Palmer Lake Fire Rescue

Palmer Lake, Colorado

Fire Department Agency Assessment

May 2019

Emergency Services Consulting International
Providing Expertise and Guidance that Enhances Community Safety

25030 SW Parkway Avenue, Suite 330 Wilsonville, OR 97070
E-Mail: info@esci.us • Corporate Office: 503.570.7778

TABLE OF CONTENTS

ACKNOWLEDGMENTS

Emergency Services Consulting International (ESCI) would like to acknowledge that without the assistance and support of the Town Administrator, Town administrative staff, Police Chief, and personnel of the Palmer Lake Fire Department, this project could not have been successfully completed.

Town Staff

Cathy Green, Town Administrator

Jason Vanderpool, Police Chief

Valerie Remington, Finance Officer/Human Resources Director

Agency Staff

Weston Oesterreich, Fire Captain

William Berry, Lieutenant

Chris McGann, Lieutenant

EXECUTIVE SUMMARY

ESCI was requested to evaluate the Palmer Lake Fire Department (PLFD) and determine the current conditions compared to industry standards and practices. This was to consider other options available including improvement of the existing department and potential for contracting the fire service to an outside agency.

Palmer Lake (Town) is a small municipality in northern El Paso County, Colorado. The Town encompasses slightly over 3 square miles and has a population of approximately 3,000. The fire department averages between 360 and 390 calls for service each year. The department operates out of one station with one engine, one Type 6 wildland unit, and other miscellaneous response apparatus. Staffing consists of 3 full-time and 4 part-time members, and 16 volunteers. The department operates on about $350,000 per year.

This study assessed responses, and training and fire prevention activities. The report offers several recommendations for improvement. There are evaluations of the fire station as well as the apparatus and response vehicles. ESCI has also included a replacement schedule and estimates the needed funding to accomplish the replacements. The station requires significant repair that may result in less expense with the building of a new structure. Staffing levels are reviewed compared to national standards. The staffing required for residential fires or major incidents cannot be accomplished by the daily staffing levels. This requires mutual aid or automatic aid response from surrounding departments. Fully staffing for major incidents is not effective as the number of those calls are very low.

Four options are examined including status quo (do-nothing approach), improve fire department operations, combine law enforcement and fire into one public safety department, and finally have another department provide fire service. Each option is discussed for advantages and disadvantages as well as the cost of implementation. The Town of Palmer Lake must make the final decision. The information necessary to make an informed decision is provided.

ORGANIZATIONAL OVERVIEW

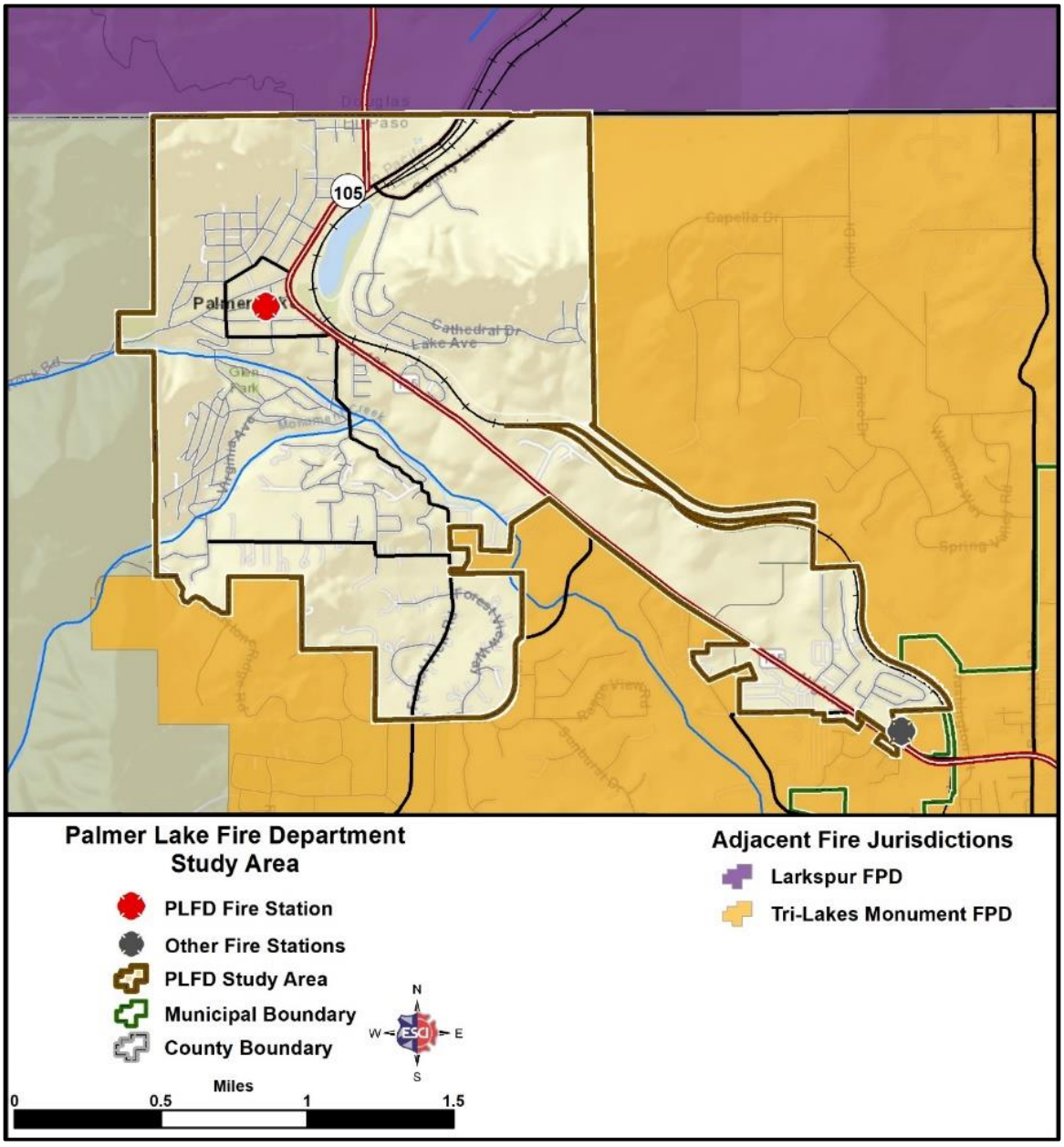
The Organizational Overview component provides a summary of the agency's composition, discussing its configuration and the services that it provides. ESCI combined data provided by Palmer Lake Fire Department management staff, as well as information collected during fieldwork to develop the following overview.

This is part of the review of current conditions within the PLFD. The purpose of this current conditions is two-fold. First, it verifies the accuracy of baseline information along with ESCI's understanding of the agency's composition. This provides the foundation from which the Agency Evaluation is developed. Secondly, the overview serves as a reference for the reader who may not be fully familiar with the details of the department's operations. Where appropriate, ESCI includes recommended modifications to current observations based on industry standards and best practices.

Service Area

Palmer Lake is a municipality that covers approximately 3-square miles in northern El Paso County. The Town's northern boundary is the northern El Paso County line. The area is a combination of mountainous areas on the west side which borders on Pike National Forest, and plains area to the east. The Town is bisected north to south by Colorado Highway 105. The south end of the Town borders the Town of Monument. The Town's governing body is the Town Board of Trustees with a Mayor, Mayor pro-tem, and five Trustees. Town management is led by a Town Administrator.

Figure 1: Palmer Lake Fire Department Study Area



Service Area and Infrastructure

The size and composition of a fire department's service area affect the type and number of personnel, fire stations, and vehicles that are needed to provide services efficiently. Sometimes complex decisions need to be made regarding the deployment strategies employed to properly position resources based on land area, geography, risk, cost, and similar factors. ESCI will provide a detailed assessment of current service delivery and effectiveness in the Service Delivery and Performance section of this report.

The Palmer Lake Fire Department is a combination department consisting of full-time firefighters, part-time firefighters, and volunteer firefighters. The department offers fire suppression, emergency medical services at the basic life support (BLS) level, and hazardous material response at the operational level. Emergency medical services (EMS) at the advanced life support (ALS) level is provided through a contract with American Medical Response (AMR) with back up by Tri-Lakes Monument Fire Protection District. Fire prevention services are provided on a limited basis with El Paso County providing some services. The department also provides fire and life safety education services. The department has one fire station.

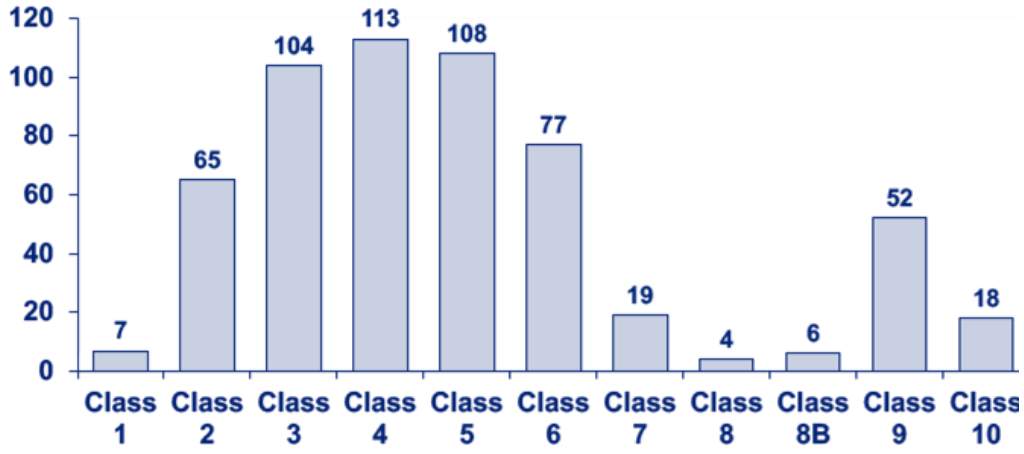
The department operates one structural engine, two Type 6 wildland engines, two utility vehicles, and one command car. BLS level emergency medical services are provided by firefighters with EMT certifications. The personnel are trained to a hazardous material operations level certification. Some fire and life safety education is offered by the department.

ISO Classification

Insurance Services Office (ISO) is a body that evaluates communities for fire protection capabilities. Many insurance companies use ISO information to determine the rates that they will charge their subscribers. The evaluation focuses on three primary areas: fire department—50 percent, water supply—40 percent, and alarm handling—10 percent. Under the relatively new evaluation framework, additional credit of 5.5 points can be obtained for Community Risk Reduction efforts. ISO classifies communities on a 1 to 10 scale. Class 10 is considered no protection. PLFD has an ISO rating of 4/9. This is a 4 for areas within 5 miles of the responding fire station and where there is water supply available within 1,000 feet. The 9 is for structures which are not within 1,000 feet of a water supply but still within 5 road miles of a fire station. Structures beyond 5 road miles are considered a classification 10 or the minimum fire protection classification.

The breakdown in classifications within Colorado is shown in the next figure. There are 113 departments that have an ISO classification of 4 out of 573 departments in Colorado with an ISO classification.

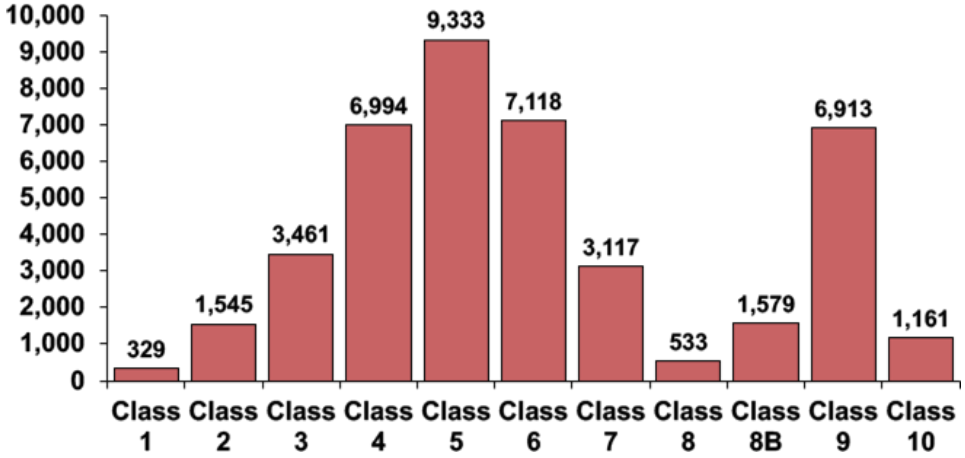
Figure 2: Colorado ISO Classifications[1]



[1] Verisk Analytics Insurance Services Office website. https://www.isomitigation.com/ppc/program-works/facts-and-figures-about-ppc-codes-around-the-country/.

The next figure depicts the number of departments within each classification nationwide. PLFD's rating of a 4 nationwide basis is one of nearly 7,000 departments.

Figure 3: ISO Classifications Nationwide



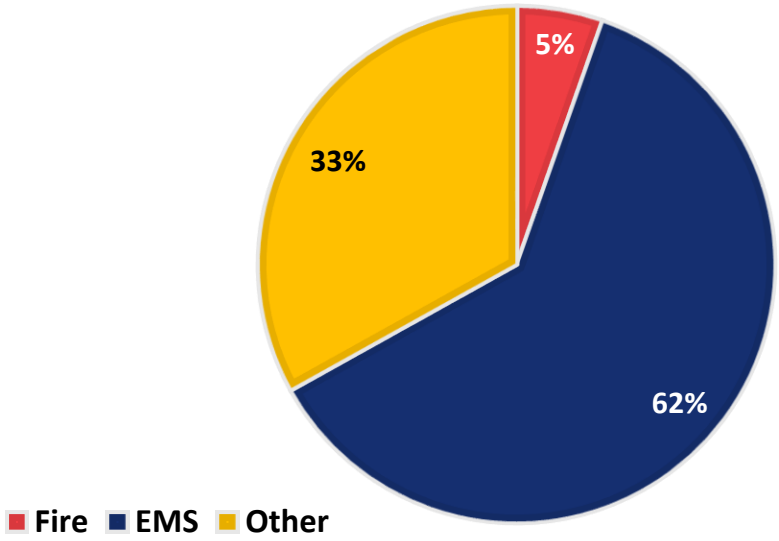
Service Demand

Service demand, or calls for service, are classified in categories specified by National Fire Incident Reporting System (NFIRS). PLFD service demand is divided by type as shown in the next figure.

Figure 4: Service Demand by NFIRS Incident Type, 2016–2018

NFIRS Category	2016	2017	2018	% of Total
1—Fire	21	22	17	5.4%
2—Rupture/Explosion	1	1	–	0.2%
3—Rescue/EMS	237	240	209	61.5%
4—Hazardous Condition	16	23	13	4.7%
5—Service Call	35	29	35	8.9%
6—Good Intent Call	29	31	38	8.8%
7—False Alarm	26	33	43	9.1%
8—Severe Weather/Natural Disaster	1	–	–	0.1%
9—Special Incidents	2	10	3	1.3%
Annual Incidents	**368**	**389**	**358**	**100%**

Figure 5: Calls for Service per 1,000 Population Comparison[2]



Governance

The very basis of any service provided by governmental or quasi-governmental agencies lies within the policies that give that agency the responsibility and authority upon which to act. In most governmental agencies, including PLFD, those policies lie within the charter and other governing documents adopted by the agency. The agency is formally identified as Palmer Lake Fire Department.

The PLFD governance configuration is typical for a Colorado municipality. The Fire Chief is responsible for the day-to-day operations of the department. The Fire Chief reports to the Town Administrator who provides guidance to the Fire Chief. The Fire Chief is responsible for preparing a fire department budget with the Finance Officer and the Town Administrator. The budget is presented as part of the Town's budget to the Town Trustees for approval. The Town retains legal counsel which is available to the Fire Chief for consultation. Town Board minutes are available online for public access.

Fire Chief Position

The Fire Chief until recently has been a volunteer. The Chief's responsibility has been to oversee the operation of the fire department. The Fire Chief's roles and responsibilities are defined under a job description. During the interim time period, since the Fire Chief has left, the Fire Captain is overseeing the fire department's day-to-day operations. The Police Chief is acting as the Fire Chief as well as his own responsibilities.

[2] National Fire Protection Association, 2016 NFPA Fire Department Profile Report. 1 Batterymarch Park, Quincy, Massachusetts, USA.

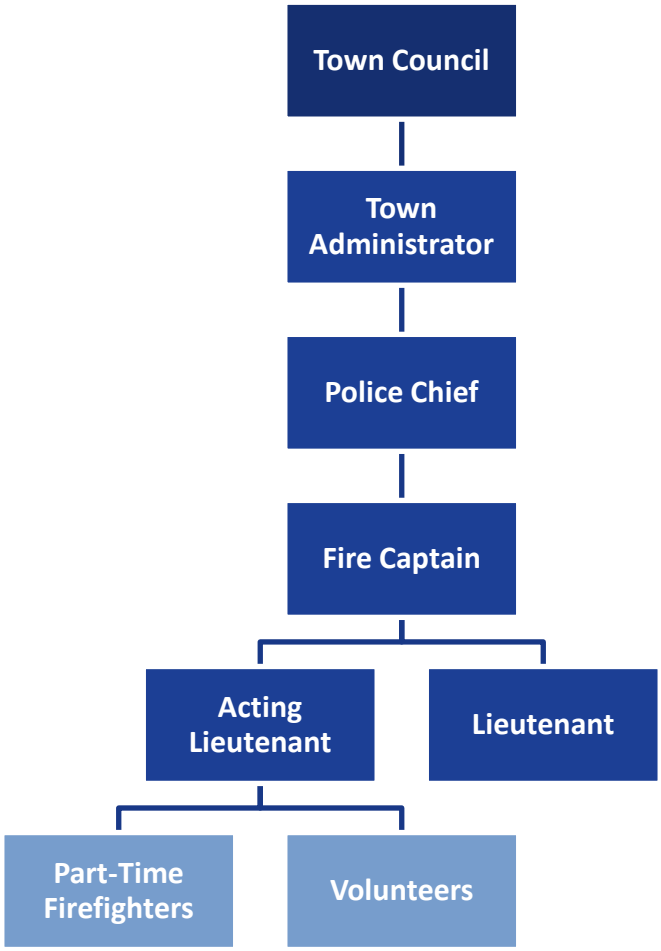
The Chief has been delegated the responsibility to hire and terminate volunteers. Employee actions for both part-time and full-time fire department employees are completed with direction from the Human Resources Director. Legal counsel is available to the Fire Chief. The responsibilities of the Fire Chief are varied, and they encompass both Board-designated and state statute requirements.

For resumption of the current operation, ESCI recommends that the Town hire a Fire Chief and that the Town Board evaluate the Fire Chief annually based on specific goals that the Board or Town Administrator sets for the Chief. This can be very helpful for the Chief to understand areas in which he or she is performing well, as well as areas for improvement. Other options presented in this report will offer alternatives to be considered.

Organizational Design

The structural design of an emergency services agency is vitally important to its ability to deliver service in an efficient and timely manner while providing the necessary level of safety and security to the members of the organization—whether career, paid-on-call, or volunteer. PLFD is organized as the typical fire department hierarchy. The following organizational chart represents the department as it is currently organized.

Figure 6: Organizational Chart



To operate effectively, the structure of a fire department needs to be clearly defined. The chart identifies roles and reporting structure. Most importantly, when followed it should limit opportunities to circumvent the reporting structure.

RECOMMENDATIONS:

- Replace the Fire Chief through a hiring process.
- Evaluate the Fire Chief annually.

MANAGEMENT COMPONENTS

Effective fire department management is a common challenge for fire service leaders. Today's fire department must address management complexities that include an effective organizational structure, a qualified workforce, maintenance of personnel competencies, adequacy of emergency response, and financial sustainability. In this section, the components of management will be discussed, however, it must be noted that good management alone will not guarantee a successful and effective organization.

Warren Bennis, in defining the difference between leadership and management made this observation, "Managers are people who do things right; leaders are people who do the right things." Both leadership and management are critical for the effective operation of a fire department. It is important to do things right and to do the right things. Having effective management ensures the procedures and appropriate functions are in place to operate successfully. Leadership is the skill to know how to implement these procedures and functions as they interface with people.

Foundational Management Elements

The development of baseline management components in an organization enables it to move forward in an organized and effective manner. In the absence of foundational management elements, the organization will tend to operate in a random and generally ineffective manner. The foundational documents answer the following questions:

- What is the purpose of the organization? (*mission statement*)
- Where the organization is going? (*vision statement*)
- How should the members treat each other and their customers? (*values or guiding principles*)

PLFD has two foundational management elements: a mission statement and a values statement. The mission statement is:

To assist and serve the community of Palmer Lake in the protection of life, property, and the environment and the prevention of emergencies that threaten residents and the Town. To stand ever ready to provide professional and timely first response.

The mission statement is the anchor that keeps a department from having mission creep, and it tells why the department exists. The purpose is clearly stated as to assist and serve to protect life, property, and environment, and to prevent emergencies that threaten the community. This allows the agency to change as methods and technologies improve but is still targeted for life, property, and environment. It allows for the reduction of risk through prevention activities as well as emergency mitigation. This statement also addresses how it will be done, i.e., "professional and timely response." Sometimes, it is important for the organization to reference other things in how the mission will be accomplished, such as safety or in a cost-effective manner. The mission statement meets the criteria for a useful statement. ESCI understands that the mission statement is in the process of being adopted by the Town Board.

The PLFD values statement should state what values are held important to the members of the fire department. A set of values can be beneficial to determine how members will act in various situations. It guides without a set of rules for every situation.

The following is the values statement for the department:

> ***Courage:*** *We strive to show courage by protecting the Town's people and visitors in the face of danger, putting the needs of others first.*
>
> ***Service:*** *We are always ready to respond at a moment's notice and support the community in emergency situations, emergency prevention, and help for those in need.*
>
> ***Dedication:*** *We are dedicated to this community, its people, and the fire department itself, displayed by the hundreds of hours of volunteer service our members have contributed.*
>
> ***Honor:*** *We hold ourselves to high standards of integrity in the care we provide and tenacity in the job we do.*
>
> ***Tradition:*** *We have a long history of community and fire department traditions that have been passed down for decades, and we strive to uphold these. We also recognize the importance of tradition in the fire service and do everything we can to respect those that have served before us and carry on their legacy.*

The values are similar for many fire departments. The values are those that impact the community. They state what is expected for members of the department to exhibit in their goal of fulfilling the mission. Courage, Service, Dedication, Honor, and Tradition are laudable goals. Each of these values are applicable to not only on-scene response, but also for every day operations within the firehouse. Values that are held in common by each of the members of the department can be powerful to hold each other accountable for conduct in both station life and how they give customer service. The department might consider looking at the values as the core set that all members should hold in common. Also, it is important that each member can interpret the values the same as their fellow members and can affirm that they hold the values in common.

The third statement that most fire departments have is a vision statement. This is valuable to paint the picture of where the department is going. In other words, it is what the department wants to become at some point in the future. This should be aspirational and not easily achieved but yet attainable with dedication and work. It may be beneficial to create a vision statement with a cross-section of the department and Town management.

Management Documents and Processes

An organization should establish appropriate documentation, policies, procedures, and identification of internal and external issues that affect the agency. Processes must also be established to address the flow of information and communication within the department, and to the Town's citizens.

Regulatory documents consist of policies and procedures, employee handbooks, and standard operating procedures or guidelines. These documents may be called different things and may be divided up differently in different departments. PLFD has an Operating Guidelines manual. The guidelines are updated annually or as needed. An Employee Handbook is in the process of being updated. The department Standard Operating Procedures (SOPs) are in place and reviewed annually or as needed with the full and part-time staff.

