



CITY OF PINOLE SPECIAL CITY COUNCIL MEETING AGENDA

**October 8, 2019
6:00 P.M.**

2131 Pear Street, Pinole, California

.....

**Peter Murray, Mayor
Roy Swearingen, Mayor Pro Tem
Norma Martinez-Rubin, Council Member
Vincent Salimi, Council Member
Anthony Tave, Council Member**

Public Comment: The public is encouraged to address the City Council on any matter listed on the agenda or on any other matter within its jurisdiction subject to the rules of decorum described in Council Resolution 2019-03. If you wish to address the City Council, please complete the gold card that is provided at the rear entrance to the Council Chambers and hand the card to the City Clerk. City Council will hear public comment on items listed on the agenda during discussion of the matter and prior to a vote.

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Ralph M. Brown Act. G.C. § 54950. In enacting this chapter, the Legislature finds and declares that the public commissions, boards and councils and the other public agencies in this State exist to aid in the conduct of the people's business. It is the intent of the law that their actions be taken openly and that their deliberations be conducted openly. The people of this State do not yield their sovereignty to the agencies, which serve them. The people, in delegating authority, do not give their public servants the right to decide what is good for the people to know and what is not good for them to know. The people insist on remaining informed so that they may retain control over the instruments they have created.

1. CALL TO ORDER & PLEDGE OF ALLEGIANCE IN HONOR OF THE US MILITARY TROOPS

2. ROLL CALL, CITY CLERK'S REPORT & STATEMENT OF CONFLICT

An official who has a conflict must, prior to consideration of the decision: (1) publicly identify in detail the financial interest that causes the conflict; (2) recuse himself /herself from discussing and voting on the matter; and (3) leave the room until after the decision has been made, Cal. Gov't Code § 87105.

3. WORKSHOP ITEM

A. Fire Services Delivery Study Draft Report Presented by ESCI [Action: Receive Report and Provide Direction (Fitzer/Kouns)]

4. ADJOURNMENT to the Special Council Meeting of October 15, 2019 and in Remembrance of the Amber Swartz.

I hereby certify under the laws of the State of California that the foregoing Agenda was posted on the bulletin board at the main entrance of Pinole City Hall, 2131 Pear Street Pinole, CA, at the Pinole Youth Center, 635 Tennent Avenue, Pinole, CA and on the City's website, not less than 24 hours prior to the meeting set forth on this agenda.

POSTED: October 3, 2019 at 4:00 P.M.

Heather Iopu, CMC
City Clerk



Pinole Fire Department
Pinole, California

REGIONAL FIRE SERVICE DELIVERY STUDY

October 2019



TABLE OF CONTENTS

Acknowledgments	iii
Executive Summary	iv
SECTION I: EVALUATION OF CURRENT CONDITIONS	1
Current Conditions.....	2
Organizational Overview	2
Service Area & Infrastructure.....	5
Staffing Analysis.....	6
Emergency Management	7
Fire Prevention	8
Training.....	13
Emergency Response Staffing.....	18
Current Financial Analysis.....	21
Economic Conditions.....	21
Historical Revenue & Expense	22
City of Pinole Fire Department	28
Capital Assets & Improvements.....	35
Apparatus/Vehicles	39
Critical Tasking	42
Service Demand & Incident Staffing Performance.....	55
Service-Demand Study.....	55
Distribution Study	70
PFD Goals Distribution	77
Concentration & Effective Response Force Capability Analysis	79
Concurrency	81
Performance Summary	83
Future System Demand Projections	93
Incident Workload Projection	93
Community Risk Factors.....	94
Overall Geospatial Characteristics	95
Geographic & Weather-Related Risks.....	96
Wildfire Risk	105
Transportation Risks.....	110
Demographics	119

SECTION II: PUBLIC WORKSHOP & STAKEHOLDER INPUT	122
Public Input.....	123
SECTION III: OPTIONS FOR SHARED SERVICES.....	138
Shared Services Options.....	139
SECTION IV: OPTIONS FOR DELIVERY OF FIRE-BASED SERVICES.....	142
Options.....	143
Option A: Rodeo-Hercules Fire Protection District	143
Option B: Contra Costa County Fire Protection District	144
Option C: Expansion of Pinole Fire Department System.....	148
Option D: Staffing of Station 74 Service Area Utilizing Two-Person Unit.....	152
SECTION V: CONCLUSIONS & RECOMMENDATIONS	155
Key Findings.....	156
Short-Term Recommendations	157
Mid- to Long-Term Recommendations	159
Implementation Plan	160
SECTION VI: APPENDICES	161
Appendix A: Proposal from Contra Costa FPD	162
Appendix B: Table of Figures	165

ACKNOWLEDGMENTS

Emergency Services Consulting International (ESCI) would like to acknowledge that without the assistance and support of the City of Pinole Fire Department executive and administrative staff, Labor leadership, City Manager, City officials, and others, this project could not have been successfully completed.

EXECUTIVE SUMMARY

To be completed following initial client review.

Section I: EVALUATION OF CURRENT CONDITIONS

CURRENT CONDITIONS

Organizational Overview

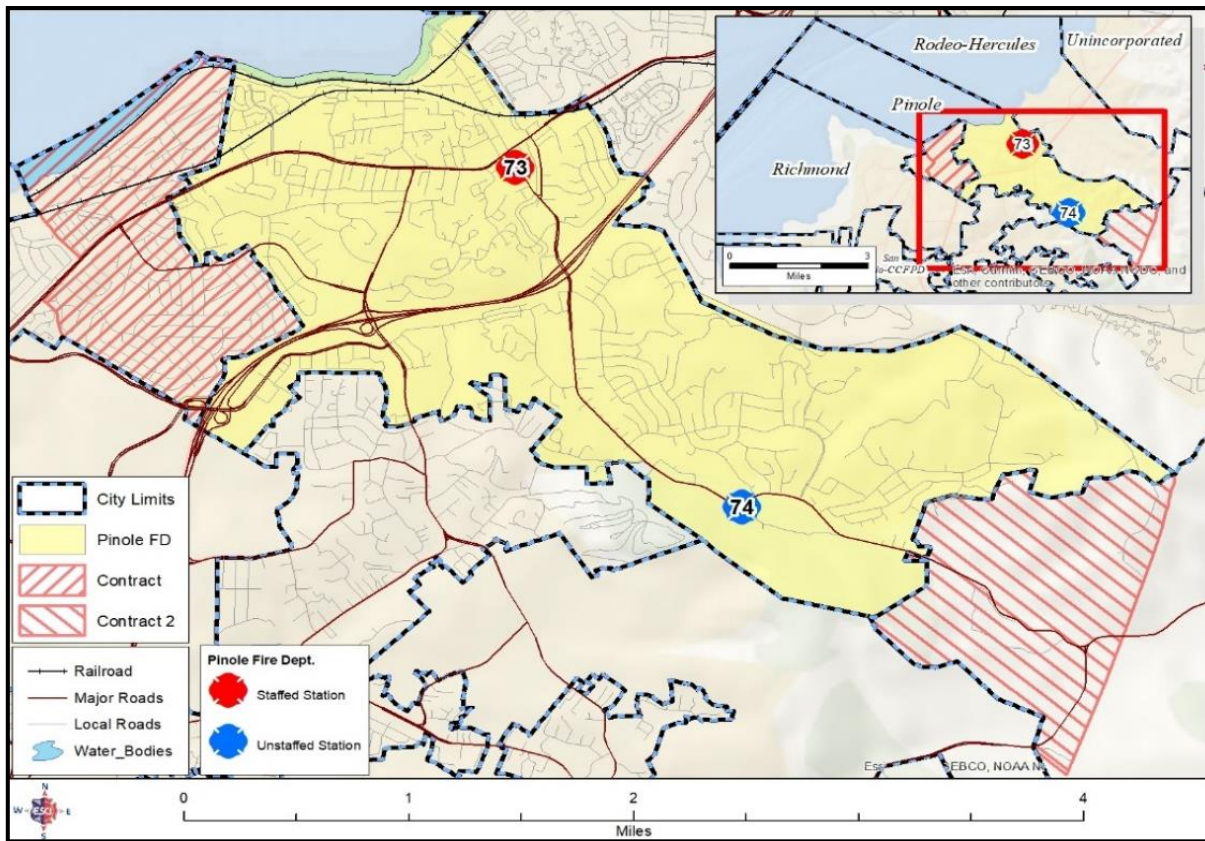
ESCI combined data provided by the participating fire agencies with information collected in the course of our field work and used to develop an overview of the organizations. The purpose of the following organizational overview is two-fold. First, it verifies the accuracy of the baseline information and ESCI's understanding of each agency's composition—the foundation from which the feasibility analysis is developed. Second, the overview serves as a reference for the reader who may not be familiar with the details of each agency's operations.

City of Pinole Fire Department

Governance & Lines of Authority

The City of Pinole was incorporated in 1903 and commenced providing fire protection the same year. Policy direction for the Pinole Fire Department (PFD) is provided by five elected City Council members (Council). The Council is provided the necessary power and authority to govern the provision of fire protection and emergency services. The Council appoints a City Manager who is responsible for implementing Council policy and overseeing the operation of the Organization. The City Manager appoints the Fire Chief to oversee the Fire Department operations.

The Pinole Fire Department (PFD) service area is comprised of the City of Pinole and two informally contracted areas of Contra Costa County, as depicted in the following figure. The Rodeo-Hercules service area is to the north and the southern boundary alternates between the City of Richmond and unincorporated Contra Costa County.

Figure 1: Pinole Fire Department Service Area

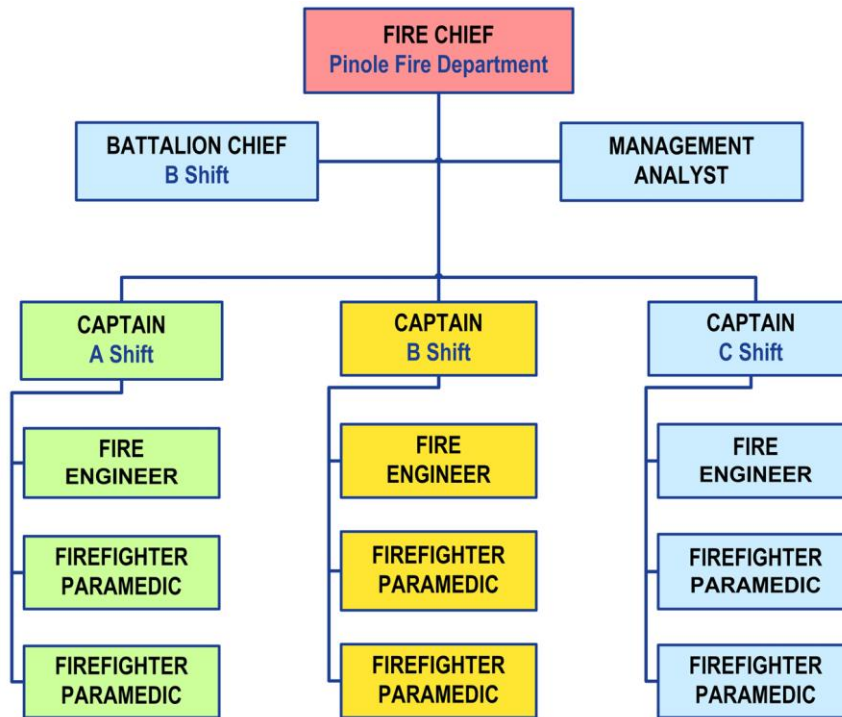
Design

The organizational design of PFD mimics a paramilitary organization, which is a common design among first responder and emergency services agencies. PFD is an all career agency, meaning all staff are full-time regular employees of the City of Pinole.

Organizational Structure

To operate effectively, a fire department needs an organizational chart that clearly defines its structure. The chart institutionalizes the agency's hierarchy, identifies roles, and most importantly, clarifies reporting authority. It also helps to ensure that communication flows appropriately and limits opportunities to circumvent the reporting structure.

PFD has a well-defined organizational chart that achieves this purpose and operates under a traditional top-down approach. Lines of authority are clear and depicted; however, the department is minimally staffed. The following figure illustrates the organizational chart for PFD.

Figure 2: Pinole Fire Department Organizational Chart (2019)***Governance & Decision-Making***

From a governance and decision-making standpoint, the organization appears to have clear direction and ability to operate. Lines of authority and the ability to carry out decisions appear to flow appropriately. The administrative staff understands the process to accomplish their mission. The chain of command is identified and clear on responsibilities. The span of control is adequate related to operations; however, as noted later in this report, the organization is lacking key positions necessary for an all risk fire department.

Service Area & Infrastructure

The size and composition of a fire department's service area affects 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 deployment strategies to properly position resources based on land area, geography, risk, and similar factors. The following offers a summary of PFD's service area and service infrastructure resources:

Figure 3: Service Area & Apparatus Resources

Agency Description	PFD Observations
Agency type (district, municipality, etc.)	City
Land Area in square miles	5.2/2.4 contract areas ¹
Headquarters location (physical address)	880 Tennent Ave
Number of fire stations	2 (one currently closed)
Engine	1
Engine, reserve	1
Wildland Engine Type 3	1
Wildland Engine Type 6	1
Ladder truck	0
Ladder, reserve	0
Duty BC Command Response Vehicle	1

From 2005 to 2011, PFD was able to deploy personnel and apparatus from two strategically located facilities. During the economic downturn, the second PFD station (74) was browned out and eventually closed. This closure has resulted in an increase in response times to the area in the eastern portion of the City.

Decisions on deployment define the Department's response capability. These decisions need to weigh multiple considerations including risk exposure, response times, access challenges, deployment, community expectations, personnel safety, and fire department capacity. Furthermore, these decisions not only need to balance the financial considerations but also need to be strategic and in the purview of the elected officials and City Manager, in consultation with the Fire Chief. Ultimately, these individuals are responsible to the public to provide the level of service that the citizens desire and for which they are willing to pay.

¹ The City of Pinole encompasses approximately 11.6 square miles. Of that, 5.2 square miles are land, with the remaining 6.4 sq. miles comprised of the bay.

Staffing Analysis

An organization's greatest asset lies in its people; yet its people also typically comprise its greatest financial cost. Thus, organizations must pay special attention to managing human resources in a way that achieves maximum productivity while ensuring a high level of employee job satisfaction. Consistent management practices combined with a safe working environment, equitable treatment, opportunity for input, and awards and recognition all comprise key components impacting job satisfaction.

The size and structure of an organization's staffing remains dependent upon the organization's specific needs. These needs must directly correlate with the needs of the community and the available revenue stream. A structure that works for one entity may not necessarily work for another agency. This section provides an overview of the PFD's staffing configuration and management practices.

One can divide Department staffing into two distinctly different groups: the first is what the citizens typically recognize and is commonly known as the operations unit, generally classified as the emergency response personnel; the second group, commonly known as the administrative section, typically works behind the scenes to provide the support that the operation's personnel need to deliver effective emergency response.

In addition to providing fire suppression services, PFD is tasked with providing emergency medical response, fire investigation, fire prevention, life safety education, community risk reduction, disaster/emergency operations planning, and hazardous materials response.

Personnel Responsibilities & Activity Levels

The leadership of PFD has established work responsibilities beyond the emergency response requirements. For example, these additional duties include fleet management, respiratory protection compliance, and training. Due to the lack of sufficient management staff, the department struggles to maintain compliance with performance goals, industry standards and workload.

Administrative & Support Staffing

One of the primary responsibilities of a response team's administration is to ensure that the operational segment of the organization has the ability and means to respond to and mitigate emergencies in a safe and efficient manner. An effective administration and support services system proves critical to the success of a response agency.

Typical responsibilities of the administration and support staff include planning, organizing, directing, coordinating, and evaluating the various programs within the Department. This list of functions is not exhaustive, and other functions may be added. It is also important to understand that these functions do not occur in a linear fashion and can more often occur concurrently. This requires the Fire Chief and the one shift Battalion Chief to focus on many different areas at the same time.

The following figure reviews the administration and support organizational structure of PFD:

Figure 4: PFD Administrative and Support Staffing

Position	Number
Fire Chief	1
Management Analyst	1
Battalion Chief (Shift)	1
TOTAL	3

Like any other part of a municipal fire department, administration and support need appropriate resources to function properly. By analyzing the administrative and support positions within an organization, we can create a common understanding of the relative resources committed to this function compared to industry best practices and similar organizations. The appropriate balance of administration and support compared to operational resources and service levels is a key factor to ensuring the department can accomplish its mission.

Administration

The administrative function within the department is currently established with the position of Fire Chief, one shift Battalion Chief, and one Management Analyst. Some of the typical responsibilities of the Fire Chief include planning, organizing, directing, and budgeting for all aspects of the department's operations. The current number of positions assigned to this activity is insufficient to meet supervisory expectations; in addition, the daily operational needs can detract from the ability to focus on administrative needs.

PFD currently operates with a limited number of administrative support staff. The position assigned to administration is one Management Analyst. This one Management Analyst provides critical support to all of the department's administrative functions. In addition, during extreme emergency situations, administrative staff are typically called upon to staff numerous duties in support of operations and logistics. One cannot overstate the value of administrative support as these staff members free up fire management staff to concentrate on other areas of operation. The level of administrative support appears to be inadequate for PFD.

Emergency Management

The responsibility for the City's emergency management planning and preparedness is assigned to the Fire Chief and the Police Chief. This shared responsibility is expected to provide for overall management and delivery of emergency management activities for the City of Pinole. Given the current duties of the Fire Chief, there is little time available to devote to this responsibility.

Fire Prevention

Typical fire prevention functions include building plan reviews, building inspections, weed abatement, community outreach, and vegetation management. The department currently outsources some of these functions through contracts; additional staffing would be required to satisfactorily fulfill these functions internally. Currently, the Fire Inspector duties are carried out via a contracted position. This includes the review and approval of building plans and providing building and construction inspections.

Fire Prevention Programs

An aggressive risk management program, through proactive fire and life safety services, is a fire department's best opportunity to minimize the losses and human trauma associated with fires and other community risks.

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.²

A fire department needs to review and understand the importance of fire prevention and public education, appreciating its role in the planning process of a community with diversified zoning including residential, commercial, and industrial properties. The fundamental components of an effective fire prevention program are listed in the following figure, accompanied by the elements needed to address each component.

Figure 5: Fire Prevention Program Components

Program Components	Elements Needed
Fire Code Enforcement	<ul style="list-style-type: none"> Proposed construction and plans review New construction inspections Existing structure/occupancy inspections Internal protection systems design review Storage and handling of hazardous materials
Public Fire & Life Safety Education	<ul style="list-style-type: none"> Public education Specialized education Juvenile fire setter intervention Prevention information dissemination
Fire Cause Investigation	<ul style="list-style-type: none"> Fire cause and origin determination Fire death investigation Arson investigation and prosecution

² NFPA Standard 1730: *Organizing and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations*, 2019 Edition.

Fire & Life-Safety Code Enforcement

The most effective way to combat fires is to prevent them. A strong fire prevention program, based on locally identified risks and relevant codes and ordinances, reduces loss of property, life, and the often-crippling impact on a community's economy. The following figure summarizes the new construction and fire protection system plan review programs, and ancillary programs typically found in fire prevention programs.

Figure 6: New Construction Inspections & Involvement

Program Elements	Pinole Fire Department
FD consulted on proposed new construction?	Yes, by utilizing contractors
FD consulted on proposed occupancy changes/tenant improvements?	Yes, via contractor
Perform fire & life-safety plan reviews?	Yes, by utilizing contractors
Charges for inspections or reviews?	Yes
Special risk inspections?	Yes, via contractor
Storage tank inspections?	No, this is a function of the Contra Costa CUPA
Key-box entry program in place?	Yes
Hydrant flow records maintained?	No ³

The following sections provide detail on the qualifications and resources dedicated to fire and life safety code enforcement provided by Pinole Fire Department.

Pinole Fire Prevention

The Fire Chief has the primary responsibility of ensuring fire prevention activities are conducted to state and local regulations. This is supported by one contract Inspector and the on-duty engine company personnel when they are available. Current services offered include:

- Inspect new or repaired fire protection systems requiring a fire construction permit;
- Inspect existing occupancies required to have an operational permit and those required by the California health and safety code to be inspected on an annual basis;
- Respond to complaints regarding fire and life safety code violations; and
- Investigate major fires and work with law enforcement to make arrests of persons responsible for unlawful actions related to fire.

³ The water and hydrant system are maintained by East Bay Municipal Utilities District (EBMUD). At the time of this report, the hydrant maintenance schedule and flow records could not be acquired from EBMUD.

Community Risk Reduction Program

Lately, U.S. fire departments have begun to recognize the value of Community Risk Reduction (CRR) programs that go beyond traditional fire prevention activities. Some have gone so far as to re-name their “fire prevention” divisions to “Community Risk Reduction Divisions.”

Regardless of the name, fire departments should be able to accurately identify the various potential community risks before developing prevention programs. This is not meant to imply diminishing the focus and importance of addressing the fire problem in a community, rather it affords an opportunity to identify and mitigate additional community risks through targeted prevention activities.

The first step in developing an effective CRR plan is identifying risks unique to a specific community by conducting a community risk assessment. A key component of the assessment process is the collection and analysis of incident data. However, firefighters, officers, and inspectors can also provide substantial anecdotal information on the various risks found within their respective response-areas.

Figure 7: Six Steps of CRR Planning



Fire & Life-Safety Public Education Program

Providing fire and life safety education to the public to minimize the number of emergencies while training the community to take appropriate actions when an emergency occurs is essential to a fire and life safety program. Life and fire safety education provides the best chance for minimizing the effects of fire, injury, and illness to the community.

Public education and outreach are conducted in various ways in each department. The following is a summary of the programs commonly offered by area fire departments.

Figure 8: Life Safety & Public Education Services

Life Safety & Public Education	Description	Pinole Fire Department
PIO/Public Educator	This position often works with the community to identify and eliminate fire and life safety risks.	Not a filled position, delegated as needed if available.
911 Education Program	This program works to reduce the amount of unnecessary 911 calls and provide education to the public on available services.	Website
Exit Drills In The Home (EDITH)	This program is typically offered to elementary school age children through annual school visits.	Engine company upon request
Smoke Alarm Installation	Often, residents are encouraged to notify their fire departments when they need assistance replacing alarm or alarm batteries.	Engine company upon request.
Carbon Monoxide Alarm Installation	Carbon monoxide alarm installation assistance.	Not available
Bike Helmet Program	Provides information on bicycle helmet use to school aged children.	Not available
Elder Safety/Fall prevention	Provides information and inspections to seniors to reduce accidents and falls.	Not available
Home Safety Inspections	A home safety program that aims to reduce fire and safety hazards in the household.	Upon request; crews not formally trained.
CPR/First Aid Classes	Classes that offer training in CPR and first aid to citizen groups, city employees, and individuals.	Not available
BP Checks	Often offered at the fire station for any resident on a walk-in basis.	Not available
Car Seat Safety Inspections	Classes, inspection, or training to ensure citizens are properly installing car seats into vehicles.	Not available
Fire Extinguisher Classes	Hands-on training to business employees and citizens on the proper selection and use of fire extinguishers.	Not available
K, 12 Fire Prevention curriculum delivery in schools	Fire Prevention classes designed for school aged children to reduce burns and fires in the home.	Not available; demos upon request.
Wildfire Defensible Space Education	Education offered to neighborhood associations or individuals on the proper wildfire mitigation efforts around residential and commercial structures.	Website
Water Safety Program	Pool safety, swimming classes, and information on how to safely rescue an individual in water.	Not available
Safety Fairs	Fairs offered to large groups of individuals with the intention of offering numerous public safety classes at one location.	Not available

Fire Prevention Discussion

In today's fire service, public fire and injury prevention education is much more important than in the past. This is likely the result of evolving community expectations, coupled with the realization by fire departments that community engagement and safety education outreach can build tremendous community support.

Consideration should be given to conducting a formal Community Risk Assessment. The U.S. Fire Administration identified a five-step assessment process for improving public safety education:⁴

1. Conduct a Community Analysis.
2. Develop Community Partnerships.
3. Create an Implementation Strategy.
4. Implement the Strategy.
5. Evaluate the Results.

Fire Cause & Origin Investigation

Accurately determining the cause of a fire is an essential element of a fire prevention program. When fires are intentionally set, identification and/or prosecution of the responsible offender is critical in preventing additional fires, injuries and fatalities, and catastrophic economic impact. Further, identifying cause and potential trends enables the department to provide specific public information and fire prevention education to prevent reoccurrence.

Pinole receives fire investigation services through mutual aid from Contra Costa County Fire Protection District.

The results of professional and thorough fire investigations can be extremely powerful in:

- Prosecuting arsonists.
- Identifying product safety issues.
- Educating the public about the outcomes of unsafe behaviors and conditions.
- Assisting insurance companies and property owners with insurance claims.
- Providing solid evidence in criminal and civil court proceedings.
- Identifying necessary life safety code changes.

⁴ <https://www.usfa.fema.gov/downloads/pdf/publications/fa-219.pdf>

Training

PFD does not have a designated individual committed to the training function for the department. The responsibility for conducting all needs assessments relative to training, as well as program design, coordination, and evaluation falls to the Fire Chief. The result of this arrangement is that the training of all personnel is delivered in an inconsistent manner due to the other duties assigned to the Fire Chief.

While the design and staffing of a fire department is dependent upon the specific needs of the community, the reality is that most of the needed training is common among California fire departments. In addition to maximizing resources through sharing training resources and opportunities, fire departments that train together tend to work better together during mutual aid incidents. This also lends itself to making the firefighters more well-rounded, as they are exposed to other lines of thinking. Finally, a coordinated regionalized, collaborative approach to training delivery, in addition to the benefits noted, can substantially reduce costs, and increase efficiency of educational efforts. In order to capitalize on local and regional training opportunities, the department needs an individual whose primary duties include this important function.

Training officers are often assigned to act as the department Safety Officer, reviewing standard operating procedures, adherence to proper personal protective equipment, inspecting facilities for safety hazards, and examining work practices to ensure they meet OSHA and Cal OSHA requirements. Safety Officers review accidents and design training classes to reduce accidents in the workplace.

Training Overview

Providing safe and effective fire protection, EMS, and other emergency services requires a well-trained workforce. Initial, ongoing, and high-quality training and education is critical for fire department effectiveness and the safety of its personnel. A comprehensive training program is necessary to achieve this goal; this is true in all-career or combination fire departments that provide a broad range of services throughout the community. Pinole Fire Department allocated \$25,000 in the fiscal year 2019/2020 budget to provide for this training.

To ensure maximum effectiveness and safety in complex environments, firefighters and officers must acquire and maintain initial training, ongoing training, and EMS Continuing Education (CE). Failure to provide necessary training endangers firefighters and citizens and exposes fire departments to liability. In addition, a well-trained workforce substantially contributes to better emergency incident outcomes and community services.

Newly hired firefighters must participate in a structured recruit training and testing process. The *California State Fire Training* utilizes NFPA 1001: *Standard for Fire Fighter Professional Qualifications* (2013), NFPA 1051: *Standard for Wildland Fire Fighter Professional Qualifications* (2016), and NFPA 472: *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents* to provide the qualifications for State Fire Training's Fire Fighter I certification. These standards identify the minimum training requirements that serve as the basis for entry-level firefighters. The NFPA recommends other standards that address initial and ongoing training for firefighters and officers in a variety of specific topics. In addition, new recruits must complete, or have previously completed, basic emergency medical training.

Following initial training, firefighters (i.e., all emergency services personnel) must actively participate in ongoing training that includes testing as well as ensuring practical skills and knowledge are maintained. In its *Fire & Emergency Service Self-Assessment Manual (9th edition)*, the Commission on Fire Accreditation International (CFAI) addresses "Training and Competency," and lists numerous performance indicators under the headings of training and education program requirements, performance, and resources.

To accomplish this, fire departments must have access to qualified instructors and training resources—either within the organization, externally with regional partners, or both.

Training programs must go beyond simply fulfilling mandatory hours. Emergency services training administrators and instructors must ensure that firefighters, EMS personnel, and officers are not only competent, but also self-confident in the variety of skills necessary to perform effectively in high-stress situations. Industry standards outline specific areas that are considered integral to effective training programs. The program should include the following:

- Training administration
- Recordkeeping (records management systems)
- Training facilities and resources
- General training competencies
- Training methodologies

Training Administration

Typically, even smaller fire departments have a dedicated individual assigned to the training division who oversees the training program, sets program goals and objectives, develops training manuals, produces annual reports, and ensures state and local mandatory training is completed. Pinole Fire does not have a dedicated Training Officer.

Contra Costa County Training Officers Association

Under the auspices of the *Contra Costa Fire Chiefs Association*, training officers from the fire departments meet regularly to develop and share resources, as well as promote fire training locally. Pinole participates regularly in the Training Officers' Association.

Training Facilities & Resources

Pinole does not possess a fire training facility and has limited access to shared resources due to daily staffing arrangements and the need to be available to respond to incidents. The following figure contains common considerations for fire service training and indicates if these training services are available within the PFD service area.

Figure 9: Training Facilities & Resources Findings

Description	Pinole Fire Department
Adequate training ground space/equipment	No
Live fire props	No
Fire & driving grounds	No
Training facility maintenance adequate	Not applicable
Classroom facilities adequate	Shared classroom facilities are available
Video & computer simulations available	No
Instructional materials available	Yes

Training Facilities in Contra Costa County

The Rodeo Hercules Fire Protection District training center is equipped with a wide variety of equipment, props, and other facilities. This facility is available for use by PFD, however utilizing it requires moving the on-duty fire crew out of the City of Pinole and placing them out-of-service or causing a delay in response.

General Training Records

Fire departments must maintain records to demonstrate competencies and completion of annual mandated (local, state, and federal) training. These records are important to internal processes such as promotions and qualifications for special operations. Externally, training records are often used in defense of litigation, for investigations, and to prove competencies in the Master Mutual Aid System.

Figure 10: Training Records Maintenance

Description	Pinole Fire Department
Individual training files maintained	No ⁵
Records & files computerized	Limited
Daily training records kept	Yes, via hard copy journal
Annual training hours tracked	No
Company training records kept	No
Responsibility for records	Fire Chief
Training equipment inventoried	Props are limited & in need of refurbishment ⁶

General Training Competencies

For training to be fully effective, it should be based on established standards. The next figure lists the general training competencies regularly delivered to the members of Pinole Fire Department.

Figure 11: General Training Competencies

Description	Pinole Fire Department
Incident command system	No, "Blue Card" is being implemented.
Accountability procedures in place	No, Lexipol policy & procedure system has been purchased and will soon be implemented.
Policy & procedures on training	No, Lexipol policy & procedures purchased and soon to be implemented.
Safety procedures in place	No, Lexipol policy & procedures purchased and soon to be implemented.
Recruit academy	Two recruits will start in the Berkeley Fire Dept Academy in October 2019. Two went through in October 2017.
Special rescue	No
Hazmat certification	No
Wildland firefighter	Yes
Vehicle extrication	Yes
Defensive driving	Yes
Use, safety, & care of small tools	Yes
Use & care of power equipment	Yes
Radio communications & dispatch	Yes
EMS skills & protocols	Yes

⁵ PFD is in the process of configuring Target Solutions to maintain training records and reports.

⁶ In fiscal year 2019/2020, \$2,500 has been allocated for this purpose. This amount is generally enough to maintain one training prop, but as PFD expands its training capabilities, additional funding should be added to the budget for prop maintenance.

EMS Training & Continuing Medical Education

Pinole Fire Department relies on in-house (PFD developed) and other regional sources, for training for basic and advanced life support continuing medical education. Pinole personnel are preparing to use Target Solutions to deliver ongoing continuing education for paramedics and emergency medical technicians at a fixed annual cost. The use of online training reduces the need to hire instructors and pay employees overtime as they attend mandated training as well as ensuring annual training mandate records are well kept.

Training Methodologies

Certain resources are necessary to arm the instructor with the tools necessary to deliver adequate educational content to provide effective training to fire and EMS personnel. In addition to such tools, effective methodologies must be employed if training delivery is to be enough to meet the needs.

The following figure list the various training methodologies and training operations utilized by PFD.

Figure 12: Training Methodologies & Operations

Description	Pinole Fire Department
Manipulative skills	Manipulative training drills for individual and company are conducted weekly.
Task performances/frequency	Manipulative training drills for individual and company are conducted weekly.
Annual training hour requirements	24 hours of EMS "Continuous Education" is accomplished annually.
Use of lesson plans	Each firefighter employee has a task book containing lesson plans. Fire Engineer and Captain task books are being developed.
Produced in-house or commercially	Training plans are produced by PFD members.
Night drills	Annual structure fire drills are held at night.
Multi-agency drills	Annual multi-agency structure fire, wildland, & EMS are held.
Disaster drills conducted	No
Pre-fire planning included in training	Yes
Safety incorporated in training	On large drills, a safety plan is developed as part of a training Incident Action Plan.
Post-incident analysis conducted	On large drills and incidents, an incident or training analysis is completed.

Training Discussion

Ongoing training reduces injuries and other risks associated with firefighting. Mandatory training is required by OSHA, Cal OSHA, and the State of California that must be undertaken and completed on an annual basis by firefighters. In addition, the Insurance Services Office (ISO) reviews training hours to ensure the adequate training of fire service responders.

Emergency Response Staffing

It takes an adequate and properly trained staff of emergency responders to put the appropriate emergency apparatus and equipment to its best use in mitigating incidents. Insufficient staffing at an operational scene decreases the effectiveness of the response and increases the risk of injury to all individuals involved.

One can break down critical tasks performed at a fire into two key components—life safety and fire flow. Life safety tasks are based on the number of building occupants and their location, status, and ability to take self-preservation action. Life safety related tasks involve search, rescue, and evacuation of victims. The fire-flow component involves delivering enough water to extinguish the fire and to create an environment within the building that allows firefighters' entry.

The number and types of tasks needing simultaneous action will dictate the minimum number of firefighters required to combat different types of fires. In the absence of adequate personnel to perform concurrent action, the Command Officer must prioritize the tasks and complete some in chronological order, rather than concurrently. These tasks include:

- Command
- Scene safety
- Search and rescue
- Fire attack
- Water supply
- Pump operation
- Ventilation
- Back-up/rapid intervention

The first 10 minutes are the most crucial period in the suppression of a fire. The timing of this 10-minute period does not start when the firefighters arrive at the scene but begins when the fire initially starts. How effectively and efficiently firefighters perform during this period has a significant impact on the overall outcome of the event. This general concept is applicable to fire, rescue, and medical situations. Critical tasks must be conducted in a timely manner in order to control a fire or to treat a patient. PFD is responsible for ensuring that responding companies can perform all the described tasks in a prompt, efficient, and safe manner.

Setting the staffing levels is a determination made at the community level based on risk, capability, and citizen expectations and is guided by national recommendations such as those found in National Fire Protection Association Standard 1710.

When a fire escalates beyond what the initial assignment can handle, or if the fire has unusual characteristics such as a wind-driven fire or has been accelerated with a highly flammable compound, additional personnel are needed. Other types of scenarios may not include fires but rather mass casualty incidents, explosions, etc., that may need additional staffing. It proves difficult or impossible to staff for these worst-case incidents; they require a strong mutual aid or automatic aid plan for assistance.

