Dutchess	245	1,114	137,545,217	30,574,005	149,440,822	289,804,922	51.6%
Erie	919	2,239	276,448,601	61,449,907	311,140,512	808,134,610	38.5%
Essex	6	399	49,264,400	10,950,653	56,213,155	67,689,827	83.0%
Franklin	25	356	43,955,204	9,770,508	52,291,830	46,564,687	112.3%
Fulton	54	339	41,856,220	9,303,939	50,502,005	50,269,059	100.5%
Genesee	-	186	22,965,359	5,104,816	26,553,668	53,577,436	49.6%
Greene	30	221	27,286,798	6,065,399	28,281,526	64,165,664	44.1%
Hamilton	-	181	22,348,011	4,967,590	27,062,386	29,763,245	90.9%
Herkimer	49	341	42,103,159	9,358,829	48,791,066	59,153,201	82.5%
Jefferson	167	397	49,017,461	10,895,763	52,924,605	97,858,174	54.1%
Lewis	-	274	33,830,691	7,519,998	40,723,796	32,871,811	123.9%
Livingston	-	227	28,027,616	6,230,071	31,699,788	59,563,894	53.2%
Madison	24	273	33,707,221	7,492,552	36,992,499	64,876,107	57.0%
Monroe	747	785	96,923,694	21,544,518	70,368,239	754,812,291	9.3%
Montgomery	33	145	17,903,103	3,979,561	20,572,808	42,722,943	48.2%
Nassau	123	2,261	279,164,934	62,053,702	150,547,117	2,303,452,333	6.5%
Niagara	329	491	60,623,610	13,475,616	72,146,777	165,186,546	43.7%
Oneida	211	832	102,726,769	22,834,445	121,018,487	135,429,619	89.4%
Onondaga	435	1,389	171,499,378	38,121,447	190,589,388	354,254,111	53.8%
Ontario	56	298	36,793,963	8,178,683	38,256,008	108,160,993	35.4%
Orange	128	1,442	178,043,270	39,576,045	181,027,979	417,081,310	43.4%
Orleans	21	148	18,273,512	4,061,896	21,673,934	38,229,195	56.7%
Oswego	117	392	48,400,112	10,758,537	56,006,271	101,329,397	55.3%
Otsego	26	214	26,422,510	5,873,283	29,986,445	38,488,785	77.9%
Putnam	-	448	55,314,414	12,295,470	63,525,214	144,818,386	43.9%
Rensselaer	131	421	51,980,733	11,554,449	55,301,412	139,465,812	39.7%
Rockland	-	571	70,501,184	15,671,236	50,996,869	565,216,585	9.0%
Saint Lawrence	42	740	91,367,559	20,309,482	106,042,422	96,888,909	109.4%
Saratoga	56	848	104,702,284	23,273,569	110,861,422	139,383,637	79.5%
Schenectady	205	339	41,856,220	9,303,939	44,480,972	132,417,475	33.6%
Schoharie	-	300	37,040,902	8,233,574	42,518,761	37,945,978	112.1%
Schuyler	-	80	9,877,574	2,195,620	10,396,006	21,377,261	48.6%
Seneca	2	152	18,767,390	4,171,677	21,197,454	27,458,692	77.2%
Steuben	64	339	41,856,220	9,303,939	47,657,901	92,295,653	51.6%
Suffolk	87	2,426	299,537,430	66,582,168	123,769,353	2,132,425,845	5.8%
Sullivan	4	860	106,183,920	23,602,912	117,866,601	156,795,666	75.2%
Tioga	-	178	21,977,602	4,885,254	20,399,936	46,044,153	44.3%
Tompkins	75	445	54,944,005	12,213,135	59,484,584	114,836,681	51.8%
Ulster	57	708	87,416,529	19,431,234	94,318,411	209,284,925	45.1%
Warren	38	355	43,831,734	9,743,062	52,401,806	77,993,382	67.2%
Washington	-	281	34,694,978	7,712,114	41,316,862	64,639,043	63.9%
Wayne	103	325	40,127,644	8,919,705	45,458,731	82,652,521	55.0%
Westchester	1,324	1,550	191,377,995	42,540,132	139,154,140	1,665,050,995	8.4%
Wyoming	-	181	22,348,011	4,967,590	26,020,518	47,708,503	54.5%
Yates	1	89	10,988,801	2,442,627	11,448,245	33,250,891	34.4%
Statewide	6,944	31,058	\$3,834,721,143	\$852,394,464	\$3,774,235,272	\$13,276,181,250	28.4%

C. The Economic Benefits of Volunteer Firefighter Tax Savings

New York’s volunteer firefighting creates significant economic benefits in sales, jobs, and wages because it leaves about \$3.8 billion in the hands of taxpayers each year. We determined the full economic impact of volunteer fire departments by measuring its effects on local communities. Of course, switching from a volunteer to a paid fire service would place much of the taxes collected in the hands of paid firefighters, but the result would be a large-scale redistribution of wealth and income with an unknown mix of winners and losers—the families, businesses, and geographic areas across the state that would gain money or lose it.