Internal and External Communications

The communication within the organization and to the external world are both very important. The following discussion describes internal and external communications in the department.

Internal Communications

The fire department has regular staff meetings twice a month and an all-members meeting once per month on the first Wednesday. There are no newsletters but email is used for communications with all personnel.

External Communications

The main communications methods with the citizens appear to be two websites and a Facebook page. There is a fire department page on the Palmer Lake Town website and there is a Palmer Lake Fire Department website at www.palmerlakefire.org. Neither website seems to be very informative. This is not a recommended procedure. ESCI recommends one website that is kept current and posting interesting and informative news items. This could be photos and a description of the latest internal training or information about the latest training taken by personnel outside the department to increase the department's overall knowledge base. Fire safety tips can be useful if rotated periodically. Facebook is maintained somewhat better and appears to be the main means of communications with the citizens. Both website and Facebook are effective ways to reach the citizens and typically will reach a different segment of the public. Facebook is often used as the means to share human interest stories and what is happening currently. Websites are where citizens will look for official documents or reports. It should be the source for insurance and response-related information.

Record Keeping and Documentation

In any organization, documentation of activities is of paramount concern. PLFD collects information regarding incidents in the records management system. The department uses Emergency Reporting Systems (ERS) as its records management system. Personnel records are kept in locked and secured files. Personnel exposure occurrences are documented and stored in the personnel files. Records for hose testing, gas monitors, and vehicle maintenance are completed and retained internally. Pump testing, SCBA maintenance and testing, testing breathing air, and ladder testing are all done by outside vendors and these records are maintained as well. Vehicle maintenance records are maintained internally, and hose testing is done by the firefighters.

Activity reports are given to the Town Board of Trustees on a routine basis; however, performance reports are not given routinely. ESCI recommends that performance, as well as activity reports, be given to the trustees on a regular basis.

Security

Fire department facilities and department vehicles are locked by key or combination locks. Computers are protected by passwords. Assets are tracked in the ERS system, but there is no periodic inventory to account for the location of the assets.

RECOMMENDATIONS:

- Consider the creation of a vision statement.
- Use one website and keep it fresh with information about the department.
- Provide Board of Trustees with activity and performance reports on a routine basis.

STAFFING

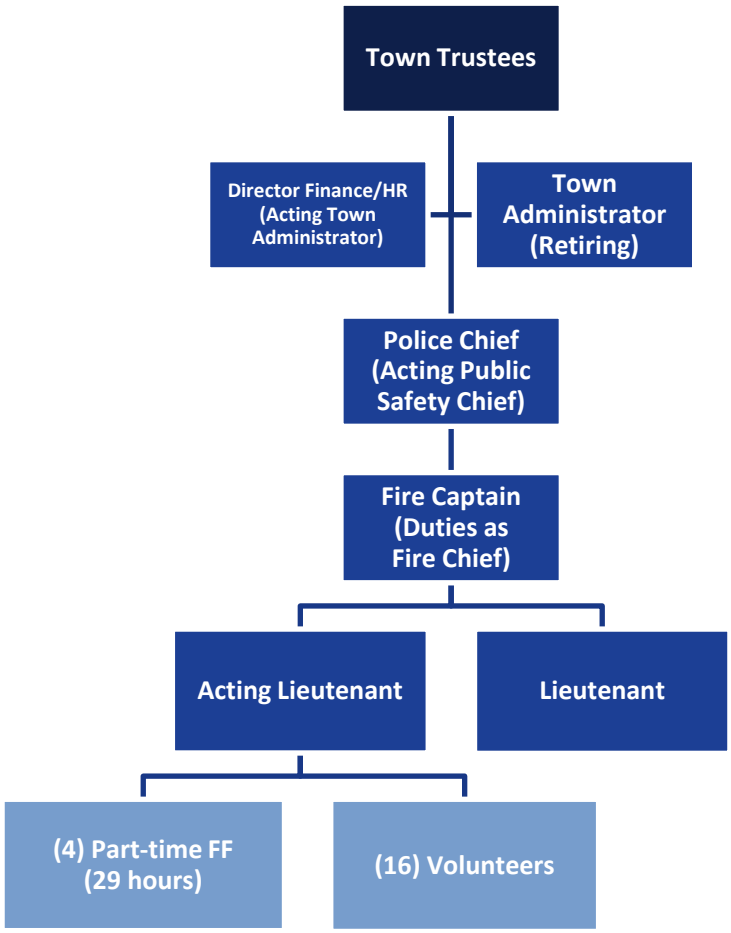
Palmer Lake Fire Department is staffed with a group of people who are the defining characteristic of dedication. Like most rural departments, PLFD has limited resources and staff but their commitment to providing service to their community is commendable. PLFD currently employs 3 full-time line officers, 4 part-time firefighters, and 16 volunteers. The administrative support staff is provided by the Town of Palmer Lake including Human Resources, Finance, and Personnel Management.

This section will provide an analysis of critical criteria associated with staffing and human resources management as defined in the Commission on Fire Accreditation International (CFAI). The criteria established by CFAI are considered industry best practices and will help evaluate PLFD's current state and potential areas for improvement.

Administration and Support Staff

PLFD is a unique combination department including career, part-time, and volunteer firefighters. The following figure breaks down the command structure and the corresponding span of control.

Figure 7: PLFD Command Structure



ESCI believes a general target for administrative and support staff to line staff to be between 12–15 percent. PLFD has a current ratio of 8 percent. In this particular situation, each support staff is performing multiple duties, and accomplishing required tasks in an efficient manner.

Designated Human Resources Manager (CFAI 7A.1)

Survey documents stated that the role of Human Resources (HR) is performed by the HR/Finance Director for the Town. It is unclear the number of hours dedicated specifically to PLFD. A report published by the Society for Human Resource Management (SHRM) supports the necessity for 1 HR specialist per 100 FTE.[3] Based on a total Town paid staff of 15, HR functions performed by the HR/Finance Director are within industry guidelines.

Recruitment, Selection, Retention, and Promotion

PLFD has demonstrated excellent community support by having 16 volunteers from a community of 3,000 people. All paid positions have been selected from the volunteer core. As the system grows, and volunteer demands become more challenging, there may be a need for a formal recruitment process. The traditional process for recruiting new firefighters are announcements and advertising through local publications and media. The Town of Palmer Lake is an exceptional combination of a rural lifestyle, combined with benefits of a large city in close proximity. Within 30 minutes, there is access to major universities (Colorado College, Regis University), a commercial airport and a variety of cultural activities. In addition, an individual can enjoy the benefits of living and working in a rural community. PLFD should perform focused recruitment in areas where individuals are not looking for an urban department but desire a department with an excellent reputation for service delivery in a rural setting. Examples of focused recruitment include:

- Utilize Social Media with Search Engine Optimization.
- Demographic research looking for similar systems.
- Recruitment at local, regional, and state EMS conferences.

Based on information gathered from DataUSA, the median household income in Palmer Lake is $57,727.[4] PLFD has a salary range of $23,088–$27,040 for line staff. A concern that needs to be considered when evaluating long term goals is the significant disparity between regional wages for firefighters and the wages offered by PLFD. Local and regional salaries are substantially higher and major increases in funding would be required for competitive recruitment. The following figure is a salary comparison for the area.

[3] Society for Human Resource Management (2015). *How Organizational Staff Size Influences HR Metrics.* Alexandria: Society for Human Resource Management.
[4] DataUSA. (2016). *Palmer Lake Co. https://datausa.io/profile/geo/palmer-lake-co/.*

Figure 8: PLFD Salary Comparison

Position	Denver Metro	Colorado Springs	TLMFPD	PLFD
Entry EMT/Firefighter	$58,672	$45,801	$52,496	$23,088
Post Probation EMT/FF	$71,386	Unavailable	N/A	N/A
Entry Paramedic/FF	$65,676	$52,101	$60,496	N/A
Post Paramedic /FF	$82,094	Unavailable	N/A	N/A
EMT (Private Ambulance)	$32,196 $39,952	$35,202	N/A	N/A
Paramedic (Private Ambulance)	$37,963–$48,177	$41,721	N/A	N/A

Increased salaries combined with a dynamic recruitment process would be an effective strategy for meeting the staffing needs of the future.

Most combination departments face the challenge of developing screening and hiring criteria for both volunteer and career positions. Organizations often have more stringent requirements for career firefighters compared to volunteer positions. The national shortage of volunteers combined with increasing demands makes volunteer recruitment difficult. ESCI recognizes the challenges associated with maintaining volunteer ranks. The emphasis on health and safety standards must be consistent throughout the organization. A recent study by the U.S. Fire Administration showed that 63 percent of firefighter fatalities were volunteer firefighters.[5]

PLFD does not require pre-volunteer medical exams but does require a physical ability assessment (modified CPAT). During the transition from volunteer to career firefighter, no additional assessments are required. ESCI recommends that all firefighters have annual medical and physical ability evaluations. This topic will be discussed in more detail later in this section.

Personnel Policies (CFAI 7C.1)

At the time of this review, personnel policies are in a state of revision. ESCI noted several discussion points that should be considered during the revision process. According to survey documents the full-time and part-time employees receive an annual evaluation. Since PLFD is a combination department, it may be beneficial to establish a formal yearly evaluation process for the volunteer core. Volunteers make up 70 percent of PLFD staffing. There appeared to be limited personnel records for the volunteer members. Focus on physical ability requirements, annual driving records, certification maintenance, and performance evaluations are useful when evaluating the current state of the organization. In addition, personnel records should include documentation for annual medical evaluations, and any event that is considered a potential medical exposure. The State of Colorado has presumptive cancer legislation. In order for an individual to receive full benefits, it is imperative to have supporting documentation for paid and volunteer firefighters for a baseline and throughout their career.

[5] U.S. Fire Administration (2016). Firefighter Fatalities in the United States, 2016. https://www.usfa.fema.gov/downloads/pdf/publications/ff_fat16.pdf

Another consideration relates to PLFD's disciplinary process. Documents provided describe a progressive disciplinary process administered through the Town. The final decision for disciplinary action is performed by the Town Administrator. ESCI recommends adding procedures for appeal to the existing policy. It appears that the current appeal process leads to the Town Trustees. Appeal processes that end at the level of governing councils or boards are often inefficient and ineffective. Consider an intermediary level, such as the acting Public Service Chief to make disciplinary decisions that can then receive final appeal with the Town Administrator.

Harassment Policies (CFAI 7C.2)

PLFD has an effective Harassment Policy. One of the documents provided to ESCI was the "Palmer Lake Fire Department Candidacy and Probationary Obligations." This document is required to be signed by all members of the volunteer core. There is not a reference to required behavior or adherence to personnel policies by volunteers. ESCI recommends orienting all volunteers to the personnel policies including those concerning harassment. Additionally, the orientation process should be documented to encourage effective implementation of policies. A potential source for a sexual harassment claim could result from the living accommodations in the station. The absence of gender facilities and sleeping quarters is a risk the Town should evaluate. Additional information will be provided on this topic in the Capital Improvement section.

Fire Staffing Levels/Performance

An adequate number of properly trained emergency responders are required in order to put the appropriate emergency apparatus and equipment to its best use in mitigating incidents. Insufficient staffing at the incident scene decreases the effectiveness of the response and increases the risk of injury for all those involved. The industry term for adequate staffing in the fire service is *Effective Response Force* (ERF). The definition for ERF is "the minimum amount of staffing and equipment that must reach a specific emergency zone location within a maximum prescribed travel or driving time."[6] Staffing numbers will be discussed in reference to NFPA 1720, the response objectives from the standard are displayed in the next figure.

Figure 9: NFPA 1720 Response Objectives

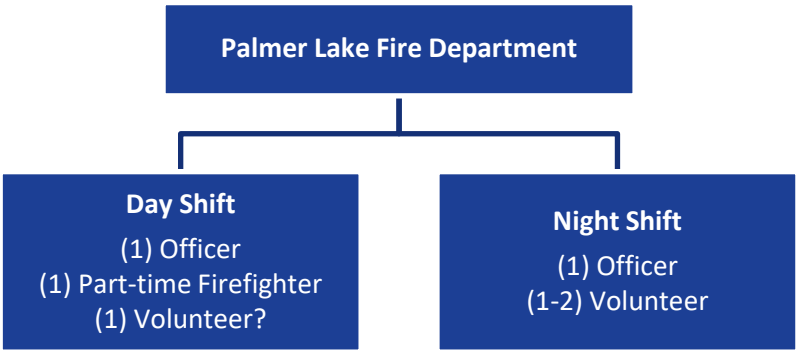
Demand Zone	Demographics	Minimum Staff to Respond	Response Time (minutes)	Meets Objective (%)
Urban Area	> 1,000 people/mi²	15	9	90
Suburban Area	500–1,000 people/mi²	10	10	80
Rural Area	< 500 people/mi²	6	14	80
Remote Area	Travel distance ≥ 8 mi	4	Directly dependent of travel distance	90
Special Risks	Determined by AHJ	Determined by AHJ based on risk	Determined by AHJ	90

* A jurisdiction can have more than one demand zone.
* Minimum staffing includes members responding from AHJ's department and automatic aid.
* Response time begins upon completion of the dispatch notification and ends at the time interval shown in the table.

[6] *Fire & Emergency Service Self-Assessment Manual, 8th Edition*; Commission on Fire Accreditation International.

Most rural fire departments face the challenge of maintaining the necessary level of staff 7 days a week, 24 hours a day. The following figure displays a normal staffing configuration for PLFD:

Figure 10: Staffing Matrix



The minimum required staffing for PLFD is 2 personnel. The remaining response for a structure fire comes from a "Box Alarm." The combined resources from the neighboring departments create the "Northern Group." The challenge PLFD is facing is the department does not have the manpower to perform a safe initial attack. Almost 70 percent of the necessary crew to make an initial attack or rescue will have to come from the neighboring agencies. In most cases, the support from Tri-Lakes Monument Fire Protection District (TLMFPD) will be able to supplement the necessary resources. The limited resources provided by PLFD may indicate an opportunity to explore the options for regional consolidation or merger.

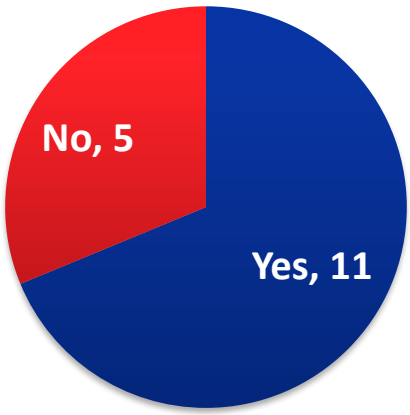
EMS Staffing Levels/Performance

Structure fires are very infrequent in the Town of Palmer Lake (approx. 1–2 year). The majority of call volume is for medical response. The above staffing configuration appears to work well for BLS response. The average response time for 2 certified EMTs within the Town was 5.39 minutes. This response is well within national standards. Ambulance transport and advanced life support care (ALS) is provided by American Medical Response (AMR) out of Donald Wescott Fire Station 1. TLMFPD has imposed a per call fee in addition to any insurance reimbursement that might be obtained. Palmer Lake felt this amount was prohibitive and chose to contract with AMR. Supporting data is limited but ESCI recommends exploring options for improved ALS and medical transport capabilities within the Town. A detailed discussion of this topic can be found in the EMS section of this report.

Utilization of Career/Volunteer Staff

Volunteer firefighters account for over 70 percent of the firefighters in the United States. They result in a savings of $46.9 billion per year.[7] PLFD continues that fine tradition with a solid core of 16 volunteers. Several factors support the success of the program. Figure 11 shows a comparison of number of volunteers who hold certification for structure fire entry. NFPA requires 110 hours of training for entry certification. The data supports the excellent initial training efforts throughout the department.

Figure 11: Comparison of Entry Level Certification



Data supporting volunteer staff utilization is limited. Each volunteer member is required to serve (8) 12-hour shifts a month for a total of 96 hours. Combined with the required training and meeting hours, this data demonstrates commitment and efficient utilization of the volunteer program. ESCI recommends gathering specific data for each volunteer regarding actual call response, training hours and certification requirements. The information will help demonstrate competency levels and training requirements.

Safety Compliance (CFAI 7F.5)

Over the past 15 years, evidence supports that firefighters have a "14 percent increase in cancer-related deaths compared to the general public."[8] The Palmer Lake community has approximately 21.3 percent of local industries that most likely produce environments with cancer causing chemicals. According to information from DataUSA, employment in the Palmer Lake area includes:[9]

- 2.5% – Utilities
- 12% – Construction
- 6.8% – Manufacturing

[7] National Volunteer Fire Council (2017), *Volunteer Fire Service Fact Sheet.* https://www.nvfc.org/wp-content/uploads/2016/02/NVFC-Fact-Sheet-2018.pdf.
[8] Firefighters and Cancer (2018). https://www.nfpa.org/News-and-Research/Resources/Emergency-Responders/Health-and-Wellness/Firefighters-and-cancer.
[9] Palmer Lake, CO (2015). https://datausa.io/profile/geo/palmer-lake-co/

There are a number of ways to begin a cancer prevention program within a fire organization. PLFD provides excellent PPE but the emphasis should be placed in minimizing individuals from wearing contaminated personal clothing back to work or home. Currently, there are laundry facilities in the station but access to an extractor comes from neighboring agencies. An extractor is an appliance that can handle the bulk of bunker gear, inject specific cleaning agents, and then at high-speed rotation remove contaminants. Based on budgetary constraints, the station should eventually have the ability to clean contaminated clothing. A second future goal would be to install an additional shower facility (male/female) for building code compliance. These facility improvements combined with education and a formal internal prevention program can improve overall firefighter health and safety.

Pre-employment and Duty Physical Fitness Program (CFAI 7G.1)

There have been extensive studies relating to firefighter fatalities over the past 20 years. The leading cause of death for on-duty firefighters is cardiac arrest resulting from coronary artery disease.[10] The disease is exacerbated by the hazardous environmental conditions often faced in the course of performing duties. Compared to other emergency response entities, firefighters are almost three times more at risk of a coronary event while on duty:

- 45% – duty related firefighter deaths
- 15% – duty related law enforcement deaths
- 11% – duty related EMS deaths

Based on survey documents, PLFD does not require an initial medical exam or annual medical screenings. ESCI recommends the development of a comprehensive screening process that can help identify individuals who may be at higher risk for a cardiac event on the fireground. There are a number of cost-effective programs such as VO2 Max that can measure individual abilities and then exercise programs to improve the health and fitness of firefighters. An opportunity may exist to work with one of the local colleges or universities who have a sports medicine program.

RECOMMENDATIONS:

- In order for PLFD to explore future staffing models, consider taking a proactive approach and develop a focused recruitment program.
- Due to a significant disparity in competitive regional wages for firefighters, PLFD should begin exploring additional funding for future department salaries.
- Implement a department-wide wellness program with the requirement of annual medical and physical ability evaluations.
- Consider an intermediary level, such as the acting Public Safety Chief to make disciplinary decisions that can then receive final appeal with the Town Administrator.
- Consider options to meet an effective response force.

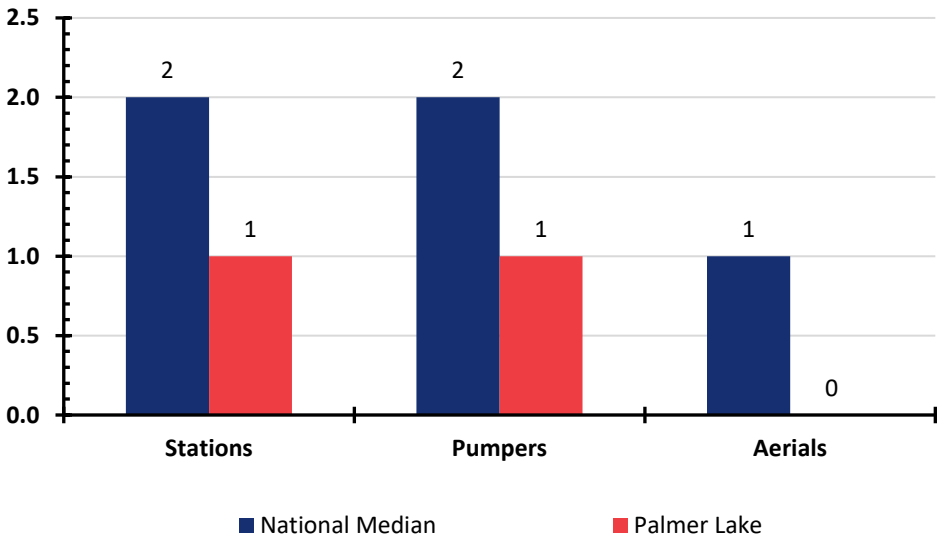
[10] *Firefighters and on-duty deaths from coronary heart disease: a case control study* (2003), Ncb.nlm.nhi.gov.

CAPITAL ASSETS AND CAPITAL IMPROVEMENT PROGRAMS

Regardless of an emergency service agency's financing, if appropriate capital equipment is not available for the use by responders, it is impossible for a fire department to deliver services effectively. Two primary capital assets that are essential to the provision of emergency response are facilities and apparatus (response vehicles).

PLFD, as most fire departments, maintains a balance of three basic resources that are needed to carry out its emergency mission: People, equipment, and facilities. Because firefighting is an extremely physical pursuit, the adequacy of personnel resources is a primary concern; but no matter how competent or numerous the firefighters are, the department will fail to execute its mission if it lacks sufficient fire apparatus distributed in an efficient manner. The size of the Palmer Lake community is such that only one station is needed to adequately cover the area. Compared to other communities of like-size, Figure 12 shows how the department compares nationally.

Figure 12: Capital Assets Comparison



This comparison shows that nationally a comparable community may have two stations and two engines with one aerial. Based on the structures within the Town, an aerial is not needed. Due to the area of the Town, one station should be sufficient and will be discussed further in the Deployment Analysis later in this report.

Facilities

Appropriately designed and maintained facilities are critical to a fire department's ability to provide services in a timely manner and with appropriate deployment of assets. These are critical for the housing of personnel who are ready to respond to calls for service. ESCI observed and reviewed the fire station operated by PLFD. The findings are summarized in the following discussion and any areas of concern are identified.

Figure 13: PLFD Station Number 1

Station Name/Number:	**1**
Address/Physical Location:	12 Valley Crescent Street, Palmer Lake, CO
	**General Description:** Station was never designed to house firefighters. Current living areas lack modern fire station amenities. It also lacks the space to adequately house apparatus. The building has aged and will require significant maintenance and rehab.
Structure	
Construction Type	Stucco covered block and concrete
Date of Construction	1938 original portion of the building; built as a pumphouse initially; second bay and dayroom quarter were added in 1965
Seismic Protection	No
Auxiliary Power	No
General Condition	Poor; leaks water through wall in heavy rain; Exterior has deterioration
Apparatus Bays	0 Drive-through bays 3 back-in bays
Special considerations (ADA, etc.)	Not ADA assessible; No separate gender facilities
Square Footage	2,320
Facilities Available	
Separate Rooms/Dormitory/Other	0 Bedroom 0 Beds 5 Beds in dormitory
Maximum Station Staffing Capability	5 Personnel
Exercise/Workout Facilities	Limited fold-up weight bench on wall
Kitchen/Dormitory	Kitchen on one side of room
Individual Lockers/Storage Assigned	No; Bunker gear hanging in bay
Shower Facilities	One shower in only bathroom
Training/Meeting Rooms	Kitchen table no meeting room
Washer/Dryer	None
Safety & Security	
Sprinklers and/or Smoke Detection	Smoke and carbon monoxide detector in dayroom/bedroom area; only exit through bay to person door
Decontamination/Biohazard Disposal	AMR picks up biohazard; No designated container
Security	Combination lock on single person door
Apparatus Exhaust System	None

PLFD has one station. The building was built in two different phases. The first phase was a Work Progress Administration project which was built as a pumphouse in 1938. Later the building was turned into a fire station and the second phase was accomplished in 1965.