The staffing level that PFD is expected to provide is a decision based on a risk assessment and community expectations. A funding level must be established that matches the fire department's deployment capability to mitigate the risk to a level that meets the community's expectations. This funding level is developed through the political process of citizens meeting with local legislators and expressing approval of the level of service being received or indicating improvements need to be made and the level of additional financial support they are willing to bear to obtain satisfaction with the services. This additional financial support is usually in the form of assessing property or other taxes to generate the necessary revenue. No mandated requirement fits all possible situations although NFPA 1710 provides guidance regarding the number of personnel and apparatus required for typical scenarios. Incidents may escalate beyond the capability of the initial assignment of units and staff, resulting in additional apparatus and personnel required. It may prove difficult or financially impossible to staff for those worst-case incidents. In those instances, a strong mutual or automatic aid system is required.

On a typical day in Pinole, as in most jurisdictions, the full staffing required by response needs are not available due to budget constraints.⁷ Currently, Pinole has determined that the minimum acceptable department staffing is three operations personnel and a shared Battalion Chief on each shift. This staffing level is generally only adequate for basic calls for service such as low acuity medical aids, small incipient fires, or motor-vehicle accidents with minor injuries. This staffing arrangement results in reliance on other jurisdictions assistance through automatic and mutual aid agreements for calls requiring two or more units as identified in critical tasking Figure 32.

Battalion 7 designates the geographical area in western Contra Costa County comprised of the Contra Costa County Fire Protection District (CCFPD), City of Pinole Fire Department (PFD), and the Rodeo-Hercules Fire Protection District (RHFPD). Per an agreement with CCFPD, RHFPD and PFD, each agency provides and shares shift Battalion Chiefs. These chief officers are assigned to Duty Chief coverage for each shift for the area described as "Battalion 7."

While this agreement provides for operational duties at the shift Battalion Chief level, it does not enhance critical administrative support needs for PFD.

The following figure depicts PFD's emergency staffing—with all authorized positions filled for the combined three shifts that PFD employs.

⁷ As an example, a residential structure fire generally requires multiple fire engine crews to accomplish the tasks required to extinguish the fire, located victims, and provide any necessary medical interventions. Another example occurs when two or more calls for service occur within a short time frame. In Pinole, only one fire engine is staffed per day. The capability to respond to complex calls requiring additional personnel or to respond to multiple incidents occurring simultaneously is fully dependent on automatic and mutual aid. See Figure 32 for additional details.

Figure 13: PFD Emergency Response Staffing

Position	Total Authorized Positions	Daily Staffing
Battalion Chief (shared)	1	0 to 1 ⁸
Fire Captain	3	1
Engineer	3	1
Firefighter	6	1
Totals:	13	3 or 4

PFD is authorized at 14 emergency response personnel for EMS, rescue, and fire suppression activities, including the Battalion Chief and Fire Chief. At the end of FY 2018, three of the authorized 12 firefighters in the Fire Operations Division were vacant. This means 25 percent of the response force positions, primarily in the firefighter rank, are vacant.

The resident population of the PFD service area inclusive of contact areas, is estimated to be approximately 24,624 (this includes the City of Pinole population of 19,498 and two nearby unincorporated areas located within the service area). PFD provides its community with .69 career firefighters per 1,000 population. This compares to a national average of .99 firefighters per 1,000 population for cities of comparable size in Western states, or almost a third less than the average.⁹

The suppression personnel are assigned to one of three shifts, each working 48-hours on/96-hours off and working a total of 2,912 hours each year.

PFD operates from one station, staffed with full-time personnel. The following figure shows the staffing configuration at full utilization of authorized personnel. ESCI notes that the minimum staffing level for PFD absent automatic aid does provide for the two-in/two-out structure firefighting per OSHA mandates¹⁰.

Figure 14: Station Units & Staffing Levels

Station	Apparatus	Minimum On-Duty Staffing
Station 73	Engine 73	3
	Reserve Engine 73A	0
	Type III Engine E273	Cross Staffed
	Wildland Type VI E473	Cross Staffed
	Utility Vehicle U73	As needed
Station 74	Battalion Chief (B shift)	1
Totals:		4

⁸ Chief Officer coverage is not provided for all three shifts by PFD.

⁹ NFPA Research—Career Firefighters per 1,000 population for All Career Fire Departments, 2013–2015. Retrieved from: <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/osCareerFF1000Population.ashx?la=en>

¹⁰ Two-in/two-out refers to section (g)(4) of OSHA's Respiratory Protection Standard, 29 CFR 1910.134.

CURRENT FINANCIAL ANALYSIS

Economic Conditions

The state and local economies have followed the trend of modest growth that the national economy has experienced since the economic downturn of 2008/2009. Though current national and international policies have created concerns that have had a negative impact on certain sections of the stock market and the economy, the consensus is that the current growth trends are expected to continue at least through the end of 2019.

California's economy has outpaced that of the United States since the third quarter of 2012. Retail sales in the state have increased by 20 percent between 2013 and 2017. While the California unemployment rate continues to be higher than that of the U.S. in general, the gap has been reduced to .4 percent.

California personal income grew 4.7 percent in 2018 versus a 4.5 percent U.S. personal income growth for the same period. A similar gap was experienced in 2017 with personal income growth at 4.6 percent and 4.4 percent for California and the U.S. respectively.

Contra Costa County is one of the original 27 counties established in California in 1850 and is home to more than a million residents. The county is located on northern portion of the East Bay region of the San Francisco Bay Area. The county is included in the San Francisco-Oakland-Hayward Metropolitan Statistical Area. The county has a total area of 804 square miles with 716 square miles of land and 88 square miles of water area. There are 19 cities, including Pinole, and numerous established communities in the county.

Due to Contra Costa County's extensive waterfront along the bays in the San Francisco area, significant heavy industry development has occurred including oil refineries and chemical plants. Agriculture contributes to employment opportunities in the county.

Information from the 2018 Census Bureau indicates that Pinole boasts the second highest median earnings per worker of \$57,784 of all places in the area. The "area" against which the comparisons were made includes the communities of Montalvin Manor, Bayview-Contra Costa County, West Contra Costa, El Sobrante-Contra Costa County, Tara Hills, San Jose-San Francisco-Oakland, and Hercules.¹¹ This compares with the median earnings of \$46,022 throughout the U.S. Household median income of \$84,255 also places it as the second highest in the area and compares favorably against the U.S median household income of \$57,652. Pinole's unemployment rate was 3.7 percent. A significant number of Pinole's residents work outside the city, elsewhere in the Bay Area. This would indicate Pinole serves more as a "bedroom community" than a commerce center.

The area continues to grow but at a very modest rate, gaining 40 new residents in 2018. Significant growth is not expected as Pinole is primarily built-out and bordered by other municipalities, creating little to no opportunity for expansion.

¹¹ TownCharts, <http://www.townchardts.com/California/Economy/Pinole-city-CA-Economy> Data.

Historical Revenue & Expense

The City of Pinole is primarily a residential community located in West Contra Costa County, approximately 30 miles northeast of San Francisco and 20 miles north of Oakland. The city covers a land area of approximately five square miles and is home to approximately 19,200 residents.

The City operates under a Council/Manager form of government. The Council is comprised of a Mayor and four Council members serving four-year terms. The Council is elected in staggered two-year periods with three members standing for election in one cycle and the remaining two positions following in the next cycle two years subsequent. The Mayor is selected by the Council on a rotating annual basis. The Council appoints the City Manager, City Attorney, and City Clerk. As is the case with most municipal governments, the Council is responsible for policymaking decisions and legislative responsibilities which include, among other items, adopting ordinances, appointing committees, and adopting the budget. The City Manager is responsible for implementing the policies, overseeing the day-to-day operations of the City, and appointing department directors.

Pinole provides all public services including fire, police, road and street maintenance, community development, recreation programs, parks, wastewater, and fiscal services through a staff of 100 full-time and 39 part-time positions.

The local economy has continued to improve following the economic downturn. Sales tax revenues continue to increase, property values have improved, and the local unemployment rate decreased from 4.9 percent in 2017 to 3.1 percent in 2018. A new shopping center has been developed with a portion opening in 2018 and the balance to open in the second half of 2019. Three significant retailers closed their doors during FY 2018. A 15,000 square foot CVS Pharmacy was completed in early 2019.

The City of Pinole employs an accounting and budgeting system that is like most municipal forms of government. This system utilizes multiple "funds," more easily described as separate operating companies, to track expenditures made by and revenues attributable to the operation of each fund. The General Fund typically reflects the operations of the performance of the core services provided by the City, such as law enforcement, fire protection, human resources, legal, debt service, finance, and the administrative side of the City's operations. Within the General Fund, separate budgets for each of the departments are prepared. The City operates on a fiscal year beginning July 1 and ending on June 30.

Additional funds may be created to manage specific projects, programs, special or specific income streams, or to account for an allocation of revenue from an assessment of taxes. Pinole employs the use of multiple funds to manage specialized activities such as Housing Programs, Community Development, Wastewater, road maintenance, debt service, and capital projects. Additional funds track police and fire department pension activities. These multiple funds require a detailed review to determine the total activity of any department that has activity in more than one fund to gain a complete picture of the revenues and costs pertaining to the department.

A significant amount of financial information and supporting data was provided to ESCI by the staff of the City of Pinole. ESCI has analyzed the historical actual revenues and expenses from FY 13/14 through FY 17/18 for the City to develop relevant financial trends, strengths, and weaknesses which, in conjunction with the annual budget information for FY 18/19, will assist in the completion of the financial forecasts presented later in this report.

Revenue

A critical component of the success and operation of any business, private or public, is a consistent and reliable funding stream. In the instance of public agencies, this funding is usually provided by the assessment and collection of various forms of taxation such as ad valorem (real estate) taxes, sales taxes, special assessments, and fees for services. Recognizing the limits of public funding, public safety agencies are limited in the level of service they may provide to their communities by the types and levels of revenues that the authority having jurisdiction is willing, or limited by the legislative process, to assess. California's legislative process created Proposition 13 in 1978, restricting the growth of tax revenues to municipal and other government agencies. Public agencies also may charge fees for services under contractual arrangements or interagency agreements to other agencies or areas outside of their political boundaries.

General Fund revenues are classified as recurring or non-recurring. Recurring revenues are those expected to continue annually such as property taxes, sales taxes, and contracts for service. Non-recurring revenues are those sources that have an expectation of not continuing such as sales of assets, grant revenues, loan proceeds, and insurance proceeds. Loan proceeds may be received in one fiscal year but not be utilized until a future fiscal year which may significantly distort the cash flows in both years. The City has sold surplus property during four of the past five years supplementing its cash flow for those years, but this source should not be expected on an annual basis.

The City of Pinole is allowed by statute to assess and collect a variety of taxes. The City assesses a property tax as well as a general sales tax. Revenues included in the General Fund to provide for various operations, including fire and police activities, are provided through two Measure "S" sales tax initiatives. The 2006 Measure created a 0.5 percent sales tax which has been allocated by budget appropriations to fund fire and police department operations. The Measure S 2014 added an additional .5 percent sales tax to fund City operations, a portion of which has also been allocated to public safety activities. Neither of the Measure S initiatives have expiration dates. Additionally, a utility use tax (UUT) initiative was originally enacted in 1998 and went into effect on December 1 of that year. The UUT assesses an 8 percent tax on telephone, electric, and gas services. Voters in Pinole have approved extensions of the UUT in 2004 and 2012. In 2018, the tax was extended without a sunset date, so it will now remain in effect until repealed by voters. The tax presently raises approximately \$2,000,000 for the General Fund, equivalent to approximately 14 percent of the General Fund Budget.

Recurring Revenues

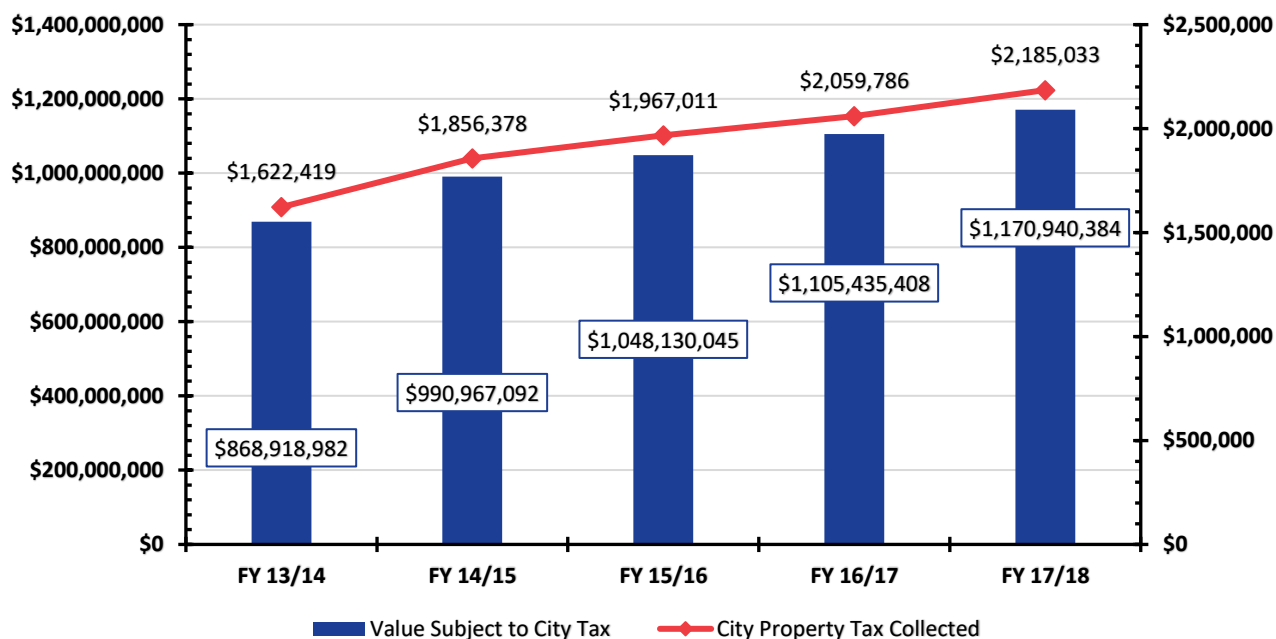
Property tax revenue is based on the assessed value of the property within the boundaries of the jurisdiction applied against the tax rate. The following figure shows the growth of the property valuation and the related property tax revenue.

Figure 15: Property Tax Value & Property Tax Revenues for City of Pinole (FY 13/14–FY 17/18 Actual)

Description	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18
Value Subject To City Tax	868,918,982	990,967,092	1,048,130,045	1,105,435,408	1,170,940,384
Effective Tax Rate	0.19%	0.19%	0.19%	0.19%	0.19%
City Property Tax Collected	1,622,419	1,856,378	1,967,011	2,059,786	2,185,033

The following figure provides a graphical presentation of the relationship between the property valuations and the tax assessed against those values.

Figure 16: Taxable Value & Property Tax Revenue (FY 13/14–FY 17/18)



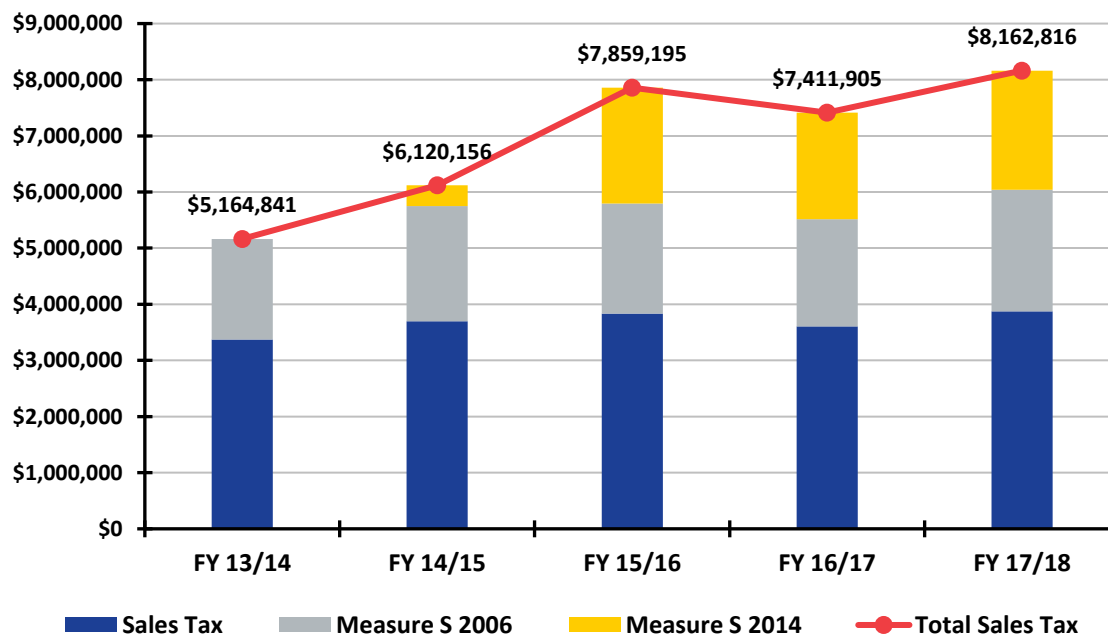
The City of Pinole serves as the Successor Agency to the Pinole Redevelopment Agency. This agency was dissolved on February 1, 2012, pursuant to State Law ABx1-26. Under the State Law, the City receives Redevelopment Property Tax Trust Fund payments equal to a 19 percent share of the 1 percent property tax from the sale of properties formerly owned by the Redevelopment Agency. Large spikes in these collections results from sales of properties with higher values. The following figure provides an historical perspective of taxes collected on redevelopment property sales. The property tax collections related to the Redevelopment Properties are not included in the previous graphical presentation of City property taxes assessed.

**Figure 17: Pinole Historical Collections of Property Taxes Related to Redevelopment Properties
(FY 13/14–FY 17/18 Actual)**

Description	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18
Tax collected on redevelopment	105,121	105,121	105,121	104,251	104,295
Redevelopment property sales	973,697	3,138,877	1,309,520	1,289,035	2,325,870
Total Redevelopment Properties:	\$1,078,818	\$3,243,998	\$1,414,641	\$1,393,286	\$2,430,165

Sales tax revenue is the most significant source of tax revenue for the City of Pinole. This amount has steadily increased except for an anomaly in FY 16/17. Sales tax has risen an average of 14.5 percent annually from FY 13/14 to FY 17/18. Franchise tax, typically assessments collected for the use of a city's right-of-way, has experienced an annual growth of 3 percent over the five-year history period. Utility and occupancy taxes have increased as real estate development activities have increased. Intergovernmental receipts grew between FY 13/14 and FY 15/16 before most of those revenues were classified as charges for services in FY 16/17 and FY 17/18.

**Figure 18: Sales Tax Collections Including Measure S (2006 & 2014 Initiatives)
FY 13/14–FY 17/18**



Non-Recurring Revenues

Non-recurring revenues consist of proceeds from a capital lease and the sale of surplus properties. Additionally, Net Transfers In (Out) are included in non-recurring revenues.

The following figure shows the recurring and non-recurring revenues for the City of Pinole from FY 13/14 through FY 17/18.

Figure 19: Recurring & Non-Recurring Revenues for Pinole (FY 13/14–FY 17/18 Actual)

Revenue	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18
Property Taxes	\$1,622,419	\$1,856,378	\$1,967,011	\$2,059,786	\$2,185,033
Redevelopment PTF	105,121	105,121	105,121	104,251	104,295
Sales Tax	5,164,841	6,120,156	7,859,195	7,411,905	8,162,816
Franchise Tax	667,030	656,564	687,737	717,013	747,625
Utility Tax	1,880,224	1,843,618	1,876,318	2,066,623	1,926,796
Other Tax Receipts	574,582	708,456	763,252	812,417	880,271
Intergovernmental	1,462,286	1,799,252	1,925,491	1,647,297	1,732,370
Investment Earnings	811	773	8,251	3,568	62,567
Charges For Service	407,651	373,161	395,363	84,107	1,085,883
Permits	36,572	47,115	94,698	61,096	98,312
Grants	—	—	—	83,902	79,426
Rents & Ground Leases	91,228	93,550	159,275	81,510	97,027
Reimbursements	—	510	—	4,171	113,071
Abatement Fees	—	—	—	4,242	720
Fines, Forfeitures, Penalties	54,273	55,734	38,161	38,876	41,279
Recurring Revenues:	\$12,067,038	\$13,660,388	\$15,879,873	\$15,180,764	\$17,317,491
Capital Lease	458,000	—	—	—	—
Other Receipts	33,184	75,836	165,694	17,355	148,062
Redevelopment Property sale	973,697	3,138,877	1,309,520	1,289,035	2,325,870
Sale of Property	—	—	—	16,099	10,017,210
Net Transfers In (Out)	116,757	235,698	(396,602)	(30,000)	(34,095)
Non-Recurring:	\$1,581,638	\$3,450,411	\$1,078,612	\$1,292,489	\$12,457,047
Total Revenues:	\$13,648,676	\$17,110,799	\$16,958,485	\$16,473,253	\$29,774,538

General Fund expenditures are classified as recurring and non-recurring with similar definitions to those of revenues. The General Fund includes funds for public safety, general administration, public services, recreation, and community development. In most instances, debt service is classified with the non-recurring expenditures however, the City of Pinole has long-term liabilities that extend for several years and will be included with the recurring expenditures.

Included in the General Fund debt service amounts is the annual payment necessary for the retirement of the \$6,214,630 of bonds that were issued in 2006 to finance the City's unfunded accrued actuarial liability with CalPERS. These bonds require an annual payment plus interest for thirty years until the debt is extinguished in 2036.

Public Safety expenditures comprise between 65 percent and 70 percent of recurring expenditures and have grown annually. The significant portion of this growth is a result of increased costs associated with the Public Employees Retirement System (CalPERS). Due primarily to a change in the expected investment returns by the plan, the City has incurred additional unfunded accrued actuarial liability with CalPERS that require amortization. These amounts are expected to increase over the next several years before the annual payment amounts decrease. This issue will be discussed further in the projections section of this report.

Capital expenditures paid from the Measure S-2014 are intermingled within the individual department expenditures.

Figure 20: Pinole Actual General Fund & Measure S Recurring & Non-Recurring Expenditures (FY 13/14–FY 17/18)

Expenditures	Actual June 30,				
	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18
General Administration	2,218,379	2,179,503	2,764,265	3,452,526	3,708,784
Public Safety	8,899,703	8,515,958	8,896,628	9,718,068	10,300,507
Public Services	609,150	677,310	1,274,402	789,966	947,950
Recreation	47	—	2,964	12,783	8,458
Community Development	(2,964)	—	4,785	7,959	8,206
Cable Access TV	—	—	30,616	—	—
Debt Service	590,884	543,605	554,467	581,443	572,923
Recurring Expenditures	\$12,315,199	\$11,916,376	\$13,528,127	\$14,562,745	\$15,546,828
Capital Outlay	—	—	—	—	—
Non-Recurring Expenditures	—	—	—	—	—
Total Expenditures:	\$12,315,199	\$11,916,376	\$13,528,127	\$14,562,745	\$15,546,828

The City established a General Fund reserve in FY 14/15 with a beginning balance of \$3 million. The Council's goal is to provide a reserve balance equal to six months of General Fund operating expenses or approximately \$5.5 million.

The fund balance of the General Fund has improved significantly over the past five years, and the City has achieved its target reserve balance.

Figure 21: Analysis of Fund Balance of the General Fund (FY 13/14–FY 17/18)

Description	Actual June 30,				
	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18
Total Revenues	13,648,676	17,110,799	16,958,485	16,473,253	29,774,538
Total Expenditures	12,315,199	11,916,376	13,528,127	14,562,745	15,546,828
Increase (Decrease) in Fund Balance	1,333,477	5,194,423	3,430,358	1,910,508	14,227,710
Beginning Fund Balance	(1,358,853)	(25,376)	5,169,047	8,599,405	11,135,715
Prior Year Adjustment	—	—	—	625,802	—
Ending Fund Balance:	\$(25,376)	\$5,169,047	\$8,599,405	\$11,135,715	\$25,363,425

The large increase in the Fund Balance in FY 17/18 results from the repayment of a loan due to the City in an amount slightly greater than \$10 million. All of these funds were transferred from the General Fund to an IRS Section 115 Pension Trust in FY 18/19. An adjustment has been made to the prior year Fund Balance in FY 16/17 to compensate for differences in balances between the annual reports.

City of Pinole Fire Department

The department is presently staffed by 14 career employees and an Administrative Analyst. PFD serves a community approximately 12 square miles in area with a population within the city limits of approximately 19,364 residents. Services, including fire protection, emergency medical services, fire investigation, fire prevention, life safety education, community risk reduction, disaster/emergency operations planning, and hazardous materials response are presently provided from a single fire station utilizing a single engine staffed with a minimum of three personnel. A Battalion Chief responds on incidents requiring a senior level command presence.

The PFD is a department of the City of Pinole and has no funding source other than that supplied by the City through the revenues generated by its General Fund and other measures enacted to generate revenue at the City level. Two general sales tax measures have been enacted since 2006 which have been allocated by budget appropriation, in whole or in part, to the Public Safety departments of the City.

The Pinole Fire Department participates in an Automatic Aid Agreement with the Contra Costa County Fire Protection District and the Rodeo-Hercules Fire Protection District. This agreement provides the framework under which the three agencies will jointly provide fire and emergency medical services through the integration of operations.

In some of the years prior to those evaluated for this project, the PFD operated from two stations. The economic downturn in 2008/2009 reduced the City's revenue to the level that the second station (Station 74) was initially closed during certain operational periods through a brownout program, but as finances continued to worsen, was ultimately closed. This closure has resulted in an increase in response times to a portion of the City.

The budget and accounting practices employed by the City of Pinole do not allocate General Fund overhead expenses to the various departments. This makes comparisons with other agencies such as fire districts difficult. While it may be possible to estimate the executive management costs of the City that would be attributable to the fire department, a portion of those costs may not be applicable to a fire district.

The budget of the Pinole Fire Department has expanded and contracted during the previous five years. However, the overall budget has remained within \$250,000 between FY 13/14 and FY 17/18 except for of an anomaly in Services in FY 16/17 for an allocation of administrative costs.

Figure 22: PFD Recurring & Non-Recurring Expenditures (FY 13/14–FY 17/18)

Description	Actuals for the Year Ending June 30,				
	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18
Salaries (includes overtime)	\$1,650,376	\$1,645,448	\$1,686,694	\$1,575,190	\$1,832,417
Benefits	605,918	660,257	817,636	597,058	604,578
Total Salaries and Benefits	2,256,294	2,305,705	2,504,330	2,172,248	2,436,995
Services	541,751	517,087	451,514	1,531,829	681,611
Supplies	142,128	144,244	138,641	152,413	153,338
Total Recurring Costs	2,940,173	2,967,036	3,094,485	3,856,490	3,271,944
Debt Service	70,433	70,433	70,497	70,433	70,433
Capital Acquisitions	465,919	51,514	9,208	7,197	—
Total Non-Recurring Expenditures	536,352	121,947	79,705	77,630	70,433
Total Expenditures:	\$3,476,525	\$3,088,983	\$3,174,190	\$3,934,120	\$3,342,377

Of these total expenditures, a portion has been funded through the Measure S (2006) and the Measure S (2014) initiatives.

Figure 23: Other Sources of Funding for the Pinole Fire Department (FY 13/14–FY 17/18)

Source	Actuals for the Year Ending June 30,				
	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18
Total Expenditures	\$3,476,525	\$3,088,983	\$3,174,190	\$3,934,120	\$3,342,377
Measure S (2006)	1,150,524	777,004	555,295	655,666	714,030
Measure S (2014)	—	—	18,683	11,589	199,863
Total Other Sources	1,150,524	777,004	573,978	667,255	913,893
Balance to fund from General Fund	\$2,326,001	\$2,311,979	\$2,600,212	\$3,266,865	\$2,428,484

Financial Projections

The Amended City of Pinole General Fund Budget for FY 18/19 projects a negative cash flow of approximately \$950,000 before considering Transfers In and Transfers Out activity. This is due to a \$1 million allocation from the General Fund balance for the purchase of a new fire engine. Approximately \$16,000,000 of the amounts included in the Transfer Out category was utilized to create an Irrevocable Pension Trust to assist the City with funding the CalPERS future retirement expenses of the City's employees. Property tax revenues in FY 18/19 are projected to be approximately \$825,000 less than the amounts received in FY 17/18, decreasing from \$4,615,000 to \$3,787,000.¹² Sales tax revenues from the General fund, Measure S (2006) and Measure S (2014) are also projected to be approximately \$12,000 less than the previous year. Charges for services are projected to be approximately \$153,000 more in FY 18/19 than the amounts received in FY 17/18.

Revenues are identified as recurring or non-recurring with recurring revenues consisting of those receipts that can be expected to continue annually and that have a reasonably expected amount. Non-recurring receipts are items that may occur sporadically or are difficult to project an amount.

The following figure uses the projected FY 19/20 as a base year on which to create the five-year projections. Property values, as well as property and sales tax revenues are projected to increase at a 2 percent annual rate. The Utility Users Tax and Franchise Tax increases are forecast to increase at a 1 percent annual rate. Other tax revenue and other revenue sources are both forecast to increase at an annual rate of 2 percent. Beginning in FY 20/21, a significant portion of the annual pension cost increases will be offset by the withdrawals from the Pension Trust with those funds included in the Transfer In category in Recurring Revenues. Non-recurring revenues include miscellaneous proceeds and proceeds from the sale of surplus assets.

¹² FY 2019/20 Proposed Budget for the City of Pinole, Pg. B-1.

Figure 24: Pinole Recurring vs. Non-recurring General Fund and Measure S Initiatives Revenues (Amended Budget FY 18/19–FY 24/25)

Revenue	Amended Budget	Adopted Budget	Projected				
	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
Property Taxes	3,787,392	4,033,892	4,114,570	4,196,861	4,280,798	4,366,414	4,453,743
Sales Tax	7,842,100	7,550,886	7,701,904	7,855,943	8,013,062	8,173,323	8,336,789
Franchise Tax	744,128	744,000	751,440	758,954	766,544	774,209	781,951
Utility Tax	1,930,000	1,898,000	1,916,980	1,936,150	1,955,511	1,975,066	1,994,817
Other Tax Receipts	884,200	858,900	876,078	893,600	911,472	929,701	948,295
Intergovernmental	1,736,706	1,819,484	1,855,874	1,892,991	1,930,851	1,969,468	2,008,857
Investment Earnings	207,000	250,000	255,000	260,100	265,302	270,608	276,020
Charges for Service	1,224,239	1,276,723	1,301,257	1,326,283	1,351,808	1,377,844	1,404,401
Permits	76,700	73,700	75,174	76,677	78,211	79,775	81,371
Grants	163,437	92,026	93,867	95,744	97,659	99,612	101,604
Rents/Ground Leases	81,450	81,450	83,079	84,741	86,435	88,164	89,927
Reimbursements	97,115	9,500	9,690	9,884	10,081	10,283	10,489
Abatement Fees	9,000	3,300	3,366	3,433	3,502	3,572	3,571
Fines, Forfeitures & Penalties	59,050	41,550	42,381	43,229	44,093	44,975	45,875
Transfers In	6,290,688	900,938	3,233,882	4,139,372	5,191,081	6,412,292	6,412,292
Recurring Revenue:	25,133,205	19,634,349	22,314,542	23,573,962	24,986,410	26,575,306	26,950,002
Capital Lease	—	—	—	—	—	—	—
Other Receipts	14,000	9,000	9,180	9,364	9,551	9,742	9,937
Property Sales	11,000	11,000	11,220	11,444	11,673	11,907	—
Non-Recurring:	25,000	20,000	20,400	20,808	21,224	21,649	9,937
Total Revenues:	25,158,205	19,654,349	22,334,942	23,594,770	25,007,634	26,596,955	26,959,939

Expenses are classified in a manner much like revenues, recurring or non-recurring in nature. Salaries, benefits, and typical operating expenses are identified as recurring in nature. In the instance of Pinole, annual debt service payments are expected for a significant number of years in the future and are also included as recurring expenditures. Capital outlays are projected annually from the Measure S (2014) initiative and are classified as non-recurring expenditures. Transfers to other funds are also classified as non-recurring expenditures.

The projection methodology incorporates expenditure type rather than function type in order to use generalized growth factors. Salary expense across the City is projected to increase at a 3 percent annual rate through the FY 23/24 fiscal year. Benefit increases primarily result from the increase in pension costs to compensate for the reduced returns experienced by CalPERS, the state pension system. Other operating expenses are projected to increase at a 2.8 percent annual rate beginning with the FY 20/21 period. Debt service is projected based on repayment terms for each liability.

Non-recurring expenditures include scheduled transfers from the General Fund, and other funds included in the General Fund, to other funds such as internal service funds or equipment reserves.

Figure 25: City of Pinole Projected Recurring vs. Non-Recurring General Fund and Measure S Initiatives Expenditures (Amended Budget FY 18/19–FY 24/25)

Expenses	Amended Budget	Projected Budget	Projected				
	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
Salaries	8,585,194	9,138,860	9,413,026	9,695,417	9,986,280	10,285,867	10,594,443
Benefits & Insurance	4,738,955	5,787,430	9,175,976	11,189,850	13,405,359	15,848,563	18,701,304
Other Operating Expenses	4,324,315	3,797,889	2,876,229	2,956,764	3,039,553	3,124,660	3,212,150
Debt Service	590,433	605,433	555,000	575,000	595,000	610,000	610,000
Recurring Expenditures	18,238,897	19,329,612	22,020,231	24,417,031	27,026,192	29,869,090	33,117,897
Capital Outlay	929,814	882,618	907,331	932,737	958,853	985,701	1,013,301
Transfers Out	22,094,954	1,328,948	1,150,000	1,150,000	1,150,000	1,150,000	1,150,000
Non-Recurring Expenditures	23,024,768	2,211,566	2,057,331	2,082,737	2,108,853	2,135,701	2,163,301
Total Expenditures:	41,263,665	21,541,178	24,077,562	26,499,768	29,135,045	32,004,791	35,281,198

Maintaining an adequate reserve or fund balance is good business practice for private businesses but is especially critical for municipalities as new revenue streams are typically enacted through a legislative process. Comparing the projected revenues and expenditures of the City of Pinole provides insight into the future financial health of the City. The significant anomaly occurring in FY 18/19 is a result of the one-time \$16 million transfer to the IRS 115 Pension Trust. City Council had initiated a plan to accumulate a \$5.5 million emergency reserve and had been able to accomplish this goal in FY 18/19. The goal has been projected to be achieved in each of the following two fiscal years through FY 21/22. However, continued fiscal pressure in the form of increased CalPERS pension funding does not allow for this financial goal to remain sustainable beyond FY 21/22.

Figure 26: Projected General Fund Balance for Pinole (Amended FY 18/19 Budget–FY 24/25)

Revenues & Expenditures	Amended Budget	Adopted Budget	Projected				
	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
Revenues	25,493,905	19,654,349	22,334,941	23,594,769	25,007,633	26,596,956	26,959,939
Expenditures	41,263,665	21,541,178	24,077,562	26,499,768	29,135,045	32,004,791	35,281,198
Net Cash Flow (Deficit)	(15,769,760)	(1,886,829)	(1,742,621)	(2,904,999)	(4,127,412)	(5,407,835)	(8,321,259)
Beginning Fund Balance	25,363,425	9,593,665	7,706,836	5,964,215	3,059,216	(1,068,195)	(6,476,031)
Ending Fund Balance	9,593,665	7,706,836	5,964,215	3,059,216	(1,068,195)	(6,476,031)	(14,797,290)

The Pinole Fire Department is a City department and there is no direct connection between the City's various revenue streams and the fire department's services. Two separate Measure S initiatives have provided sales tax revenues that have been allocated to address various needs of the City including public safety operations and capital expenditures.