The approach we take is to evaluate the economic impact of volunteer fire departments in the aggregate, not to calculate any offsetting or redistributive effect of converting volunteers to paid firefighters. The net impact of a complete shift to paid departments is uncertain and unknown.

To perform the economic impact analysis, ResEcon employed the input-output technique, which is a widely-used approach to forecasting economic impacts . This is a mathematical way of specifying the economic relationships among consumers, businesses, and the extensive network of supplier firms that generate jobs and wages and pay taxes within the community and throughout the state.

We measure each of the activities which economists separate into “direct effects,” “indirect effects,” and “induced effects.” The direct effects relate to the initial purchases by households and businesses with their tax savings. The indirect effects represent inter-business purchases made in response to these direct sales, mostly purchases from suppliers and their suppliers. Finally, the induced effects add the result of household spending by the employees and owners of all industries benefiting from direct and indirect effects. Together these multiply the initial spending and account for the full economic impact of the volunteer fire service.

Figure IV-5

Economic Impact of Tax Savings from Volunteer Fire Service	
New York State 2022	
Activity	Direct, Indirect, and Induced Impact
Jobs Created (Non-fire)	19,595
Labor Income (Non-fire)	\$1,204,427,437
Output (Sales)	\$3,583,894,198

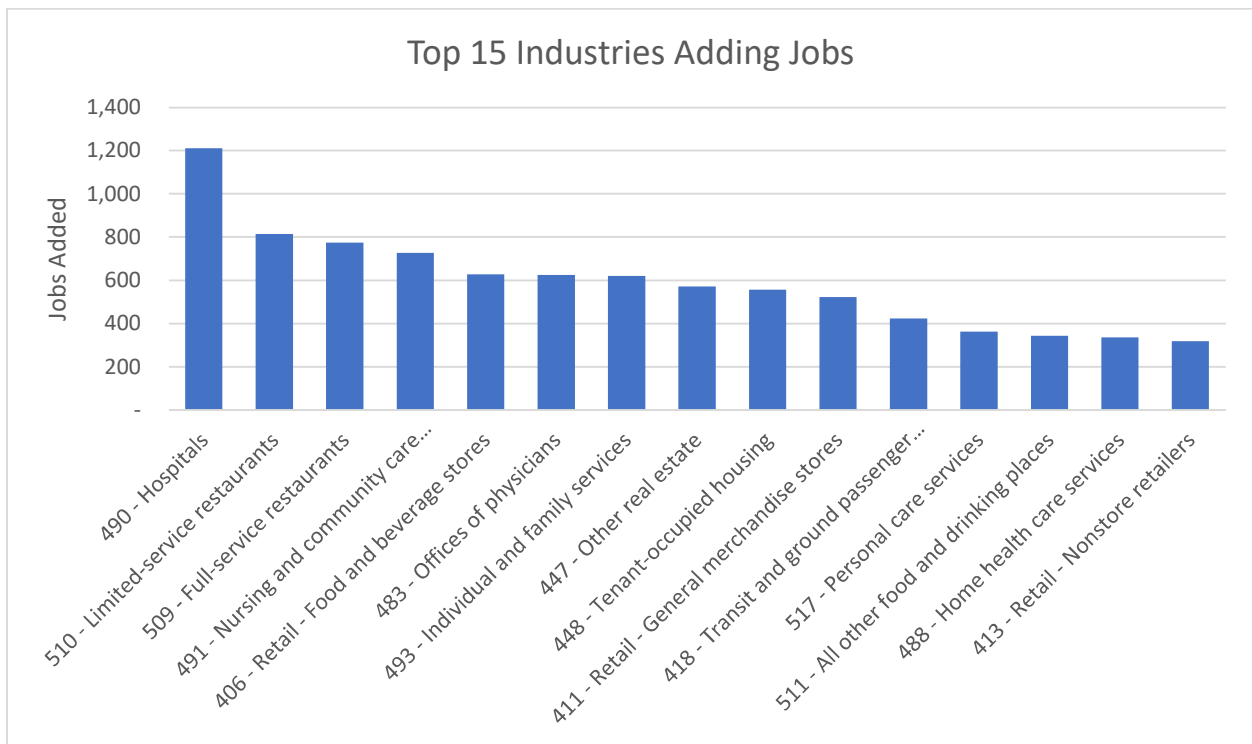
** Excludes NYC and Sales Outside of NY State*

Figure IV-5 shows households and businesses purchase \$3.6 billion of goods and services within New York State using the tax savings from lower property taxes. This is the result of a complicated process from which the \$3.8 billion in tax savings creates additional “indirect”

plus “induced” spending as firms pay their employees and suppliers and distribute earnings to their owners and lenders. All told, the full direct + indirect + induced impact amounts to over \$4.5 billion. However, some of the spending flows outside New York, netting to the \$3.6 billion in New York sales shown in Figure IV-5. Of this amount, \$1.2 billion goes to New York labor, resulting in 19,595 New York jobs created by the tax savings from the volunteer fire service.

