ASSESSING THE COST BURDEN ON CALIFORNIA'S VOLUNTEER FIREFIGHTERS

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ASSESSING THE COST BURDEN ON
CALIFORNIA'S VOLUNTEER FIREFIGHTERS

A Thesis

by

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Abstract

of

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Statement of Problem

The main objective of this study was to answer the question: What, if any, cost burden is assumed by California's volunteer firefighters? While there are many studies on volunteerism in fire service, none directly examine the out of pocket expenses that may be incurred by non career-track firefighters. Volunteer fire departments represent a substantial cost savings in areas such as rural communities. However, studies indicate that often volunteer fire departments do not provide adequate equipment, leaving volunteers in the potential position of having to buy their own equipment. A more complete understanding of the price of being a volunteer firefighter would inform future policies designed to retain and support fire service volunteers.

Sources of Data

I obtained relevant data from a telephone survey. Responses were gathered from twelve fire chiefs in randomly-selected, all-volunteer fire departments throughout the state. Respondents discussed the costs of training and equipment and related expenses, as well as the non-monetary costs of the hours volunteers must spend in training and on duty.

Conclusions and recommendations

The results suggest that although volunteer firefighters do have out of pocket expenses, the costs do not appear prohibitively high, and volunteers for the most part accept expenditures as a part of the responsibility of service. Some volunteers are also on a career track, which may induce them to regard training and equipment as an investment.

Based on the findings, the state should consider policy options designed to help communities that wish to augment the training and equipment that may be lacking at the level of the volunteer fire department. Such policies could include offering grants, matching funds, and low-interest loans. A follow-up study, including a comprehensive survey of volunteer firefighters, is needed to obtain a clearer picture of the state of volunteer fire service in California.

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TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

Chapter 1

BACKGROUND

Introduction

Volunteer fire departments provide an invaluable service to local communities, not just for fire safety but in terms of fiscal savings. The use of volunteer firefighting service saves approximately $37.2 billion per year in public funds, with communities saving an average of $45,000 per firefighter (USFA 2007).

However, communities are facing daunting challenges in keeping up the ranks of volunteer firefighters. When asked why volunteers leave fire service, most fire departments say their volunteers feel they have insufficient time or must undergo too much training (USFA 2007). At the same time, many volunteer fire departments are operating with a lack of personal protective equipment. Sixty-six percent have personal protective equipment that is at least ten years old, and a high number do not have enough portable radios or breathing devices to equip all responders on a shift (USFA 2006).

In 2007, California legislators considered a bill that would offer a state income tax credit to firefighters who must pay out of pocket for training and personal protective equipment. The assertion was that volunteer firefighters sometimes spend as much as $3500 per year out of pocket to buy their own training and equipment, Such an incentive would directly help volunteers who pay out of pocket when fire departments do not supply formal training or safety gear. Other states already offer such an incentive as a way to help pay small expenses and mitigate the amount of time volunteers must devote

to fire service. Though the bill did not pass out of committee, the question is worth exploration. Before it can be determined if volunteer firefighters need such a tax credit, it is necessary to learn if there is a cost burden on them, and if so, what elements are included and how large the financial obligation is.

The significance of this study

What is the nature of the cost burden, if any, assumed by California's volunteer firefighters? The purpose of this study is to learn what kinds of costs are typically assumed among California volunteer firefighters through a review of the available data, supplemented by a survey of randomly-selected, all-volunteer local fire departments. Accomplishing this purpose will be the first step toward a comprehensive analysis that will determine if there is a need to assist volunteer fire departments and the firefighters who work for them. This thesis should be considered a pilot study to inform future research and help determine if fiscal assistance to volunteer firefighters is appropriate and equitable.

The state of volunteer firefighting

For purposes of this study, volunteer firefighters are defined as "individuals who assist government directly in providing public services – such as fire protection, recreation and education – but who receive no monetary pay (excluding interns and prisoners)" (Brudney 1993).

Approximately half of all volunteer firefighters in the U.S. serve in communities with population of less than 2,500 (USFA 2006). Volunteer fire departments, likewise, primarily serve small communities. Mid-sized communities, with populations ranging

between 25,000 and 100,000, maintain fire departments with a combination of professional and volunteer firefighters. In California, the state's largest communities use career fire departments. Table 1.1 gives a distribution of California fire departments by community size. USFA classifies fire departments as follows: 1) "volunteer fire departments" include zero percent career firefighters; 2) "mostly volunteer" departments employ 1 – 15 percent career firefighters; 3) "mostly career" departments employ 51 – 99 percent career firefighters; and 4) "career" departments include 100 percent career firefighters with no volunteer firefighters on staff (USFA 2007).

Table 1.1

Distribution of California Fire Departments

Population of Community	Volunteer	Mostly Volunteer	Career and Mostly Career
500,000 or more	0.0%	0.0%	100.0%
250,000 to 499,999	0.0%	25.0%	75.0%
100,000 to 249,999	0.0%	8.6%	91.4%
50,000 to 99,999	0.0%	5.4%	94.6%
25,000 to 49,999	0.0%	27.8%	72,2%
10,000 to 24,999	0.0%	45.9%	54.1%
5,000 to 9,999	11.1%	74.1%	14.8%
2,500 to 4,999	43.5%	56.5%	0.0%
Under 2,500	89.5%	5.3%	5.3%

Source: U.S. Fire Administration

The United States Fire Administration estimates that there are approximately 807,000 volunteer firefighters in the United States, which is roughly 73 percent of the 1.1 million firefighters nationally (USFA 2007). These numbers correspond roughly with those of the Bureau of Labor Statistics, which states the total paid employment in firefighting occupations in 2008 was 310,400 (BLS 2010).

An ongoing USFA census of California fire departments, accessed in December 2009, gave a count of approximately 60,000 firefighters, 12,000 of whom were volunteers (USFA census 2009). This would indicate that 20 percent of the state's firefighters are volunteer. Given that USFA estimates it has captured data on 75 percent of the nation's fire departments, it may be inferred that California has between 60,000 and 80,400 firefighters, 12,000 -16,400 of whom are volunteers.

Proposed incentive: state income tax credit

In spite of the need for volunteer fire service in rural communities, departments are experiencing challenges in retention. In a survey of fire departments, over half report the say those volunteers who have left fire service feel they have no time, or must undergo too much training (USFA 2007). At the same time, many volunteer fire departments are operating with a lack of personal protective equipment. Sixty-six percent have personal protective equipment that is at least ten years old, and a high number do not have enough portable radios or breathing devices to equip all responders on a shift (USFA 2006).