The Pinole Fire Department's FY 18/19 Budget is \$5,188,930, including \$1,280,560 for capital acquisitions. This is an increase of \$1,846,533 over actual expenditures in FY 17/18. Benefit costs increased approximately \$290,000 over FY 17/18 actual costs and is primarily related to the increase in required pension costs. The budget is divided between General Fund expenditures and Measure S (2006) and Measure S (2014) funded expenditures.

The adopted fire department FY 19/20 budget was developed by the City of Pinole staff with the goal of providing quality services within the City's available resources. This budget forms the basis for the remaining projections.

Like the City's growth factors for expenses, salaries are anticipated to increase 3 percent annually. The increase in employee benefits is driven by the significant increases in the required CalPERS plus a 5 percent increase in other benefits. Service and supplies costs are projected to increase at 2.8 percent annually. Measure S (2006) and Measure S (2014) initiatives are projected to grow at an annual rate of 1 percent during the next five years and will continue to provide funding for a portion of fire department salaries, benefits, operating expenses, and capital acquisitions. The following figure demonstrates what is considered as a status quo option which shows the projected costs if the City took no action other than to leave the service delivery system as is.

**Figure 27: PFD Projected Status Quo Expenditures & Funding Sources
(Amended Budget FY 18/19–FY 24/25)**

Description	Amended	Adopted	Projected				
	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
Salaries	1,900,133	2,104,678	2,167,818	2,232,853	2,299,838	2,368,834	2,439,899
Benefits	894,321	1,284,608	2,113,226	2,577,021	3,087,252	3,649,922	4,306,908
Total Salaries & Benefits	2,794,454	3,389,286	4,281,044	4,809,873	5,387,090	6,018,755	6,746,807
Services	917,898	808,274	830,906	854,171	878,088	902,674	927,949
Supplies	125,585	156,300	160,676	165,175	169,800	174,555	179,442
Total Recurring Costs	3,837,937	4,353,860	5,272,626	5,829,219	6,434,978	7,095,984	7,854,198
Debt Service	70,433	70,433	-	-	-	-	-
Capital Acquisitions	280,560	1,064,000	-	-	-	-	-
Total Non-Recurring Expenditures	350,993	1,134,433	-	-	-	-	-
Total Expenditures	4,188,930	5,488,293	5,272,626	5,829,219	6,434,978	7,095,984	7,854,198
Sources of Funding							
Measure S (2006)	951,046	786,830	794,698	802,645	810,672	818,778	826,966
Measure S (2014)	314,663	306,128	309,189	312,281	315,404	318,558	321,744
Total Other Sources	1,265,709	1,092,958	1,103,888	1,114,926	1,126,076	1,137,336	1,148,710
Balance To Fund From General Fund	2,923,221	4,395,335	4,168,739	4,714,293	5,308,903	5,958,648	6,705,488

Capital Assets & Improvements

Three basic resources are required to successfully carry out the mission of a fire department—trained personnel, firefighting equipment, and fire stations. No matter how competent or numerous the firefighters, if appropriate capital equipment is not available for use by responders, it is impossible for a fire department to deliver services effectively. The capital assets that are most essential to the provision of emergency response are facilities and apparatus (response vehicles).

Fixed Facilities

Fire stations play an integral role in the delivery of emergency services for several reasons. A station's location will dictate, to a large degree, response times to emergencies. A poorly located station can mean the difference between confining a fire to a single room and losing the structure. Fire stations also need to be designed to adequately house equipment and apparatus, as well as meet the needs of the organization and its firefighters.

Consideration should be given to a fire station's ability to support the jurisdiction's mission as it exists today and into the future. The activities that take place within the fire station should be closely examined to ensure the structure is adequate in both size and function.

ESCI Associates conducted walk-through inspections of the two Pinole Fire Stations. ESCI utilized a standard check-off list for each facility inspection.

Special attention was made to the building's location, future use viability in terms of serving the community, and capability of accommodating an increase in staffing levels and emergency response apparatuses in the future.

Figure 28: Fire Station Condition Definitions

EXCELLENT	Like new condition. No visible structural defects. The facility is clean and well maintained. Interior layout is conducive to function with no unnecessary impediments to the apparatus bays or offices. No significant defect history. Building design and construction matches building purpose.
GOOD	The exterior has a good appearance with minor or no defects. Clean lines, good work flow design, and only minor wear of the building interior. Roof and apparatus apron are in good working order, absent any significant full thickness cracks or crumbling of apron surface or visible roof patches or leaks. Building design and construction matches building purpose.
FAIR	The building appears to be structurally sound with weathered appearance and minor to moderate non-structural defects. Interior condition shows normal wear and tear but flows effectively to the apparatus bay or offices. Mechanical systems are in working order. Building design and construction may not match building purpose well. Showing increasing age-related maintenance, but with no critical defects.
POOR	The building appears to be cosmetically weathered and worn with potentially structural defects, although not imminently dangerous or unsafe. Large, multiple full-thickness cracks and crumbling of concrete on apron may exist. Roof has evidence of leaking and/or multiple repairs. The interior is poorly maintained or showing signs of advanced deterioration with moderate to significant non-structural defects. Problematic age-related maintenance and/or major defects are evident. May not be well suited to its intended purpose.

The following figures depict the results of ESCI's inspections of the City of Pinole's fire stations.

Figure 29: Pinole Fire Department Station 73 & Administrative Headquarters



Station Name/Number:	73					
Address/Physical Location:	88o Tennent Ave., Pinole, CA 94564					
	General Description: This two-story station houses the on-duty crew, Fire Chief, and Management Analyst.					
Structure						
Construction Type	Type 3 Ordinary					
Date of Construction	1985					
Seismic Protection	Unknown					
Auxiliary Power	Diesel Generator with 1,000 Gallons					
General Condition	Fair					
Number of Apparatus Bays	3	Drive-through bays		3	Back-in bays	
Considerations (ADA, etc.)	No					
Square Footage	Two-story, approximately 3,500 square feet					
Facilities Available						
Separate Rooms/Dormitory	2	Bedrooms	3	Beds	12	Beds in dormitory
Maximum Station Staffing Capability	6 (the Captains' room has 3 murphy beds)					
Exercise/Workout Facilities	Yes					
Kitchen Facilities	Yes					
Individual Lockers/Storage Assigned	Yes					
Shower Facilities	Yes					
Training/Meeting Rooms	Yes					
Washer/Dryer	Yes					
Safety & Security						
Sprinklers	Yes					
Smoke Detection	Yes					
Decontamination/Biohazard Disposal	Yes					
Security	Yes					
Apparatus Exhaust System	Yes					

Figure 30: Pinole Fire Department Station 74

Station Name/Number:	74 (open only to a BC)				
Address	3700 Pinole Valley Rd., Pinole, CA 94564				
	General Description: This single-story station has been closed since 2011.				
Structure					
Construction Type	Type 3 Ordinary				
Date of Construction	2003				
Seismic Protection	None				
Auxiliary Power	Yes				
General Condition	Good				
Number of Apparatus Bays	2	Drive-through bays	0	Back-in bays	
Special Considerations (ADA, etc.)	Yes				
Square Footage	2,500				
Facilities Available					
Separate Rooms/Dormitory/Other	3	Bedrooms	3	Beds each	Beds in dormitory
Station Staffing Capability	3				
Exercise/Workout Facilities	No				
Kitchen Facilities	Yes				
Individual Lockers/Storage Assigned	Yes				
Shower Facilities	Yes				
Training/Meeting Rooms	No, front office only				
Washer/Dryer	Yes				
Safety & Security					
Sprinklers	Yes				
Smoke Detection	Yes				
Decontamination/Biohazard Disposal	No				
Security	Yes				
Apparatus Exhaust System	Yes				

Facilities Summary

The two facilities range in age from 16 to 34 years old.

Fire Station 73

The exterior is in good shape. Office space is upstairs adjacent to the central living area/kitchen. The upstairs living/dorm space is non-partitioned and cramped with furniture/gym equipment. Very little workstation or training space is available for personnel. Interior modifications would be useful. An SCBA filling station/storage and bunker room is adjacent to the apparatus bay, separated by a single door, which if open exposes both rooms to diesel exhaust. Station 73's office was recently remodeled; however the crew quarters are in need of remodeling and updating which may include ADA accommodation. Remodeling should take into account the need to provide additional office, workspace, gender segregation of crews, and a shift Battalion Chief.

Fire Station 74

The exterior and grounds are well kept. The interior is in good shape with some carpet wear and tear. The FY 19/20 budget includes \$20,000 for these repairs. Individual dorm rooms and bathrooms allow for gender separation. There is some workstation/training space but little room for expansion. The apparatus bays are in good working order with a bunker room directly adjacent. While small, the station is adequate to house a three-person Engine Company and crossed-staffed Type III wildland engine.

Apparatus/Vehicles

Other than firefighters assigned to stations, response vehicles are undoubtedly the next most important resource of the emergency response system. The delivery of emergency services will be compromised if emergency personnel cannot arrive quickly due to unreliable transportation or if the equipment does not function properly.

Fire apparatus are unique and expensive pieces of equipment, customized to operate efficiently for a narrowly defined mission. An engine may be built in such a way that the compartments fit specific equipment and tools. Virtually every space on a fire vehicle is designed for function. This same vehicle, with its specialized design, does not lend itself well to operate in a completely different capacity, such as a hazardous materials unit or a rescue squad. For this reason, fire apparatus offers little flexibility in use or reassigned purpose. As a result, communities across the country have sought to achieve the longest life span possible for these vehicles. Unfortunately, no piece of mechanical equipment can be expected to last forever. As a vehicle ages, repairs tend to become more frequent and more complex.

Parts may become more difficult to obtain, and downtime for repairs increases. Given the emergency mission that is so critical to the community, downtime is one of the most frequently identified reasons for apparatus replacement. Because of the expense of fire apparatus, most communities develop replacement plans. To enable such planning, communities often turn to the accepted practice of establishing a life cycle for apparatus that results in an anticipated replacement date for each vehicle. The reality is that it may be best to establish a life cycle for planning purposes, such as the development of replacement funding for various types of apparatus; yet, apply a different method (such as a maintenance and performance review) for determining the actual replacement date, thereby achieving greater cost effectiveness when possible.

Fire administrators should be concerned about aging of the fleet and having a funded replacement schedule. As frontline apparatus age, fleet costs will naturally be higher and more down time will be associated with necessary repairs and routine maintenance.

It is beyond the scope of work and the expertise of ESCI to provide a mechanical assessment of the apparatus. For a mechanical evaluation of the apparatus, ESCI recommends seeking the services of a certified Emergency Vehicle Technician.

The following figure displays the City of Pinole's Apparatus/Vehicle Inventory as submitted by PFD staff.

Figure 31: PFD Station 73 Apparatus & Vehicle Inventory

Apparatus	Type	Year	Make/Model	Condition	Seating Capacity	Pump Capacity	Tank Capacity
Battalion 7, 7301	SUV	2008	Ford/Expedition	Fair	5	N/A	N/A
Engine E73	Type 1	2015	Spartan	Good	5	1500	500
Reserve E73A	Type 1	2005	HME/Rosenbauer	Fair/Poor	5	1500	1200
Wildland E273	Type 3	2008	Rosenbauer	Good/fair	4	1000	500
Wildland E673	Type 6	2001	Ford F550	Fair/Poor	2	160	200
Fire Chief 7300	SUV	2015	Ford/Intercept	Good	5	N/A	N/A
Utility 73	Pickup	2007	Ford F250	Fair	4	N/A	N/A
New Battalion 7	SUV	2019	Ford Expedition	New	5	N/A	N/A

Apparatus Summary

Generally, fire agencies utilize a guideline as follows to establish capital equipment replacement programs:

- **Engines:** 10 years frontline and 5 years in reserve.
- **Wildland Engines:** 15 years frontline 5 years in reserve.
- **Truck Companies:** 15 years frontline and 5 to 10 years in reserve.
- **Ambulance:** 5 years frontline and 5 years in reserve.

The level of activity, topography, and other factors may influence these guidelines.

- PFD apparatus specifications have not been standardized with Battalion 7 apparatus.
- The age of PFD's frontline engine is 4 years. It is scheduled to become the reserve engine when the engine currently on order arrives in FY 19/20.
- Reserve Engine 73A is 14 years old and will be replaced by current E73 when the engine on order arrives.
- Wildland Engine 273 is 11 years old and 673 is 18 years old and should be scheduled for replacement.

Capital Replacement Planning

Long range capital replacement planning is always a challenge for any municipality. Pinole has done a commendable job of purchasing and maintaining its fleet of fire apparatus using General Fund Reserves. This practice—while not uncommon—has resulted in a significant number of replacements being deferred. Fire vehicles have a readily predictable service life and an easily forecast future replacement cost, which should be preplanned. If future needs are identified and funding is set aside to accommodate the need, the agency will not be dependent on reserves in the future to meet its long-term financial demands. ESCI recommends to clients that, as soon as a new piece of fire apparatus is purchased, funding should start to be set aside for its replacement.

Critical Tasking

Critical tasks are those activities that must be conducted in a timely manner by firefighters at emergency incidents in order to control the situation, stop loss, and to perform necessary tasks required for a medical emergency. The Pinole Fire Department is responsible for assuring that responding PFD personnel are capable of performing all of the described tasks in a prompt, efficient, and safe manner.

Fires: Critical tasking for fire operations is the minimum number of personnel to perform the tasks required to effectively control a fire in the listed risk category. Major fires (beyond first alarm) will require additional personnel and apparatus.

Emergency Medical: Critical tasking for emergency medical incidents is the minimum number of personnel to perform the tasks required and support the identified strategy based on the department's adopted medical protocol.

The following figure details PFD's available response staffing by type of incident

Figure 32: Critical Tasking

Low Rise Structure Fire

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Pump Operations	1
Attack Line	2
Search and Rescue	0
Ventilation	0
RIC	0
Other (Hydrant, backup line)	0
Total	4

High Rise Structure Fire (75+ feet in height)

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Pump Operations	1
Attack Line	2
Search and Rescue	0
Ventilation	0
RIC	0
Other (Hydrant, backup line)	0
Total	4

Moderate Risk Commercial Structure Fire

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Pump Operations	1
Attack Line	2
Search and Rescue	0
Ventilation	0
RIC	0
Other (Hydrant, backup line)	0
Total	4

High Risk Commercial Structure Fire

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Pump Operations	1
Attack Line	2
Search and Rescue	0
Ventilation	0
RIC	0
Other (Hydrant, backup line)	0
Total	4

Wildland Fire—Low Risk

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Attack Line	2
Pump Operations	1
Total	4

Wildland Fire—High Risk

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Pump Operations/Lookout	1
Attack Line	2
Structure Protection	0
Water Supply	0
Total	4

Aircraft Emergency

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Aircraft Fire Suppression	0
Pump Operations	1
Attack Line	2
Back-up Line	0
Rescue	0
Emergency Medical Care	0
Water Supply	0
Total	4

Hazardous Materials—Low Risk

Task	Number of Personnel
Command	1 (B-Shift)
Liaison	0
Decontamination	0
Research/Support	3
Entry team, and Backup Team	0
Total	4

Hazardous Materials—High Risk

Task	Number of Personnel
Command	1 (B-Shift)
Liaison	0
Decontamination	0
Research Support	3
Team Leader, Safety, Entry Team, and Backup Team	0
Total	4

Emergency Medical Aid (Life-threatening)

Task	Number of Personnel
Patient Management	1
Patient Care	1
Documentation	1
Total	3

Major Medical Response (10+ Patients)

Task	Number of Personnel
Incident Command/Safety	1 (B-Shift)
Triage	1
Treatment Manager	0
Patient Care	2
Transportation Manager	0
Total	4

Motor Vehicle Accident (Non-Trapped)

Task	Number of Personnel
Scene Management/Documentation	1
Patient Care/Extrication	2
Total	3

Motor Vehicle Accident (Trapped)

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Scene Management	0
Patient Care	1
Extrication	2
Pump Operator/Suppression Line	0
Extrication/Vehicle Stabilization	0
Total	4

Technical Rescue—Water

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Rescue Team	0
Backup Team	0
Patient Care	3
Rope Tender	0
Upstream Spotter	0
Downstream Safety	0
Total	4

Technical Rescue—Rope

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Rescue Team	2
Backup/Support Team	0
Patient Care	0
Rigger	1
Attendant	0
Ground Support	0
Edge Person	0
Total	4

Technical Rescue—Confined Space

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Rescue Team	0
Backup/Support Team	0
Patient Care	2
Attendant	0
Rigger	1
Ground Support	0
Total	4

Technical Rescue—Trench

Task	Number of Personnel
Command/Safety	1 (B-Shift)
Rescue Team	0
Backup/Support Team	2
Patient Care	1
Shoring	0
Total	4

Alarm Assignments

In order to ensure adequate personnel and apparatus are dispatched to an emergency event, the following first alarm response assignments have been established. "Total PFD Staffing available" is the number identified in the Critical Tasking analysis above. The number of personnel and apparatus required to mitigate an active and complex working incident will require additional resources above and beyond the numbers listed as available. The "Alarm Assignments" are what has been identified as the number of resources and personnel necessary to address the challenges of each identified event.

Figure 33: Alarm Assignments

Low Rise Structure Fire

Unit Type	Number of Units	Total Personnel
Engine	4	12
Truck	1	4
Air Supply	1	3
Battalion Chief	2	2
Total Staffing Provided		4
Total Staffing Needed		21

High Rise Structure Fire (75+ feet)

Unit Type	Number of Units	Total Personnel
Engine	8	24
Truck	3	12
Air Supply	1	3
Battalion Chief	3	3
Total Staffing Provided		4
Total Staffing Needed		42

Moderate Risk Commercial Structure Fire

Unit Type	Number of Units	Total Personnel
Engine	6	18
Truck	2	8
Air Supply	1	3
Battalion Chief	3	3
Total Staffing Provided		4
Total Staffing Needed		32

High Risk Commercial Structure Fire

Unit Type	Number of Units	Total Personnel
Engine	8	24
Truck	3	12
Air Supply	1	3
Battalion Chief	3	3
Total Staffing Provided		4
Total Staffing Needed		42

Wildland Fire—Low Risk

Unit Type	Number of Units	Total Personnel
Engine	1	3
Brush Engine	1	3
Battalion Chief	1	1
Total Staffing Provided		4
Total Staffing Needed		7

Wildland Fire—High Risk

Unit Type	Number of Units	Total Personnel
Engine	1	3
Brush Engine	3	9
Battalion Chief	2	2
Total Staffing Provided		4
Total Staffing Needed		14

Aircraft Emergency

Unit Type	Number of Units	Total Personnel
Engine	3	9
Truck	1	4
ARRF	1	4
Rescue	2	6
Paramedic Ambulance	2	4
Battalion Chief	2	2
Total Staffing Provided		4
Total Staffing Needed		29

Hazardous Materials—High Risk

Unit Type	Number of Units	Total Personnel
Engine	3	9
Truck	1	4
Rescue	1	3
Battalion Chief	2	2
Hazardous Materials Unit	2	6
Total Staffing Provided		4
Total Staffing Needed		24

Hazardous Materials—Low Risk

Unit Type	Number of Units	Total Personnel
Engine	2	6
Truck	1	4
Battalion Chief	1	1
Hazardous Materials Unit	1	1
Total Staffing Provided		4
Total Staffing Needed		12

Emergency Medical Service (Life-threatening)

Unit Type	Number of Units	Total Personnel
Engine	1	3
Paramedic Ambulance ¹³	1	2
Total Staffing Provided		3
Total Staffing Needed		5

¹³ Paramedic Ambulance is provided by Contra Costa Fire

Major Medical Response (10+ Patients)

Unit Type	Number of Units	Total Personnel
Engine	2	6
Truck	1	4
Rescue	1	3
Paramedic Ambulance	5	10
Battalion Chief	2	2
Total Staffing Provided		4
Total Staffing Needed		25

Motor Vehicle Accident (Non-Trapped)

Unit Type	Number of Units	Total Personnel
Engine or Truck	2	6
Total Staffing Provided		3
Total Staffing Needed		6

Motor Vehicle Accident (Trapped)

Unit Type	Number of Units	Total Personnel
Engine	1	3
Truck	1	4
Paramedic Ambulance	1	2
Rescue	1	3
Battalion Chief	1	1
Total Staffing Provided		4
Total Staffing Needed		13

Technical Rescue—Water

Unit Type	Number of Units	Total Personnel
Engine	2	6
Water Rescue Unit	1	4
Tech Rescue Unit	1	3
Rescue	1	3
Battalion Chief	2	2
Total Staffing Provided		4
Total Staffing Needed		18

Technical Rescue—Rope

Unit Type	Number of Units	Total Personnel
Engine	1	3
Truck	1	4
Rescue	1	3
Tech Rescue Unit	1	3
Battalion Chief	1	1
Total Staffing Provided		4
Total Staffing Needed		14

Technical Rescue—Confined Space

Unit Type	Number of Units	Total Personnel
Engine	1	3
Truck	1	4
Rescue	1	3
Tech Rescue Unit	1	3
Battalion Chief	1	1
Total Staffing Provided		4
Total Staffing Needed		14

Technical Rescue—Trench

Unit Type	Number of Units	Total Personnel
Engine	1	3
Truck	1	4
Rescue	1	3
Tech Rescue Unit	1	3
Battalion Chief	1	1
Total Staffing Provided		4
Total Staffing Needed		14

Absent automatic and mutual aid from surrounding agencies, standalone PFD is not capable filling the alarm assignments noted above. In the event PFD Station 74 is reopened, the department will be able to initiate initial attack and comply with the OSHA two-in/two-out rule.

Staff Scheduling Methodology

PFD utilizes a traditional three platoon system operating on a 48-hour shift rotation to achieve this minimum staffing of three FTEs per day as required. The total number of positions required per jurisdiction becomes a policy decision based on the jurisdiction's needs. The jurisdiction also then establishes the number of employees needed above the minimum to allow for vacancies due to vacation, sick, and other types of leave, yielding an overall number of full-time employees required to ensure that necessary staffing, according to policy, is available daily. This staffing methodology is very common across the Western United States for firefighters to work a 24- or 48-hour shift cycle. Studies have been undertaken and remain ongoing in an attempt to better understand the impact of this work cycle on the physiological process.¹⁴ The science indicates that sleep is important and that going without sleep for too long or interrupting the sleep rhythm leads to physical and cognitive problems. That said, no easy answer to the problem exists. Intuitively, the problems would be exacerbated in a busy station and lessened in a less busy station.

All personnel are trained as firefighters, with most trained at a minimum of Emergency Medical Technician (EMT) level. Six have been trained to the Paramedic level. The department provides Advanced Life Support (ALS) services utilizing its one Engine Company. Ambulance response and patient transport are currently assigned to CCFPD.

¹⁴ Is the firefighter 48/96 shift a health hazard? Sara Jahnke, FireRescue1, <https://www.firerescue1/fire-rehab/articles/223601018-Is-the-firefighter-48-96-shift-a-health-hazard/>.

SERVICE DEMAND & INCIDENT STAFFING PERFORMANCE

Service delivery is the foundation of any service-oriented organization. Without an understanding of how services are organized, deployed, and managed, one cannot quantify efficiency and effectiveness. This section of the report will analyze multiple facets of the current delivery of fire services for the City of Pinole, including the identification of incidents by type and frequency, deployment analysis, system reliability, and a summary of performance. By understanding current performance and how the system functions, goals and objectives for future performance improvements can be established and implemented.

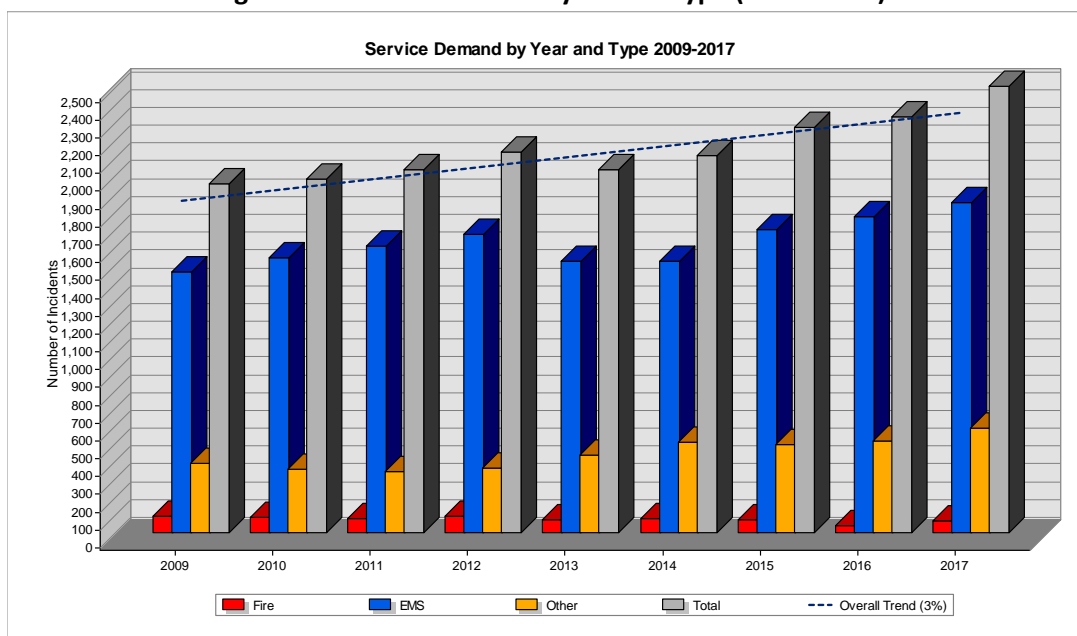
Service-Demand Study

Incidents by Type & Frequency

The ways in which demands for service occur can follow predictable patterns over time. To identify those patterns occurring in Pinole, ESCI conducted an analysis and geographic display of current service demand by incident type and temporal variation using dispatch data obtained from the Contra Costa Fire Protection District. Incident types were selected based on the classification system established by the National Fire Incident Reporting System (NFIRS); temporal variation, or the way service demand changes over time, was analyzed by the month, by the day, and by the hour.

The following figure provides a historical view of service types and frequency of incidents over the past 9 years within the City of Pinole. This includes all incidents regardless of which fire agency responded. The incident data for the two contract areas was not available from CCCD.

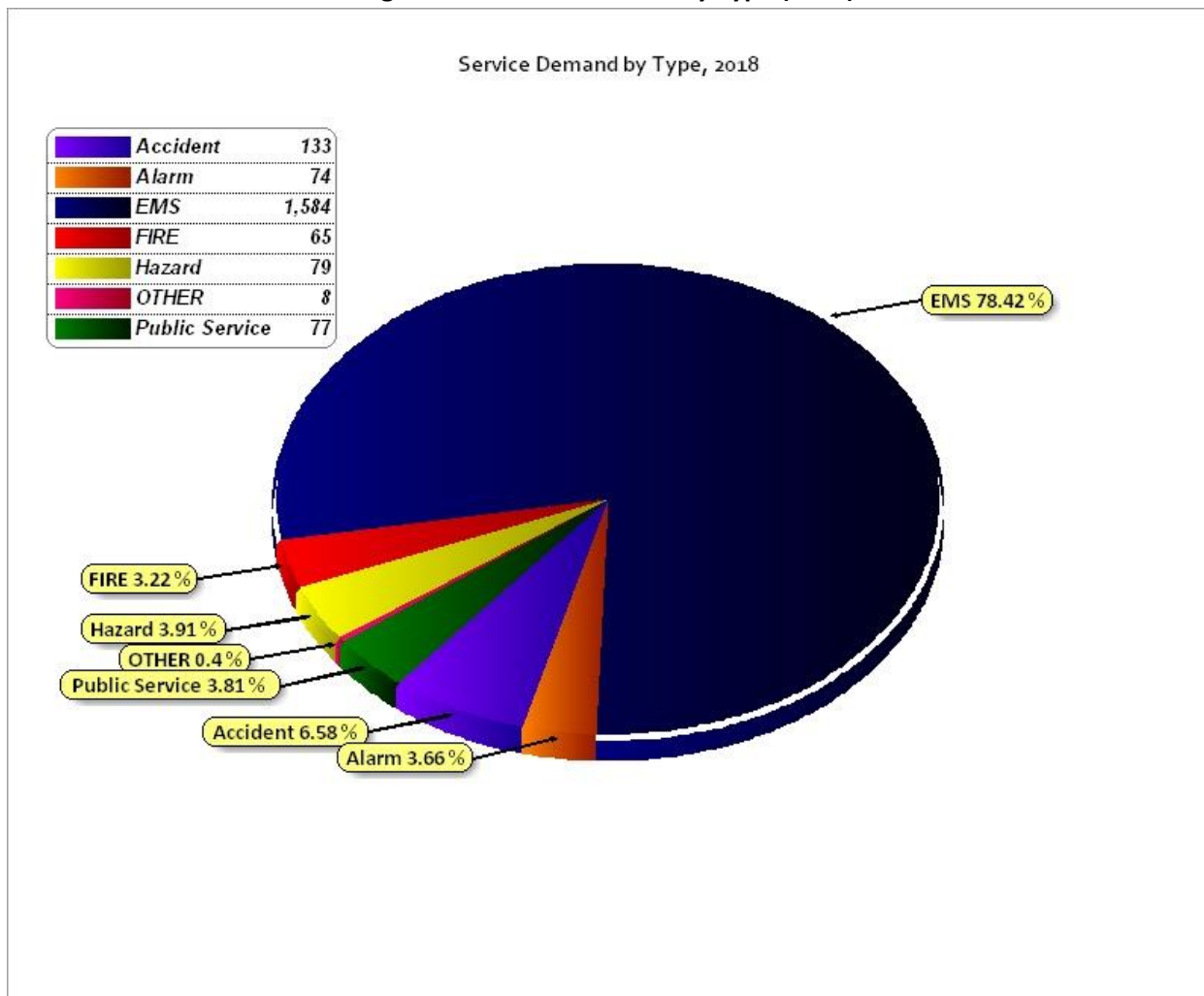
Figure 34: Service Demand by Year & Type (2009–2017)



Over the nine-year span, the total number of incidents increased from 1,954 in 2009, to 2,504 in 2017, an average increase of 3 percent per year. Incidents that did not indicate that they were a fire or an EMS incident, such as HAZMAT or Good Intent were placed in the "OTHER" category.

A summary analysis of the 2,020 incidents within the City of Pinole and the two informal contract areas by type for calendar year 2018 is shown in the following figure.

Figure 35: Service Demand by Type (2018)

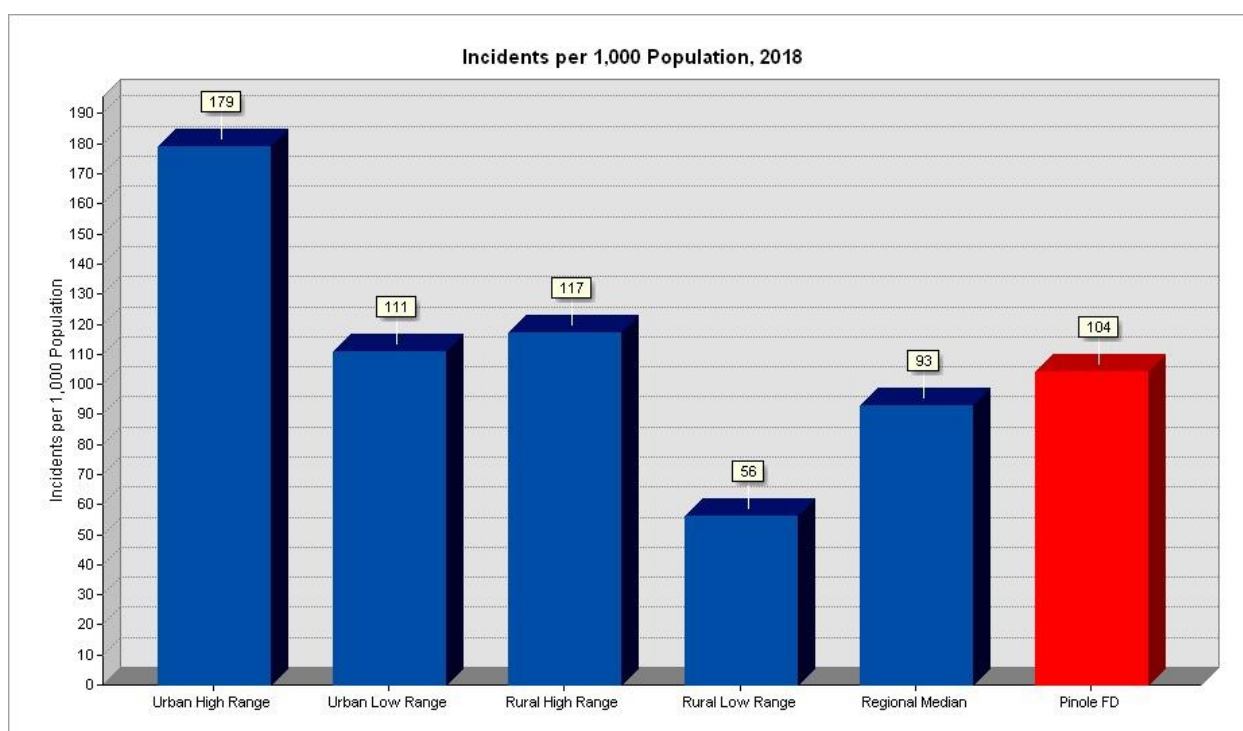


As illustrated in Figure 35, EMS represents the greatest impact to service demand at 78.42 percent, followed by accident calls, which accounted for 6.58 percent of incidents. Accident data includes motorcycle, vehicle, bicycle, and pedestrian incidents.

The following figure displays a comparison of the total number of incidents (2,020) in 2018 within the City of Pinole and the two contract areas, as compared to other similar-sized urban fire departments around the country.

Figure 36: Incidents per 1,000 Population, 2018

Dept. Size	Number of Incidents/1,000
Rural Low Range	56
Regional Median	93
Pinole FD	104
Urban Low Range	111
Rural High Range	117
Urban High Range	179

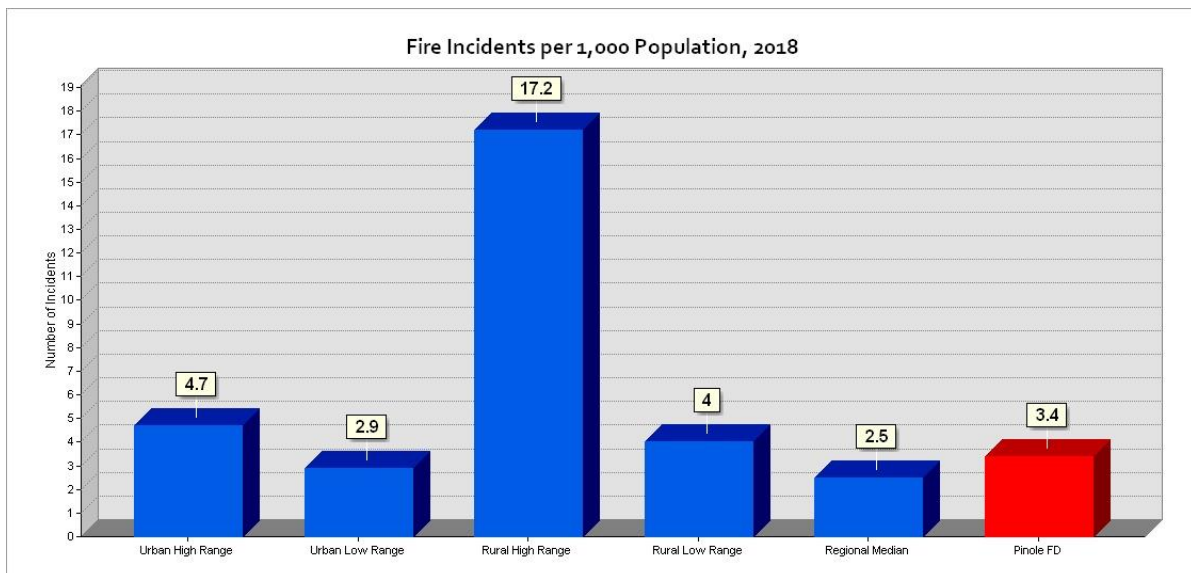


At 104 calls per 1,000 population, PFD has a higher than regional median number of calls per 1,000 population but slightly lower than the urban high range.