These 19,595 jobs are distributed throughout the state’s economy. Figure IV-6 tallies the top 15 industries having jobs created by volunteer tax savings. Hospitals are the largest job creators, adding about 1,200 employees. This number is followed closely by “limited-service restaurants” (800 jobs) and full-service restaurants (795 jobs). Real estate, family services, and retail also benefit strongly as do the other industries listed in Figure IV-6.

Figure IV-6



The numbers above give a sense of the scale of economic activity that is impacted by New York’s system of volunteer firefighting which has left billions of dollars in the hands of residents and drives substantial economic activity at the local level. A transition to career firefighting would have two primary effects on this historic arrangement. As noted earlier, the dramatic tax increases needed to fund a career service would transfer billions of dollars from New York taxpayers, to village, town, city, and county governments. While these funds will be spent on career fire protection services, the final effect of these dollars is difficult to predict but will certainly disrupt the local economy and create many winners and losers.

Taxpayers in New York have ample experience with the challenges that are created when local tax increases redirect money from residents to local governments. Even when local governments and taxpayers are in full agreement on an expansion of services, tax hikes involve debates over how the new tax burden will be shared. How will taxes change to fund the necessary revenue? Should these increases be funded by the residents and businesses most likely to benefit from career fire protection service? Or should additional taxes be paid largely by those with the greatest ability to pay?

The economic disruption that occurs when there is a large-scale increase in local taxes is key to understanding the economic impact of a shift from volunteer to career fire protection. It's not just a change in where the money is spent – it's a change in the whole process of how taxes are assessed and allocated, how spending decisions are made, and what tradeoffs are necessary when formulating local government budgets.

V. Tax Savings in NY Legislative Districts

A. Calculating Senate and Assembly Impacts

A transition from volunteer fire departments to career would have varying impacts on property taxes across different communities. As shown previously for New York counties, the net percent increase in property tax provides a useful measure of the burden that property owners would face, although local decisions on taxation and burden-sharing would influence the average rate increase throughout each area. Unlike the previous county calculations, legislative districts offer unique challenges in measuring the tax burden because they contain layers of other taxing jurisdictions and they themselves do not levy property taxes.

Senate and Assembly boundaries are drawn without respect to any standard configuration of the taxing jurisdictions within. Each legislative district has a unique complement of cities, towns, villages, school districts, counties, and special districts. Each district's multiple jurisdictions may have its own budget policies and property tax rates, and thus a different burden if they were to add an all-career fire service.

New York State Senate districts are organized based on population and geography. There are a total of 63 districts, each with approximately 300,000 residents. Assembly districts are similarly determined and number 150 with approximately 130,000 residents each. The districts are redrawn every ten years following the decennial census to account for changes in population. The analysis that follows covers 2022 district boundaries.

You will see there are wide differences in tax burdens among the districts. These reflect:

1. The count and coverage of existing career departments.
2. The complexity of the multiple jurisdictions within it.
3. The characteristics of the population and geography.
4. The types and density of real property.
5. The funding from all sources for all elements of non-career fire protection that can be redirected and offset the need for new taxes.

Geography has special importance as recognized in the NFPA 1710 and 1720 standards. Urban areas are densely populated and characterized by a high concentration of businesses, residential areas, and cultural institutions. Outside New York City, these include the cities of Buffalo, Rochester, Syracuse, and Albany, and well as numerous high density suburban communities.

Rural areas, on the other hand, are sparsely populated and characterized by agricultural land, forests, and small towns. These include the Adirondack Mountains areas, the Catskill Mountains, and parts of the Finger Lakes region.

Urban and rural areas in New York State face unique challenges and require different approaches to governance. Urban areas, for example, typically require more investment in infrastructure, public transportation, health care, and housing, while rural areas may require more investment in agriculture, natural resource management, and have more difficult access to healthcare. In the less populated suburban areas and in rural areas, school taxes may be by far the highest component of the total tax levy. In these districts, to add a tax for additional career fire services to a rather low municipal budget may require a huge percent tax increase. However, if a similar amount is added to a large municipal budget, the percent increase in the tax levy may be smaller.

Indeed, the calculation of estimates for Senate and Assembly districts in New York can be complex due to the presence of both high and low taxing jurisdictions, as well as a mix of all-career and all-volunteer communities within a district.

When estimating property tax increases for these districts, it is important to consider the different tax rates and budgetary situations in each jurisdiction. For instance, a Senate district that spans several counties may have significantly different property tax rates and budgetary priorities among its various jurisdictions. Similarly, an Assembly district may have a mix of all-career and all-volunteer communities, each with different budgetary needs and tax rates.

To account for these differences, we used a composite approach. This involves breaking down each jurisdiction into its component Census Blocks and estimating the property tax increase for each block based on its population, land area, and other relevant factors related to the weighted characteristics for the counties included in each district and their county-wide tax levy. These estimates are then weighted and combined to arrive at an overall estimate for the district as a whole.

While this approach is time-consuming and complex, it is necessary to ensure that estimates for Senate and Assembly districts accurately reflect the different tax rates and budgetary priorities of each jurisdiction.

Blocks within, say, the city of Albany and other areas covered by career departments are largely excluded from the allocation of county estimates because they are already covered by paid firefighters. Additionally, blocks without any population or land area, such as those covering lakes, are also excluded from the allocation of county estimates.