Figure 14: Palmer Lakes Fire Station

This added one additional apparatus bay to the front and another bay to the back (which is now the dayroom/dormitory area). This area had an overhead garage door that was later removed. The area of the removed overhead door leaks water during heavy rains. The dayroom/dormitory area is still heated with an overhead heater like what is found in a garage. This generates considerable noise all through the night.

Figure 15: Overhead Heater in Sleeping Area

Five beds (two bunk beds and one single) are located along one wall of a large room. This functions as a dormitory style sleeping arrangement. This area is not partitioned off from the rest of the room. There is both a smoke detector and carbon monoxide detector in the sleeping area. The only exit from the sleeping/living area is through the apparatus bay or out through the windows. A fire in the apparatus bays would likely preclude using the door and force evacuation through the windows.

Figure 16: Fire Station Sleeping Area

The lack of separate gender facilities may cause individuals of either gender to be uncomfortable, and does not represent current practice for station design. This lack of separate sleeping areas for privacy could be a source of sexual harassment litigation.

On the opposite wall is the kitchen and dining table. There is one restroom with a shower. This restroom/shower arrangement allows only one person to use it at a time. There is a desk for administrative work. There is a weight bench for physical training that folds down from the one wall. There are no cardio machines.

Figure 17: Fire Station Kitchen/Training Area

The station has no emergency power back-up which could slow response due to manually opening the bay overhead door. The space is very limited for both the vehicles and working/walking area. Some vehicles are parked outside under a carport. The bay has no vehicle exhaust removal system or filter system. There is a large gap under the door between the bays and living quarters. This could be a pathway for exhaust fumes to enter the area where firefighters eat and sleep. Since vehicle exhaust has been found to be a carcinogenic, the firefighters are exposed to exhaust or the residual deposits on a daily basis. Bunker gear is hung in the apparatus bays where they are exposed to vehicle exhaust. Firefighters wear the gear during their shift and are subject to absorbing the carcinogens through their skin.

Figure 18: Firefighter Gear Storage in Apparatus Bays

The station exterior is deteriorating with stucco or plaster falling off in spots. The station needs to have extensive renovation or to be replaced. Since this is a designated historical building it may be difficult or impossible to renovate it sufficiently without changing the character of the building. It also may be more expensive to try to add the necessary functions than to build a new station.

Figure 19: Exterior Deterioration

Apparatus

PLFD maintains a fleet of response vehicles that are a mix of older and some newer vehicles. The overall condition of the fleet was reported to be good to very good. The average age of the fleet is 11.4 years, although two of the newest pieces are utility vehicles. An inventory of all apparatus, configuration, and condition is provided in the following figure.

Figure 20: Apparatus Inventory

Apparatus Designation	Type	Year	Make/Model	Condition	Minimum Staffing	Pump Capacity	Tank Capacity
2015	Engine	2001	Pierce	Good	2	1250	1000
2045	Brush Truck	2009	Dodge	Very Good	2	N/A	350
2040	Brush Truck	2004	Ford F-450	Very Good	2	N/A	350
2053	Command Vehicle	1996	Chevy Blazer	Out of Service	1	N/A	N/A
2051	Utility	2012	Polaris 500	Good	1	N/A	N/A
2052	Utility	2012	Polaris 500	Good	1	N/A	N/A

Through a verbal agreement with Larkspur Fire Protection District, an engine is available to be used in a reserve capacity if the main engine is out of service for maintenance.

Capital Replacement Planning

Fire apparatus are typically unique pieces of equipment, often very customized to operate efficiently in a narrowly defined mission. A pumper/engine may be engineered such that the compartments fit specific equipment and tools, with virtually every space on the truck designated in advance for functionality. This same vehicle, with its specialized design, cannot be expected to function in a completely different capacity, such as a hazardous materials unit or a rescue squad. For this reason, fire apparatus are very expensive and offer little flexibility in use and reassignment. As a result, communities across the country have sought to achieve the longest life span possible for these vehicles.

No mechanical piece of equipment can be expected to last forever. As a vehicle ages, repairs tend to become more frequent, parts more difficult to obtain, and downtime for repair increases. Given the emergency mission that is so critical to the community, this factor of downtime is one of the most frequently identified reasons for apparatus replacement.

Because of the large expense of fire apparatus, most communities find the need to plan for the cost of replacement. To properly do so, agencies often turn to the long-accepted practice of establishing a life cycle for the apparatus that results in a replacement date anticipated well in advance. Forward-thinking organizations then set aside incremental funds during the life of the vehicle, so replacement dollars are ready when needed.

The same holds true for fire stations, training grounds, and other fixed facilities. As support equipment becomes costlier, particularly EMS equipment, planning for the replacement of these items is of equal importance.

ESCI surveyed capital replacement planning efforts at PLFD, with the findings as follows:

Apparatus Replacement

The existing fleet of vehicles, with the exception of the command unit that is not being used and is out of service, is shown in the following schedule. This table shows the replacement cost based on the age of the vehicle and recommended life expectancy. The cost of inflation is estimated at 4 percent.

Figure 21: Fleet Replacement Schedule

Unit	Year	Base Repl. Cost	Repl. Cost w/ Inflation	Current Cash Reqs.	Annual Cash Reqs.	Current Age	Life Expectancy	Repl. Year
Engine 2015	2001	$660,000	$713,856	$642,470	$35,693	18	20	2021
Brush 2045	2009	$175,000	$259,043	$129,521	$12,952	10	20	2029
Brush 2040	2004	$175,000	$212,914	$159,686	$10,646	15	20	2024
Utility	2012	$17,000	$19,123	$13,386	$1,912	7	10	2022
Utility	2012	$17,000	$19,123	$13,386	$1,912	7	10	2022
TOTALS		**$1,044,000**	**$1,224,058**	**$958,449**	**$63,115**			

Figure 21 shows the cost of the vehicles with and without inflation. Using an inflation factor of 4 percent, the current cash requirement is $958,449 with an annual contribution to the replacement fund of $63,115. It is ESCI's recommendation to create a vehicle replacement fund to be able to purchase the vehicles when due.

Based on recommendations from NFPA 1901: *Standard for Automotive Fire Apparatus*, engines over 15 years of age that have been maintained and are still serviceable can be placed into a reserve status. Replacement is recommended over ten to fifteen years due to safety upgrades that have been built in to newer units.[11]

Facilities and Equipment Replacement

There is no replacement schedule for station 1 nor is ESCI aware of any equipment replacement schedule for self-contained breathing apparatus (SCBA) or for radios. These items are usually very costly to replace as they are replaced across the organization at the same time. Equipment like personal protection ensemble (PPE) needs to be replaced on a five-year basis but a good practice is to replace only one fifth of the inventory each year. This moderates the budget impact compared to the fifth-year replacement of all units. Some items like radios have been replaced through grants, still ESCI recommends that all major equipment be scheduled for routine replacement so that funding can be planned in advance. Setting up a capital assets replacement schedule is recommended for all types of equipment.

[11] NFPA 1901: *Standard for Automotive Fire Apparatus 2016,* Annex D Guidelines for First-Line and Reserve Fire Apparatus, Section D.1 General. National Fire Protection Association, 1 Batterymarch, Quincy, Massachusetts.

Likewise, the station needs replacement or extensive renovation. This is overdue and will need to be funded some way since there is no capital replacement fund established. This could be funded through bonds or lease purchase agreement.

RECOMMENDATIONS:

- Station 1 needs to be renovated or rebuilt.
- Create and fund a vehicle replacement schedule.
- Create and fund a major equipment replacement schedule.

SERVICE DELIVERY AND PERFORMANCE

The most important aspect of any emergency services agency is its ability to deliver services when requested. This section of the report evaluates the current and historical service delivery elements of:

- Service Demand
- Resource Distribution
- Resource Concentration
- Workload and Reliability
- Response Performance

The discussion begins with a summary of the current service delivery and performance elements that are in place in the Palmer Lake Fire Department.

Service Demand Analysis

ESCI analyzes the current and historical service demand of PLFD service area by incident type and temporal variation. GIS software is used to provide a geographic display of service demand within the study area. Incident data collected in the department's records management software (RMS)—Emergency Reporting Systems (ERS), is utilized to provide a view of historical service demand and current temporal variations.

The following figure displays PLFD service demand for 2016 through 2018, summarized by year and National Fire Incident Reporting System (NFIRS) incident category.

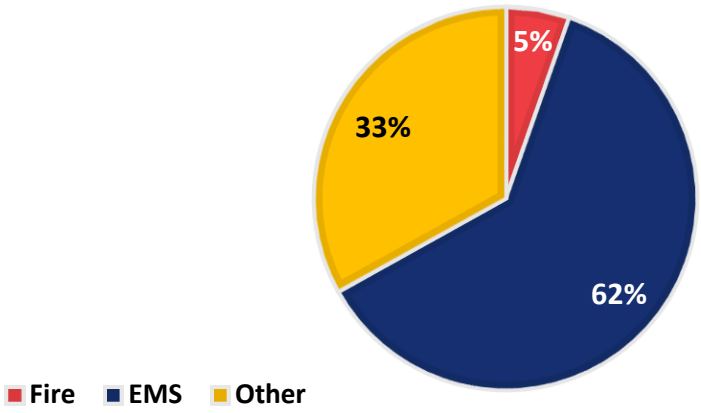
Figure 22: PLFD Service Demand by NFIRS Category, 2016–2018

NFIRS Category	2016	2017	2018	% of Total
1—Fire	21	22	17	5.4%
2—Rupture/Explosion	1	1	–	0.2%
3—Rescue/EMS	237	240	209	61.5%
4—Hazardous Condition	16	23	13	4.7%
5—Service Call	35	29	35	8.9%
6—Good Intent Call	29	31	38	8.8%
7—False Alarm	26	33	43	9.1%
8—Severe Weather/Natural Disaster	1	–	–	0.1%
9—Special Incidents	2	10	3	1.3%
Annual Incidents	**368**	**389**	**358**	**100%**

PLFD responded to approximately 360 to 390 incidents annually between 2016 through 2018. EMS incidents represent the majority of service demand. Overall, Fires account for slightly over five percent of service demand; and all other NFIRS categories represent approximately 33 percent of the incidents displayed in this figure.

The nine NFIRS incidents categories are regrouped as Fires, EMS, and Other in the following figure.

Figure 23: PLFD Service Demand Categorized as Fire, EMS, and Other, 2016–2018

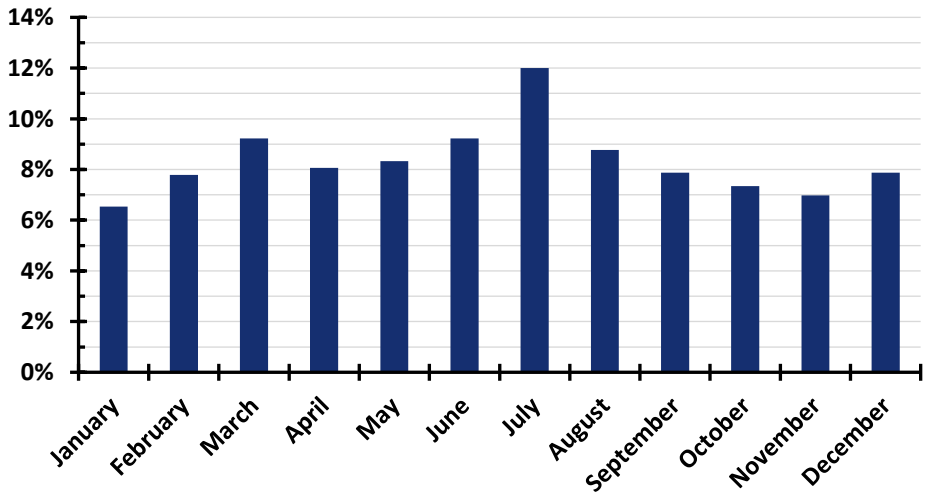


This figure demonstrates the overall nature of service demand in the PLFD service area. The distribution of incidents is similar to that of comparable fire jurisdictions in the region and nationally.

Temporal Variation

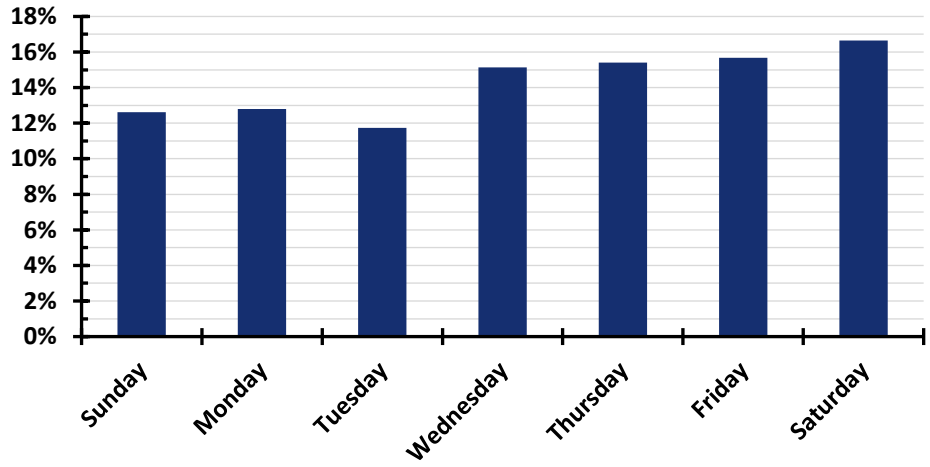
It is instructive to look at when calls occur to see if there are identifiable trends. In the following figures, the fire department incident responses are shown by month, day, and time of day. The data used in these figures is overall service demand for 2016 through 2018.

Figure 24: PLFD Service Demand by Month of the Year, 2016–2018



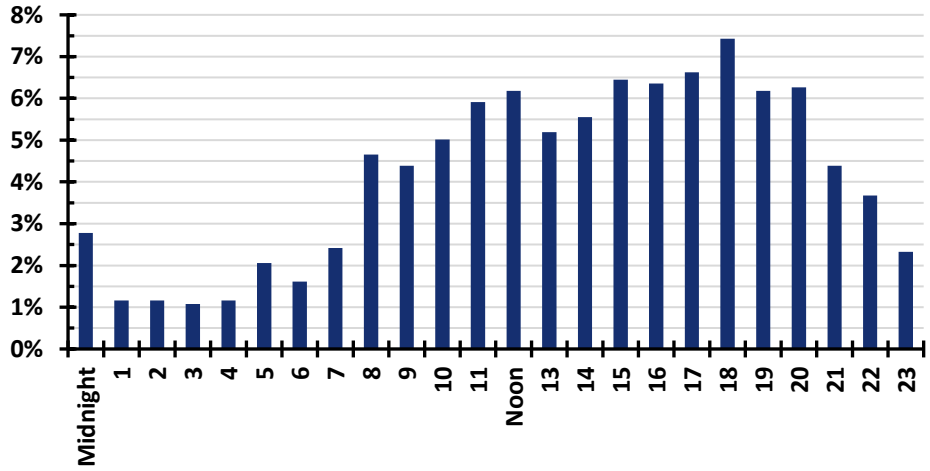
Overall service demand varies from a low of approximately 6.5 percent in January to a high of 12 percent in July. On average, PLFD responds to approximately 31 incidents per month. The general trend is for service demand to increase in the late spring through the fall. The next figure displays overall service demand by day of the week.

Figure 25: PLFD Service Demand by Day of the Week, 2016–2018



In general, Sundays through Tuesdays demonstrate the lowest service demand. While Thursdays, Fridays, and Saturdays experience the highest demand for PLFD services. Tuesdays display the lowest service demand (11.7 %) and Saturdays experienced highest demand (16.7 percent) in the 2016 through 2018 data.

Figure 26: PLFD Service Demand by Hour of the Day, 2016–2018

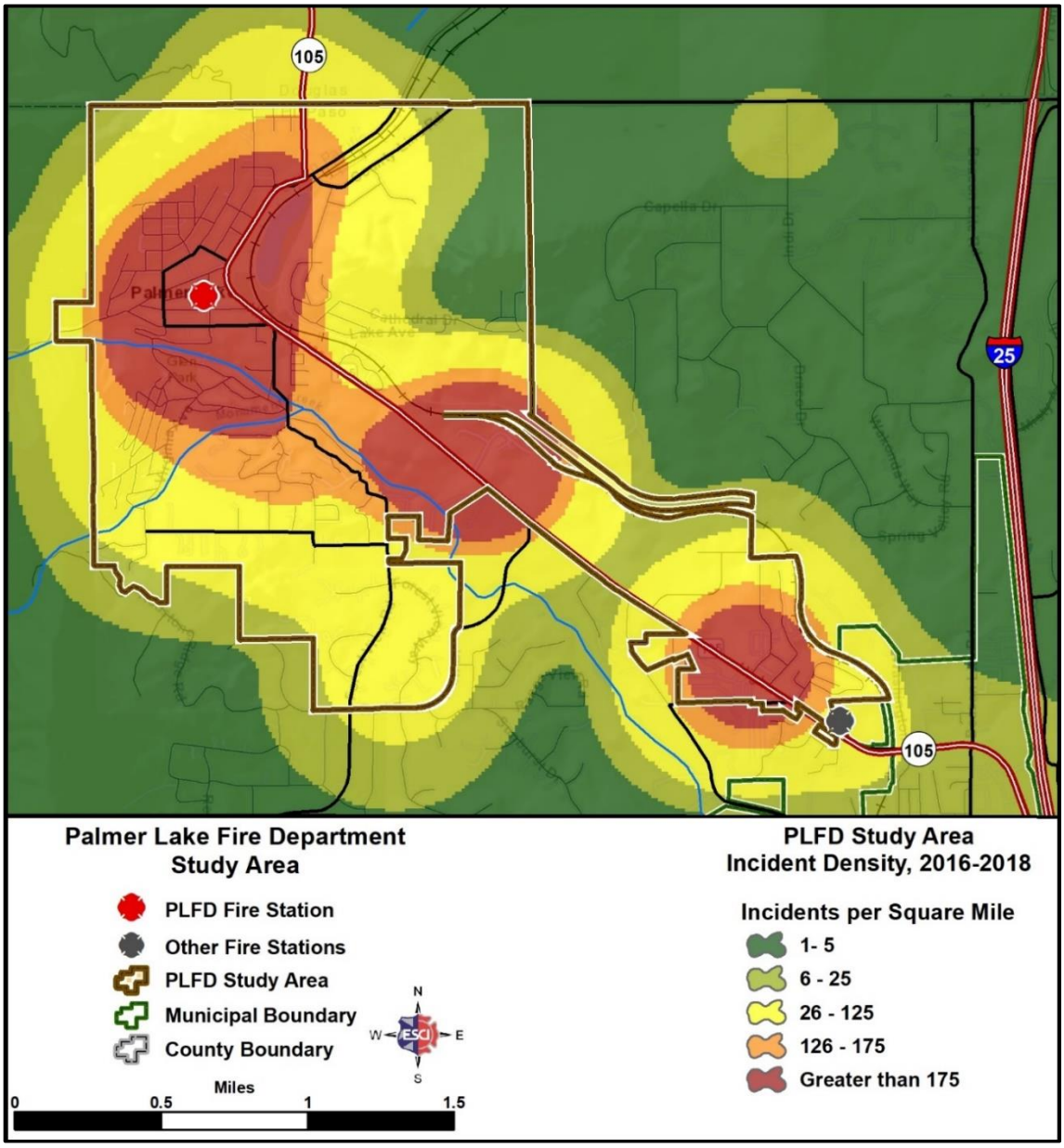


In this figure, service demand correlates with the activity of people; with demand increasing during the workday and decreasing in the evening and early morning hours. Nearly 70 percent (69.9 percent) of PLFD service demand occurred between 8 AM and 8 PM. Fire jurisdictions that utilize part-time and volunteer personnel to staff additional apparatus may experience staffing issues during the workday when demand is highest and additional personnel availability is lowest.

Geographic Service Demand

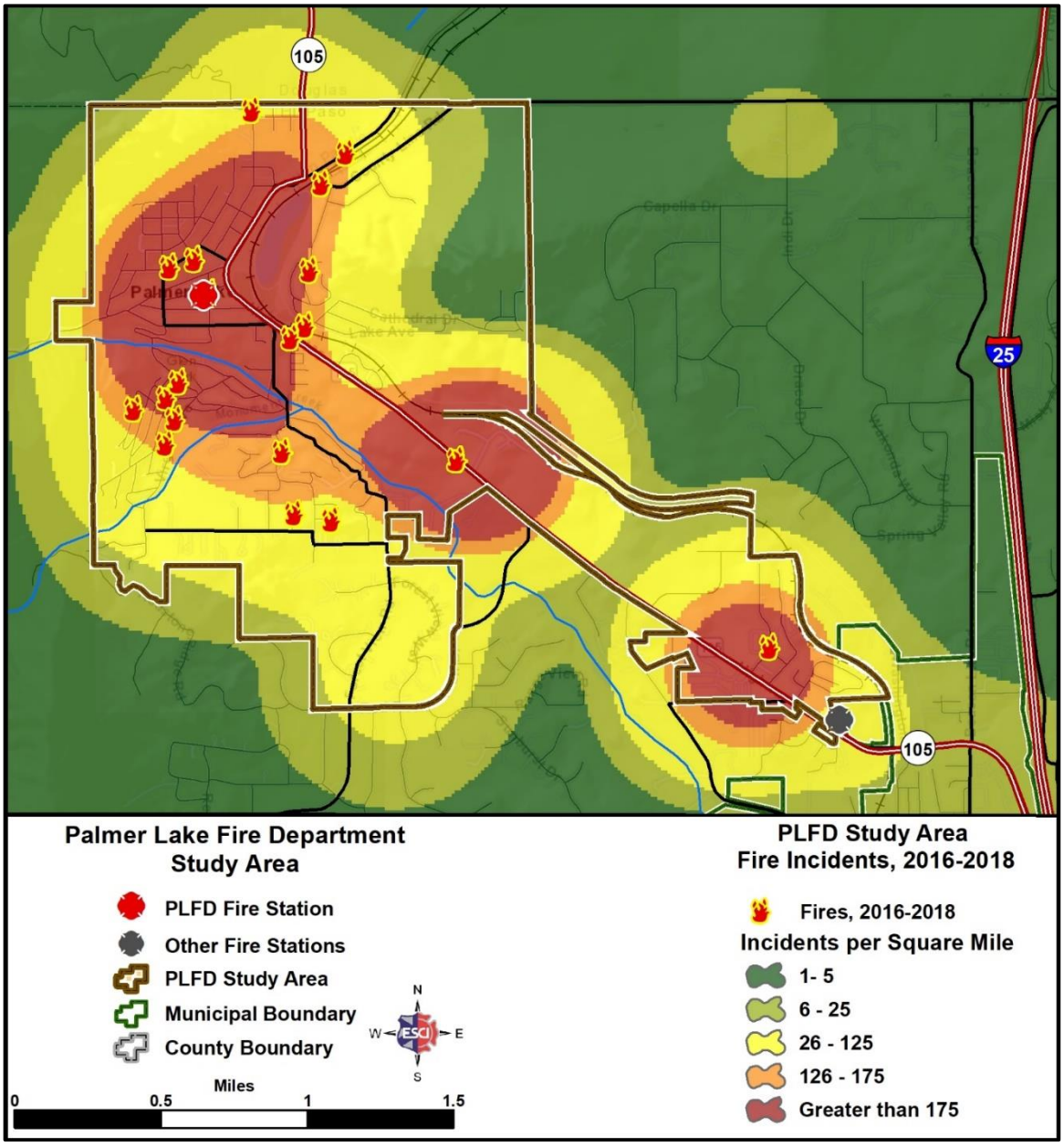
In addition to the temporal analysis of workload, it is useful to examine the geographic distribution of service demand. ESCI uses geographic information systems software (GIS) to plot the location of 2016–2018 PLFD incidents and calculates the mathematical density of incidents (incidents per square mile) in the study area.