The following figure displays a comparison of the total number of fire incidents in Pinole as compared to other similar-sized urban fire departments around the country. This figure uses incidents within the City of Pinole and the two contract areas (65 fires in 2018).

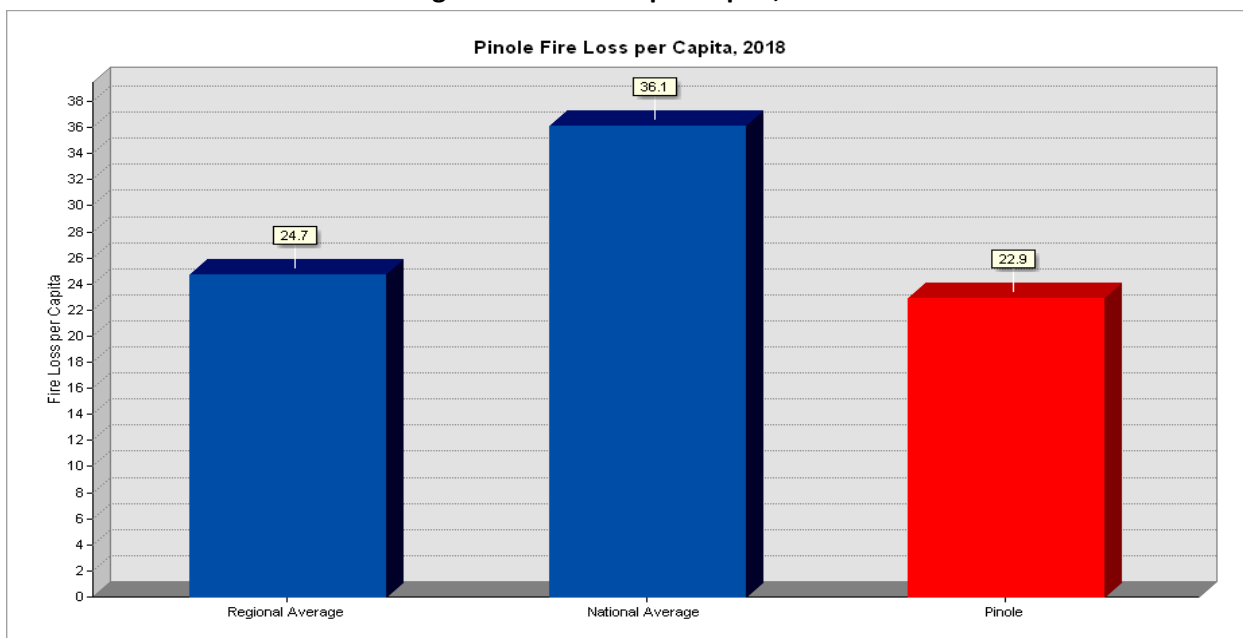
Figure 37: Fire Incidents per 1,000 Population, 2018

Dept. Size	Fires/1,000
Pinole FD	3.5
Regional Median	2.5
Rural High Range	17.2
Rural Low Range	4
Urban High Range	4.7
Urban Low Range	2.9



PFD's 3.4 fires per 1,000 population is just above the regional median of 2.5 fires per 1,000 population. It is comparable to most other Urban Low Range and Rural Low Range fire departments.

The next figure is fire loss per capita compared with other national and regional departments. In 2018, at \$22.90 per capita, PFD's fire loss is much lower compared to the national average and very comparable to the regional average.

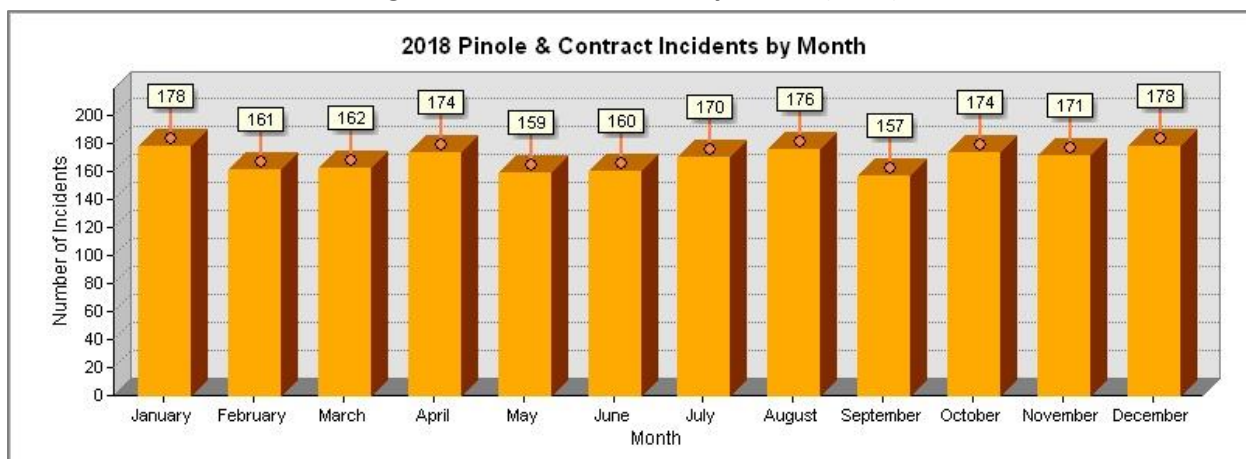
Figure 38: Fire Loss per Capita, 2018**Figure 39: Comparison Chart, Fire Loss per Capita**

Depts.	Fire Loss per Capita (in dollars)
Regional Average	\$24.70
National Average	\$36.10
Pinole	\$22.90

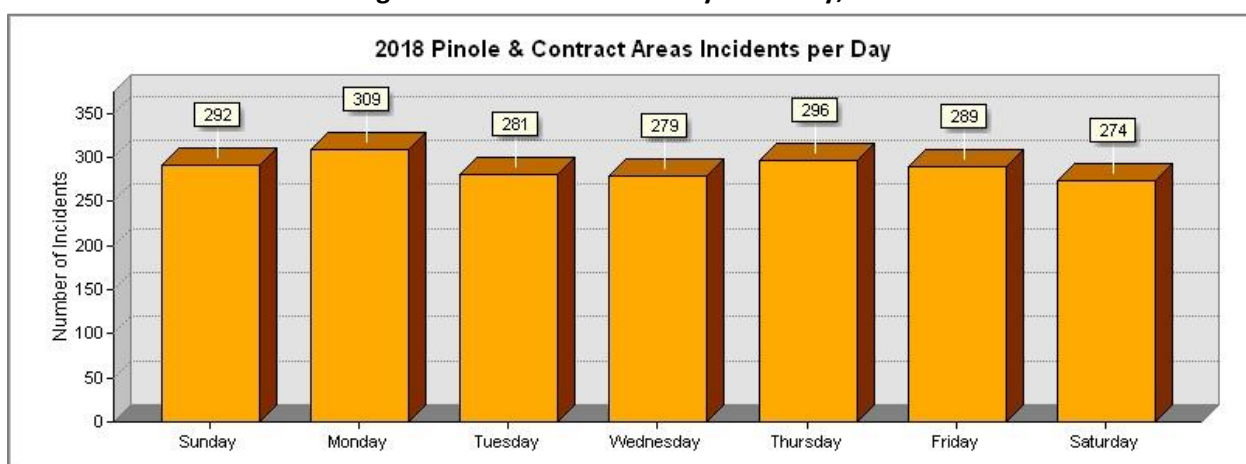
Temporal Analysis

In addition to understanding the types and frequency of service demand, an understanding of when these events occur is critical to the understanding of when system demand will most likely reach its peak. Knowing when high demand periods occur will assist administrators in determining whether staffing levels are adequate for the demand and also in scheduling additional duties such as training, fire safety inspections, and vehicle maintenance.

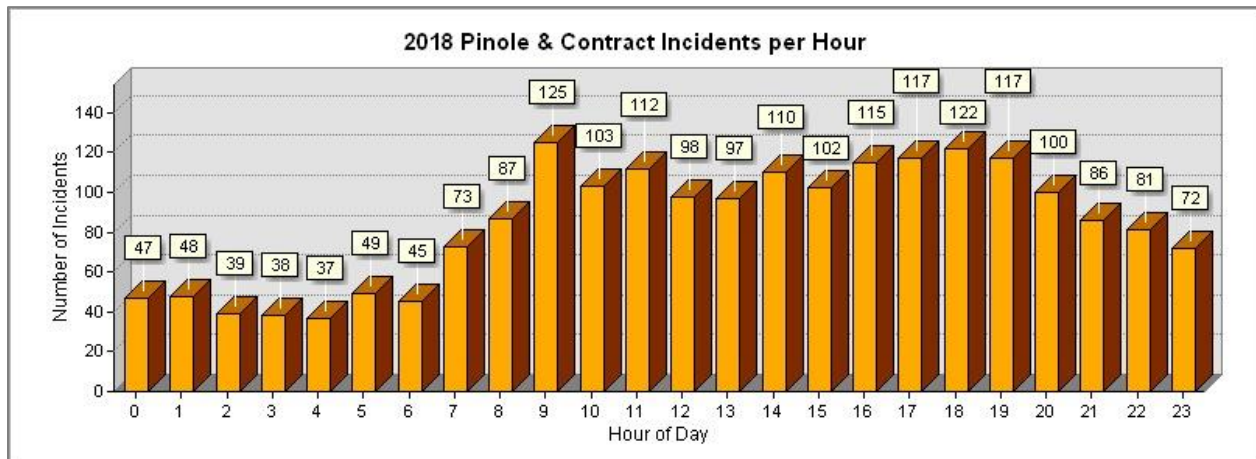
The following figure shows the temporal variation of PFD's service demand by month during 2018. There is only minor variation in workload by month. The winter months of January and December are the busiest months with August following closely.

Figure 40: Service Demand by Month (2018)

The next figure illustrates service demand by day of the week. Again, only minor variations in workload exist by day of week, although Monday is the busiest.

Figure 41: Service Demand by Weekday, 2018

Finally, the following figure shows service demand by hour. Workload increases significantly during daytime hours as compared to nighttime hours.

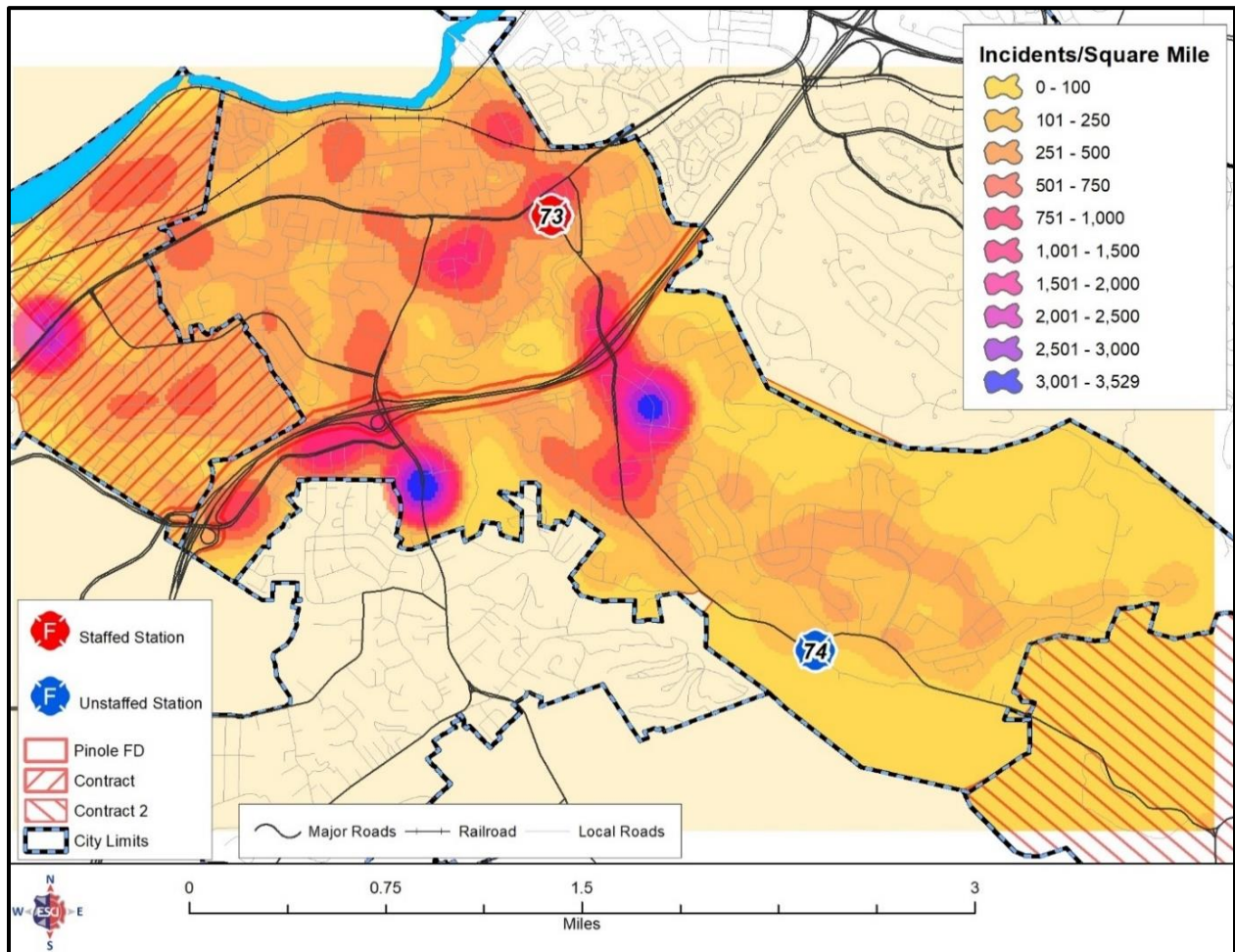
Figure 42: Service Demand by Hour, 2018

Peak workload is between 9:00 a.m. and 7:00 p.m. and most heavily concentrated during the commute hours.

Spatial Analysis

In addition to the temporal analysis, it is useful to examine geographic distribution of service demand. The following figures indicate the distribution of emergency incidents in PFD during 2018. The incident data received from Contra Costa County Dispatch uses a “road address range” system rather than a “site address” system. This always places a data point on a roadway rather than on the adjacent structure or actual site of the incident

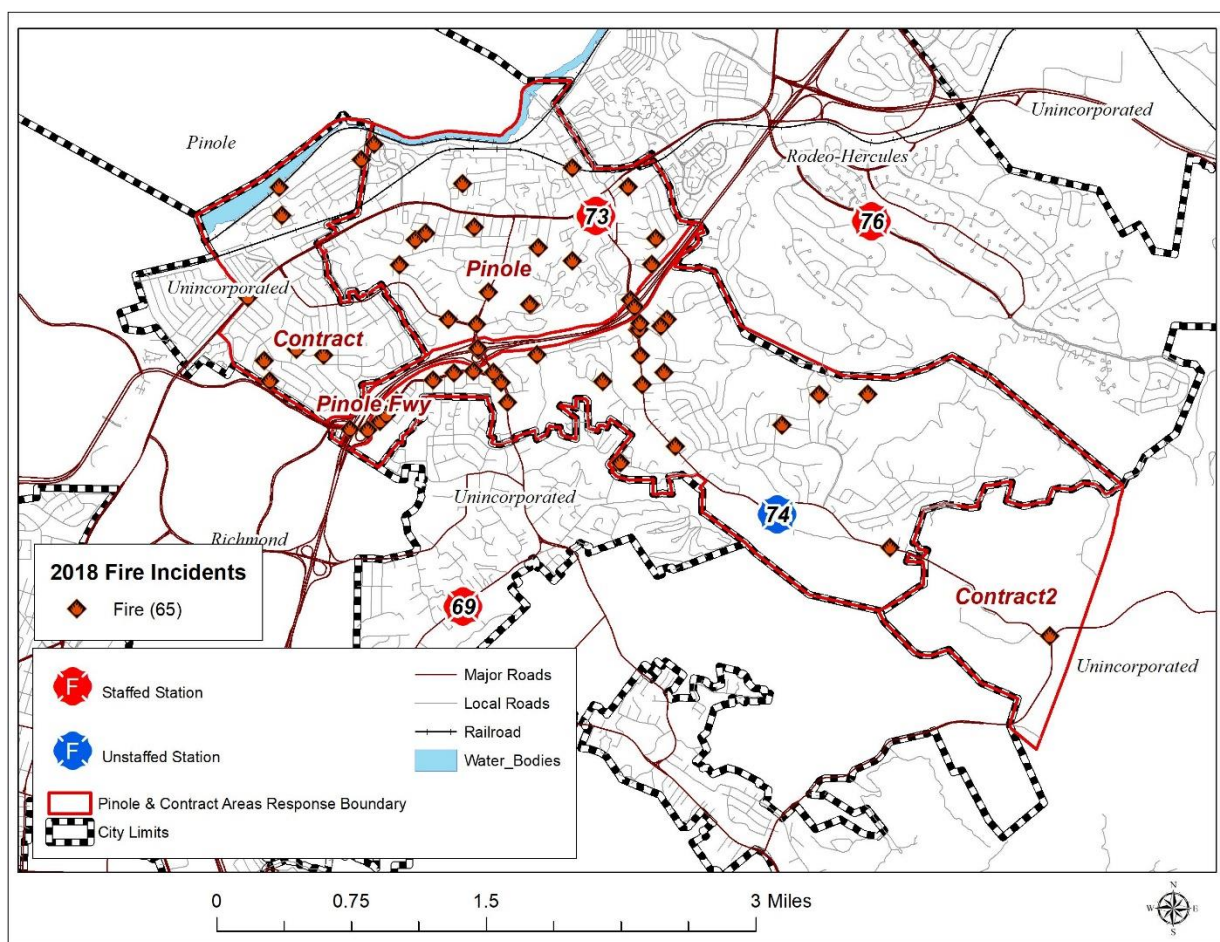
The first figure displays the number of incidents per square mile within various parts of the city. The area of greatest service demand is the northwest and central portions of the city.

Figure 43: Service-Demand Density

The two densest concentrations of incidents are at Appian Way/Michael Drive, which is adjacent to a large commercial/retail development; the other densest concentration of incidents is Estates Ave/Paloma—which is adjacent to a senior retirement center. Again, the use of street address ranges to place a data point might lead to an interpretation of “dangerous intersections,” where the reality is the incident is related to proximal activities.

While the service demand density reflects all calls served within PFD service area, service demand can vary based on incident type. The following figure displays the location of all fire types occurring within the PFD’s service area during 2018.

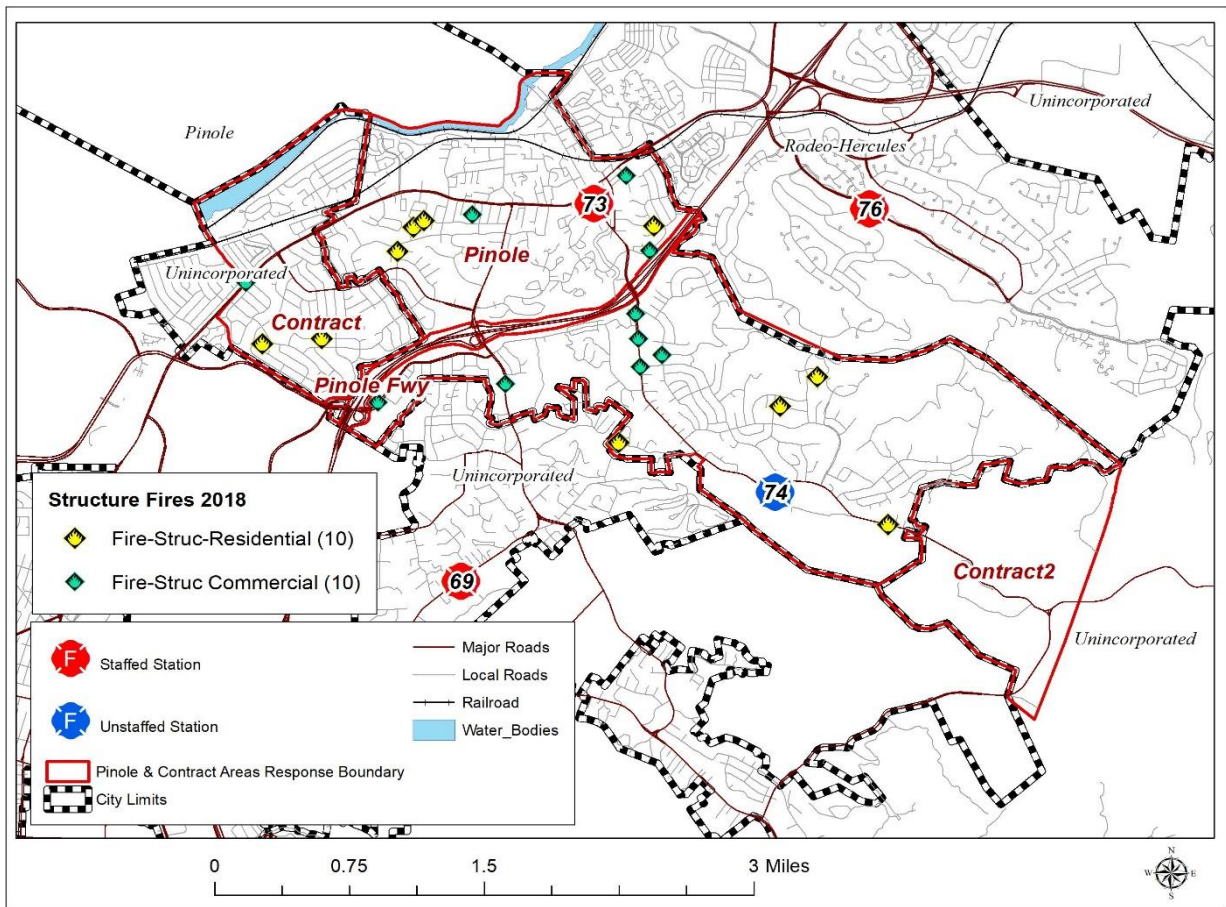
Figure 44: All Fire Types, 2018



The fire incidents are distributed widely but predominantly in the PFD's northwestern half. Again, it appears as though all the fires are in roadways, but only 21 percent (14 of the 65 fires) involved a vehicle. The remaining 79 percent were structural, electrical, or vegetation fires in areas adjacent to roadways.

The following figure depicts the locations of the 20 commercial and residential structure fires in 2018.

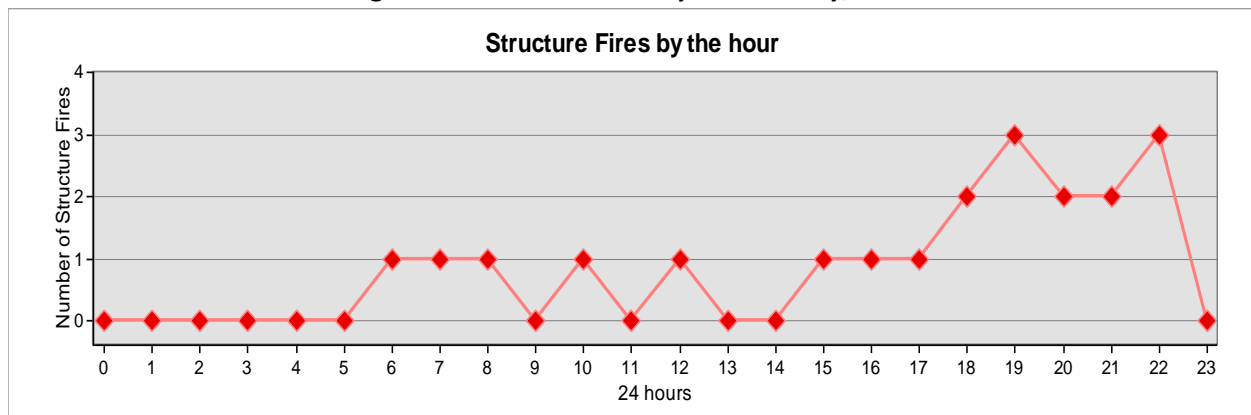
Figure 45: Structure Fires, Commercial & Residential, 2018



These structure fires were distributed equally throughout the PFD's service area.

The following figure illustrates structure fires by hour of day during 2018.

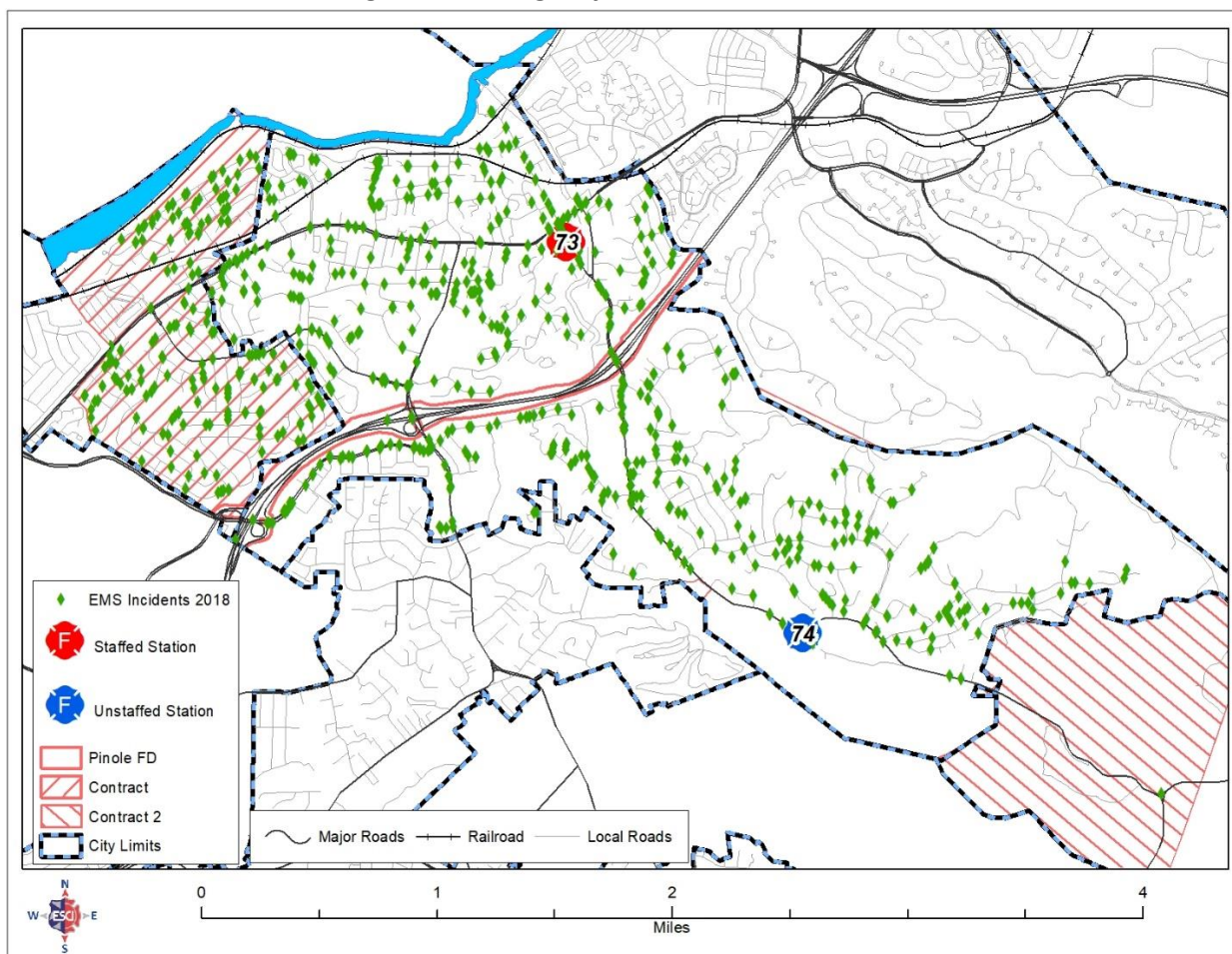
Figure 46: Structure Fires by Hour of Day, 2018



Structure fires in 2018 occurred more frequently during the afternoon and evening hours.

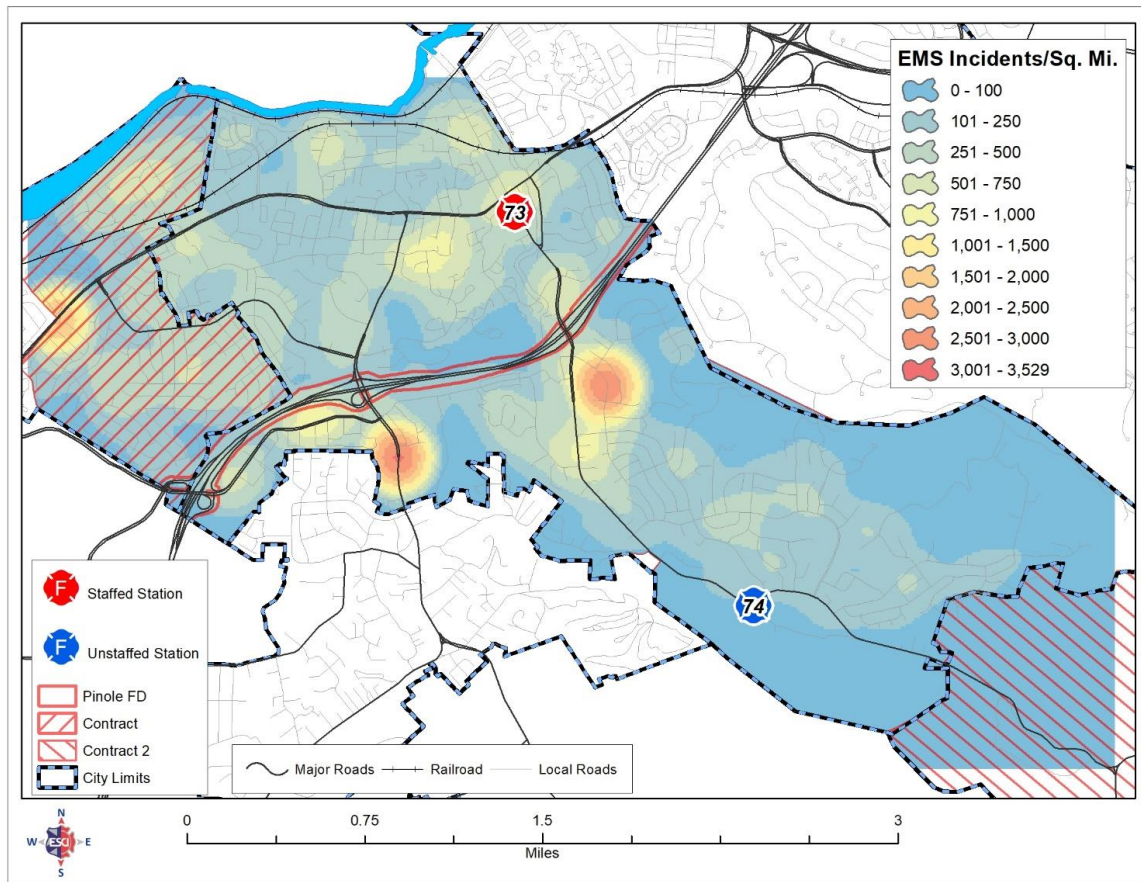
Similarly, emergency medical incidents also occur in greater concentration in areas of higher population density. The next figure depicts the EMS incidents in the PFD service area in 2018.

Figure 47: Emergency Medical Incidents, 2018



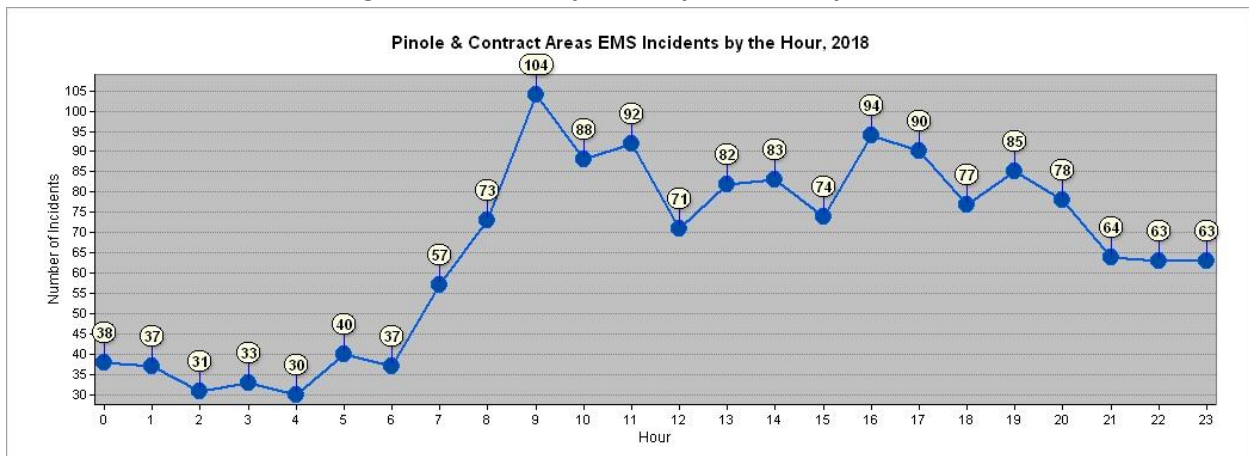
The incidents are widely scattered but primarily located in the northwestern portion of the PFD service area.

As shown previously, EMS calls are the primary incident type. The following figure displays emergency medical incidents per square mile during 2018.

Figure 48: Emergency Medical Incidents per Square Mile, 2018

The previously identified areas of incident density re-appear, the commercial/retail area and the senior retirement home.

EMS response workload also varies by hour of day, as shown in the following figure. As it is the predominant type of incident, it closely follows total workload by hour of day.