Since property tax information is not available at the block level, blocks inherit the county property tax information, which may be an average or weighted average of the tax rate across the county. This means that the estimated property tax increase for a given block is based on the property tax information of the county in which the block is located. The composition of blocks within counties is a key factor that accounts for why some Assembly and Senate districts may initially appear to be outliers. For instance, Assembly Districts 134-138 consist entirely of blocks within Monroe County, resulting in these districts inheriting the county's relatively small property tax increase. Monroe County is also part of eight different Assembly districts, which causes the county's firefighter estimates to be spread more thinly compared to other counties, such as Nassau and Suffolk, which are part of 13 and 12 Assembly districts, respectively. Furthermore, some districts have fewer blocks, and therefore receive fewer additional allocations, due to the exclusion of career fire protection blocks.

Additionally, there are individual districts that span multiple counties, such as Senate District 45, which is the northernmost district in the state and covers six counties: Clinton, Essex, Franklin, Saint Lawrence, Warren, and Washington. In these cases, districts comprise only their composite blocks, meaning that while a county like Clinton contributes 100% of itself to Senate District 45, Washington County only contributes a fraction of itself. The estimated property tax increase for the district is weighted by block populations, which involves multiplying the population proportion by the property tax rate for each county within a district, and then summing those numbers.

The Senate and Assembly tables (Figures V-1 and V-2) follow the definition and column headings described earlier for the County table V-4. They show every district outside New York City that currently has a volunteer fire service and would require higher property taxes were it not for the volunteers.

**V-1 Significantly Higher Property Taxes if No Volunteer
Fire Departments:
New York State Senate Districts 2022**

Senate District	Additional Active Career FFs Required	Additional Pay and Benefits	All Other Annual Operating & Debt Costs	Total Additional Annual Cost less Available Fire Funding	Average Increase in Existing Property Tax
1	829	102,311,866	22,742,219	42,275,429	6.0%
2	451	55,741,439	12,390,391	23,032,453	6.0%
3	499	61,573,728	13,686,811	25,442,365	6.0%
4	352	43,424,033	9,652,437	17,942,881	6.0%
5	518	63,920,277	14,208,410	34,470,710	7.0%
6	424	52,357,655	11,638,232	28,235,259	7.0%
7	739	91,210,716	20,274,619	49,187,805	7.0%
8	445	54,990,948	12,223,569	25,055,314	6.3%
9	431	53,171,701	11,819,181	28,674,254	7.0%
34	22	2,694,649	598,975	1,959,324	8.0%
35	302	37,318,443	8,295,267	27,134,864	8.0%
37	450	55,566,139	12,351,425	40,403,069	8.0%
38	513	63,341,437	14,079,744	45,817,883	9.0%
39	923	114,019,492	25,344,629	123,287,977	49.4%
40	1,145	141,359,514	31,421,859	118,937,067	16.6%
41	1,411	174,252,100	38,733,332	186,723,634	46.6%
42	1,251	154,516,043	34,346,336	157,106,342	43.0%
43	836	103,265,509	22,954,198	112,699,175	45.7%
44	904	111,582,984	24,803,034	118,173,603	75.4%
45	2,137	263,804,189	58,639,265	307,679,109	94.3%
46	962	118,770,605	26,400,722	127,980,170	41.7%
48	921	113,753,403	25,285,482	127,124,502	52.0%
49	1,921	237,150,151	52,714,518	275,641,912	79.1%
50	927	114,421,719	25,434,037	128,443,188	54.2%
51	2,418	298,538,380	66,360,096	336,130,014	71.6%
52	826	102,029,591	22,679,474	113,673,284	44.1%
53	1,221	150,775,204	33,514,810	173,129,372	77.2%
54	998	123,191,218	27,383,350	128,658,523	40.0%
55	249	30,742,476	6,833,539	22,319,557	9.0%
56	222	27,446,391	6,100,874	19,926,544	9.0%
57	1,582	195,327,934	43,418,137	227,663,514	65.1%
58	1,185	146,312,655	32,522,859	159,466,806	51.7%
60	1,512	186,746,709	41,510,674	210,181,808	39.0%
61	536	66,182,899	14,711,353	74,488,281	39.0%
62	805	99,389,954	22,092,727	108,698,853	36.9%
63	190	23,518,992	5,227,879	26,470,423	39.0%
Statewide	31,058	\$3,834,721,143	\$852,394,464	\$3,774,235,268	28.4%