Figure 27: PLFD Geographic Service Demand (Incidents per Square Mile), 2016–2018



The greatest concentration of service demand occurs in the central area around the fire station and the southeastern corner of Palmer Lake. These areas exhibit the highest concentration of population and development. The third area demonstrating high service demand appears to be related to a residential care facility located in the area.

Figure 28: PLFD Fire Incidents and Overall Incident Density, 2016–2018

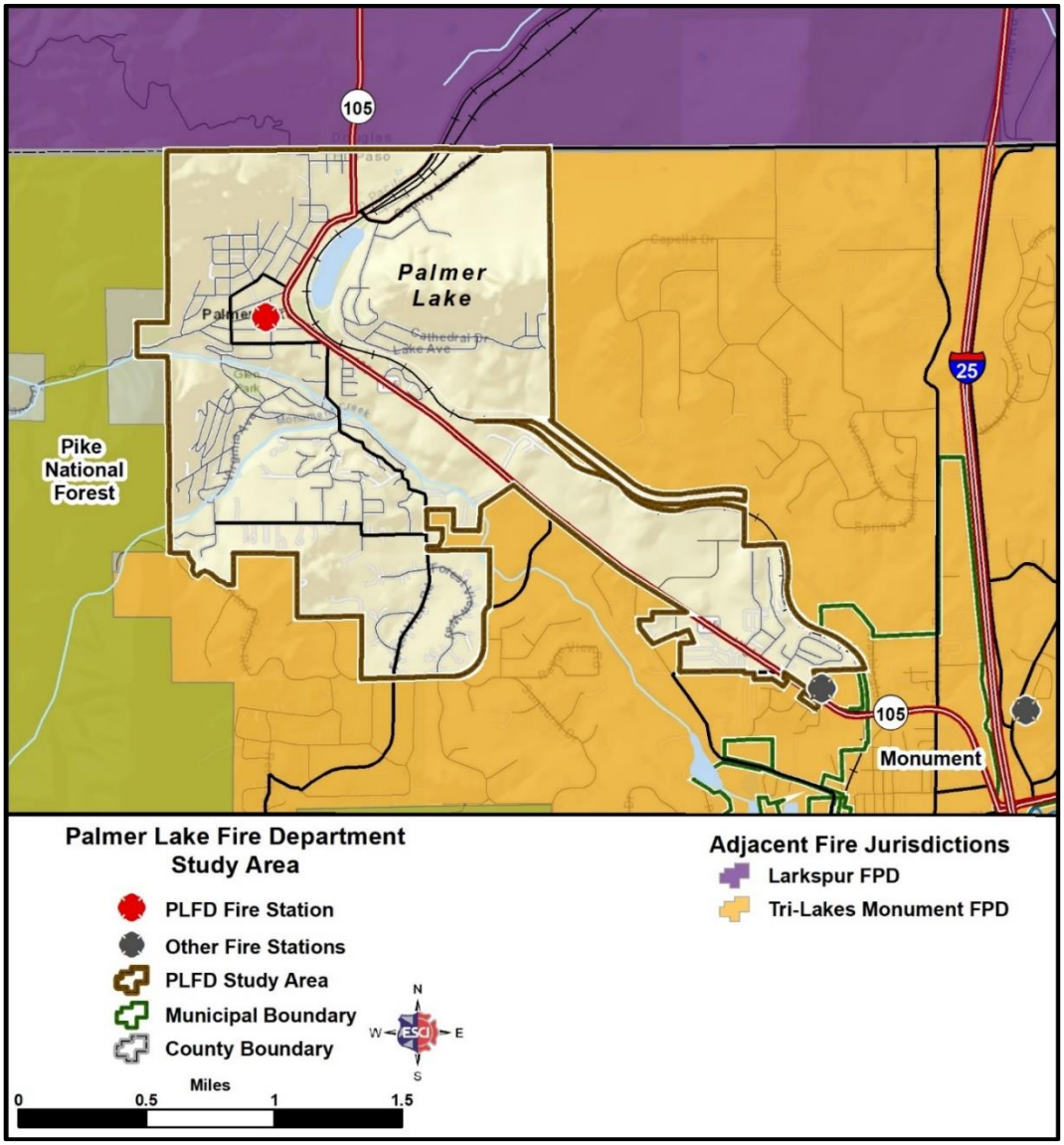


Fire incidents are the least frequent incident type in the data displayed. However, incidents categorized as Fires are distributed throughout the study area in a pattern similar to the overall incident data.

Resource Distribution Analysis

The distribution analysis examines the current distribution of fire department resources in the PLFD service area. The following figure displays the PLFD service area and the fire jurisdiction immediately adjacent to Palmer Lake.

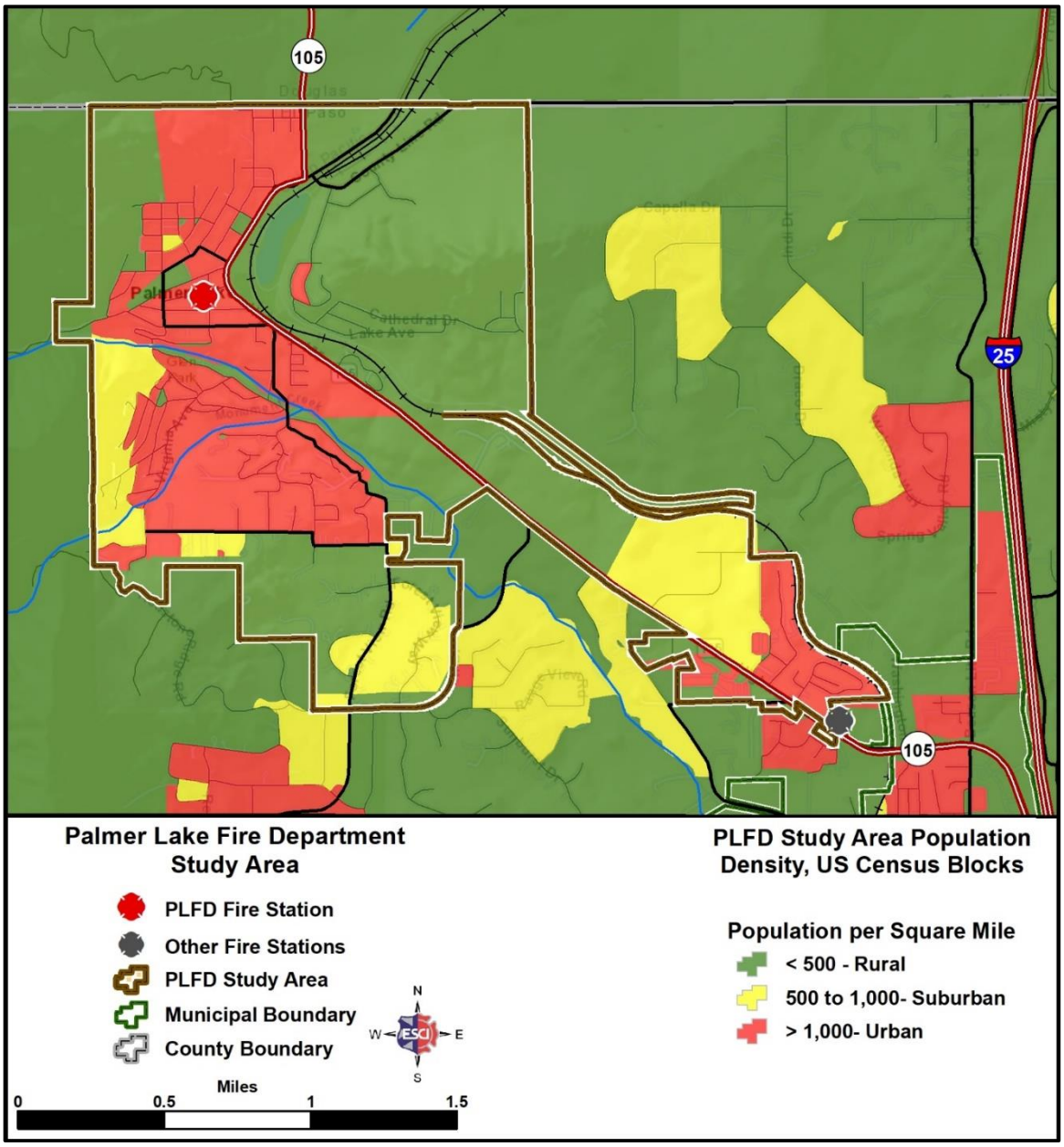
Figure 29: PLFD Service Area



The Palmer Lake Fire Department serves the incorporated Town of Palmer Lake. With an area of approximately 3.1 square miles, Palmer Lake is west of Interstate 25, bordering Douglas County to the north and the Town of Monument on the southeast corner of Palmer Lake. The Pike National Forest is on the western boundary of Palmer Lake. State Highway 105 runs from the southeast end to the northern boundary of the Town. Tri-Lakes Monument FPD and Larkspur FPD in Douglas County are the two fire jurisdictions adjacent to the PLFD service area. PLFD participates with these two agencies and other El Paso and Douglas County fire jurisdictions through regional mutual and automatic aid agreements.

In the following figure, ESCI uses U.S. Census Bureau census block data to display population density in the study area. Using National Fire Protection Association (NFPA) population classifications, population density is categorized as Urban, Suburban, and Rural.

Figure 30: PLFD Population Density, 2010 U.S. Census Blocks

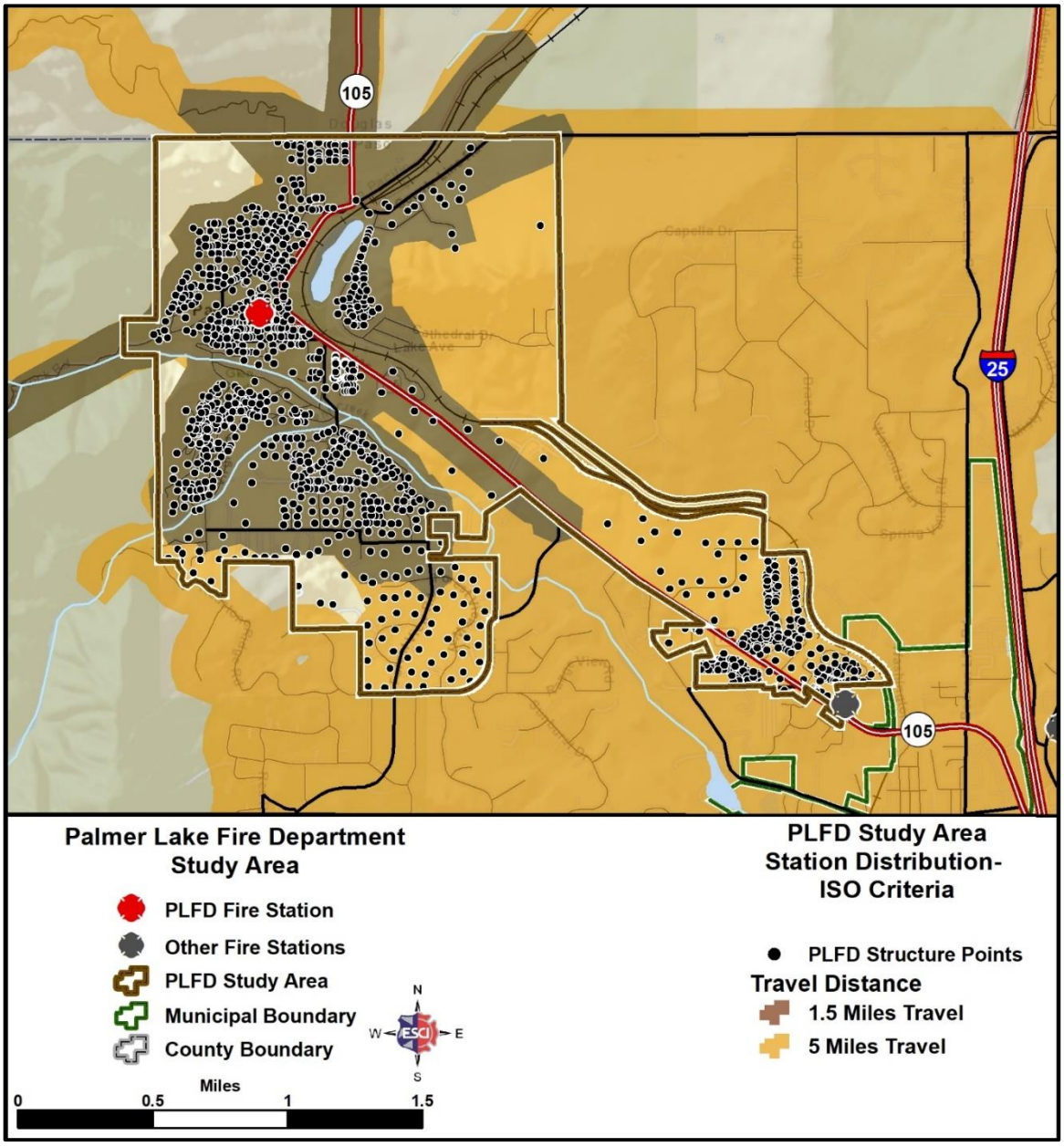


The population of Palmer Lake is approximately 2,767 according to the most recent estimate available from the Colorado State Demography Department (July 2017). As illustrated in this figure, the population is concentrated in the western portion of the Town, west of Highway 105; and in the southeastern area adjacent to Monument, on either side of Highway 105. The overall population density within Palmer Lake is approximately 893 residents per square mile. Due to this population density, overall Palmer Lake has a suburban density even though parts are urban density and other parts are rural density. Because of this it is appropriate to consider the recommendations for response time and staffing in NFPA 1720: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*.

There are two methodologies commonly used in the fire service to evaluate resource distribution. The Insurance Services Organization (ISO) is a national insurance industry organization that evaluates fire protection for communities across the country. A jurisdiction's ISO rating is an important factor when considering fire station and apparatus distribution, since it can affect the cost of fire insurance for individuals and businesses. To receive maximum credit for station and apparatus distribution, ISO recommends that in urban areas, all "built upon" areas in a community be within 1.5 road miles of an engine company. If there are more than five structures over three stories or have a "needed fire flow" of over 3,500 gallons per minute ISO requires an aerial truck responding from within 2.5 miles. Additionally, ISO states that a structure must be within five miles of a fire station to receive any fire protection rating for insurance purposes.

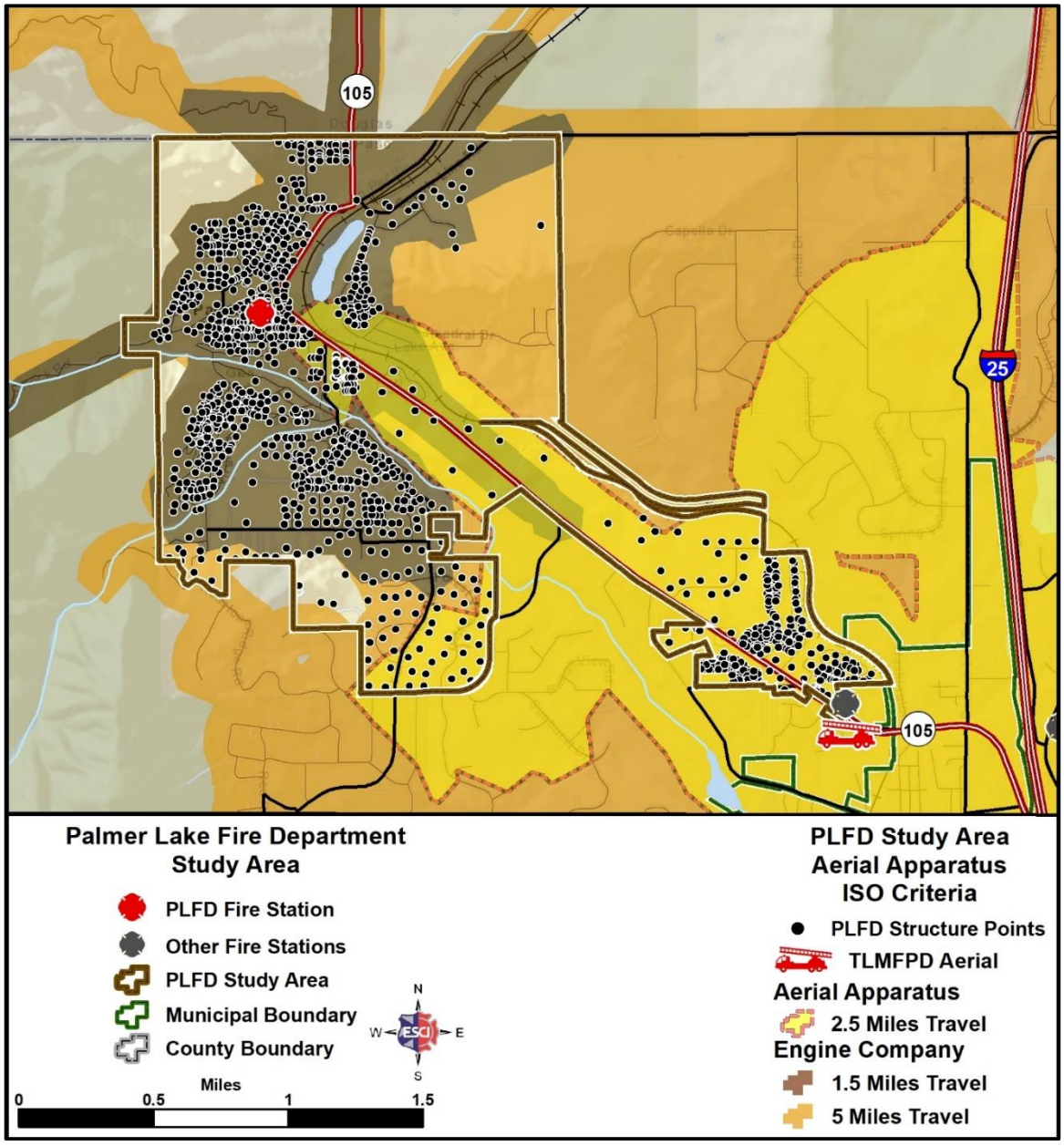
The following two figures examine current PLFD station and apparatus distribution, based on rating criteria for the Insurance Services Organization (ISO).

Figure 31: PLFD Station Distribution (ISO Travel Distance Criteria)



Approximately 71 percent of structures (El Paso County GIS data) in the PLFD service area are within 1.5 miles travel distance of the current PLFD fire station. All of the developed portions of the service area are within 5 miles of the fire station. Note that structures in the southeastern corner of Palmer Lake are within 1.5 miles of the TLMFPD station in Monument.

Figure 32: Study Area Aerial Apparatus Distribution (ISO Travel Distance Criteria)



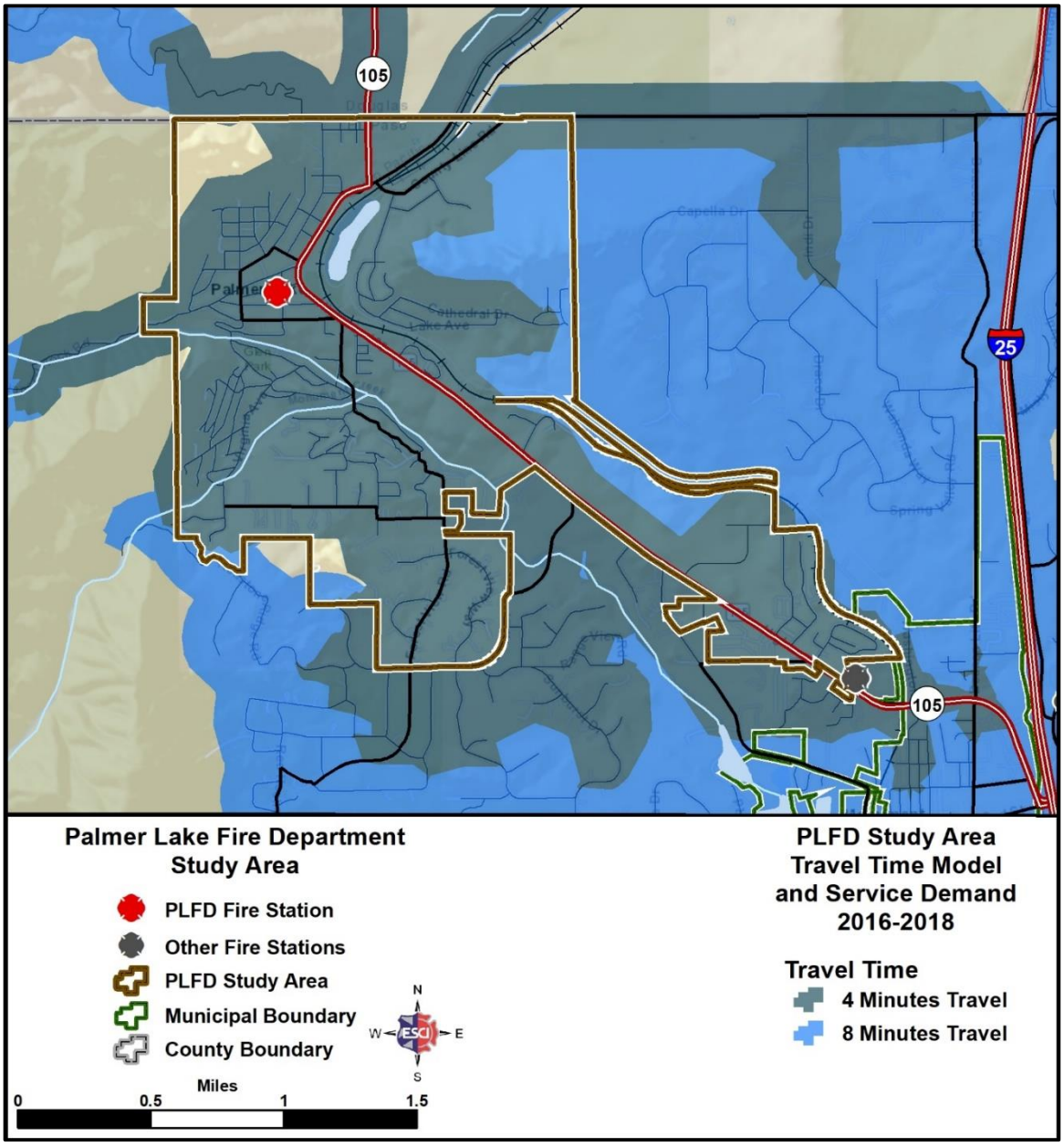
PLFD does not operate an aerial apparatus, however, an aerial apparatus is available at Tri-Lakes Monument FPD (TLMFPD) Station 1. Figure 32 demonstrates that the TLMFPD aerial is within 2.5 miles travel distance of most of the Highway 105 corridor within PLFD. ISO permits jurisdictions to receive some credit for apparatus from neighboring jurisdictions based on a signed automatic aid agreement between the participating agencies. An automatic aid agreement and dispatch protocols that incorporate apparatus from neighboring jurisdictions into the response protocols are in place between PLFD and TLMFPD.