Figure 49: EMS Responses by Hour of Day, 2018

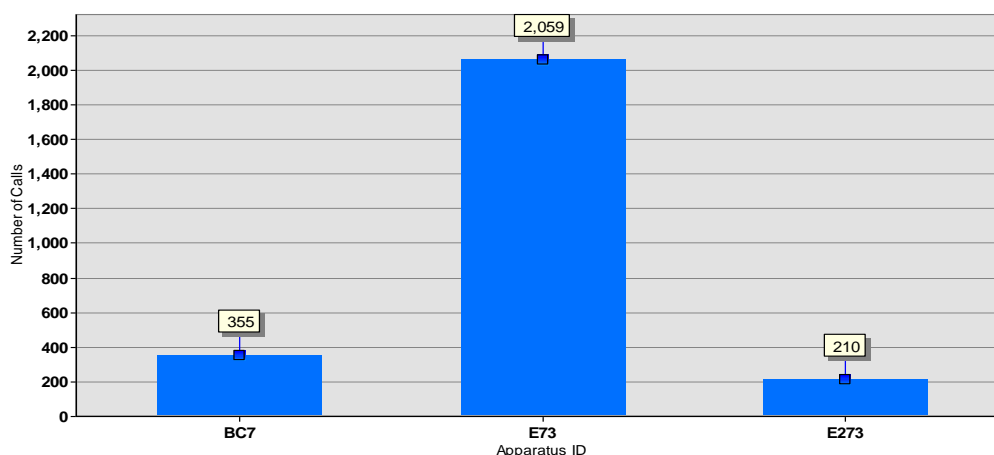
Unit Workload Analysis

A review of workload by response unit can reveal much about response time performance. Although fire stations and response units may be distributed in a manner to provide quick response, that level of performance can only be obtained when the response unit is available in its primary service area. If a response unit is already on an incident and a concurrent request for service is received, a more distant response unit will need to be dispatched. This will increase response times.

Response Unit Workload

The workload of individual response units during the study period is shown in the following figure. Individual response unit workload can be greater than the workload in its home station area. Many incidents, such as structure fires, require more than one response unit. The next figure depicts the total number of calls received by PFD in 2018 regardless of jurisdiction.

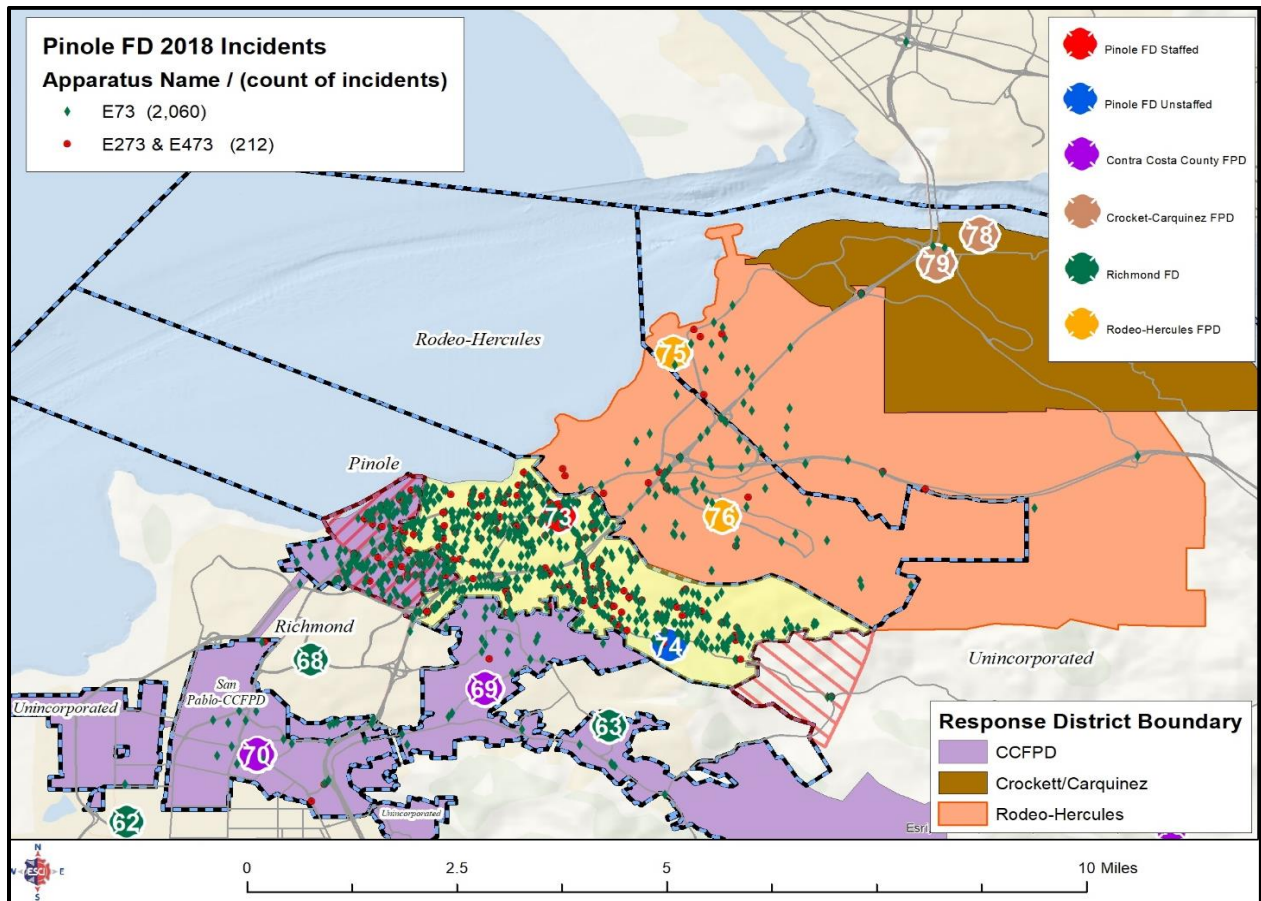
Figure 50: PFD Response Unit Workload, 2018



As the only fully staffed apparatus, Engine 73 is naturally the busiest in the PFD. Not shown in the figure are Reserve Engines E73A and E473 which had limited use, with one and two calls respectively.

The following figure shows the extent of these calls, reaching from the Carquinez Bridge to San Pablo. In 2018, there were 2,020 incidents within the city and 401 calls outside of the City of Pinole.

Figure 51: PFD Incident Locations by Apparatus, 2018



The amount of time a given unit is committed to an incident is also an important workload factor. The following figure illustrates the average time each unit was committed to an incident, from initial dispatch until it was available for another incident.

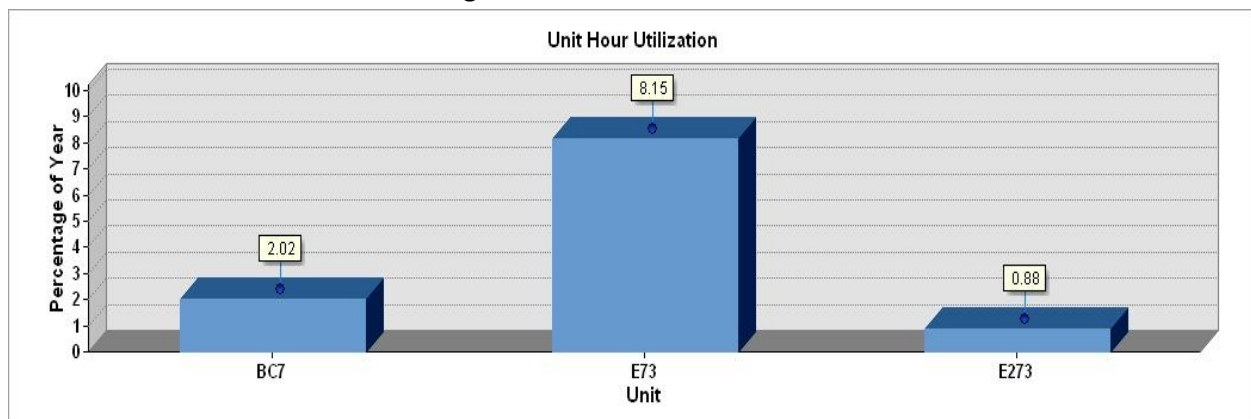
Figure 52: Average Time Committed to an Incident by Unit (2018)

Unit	Responses	Average per Response
Battalion 7	355	0:29:59 minutes
Engine 73	2,059	0:20:49 minutes
Engine 273	210	0:21:55 minutes

Unit Hour Utilization

Unit hour utilization is an important workload indicator. It is calculated by dividing the total time a unit is committed to all incidents during a year divided by the total time in a year. Expressed as a percentage, it describes the amount of time a unit is not available for response since it is already committed to an incident. The larger the percentage, the greater a unit's utilization and the less available it is for assignment to an incident. Unit Hour Utilization is an important statistic to monitor for those fire agencies using percentile-based performance standards, as does PFD. In PFD's case, where performance is measured at the 90th percentile, unit hour utilization greater than 10 percent means that the response unit will not be able to provide on-time response to its 90 percent target, even if response is its only activity. While Pinole Engine 73 is not at 10 percent UHU at this time, absent the addition of a second engine in Pinole, it will most likely be at and exceed the threshold in a few years. Call volume is projected to increase 3 percent per year based on the above analysis of the nine years of data (2009–2017).

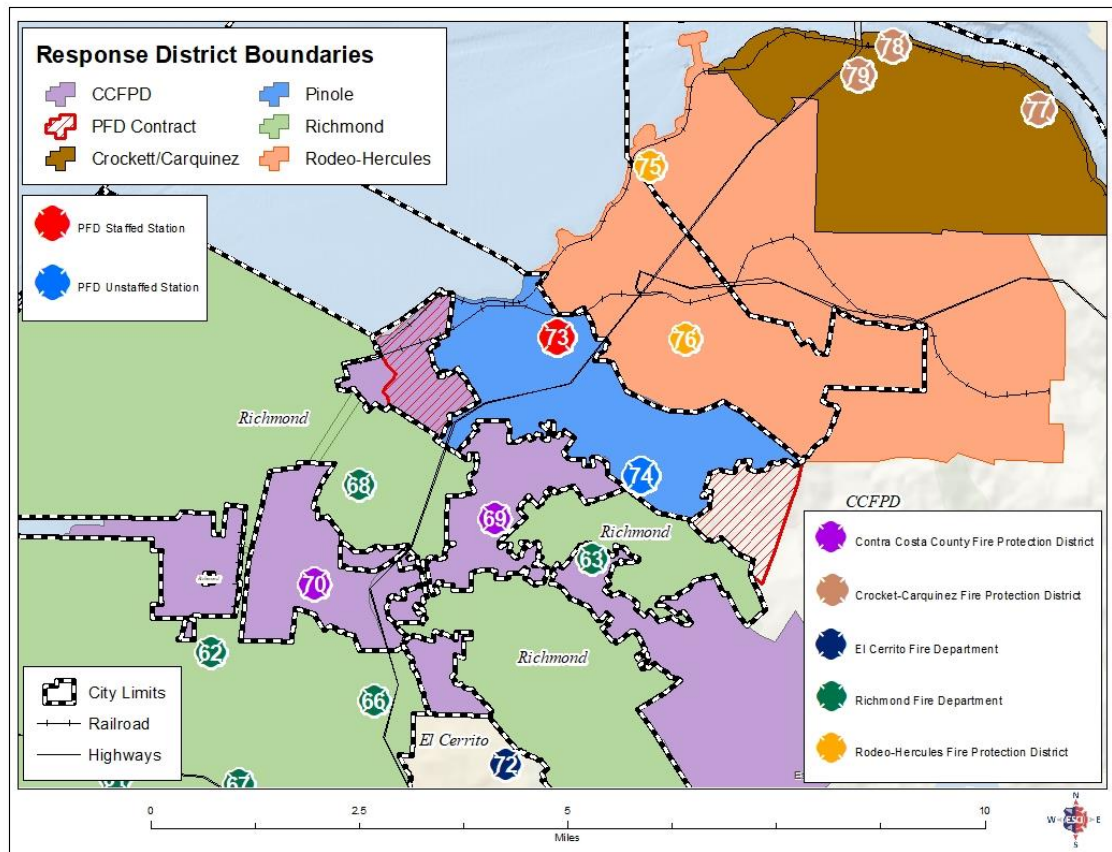
Figure 53: Unit Hour Utilization



Distribution Study

Next, an overview of the current deployment strategy, which includes facility and apparatus locations, was analyzed using Geographic Information Systems (GIS) software to identify potential service gaps and redundancies of resources. The following figure is an overview of the PFD service area. PFD stations and nearby adjacent agency stations are displayed.

Figure 54: PFD Service Area



The City of Pinole encompasses approximately 11.6 square miles. Of that, 5.2 square miles are land, with the 6.4 sq. miles remainder comprised of the bay. The PFD provides service to the city as well as to the two contract areas depicted. PFD staffs one fire station located within the city.

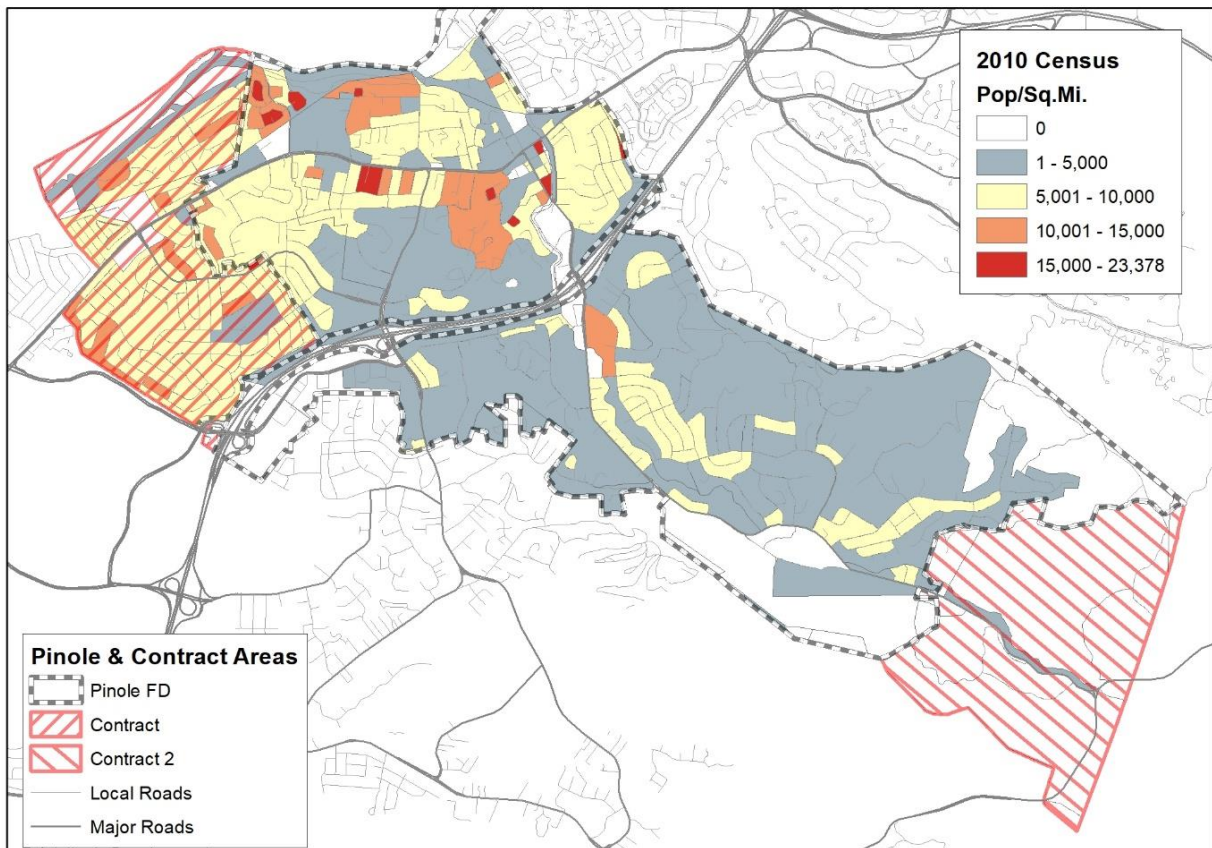
An important consideration for fire departments and other service delivery organizations is to understand the location of population concentrations. If the majority of people live in a concentrated area, it is intuitive to anticipate that that area will also request the highest levels of service demand as calls for service are generally initiated by people.

The definitions per the Center for Public Safety Excellence Standards of Cover 6th edition:

- **Urban:** population of over 30,000 and or a population density of 2,000 per sq. mile
- **Suburban:** population of 10,000 to 29,000 and or a density of 1,000 to 2,000 per sq. mile
- **Rural:** population of less than 10,000 or 1,000 per sq. mile

The following figure presents Pinole's population by census block, based on the 2010 census. Census data divides a census defined place, such as a city or county, into small areas known as *census blocks*. The boundaries follow natural or manmade features such as rivers, ridgelines, or roads. The area of a census block can be calculated in fractions of a square mile. The total counted population for each census block is divided by the area, resulting in an estimate of relative population density. The densest population area of the City of Pinole is in the northwest.

Figure 55: Population per Square Mile, 2012



The total population used in this study was 19,364, which is classified as Suburban. However, the density of in various areas of Pinole shifts it into an Urban classification. The majority of Pinole has 2,000 to 5,000 people per square mile. However, much of the northwest area of the City of Pinole and the western contract area have population densities of greater than 5,000 people per square mile, which is classified as Urban. Pinole has a small but densely concentrated population.

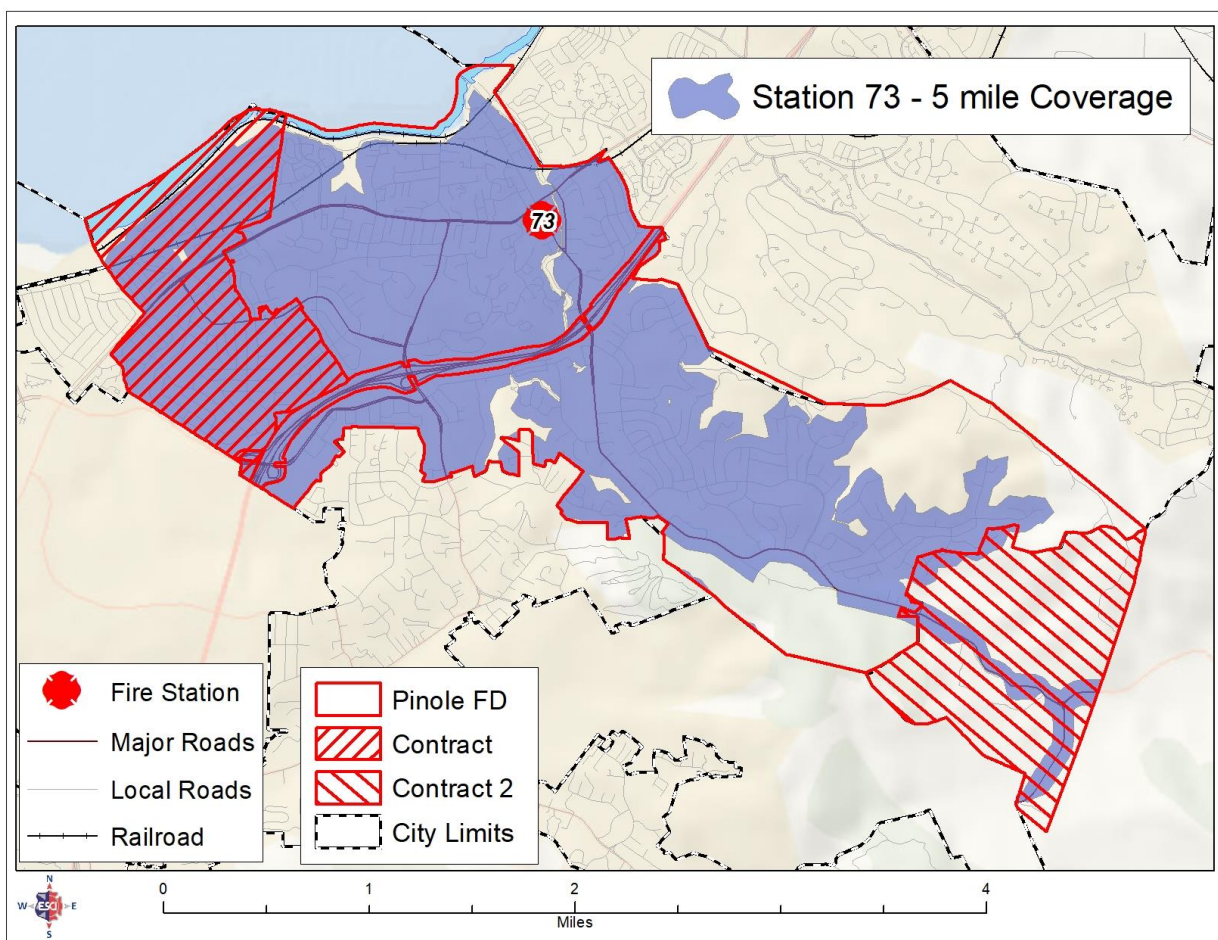
Next, the distribution of PFD resources will be examined and compared to the Insurance Services Office (ISO) and National Fire Protection Association (NFPA) criteria. These standards provide baseline criteria for comparison of PFD's deployment strategy. These are important standards for comparison because, while ISO criteria focuses on fire suppression capabilities for insurance purposes, NFPA standards establish a foundation for overall system benchmarking for fire suppression, rescue, and other activities fire departments may be required to perform.

ISO Distribution

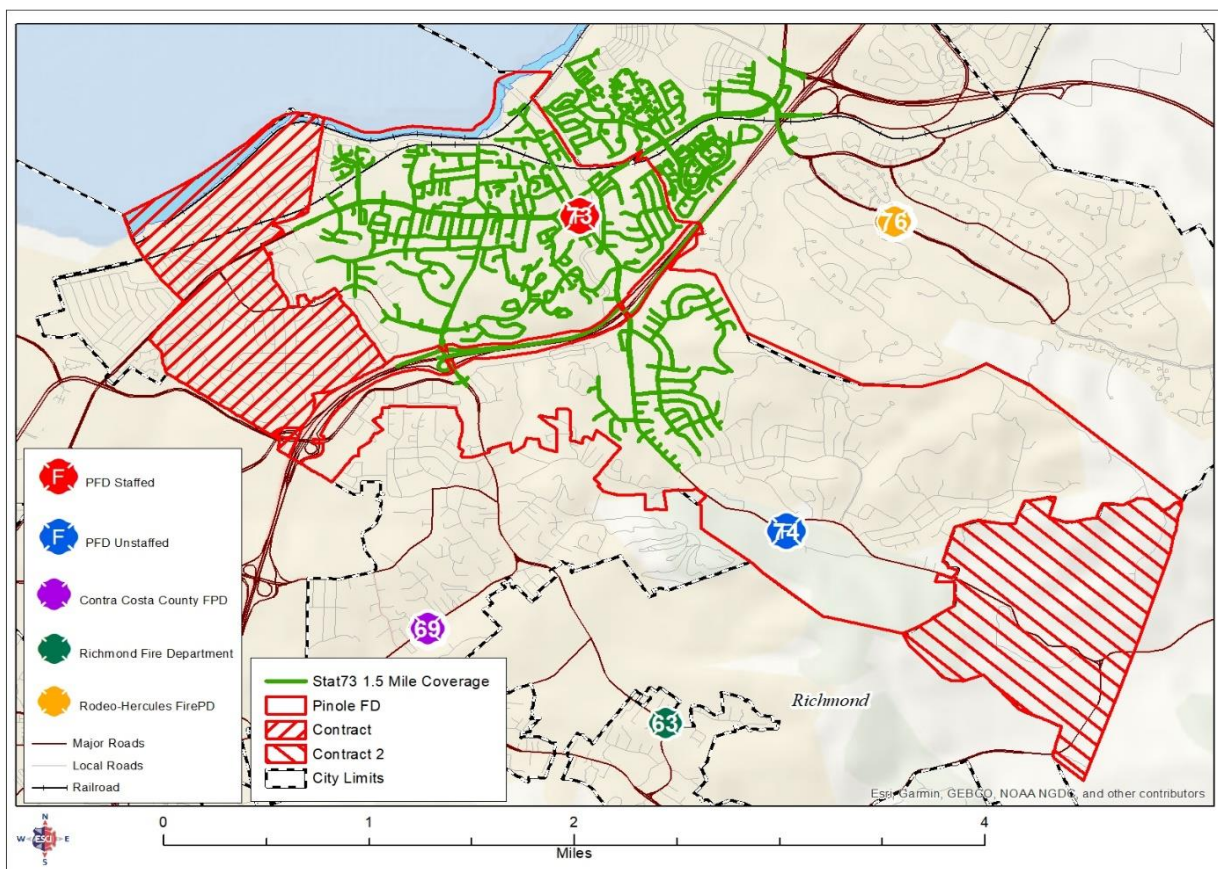
The ISO Public Protection Classification (PPC®) score was developed for communities to provide recommendations for key areas of improvement. The PPC system is a national system used by the New Jersey-based advisory organization ISO to provide insurance providers with a classification rating of a local community's fire protection. The PPC score classifies communities based upon a rating scale of 1 (best protection) to 10 (no protection) and assesses all areas related to fire protection broken into four major categories, which include: emergency dispatch and communications (10 points), water system supply and distribution capabilities (40 points), the fire department (50 points), and Community Risk Reduction (5.5 points).¹⁵ The PPC score is developed using the Fire Suppression Rating Schedule (FSRS), which outlines sub-categories and the detailed requirements for each area of the evaluation.

The first component of ISO distribution is the ability of a fire department to arrive on-scene equipped with personnel, equipment, and sufficient water to effectively mitigate a fire. To determine whether a structure is eligible to receive a PPC rating better than 10, indicating that the fire department does not meet minimum ISO criteria for the structure to receive a rating, a service area of five road miles from the fire station is generally used. The only area of Pinole beyond five miles of a fire station is in the roadless southeast portion, as depicted in the following figure.

¹⁵ ISO uses a 100-point grading scale, yet 105.5 total points are available to each agency. The Fire Service Rating Scale lists a large number of items (facilities and practices) that a community should have to fight fires effectively. The schedule is performance based and assigns credit points for each item. Using the credit points and various formulas, ISO then calculates a total score on a scale of 0 to 100 with 5.5 points being available as extra-credit.

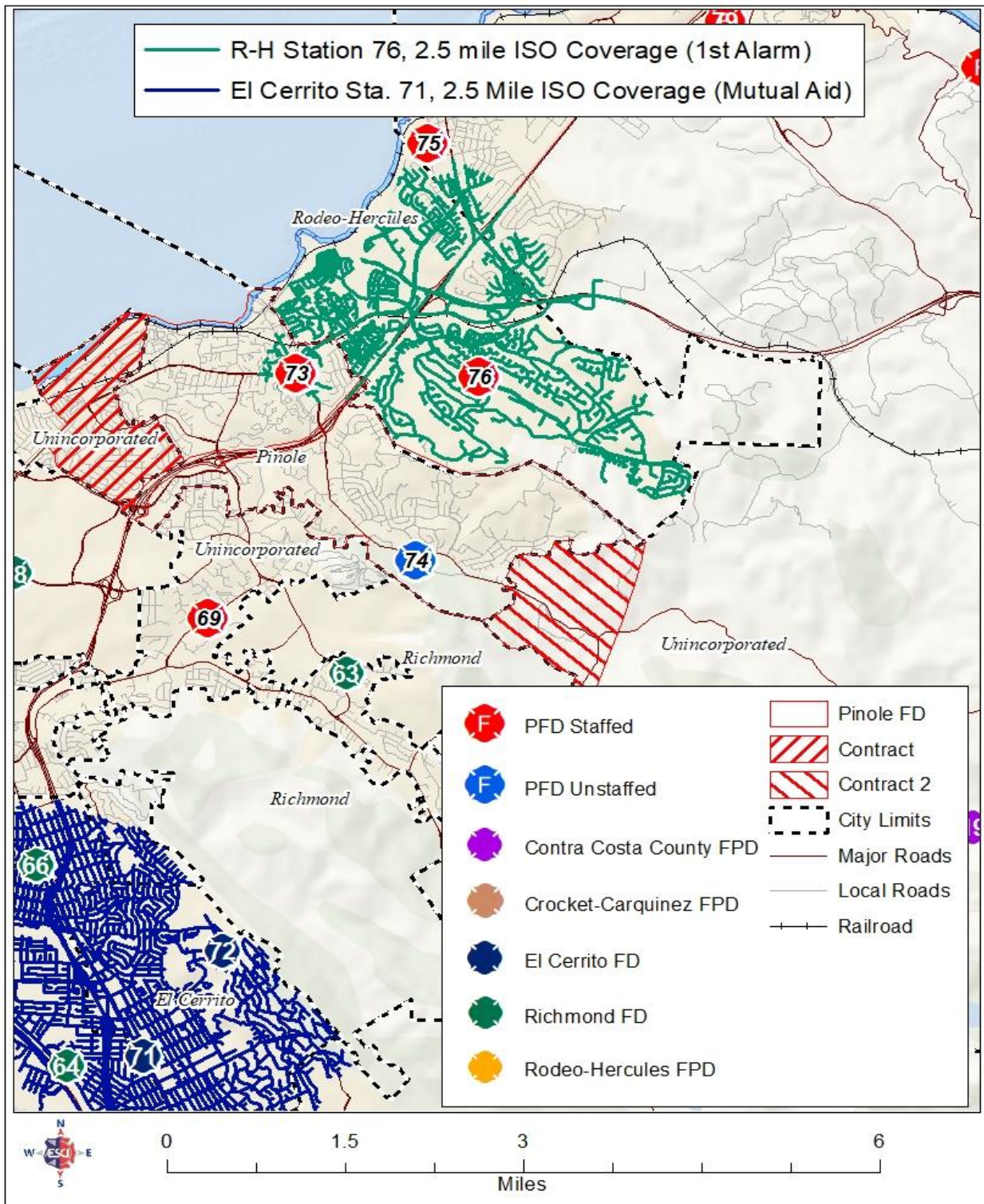
Figure 56: Pinole Fire Station 73, 5-Mile ISO Coverage

The next figure illustrates 1.5-mile coverage from PFD Station 73. ISO is concerned with the provision of fire suppression services to the built-upon areas, meaning that ISO is less concerned with the protection of unpopulated regions of a service area that lack permanent structures.

Figure 57: Fire Station 73, 1.5-Mile ISO Coverage

Much of the developed residential area in the eastern part of the city is beyond 1.5 miles of Station 73.

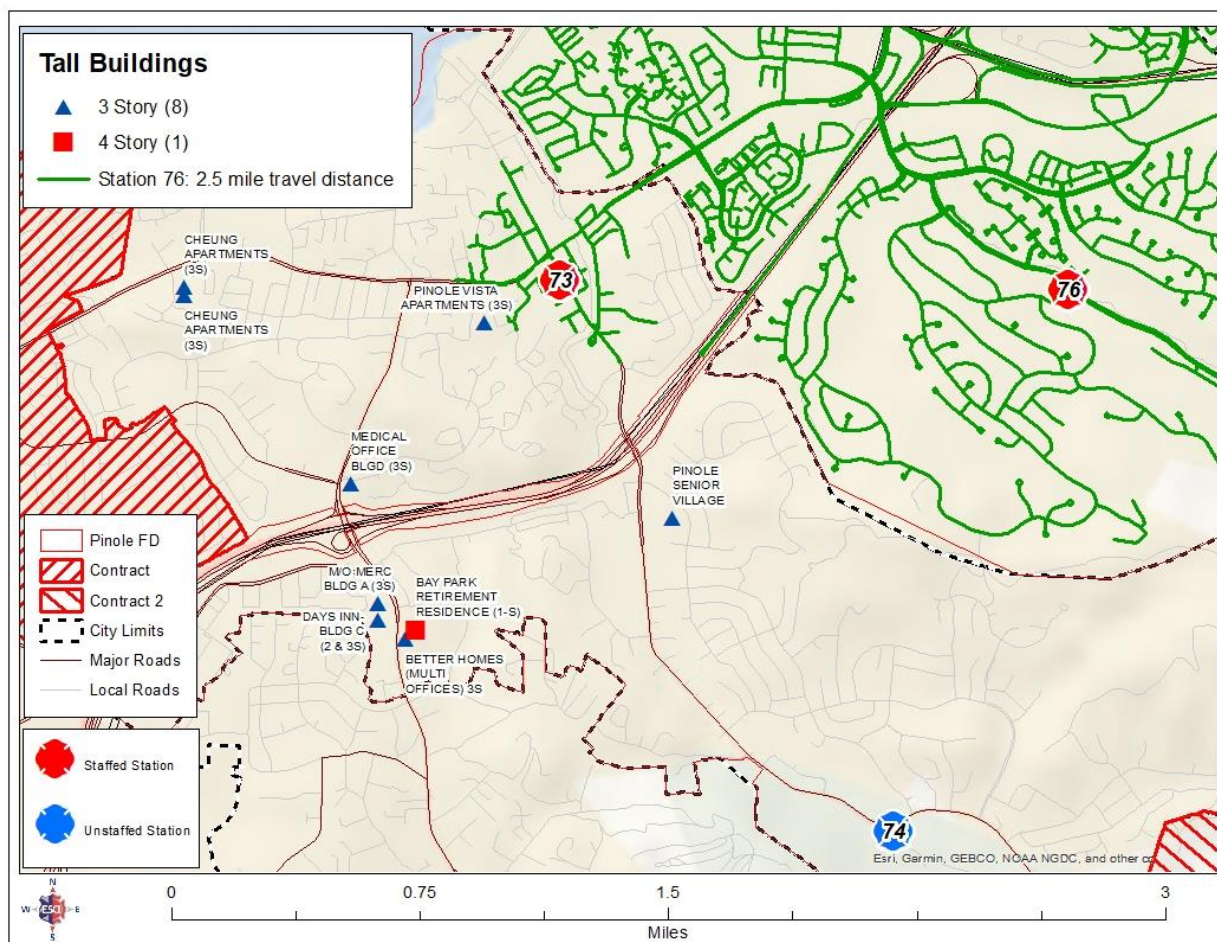
Like the maximum service of engine companies shown in Figure 57 above, there is a maximum service area for ladder companies. The next figure illustrates the 2.5-mile maximum service area for the closest ladder company, Rodeo-Hercules FPD Station 76 for 1st Alarm and El Cerrito Station 71 for Mutual Aid.

Figure 58: Fire Station Distribution, 2.5-Mile Ladder Company ISO Criteria

Neither ladder company can fully cover the PFD. RHPD Ladder 76 extends approximately 0.5 mile into PFD, while the El Cerrito ladder would still be 4 to 5 miles away.

The following figure shows the 2.5-mile ISO coverage of three- and four-story buildings within the City of Pinole.