V-2 Significantly Higher Property Taxes if No Volunteer Fire

Departments: New York State Assembly Districts 2022

Assembly District	Additional Active Career FFs Required	Additional Pay and Benefits	All Other Annual Operating & Debt Costs	Total Additional Annual Cost less Available Fire Funding	Average Increase in Existing Property Tax
1	466	57,511,496	12,783,845	23,763,843	6.0%
2	341	42,105,498	9,359,349	17,398,060	6.0%
3	200	24,746,378	5,500,706	10,225,244	6.0%
4	174	21,526,738	4,785,034	8,894,883	6.0%
5	162	19,969,335	4,438,850	8,251,362	6.0%
6	136	16,778,469	3,729,573	6,932,891	6.0%
7	179	22,134,256	4,920,075	9,145,910	6.0%
8	185	22,900,413	5,090,379	9,462,488	6.0%
9	175	21,606,707	4,802,810	10,028,976	6.3%
10	193	23,865,551	5,304,913	10,348,732	6.1%
11	150	18,533,787	4,119,751	7,818,277	6.1%
12	176	21,728,203	4,829,817	8,978,129	6.0%
13	256	31,616,950	7,027,920	17,050,282	7.0%
14	234	28,881,880	6,419,960	15,575,322	7.0%
15	350	43,187,107	9,599,773	23,289,796	7.0%
16	248	30,656,632	6,814,457	16,532,404	7.0%
17	177	21,800,429	4,845,871	11,756,461	7.0%
18	159	19,639,484	4,365,529	10,591,114	7.0%
19	198	24,431,153	5,430,637	13,175,149	7.0%
20	197	24,326,067	5,407,278	13,118,479	7.0%
21	176	21,751,715	4,835,043	11,730,191	7.0%
22	154	19,004,117	4,224,298	10,248,476	7.0%
88	131	16,231,219	3,607,929	11,801,990	8.0%
91	170	20,965,986	4,660,388	15,244,719	8.0%
92	286	35,358,298	7,859,559	25,709,609	8.0%
93	497	61,391,867	13,646,387	44,639,053	8.0%
94	533	65,868,891	14,641,554	67,557,744	31.7%
95	380	46,876,148	10,419,785	37,726,238	10.7%
96	216	26,649,474	5,923,733	19,276,836	9.0%
97	181	22,313,211	4,959,854	16,140,210	9.0%
98	613	75,709,237	16,828,899	72,759,463	30.3%
99	401	49,454,118	10,992,824	48,182,378	39.1%
100	954	117,774,350	26,179,271	128,686,269	60.6%
101	720	88,872,766	19,754,932	94,621,798	48.9%
102	1,097	135,406,607	30,098,627	149,615,951	70.1%
103	452	55,859,618	12,416,660	60,351,436	45.9%
104	220	27,221,257	6,050,831	28,628,201	45.4%
105	543	67,010,252	14,895,260	72,805,637	52.0%
106	644	79,540,803	17,680,592	85,782,006	49.9%
107	524	64,722,707	14,386,777	69,505,794	43.4%
108	138	17,075,339	3,795,563	18,160,545	46.5%
109	144	17,821,340	3,961,386	18,996,931	45.0%
110	301	37,212,870	8,271,799	39,645,222	42.9%
111	234	28,931,136	6,430,908	31,103,852	36.1%
112	481	59,365,410	13,195,939	63,629,589	73.1%
113	329	40,649,591	9,035,725	43,922,850	76.9%
114	1,026	126,716,335	28,166,925	146,313,460	71.6%

V-2 Significantly Higher Property Taxes if No Volunteer Fire

Departments:

New York State Assembly Districts 2022

Assembly District	Additional Active Career FFs Required	Additional Pay and Benefits	All Other Annual Operating & Debt Costs	Total Additional Annual Cost less Available Fire Funding	Average Increase in Existing Property Tax
115	915	113,018,890	25,122,212	131,411,012	105.3%
116	540	66,684,866	14,822,932	75,273,779	85.9%
117	1,072	132,332,825	29,415,377	154,283,874	91.4%
118	987	121,835,257	27,081,943	144,071,641	80.3%
119	154	19,051,713	4,234,878	22,444,097	89.0%
120	481	59,431,952	13,210,730	68,167,517	54.4%
121	752	92,874,382	20,644,424	104,603,799	56.7%
122	552	68,157,050	15,150,174	78,615,373	78.7%
123	126	15,518,566	3,449,518	18,414,102	45.0%
124	429	53,002,074	11,781,476	55,766,618	47.2%
125	505	62,398,050	13,870,044	67,535,955	45.6%
126	675	83,332,425	18,523,406	92,838,662	52.9%
127	427	52,742,031	11,723,673	58,567,187	54.2%
128	281	34,723,731	7,718,505	38,588,913	54.0%
129	108	13,306,076	2,957,718	14,787,207	54.0%
130	379	46,749,942	10,391,731	50,266,631	39.7%
131	474	58,550,625	13,014,826	63,975,327	44.3%
132	554	68,352,393	15,193,595	75,689,862	50.4%
133	469	57,932,390	12,877,403	61,866,461	43.8%
134	175	21,626,309	4,807,167	15,701,066	9.0%
135	181	22,319,858	4,961,332	16,204,594	9.0%
136	82	10,169,588	2,260,530	7,383,293	9.0%
137	30	3,764,599	836,807	2,733,162	9.0%
138	128	15,797,596	3,511,542	11,469,322	9.0%
139	501	61,813,504	13,740,110	66,932,828	42.7%
140	218	26,916,759	5,983,146	30,607,494	40.0%
142	163	20,134,431	4,475,548	22,661,128	39.0%
143	251	30,945,540	6,878,677	34,828,938	39.0%
144	500	61,687,855	13,712,180	71,511,035	41.4%
145	261	32,199,069	7,157,315	37,760,399	42.8%
146	287	35,456,263	7,881,335	39,905,717	39.0%
147	951	117,408,696	26,097,992	132,921,391	43.4%
148	1,021	126,108,510	28,031,816	148,929,946	94.6%
149	153	18,833,711	4,186,419	21,197,179	39.0%
150	371	45,842,422	10,190,005	51,195,503	41.0%
Statewide	31,058	\$3,834,721,143	\$852,394,464	\$3,774,235,268	28.4%