Palmer Lake was last evaluated by the ISO in January 2018 and received a Public Protection Classification (PPC) of 4/9. The ISO PPC is based on a scale of 1 to 10, with 1 representing exemplary fire protection and 10 being no recognized fire protection for insurance purposes. Further discussion of ISO occurs in the Organization Overview section of this report.

The ISO PPC criteria only address fire suppression activities and are primarily concerned with the geographic coverage of property. The second standard for evaluating resource distribution is using response time criteria based on the travel time necessary to reach an incident. This method is used by NFPA standards and the Center for Public Safety Excellence accreditation of fire departments.

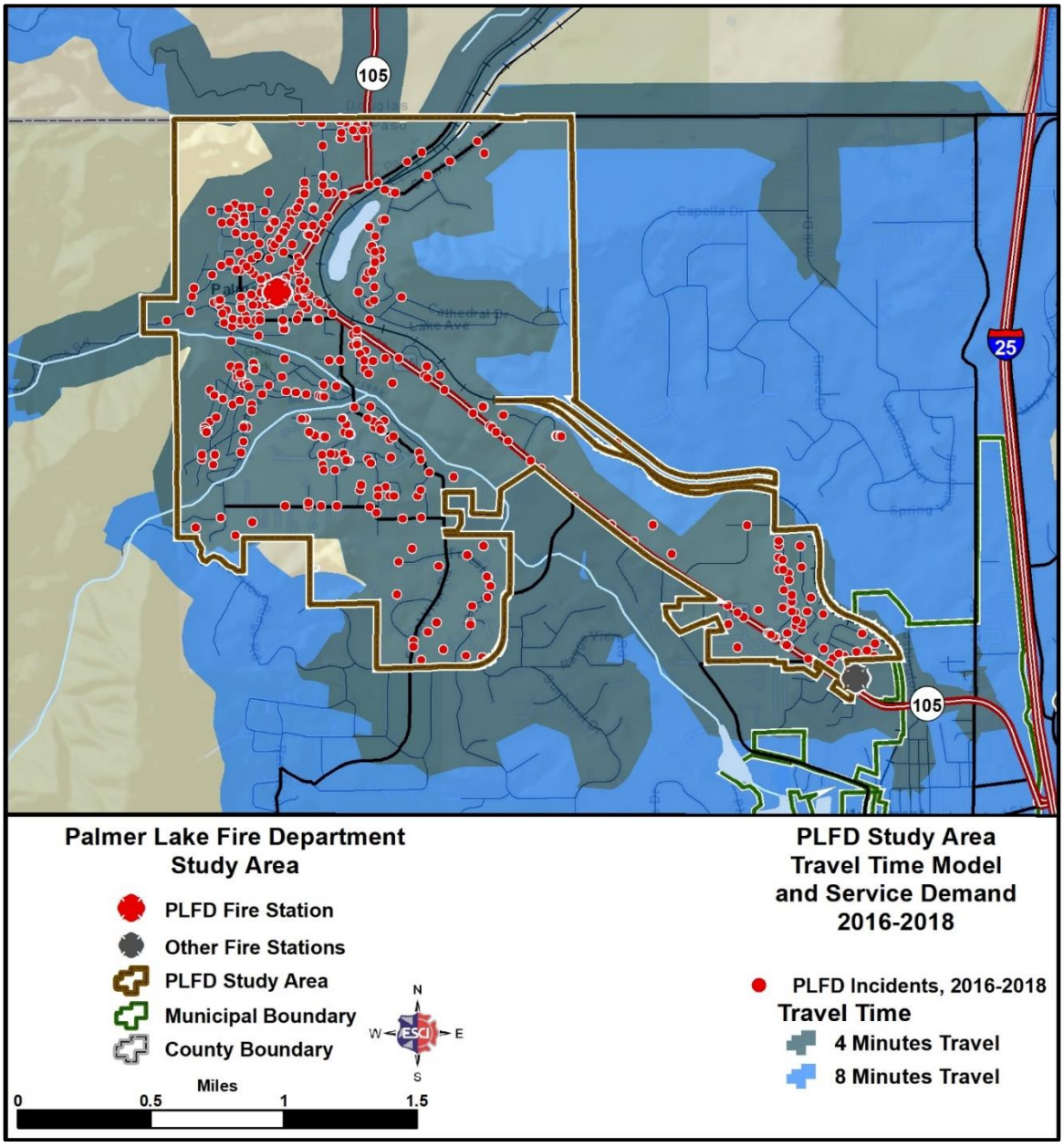
The following figure presents a travel time model from the current PLFD station location over the existing road network. Travel time is calculated using the posted speed limit and adjusted for negotiating turns, intersections, and one-way streets.

Figure 33: PLFD Travel Time Model, Four and Eight Minutes Travel



Virtually all of the road network in the PLFD study area is within 4 minutes or 8 minutes travel or less of the PLFD fire station. The next figure displays 2016 to 2018 incidents over the travel time model to determine if the fire station is properly located, based on where incidents currently occur within Palmer Lake.

Figure 34: PLFD Travel Time Model and 2016–2018 Incidents



Over 98 percent of 2016 to 2018 service demand inside of Palmer Lake occurred within 4 minutes travel or less of the current PLFD fire station. All incidents inside the service area are within 8 minutes travel of the fire station. Note that the travel time models in these figures demonstrate potential travel time capability, assuming all apparatus are in quarters and personnel are available to respond. Actual PLFD travel time and response performance are discussed in the Response Performance Analysis.

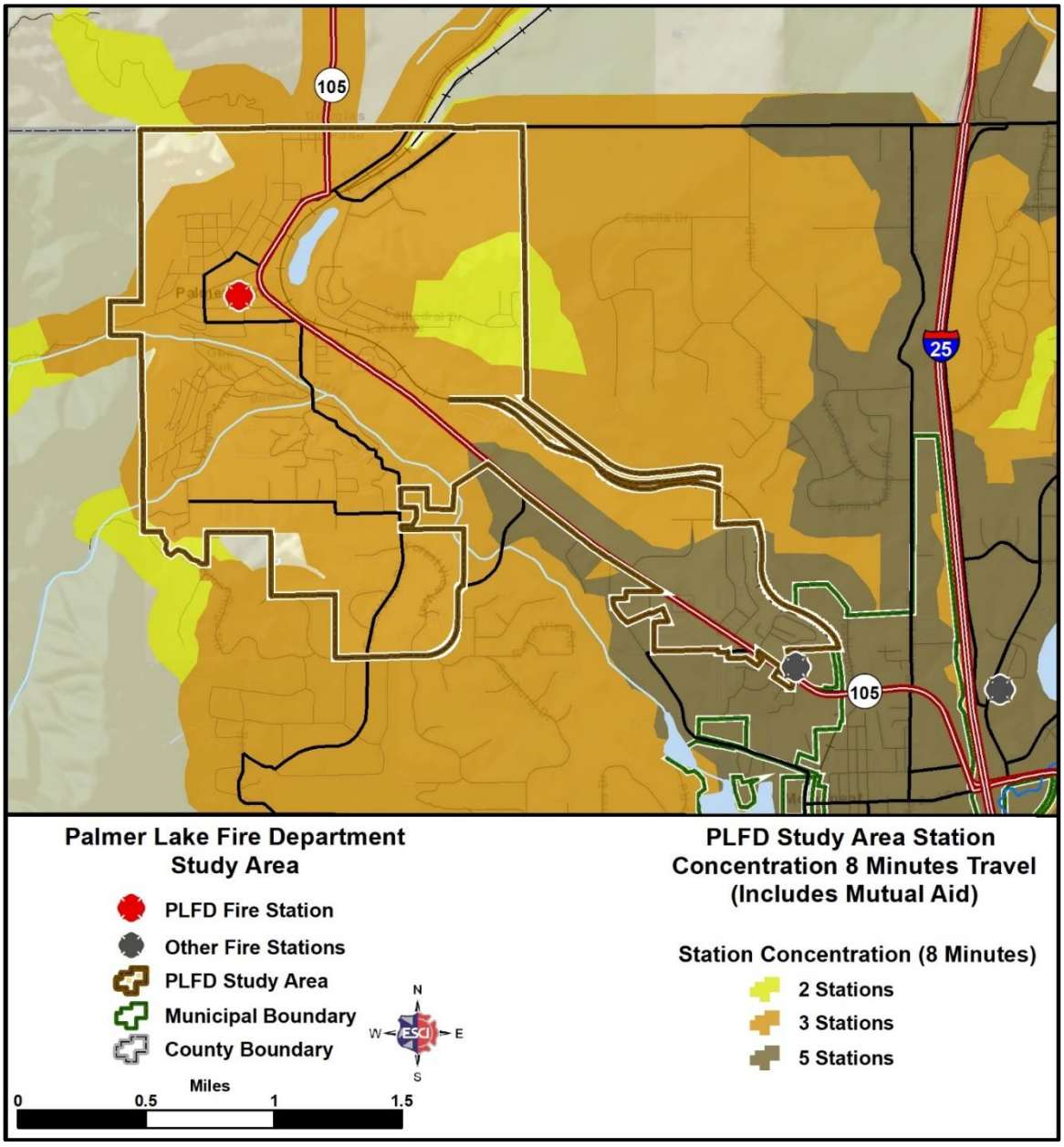
Resource Concentration Analysis

Accepted firefighting procedures call for the arrival of the entire initial assignment (sufficient apparatus and personnel to effectively deal with an emergency based on its level of risk) within a reasonable amount of time.[12] This is to ensure that enough people and equipment arrive soon enough to safely control a fire or mitigate any emergency before there is substantial damage or injury. PLFD relies on call back personnel and resources from neighboring fire departments to assemble multiple apparatus and personnel at the scene of incidents beyond the capabilities of on-duty personnel.

The following figure illustrates the concentration of Palmer Lake and mutual or automatic aid resources within 8 minutes travel or less throughout the PLFD study area.

12 See: NFPA 1720: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments* (National Fire Protection Association 2014); and the Center for Public Safety Excellence (CPSE) Community Risk Assessment: Standards of Cover, 6th Edition.

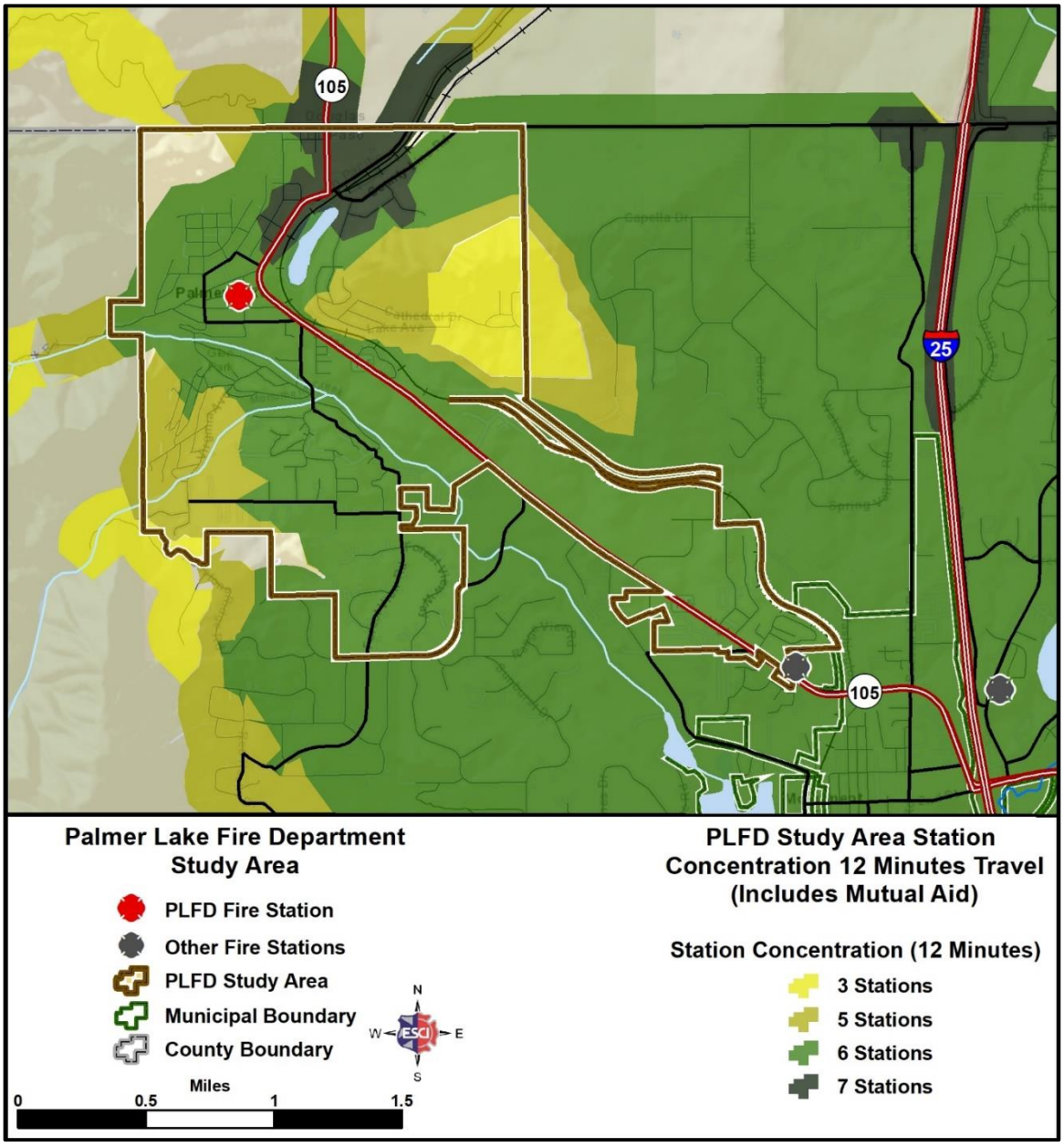
Figure 35: PLFD Study Area Station Concentration (Includes Aid Stations), 8 Minutes Travel Time



Most of the PLFD service area is within 8 minutes travel of three to five stations. Aid resources from Tri-Lakes Monument FPD and Donald Wescott FPD can reach the southeastern corner of PLFD and the southern portion of the Highway 105 corridor in 8 minutes travel or less. Resources from at least two TLMFPD stations can assist PLFD units throughout the rest of the PLFD service area, with the exception of a small area at the end of Cathedral Drive.

The following figure displays the concentration of resources available in 12 minutes travel time or less.

Figure 36: PLFD Study Area Station Concentration (Includes Aid Stations), 12 Minutes Travel Time



At 12 minutes travel time, resources from Tri-Lakes Monument FPD, Donald Wescott FPD, Colorado Springs FD, and the Larkspur FPD are available to assist PLFD resources. The majority of the service area is within 12 minutes travel of five to six fire stations. There are no portions of the service area that cannot be reached by at least three stations in 12 minutes travel or less.

The preceding figures demonstrate that mutual or automatic aid resources can increase the number of resources available within a jurisdiction's service area. This is especially important for fire departments such as PLFD, which operates out of a single station with minimal staffing. The following figure displays PLFD mutual or automatic aid received and given for 2016 through 2018.

Figure 37: PLFD Mutual/Automatic Aid, 2016–2018

Aid Received or Given	2016	2017	2018	2016–2018
Aid Received	101	104	63	**268**
Aid Given	20	14	16	**50**

Overall, PLFD received mutual or automatic aid 268 times and provided aid at 50 incidents from 2016 through 2018. Approximately 24 percent of PLFD incidents in the three years displayed involved aid resources from neighboring fire jurisdictions. Mutual or automatic aid agreements are intended to be jointly beneficial to the participating jurisdictions and are a fiscally responsible method to improve the level of service for the participating agencies. PLFD effectively uses mutual or automatic aid to improve the level of service provided to the department's constituents.

Response Reliability

The workload of emergency response units can be a factor affecting response time performance. Concurrent incidents, or the number of time units are committed to simultaneous incidents, can affect a jurisdiction's ability to muster sufficient resources to respond to additional emergencies.

Figure 38: PLFD Concurrent Incidents, 2016–2018

Concurrent Incidents	2016	2017	2018	Overall
Single Incident	90.7%	87.1%	88.1%	**88.8%**
Two or Three Incidents	9.3%	12.9%	11.9%	**11.3%**

Overall, over 11 percent (approximately 126 overlapping incidents) of PLFD service demand occurred while at least one other incident was already in progress. Most of the overlapping incidents involved two incidents occurring simultaneously. The number of concurrent incidents increased from 34 instances of overlapping incidents in 2016, to 50 in 2017, and 42 in 2018. The number of concurrent incidents in the PLFD service area is not excessive and is similar to comparable fire jurisdictions. However, as the frequency of concurrent or simultaneous incidents increases, the department's ability to respond to additional incidents may be affected.

It is also useful to evaluate how busy an organization is relative to the total amount of available time. This is known as unit hour utilization (UHU). UHU is calculated by measuring the amount of time individual apparatus are committed to an incident and dividing the result by the total number of hours in a year (8,760). Fire service best practices documents such as the Center for Public Safety Excellence (CPSE) *Community Risk Assessment: Standards of Cover, 6th Edition* suggest that UHU rates in the range of 25 to 30 percent can lead to employee burnout issues or affect station and unit reliability.

The following figure illustrates PLFD unit hour utilization in 2016 through 2018, expressed as a percentage of the total hours in the year. Additionally, the figure displays the average time each apparatus was committed to an incident.

Figure 39: PLFD Unit Hour Utilization, 2016–2018

Year	Apparatus	Incidents	Average Time Committed	Total Time Committed	UHU
2016	Engine 2015	206	0:37:46	129:40:45	1.48%
	Brush Engine 2040	6	0:46:20	4:37:58	0.05%
	Brush Engine 2045	148	0:49:30	122:05:12	1.39%
	Utility 2051	6	1:21:43	8:10:15	0.09%
	Utility 2052	14	1:49:57	25:39:20	0.29%
2017	Engine 2015	292	0:40:03	194:55:08	2.23%
	Brush Engine 2040	9	1:11:26	10:42:57	0.12%
	Brush Engine 2045	100	0:41:06	68:29:20	0.78%
	Utility 2051	13	2:59:40	38:55:42	0.44%
	Utility 2052	12	2:58:11	35:38:09	0.41%
	Command 2053	1	0:17:38	0:17:38	0.00%
2018	Engine 2015	302	0:33:40	169:25:56	1.93%
	Brush Engine 2040	3	2:54:29	8:43:28	0.10%
	Brush Engine 2045	54	3:04:04	165:39:59	1.89%
	Utility 2051	13	3:06:40	40:26:46	0.46%
	Utility 2052	6	4:44:54	28:29:22	0.33%
	Command 2053	1	9:03:18	9:03:18	0.10%

As the primary PLFD response unit, Engine 2015 displays the highest annual workload of the PLFD apparatus. On average, Engine 2015 was committed to an incident just over 37 minutes per incident. The brush engines demonstrate the next highest utilization rate. Overall, the total time PLFD apparatus were committed to an incident increased from approximately 290.25 hours in 2016 to just over 421.75 hours in 2018.

The current UHU rate and workload for PLFD units are not approaching a level that would be expected to affect unit or station reliability. However, small jurisdictions that depend on volunteer staffing are more sensitive to workload issues than a larger organization with multiple stations and apparatus. Note that the UHU analysis only looks at incident activity and does not measure the amount of time dedicated to training, public education events, station duties, or additional duties as assigned.

Response Performance Analysis

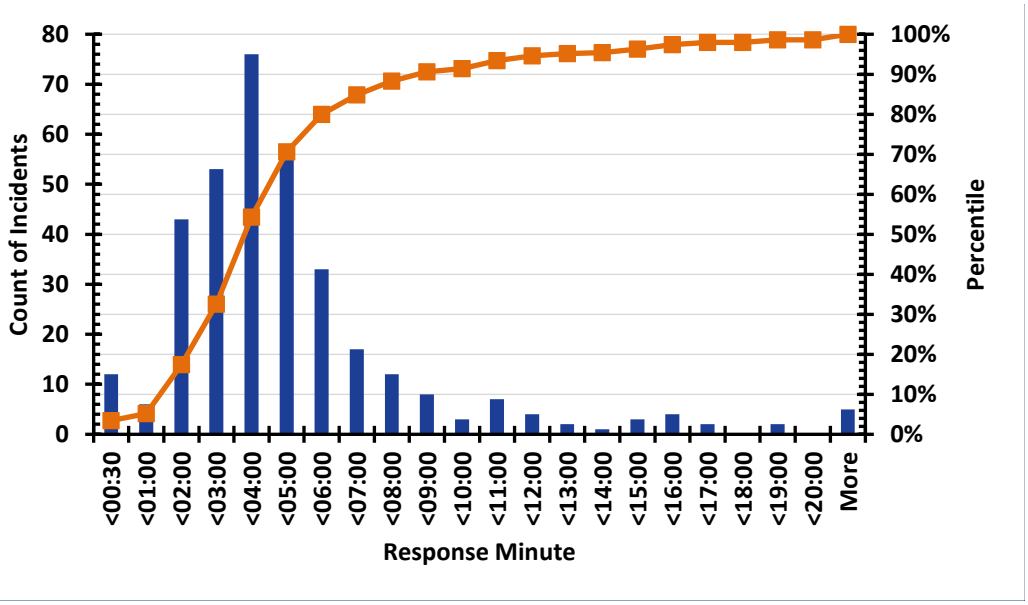
The ultimate goal of any emergency service delivery system is to provide sufficient resources (personnel, apparatus, and equipment) to the scene of an emergency in time to take effective action to minimize the impacts of the emergency. This need applies any emergency to which the fire department responds. Policy makers and citizens want to know how quickly they can expect to receive emergency services.

For the Response Performance Analysis, ESCI uses incident data extracted from the PLFD RMS (ERS) to provide an overview of response performance from January 2016 through December 2018. Non-emergency incidents, incidents canceled prior to arrival, invalid data points, mutual aid responses outside of the PLFD service area, and data outliers are eliminated from the data set whenever discovered. This results in a data set of approximately 351 emergency incidents during the three years examined. Following fire service best practices, percentile measurement of response time performance is calculated. The percentile means that if the stated value is six minutes measured at the 80th percentile, 80 percent of response times are six minutes or less. ESCI also calculates average response times, since this is a familiar measure, which measures the central tendency of the data set.

The most important reason for not using averages for performance standards is that it may not accurately reflect the performance for the entire data set, and can be easily skewed by bad data. Percentile measurements are normally used for performance objectives and performance measurement since they show that the majority of the data set has achieved a particular level of performance.

The following figure displays the frequency of emergency response times within one-minute increments and the cumulative percentage (percentile measurement) of response times for the first PLFD apparatus to arrive at an emergency incident from 2016 through 2018. Response time is calculated from the time the fire department is notified by the dispatch center of an emergency to the arrival of the first apparatus to arrive on the scene.

Figure 40: PLFD Emergency Response Time Frequency, 2016–2018



The most frequently recorded emergency response time occurs between three and four minutes. The average response time for emergency incidents in the PLFD service area is 4 minutes, 44 seconds (04:44). The first apparatus arrived at 80 percent of emergency incidents in 6 minutes (06:00) or less.

The response time performance displayed in Figure 40 is comprised of the following components:

- **Turnout Time:** The time interval between when units are notified of the incident and when the apparatus is enroute.
- **Travel Time:** The amount of time the responding unit spends traveling to the incident.
- **Response Time:** Response Time is calculated from the time the fire department is dispatched to the arrival of the first apparatus; and equals the combination of "Turnout Time," and "Travel Time."