Figure 59: Detail of Station 76, 2.5 mi. ISO coverage for Pinole Three- & Four-Story Buildings



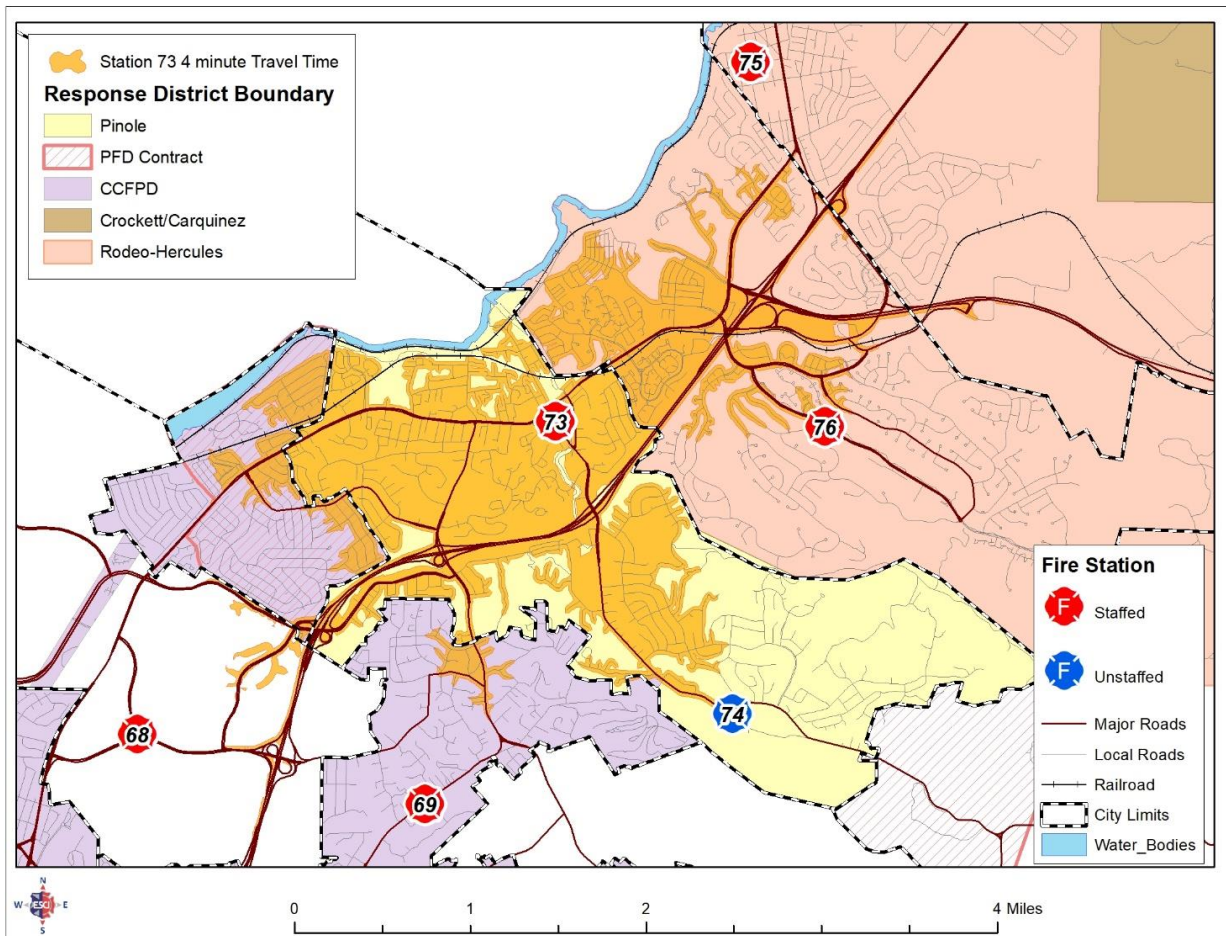
None of these taller structures are within this 2.5-mile coverage, although the Pinole Vista Apartments are a mere 300 feet further.

PFD Goals Distribution

While ISO criteria is focused on fire suppression activities exclusively, PFD's goals define expected performance for all response services. PFD advised ESCI to utilize NFPA standards. These standards establish a four-minute travel time objective for the arrival of the first capable response unit. This, and PFD's other response performance goals are measured using that same standard.

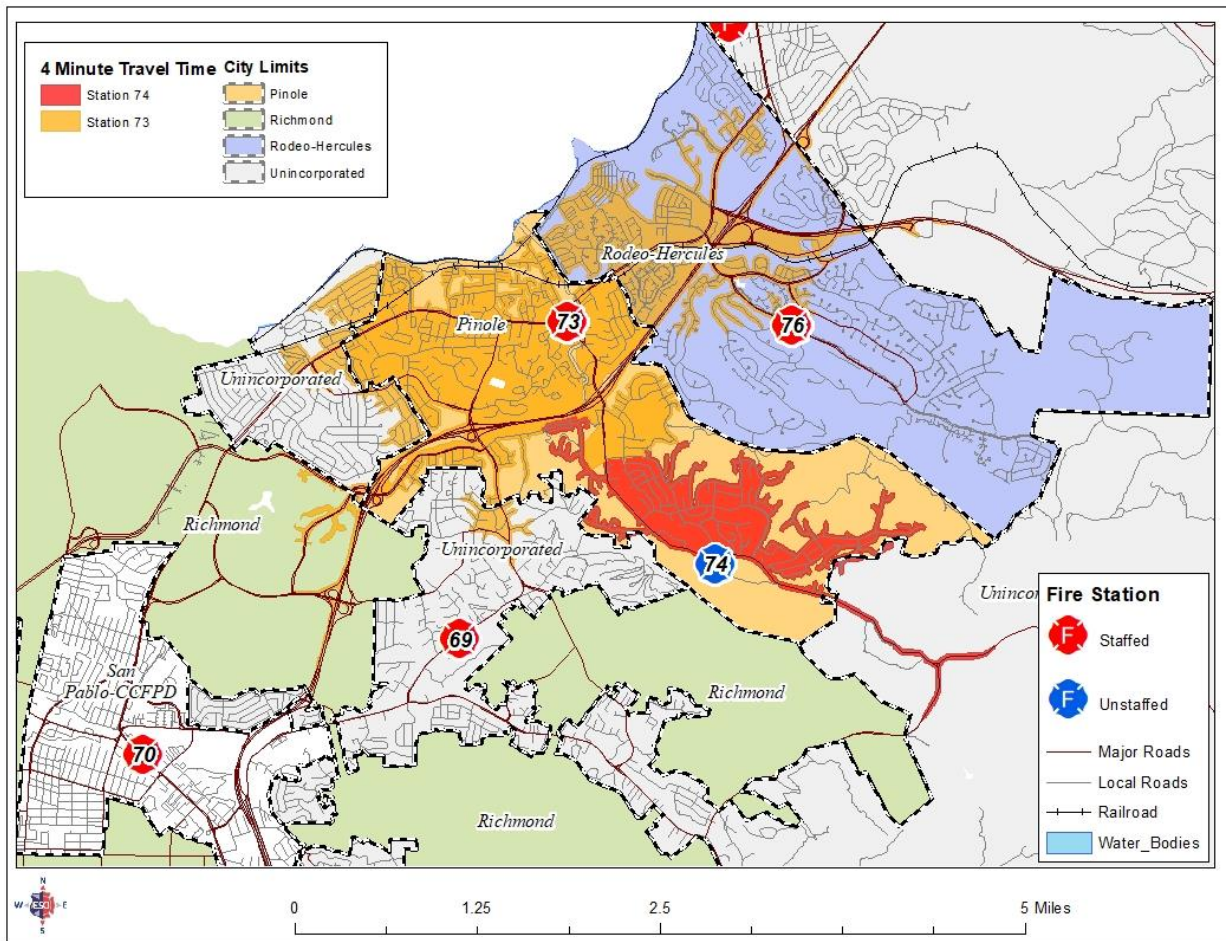
The following figure models four-minute travel time coverage using posted street speeds from PFD Station 73. The model travel time does not account for traffic congestion.

Figure 60: Station 73 Four-Minute Travel Time (Entire Response District)



A portion of the developed residential area in the southeast portion of the city is beyond the four-minute travel time footprint. The next figure shows the four-minute travel time footprint allocated to the closest station, should Station 74 be re-opened.

Figure 61: Station 73 & 74 Four-Minute Travel Time



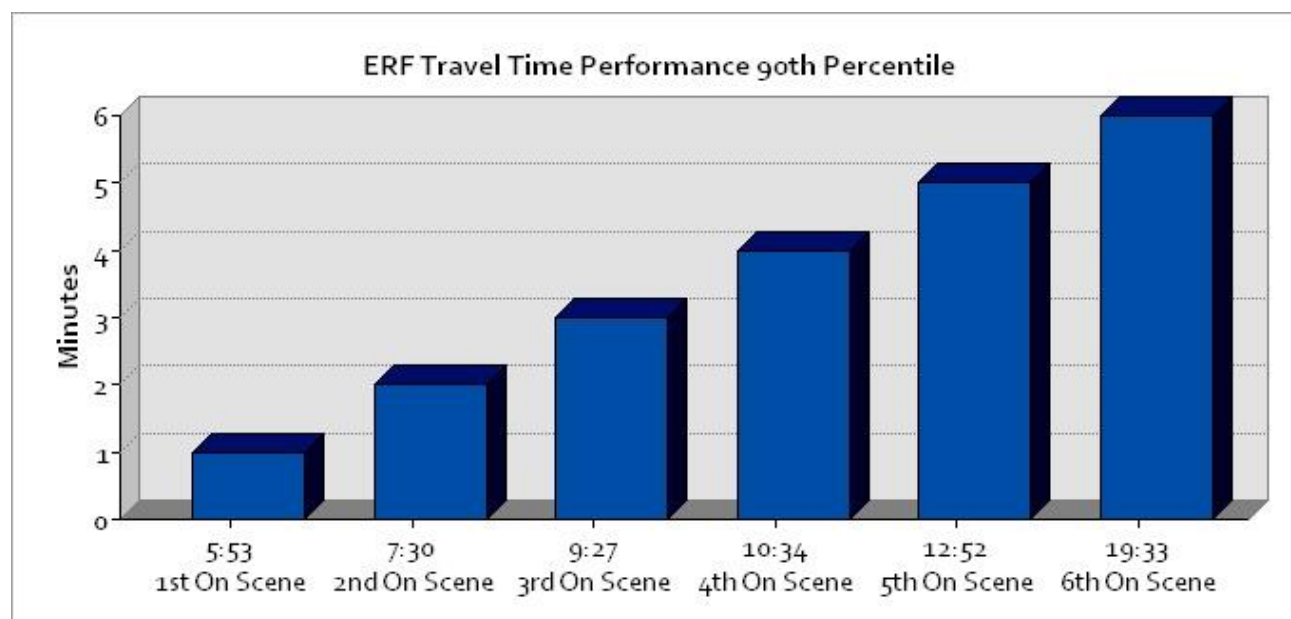
Concentration & Effective Response Force Capability Analysis

Effective Response Force (ERF) is the number of personnel and apparatus required to be present on the scene of an emergency to perform the critical tasks in a manner to effectively mitigate the incident without unnecessary loss of life and/or property. The ERF is specific to each individual type of incident and is based on the critical tasks that must be performed. In accordance with NFPA 1710, a moderate risk building fire is modeled for this analysis.

The NFPA response time goal for the delivery of the full ERF to a moderate risk building fire is within 8 minutes, 90 percent of the time. PFD has defined the minimum full effective response force for moderate risk building fires as four fire engines, one ladder truck, and two Battalion Chiefs for a total of 21 firefighters. Eight minutes of travel time is allowed to assemble the defined, fully effective response force on the scene. This figure includes the resources of five adjacent automatic aid stations.

The next figure shows the ERF for the 20 structure fires that occurred in 2018, showing the 90th percentile travel time for the on-scene resources. The travel time is not cumulative as the various resources could be traveling simultaneously.

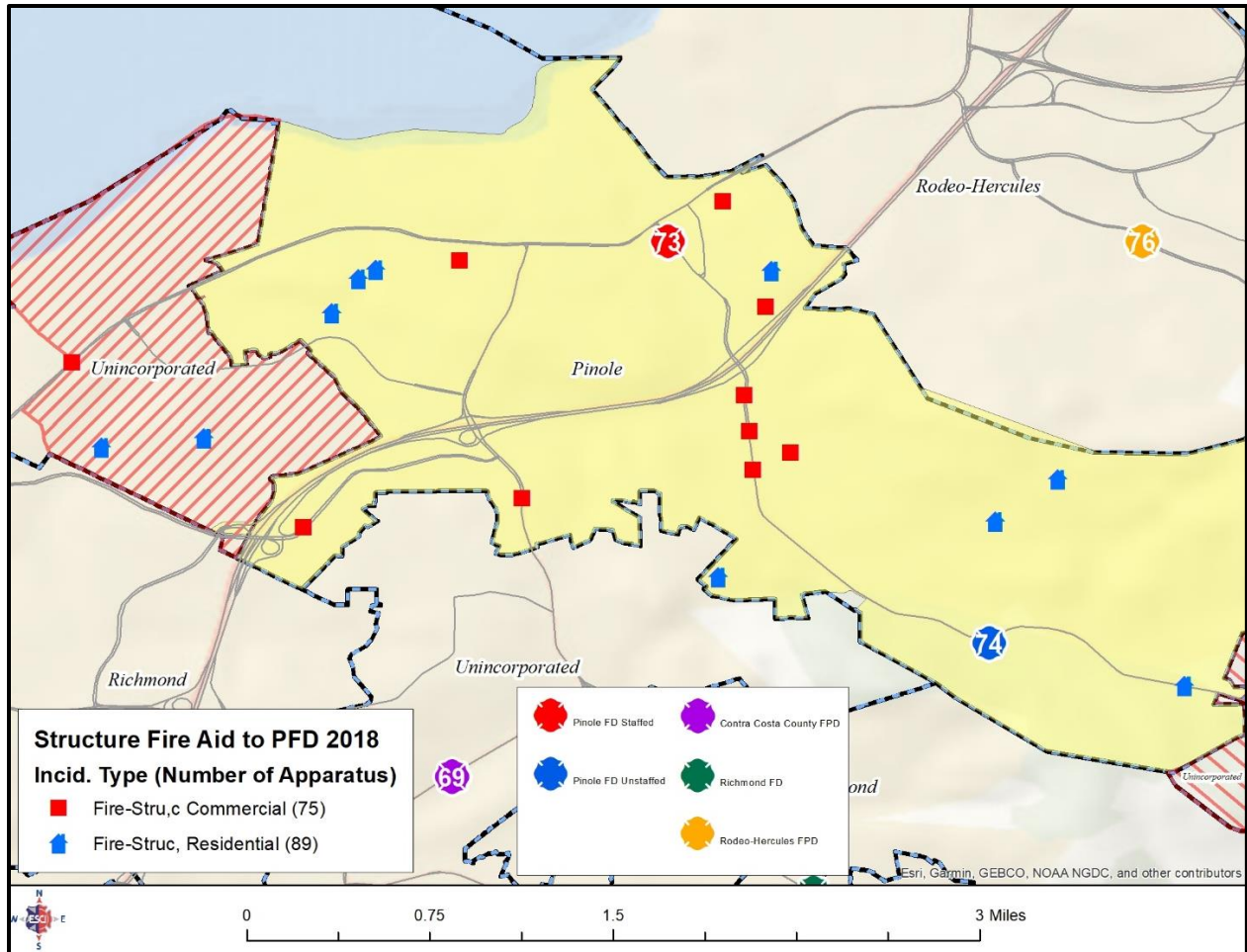
Figure 62: Effective Response Force



Of the 20 structure fires, E73 was the first on-scene at 12 incidents (60%). BC7 was the first on-scene at 3 incidents (15%); E273 was 1st on scene twice (10%). E169& E170 were the first on-scene at 3 incidents (15%). Engine 73 or BC7 were second on-scene at 9 incidents (45%).

In 2018, PFD responded to 20 fires—10 commercial and 10 residential. The following figure shows the incident type and the number of apparatus that were assigned. Much of the incident data did not have time stamps for all the units assigned, possibly due to being cancelled in route.

Figure 63: Structure Fire Aid to PFD, 2018



Using this data without the arrival time stamps, there were two incidents, both residential fires, where a maximum number of firefighters on-scene were 14 or 15 firefighters, depending on how many firefighters were on the ladder trucks. None of the incidents achieved 21 firefighters on-scene nor did they achieve the 8-minute travel time standard for all apparatus arriving on-scene.

Concurrency

One way to look at resource workload is to examine the number of times multiple incidents happen within the same timeframe in each station area. Incidents during the study period were examined to determine the frequency of concurrent incidents. This is important because concurrent incidents can stretch available resources and extend response times.

The following figure shows the number of times during the study period that one or more incidents occurred concurrently. This shows that in most cases (1,770) only one incident was in progress at a time. However, 647 times there were two incidents in progress at the same time; 174 times there were three incidents in progress at the same time; and once there were six incidents in progress at the same time.

Figure 64: Incident Concurrency, 2018 (By Time of Day)

Station	Incidents 9:00 a.m.–8:59 p.m.	Incidents 9:00 p.m.–8:59 a.m.	Incidents per hour 9:00 a.m.–8:59 p.m.	Incidents per hour 9:00 p.m.–8:59 a.m.
73	1,697	930	141	77

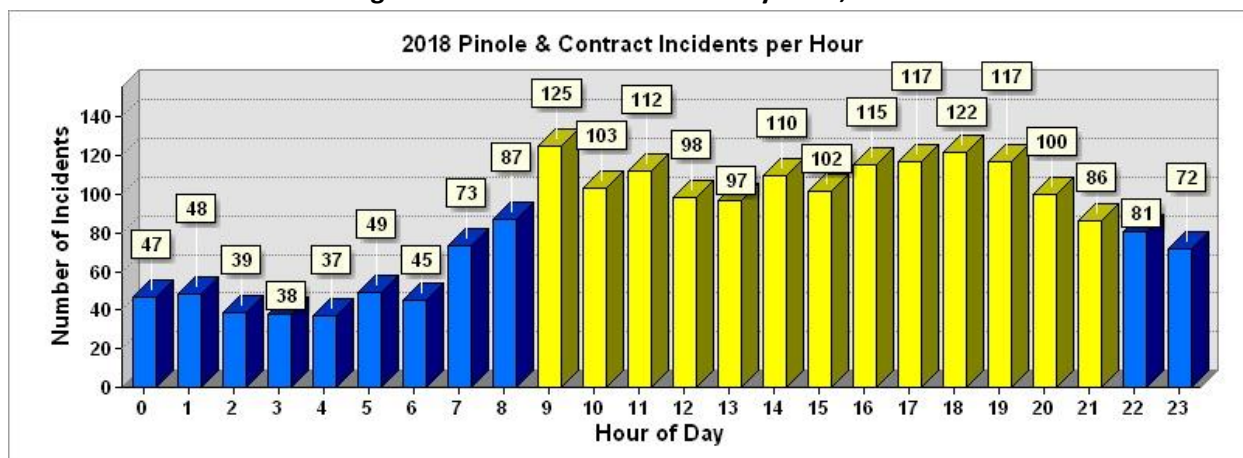
Figure 65: Incident Concurrency, 2018 (By Number of Concurrent Incidents)

Concurrent Incidents	Count
1	1,770
2	647
3	174
4	29
5	6
6	1

It is important to note that Pinole only staffs one response unit. As a result, anytime there is more than one incident the City is totally dependent on outside aid.

Peak workload periods occur every day of the week. The following figure illustrates Station 73 workload by time of day during the study period.

Figure 66: PFD Overall Incidents by Hour, 2018



Performance Summary

Incident data for the period between January 1 and December 31, 2018, was evaluated in detail to determine PFD's current performance. Data was obtained from PFD incident reports and the dispatch center's computer-aided dispatch system.

Only incidents occurring within the PFD service area that were dispatched as a "priority" are included in the analysis. Priority incidents involve emergencies to which the fire department initiated a "code 3" (using warning lights and sirens) response (1,706 incidents during 2018). Incidents initially dispatched as non-emergency responses were excluded. Performance is reported based on the final determination of the incident type, which may be different than how it was initially dispatched. For example, a person may report smoke coming from a building that turns out to only be steam. It may have been dispatched as a structure fire, but its final type would be reported as "good intent."

Each phase of the incident response sequence was evaluated to determine current performance. This allows an analysis of each individual phase to determine where opportunities might exist for improvement.

The total incident response time continuum consists of several steps, beginning with initiation of the incident and concluding with the appropriate mitigation of the incident. The time required for each of the components varies. The policies and practices of the Department directly influence some of the steps.

PFD's response performance was compared to the national consensus standard for response performance found in the 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*, 2010 Edition. The various primary answer points and CCC Dispatch performance were compared to the PFD's goals as well as standards found in NFPA 1221: *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, 2013 Edition.

The following figure summarizes the performance standards found in the National Fire Protection Association (NFPA) documents.

Figure 67: Summary of NFPA Performance Standards

Incident Interval	Performance Goal
911 call answer time (time from first ring to answer)	Within 15 seconds, 95% of the time Within 40 seconds, 99% of the time
Call transfer time (time from answer to acceptance at the secondary dispatch center)	Within 30 seconds, 95% of the time
Call process time (time from acceptance at the dispatch center until notification of response units)	Within 70 seconds, 90% of the time
Turnout time (time from notification of response personnel until the initiation of movement towards the incident)	Within 60 seconds, 90% of the time
First unit travel time (time from initiation of response until arrival of the first unit at the incident)	Within 4 minutes, 90% of the time
First unit response time (time from dispatch until arrival of the first unit at the incident)	Within 5 minutes, 90% of the time
Full effective response force travel time (time from dispatch until all units initially dispatched arrive at the incident. Response resources needed for a moderate risk building fire are used for the evaluation.)	Within 8 minutes, 90% of the time

In keeping with NFPA 1710 and 1221, all response time elements are reported at a given percentile. Percentile reporting is a methodology by which response times are sorted from least to greatest, and a “line” is drawn at a certain percentage of the calls to determine the percentile. The point at which the “line” crosses the 90th percentile, for example, is the percentile time performance. Thus, 90 percent of times were at or less than the result. Only 10 percent were longer.

Percentiles differ greatly from averages. Averaging calculates response times by adding all response times together and then dividing the total number of minutes by the total number of responses (mean average). Measuring and reporting average response times is not recommended. Using averages does not give a clear picture of response performance because it does not clearly identify the number and extent of events with times beyond the stated performance goal.

What follows is a detailed description and review of each phase of the response time continuum. All phases will be compared to the NFPA performance goals.

Call Processing

Most emergency incidents are reported by telephone to the 911 center. Call takers must quickly elicit accurate information about the nature and location of the incident from persons who are apt to be excited. A citizen well-trained in how to report emergencies can reduce the time required for this phase. The dispatcher must identify the correct units based on incident type and location, dispatch them to the emergency, and continue to update information about the emergency while the units respond. This phase begins when the 911 call is answered at the primary Public Safety Answer Point (PSAP) and ends when response personnel are notified of the emergency. This phase, which has two parts, is labeled “call processing time.”

NFPA 1221 recommends that 911 calls be answered within 15 seconds, 95 percent of the time (within 40 seconds, 99 percent of the time) and then be transferred to the dispatch center within 30 seconds, 95 percent of the time (within 40 seconds, 99 percent of the time). None of the primary PSAPs provided information necessary to quantify current performance at this time.

The second part of call processing time, dispatch time, begins when the call is received at the dispatch center (CCRFCC) and ends when response units are notified of the incident. PFD's goal prescribes that this phase should occur within 70 seconds, 90 percent of the time.

The following figure illustrates performance by CCRFCC from the time it receives the call until it notifies response units. Overall performance was 2 minutes, 15 seconds, 90 percent of the time.

Figure 68: CCRFCC Dispatch Time Performance

Incident Type	Processing Time
EMS	0:02:25
Fire	0:01:57
Other	0:01:47
All Types	0:02:15

Turnout Time

Turnout time is a response phase controllable by the fire department. This phase begins at notification of an emergency in progress by the dispatch center and ends when personnel and apparatus begin movement towards the incident location. Personnel must don appropriate equipment, assemble on the response vehicle, and begin travel to the incident. Good training and proper fire station design can minimize the time required for this step.

The NFPA performance goal for turnout time is within 90 seconds, 90 percent of the time. The following figure lists turnout time for all incidents as well as specific incident types.

Figure 69: Turnout Time Performance

Incident Type	Turnout Time
EMS	0:00:53
Fire	0:02:15
Other	0:01:36
All Types	0:01:28

Turnout time for all incidents is within 1 minute, 28 seconds, 90 percent of the time, meeting their performance goal. The turnout time for fire incidents is above the performance goal.

Distribution and Initial Arriving Unit Travel Time

Travel time is potentially the longest of the response phases. The distance between the fire station and the location of the emergency influences response time the most. The quality and connectivity of streets, traffic, driver training, geography, and environmental conditions are also factors. This phase begins with initial apparatus movement towards the incident location and ends when response personnel and apparatus arrive at the emergency's location. Within the NFPA goal, 4 minutes is allowed for the first response unit to arrive at an incident.

PFD and automatic aid units are selected for response to an incident based on a calculation by the dispatch computer system to determine the unit that will have the shortest travel time. This method ensures the shortest possible travel times.

The following figure lists travel time for all priority incidents as well as specific incident types.

Figure 70: Travel Time Performance, First Arriving Unit

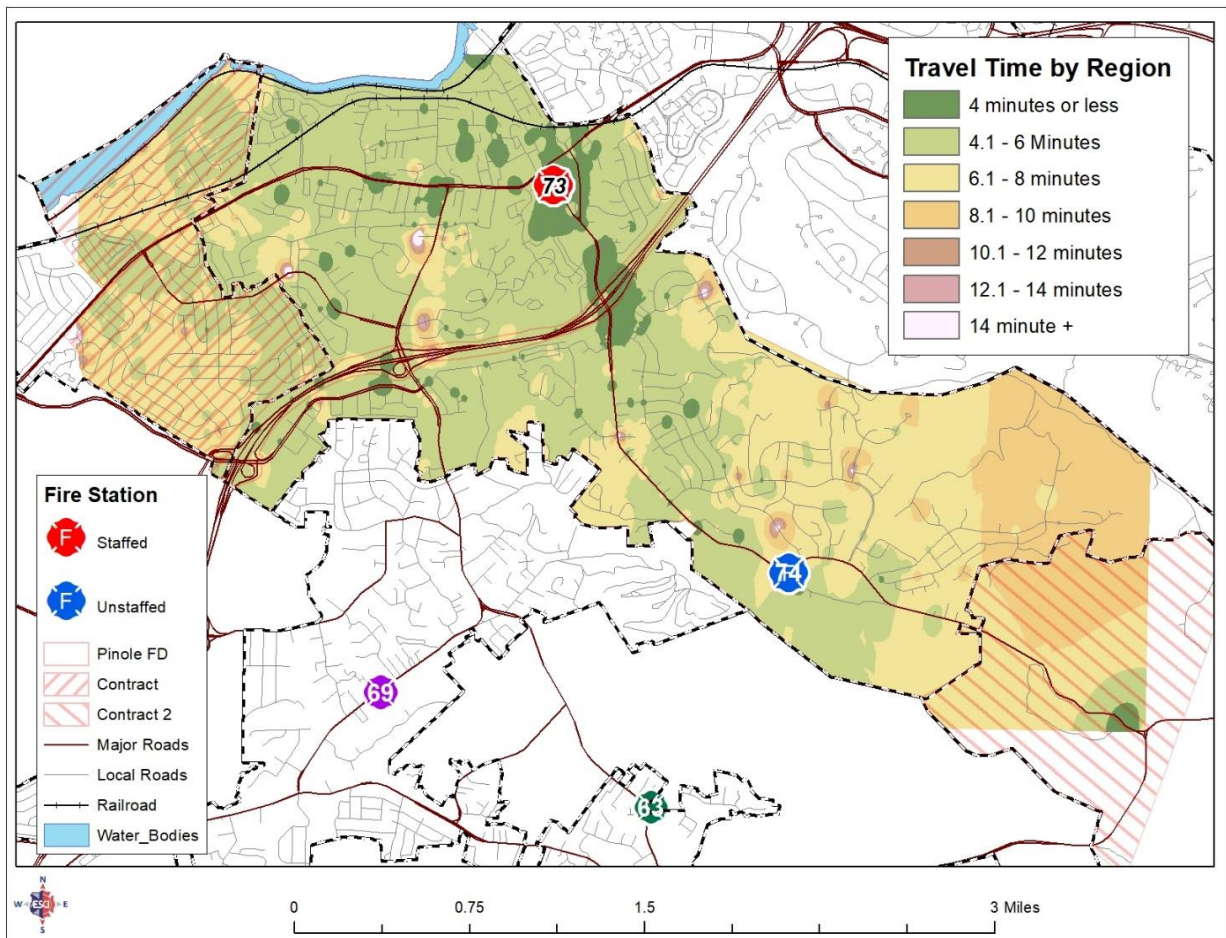
Incident Type	90% Percentile Travel Time
EMS	0:07:45
Fire	0:08:01
Other	0:07:55
All Types	0:07:45

Overall, travel time for all incidents within the city is within 7 minutes, 45 seconds, 90 percent of the time which does not meet the performance objectives. It is unknown what causes the lengthy travel time, whether it is congested traffic, traffic signal timing, or steep terrain issues.

Travel Time Performance by Region

Travel time performance by region is variable and influenced by a number of factors including individual station area workload and the number of times a station must cover another station's area. Additional factors include the size of the station area and the street system serving it. More highly connected, grid-patterned street systems contribute to faster response times than do areas with meandering streets with numerous dead-ends.

The following figure evaluates travel time performance by sub-area using Inverse Distance Weighting analysis (IDW). This process uses travel time for known points (actual incidents) to predict travel time for the area surrounding the actual incident. Better performance is generally noted near fire stations, with progressively longer response times for those incidents more distant from the stations.

Figure 71: Travel Time Performance by Region

The four-minute travel time objective is generally met near the fire station, with progressively longer travel times at further distances. The pockets of 10 to 12-minute travel times near the station do correspond to hilly locations with many turns to reach the interior of a neighborhood.

First Arriving Unit Response Time

Response time is defined as that period between the notification of response personnel by the dispatch center that an emergency is in progress until arrival of the first fire department response unit at the emergency. When turnout time and travel time are combined, the NFPA performance goal for response time is within 5 minutes, 90 percent of the time.

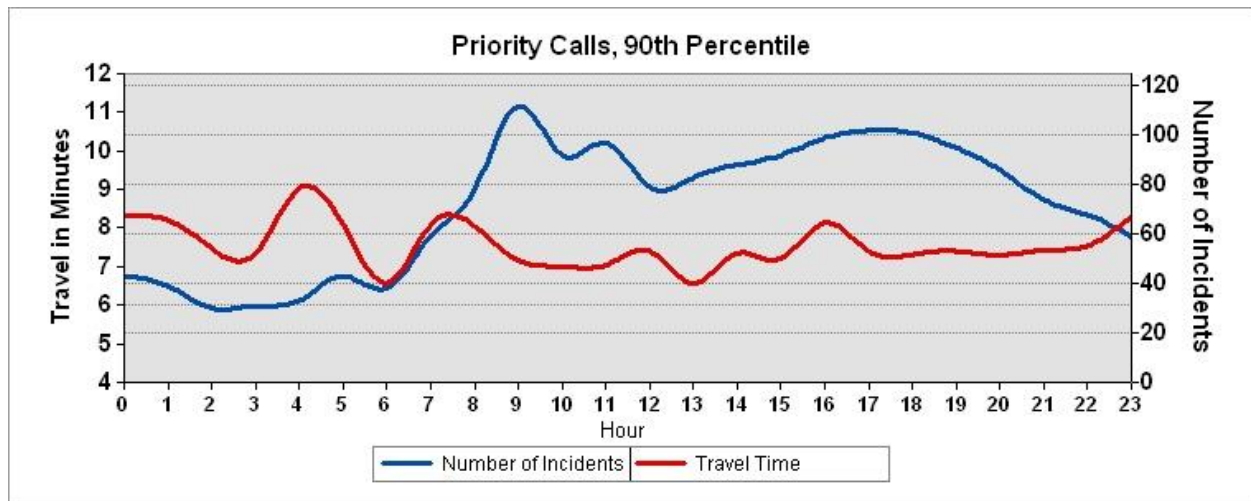
The following figure illustrates response time for all priority incidents as well as specific incident types during 2018.

Figure 72: Response Time Performance, First Arriving Unit

Incident Type	Time
EMS	00:08:11
Fire	00:09:32
Other	00:08:37
All Types	00:08:17

Overall, response time for all priority incidents was within 8 minutes, 17 seconds, 90 percent of the time.

The following figure represents the number of calls in 2018 where the travel time was greater than 4 minutes. There are notable spikes at the commute hours, 7 to 9 a.m. and again from 5 to 8 p.m.

Figure 73: PFD Number of Calls in Excess of Four Minute Travel Time by the Incident Hour

First Arriving Unit Received to Arrival Time

From the customer's standpoint, response time begins when the emergency occurs. Their first contact with emergency services is when they call for help, usually by dialing 911. Received to arrival time combines answer/transfer, call processing, turnout, and travel time. As described in the "Call Processing" discussion in this section, data for call answer and transfer time is not available. The time the call was "received" will either be the actual answer time for calls created by PSAPs other than CCRFCC or the time CCRFCC received the call transferred by another agency. When the PFD performance goals are combined, received to arrival time should be within 6 minutes, 90 percent of the time.

The next figure shows received to arrival performance during 2018 at the 90th percentile for priority incidents within the PFD service area. Overall, received time to arrival time is within 9 minutes, 55 seconds, 90 percent of the time.

Figure 74: Received to Arrival Time, First Arriving Unit

Incident Type	Time
EMS	00:10:00
Fire	00:10:30
Other	00:09:33
All Types	00:09:55

Second Unit Arrival Time

The PFD fire engine is staffed with three personnel. Safety regulations require that at least four firefighters be on scene before firefighters can enter a burning building. The only exception is if it is known that a person is inside the building and needs to be rescued. Current staffing levels at PFD require the arrival of a second response unit before non-rescue interior firefighting activities can be initiated.

Incident data for building fires during the study period was analyzed to determine the time the second response unit arrived on the scene. The data indicated that the second unit arrived on the scene of a structure fire within 6 minutes, 45 seconds, 90 percent of the time.

The dispatch data uses a priority coding system for incidents as shown in the following figure.

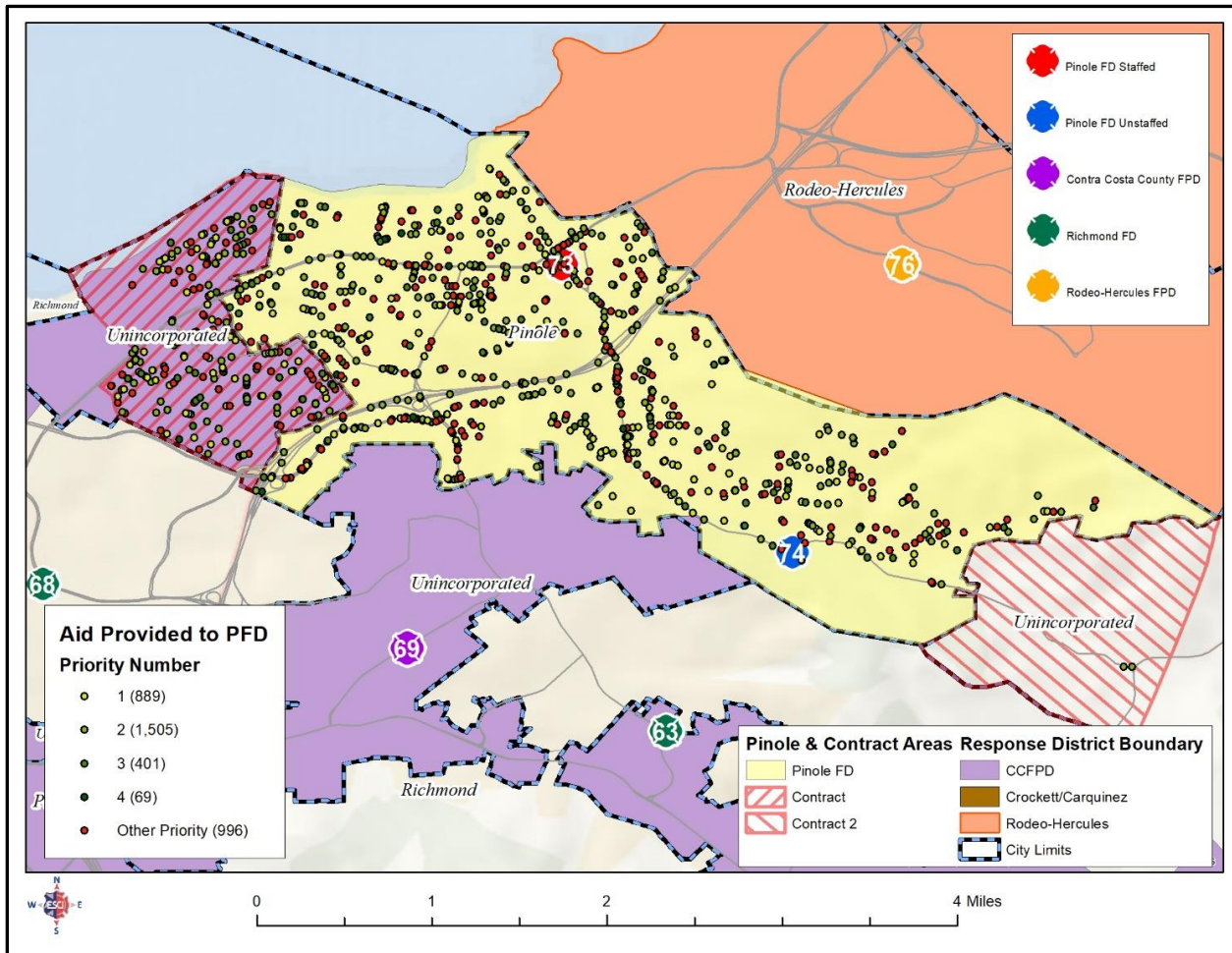
Figure 75: CCC Dispatch Priority Codes

Priority	Description
1	P1 Emergency
2	P2 Emergency
3	P3 Urgent
4	P4 Routine
5	P5 Non-Emergency
6	P6 Non-Emergency
7	P7 Triage status that should be updated to another priority during call taking.
8	P8 No Response
9	P9 Test

Priority 1–4 are Code 3, “lights/sirens.” All other priorities are Code 2, no lights/sirens.