VI. Special Response Time Analysis

A. Importance of Rapid Response to Emergencies

The response rate is a critical component of fire protection as it directly impacts the safety of both firefighters and the general public. Firefighters must respond quickly and effectively to minimize property damage, prevent injury or death, and contain the spread of fire.

In emergency situations every second counts, and a prompt response can make a significant difference in the outcome. Delayed response times increase the risk of property damage and injury and can also exacerbate the spread of fire. Slow response times may also result in critical resources being diverted from other emergency situations, putting other people's lives and properties at risk. If resources are not deployed quickly and efficiently, a fire can quickly spiral out of control, increasing the risk of property damage, injuries, and fatalities.

The response rate is also critical in identifying and addressing the root causes of fires. A quick response can help identify and contain the source of the fire before it can spread, allowing firefighters to investigate the cause and develop strategies to prevent similar incidents in the future.

Response time is influenced by several factors, such as the distance between the fire station and the emergency location, the time it takes for the alarm to be noticed and the equipment to be dispatched, and the type of firefighting department, be it volunteer or paid.

Paid firefighters typically have an advantage in response time because they are stationed at the firehouse 24/7, ready to respond immediately. In contrast, volunteer firefighters may be located in more rural or less dense suburban areas, with longer distances between the fire station and the emergency location. NFPA standards for response time have been developed for both career and volunteer departments.

The National Fire Protection Association (NFPA) provides a benchmark for measuring response times. NFPA 1710 standards for career units and NFPA 1720 for volunteer units include criteria such as fire recognition and notification time, firefighter turn out time, and firefighter response time. For paid firefighters, NFPA 1710 stipulates a firefighter turnout time of 80 seconds and an arrival time of four minutes, making a total of 5.3 minutes from the moment the fire station receives notification until the first unit arrives at the emergency location.

For volunteer departments, there is no standard for turnout because volunteers generally respond from their homes or workplaces and may travel to their station or go directly to the location of the emergency. NFPA 1720's response time between firefighters and equipment leaving the station to arrive on scene varies based on the population and distance in the area protected. The standard volunteer response time is 9 minutes for high-density areas but increases to 14 minutes in low-density areas or when the travel distance is eight miles or more.

NFPA 1720 standards are promulgated for four classifications: urban, suburban, rural and remote areas:

Urban area (more than 1,000 persons per sq. mile): 15 firefighters respond in 9 minutes 90% of the time

Suburban area (500-1,000 persons per sq. mile): 10 FFs to respond in 10 minutes 80% of the time

Rural area (less than 500 people per sq. mile): 6 FFs to respond in 14 minutes 80% of the time

Remote area (8 miles or more to fire): 4 FFs to respond in (depends on distance) 90% of the time

FEMA established the Staffing for Adequate Fire and Emergency Response Program (SAFER) for both career and volunteer departments. As stated by FEMA, “SAFER grants intend to improve or restore local fire departments’ staffing and deployment capabilities so they may more effectively respond to emergencies.”

The effectiveness of the SAFER grants in reducing response times can be measured by directly analyzing incident reports filed with the state. An increased number of volunteer firefighters would provide a larger pool of available responders to arrive at the scene of an emergency more quickly, as well as deploy supplementary apparatus from the fire station. Thus, SAFER grants aim to support activities to recruit and retain volunteer firefighters.

The success of SAFER grants might be evaluated by comparing response times, the number of responders, and types of equipment responding before and after the implementation of the grants. However, it can be challenging to obtain direct counts of volunteers let alone measuring the training they undergo, or how active they are in firefighting versus other activities of volunteer departments. There is no centralized repository of such data maintained by the government.

A more practical approach would be to measure response time directly from incident reports filed with the state. This would provide a clear indication of the effectiveness of SAFER grants in reducing response times, as well as help to identify any potential issues or areas for improvement. By utilizing incident reports, the impact of SAFER grants can provide valuable feedback that can be used to make data-driven decisions regarding future funding and program implementation.

B. Response Time Analysis for 2021 in New York

The New York State Office Homeland Security provided data for this analysis, including approximately several million incident reports from over 1,500 fire departments across the state for 2021 and 2013. The data were collected from the New York State Fire Incident Reporting System which conforms with the National Fire Incident Reporting System (NFIRS). The file includes identifying information for fire departments as well as incident details such as the type of incident, dispatch time, and time of arrival for the first unit at the scene. Incidents in New York City are excluded from the analysis.