In an effort to address retention challenges, some states have begun to provide tax-related assistance to volunteer firefighters. Table 1.2 lists the states which currently offer tax incentives.

Table 1.2

State Tax Incentives to Volunteer Firefighters

State	Comments
Connecticut	$250 in taxes after one year of service, $500 after five years, $750 after seven years and $1000 after

	ten years or more of service.
Maryland	Volunteer firefighters are eligible for a state income tax subtraction modification of $3,500.
New York	Municipalities may vote to provide a 10% deduction on local taxes. There is also a $200 income tax credit for volunteer firefighters.
Oklahoma	$200 - $400 depending on training level.
Pennsylvania	One year, $100.
South Carolina	A tax deduction program awards points based on training received, meetings and calls attended. The maximum deduction is $3000.

Source: National Volunteer Fire Council

In California, there has been at least one attempt to give volunteer firefighters a tax incentive for purchases of personal protective equipment. Assembly Bill 1700 (LaMalfa), introduced in 2007, would have provided a personal income tax credit in an amount equal to 80 percent of the costs paid or incurred, not to exceed $1,500, for qualified firefighter expenses for each taxable year beginning on or after January 1, 2008.

The California Franchise Tax Board (FTB) conducted a fiscal analysis of AB 1700, in which the agency estimated AB 1700, as written, would have cost the state $5 million in revenues during 2008-09, and an additional $10 million in 2009-10. The figures were based on the potential for 100,000 firefighters (25,000 professionals and 75,000 estimated volunteers) qualifying for a maximum tax credit of $1500 per person,

with half the workforce taking advantage of the deduction in the first tax year, and 100 percent the second year (Franchise Tax Board, 2007).

AB 1700 died in committee soon after the FTB analysis, but its story points up two flaws that, taken together, underscore how little we know about the real cost of being one of California's volunteer firefighters. First, the bill offered financial assistance for both professional and volunteer firefighters, though each has differing needs and expectations in fire service. When individuals who want to become professional firefighters pay for their own training and equipment, they have an expectation they will reimburse themselves through their future earnings in fire safety. As with most people embarking on a career path, initial expenditures are an investment in the future; the eventual compensations of salary and benefits will pay them back with interest. Volunteers, on the other hand, who may have "day jobs" in another field, or in any case are not on a career path in fire safety. If volunteers do pay for their own training or equipment, it is not a career investment for which they expect to compensate themselves through a firefighter's salary.

Secondly, there was nothing in AB 1700 supporting the dollar amount - $1500 maximum – as an appropriate tax credit. An accurate fiscal analysis of the impact on the state's General Fund depends on a defensible tax credit per volunteer. An accurate fiscal analysis of the impact on the state's General Fund depends on a defensible tax credit per volunteer. Such a defensible tax credit is derived from a comprehensive analysis of the true cost of being a volunteer firefighter.

Conclusion

Communities rely on volunteer fire departments to provide emergency, fire, and rescue services at a comparatively low cost, particularly to rural communities, but fire departments are encountering challenges in recruiting and retaining volunteers. One way other states seek to counterbalance the problem is by providing tax incentives. Before we can know whether a financial incentive for volunteer firefighters would be of legitimate use in California, and how much such an incentive might cost the state, we need to understand much more about the scope of the cost burden to California's volunteer firefighters.

Chapter 2 of this thesis is a review of the literature, highlighting what is currently known about the state of volunteerism in general, and the costs to equip and train volunteers associated with volunteer fire departments specifically.

Chapter 3 describes a survey I conducted in March 2010 of fire chiefs who work in selected all-volunteer fire departments in California. To learn the scope of the cost burden to volunteers, I gathered information through interviews with fire chiefs in all-volunteer departments. The departments were selected at random from a national census; the size of the departments range from eight volunteers to over 60. The results of the analysis will comprise Chapter 4. In Chapter 5, I will offer some conclusions and explore policy implications, as well as present suggestions for a quantitative survey of the volunteers who dedicate their time and energy to ensuring California's fire safety.

Chapter 2

LITERATURE REVIEW

Introduction

A search for related literature turned up no academic studies or in-depth reports dealing specifically with the range or types of out of pocket expenses borne by volunteer firefighters. Neither the California Department of Forestry and Fire Protection (CalFIRE), nor its subsidiary department, the Office of the State Fire Marshall (OSFM), collect statistical data concerning volunteer firefighters. This is probably because most fire departments are special districts, nonprofit agencies or are otherwise locally governed, and thus not under the auspices of the state. However, studies concerning the general state of volunteerism, as well as in the fire safety field, describe some of the motivations and constraints associated with being a volunteer. State and federal agencies also provide background information about the cost of maintaining firefighters, particularly in training and personal protective equipment.

This section will include a discussion on volunteerism in general, as well as volunteerism specific to fire service. I will then examine research related to the cost of equipping and training volunteer firefighters, and how departments are expected to comply with federal and state safety regulations for individuals who perform active fire and rescue duties. Finally, I will discuss training and personal protective equipment, including average costs.

Volunteer firefighting: a tradition

Carp (2001) describes the long and auspicious tradition of volunteer fire departments in the United States. The first fire company was founded in Philadelphia by Benjamin Franklin, who wrote that firefighters were the consummate citizens – "Heroes and effective Men fit to compose the Prime of an Army." Firefighters were called upon for a wide variety of tasks. They not only protected property but the lives and the independence of their neighbors. They were expected to maintain order at the scene of a fire, remove goods from burning buildings, and stop people from looting. Only "men of character" were permitted to become firefighters. In Boston, only "prudent persons of known fidelity" were allowed to serve. New York City declared that it would only take on "Strong, Able, Discreet, Honest, and sober Men" to work in its engine companies (Carp 2001).

Historical documents preserved by the Oak Park (California) Volunteer Fire Department give insight into the way fire service used to be provided. This volunteer fire department was formed in 1906 out of literally nothing but a desire to serve the community. After the board was established, the first order of business was to organize a charity dance to raise funds. With the net proceeds of $124, the fire department made its first purchases, including a number of "oiled" hats and coats for $10. Though the board kept detailed financial records, no other personal protective equipment was mentioned as having been purchased. There is also no mention of paying for the training of recruits. It is probable that, like most firefighters of the day, volunteers simply wore

everyday clothing in the performance of their duties. Training was conducted “on the job” by more experienced volunteers (Oak Park VFD).