The following figure shows the 2018 incidents within the City of Pinole and the two contract areas where adjacent fire agencies were dispatched. There were 3,860 dispatch requests for aid from adjacent fire agencies. This number reflects the dispatch of multiple units not the total number of calls.

Figure 76: Dispatched Aid for PFD



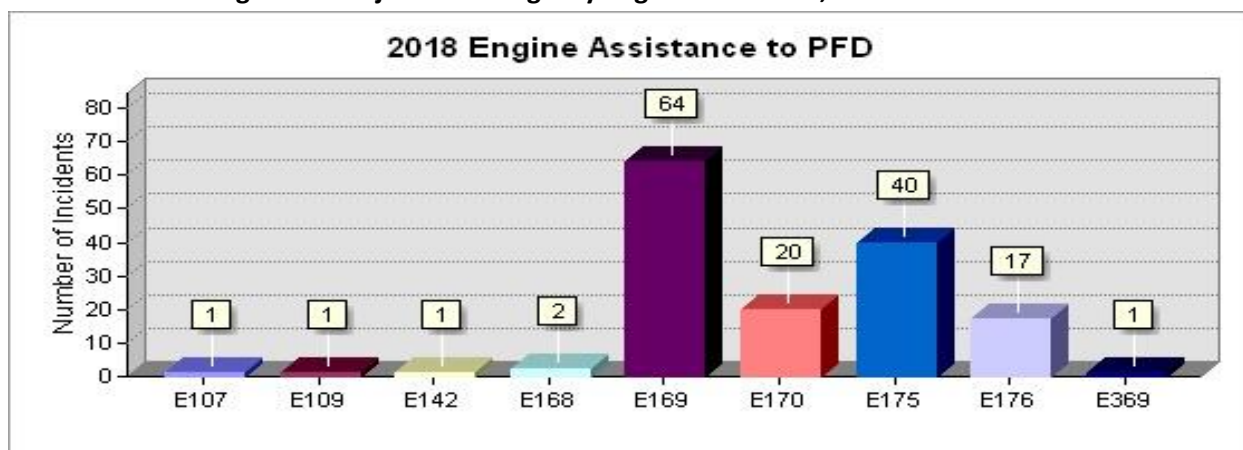
Of those 3,860 requests, 940 incidents did not have a time stamp for “Arrived on Scene”—perhaps these units were cancelled enroute. The adjacent fire agency units that responded to the remaining 2,920 incidents, are shown in the following figure.

Figure 77: Adjacent Fire Agency Assistance, PFD available

Unit	# of Requests	Unit	# of Requests	Unit Name	# of Requests
E169	124	E163	2	E372	1
Q176	82	E168	2	E376	1
E175	52	E178	2	E379	1
E176	20	E375	2	EBMUD	1
E170	12	E378	2	H30	1
R369	8	1122	1	HM21	1
SQ70	7	BC4	1	HM4	1
BC71	5	E107	1	STARR	1
BC64	2	E142	1	T114	1
CSTAR1	2	E1676	1	USCG	1
		E369	1		

In 2018, 31 different fire agency units responded to PFD while PFD was available. CCFPD Station 69's engine was the most frequent responding engine at 124 requests.

On occasion, the engine from Station 73 was not available to respond to an incident as it had not been cleared from a previous incident. Available engines from the adjacent agencies were dispatched to the City of Pinole and the two contract areas in their stead. The following figure shows the frequency of adjacent agencies' assistance.

Figure 78: Adjacent Fire Agency Engine Assistance, PFD not available

Again, the engine from CCFPD Station 69 was the most frequent responder when E73 was not available, followed by the engine from Rodeo-Hercules Station 75.

The adjacent agencies' engines were dispatched to a variety of incident types, as the next figure shows.

Figure 79: Incident Types; PFD not available

Incident Type	Number of Incidents
5150 PD Request	2
EMS—Alpha (Fall)	1
EMS—Alpha *Code 2	4
EMS—B Ltd	2
EMS—Bravo	12
EMS—Charlie	31
EMS—Delta	39
EMS—Echo	1
EMS—Richmond	2
EMS—Alpha Code 2 With Engine	2
EMS—Medical Emergency	1
Fire—Veh Large	3
Fire Alarm—Commercial	6
Fire Alarm—Residential	7
Fire Exterior	2
On View	4
Single Engine C2	2
Single Engine C3	5
Veh Accident Motorcycle	4

The most frequent type of incident of the adjacent fire agencies' response was a variety of EMS incidents.

The following information relates to codes utilized for EMS calls shown in Figure 79.

**Figure 80: List of Common Emergency Medical Dispatch (EMD) Codes
Used by Most Dispatch Agencies in the United States**

Code	Type	BLS/ALS	Emergency Status
Alpha	Non-Life-Threatening	Basic Life Support	Non-Emergency
Bravo	Possibly Life-Threatening	Basic Life Support	Emergency
Charlie	Life-Threatening	Advanced Life Support	Emergency
Delta	Serious Life Threat	Advanced Life Support	Emergency
Echo	Life Status Questionable	Closest Available (Multiple Resources Sent)	Emergency
Omega "Ω"	Public Assist Only	Basic Life Support	Non-Emergency

FUTURE SYSTEM DEMAND PROJECTIONS

A population forecast was provided by the City. Future population growth for Pinole is forecast to average 0.79 percent per year through 2050. Using this estimate, the city's population could reach 22,228 by 2050. This projection is based on historical growth. Future growth projections have not been available from other sources. It is unlikely that actual projections will differ much unless city zoning density increases occur.

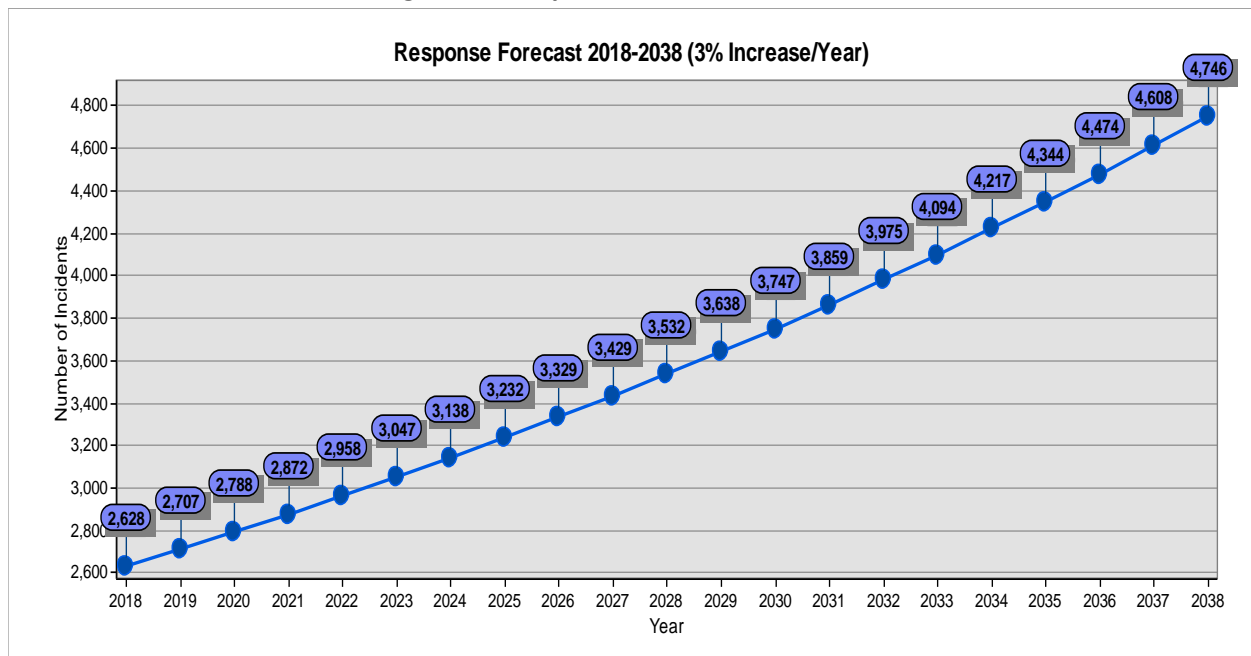
Incident Workload Projection

The most significant predictor of future incident workload is population and historic call volume; 100 percent of requests for emergency medical service are people driven. The National Fire Protection Association reports that approximately 70 percent of all fires are the result of people either doing something they should not have (i.e., misuse of ignition source) or not doing something they should have (i.e., failure to maintain equipment). It is reasonable to use forecast population growth to predict future fire department response workload.

The current department services utilization rate is 110 incidents per 1,000 population, the PFD has a higher than regional median number of calls per 1,000 population but slightly lower than the urban high range.

The utilization of fire department services is expected to grow modestly over time at a rate of about 3 percent per year. This, plus expected population growth, will increase the PFD's workload as shown in the following figure. Response workload could reach approximately 4,700 responses per year by 2038, driven primarily by requests for emergency medical care.

Figure 81: Response Forecast, 2018–2038



Community Risk Factors

This section analyzes risks that are present within the study area that potentially threaten people and property. These risks are identified to assist the study area agency in planning where to locate response resources in the types and numbers necessary to effectively respond to likely emergencies. While not all hazards of individual occupancies can be considered—that is beyond the scope of the study—there are risks that seem to be relevant to the area. It is recommended that the department be aware of and rate the hazard and risks in terms of frequency and severity within the jurisdiction.

The City of Pinole fire service area has many risks including the shoreline, a significant wildland interface, underground pipelines, a freeway, and railroad. The arrangement of the service area is constrained by topography such that there are few areas that have grid coverage from the Pinole Fire Station and neighboring automatic aid from other fire departments. Due to this configuration, response is funneled through gateways at the foot of each valley. Significant challenges and risks exist in the City of Pinole.

The following figure represents a method of identifying and analyzing risks within Pinole. This figure should be reviewed annually by department leadership with the goal of continuous improvement through re-evaluation of the risks facing the city.

Figure 82: Risk Identification and Analysis Process¹

Step	Action
Hazard Identification	Identify hazards.
	What is the probability this hazard will occur?
	Is this hazard a significant threat to your jurisdiction?
	Approximately how often does this hazard occur in your jurisdiction?
Vulnerability Assessment	For each hazard identified in the hazard identification process, consider each of the five factors. Factor 1: Danger/Destruction/Personal harm Factor 2: Economic Impacts Factor 3: Environmental Impacts Factor 4: Social Impacts Factor 5: Political Considerations
	Score the vulnerability from this hazard.
	Reconsider priority of each hazard based on vulnerability.
Risk Rating Score	Risk Rating = Probability ² X Vulnerability ²

¹ Adapted from the Community Risk Reduction Model, United States Fire Administration, National Fire Academy

² Probability and Vulnerability are rated as 3 = High, 2 = Moderate, 1 = Low

The fire service assesses the relative risk of properties based on several factors: the service area population and population density, the demographics of the population, local land use and development, and the geography and natural risks present within the community. These factors affect the number and type of resources (both personnel and apparatus) necessary to mitigate an emergency. Properties with high fire and life risk often require greater numbers of personnel and apparatus. Therefore, staffing and deployment decisions should be made with consideration to the level of risk within geographic sub-areas of a community.

Overall Geospatial Characteristics

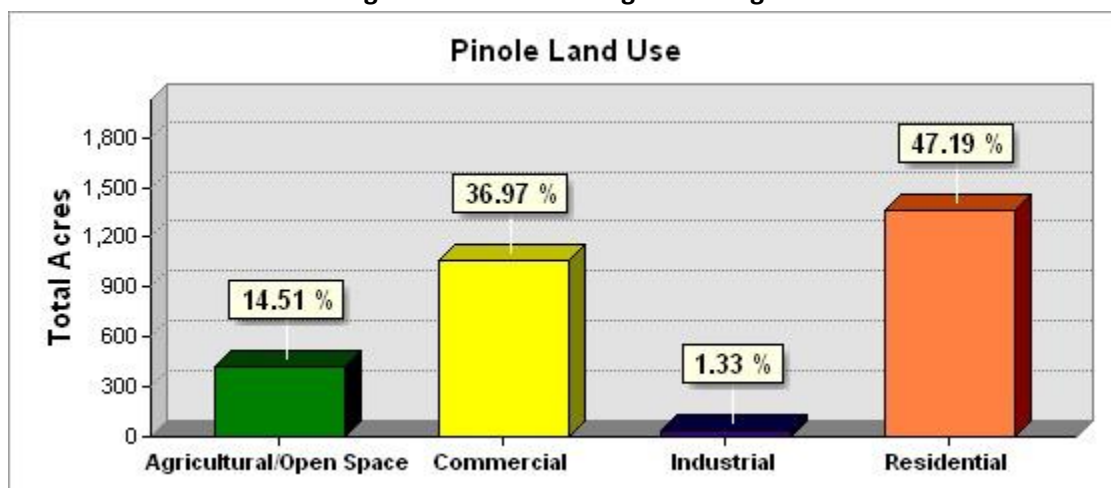
The following community risk assessment has been developed based on intended land uses as described in the zoning designations of the study area. The following figure translates zoning to categories of relative fire and life risk.

Figure 83: Translation of Zoning to Relative Risk Categories

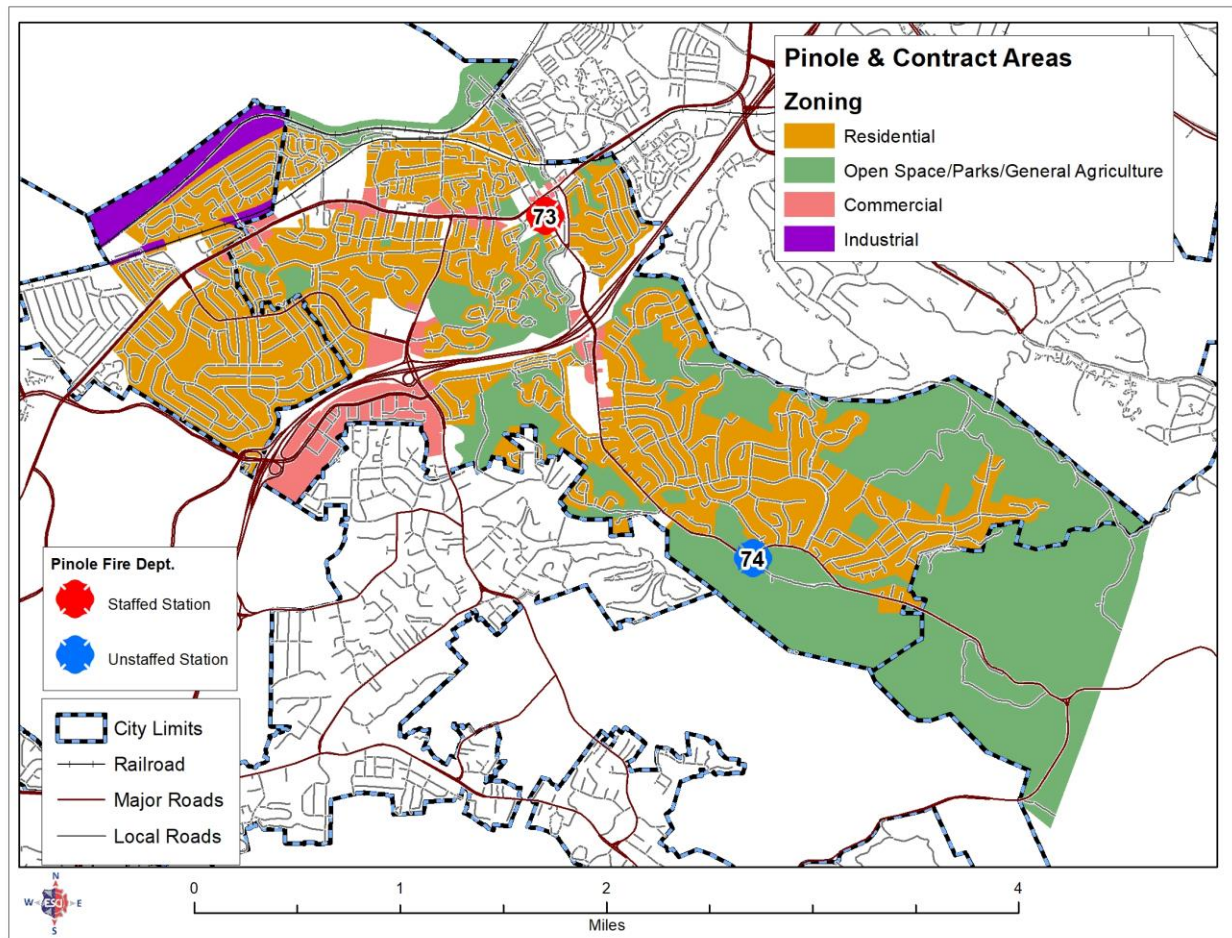
Relative Risk Category	Zoning
Low Risk	Areas zoned and used for agricultural purposes, open space, and very low-density residential use.
Moderate Risk	Areas zoned for medium-density single family properties, small commercial and office uses, low-intensity retail sales, and equivalently sized business activities.
High Risk	Areas zoned for Higher-intensity business districts, mixed use areas, high-density residential, industrial, warehousing, and large mercantile centers.

The following shows the relative percentages of zoning in the City of Pinole.

Figure 84: Pinole Zoning Percentages



The following figure illustrates the distribution of the current zoning classifications in the City of Pinole. By acreage, nearly half of the City of Pinole is residential and 1/3 is zoned commercial. The current zoning data was undergoing review as some of the parcels were without a zoning code, i.e., the white areas within the city. Some of these are likely "Commercial" due to their proximity to existing commercial zoning.

Figure 85: Pinole & Contract Area's Current Zoning

Geographic & Weather-Related Risks

The number and frequency of federal disaster declarations affecting Pinole paints a picture of the risks that natural hazards pose to the region. The next figure is a summary of federal disaster declarations that have occurred in Contra Costa County:¹⁶

- Between 1969 and 2017, Contra Costa County has received 14 presidential disaster declarations and 2 emergency declarations.
- These events are important to consider in establishing recurrence intervals for hazards of concern.

¹⁶ Retrieved from <http://www.co.contra-costa.ca.us/DocumentCenter/View/48893/Contra-Costa-County-Draft-Local-Hazard-Mitigation-Plan-Volume-1-January-31-2018?bidId=>

Figure 86: Summary of Federal Disaster Declarations in Pinole by Type, 1965–2017

Type of Event	Declaration Date	FEMA Disaster #
Severe Winter Storms, Flooding, Mudslides	4/1/2017	DR-4308
Severe Winter Storms, Flooding, and Mudslides	3/16/2017	DR-4305
Severe Storms, Flooding, and Mudslides	2/14/2017	DR-4301
Severe Storms, Flooding, Mudslides, and Landslides	2/3/2006	DR-1628
Severe Winter Storms and Flooding	2/9/1998	DR-1203
Severe Storms, Flooding, Mud and Landslides	1/4/1997	DR-1155
Severe Winter Storms, Flooding Landslides, Mud Flow	3/12/1995	DR-1046
Severe Winter Storms, Flooding, Landslides, Mud Flows	1/10/1995	DR-1044
Severe Winter Storm, Mud and Land Slides, and Flooding	2/3/1993	DR-979
Loma Prieta Earthquake	10/18/1989	DR-845
Severe Storms and Flooding	2/21/1983	DR-758
Coastal Storms, Floods, Slides, and Tornadoes	2/9/1983	DR-677
Severe Storms, Flood, Mudslides, and High Tide	1/7/1982	DR-651
Torrential Rain, High Tide, and Winds	2/1/1980	EM-3078
Drought	1/20/1977	EM-3023
Severe Storms and Flooding	1/26/1969	DR-253

EM = Emergency Declaration; DR = Disaster Declaration

From a planning perspective, there are several weather-related risks of concern to the study area as noted in the previous figure. Severe storms can include lightning strikes and significant wind events.

Weather Risks

The climate for Pinole is moderate. Pinole receives 27 inches of rain, on average, per year, the U.S. average is 38 inches of rain per year. The average annual temperatures range from a high of 80°F in July to a low of 40°F in January—with the average temperature being 71°F. Pinole receives 255 sunny days on average, this is 50 more days than the national average.¹⁷

¹⁷ Retrieved from <https://www.bestplaces.net/climate/city/california/pinole>.

Flood Risk

There are various risks associated with flooding. It is essential, therefore, that the community in the area of flood zones and areas prone should be informed of the risks, before the flood and as part of the planning process. Further this should be a part of the public education process to ensure that residents are aware of the risks associated with flooding and the actions they should take to ensure readiness.

During a flooding event, the fire department will be called upon to assist in evacuations and rescues. These evacuations may include facilities with large numbers of people requiring EMS resources. Rescue and emergency evacuations may involve moving water requiring the specialty trained technical rescue team to intervene.

After a flood as the residents begin recovery, EMS-related incidents will increase as injuries and medical conditions occur. Public education can help the community prepare for the recovery process.

The Contra Costa Hazards Mitigation Plan addresses two principal sources of floods. These two sources are summarized and defined in the next figure.

Figure 87: Sources of Flooding in Contra Costa County¹⁸

Source of Flood	Description
Riverine (river and stream)	Riverine floods described in terms of their extent (including the horizontal area affected and the vertical depth of floodwater) and the related probability of occurrence (expressed as the percentage chance that a flood of a specific extent will occur in any given year).
Flash Flooding	Flash floods that occur suddenly after a brief but intense downpour. They move rapidly, end suddenly, and can occur in areas not generally associated with flooding (such as subdivisions not adjacent to a water body and areas serviced by underground drainage systems). Although the duration of these events is usually brief, the damage they cause can be severe. Flash floods cannot be predicted accurately and happen whenever there are heavy storms.

Garrity Creek Watershed

This 1,790-acre area in western Contra Costa County includes the watershed of Garrity Creek (3.67 miles). This watershed includes sections of the City of Pinole.

Pinole Creek Watershed

Pinole Creek is a perennial creek that runs through the center of the city.

¹⁸ Retrieved from <http://www.co.contra-costa.ca.us/DocumentCenter/View/48893/Contra-Costa-County-Draft-Local-Hazard-Mitigation-Plan-Volume-1-January-31-2018?bidId=>.

The next figure illustrates the Special Flood Hazard Areas (SFHA) as designated by FEMA. There are areas with the risk of flooding throughout the city. For the most part, the areas that are flood prone have a one-percent increase of annual flooding. There are small portions of the study area that include a 0.2 percent annual chance of flooding. Station 73 and 74 are located very close to Pinole Creek drainage and potential flood areas as seen in the following figures.

Figure 88: Watersheds in the Study Area

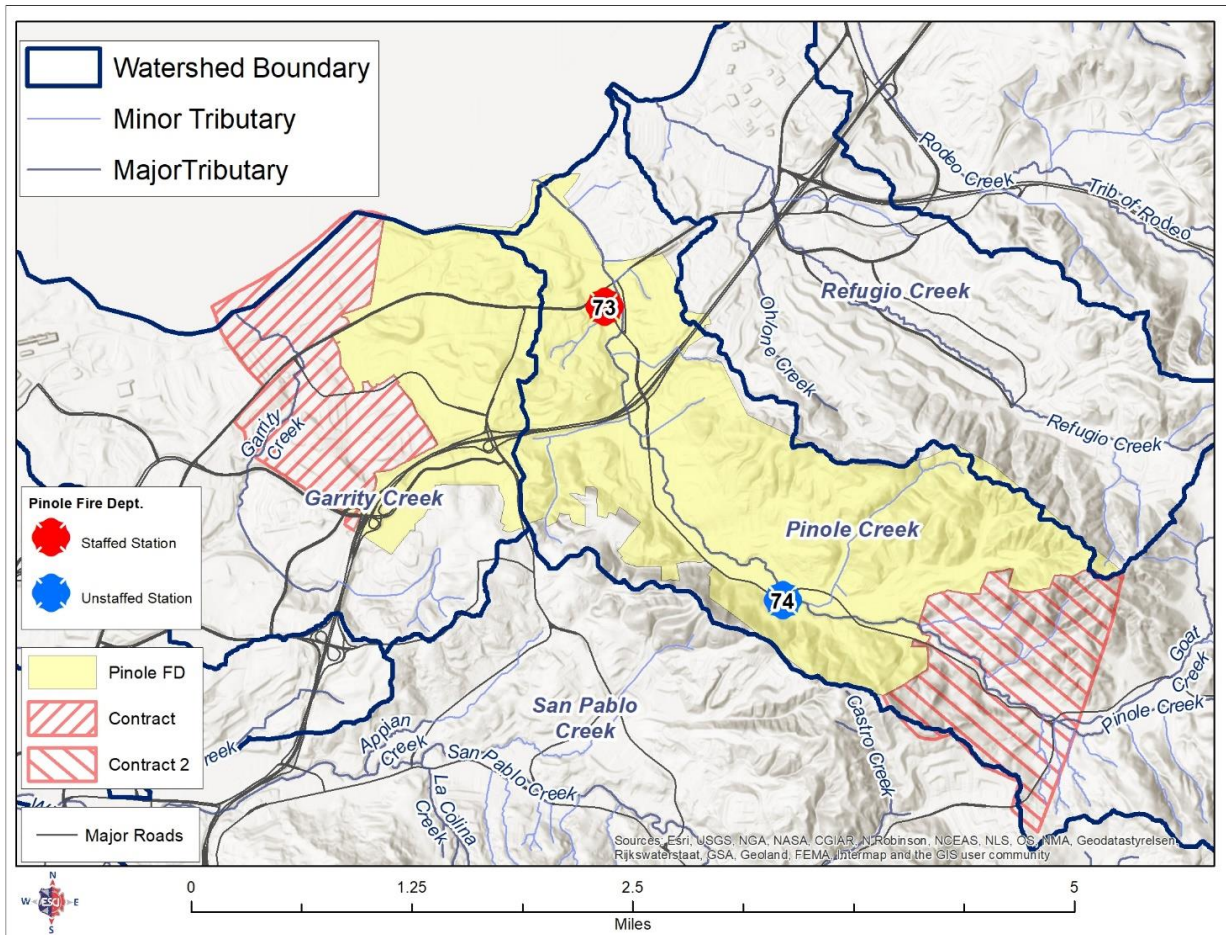
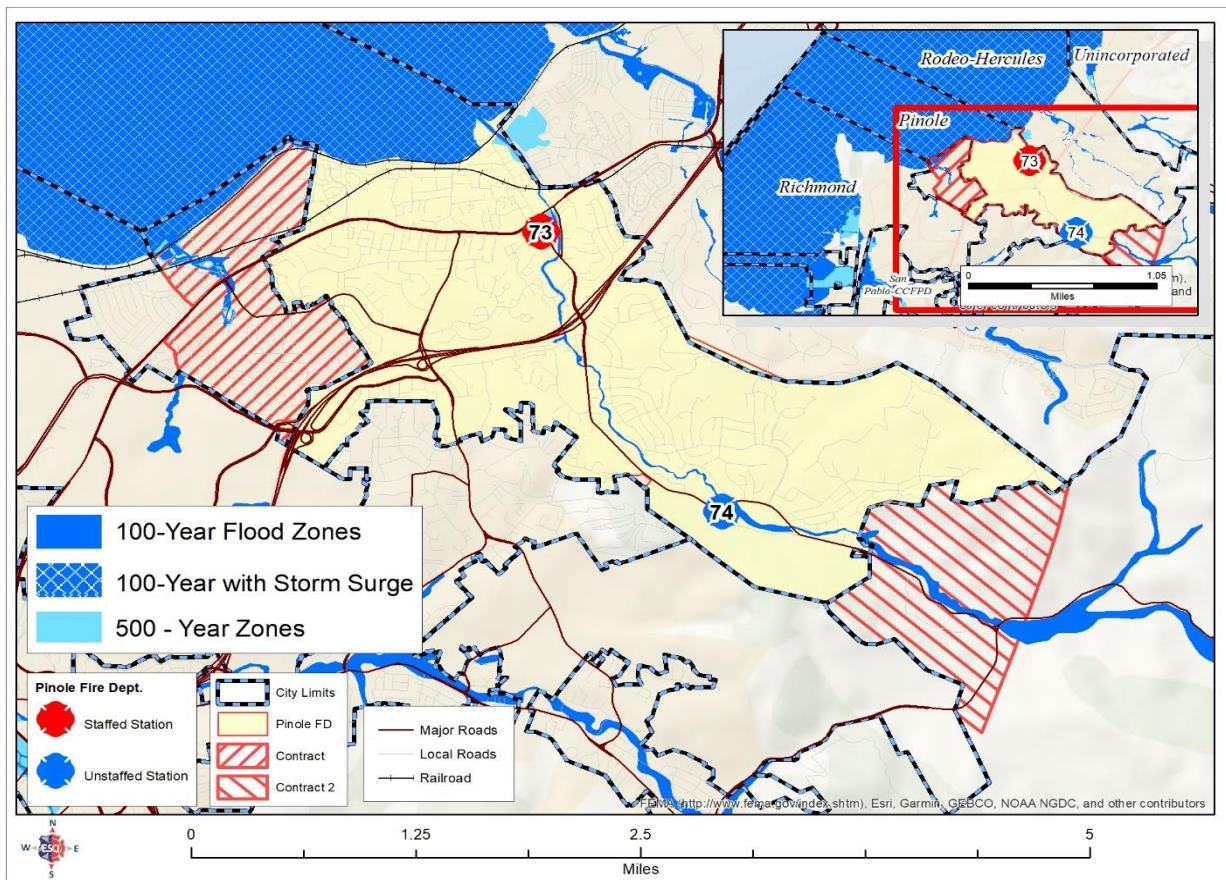


Figure 89: Flood Zones in the Study Area

Flood hazard areas identified on the Flood Insurance Rate Map are identified as a SFHA. SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance of flood is also referred to as the base flood or 100-year flood. Moderate flood hazard areas are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The Coastal High Hazard area is that part of the coastal floodplain where the wave heights during the base flood will be three feet or more.

There are 145 parcels that intersect various FEMA flood zones. Ten of these parcels are zoned "agricultural/open space" and 25 additional parcels are zoned "commercial," including one corner of a school parcel. The remaining 110 parcels are zoned "residential" including 109 single family parcels and one multifamily parcel with 12 units. Using the 2010 census data, the Pinole average household size is 2.7 persons, this gives an estimated total population of flood risk of 327 persons. The following figure shows the population within the various flood zones.

Figure 90: Flood Hazard Areas

Population Within the 10%, 1%, and 0.2% Annual Chance Flood Hazard Areas					
10% Annual Chance Flood Hazard Area		1% Annual Chance Flood Hazard Area		0.2% Annual Chance Flood Hazard Area	
Population Exposed	% of Total Population	Population Exposed	% of Total Population	Population Exposed	% of Total Population
0	0	0	0	327	1.7%

The commercial and agricultural/open space parcels were located in the 10 percent and 1 percent SFHAs.

Tornadoes

Tornadoes can have winds of over 300 mph which—at the higher ranges—will cause a significant threat to life and damage to property. The intensity of tornadoes is measured on the Enhanced Fujita Tornado Damage Scale. This scale has an intensity range for tornadoes from EF-0 to EF-5 including wind estimates. The next figure is a summary of the damage associated at the various levels. Pinole has not experienced a tornado within written history.

Figure 91: Tornado Intensity, Enhanced Fujita Scale

Designation	Wind Speed, mph	Typical Damage
EF-0	65–85	Minor or no damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over. Confirmed tornadoes with no reported damage are always rated EF-0.
EF-1	86–110	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF-2	111–135	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF-3	136–165	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations are badly damaged.
EF-4	166–200	Devastating damage. Well-constructed and whole frame houses completely leveled; cars and other large objects thrown, and small missiles generated.
EF-5	> 200	Extreme damage. Strong-framed, well-built houses leveled off foundations are swept away; steel-reinforced concrete structures are critically damaged; tall buildings collapse or have severe structural deformations; some cars, trucks, and train cars can be thrown approximately 1 mile (1.6 km).

While ranges of winds are listed on the scale, the wind estimate is not exact—nor have they been verified in science or engineering. Different wind speeds may cause similar-looking damage from place to place—even from building to building.

While preventing tornadoes is not possible, being prepared for the potential of tornado should be considered as a high priority. Tornadoes can occur with little or no warning and can result in devastating damage, departments must consider that as part of their planning for disaster readiness; the likelihood of a tornado occurring is very small in Pinole.

Tsunamis

A tsunami is a series of high-energy waves radiating outward from an area where a generating event occurs. Earthquakes may produce displacements of the sea floor that can set the overlying column of water in motion, initiating a tsunami, depending on the magnitude of the earthquake and the type of faulting.

The San Pablo Bay area is a likely site of tsunami impacts in Contra Costa County that would rise with floodwaters from a San Francisco Bay tsunami caused by a local earthquake. According to the Contra Costa Hazard Mitigation Plan, Pinole only has a small threat of tsunamis immediately along its coastline vicinity.¹⁹

Additional Weather-Related Hazards

Severe weather hazards also pose a threat to Pinole. Aside from the weather-related hazards described in the preceding section, several other weather-related events have been analyzed as part of the hazard mitigation plan. The next figure—while applicable to the whole County—is a summary of these events including the definitions, severities, and impacts.

¹⁹ <https://www.contracosta.ca.gov/DocumentCenter/View/48893/Contra-Costa-County-Draft-Local-Hazard-Mitigation-Plan-Volume-1-January-31-2018?bidId=>.