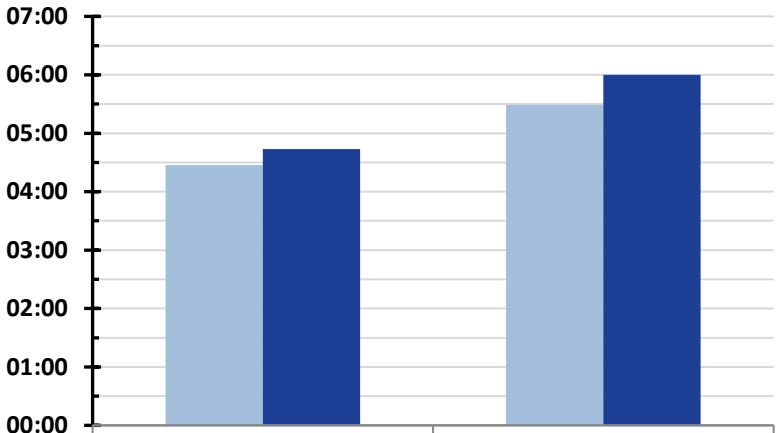
Tracking the individual components of response time enables jurisdictions to identify deficiencies and areas for improvement. In addition, knowledge of current performance for the components listed above; is an essential element of developing response goals and standards that are relevant and achievable. Fire service best practice documents recommend that fire jurisdictions monitor and report the components of total response time.[13]

Working with the PLFD incident data, ESCI discovered that a data entry anomaly and invalid data points appear to prevent an accurate calculation of turnout time. ESCI recommends that PLFD work with the department's RMS vendor (ERS) and the regional dispatch center to discover the source of this anomaly and rectify the issue. Due to the issue identified, the response performance analysis will be limited to a discussion of Travel Time and Response Time (fire department units dispatched to the first unit on scene). This follows the NFPA 1720: *Standard for Volunteer and Combination Fire Departments* recommendations for measuring and reporting response time performance.

The following figure displays PLFD overall emergency response performance for the components of response time.

[13] 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* (2014); NFPA 1720: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments* (2014); Center for Public Safety Excellence *Community Risk Assessment: Standards of Cover, 6th Edition*.

Figure 41: PLFD Emergency Response Time Performance, 2016–2018



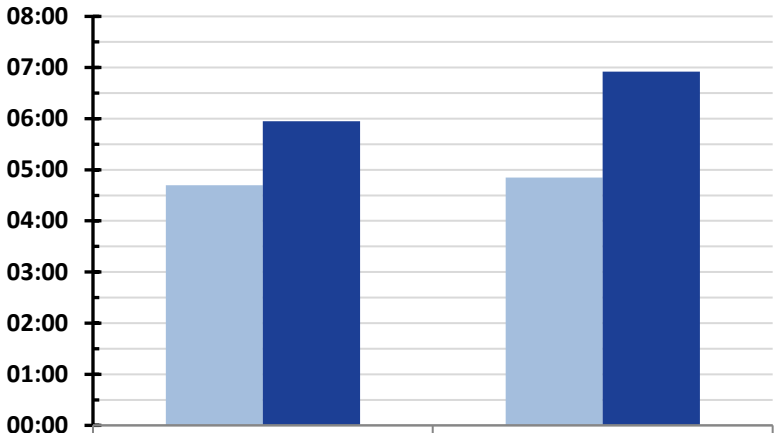
	Average	80th Percentile
Travel Time	04:27	05:29
Response Time	04:44	06:00

As discussed in the Distribution Analysis, the PLFD station is within 4 minutes travel or less of approximately 98 percent of service demand in Palmer Lake. Examination of actual travel time performance shows that PLFD units averaged 4 minutes, 27 seconds (04:27) travel time for the first unit to arrive. Eighty percent of emergencies were reached in 5 minutes, 29 seconds (05:29) travel time or less. Actual travel time performance can be affected by factors such as traffic flow during peak traffic times, the nature and quality of the street network, or poor driving conditions caused by severe weather.

The travel time performance displayed in Figure 41, resulted in an average response time of 4 minutes, 44 seconds (04:44) and response time performance of 6 minutes (06:00) measured at the 80th percentile for emergency incidents in Palmer Lake in 2016 through 2018.

The next figure examines PLFD emergency response performance summarized by the type of incident. Incidents are categorized as EMS or Fire/Other. The EMS category includes any call for a medical first response (all calls for medical service, including MVAs and rescues, any 3 series NFIRS code). The Fire/Other category includes any fire incident (NFIRS 1 series) and all other primarily fire unit emergency responses (NFIRS series 2, 4, 5, 6, 7, 8, and 9).

Figure 42: PLFD Emergency Response Time Performance by Incident Category, 2016–2018



	EMS	Fire/Other
Average	04:42	04:51
80th Percentile	05:57	06:55

Emergency response performance varies to some degree, depending on the type of incident. On average, the difference between the EMS category and the Fire/Other category is approximately 9 seconds. Measured at the 80th percentile, the range increases to slightly less than 1 minute (58 seconds). This is most likely due to a high number of EMS incidents that are clustered in closer proximity to the PLFD fire station and in most cases easier to access. Fire and Other incidents tend to be dispersed throughout the service area and can be more difficult to access in some cases.

The following figure displays emergency travel time performance summarized by incident category.

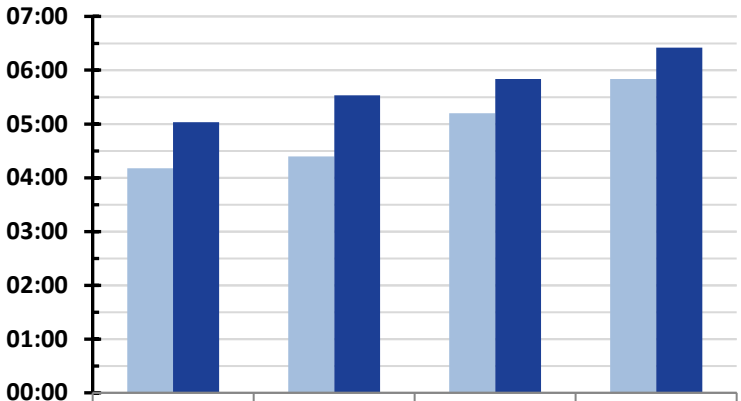
Figure 43: PLFD Travel Time Performance by Incident Category, 2016–2018

	EMS	Fire/Other
Average	04:24	04:38
80th Percentile	05:23	06:46

The differences in emergency travel time performance by incident category are similar to that displayed in Figure 42. Location and access issues can affect travel time performance and hence total response time performance.

The next figure illustrates emergency travel time and response performance for the primary PLFD emergency response apparatus.

Figure 44: Emergency Travel Time and Response Time Performance by Apparatus, 2016–2018



	Average Travel	Average Response	80th Travel	80th Response
Engine 2015	04:11	04:24	05:12	05:50
Brush Engine 2045	05:02	05:32	05:50	06:25

Engine 2015 and Brush Engine 2045 were the first apparatus to arrive at nearly 97 percent of PLFD emergency incidents. Figure 44 reveals that whether measured on average or at the 80th percentile, travel time affects overall emergency response performance. Engine 2015, which responds primarily in the more developed portions of the service area, demonstrates the best travel time and response time performance. While Brush Engine 2045, which is more likely to respond to more remote locations with poor road access which extends travel time, demonstrates total response time performance that is approximately 30 seconds longer on average and 35 seconds longer measured at the 80th percentile.

Overall, PLFD response performance compares favorably to similar fire jurisdictions operating from a single station with a combination of paid and volunteer staffing.

TRAINING PROGRAM

Training is the foundation of all aspects of emergency services. An individual's ability to effectively utilize resources and equipment is dependent on the level of training an organization has provided. The following section provides an overview of the equipment, facilities, execution, and efficacy of the current training program.

Current State

Based on survey information, PLFD stated 190 hours of training was provided to paid personnel and 50 hours of training provided to volunteer members. Additionally, the survey stated that there was an equal breakdown of training hours for fire and EMS related topics. The documentation provided during the site visit indicated the following breakdown of classroom/practical training hours from August 1,2018 through February 28, 2019:

- Fire Training – 32 hours
- EMS Training – 62 hours
- Other Training – 32 hours

Total Training Hours – 126

ESCI was advised that there had been a leadership change in the summer of 2018 and prior to that period training records were limited. The disparity between the number of hours provided and the number of hours documented supports the necessity to improve training record documentation. ESCI has broken down the information into the number of classroom/drill ground hours. The information does not include specific certifications that individuals acquired (Blue Card, Fire Instructor I, DOII) but focuses on training that the majority of firefighters received. The following figure shows the number of different training subjects and the hours for each category.

Figure 45: PLFD 2018 Training Hours

Subjects Presented	Category	Total Class/ Drill Hours (Approximation)
5	Tech Rescue	10 hours
7	Fire	16 hours
6	Hazmat	12 hours
8	Wildland	16 hours
18	EMS	62 hours
1	DO	2 hours
3	Other	8 hours

ISO Required Training

The Insurance Services Office (ISO) has specific requirements for training and documentation.[14] PLFD currently has an ISO rating of 4 in hydranted areas and a 9 in non-hydranted areas. In order to maintain or improve the area ISO scores, the following training hours and documentation must be performed each year (see Figure 2).

Figure 46: ISO Annual Training Requirements

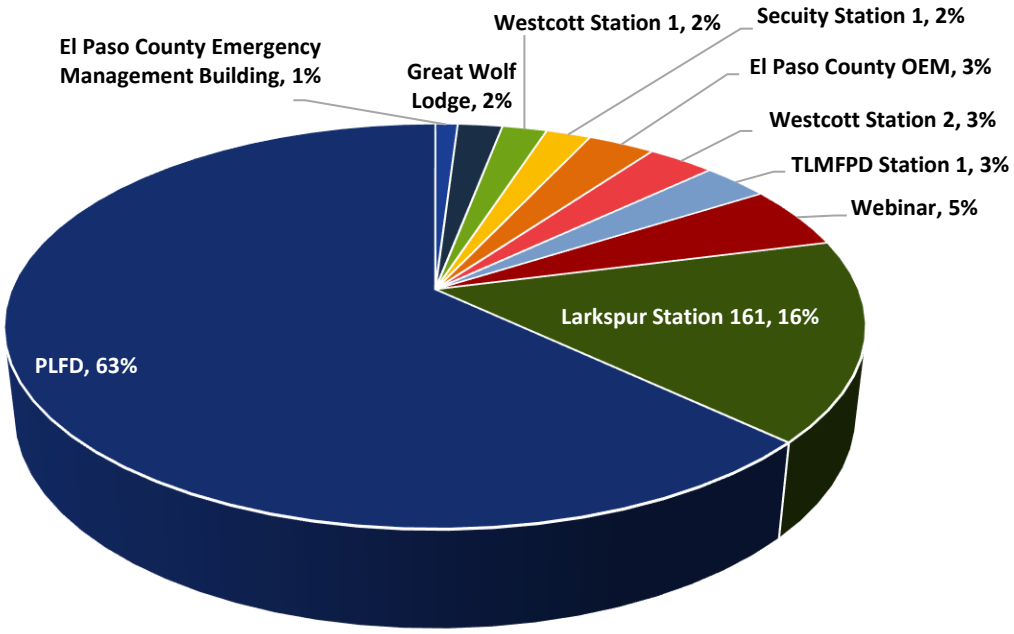
Subject	Hours per Year
Company Fire Training	192 hrs./yr.
Hazmat Training	6 hrs./yr.
Driver Training	12 hrs./yr.
Officer Training	12 hrs./yr.
Facility Training	18 hrs./yr.

Based on the information provided, it appears that PLFD needs to add additional training in company fire training, driver training, officer training, and facility training. These required hours should be incorporated into an overall annual training calendar.

The following figure shows the percentage of training in a specific location. The data indicates that 37 percent of training is conducted at outside agencies. This points to excellent cooperation with surrounding agencies.

[14] Target Solutions. *Updates to ISO's Training Requirements Impact Clients Using TargetSolutions' ISO Training Tracker.* https://www.targetsolutions.com/company-news/updates-to-isos-training-requirements-impact-clients-using-targetsolutions-iso-training-trackerall/

Figure 47: Training Locations



Initial Fire Training

PLFD has a cooperative relationship with Larkspur Fire Protection District (LFPD) and provides an initial fire academy. After selection into the volunteer core for PLFD, candidates are required to attend LFPD's FF I academy. The program is highly respected, and volunteers come out of the program capable of performing all duties required. When an opening occurs for a paid position at PLFD, all selections are done from the volunteer group who already possess FF I, Hazmat Operations and DO I certification. Additionally, the affiliation with LFPD has supported necessary continuing education and facilities for the remaining department members.

General Training Competencies

PLFD appears to have a comprehensive training program. The department has an extensive "Task Book" for probationary volunteer firefighters, which focuses on job performance reviews (JPR) from the State of Colorado. An opportunity for improvement lies with documentation of job performance after individuals have completed their probationary period. ESCI recommends implementing a training program that includes training action plans (TAP), course sign-in sheets, and training evaluations. This program provides specific documentation demonstrating core competency for each member and can support future accreditation or requirements to be considered a training center.

Training Administration

The Training Officer role is currently managed by the C-Shift Lieutenant (Lieutenant Berry). It appears to be a new assignment and he has made a lot of progress in developing a formal training program. He is managing a very limited annual training budget of $2,500. Most of this allocation is for recertification fees. There is no other line item specific to training in the department budget. ESCI recommends the development of a comprehensive budget that can help plan for short- and long-term training requirements. The budget should set aside funding for future training equipment and facilities to maintain the level of service provided.

Training Schedules

Following ESCI's analysis, there does not appear to be a balanced, scheduled approach to the training program. Again, there is limited documentation but PLFD should consider a balanced EMS/Fire education program. One portion of the program should reflect statistical data from PLFD incidents. PLFD should look for areas of improvement (Focused CE) or opportunities for additional levels of patient care. The second portion should be to fulfill the continuing education requirements for various certifications. A training calendar should be established that assigns specific monthly training to a specific purpose. Training opportunities from Penrose Hospital and surrounding fire agencies can be placed on a 12-month calendar. Individuals can then plan on attending the specific training necessary for recertification. Following is an abbreviated example of a balanced EMS CE training program (see Figure 48):

Figure 48: Balanced EMS Training Schedule (Example)

January	February	March	April	May	June
Recert (OB/Peds)	Recert (Cardiac)	Recert (Trauma)	Focused CE	Recert (Medical)	Multi-agency MCI
July	**August**	**September**	**October**	**November**	**December**
Recert (Environmental)	Focused CE	Recert (BLS, ACLS, PALS as needed)	Recert (Respiratory)	Recert (Behavioral)	Focused CE

Training Facilities

PLFD has limited training facilities and relies on regional assets for most training requirements. The Town of Palmer Lake has an area "town yard," where training such as extrication and driver operator can be provided. Additionally, the Town Hall building can accommodate all members of the department for didactic classes. Air Force Academy Fire has a burn facility that PLFD can utilize once or twice per year. The limitations for all northern group agencies support the need for a regional training facility.

Training Record Keeping

Throughout this section, there has been a reference to the necessity of improved training documentation. The first step, as described earlier in this section, is the development of training action plans (TAP) for each course provided. Then, accurate documentation of topic/hours/attendance combined with a post-evaluation tool will support the quality training provided by PLFD. Future goals should include becoming part of the Northern CE certification group initiated by TLMFPD. This would enable PLFD to provide medical CE, and the firefighters could receive credit toward National Registry recertification.

RECOMMENDATIONS:

- PLFD should consider implementation of a training program that includes training action plans (TAP), course sign in sheets, and training evaluations.
- Develop mandatory annual training requirements supported through the annual training calendar.
- PLFD should consider the development of a balanced EMS/Fire education program that includes requirement for recertification and retrospective analysis of actual responses.
- ESCI recommends the development of a comprehensive budget that can help plan for short- and long-term training requirements.
- Develop short, mid, and long-term strategies to address inadequate training facilities.

FIRE AND LIFE SAFETY

Albert Einstein once said, "Intellectuals solve problems, geniuses prevent them." Fire prevention and life safety code enforcement is a critical component of community safety. Fiscal responsibility is manifested through the prevention of working fires and minimizing human suffering. The following section will provide analysis of PLFD's current Life Safety Programs, and reference national standards established by NFPA and the Commission on Fire Accreditation International (CFAI). The criteria established by CFAI are considered industry best practices and will help evaluate PLFD's current state and potential areas for improvement.

The National Fire Protection Association recommends a multifaceted, coordinated risk reduction process at the community level to address local risks. This requires engaging all segments of the community, identifying the highest priority risks, and then developing and implementing strategies designed to mitigate the risks.[15]

Community Risk Reduction (CFAI 5A)

Community Risk Reduction (CRR) plan begins with a Community Risk Assessment (CRA). Every community is unique, and an assessment process will help identify specific risks. The process should evaluate residential, commercial, and industrial properties. The following graphic shows a systematic process for completing a CRR:

Figure 49: Risk Reduction Strategy

[15] Kirtley, Edward, *Fire Protection Handbook*, 20th Edition, 2008, NFPA, Quincy, MA.

Palmer Lake has numerous areas for risk assessment. A few examples include interface fires, environmental emergencies, active shooter, hazardous materials release involving the railroad, and events associated with large bodies of water. It does not appear that the Town of Palmer Lake has done a CRA and ESCI encourages a collaborative effort between local private and public entities to help identify community risk. After a CRA has been performed and the risks prioritized, the Town should begin development of risk reduction strategies. The following figure lists of the components and specific elements required to adequately address risk reduction. The remaining section will provide an analysis of each component and areas that PLFD can consider opportunities for improvement.

Figure 50: Risk Reduction Strategy

Risk Reduction Strategy Program Components	Elements Needed to Address Program Components
Public Fire & Safety Education	• Public education • Specialized education • Juvenile fire setter intervention • Prevention information dissemination
Fire Code Enforcement	• Proposed construction and plans review • New construction inspections • Existing structure/occupancy inspections • Internal protection system design review • Storage and handling of hazardous materials
Emergency Response	• Respond effectively and quickly • Firefighter competency • Appropriately equipped
Engineering	• Applicable building and fire codes • Built-in fire protection • Emergency response techniques
Fire Cause Investigation	• Fire cause and origin determination • Fire death investigation • Arson investigation and prosecution

Public Fire and Safety Education

PLFD has limited resources for public education. The on-duty crew consisting of an officer and 1 to 2 firefighters is generally responsible for all public education. Currently, there is an emphasis to provide annual education (October) at the grade school during fire prevention month. PLFD should consider additional educational outreach opportunities. Workplace seminars can help property managers, fire wardens, and building engineers effectively respond to a wide variety of emergencies. Response guidelines for fires, workplace violence, medical emergencies, and natural disasters can assist citizens in taking appropriate action when emergencies occur.

Another example specific to the Town of Palmer Lake would be seminars designed to educate the community on how to respond to wildfire events. Residential mitigation (defensive space), evacuation routes and emergency communication are topics that are commonly covered. Most of these programs have minimal fiscal requirements and can demonstrate remarkable success. ESCI recommends the development of an outreach program that can be documented and measured for effectiveness. The current Palmer Lake Fire Association and volunteer program may be an excellent resource to help develop a formal public education program.

Fire Code Enforcement (CFAI 5A.1)

The Town of Palmer Lake and PLFD do not currently have a Fire Marshal. It appears that there is limited fire code enforcement throughout the Town. Pikes Peak Building Regional performs all of the building plan reviews for the Town. Occasionally, the current PLFD Captain performs a specific review of fire systems in a commercial structure but documentation is unclear as to overall utilization. At the time of this review, the Palmer Lake Sanitation District had stopped issuing sanitation permits for new construction. This has significantly limited building growth. There is not an urgent need to address fire code enforcement in new construction. Future growth may require the Town of Palmer Lake to evaluate the need for a Fire Marshal position.

One area that may warrant additional attention is when there are occupancy and tenant changes. It is critical for PLFD to be aware of tenant changes that may require additional internal protection systems or design review. On-duty engine companies perform building familiarization, and pre-plans exist for the majority of commercial structures. Fire crews' familiarization of the internal layout of the businesses is a requirement for improving ISO ratings.[16] Additionally, there did not appear to be adequate expertise/certification within the department to support fire code enforcement. Consider assisting 1 to 2 fire personnel in acquiring Fire Inspector I and II certifications. Neighboring agencies including Tri-Lakes Monument Fire Protection District (TLMFPD) do not appear to have a routine inspection program for commercial structures. This may be an opportunity for a regional program that can improve the prevention of catastrophic fires. Following are general guidelines for fire inspection frequency:

[16] Insurance Services Office, Fire Suppression Rating Schedule 2012, Section 1022.

Figure 51: Recommended Fire Inspection Frequencies

Hazard Classification	Example Facilities	Recommended Inspection Frequency
Low	Apartment common areas, small stores, and offices, medical offices, storage of other than flammable or hazardous materials.	Annual
Moderate	Gas stations, large (> 12,000 square feet) stores and offices, restaurants, schools, hospitals, manufacturing (moderate hazardous materials use), industrial (moderate hazardous materials use), auto repair shops, storage of large quantities of combustible or flammable material.	Semi-Annual
High	Nursing homes, large quantity users of hazardous materials, industrial facilities with high process hazards, bulk flammable liquid storage facilities, facilities classified as an "extremely hazardous substance" facility by federal regulations (SARA Title III).	Quarterly

Emergency Response

PLFD faces similar challenges compared with many rural combination fire departments, including fiscal limitations resulting in limited resources. Based on the information provided, PLFD appears to have adequate personnel and resources for basic life support (BLS) medical response. Documentation supports that advanced life support (ALS) is limited, due to a delayed response from Donald Wescott Fire Protection District (DWFPD). The department has adequate resources for an initial wildland fire which can be critical in preventing a large-scale event. This document shows that PLFD does not have adequate resources for response to commercial or residential structure fires. ESCI recommends exploring options for adequate emergency response for the Town of Palmer Lake, i.e., built-in fire protection, mutual aid responses, etc.

Engineering

The Town of Palmer Lake is surrounded by other municipalities and appears to have significant growth in the future. The majority of change will occur in occupancy and tenant changes. As previously discussed, it is imperative for PLFD to be involved in the change process so that built-in fire protection and emergency response techniques are based on the latest technology. Continued participation in the Community Wildfire Protection Planning (CWPP) process will help mitigate potential interface wildland fire emergencies.

Fire-Cause Determination and Investigation (CFAI 5C)

PLFD personnel do not carry specific certifications for arson investigations. For routine events, if the company officer believes the cause is suspicious, a notification can be made for support from El Paso County. Fire-cause and investigations are performed by El Paso County Sherriff Emergency Services Division in cooperation with Colorado Springs Fire Department. Additional resources are available from the United States Forest Service, the Colorado Bureau of Investigation, and surrounding municipalities.

RECOMMENDATIONS:

- ESCI recommends the development of a community education outreach program that can be documented and measured for success.
- Consider assisting 1 to 2 fire personnel in acquiring Fire Inspector I and II certification to improve fire code compliance activities.
- Consider a formal fire inspection/fire code enforcement program focusing on tenant changes that may require additional internal protection systems or design review.

FUTURE OPTIONS

There are four options available to the Town of Palmer Lake for providing fire services. One is to do nothing different which is the status quo option. The second option is to maintain the fire department but to bring it up to meet current standards. The third option is to create a public safety department that would combine police and fire personnel to provide both law enforcement and fire/EMS services. The fourth option is to obtain fire and EMS services from the Tri-Lakes Monument Fire Protection District. This section will discuss the advantages and disadvantages based on the previous evaluations and will identify the costs of that option. While the numbers are chosen as reasonable estimates there can be a wide range depending on the specific chosen level of expenditure.