Volunteer firefighting today

Today, there are over 823,000 volunteer firefighters in the United States, comprising 72 percent of all firefighters. The vast majority (21,575) of the nation’s 30,300 fire departments are volunteer. In California, over a third of the state’s firefighters are active volunteers (USFA 2007).

Brudney (1993) states that today, volunteer firefighters continue to be a boon to communities, and lists four advantages that, collectively, can enhance government productivity.

1) Utilizing volunteers offers a demonstrable cost savings to government.
2) Their use can lead to an expansion of government services by augmenting the work of paid staff by taking over routine functions, and by giving the agency the capability of doing more with available resources.
3) Volunteers can contribute to the quality of government service by bringing specialized skills to the workplace, as well as providing higher levels of personal contact with the public and improving agency relations with the community.
4) A well-run volunteer staff produces tangible benefits overall, such as deepening the experience of participants, increasing job skills, and promoting greater public awareness of constraints an agency faces (Brudney 1993).

Simpson (2006) also describes the positive effects of volunteer fire department to the culture of a community, stating that volunteer fire departments "ritually enhance local identity, build moral systems based on locality, and empower residents to overcome natural adversity" (Simpson 2006).

Thompson and Bono (1993) hypothesize that volunteerism meets a deep-seated need in people. Individuals engage in volunteerism in an effort to achieve self-actualization. Living in a capitalist society, and having to earn wages in order to survive, tends to alienate people from rewarding social relations. The drive to work for food and shelter is the most basic human motivation, but is the opposite end from the spiritual gratification. Volunteering is one way that people regain a sense of higher purpose in the community (Thompson and Bono, 1993).

The cost of a volunteer firefighter

Volunteer firefighters provide a demonstrable savings to communities, but there is still a cost to adequately equip and maintain fire service staff. The Occupational Safety and Health Administration (OSHA) requires that employers provide, test, inspect, and maintain personal protective equipment for employees who are exposed to workplace hazards. Employees must also be trained on proper use of equipment. (29 CFR § 1910.132 et seq.) In California, the Occupational Safety and Health Act of 1973 held that the definition of "employee" meant individuals hired for pay. However, the state amended the law in 2001 to make the Act applicable to volunteer firefighters (Labor Code Section 6303 et seq.).

Consequently, fire departments must ensure their volunteer firefighters conform to most of the same training and safety requirements that career firefighters have. In this section, I will examine the two main costs associated with maintenance of volunteer firefighter staff: training and personal protective equipment.

Training

In California, there is no required state-level certification for volunteer firefighters. Individual fire departments set training policies and procedures, which may vary in breadth and scope. By the same token, the cost of training can vary widely.

Firefighter I is a standard for firefighter professional qualifications. Written by the National Fire Protection Association (NFPA), Firefighter I identifies the minimum job performance requirements for firefighters, primarily for structural fire duties. Firefighter I is the first step for career firefighters and is considered a practical standard for volunteers as well (Personal communication, Linda Menchaca, Regional Instructor & EMT Coordinator, California Office of the State Fire Marshall).

The Office of the State Fire Marshall (OSFM) is charged by state law to make available fire safety and education programs to fire departments that are chiefly comprised of volunteers (California Health and Safety Code Section 13159). In keeping with its mission to establish a fire-safe environment for the people of California, OSFM offers voluntary training and education to fire districts, including Firefighter I. OSFM implements its own training standards, publishes materials and manages curriculum, and provides accredited courses which lead to certification. OSFM contracts with some fire departments in the state to train firefighters either on site or in a classroom setting, in

specialized subjects such as EMT and HAZMAT. When a firefighter completes OSFM-sponsored training, OSFM sends a certificate of completion to the firefighter. Other departments may choose to conduct in-house training and do not require their volunteers to train through or report the completion of their training to the OSFM. It is not mandatory for a volunteer firefighter to hold OSFM certification.

OSFM administers two training programs. The first is the California Fire Service Training and Education System (CFSTES). CFSTES is a single, statewide system of fire service training. Firefighters who pass the CFSTES training program receive Firefighter I certification, and may go on to take more advanced or specialized training courses.

Volunteer fire departments may also offer CFSTES training courses. The lesson plan is the same as Firefighter I. When a volunteer completes the Volunteer Fire Fighter program, records must be kept on file in the department. Records are not submitted to the OSFM. After certification and an additional six months of experience, a volunteer may complete supplemental training and be certified by OSFM as a Firefighter I. Again, the records do not need to be submitted to the OSFM unless the individual is on a career track.

The second type of training administered through OSFM is the Fire Service Training Education Program (FSTEP). OSFM offers a series of hands-on training courses, delivered directly to volunteer and career firefighters through registered OSFM instructors. Courses may be tailored to suit the specific needs of a department. Courses include fire fighting, extrication, rescue, emergency vehicle operation, pump operation, and Incident Command System. Participants are awarded a certificate of completion by

the OSFM. However, FSTEP does not lead to Firefighter I certification like CFSTES does.

CFSTES and FSTEP instructors must be registered with OSFM. Some volunteer fire departments contract with outside instructors; others have instructors on staff.

Personal Protective Equipment

Personal protective equipment is a second-line defense when a hazard cannot be avoided or mitigated in a hazardous situation. It helps prevent injury, or it reduces the severity should injury occur.

Table 2.1 is an itemized list of personal protective equipment listed by the National Institute of Standards and Technology (NIST) as being the basic protective gear that should be worn by firefighters in structural fire situations (NIST 2002). I researched three online fire equipment stores: Galls (http://www.galls.com); Grainger (http://www.grainger.com); and American Air Works (http://www.americanairworks.com) to gather a low and high retail dollar figure for each component. The low estimate to equip one firefighter with all-new equipment at retail price is $3635; the high estimate is $5548.