The database is comprehensive and covers incidents from over 90% of fire departments, making it a reliable source of information. Figure VI-1 summarizes 866,952 incidents reported in 2021 by fire departments outside of New York City. Most incidents, 508,477, occurred in high-density urban areas, as expected. Rural areas had the next largest number of incidents, totaling 259,418 in 2021. While there are differences in the total counts among urban, suburban, rural, and remote areas, the distribution of incident types is relatively similar. Most incidents involve medical and other rescues (58.8%), and false alarms and "good intention" calls are also common (22.1%), requiring a full response despite no real need for firefighting or medical equipment.

While firefighting incidents make up only about 4.7% of all incidents, they typically require a more significant response due to their severe and dangerous nature, such as rescuing multiple people from a burning structure using significant apparatus and equipment.

Figure VI-1

INCIDENTS REPORTED BY NY FIRE DEPARTMENTS 2021					
Number of Incidents	Fire Department Classification				Total
	Urban	Suburban	Rural	Remote	
Fire	19,471	4,100	17,180	358	41,109
Medical and Other Rescues	298,816	59,125	149,914	1,966	509,821
Explosions/Spills (no fire)	29,302	5,135	18,892	379	53,708
False Alarms/Good Intent	124,582	19,884	46,361	374	191,201
Service Call	33,107	6,962	23,523	211	63,803
Other	3,199	482	3,548	81	7,310
Total	508,477	95,688	259,418	3,369	866,952
Percent of Incidents	Urban	Suburban	Rural	Remote	Total
	3.8%	4.3%	6.6%	10.6%	4.7%
Medical and Other Rescues	58.8%	61.8%	57.8%	58.4%	58.8%
Explosions/Spills (no fire)	5.8%	5.4%	7.3%	11.2%	6.2%
False Alarms/Good Intentions	24.5%	20.8%	17.9%	11.1%	22.1%
Service Call	6.5%	7.3%	9.1%	6.3%	7.4%
Other	0.6%	0.5%	1.4%	2.4%	0.8%
Total	100%	100%	100%	100%	100%

Includes All fire departments reporting categorized incidents in 2021 (2020 for Buffalo)

Excludes NYC

To investigate the effectiveness of SAFER grants in promoting volunteer firefighter recruitment and retention, we analyzed changes in response times from the universe of incidents in 2013 and in 2021. As will be shown later in this report, response time decreases as the number of volunteers increases, other things equal. This does not isolate the impact of SAFER grants; however it is indicative of their impact if we assume departments not receiving grants remained relatively constant in their experience. Then, an improvement in the total response data would suggest a positive change associated with the grants.

Figure VI-2 compares the average response time of volunteer departments in urban, suburban, and rural areas for 2013 and 2021, excluding remote areas due to the lack of specific response time standards. The comparison was conducted by ranking all volunteer

departments based on their response time in 2013 and dividing them into three categories: the third with the shortest, the third with the longest, and the middle third. These departments were then matched with their response times in 2021, with a total of 254 urban, 124 suburban, and 852 rural departments included in the analysis.

The results in Figure VI-2 show that both the best and middle-performing groups in 2013 had increased their average response time in 2021 across all areas. The fastest urban departments went from an average of 3.94 minutes in 2013 to 5.47 minutes in 2021. Suburban departments increased from 5.17 to 7.79 minutes, and rural departments went from 6.89 to 9.97 minutes. However, the slowest-performing groups in 2013 reduced their response times, moving from 9.41 to 7.99 minutes in urban areas, from 12.23 to 10.87 minutes in suburban areas, and from 15.01 to 14.29 minutes in rural areas.

It is important to acknowledge that the year 2021 was heavily impacted by the COVID-19 pandemic, which likely influenced the response times of volunteer fire departments. Conversations with fire departments indicate that many had policies in place that prohibited high-risk volunteers from responding to emergencies, and volunteers themselves may have altered their behavior as the pandemic evolved. Therefore, it may not be appropriate to draw any conclusions about the effectiveness of SAFER grants based on the data from this unusual period as compared with other time periods.

Figure VI-2

Volunteer Departments Change in Response Time						
Fire Incidents Only - 2013 and 2021						
Average Response in Minutes						
Fire Department Classification						
	Urban (254 Depts)		Suburban (124 Depts)		Rural (852 Depts)	
2013 Response Times	2013 Avg Response	2021 Avg Response	2013 Avg Response	2021 Avg Response	2013 Avg Response	2021 Avg Response
Shortest Third	3.94	5.47	5.17	7.79	6.89	9.97
Middle Third	5.98	6.94	8.10	8.98	10.55	12.17
Longest Third	9.41	7.99	12.23	10.87	15.01	14.29

If it is not reliable to compare responses between 2013 and 2021 is it possible at least to determine if in 2021 NFPA standards are being met? Figure VI-3 presents a table that does exactly that by calculating the percentage of fires in urban, suburban, rural, and remote areas that met the response time standard. The data is from the reported fires and includes incidents in which the standard was met and those in which it was not met.