Option One: Status Quo—Continue to Operate the Palmer Lake Fire Department

The status quo option is always the baseline service provision. There always can be a continuation of current operations.

Analysis

Advantages: No changes would be made. Politically this is often the easiest path to follow. There is no dramatic change in costs.

Disadvantages: Changes that need to be made would not be done. Even if there is no desire to improve the functional level of the department, ESCI strongly recommends changes due to areas of potential liability. These specifically fall into having adequate and separate facilities for both genders and provide modifications to prevent contamination and future health concerns. These issues could lead to legal liabilities in the future that will not be resolved under this option.

Cost impact: None.

Option Two: Continue to Operate the Palmer Lake Fire Department with Improvements

This report was meant to identify gaps in current conditions to what is recommended by industry standards and best practices. In earlier sections of this report, ESCI assessed current conditions in the department. Specific recommendations were made. Some of the more significant recommendations are reflected in this section for improvement.

Analysis

Advantages:

- Fire station maintenance and health issues could be resolved.
- Potential for housing an ambulance improving response time to the town.
- Funded replacement schedule for vehicle and major equipment replacement.
- Improved staffing for initial response to calls but still not reaching a fully effective response force and will still require automatic or mutual aid assistance for working fires and expanded incidents.
- Town retains full control of the fire department.
- Better ALS service (assumes ambulance provider will place a unit in the new station).

Disadvantages:

- Cost is high.
- The Town is still responsible to maintain the operation of the fire department.

Cost: If the identified gaps are improved the cost would be as shown in the following figure:

Figure 52: Cost for Operating Improvements—Option Two

Operating Improvement	Cost Estimate	Annual Cost	Mill Levy Equivalent
Budget Adjustment	Budgeted 2019 Costs	$ 362,274	
	Minus Budgeted Wages with assumed 30% Benefits	($ 128,952)	
	Operating Budget Minus Wages and Benefits	**$ 233,322**	**6.695 Mills**
Improvement in Staffing Levels	9 FTE Current Wages and 30% Benefits	$ 270,130	7.751 Mills
	Add Fire Chief Benefits and Wages	$ 110,500	3.171Mills
Bring Wages to Competitive Levels	Move 9 FTE to Current Wage with 30% Benefits	$ 344,074	9.873 Mills
Additional Training/Certification	Add $10,000 to the Training Costs	$ 10,000	0.287 Mills
Quicker EMS Response	Provide station space and sign an agreement with the ambulance provider.	No additional cost if the new station is built with room.	0.0 Mills
Total Operating Costs		**$ 968,026**	**27.777 Mills**

Figure 53: Cost for Capital Improvements—Option Two

Capital Improvement	Cost Estimate	Annual Cost	Mill Levy Equivalent
Fire Station Replacement	New Fire Station Estimated at $3.0 Million		
	30-Year Debt Schedule $162,000 Annually	**$162,000**	**4.648 Mills**
Apparatus Replacement Lease Purchase	Engine 2015 $713,856 in 2021, Paid off 2031	$83,685	
	2 Utility Vehicles $38,246 in 2022, Paid off 2027	8,332	
	Brush 2040 $212,914 in 2024, Paid off 2034	$24,960	
	Brush 2045 $256,043 in 2029, Paid off 2039	$30,368	
	Highest Lease Payment, 2030 & 2031	**$139,013**	**3.989 Mills**
Equipment Replacement Fund	Bunker gear needs to be replaced every 5 years at $1,000 per set.		
	1/5 Replaced Annually $5,000	**$ 5,000**	**0.144 Mills**
	SCBA needs to be replaced every 15 years at $5,000 per set.		
	Needs to be replaced all at once: (10 Sets $50,000 – Annually $3,333)	**$ 7,600**	**0.218 Mills**
Total Capital Costs		**$ 313,613**	**8.999 Mills**

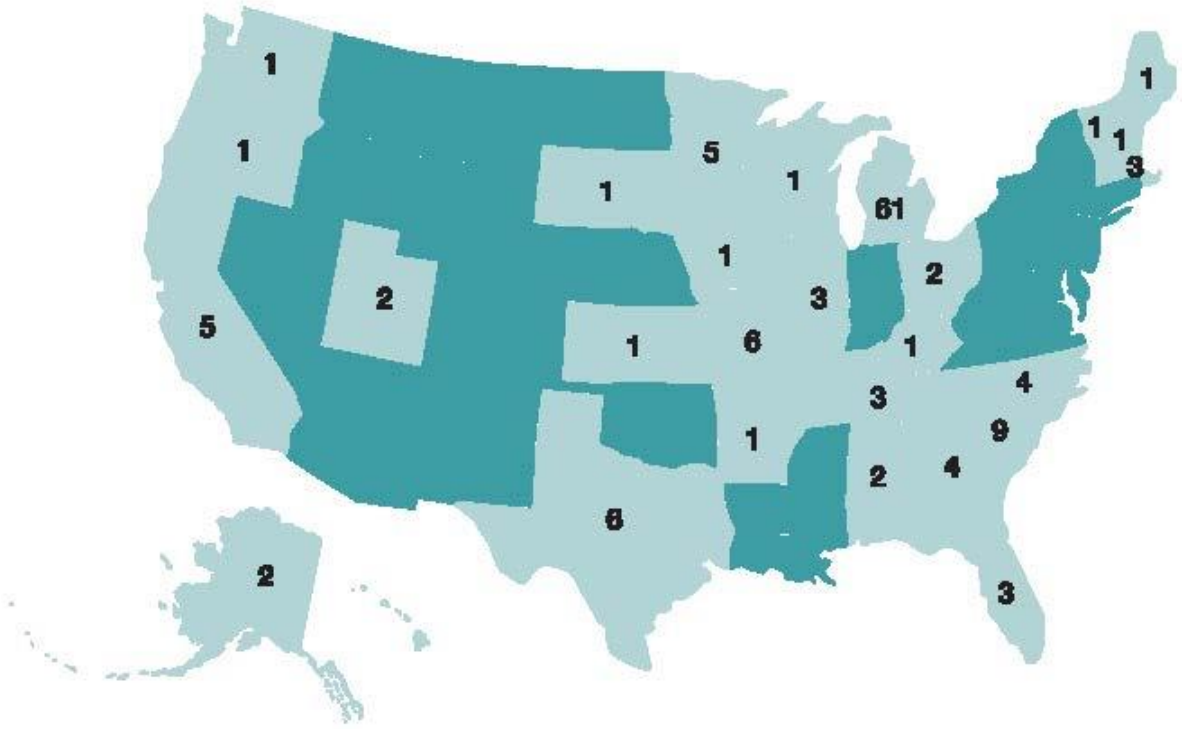
The cost for improving the fire department is capital replacement of $313,613 and operating cost of $968,026 together the equivalent mills levy would need to be 36.774 mills based on the 2019 assessed valuations.

Option Three: Become a Public Safety Department

Since the resignation of the Fire Chief, the Police Chief has been acting as both Police Chief and Fire Chief. The Chief has written a proposal of forming a public safety department that was given to ESCI to consider. The concept of a public safety department has been around for nearly one hundred years, but the concept was more widely accepted in the 1970s and is still being adopted in places around the country. The primary motivation was to reduce the costs of having multiple services and staffs. According to a COPS study, there are 131 departments in the United States that are public safety concept departments.[17] Interestingly, nearly half of them are in Michigan. The rest are distributed around the country as shown in the following figure.

[17] Jeremy M. Wilson, Meghan Hollis, and Clifford Grammich, *Consolidated Public Safety Departments: A Census and Administrative Examination*, 2016, Washington, DC: Office of Community Oriented Policing Services.

Figure 54: Map Public Safety Departments in the U.S.



To be considered a public safety department there would need to be a combination of law enforcement and EMS, or law enforcement and fire, or a combination of all three. Departments are classified as full, partially, or nominal as to the level of consolidation. A full level consolidation is a complete integration of police and fire with fully cross-trained officers. Partial integration is with cross-trained public safety officers existing alongside separate functional personnel. The level of consolidation is considered nominal if where there is no integration of the services but there is a chief executive over all functions.

The concept of having cross-trained personnel supplying services had advantages, especially for cost savings. The thought is that neither department is busy continuously and therefore the personnel can handle the duties without having two separate staffs. Unfortunately, both law enforcement and fire services/EMS are often busy with the same incident at the same time. Another issue is that the personalities of personnel drawn to law enforcement and to fire and EMS are somewhat different and so finding personnel that is interested and adept at both are harder to find and hire.

Nevertheless, ESCI thought it valuable to look at this concept which appears to have some merit for Palmer Lake. The service demand for either entity is not great. The situations that would demand both services are statistically small. An assault on a victim that requires medical assistance and the arrest of the perpetrator is an example of such an incident. Designing the service correctly could provide better service due to doubling nighttime staffing with public safety officers, however, it may not have any financial advantage due to the fact staffing is very low on both sides.

Public Safety Concept Needs

Operation

The career officers would likely work 12-hour shifts. Two public safety officers would be on patrol during each shift. These could be in separate vehicles and are available to respond to law enforcement, medical or fire call for service. If fire call, an engine could respond driven by a volunteer or part-time paid personnel and meet the public safety officers on the scene of the incident. The patrol officers could establish initial basic life support (BLS) medical care before the ambulance arrives and initiates advanced life support (ALS) service. Each patrol vehicle should be equipped with an Automatic External Defibrillator (AED) and medical kit. The medical kit should contain necessary supplies for controlling bleeding and administering oxygen. CPR could be administered as soon as the first patrol vehicle arrived.

Staffing levels would be somewhat improved by the available public safety officers, who could enforce the law, which would double at night. The response time for getting medical on the scene might be shortened by having personnel on patrol. Additionally, the patrol vehicle could be redesigned perhaps as a pickup with storage cabinets and small water tank and pump for small grass fire control. It could also be equipped with extinguishers to provide immediate first aid measures on fires that are incipient and small. This initial intervention could stop or control the progression of a fire. Fires beyond an extinguisher control level will require a response of other Palmer Lake resources and mutual aid resources. This is not much different than the current situation that requires mutual aid response on any medium size fire. Initial staffing levels for fire would be four persons (two public safety officers and two volunteers/PT firefighters).

Staffing

There are several considerations in staffing the public safety concept. These considerations are:

1. An individual holding multiple certifications for Fire/EMS/Law Enforcement will probably require full-time employment.
2. In order to have a minimum response during the day for Law Enforcement/Fire/EMS at least two full-time paid positions must be staffed 12-hour/day shift and 12-hour/night shift. The 12-hour shifts are the most commonly used deployment for multifunction public safety officers.[18]
3. Coverage during the day by volunteer firefighters is a challenge faced by most volunteer organizations. Most volunteers hold employment that limits response during the day.
4. With two public safety officers on patrol, there is still a need for someone to respond a fire apparatus for starting a fire attack on a structure or a wildland fire spreading beyond the incipient stage. This may require a combination of part-time firefighters and volunteer firefighters. Two part-time and two volunteers through the day and night hours are anticipated. Potentially one firefighter could be used to drive the fire apparatus to the scene and meet the two public safety officers. This is not the recommended strategy for safety. It is better to be able to have one firefighter give directions and operate the radio while the other drives.

[18] Jeremy M. Wilson, Meghan Hollis, and Clifford Grammich, *Consolidated Public Safety Departments: A Census and Administrative Examination*, 2016, Washington, DC: Office of Community Oriented Policing Services, pg. 15.

Numerous models have been developed for 12-hour shift employees. An example would be an individual working (3) 12/hour shifts (36 hours) on week 1 of the pay period and (3) 12/hour shifts and (1) 8-hour shift (44 hours) during the second week of the pay period. Regardless of the schedule selected, and based on the functional restrictions listed above, the following graphic shows the staffing hours for the Public Service (PS) Model:

Figure 55: Required Weekly Staffing Hours

Hours per Day of Staffing	Minimum Required PS Officers/Shift	Staffing Hours/Week
24 hours	2	336 hours

Breaking the total staffing hours per week by a 40/hour work week would require 8.4 full-time equivalents (FTE). For cost analysis, we have used 9 FTE public safety officers.

ESCI is not aware of any department currently using a Public Service Model in Colorado but contacted a department in Texas. There, the public safety officer is paid a law enforcement wage with add-ons for each additional fire certification obtained. It is difficult to compare salaries between states but assuming an annual salary of $54,900 for a police officer in Colorado plus $10,000 is added for the certifications for firefighter and EMT.[19] This is $64,900 for an annual wage of a public safety officer which is used in the cost analysis.

Station

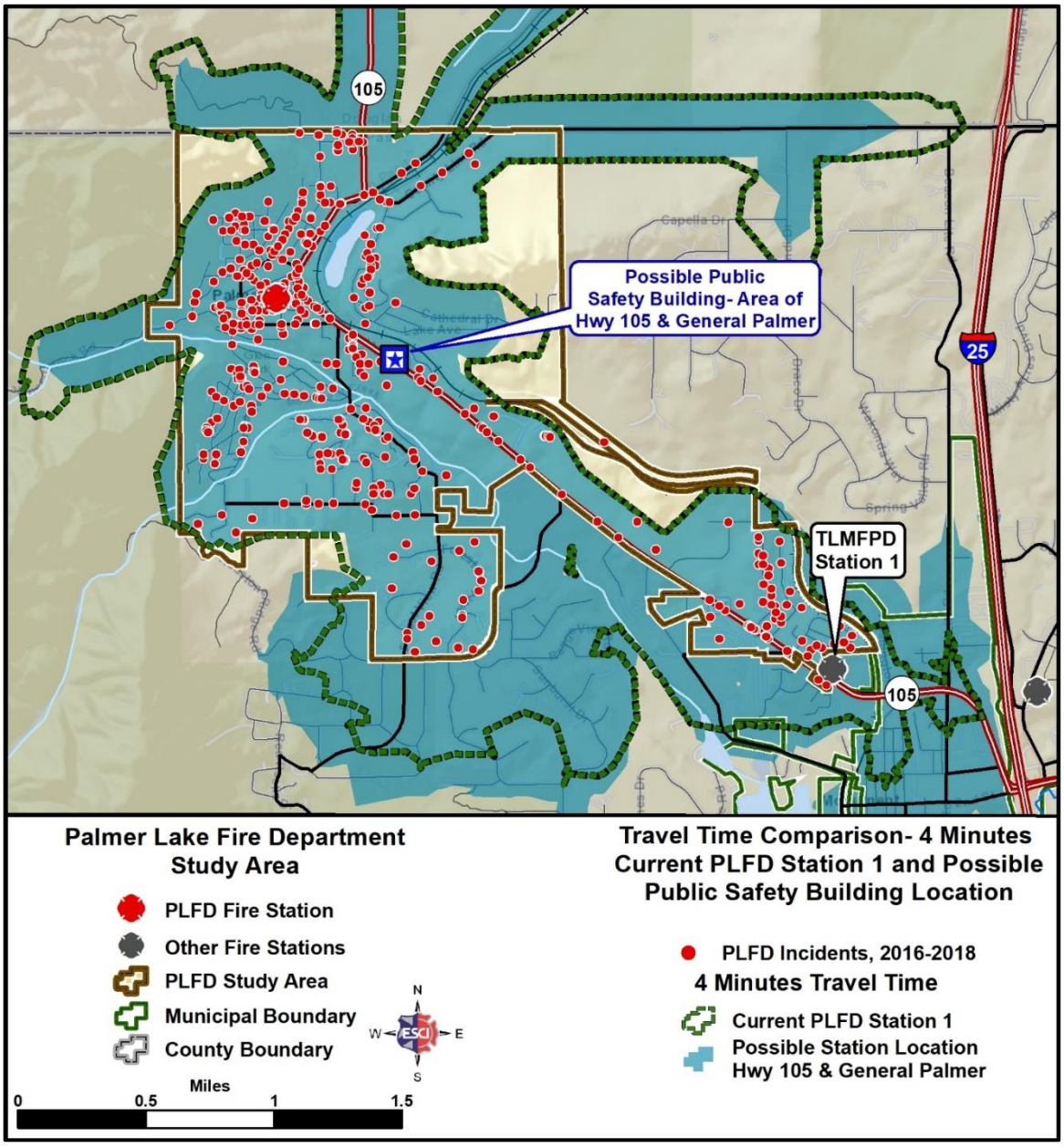
The fire station needs to be replaced. Building a public safety station could house the public safety employees and fire apparatus and offices for both law enforcement and fire services. The suggested location for this building is Highway 105 and General Palmer Drive. Besides having two to three bays for fire equipment there should be an additional bay for an ambulance to be stationed at the station should this be negotiated. This would require an additional two or three bedrooms for 24-hour staffing of the ambulance crew. It has been suggested that if space was available, the contract ambulance company would station an ambulance for the north end of the county. This would provide medical ALS response with shorter response time whenever the ambulance is in quarters. The station should have some bedrooms for volunteers and/or part-time paid personnel that will be part of the fire response. ESCI estimates that a public safety station would cost about $5 Million as it would be larger than a fire station to meet the needs of the law enforcement functions. This could be funded by a bond issue or a lease-purchase agreement. The debt service costs of a $5 Million bonded debt would be $270,000 annually if a 30-year debt service schedule is used.

[19] Source: https://www.salary.com/research/salary/alternate/police-officer-salary/co.

Response Capability

In the following figure, potential travel time is modeled over the existing road network. The incidents displayed include all geo-located incidents from January 2016 through December 2018 (approximately 950 incidents) inside the incorporated boundary of Palmer Lake. GIS software is used to measure the extent of service demand coverage provided from the current PLFD station location and a possible location for a new facility approximately .5 miles to the southeast is examined.

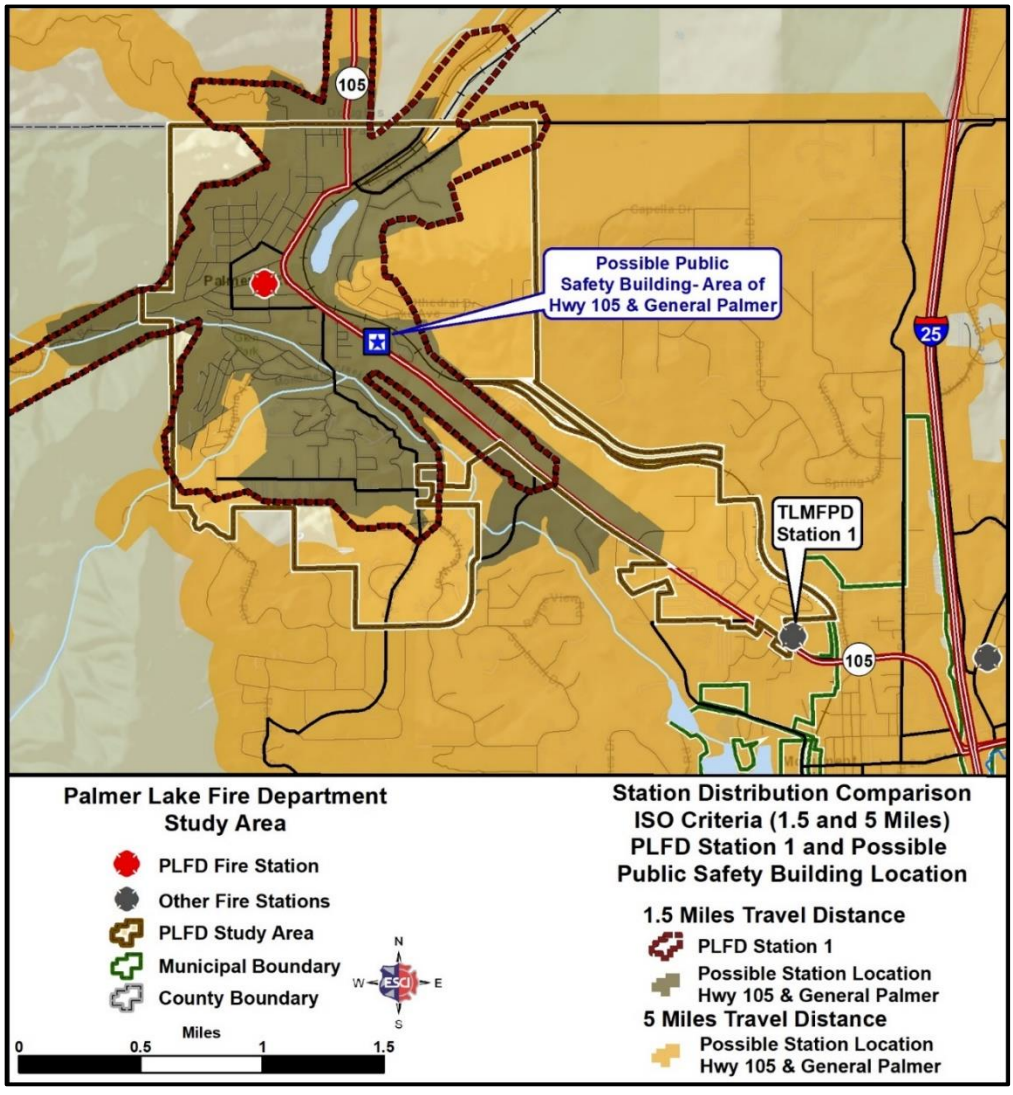
Figure 56: Travel Time Comparison, Possible Station Location and Current PLFD Station 1



Over 98 percent of 2016 through 2018 service demand occurred within four minutes travel or less of the current PLFD fire station. As demonstrated in this figure, the possible public safety building location is in the area of Highway 105 and General Palmer Drive serves a very similar area within Palmer Lake; and is also within four minutes travel or less of the same percentage of service demand as the current station location.

The following figure compares travel distance from the possible future station location and the existing station location based on the travel distance criteria of the Insurance Services Office (ISO). Address point data provided by El Paso County is used to compare the coverage provided by the two station locations displayed.

Figure 57: ISO Criteria Travel Distance Comparison, Possible Station Location and Current PLFD Station 1



The current PLFD station is within 1.5 miles travel of approximately 71 percent of the address points (i.e., structures) inside of Palmer Lake. The proposed location at Highway 105 and General Palmer Drive is within 1.5 miles travel of 66 percent of the same address points. Both station locations are within 5 miles travel of all of the currently developed area inside Palmer Lake.

Training

The ultimate goal would be to have career public safety personnel that would be trained in both firefighting and medical certifications as well as being law enforcement certified. This will take some time for existing personnel to achieve these levels. Training to a Firefighter I certification, Emergency Medical Technician–Basic and a POST trained officer (even to a level commensurate to a reserve officer status will take some time and a commitment of money to achieve with existing personnel. It may be possible to hire new officers that have both law enforcement credentials and fire and EMS credentials.

Training certifications would require the following:

Figure 58: Public Safety Officers Certifications

Law Enforcement		Firefighter/EMT	
Post Training	556 hours	**Firefighter 1**	120 hours
Reserve Officer Training	209 hours w/o driving	**Firefighter 2**	200 hours
Reserve Officer Training	253 hours w/driving	**Emergency Medical Technician**	200 hours

ESCI has been told that the Town could elect to send an officer to the full POST training or as a reservice officer. Firefighter I would be the minimum certification to function as a firefighter. EMT certification would be a must for public safety officers this will probably be their primary function.

Analysis

Advantages:

- Improves the staffing for both law enforcement and fire.
- Have BLS and first aid firefighting on the streets with quick response to call for service.
- With station and contract, improves ALS and transport service (if the ambulance provider agrees to place an ambulance in the station).