Table 2.1

Range of Cost for Personal Equipment

Item	Low cost	High cost
Turnout Coat	$660	$1130
Turnout Pants	360	730
Helmet	300	340
Boots	130	200
Gloves	35	48
Self-Contained Breathing Apparatus	1600	2400

PASS Device	400	500
Radio	150	200
Total:	**$3635**	**$5548**

Do volunteer firefighters routinely wear a full complement of personal protective equipment when performing structural firefighting duties? The National Volunteer Fire Council Foundation conducted a survey to determine, among other things, the personal safety practices of firefighters. A questionnaire was distributed nationwide to 364 firefighters, 165 of whom identified themselves as volunteers and 50 as both volunteer and career. When asked if they wear personal protective equipment, eleven percent of the volunteer firefighters surveyed said they were not assigned equipment and did not use it. Sixty-five percent indicated they were assigned personal protective equipment but were not required to wear it in the line of duty. The NFVC Foundation recommended, among other things, increasing the number of firefighters assigned PPE and required to wear it during active duty up to 100 percent (USFA 2008).

Retention challenges

The USFA, in a 2007 field survey, identified two reasons why volunteer firefighters leave service: time burden and training burden. The main disincentive cited identified was the demand on their time. Respondents noted that having two-income households and holding multiple jobs mean less time for volunteering. Some volunteers object to increases in training requirements; others to higher emergency call volumes (USFA 2007). This response corresponds with more general findings of a 2005 Bureau of Labor Statistics survey. Former volunteers from various service areas were asked why they no longer engaged in volunteerism. Among 25 to 34 year olds, the majority

(59 percent) cited “lack of time.” Nearly five percent cited other reasons, including “lack of paid expenses” (U.S. Department of Labor 2005).

Conclusion

California requires fire departments to ensure volunteer firefighters have personal protective equipment, as well as adequate safety training, but the way in which that is accomplished is largely left to the discretion of the fire departments. Previous studies suggest volunteer fire departments sometimes do not issue new personal protective equipment, or do not require all such equipment to be worn in the line of duty.

The literature revealed two areas of direct expense for a fire department to maintain a staff of volunteer firefighters: training and personal protective equipment. There are a few questions to keep in mind going forward. Do volunteer firefighters routinely purchase their own equipment and supplement their own training? Do they have other, related expenses? If so, what is the range of those expenses? Finally, if there are expenses, do they serve as a disincentive to volunteering? In order to learn more about what is spent on training, personal protective equipment and other expenses, I interviewed fire chiefs in all-volunteer fire departments throughout California. In the next chapter, I will describe the survey methods in detail.

Chapter 3

METHODOLOGY

Introduction

To find out what the range of cost is for volunteer firefighters, we must go to the source – the fire departments where volunteers serve. The goal of this study is to identify and describe the range of variation associated with the cost burden for equipment and training for volunteer firefighters. My main source of information was a telephone survey of fire chiefs operating volunteer fire departments in California. The information gathered may be useful as a baseline of knowledge upon which to draw for a future, quantitative analysis. Learning who pays for volunteer equipment and training will help lawmakers explore policy options for the fire protection needs of California communities.

Research approach

Because I could find no previous studies on expenses assumed by volunteer firefighters, I conducted the study as a descriptive inferential analysis. King et al. (2004) describe *descriptive inference* as the process of understanding an unobserved phenomenon on the basis of a set of observations. It is an approach that works well when the range of variables in a given situation are not known. Observations are the values of the variables for each survey respondent, and may be derived from the interviews themselves or from additional background data. The function is to establish the outputs that answer the research question, while weeding out the off-topic outputs. The most relevant of the outputs may be examined further in subsequent studies. More

specific data may be pinpointed and gathered in time (King et al. 2004). Using the analytical method of descriptive inference, I hope to establish the outputs that answer my thesis question.

There are several advantages to the descriptive inferential study. First, it allows the analyst to observe phenomena, gather facts, and be open to correlations. Secondly, open-ended questions asked of subjects may capture nuances in a situation. Third, descriptions obtained through inferential methods may inform future studies.

The main drawback to this method is the random factor. Observations of only a few volunteer fire departments out of hundreds may not be a reliable measure of what constitutes systematic operation. Repeated tests over time might enable us to decide with confidence whether observations represent the status quo or are one-time events, but as this is a pilot study caution is needed in drawing conclusions given the potential for random error.

A second drawback is the potential for bias in the observations. Volunteer fire chiefs who provide the raw data in telephone interviews may have reasons for providing estimates that are systematically too high or too low. For example, they may want to make themselves appear to be in full compliance with OSHA regulations by exaggerating the levels of training or equipping staff. I sought to counter some of this potential for bias by offering anonymity to respondents, enabling them to speak more candidly.

The population

Most local volunteer fire departments in California are special districts or non-profit organizations. As such, the state or federal government do not require them to report demographic information such as number and type of personnel, number of stations or other characteristics. The State of California does not maintain a database of fire departments, except those administered by CalFIRE. However, USFA conducts an ongoing national census of all fire departments. Fire departments are not under statutory obligation to report to USFA, but most do. USFA estimates that approximately 75 percent of the fire departments in the U.S. are accounted for on their database. The census is available on USFA's website at http://www.usfa.dhs.gov/applications/census/.

In December 2009, I downloaded the census, at which time 833 fire departments were listed in California. Table 3.1 shows the distribution of departments by type.

Table 3.1

Distribution of Fire Departments

Career	Mostly career	Mostly volunteer	Volunteer	Total
191	130	260	252	833

Source: USFA

I decided to narrow this interview pool to all-volunteer fire departments, because I wanted to concentrate on departments where all the firefighters were non-professional, with "day jobs" that were not necessarily in the fire safety field. By concentrating on all-

volunteer departments, I attempted to factor out firefighters who may be inclined to pay for some or all of their own training and equipment as a career investment.

I further narrowed the population to local fire departments. Table 3.2 shows that most of California's all-volunteer fire departments self-identify as local. "Local" departments are special districts or non-profit organizations serving a city or region.

Table 3.2

Distribution of Volunteer Fire Departments

Type	Number of departments	Notes
Local	238	Generally special districts or non-profit organizations
Federal	1	Associated with the U.S. Forest Service
Contract	3	A non-profit contracts at the level of local government (county, city)
Private / Industrial	4	Private firms where regular employees double as fire personnel when needed
Tribal Government	2	Most tribal fire departments staff career firefighters; only two list their staff as all-volunteer
Other	4	
Total:	252	

Source: USFA

What remained was a population of 238 local, all-volunteer California fire departments, staffed by 4,032 active volunteer firefighters.