In urban areas, the standard of responding to 90% of fires in 9 minutes or less was met 89.7% of the time. In suburban areas, the standard of responding to 80% of fires in 10 minutes or

less was met 74.2% of the time. In rural areas, the standard of responding to 80% of fires in 14 minutes or less was met 73.2% of the time. However, in remote areas, where the NFPA standard is based on an 8-mile or greater distance to a fire, there is no specific response time given. The data show the average response time for all fires was 13.6 minutes. For 90% of fires the response time was 26 minutes or less. For 80% of fires it was 20.1 minutes or less, and for 70% of fires it was 16.3 minutes or less. It is important to note that the data does not address the minimum four firefighter requirement, but rather the overall response time.

Figure VI-3

Effectiveness at Meeting Response Standards: 2021				
	Fire Department Classification			
	Urban	Suburban	Rural	Remote
Number of Fires	18,968	3,820	16,685	347
Fire Departments Reporting	322	137	932	44
Average response time	5.6	8.7	11.4	
Median Response time	5.0	6.0	7.0	
	9 min or less, 90% of fires	10 min or less, 80% of fires	14 min or less, 80% of fires	Depends on distance
Fires meeting standard or better	17,023	2,834	12,217	see below
Percent of Fires	89.7%	74.2%	73.2%	see below
Remote Areas				
	Number of Fires	Percent of Fires	Response Time (mins.)	
Average Response Time of All Fires	347	100%	Average 13.6	
Response Time for 90% of Fires	312	90%	Within 26.0	
Response Time for 80% of Fires	278	80%	Within 20.1	
Response Time for 70% of Fires	243	70%	Within 16.3	

The capacity of volunteer fire departments to ensure adequate fire protection coverage heavily relies on the availability of individuals who are willing and able to volunteer as firefighters. The number of volunteers in a department significantly determines its ability to provide firefighting resources and respond to various types of other emergencies. The table below, Figure VI-4, offers a glimpse of the correlation between the number of available volunteers and a department's response time to fire incidents. Simply stated, the response time to a fire emergency is directly related to the pool of volunteers available to respond, other things equal.

This analysis focuses on the pool of volunteers available in each department, although we recognize that other variables impact response time and include population density, geography, and land development patterns, which may vary significantly even within the same protection area. Nonetheless, the data suggests a clear pattern that a greater number of volunteers reduces a department's response time to fire calls.

To conduct the analysis, fire departments were divided into three categories based on their pool of firefighters: one third with the highest number of firefighters, one third with the lowest number, and the middle third. These categories were further classified into urban, suburban, and rural departments. See Figure VI-4.

For the 259 urban departments examined, those with an average of 157 firefighters had an average response time of 5.8 minutes. This increased to 6.4 minutes for departments averaging 75 firefighters and further increased to 8.3 minutes for the smallest departments averaging 43 firefighters. Similar results were found for suburban departments, where the response time increased from 8.1 minutes to 9.9 minutes as the average number of firefighters in the department decreased from 86 to 27.

In rural areas, the largest departments had an average of 66 firefighters and had a mean response time of 10.9 minutes. In contrast, the smallest departments, averaging 24 firefighters, had a mean response time of 12.9 minutes. For all categories, the more firefighters available the shorter the response time.

Figure VI-4

Volunteer Department Staffing and Response Time						
Average Response in Minutes Fire Incidents Only - 2021						
Fire Department Classification						
	Urban (259 Depts)		Suburban (126 Depts)		Rural (869 Depts)	
Number Firefighters*	Avg FF Per Dept	Avg Response Time	Avg FF Per Dept	Avg Response Time	Avg FF Per Dept	Avg Response Time
Highest Third Depts.	157	5.8	86	8.1	66	10.9
Middle Third	75	6.4	44	9.8	38	12.6
Lowest Third	43	8.3	27	9.9	24	12.9

* Number of firefighters based on NFIRS New York Registry file



The Firefighters Association of the State of New York (FASNY) is one of the nation's premier fire service organizations, representing the interests of volunteer firefighters and EMS personnel. The organization was founded in 1872 and is headquartered in Albany, New York. FASNY also operates the Firefighter's Home (a skilled nursing facility for volunteer firefighters) and maintains the FASNY Museum of Firefighting on a 125-acre campus located in Hudson, New York.

MISSION:

To maintain, support and serve the volunteer fire service of New York, its firefighters, and to promote and protect the public they protect through education, legislation, communication, recruitment and retention, recognition and community service. To provide a haven at the FASNY Firefighter's Home for our volunteer firefighters. The mission will be accomplished by:

- Building camaraderie among the members and forming positive partnerships with related organizations;
- Representing the interests of the volunteer Fire and EMS organizations at the local, state and federal levels;
- Promoting the interests of sectional organizations at all levels;
- Promoting health and wellness, as well as fire safety initiatives, and providing education and training for the volunteer Fire and EMS organizations;
- Providing representation on state and national standards setting committees and projects;
- Gathering information from and disseminating information to the volunteer Fire and EMS organizations through printed, web and social media.

VISION:

Our Vision is:

- To be the resource organization for legislative, regulatory and standards making bodies;
- To be the premier resource for the volunteer fire service for recruitment education and retention of the volunteer Fire and EMS personnel;
- To be a resource for health and wellness as well as fire safety education initiatives.