Disadvantages:

- Potential for law enforcement and fire or EMS responses at the same time.
- May be difficult to recruit the right individual for a public safety officer.
- Initial training requirements are high.
- May still require additional back up from part-time paid firefighters or volunteers.

Cost:

Figure 59: Cost of Operational—Option 3

Operational Improvement	Cost Estimate	Annual Cost	Mills To Cover Costs
Budget Adjustment	Budgeted Fire 2019 Costs	$ 362,274	
	Budgeted Police 2019 Costs	$ 379,653	
	Less Budgeted Fire Wages with 30% Benefits	($ 128,952)	
	Less Budgeted Police Wages with 30% Benefits	($ 281,554)	
	Total Fire and Police Budget minus Wages and Benefits	**$ 331,421**	**9.509 Mills**
Improvement in Staffing Levels	$64,900 each for 9 Public Safety Officers Wages and 30% Benefits	$759,330	21.787Mills
Additional Training/Certification	Add $25,000 to Training Budget	$25,000	0.717 Mills
Quicker EMS Response	Provide station space and sign an agreement with the ambulance provider	No additional Cost if the new station is built with room	0.0 Mills
Total Operating Budget		**$ 1,115,751**	**32.014 Mills**

Figure 60: Cost of Capital Improvements—Option 3

Capital Improvement	Cost Estimate	Annual Cost	Mills To Cover Costs
Station Meeting Current Health and Living Standards	New Public Safety Station $5.0 Million		
	30-Year Debt Schedule $270,000 Annually	**$270,000**	**7.747 Mills**
Apparatus Replacement Lease Purchase	Engine 2015 $713,856 in 2021, Paid off 2031	$83,685	
	2 Utility Vehicles $38,246 in 2022, Paid Off 2027	$8,332	
	Brush 2040 $212,914 in 2024, Paid Off 2034	$24,960	
	Brush 2045 $256,043 in 2029, Paid Off 2039	$30,368	
	2 Pickups with Limited FF Equipment & EMS $200,000 in 2020, Paid Off 2025	$43,049	
	Highest Lease Payment – 2025	**$159,927**	**4.59 Mills**
Equipment Replacement Fund	Bunker Gear Needs to be Replaced every 5 Years at $1,000 per set (1/5 of 25 sets)	$ 5,000	0.143 Mills
	SCBA Needs to be Replaced every 15 Years at $5,000 per set	$ 7,600	0.218 Mills
	Add BLS Equipment to Police Vehicles (assumes not outfitting new trucks)	$5,000	0.143 Mills
Total Capital Costs		**$447,527**	**12.841 Mills**

The cost for option three is $1,115,751 for operating and $447,527 for capital costs or $1,563,278 or 44.855 mills.

Option Four: Obtain Fire and EMS Services from Tri-Lakes Monument Fire District

Three possibilities exist for TLMFPD supplying services to the Town of Palmer Lake. One is by Palmer Lake contracting with TLMFPD for services on an annual basis. The other is for the entire area of the Town to be included into the fire district. The third is contracting until an inclusion can be completed. ESCI is not proposing these implementation preferences as actual offers by Tri-Lakes Monument Fire Protection District but only as suggestions for possible implementation. Actual negotiations need to be between the Town and the Fire District.

Response Capability

There will be some differences between the response to calls in Palmer Lake from TLMFPD Station 1 and the existing station. To determine that difference ESCI conducted both drive time and ISO criteria analysis. The first analysis will be a travel time study. Travel time is modeled from the current PLFD fire station and TLMFPD Station 1.

Figure 61: Travel Time Comparison, Current PLFD Station 1 and TLMFPD Station 1

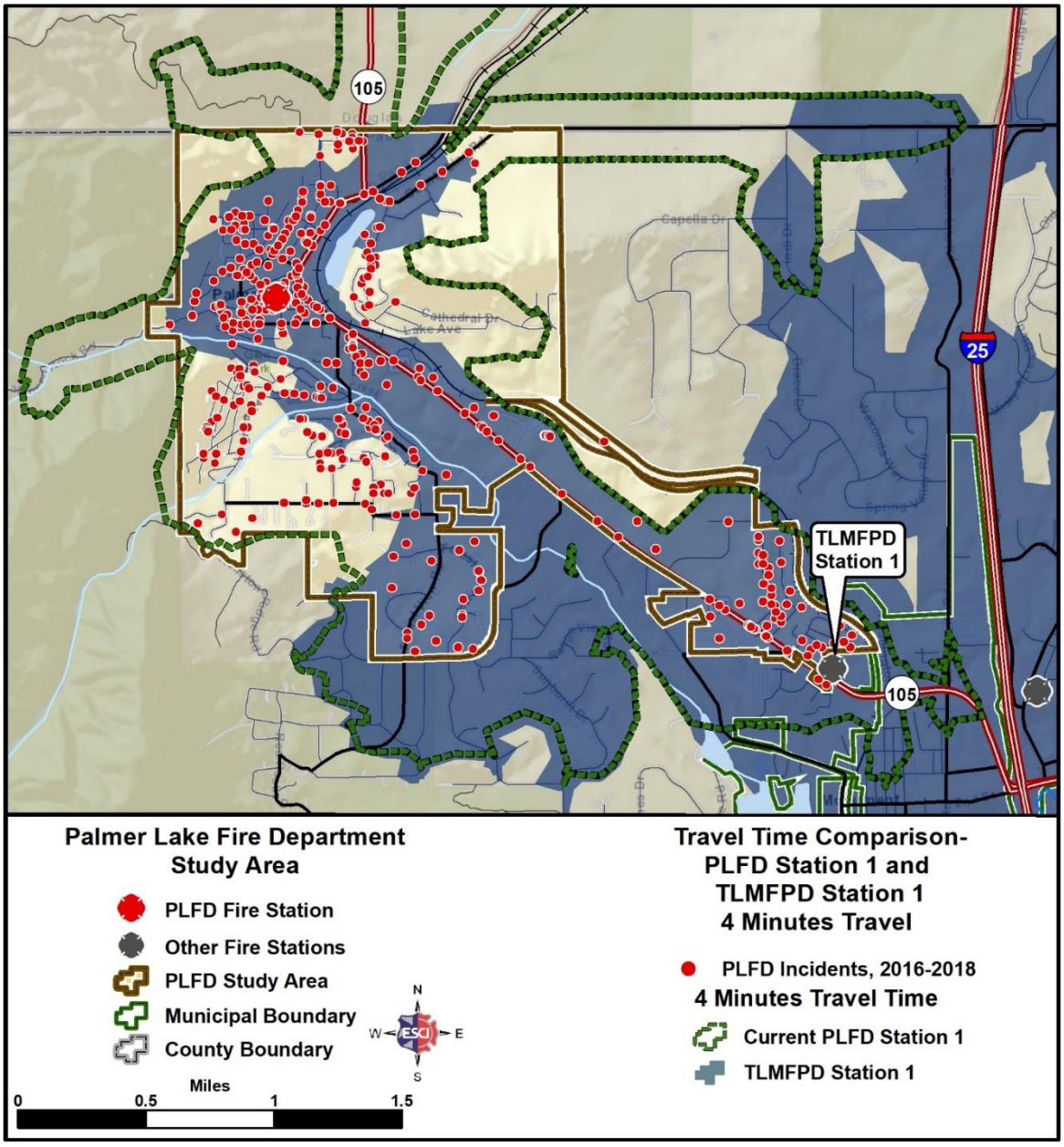
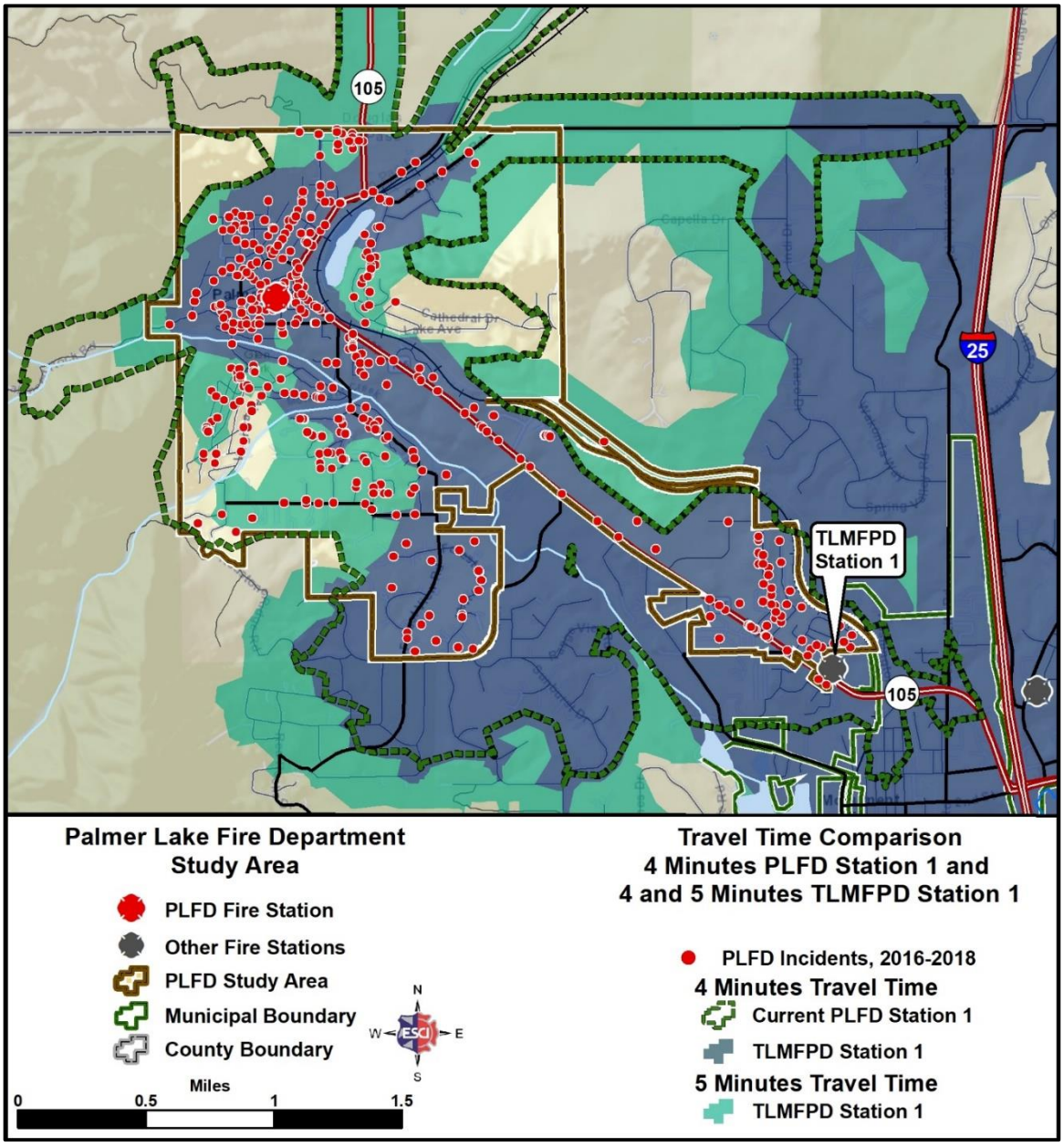


Figure 61 displays the 4-minute service areas of the current PLFD Station 1 and Tri-Lakes Monument Fire District (TLMFPD) Station 1. The red dots are incident locations from 2016 through 2018. As displayed, units from the TLMFPD station can reach a large portion of the PLFD service area along the Highway 105 corridor. Eighty-four percent of 2016 through 2018 PLFD service demand occurred within 4 minutes travel or less of TLMFPD Station 1, as compared to 98 percent within 4 minutes travel of PLFD Station 1.

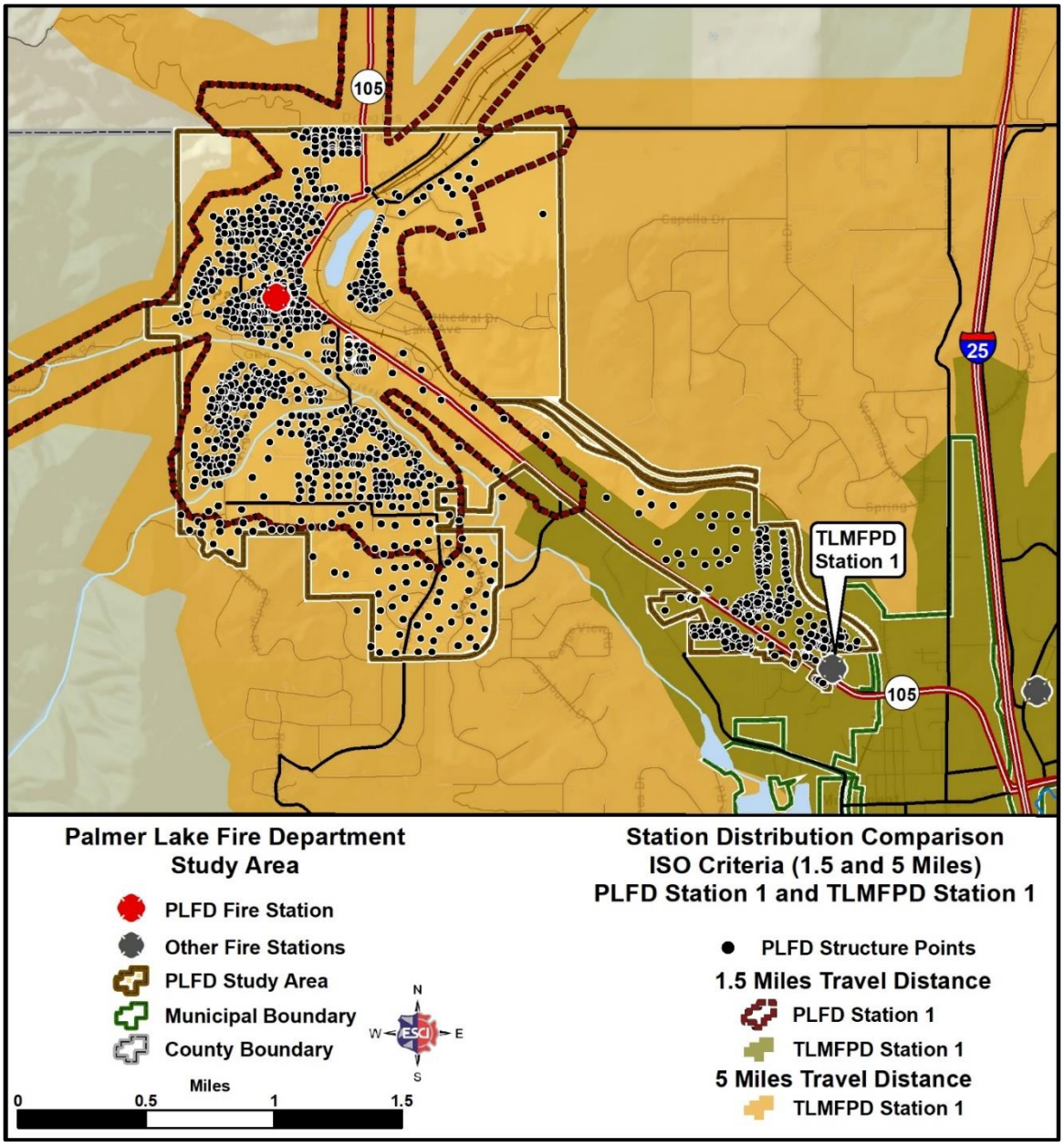
The following figure demonstrates the travel time required to reach a comparable percentage of service demand from the TLMFPD station as can be reached from the PLFD Station.

Figure 62: Travel Time Comparison, PLFD Station 1 (4 Minutes) and TLMFPD Station 1 (4 and 5 Minutes)



This figure demonstrates that five minutes travel time from TLMFPD Station 1 is required to reach a similar percentage (97 percent) of the 2016 through 2018 incidents displayed; to that of the current PLFD Station (98 percent) of incidents inside Palmer Lake.

Figure 63: Travel Distance Comparison (ISO Criteria), Current PLFD Station 1 and TLMFPD Station 1



Based on the 1.5-mile ISO travel distance criteria, there is a significant difference between the coverage provided from the current PLFD station to that achieved from TLMFPD Station 1. Twenty-three percent of structures inside the service area are within 1.5 miles travel of TLMFPD Station 1; while slightly over 71 percent of structures are within 1.5 miles of the PLFD station. As displayed, all of the PLFD service area is within 5 miles travel of the TLMFPD station over the existing road network. This may be a point to discuss with ISO. There is a lower ISO classification at TLMFPD but in this case, a larger portion of the structures may be beyond 1.5 miles from a station.

Contract Services Preference

The first sub-option for receiving services from TLMFPD is by contract. The amount charged to Palmer Lake will likely be equivalent to what the taxpayers of TLMFPD pay for services unless the delivered services can be demonstrated to be less than what a resident of the TLMFPD receives. This means that the contractual amount would probably be the equivalent of 18.4 mills applied against the Palmer Lake valuation. If the relationship is going to be contractual, it would be reasonable for TLMFPD to include an administrative fee that covers their cost for implementation of the contract as there will be some additional work to administer the contract that would be over and above the work required if the town properties were within the fire district.

Analysis

Advantages:

- Improved service due to the greater depth of response capability.
- Personnel management, training/certification issues responsibility of TLMFPD.
- No station improvement required.
- No capital replacement fund contribution required.
- Performance can be set through contract language with penalties for inadequate performance or bonus for superior performance.
- Relatively simple to implement. Requires an annual appropriation of the contract amount.
- Better ALS service.

Disadvantages:

- Cost increase over the current operation.
- Loss of direct control over the fire department.

The cost of a contract would likely be $679,954 based on the 2019 valuation plus a 6 percent administrative fee. This administrative fee is chosen based on experience with other contract administrative fees, however, a fee could be negotiated based on the actual cost of administrating the contract. Of all of the suggested options, this would be the least cost to the property owners if TLMFPD would provide the service at the 18.4 mills. Palmer Lake currently has a 10-mill tax for fire protection services. This is 8.4 mills less than the needed amount.

Inclusion Preference

An election to include into the TLMFPD would require the Palmer Lake citizens to vote to request inclusion into the district and vote to increase their property taxes 18.4 mills. If this would be approved, the Town could eliminate the 10-mill tax for fire service. The net result to the property owner would be an 8.4 mill increase.

Analysis

Advantages:

- Improved service due to the depth of response.
- Personnel management, training/certification issues are the responsibility of TLMFPD.
- No station improvement required.
- No contract administrative fee.

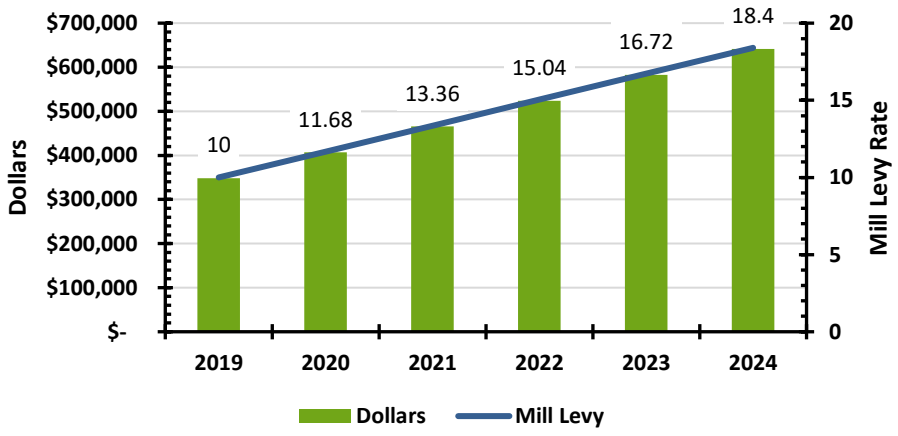
Disadvantages:

- Cost increase over the current operation.
- Loss of direct control over the fire department.
- Requires a vote of the property owners to increase taxes to make the inclusion into the fire district.

Contract Leading to Inclusion Preference

It is conceivable to transition into the full amount for contracted services over a period of time. This would allow the citizens of the Town to experience the service level from TLMFPD and be working towards a point in time when an election would be scheduled to determine if the property owner within the Town would vote to become a part of the TLMFPD district. It also allows the Town of Palmer Lake to gradually increase the amount paid for fire protection. Assuming that this period was five years, the Town would pay an additional amount equivalent of 1.68 mills applied against the Town's valuation each year. At the end of five years, the Town would be paying the equivalent amount that a TLMFPD district taxpayer would pay for services. Should the voters at that time decline to join the TLMFPD district then the Town could continue to contract or pursue an alternative path.

Figure 64: Increase in Amount Paid Over 5 Years



Analysis

Advantages: Same as two prior preferences. Allows gradual increase to reach the fire district mill levy level.

Disadvantages: Same as two prior preferences. Prolongs the final vote for inclusion into the district of five years. Difficult position if voters deny the inclusion request.

CONCLUSION

ESCI was asked to evaluate the current operations of the Palmer Lake Fire Department and describe what it would take to bring the department up to accepted national standards and practices. The current conditions were analyzed. PLFD staff impressed ESCI with a dedication to their duties and service to the community. It is apparent that there is a great deal of effort being made to work within the resource constraints to provide the very best service possible. There are deficiencies that will be difficult to overcome without spending a great deal of money. The number of firefighters for working fires is something that may not be achievable for PLFD. ESCI has tried to take that into consideration. There will need to be mutual aid assistance in tackling larger incidents but that is not unusual for a department to require assistance. An engine staffed with three firefighters is considered the minimum for safety and effectiveness and that is what is proposed or its equivalence in the public safety model. This is one area that needs to be understood by readers of the report. The staffing recommendations are not meeting the number of firefighters required for a residential dwelling fire but do provide the minimum for a town with a very limited number of these fires. It does provide for the fire department to attack incipient fires, extinguish most grassfires, and even affect a rescue should it be necessary to do so. Emergency medical responses are the primary type of call faced by the department and this allows for the ability to handle these calls.

Each option has been described and analyzed for advantages and disadvantages. Each option has a description of the budgetary impact. Each improvement can be evaluated if it should be done or if the cost should be modified. This gives the Town choices. The costs have been stated in terms of equivalent mill levy at the current assessed valuation. This allows for a comparison of the options for continuing to operate the fire department internally in contrast to a contractual or inclusion option.

Finally, the following figure summarizes the various options for cost based on the annual tax to a homeowner with a home valued at $400,000.

Figure 65: Comparison of Options—Cost on $400,000 Property

Market Value of Property		Assessment Rate	Assessed Value of Home	
$ 400,000		**7.15%**	**$ 28,600**	
Option/Preference	**Additional Tax**	**Total Tax**	**Additional Mill Rate**	**Total Mill Rate**
Tax with Option 1				
Status Quo	$ –	$ 286	0.0	10
Tax with Option 2				
Make Improvements	$ 766	$ 1,052	26.774	36.774
Tax with Option 3				
Public Safety Agency	$ 997	$ 1,283	34.855	44.855
Tax with Option 4				
Contract with TLMFPD	$ 272	$ 558	9.5	19.5
Tax with Option 4				
Merge with TLMFPD	$ 240	$ 526	8.4	18.4

Some of the options have a significant increase in costs. Keeping the fire department internal to the town except for the status quo option requires substantial investment into the fire department and its infrastructure. ESCI has shown various improvements with costs admittedly on the high side. Some of these may be reduced or eliminated based on choices by the Town of Palmer Lake. Based on attempts to analyze reduced and eliminated improvements it does not appear that the reductions will be enough to compare with the contract or merger preferences.

This report should provide the Council with the necessary information to make a decision regarding the future of the Palmer Lake.

TABLE OF FIGURES