Interviews

Before the selection process began, the questions and consent form were reviewed by the PPA Human Subjects Review committee. Appendix A is the disclosure and

consent form which was mailed to all participants in advance of the interviews. Appendix B is the survey protocol.

For the survey, I decided on a structured interview format, I had the option of conducting this survey using an online survey instrument but I decided to use a telephone survey for three reasons.

First, USFA does not publish email addresses for fire chiefs. Email contact information was not readily available. The census includes department websites, but only a third of the participating fire departments indicated one. To have interacted with fire departments by online means, I first would have had to call or write to each randomly-selected department and ask if the fire chief would be willing to share an email address or to take a survey online. I felt that, since I was initiating contact by telephone anyway, conducting the survey by telephone would be more efficient.

Secondly, I could not assume the individuals I wanted to reach would be uniformly Internet-proficient. The cohort was to be made up of primarily rural fire chiefs whom I was contacting in the off-season. I could not be confident that they would have email, check it regularly, or be comfortable with web-based interactions.

Finally, the questions did not lend themselves to a written interview format because they were open-ended and called for opinion. There needed to be the option to pursue a line of questioning.

For much the same reasons, I also did not opt to send written surveys to fire chiefs. I did not have confidence I would get an acceptable rate of response for two reasons.

First, I wanted to contact the chiefs in the off-season for fire incidence, when they would have more time to answer a survey. But in deciding this, I knew I would sacrifice the assurance that there would be staff at the department or that a letter would be opened in a timely manner.

Secondly, as stated previously, some of the questions did not lend themselves to a written format. Because there were open-ended questions, I wanted to elicit complete answers. A respondent faced with open-ended questions in a survey might opt to stop filling out the survey, and neglect to send it back.

Fire departments were selected for interview using a random number generator, available online at Random.org (http://www.random.org). I telephoned each randomly-selected fire department. When I reached the department's fire chief, I asked if he or she would be willing to participate in a telephone survey. If the chief agreed, I sent a consent form to the chief by U.S. mail, along with a self-addressed, stamped envelope. I asked respondents to read and sign the consent form and mail it back to me. Alternately, respondents could send back the form by fax, using a number provided.

The interviews were conducted during March 2010, a month that is well out of "fire season." It turned out there were advantages and disadvantages to this choice of month. On the positive side, departments were not busy; the timing of interviews never conflicted with emergency work. However, it was sometimes difficult to contact the chiefs because many department offices all but shut down during the off season. Some chiefs I tried to contact were on vacation, leaving staff to field non-emergency calls. It

should be noted that the phone numbers were the departments' non-emergency lines; every voice mail I reached advised me to call 9-1-1 in the event of an actual emergency.

The fire chiefs I reached were courteous, amenable to being interviewed, and very forthcoming with answers. When I would describe my thesis and the reason for requesting a telephone interview, they usually wanted to participate in the interview on the spot, even before signing the consent form. Approximately half the potential respondents I reached had access to a fax machine to receive and send back the form. Two asked to have the form sent by email; they returned the signed form by U.S. mail. The rest preferred to receive the form by U.S. mail.

Some fire chiefs were not reachable. I called each selected department three times before moving it to a "no response" list and replacing it with another randomly-selected department. One department agreed to the interview but was subsequently unavailable despite repeated voice mail messages. Another department responded but was subsequently eliminated because it was a specialized agency whose main purpose was to loan equipment and fire engines to volunteer departments. Several departments submitted consent forms but were subsequently unreachable for the interview. I discontinued an interview with one department when I learned it had recently hired career firefighters. In all, 19 departments did not answer their phones or return calls.

When I had interviewed twelve local, all-volunteer fire departments, I stopped contacting departments. Gathering these twelve interviews took me approximately 20 hours over three weeks. Table 3.3 gives an overview of each of the twelve fire departments.

Table 3.3

Volunteer Fire Department Interviewees

Department	Organizational Type	Number of Volunteers	Northern / Southern CA
A	Non-Profit	8	N
B	Special District	16	N
C	Special District	16	N
D	Special District	17	N
E	Non-Profit	20	N
F	Non-Profit	20	N
G	Special District	20	N
H	Special District	22	N
I	Non-Profit	30	N
J	Non-Profit	39	S
K	Special District	59	N
L	County	120	N

In an effort to allow fire chiefs to speak freely, their responses are being kept confidential. I will refer to the departments in this thesis by letter instead of name. I have arranged the departments by staffing numbers; Department A had the lowest number of active volunteers, and Department L the highest number. Eleven of the twelve departments were in Northern California, which encompasses all counties above the northernmost boundary of Monterey, Kings, Tulare and Inyo counties. One department was in Southern California.

At the scheduled time, I contacted each fire chief by telephone. Interviews began with an explanation about the reason for the survey and the way in which the results will be tallied and used. I emphasized respect for the privacy of respondents, and offered the respondents access to the published report. Interview questions were structured to garner specific data, but the last questions were opinion-based and open-ended to allow

respondents the opportunity to expand on ideas or to bring up issues they felt were relevant. Each interview took approximately 25 minutes. he interviews covered these topic areas:

Background
Number of firefighters (verifies the department uses only volunteer firefighters)

Training
Average number of hours of training
Average cost of firefighting / emergency response training
Cost burden – who pays for training

Equipment
Percentage of firefighters equipped with basic personal protective equipment
Average cost of personal protective equipment
Cost burden – who pays for equipment

Other expenses
A discussion of costs imposed on volunteers
A discussion of the perception of cost burden on the part of participating volunteers

Conclusion

Using a descriptive inferential method of analysis, I conducted telephone surveys of 12 randomly-selected, all-volunteer fire departments, gathering observations in the form of structured interviews. I narrowed down the population of fire departments in the state to local, all-volunteer departments. In the next section, The purpose was to learn the value of variables concerning training, personal protective equipment, and other expenses, as well as the costs specifically incurred by volunteers themselves. I will analyze the observations and present conclusions.

Chapter 4

FINDINGS

Introduction

This thesis is an attempt to answer several questions concerning the cost burden to volunteer firefighters. Do volunteer firefighters routinely pay out of pocket for their own training, equipment and other expenses? If they do, what is the range of expense they encounter? Do they consider this cost a disincentive to service?

In my review of the available literature, I found information on the cost to train and equip firefighters, but could find no estimated costs assumed by volunteers themselves. To learn more, I conducted a telephone survey of fire chiefs serving all-volunteer fire departments. Respondents were asked questions relating to the cost of maintaining a volunteer staff, focusing on training, personal protective equipment, and other expenses.

Training

Table 4.1 displays my findings regarding basic training hours and cost. For the sake of anonymity, fire department name are replaced with letters.

Table 4.1

Basic Training Hours and Approximate Cost

Department	Basic training hours	Approximate cost of basic training per volunteer	Do volunteers pay for some or all of basic training?
A	400	$5000	No
B	40	$200	No
C	350	$400	No
D	220	$1000	No

E	120	$2000	No
F	400	$1000	No
G	110	$2000	No
H	208	$2800	No
I	120	$900	No
J	*	$1000	Some
K	48	$200	No
L	114	$570	No

Respondents were asked the number of hours of training needed to give an inexperienced volunteer the basic skills necessary to be safe and competent on the job. Responses varied widely, from 40 hours to 400. Departments with the largest number of hours, such as Department C, said volunteers must complete Firefighter I training. Other departments require similar training but not to the level of Firefighter I. Department A explained firefighters work through a task book at their own pace, and competency is tested by the fire chief, while Department F stated its course is fairly regimented but is not quite to Firefighter I level.

Fire departments with the lower training hours focus on core competencies. Department B described a 40-hour training course to learn basic safety rules, fire hose lays and tool usage. Department K puts volunteers through a 48-hour “probational academy,” including basic structural fire training. Department J opted not to answer the question, stating required hours depended entirely on an individual’s knowledge level.

Cost of training also varied widely. Some departments spend practically nothing; others spend as much as $5000. Yet all but one department stated they pay 100 percent of the basic training cost. Some respondents mentioned that volunteer firefighters occasionally take additional or specialized training at their own expense.

Of the respondents, only Department J requires its volunteers to pay for some of their basic training. Volunteers spend their first year on probation, during which they must enroll in Fire Academy at their own expense. Department J's fire chief explained that approximately half their volunteer force is on a career track and expects to foot the bill for part of their training. The other half, being community members with no aspirations to move up in fire service, must also attend Fire Academy. The chief feels that the community volunteers do not consider the expense a hardship.

Most departments said their volunteers actively seek in-house training in order to specialize, whether for the sake of a future career in fire safety, or just to be of greater use to the station and the community. Additional training, especially specialized training, is encouraged but not required.

Fire departments are cognizant of federal grant programs. Most of the departments surveyed actively seek funds. The funds are earmarked and must be used for the purpose intended. Two respondents said their departments give stipends to volunteers in training, which they were able to provide through federal grants. Department B uses federal grant money, earmarked to give volunteer firefighters a stipend of $10 per training day and another stipend per call. A SAFER grant is used by Department I to give its volunteers $30 per training classes.

Personal Protective Equipment

The twelve fire departments answered questions concerning personal protective equipment. "Personal protective equipment" meant basic items assigned to each firefighter to stay safe while engaged in firefighting. While firefighters are capable of

carrying quite a few items, I asked specifically about four key pieces of equipment, identified in a NIST study as the basic pieces needed for safety in structural fires. Responses are detailed in Table 4.2 below.

Personal protective equipment

During the interview, I defined personal protective equipment as helmet, turnout (coat), pants, gloves and boots. Firefighters require two sets - one set for structural fires, the other for wildland fires.

PASS (Personal Alert Safety System) devices – a personal safety device used by firefighters in a hazardous environment such as a burning building, which sounds a loud audible alert to notify others in the area that the firefighter is in distress.

SCBA (self contained breathing apparatus) – a device worn by firefighters to provide breathable air in situations where there may be poisonous gases, airborne particulates, or smoke in the surrounding area.

Radio – a handheld radio for communication.

Table 4.2

Issuance of Personal Protective Equipment

		Used in the course of firefighting duty?					
Dept.	Approx cost of basic PPE	Personal protective clothing	PASS device	SCBA	Radio	Do volunteers pay for some or all of their basic PPE?	Comments
A	$3000 - $3500	x	x	x	Assigned to engines	No	
B	$3000	x	x	x	Assigned to engines	No	

C	$6000	x	x	x	x	No	Some volunteers buy backpacks, wildland gear
D	$5500	x	Assigned to structural fires only	Assigned to engines	x	No	
E	$5000	x	x	x	x	No	
F	$5000	x	x	x	Assigned to engines	No	
G	$5500	x	Assigned to engines	Assigned to engines	Assigned to engines	No	Basic boot credit. Upgrade optional
H	$8400	x	x	x	Assigned to engines	Boots	Volunteers pay for wildland boots
I	$6000 - $7000	x	x	x	x	Boots	Volunteers pay for wildland boots
J	$5000	x	x	x	Assigned to engines	No	
K	$3000	x	x	Assigned according to conditions	Assigned to engines	Boots	
L	$5000	x	x	x	Assigned to engines	Boots	Volunteers pay for both structural and wildland boots

All respondents surveyed said basic protective clothing is issued free of charge to every volunteer firefighter, with the exception of wildland boots. Department H stated the department issues a full set of personal protective gear to firefighters, including radios which the department priced at $1800 apiece. Likewise, Department E issues a full complement of equipment to every volunteer, with the idea that volunteers often

have no time in an emergency to drive to the firehouse and ride the engine to the scene of a fire; firefighters usually drive directly to a fire with their equipment stowed in the trunk of their cars.

However, most respondents stated that the other items in the survey (PASS devices, SCBAs, and radios) are frequently carried on fire engines and passed out among firefighters on site as needed. For instance, Department G said to avoid liability, the department ensures firefighters have proper equipment, but many items are on the truck and are issued to the firefighter on site, not assigned individually.

Respondents stressed that personal protective equipment for staff volunteer firefighters is safe and in compliance with safety regulations, but several admitted their equipment is old and worn. Department L said all new personal protective equipment has been paid for by federal grants. Previously, Department L's equipment was "ragtag" and old, not in good working condition. The department basically ignored requirements for up-to-date equipment. However, with the infusion of federal grant funds, the department was able to purchase new equipment.

The major exception to the issuance of equipment was wildland boots. Four of the largest departments said they require firefighters to purchase their own wildland boots. There were several reasons given. Cost was a factor most frequently cited. One chief explained that a firefighter typically wears out a pair of wildland boots every year, and the department cannot afford to replace them. Wildland boots are generic work boots that can be worn on all occasions. The department chiefs felt that wildland boots cross the line into personal wardrobe. Firefighters typically wear their boots as everyday wear.

It would be unhygienic to distribute used boots to recruits, so volunteers are required to purchase their own. Department L requires the purchase of both wildland boots and the rubber boots used in structural fires.

Optional upgraded equipment

Respondents stated that, while the personal protective equipment issued to volunteers is adequate for fire safety, they are usually second-hand and have a few years' wear on them. Sometimes volunteer fire departments purchase older, second-hand personal protective equipment from larger fire departments. In other cases, the fire department simply does not replace older equipment timely. In either case, sometimes there are not enough optional or upgraded items to go around. For these reasons, volunteers frequently spring for their own helmets, gloves, wildland harnesses, and other pieces of personal protective equipment.

Beyond a desire to be better-protected, respondents said volunteers like to show pride in their work through buying upgraded equipment. Some volunteers think of optional upgrades as investments in a hobby; others as investments in their career in the firefighting profession.

Other expenses

Respondents were asked if the volunteer firefighters in the department incur out of pocket expenses. I left this question open-ended in order to capture any types of expenses that might be a problem in that particular department. Figure 4.1 is a matrix showing the responses, and the number of respondents who mentioned the particular expense.

Figure 4.1

Other Monetary and Non-monetary Expenses

Commute time (1)	Babysitter (1)	Boots (some or all of expense) (4)
Lodging for out of town training (1)	Meals (1)	Gas (5)
Meals for out of town training (1)	Potlucks (1)	Supplemental equipment (5)
Time off work (1)	Car maintenance (2)	Supplemental training (6)
	Car repair (3)	Time away from family (6)

Cost burden

I asked fire chiefs if, in their professional opinion, volunteer firefighters experience a cost burden. “Burden” was kept undefined; respondents were encouraged to discuss opinions they had heard expressed, or issues they had encountered as fire department administrators and as volunteers themselves.

Only a few respondents answered with an unqualified yes. Department E explained many volunteers are looking for a career position. The department assists in any way it can with most training (driver’s training, EMT, Firefighter I, etc.) There are some expenses the department just cannot afford, so the firefighters must assume the costs themselves.

The most common complaint was the time spent away from home and family to be in service. For instance, Department G’s chief described complaints about the cost in time away from family, friends, jobs, etc. He said, however, that the small costs of gas and so forth are never the subject of complaints. The volunteers consider those costs the price of being a good community member. But the time constraints are not as easy to

put up with. Department H also said time constraints are a burden, such as getting up at 3 a.m. to help a neighbor.

Other respondents, such as the Department A representative, said while volunteering is a burden, the volunteers do not consider it so. They consider the job their hobby; they like to add onto their knowledge and equipment with an attitude of acquiring "the latest and greatest" for their hobby.

Several respondents took the opportunity to stress that their volunteers are not under a cost burden. Department D, for instance, said some volunteers opt to purchase optional accessories or upgraded equipment, but do so at their own expense, and Department F emphasized the local government spends a lot to train and equip volunteers properly.

Department I took a philosophical attitude, pointing out if there was a cost burden, these people would probably not volunteer in the first place. A training stipend from federal grant money helps, but the volunteers would choose to participate anyway; therefore, the costs must not be prohibitive.

Analysis

Training. The range of training costs depends on four basic factors. First, there are no state-mandated training requirements for volunteer firefighters. Proficiency requirements are dictated at the level of the fire department. California, through OSFM, offers a volunteer firefighter certificate program, but there is no state-level requirement for volunteers to be certified. Some firefighters – particularly those on a career track – may opt for specialized training above and beyond the department's requirements. The

department is under no obligation to fund optional training. Sometimes career-track firefighters put in hours on a volunteer basis in order to qualify for certifications. They may already be fully trained, not trained much at all, or they may be attending Fire Academy at their own expense while serving as volunteers.

Secondly, the cost of trainers can vary widely. Some departments contract with private tutors whom OSFM has certified as instructors but who may charge whatever they wish. Some utilize the skills of volunteer trainers within the department or district.

A third factor is economies of scale. Department L, a large, county-run department, typically trains ten students per class, using two instructors hired at a cost of $5700, which divides into $570 per student. Other, smaller departments only train one or two at a time, thus facing a higher cost per student.

And finally, individuals come into a department with all different levels of previously-acquired certification and training needs. Some are preparing for a career in fire safety.

Personal protective equipment. Equipment is issued to firefighters by the department. But there are several problems. The first is that the equipment is often old and second-hand because volunteer fire departments cannot afford new equipment. These observations occurred in the survey and are also borne out in the literature.

Secondly, volunteer firefighters regularly pay for supplemental equipment, some of which constitutes an upgrade. This may signal a need among volunteers for safer equipment.

Third, radios and other equipment are most often assigned per fire instead of per volunteer. This may be a symptom of shortages, or it may be a logical distribution.

Other expenses. Volunteer firefighters experience monetary and non-monetary costs for being in fire service. However, it is still a matter of conjecture whether firefighters experience these costs as burdensome. It is pragmatic to say volunteers would not be there it if they could not afford it. But if the numbers are any indication, fewer individuals are volunteering in fire service than they used to, which could easily point to an increased feeling that the job is too much of a burden to handle.

Conclusion

The survey responses offered insights into the range of costs for training and personal protective equipment required for volunteer firefighters to conduct work safely. I found that, for the most part, the cost of being a volunteer is not prohibitively high. All but one fire chief reported that volunteers do not pay for their own basic training. Few departments require volunteers to buy the basic personal protective equipment – with the exception of wildland boots – but the equipment that is issued is sometimes second-hand and showing wear, which may be one reason why volunteers purchase upgrades out of pocket. Federal grant money is instrumental in helping purchase equipment. Some fire chiefs reported that, while some volunteers have monetary and non-monetary expenses, some but not all consider the costs a burden. The fire chiefs attribute this to the fact that some volunteers are aspiring career firefighters and regard expenses as an investment in their future, while other, non career-oriented firefighters enjoy spending their time and money on community service.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The goal of this study was to learn what, if any, cost burden is assumed by California volunteer firefighters. The literature revealed two areas likely to be sources of out of pocket expenses for volunteers: training, and personal protective equipment. In addition, previous studies revealed that volunteer firefighters experience a time burden for undertaking the training and duties associated with fire safety. I interviewed twelve volunteer fire departments to gain a picture of cost burden.

What I learned is that, although volunteer firefighters do have out of pocket expenses, the costs do not appear prohibitively high, and volunteers for the most part accept some expenses as part of the responsibility of service. Some volunteers are also on a career track, which may induce them to regard the purchase of training and equipment as an investment. Further, fire departments are taking practical steps to maximize resources, such as assigning equipment on site and applying for federal grants.

Limitations to this study

I designed this paper as a pilot study, to explore avenues of potential cost constraints for volunteer firefighters. As such, it is the first step in the research process. However, there were several limitations.

However, there were several limitations.

1) I interviewed only fire chiefs; I did not have the time or the budget to interview volunteers.

2) The number of fire departments in the study made up a very small percentage of the volunteer fire departments in the state.

3) Individual fire department budgets were not readily available, and I did not have the time to visit the selected fire departments and conduct a more thorough fiscal analysis.

4) Though I offered anonymity to respondents, there is no guarantee that the potential for bias in responses was completely eliminated.

Recommendations

Follow-up study. The next step should be a comprehensive, quantitative survey of volunteer firefighters themselves. There are two reasons to conduct a follow-up study. First, as this thesis was based on a limited sample size, a follow-up study would test the conclusions. Secondly, fire departments in this survey reported using second-hand personal protective equipment, having not enough equipment to go around, and having widely varied training courses. A follow-up study would help us get a clearer picture of the state of volunteer fire departments in California, as well as the obligations the firefighters experience.

An organization undertaking this project should ensure it has the time and resources needed to survey a substantial percentage of the volunteer firefighter population. The study should incorporate the use of a focus group to review survey questions. The survey itself should include not only questions on the nature and cost to

firefighters in the areas of training, equipment, and related expenses, but should explore the perceived cost of the time spent training and engaging in fire safety duties. Background questions should be included, covering household income, job and family obligations, and the number of hours dedicated to volunteering, so that we may learn the average percentage of income spent on fire safety-related obligations. We should also learn more about the general attitude toward the obligations of volunteerism. From there, we can consider policy options to mitigate disincentives, and potentially make volunteer firefighting a more attractive prospect. Such a thing would be of great use to smaller communities that rely on volunteer fire departments for their fire safety needs.

Alternative to tax incentives. One alternative to assisting volunteer firefighters is to offer a tax incentive that helps compensate individuals for their expenses in fire service, as was suggested in 2007 with the introduction of AB 1700. However, the downside to a tax incentive is that it does not get to the heart of the matter: a lack of resources at the level of the fire department. As an alternative to a tax incentive for individuals, the state should consider policy options designed to help communities that wish to augment the training and equipment budgets of volunteer fire departments. Such a policy would directly aid fire departments to comply with OSHA health and safety requirements. Funding models could include grants, matching funds, and low-interest loans.

Conclusion

Volunteerism has a long tradition in the United States, and still serves as an efficient and economic service, particularly in rural areas. Though society has urbanized

and the population has increased, there is still a need for the cost savings and the community spirit that is offered by volunteer fire service. This study has identified the out of pocket expenses that California's volunteer firefighters pay. I have concluded that they are not facing burdensome costs, but that further study is needed to learn more about their obligations. It is possible that fire departments are faced with inadequate equipment or resources for training purposes. If so, policy changes should be centered on the fire departments, not the individuals. With thoughtful research, we may be able to take steps to support the men and women who volunteer their time in fire service in order to keep our communities safe.

APPENDICES

APPENDIX A

Consent to Participate in Research

Dear Sir or Madam:

You are being asked to participate in research which will be conducted by Pam Martin, a graduate student in the Department of Public Policy and Administration at California State University, Sacramento. The purpose of the study is to learn the ways that firefighter training and personal safety equipment are funded in volunteer fire departments and districts in California. This information will shed light on the cost burden to fire departments, fire districts and volunteer firefighters, in order to explore possible fiscal policy options.

You were chosen at random to participate in this study. Overall, 12 volunteer fire department administrators will be included in the study. Participation will involve a telephone interview which will last approximately 20 minutes. You have the right to refuse to answer any questions, and to stop the interview at any time.

Your participation will be kept confidential. Neither your name nor the name of your fire department or fire district will be used in the final report. However, the study will be published, and the results will be made public.

There will be no compensation offered for participation. You may not personally benefit from participating in this study. However, you may request a copy of the final report.

If you have any questions about this study, you may contact Pam Martin at [cell phone number], or by email at [email address]@gmail.com.

Will you consent to participate in this study?

- □ No, I do not consent to participate.
- □ Yes, I consent to participate.

Your signature below indicates that you have read this page and consent to participate in the study. If you agree to participate, you will be contacted by telephone to arrange a date and time for the interview.

_____ _____

Signature Date

_____

Fire Department / Fire District Telephone number

Please mail or fax this sheet to:
Pam Martin
[address]
[fax number]

APPENDIX B

Interview Questions

Name of Department _____
Chief _____
Date of Interview _____

1. How many volunteer (non-paid) firefighters are currently on staff?

2. Describe the training required of new volunteers in your department / district.

3. Approximately how much does it cost to train an inexperienced volunteer?

4. How is the cost of training volunteer firefighters generally distributed? (Percentages)
   a. State (CalFIRE)
   b. Fire department or district
   c. Volunteer
   d. Private funds
   e. Government grants
   f. Other (specify)

5. Of the following, what personal safety equipment is used by volunteer firefighters during structural and wildland fires?
   a. Protective clothing
   b. PASS devices
   c. SCBAs
   d. Radios

6. Approximately how much does it cost to equip a volunteer firefighter?

7. How is the cost of personal safety equipment for volunteer firefighters generally distributed? (Percentages)
   a. State (CalFIRE)
   b. Fire department or district
   c. Volunteer
   d. Private funds
   e. Government grants
   f. Other (specify)

8. Do the volunteer firefighters in your department / district incur out of pocket expenses to train and equip themselves?

9. [If yes] What is the approximate cost to volunteers for their own training and equipment?

10. [If yes] In your experience, do volunteers consider these costs to be a burden?

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