Figure 92: Other Weather-Related Hazards in Contra Costa County²⁰

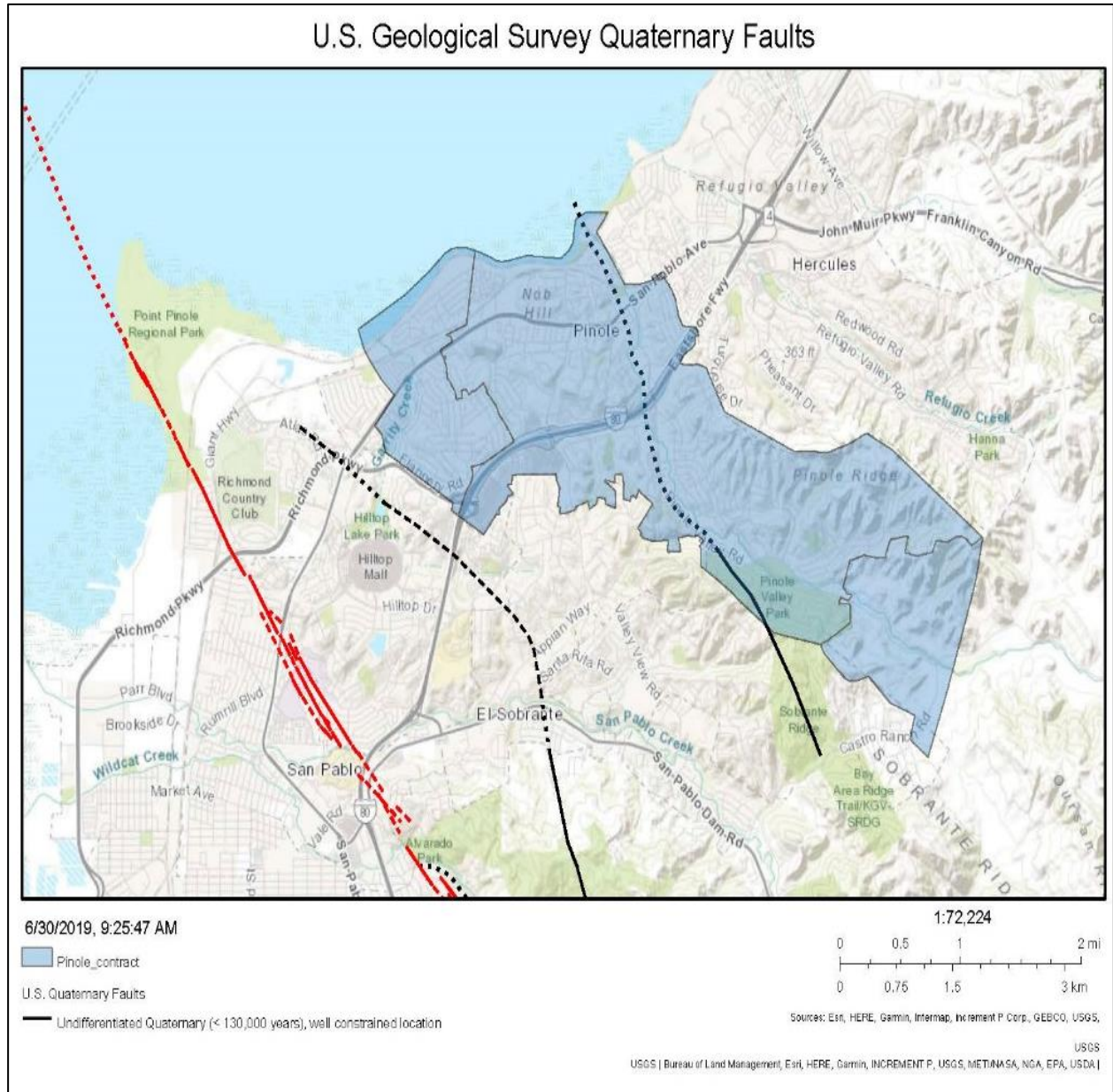
	High Winds	Heavy Rain and Thunderstorms
Definition	The National Weather Service defines high winds as, “sustained wind speeds of 40 mph or greater lasting for one hour or longer, or winds of 58 mph or greater for any duration.”	Heavy rainfall is any amount of rain produced in a relatively short time period that exceeds the capacity of natural systems’ or stormwater infrastructures’ ability to effectively and safely convey the flow of stormwater.
Severity	The entire county is directly or indirectly susceptible to the effects of high-speed winds. Trees are susceptible to blowing over and causing damage to surrounding property. All communities can suffer extended power outages.	The entire county is directly or indirectly susceptible to the effects of heavy rains or thunderstorms. All communities can suffer the impacts of heavy rains or thunderstorms.
Impacts	<p>Widespread power outages.</p> <p>Mass of downed debris on the transportation network impedes the response of emergency personnel and utility crews.</p> <p>Electrical blackouts force the closure of government offices, businesses, and schools.</p> <p>Power outages can disrupt transportation, generating traffic snarls resulting in thousands of motorists seeking few available alternate routes on local arterials and collectors, complicated by blocked roads.</p>	<p>Heavy rain can have significant impacts, including rising rivers, flash flooding, mudslides, and landslides. Stormwater runoff from heavy rains can also impair water quality by washing pollutants into water bodies.</p> <p>When power outages occur simultaneously with heavy stormwater flows, public works crews may struggle to provide auxiliary power to sewer lift stations to prevent backups or flooding in suburban and urbanized areas.</p> <p>Thunderstorms carry the same risks as heavy rain events, and depending on the type of storm, they can also include tornadoes, lightning, and heavy winds, increasing risk of injury and property damage.</p>

²⁰ Retrieved from https://www.trpc.org/DocumentCenter/View/4172/HazMit_Ch4-2_Storm?bidId=.

Earthquakes

The Contra Costa Hazard Mitigation Plan rates the hazard profile of earthquakes as a high probability. Earthquakes can cause widespread damage and disrupt many services across the area.

Figure 93: Earthquake Fault Lines In and Around Pinole



The Pinole Fault and the Moraga Fault, both undifferentiated quaternary faults, pass through the study area. The historic Hayward Fault, with a slip rate of 5 mm/year passes to the southwest of the study area.

Effects of earthquakes are described in the following figure.

Figure 94: Effects of Earthquakes

Effect	Description
Ground Motion	When a fault ruptures, seismic waves radiate, causing the ground to vibrate. This wave movement causes the ground to shake during an earthquake.
Ground Failures	Earthquakes can cause surface faulting, landslides, subsidence, and uplifting. Surface faulting is the differential movement of two sides of a fracture.
Liquefaction	Liquefaction is the phenomenon that occurs when ground shaking causes loose soils to lose strength and act like viscous fluid. Liquefaction causes two types of ground failure: lateral spread and loss of bearing strength.
Tsunamis	Tsunamis are large ocean waves generated by sudden changes in the sea floor elevation which displace a significant volume of water.

Wildfire Risk

Like many areas of California, there is a wildfire risk in the Pinole area. The level of risk associated with wildfires in any given area of a community is dependent upon several factors including climate, vegetation, and topography. Also a factor is the number of homes that are built within the Wildland Urban Interface. Pinole has 30 buildings within the Very High Fire Hazard Severity Zone (FHSZ).

According to Contra Costa Hazards Mitigation Plan the summary assessment on wildfire reads:

The geography, weather patterns and vegetation in the East Bay area provide ideal conditions for recurring wildfires. Especially vulnerable are the East Bay Hills in Lamorinda, which includes Lafayette, Moraga, and Orinda. Parts of Walnut Creek, including the area surrounding Rossmoor, are vulnerable to wildfires, as are Clayton, the Danville/San Ramon area, and the San Pablo-El Cerrito, El Sobrante area. Because the natural vegetation and dry-farmed grain areas of the county are extremely flammable during late summer and fall, wildfire is a serious hazard in undeveloped areas and on large lot home sites with extensive areas of un-irrigated vegetation.²¹

In the next figure, a summary of the historical wildfire occurrences and impacts is illustrated. The Castro and the Carson Fires of 2011 were the largest incidents, with numerous small incidents in the succeeding years.

²¹ Retrieved from https://www.trpc.org/DocumentCenter/View/4172/HazMit_Ch4-2_Storm?bidId=County-Draft-Local-Hazard-Mitigation-Plan-Volume-1-January-31-2018?bidId=.

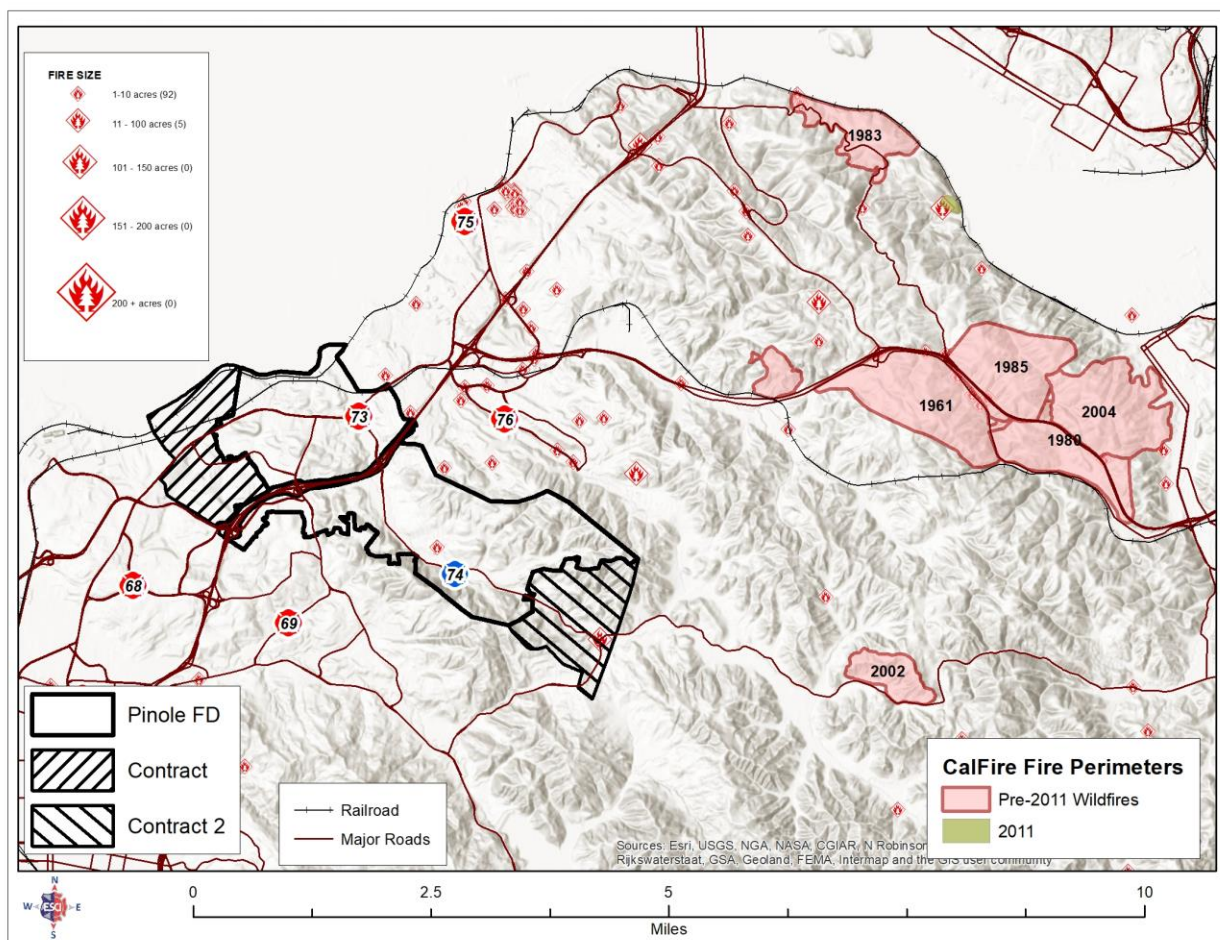
Figure 95: Study Area Historical Wildfire Occurrences and Impacts, 2009–2018²²

Fire Name	Year	Acres	Month
Carson	2011	20	September
Turquoise	2011	1	July
Franklin	2011	1	August
Savage Av Pinole	2011	1	July
Castro	2011	83	September
Refugio Valley Rd	2011	4	June
Unnamed	2011	0.01	August
Unnamed	2011	0.01	June
Unnamed	2011	0.01	June
BrickYard	2011	17	September
Franklin	2012	1	October
Unnamed	2012	0.01	July
Unnamed	2012	0.1	August
Unnamed	2012	0.4	August
Unnamed	2012	0.01	September
Unnamed	2012	0.5	September
Unnamed	2013	2	May
Unnamed	2013	0.1	November
Unnamed	2013	0.5	November
Unnamed	2014	0.25	June
Toll	2017	43	June

²² Retrieved from Pinole_Incident_Summary_2009-2018.xlsx.

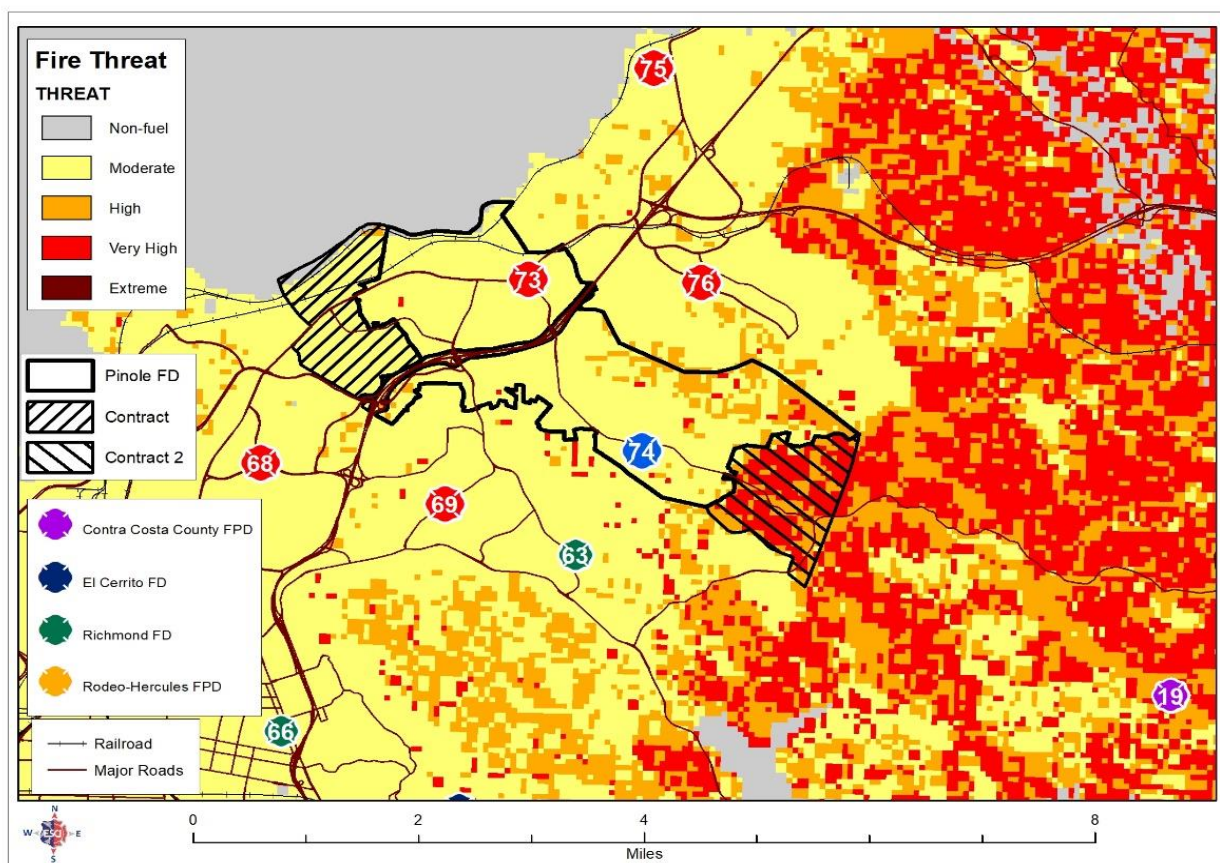
The next figure shows the historical wildfires listed in the previous figure in and near Pinole. There have been many small wildfires (< 10 acres) in the more remote portions of the county.

Figure 96: Historical Wildfires In and Near Pinole through 2018



The next figure shows the wildfire threat in and near Pinole.

Figure 97: Degree of Wildfire Threat



Fire threat is a combination of two factors: 1) fire frequency, or the likelihood of a given area burning, and 2) potential fire behavior (hazard). These two factors are combined to create four threat classes ranging from moderate to extreme (California Department of Forestry and Fire Protection's Fire and Resource Assessment Program [FRAP]).

The next figure shows the estimated land area, population, and dwellings that are in the Wildland Urban Interface areas.

Figure 98: Study Area Current Estimates as Related to the Urban Interface, 2015

Fire Department/District	Population		Residential Dwellings	
	Total	Percent in the Hazard Area	Total	Value in the Hazard Area
Pinole Fire Department	94	.5% ²³	30	\$16,007,875

Of concern is the Galbreath Road neighborhood to the southwest of Station 74. This area is characterized by a single road in, as well as being surrounded by dense vegetation. This is a large concern for ingress of fire equipment during an emergency (such as a wildfire event) and egress of residents who may be evacuating the Galbreath Road area. Future development should evaluate hazards to the development area and ensure adequate traffic routes are designed and implemented.

Figure 99: Galbreath Road Neighborhood

²³ Retrieved from: <http://www.co.contra-costa.ca.us/DocumentCenter/View/48893/Contra-Costa-County-Draft-Local-Hazard-Mitigation-Plan-Volume-1-January-31-2018?bidId=>.

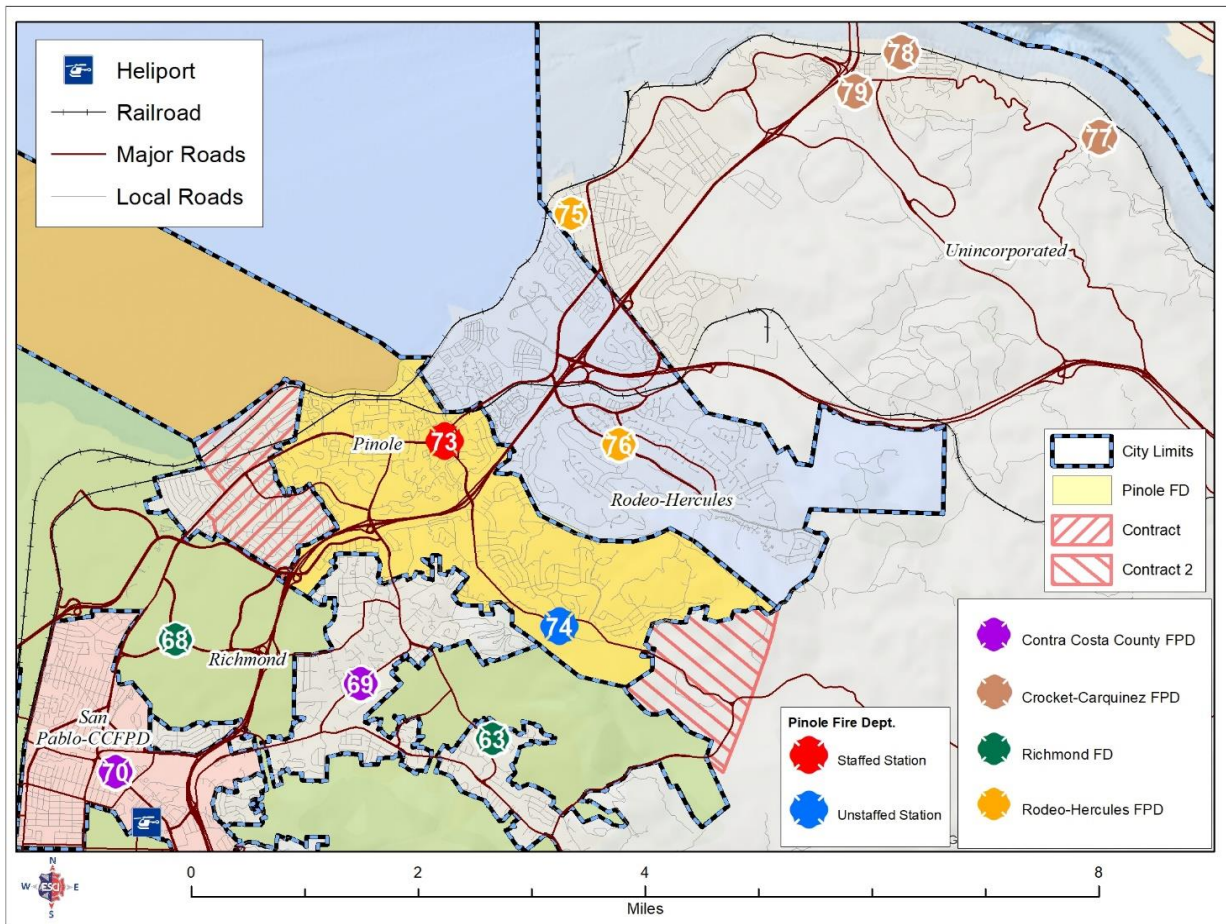
Transportation Risks

Highways

There are several transportation corridors and various modes of transportation that fall within the study area for which the department is responsible. Beginning with major roadways, Interstate 80 goes through the middle of Pinole. Additionally, there are several major local roads within the City including San Pablo, Appian Way, and Pinole Valley Road. Regardless of the size of the roadway or the speed limit, any roadway has the potential for motor vehicle crashes, vehicle fires, medical emergencies, brush fires, or hazardous material spills/leaks. Each of these are not only a risk to the community but the responders are also at risk of being struck by vehicles while operating near moving traffic.

Last year, the town of Paradise faced a devastating fire. Evacuations from the town on narrow two-lane roads became problematic to those leaving the fire area. In 2019, Streetlight Data, Inc. listed Pinole as three times the National average in difficulty in evacuating the city in case of emergency due to limited evacuation routes and narrow street.²⁴ Due to the general geography of Pinole, this road arrangement is nearly unavoidable. The Pinole Police Department has a plan to use all lanes to travel in one direction to evacuate residents from the fire area in an expedient manner.

²⁴ It should be noted that Streetlight Data only studied cities of under 40k in population. The study also made the assumption that people would choose familiar and preferred routes even though other exists exist.

Figure 100: Major Transportation Infrastructure in the Study Area

Airports

The City of Pinole does not have an airport. Two international airports are located nearby, the Oakland International Airport (27 miles) and the San Francisco International Airport (34 miles). There is a heliport in San Pablo.

Railroads

Figure 100 shows the rail line through Pinole. Amtrak provides regular service through the city with over 16 rail stations within a 30-mile radius. In addition, Union Pacific's Martinez Subdivision and BNSF Stockton Subdivision transport freight through the area. Although a comparatively safe mode of transport, railway operations do come with hazards including accidents involving pedestrians, other vehicles, derailments, and accidental hazardous material releases. The next figure discusses some of these incidents.

Figure 101: Hazard Descriptions Faced by the Pinole Fire Department

Type of Incident	Description/Hazard
Train Collisions	Collisions can be between two or more trains or between trains and infrastructure.
Derailments	Derailments occur when one or more cars of a train leaves the tracks; generally, involves just one train.
Grade Crossings Crashes	There are various scenarios in which accidents occur at railroad crossings.
Railroad Staff Injuries	Railroad staff may get injured while working on or near the tracks. In some cases, accessibility will be a problem.
Dangerous Goods Release	As the railroads carry dangerous goods, there is always the potential for product release.

The effects from these incidents can require large numbers of fire and EMS resources. In review of the previous figure, several of these incidents could require the response of a Haz-Mat team, Technical Rescue, and EMS. Many times, the complexity of the incidents will require multiple operational periods. Risk analysis and planning for these types of incidents must consider the need for higher than usual personnel, equipment, and Automatic or Mutual Aid resources. When incidents occur at a grade crossing, fire and EMS personnel will have to operate near the tracks. Training in the proper precautions is essential.

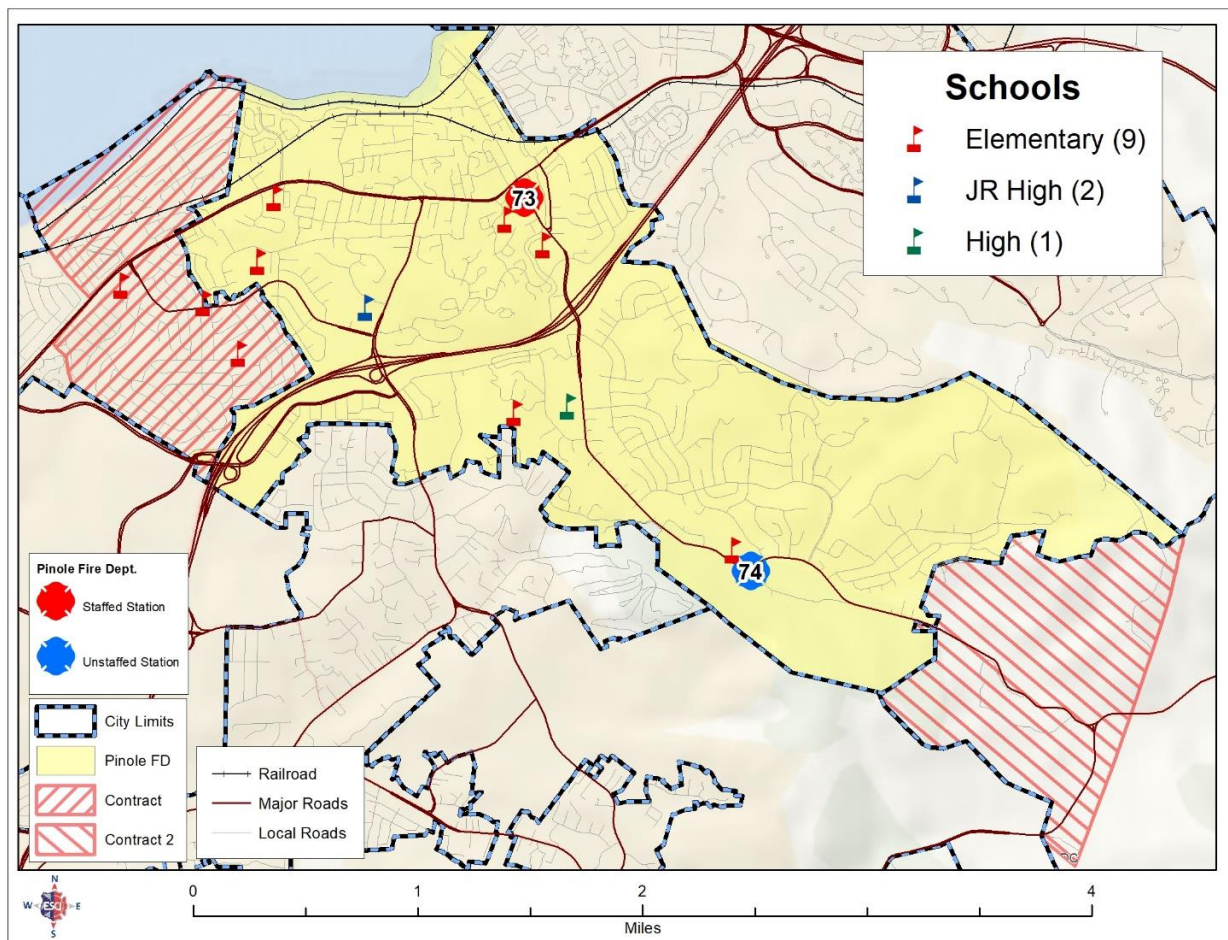
Buildings

Many buildings in the city are used for purposes that create more significant risk than others during an emergency. High occupancy buildings, facilities providing care to vulnerable populations, and others may require greater numbers of emergency response and resources during an emergency.

Numerous buildings lie within the study area in which large numbers of people gather for entertainment, worship, and other similar events. A variety of small businesses and entertainment venues also exist.

Colleges and Schools

The next figure shows the locations of the educational facilities within the study area. These facilities present additional risk, primarily for mass casualty incidents. Fire, criminal mischief, and potentially terrorism could cause a major medical emergency requiring significant emergency service resources.

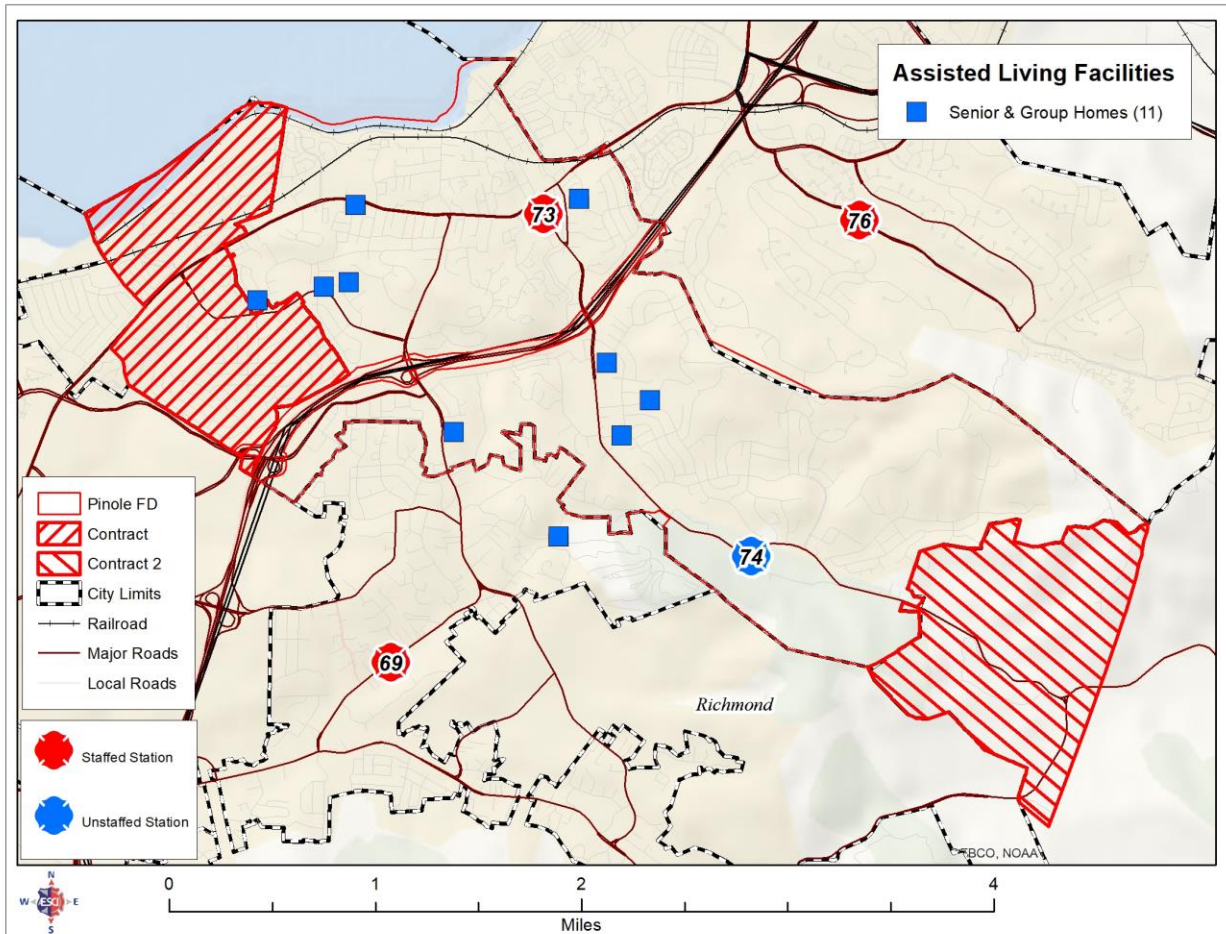
Figure 102: Colleges and Schools in the Study Area

Medical and Congregate Care Facilities

Medical and congregate care facilities, particularly hospitals and nursing homes. Although these facilities have regular fire safety inspections and are generally built of fire resistive construction with built-in fire suppression, emergencies still can occur that require the quick movement of patients away from the hazard. Incidents at these facilities will require high resource levels.

Pinole does not have a hospital, but has 11 assisted living facilities, as the next figure depicts.

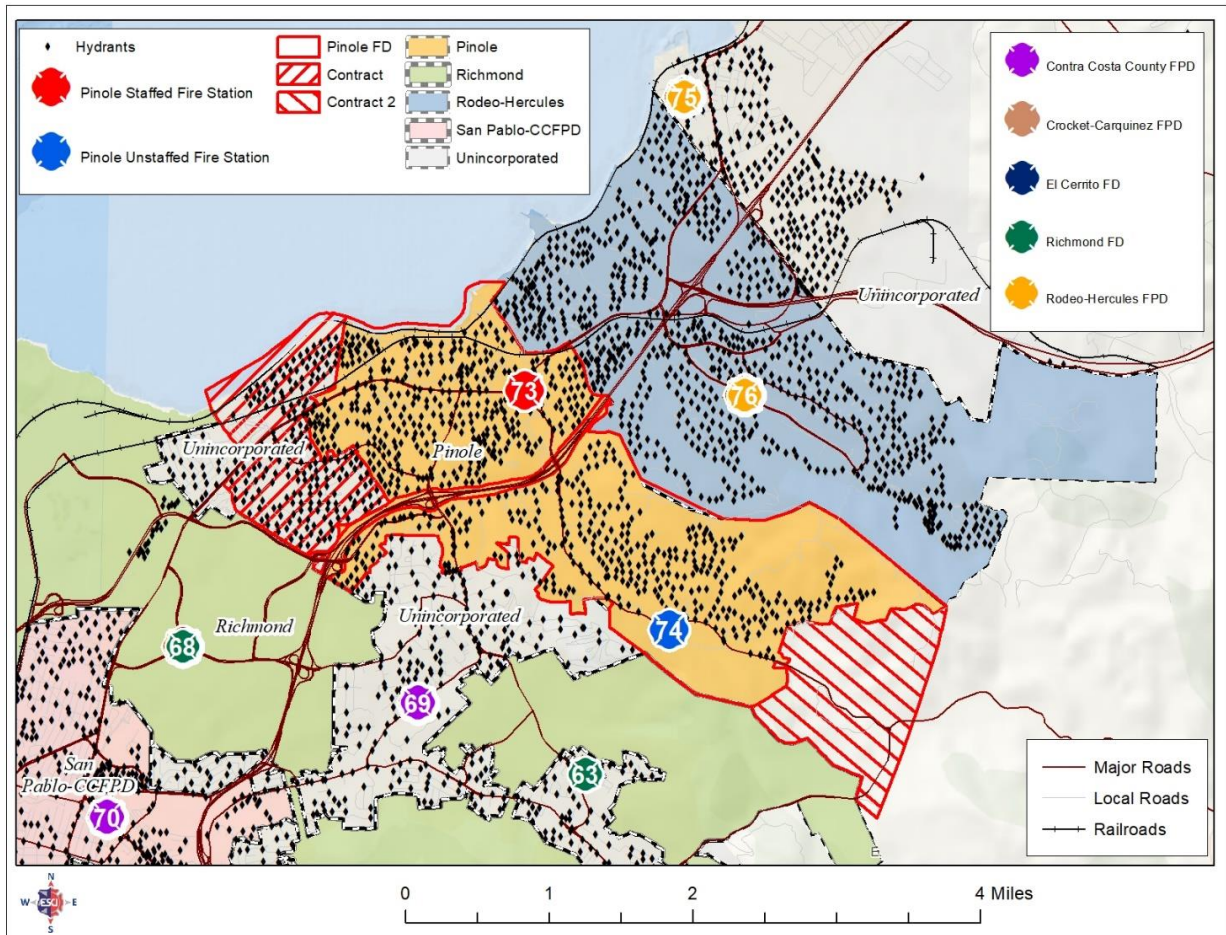
Figure 103: Assisted Living Facilities



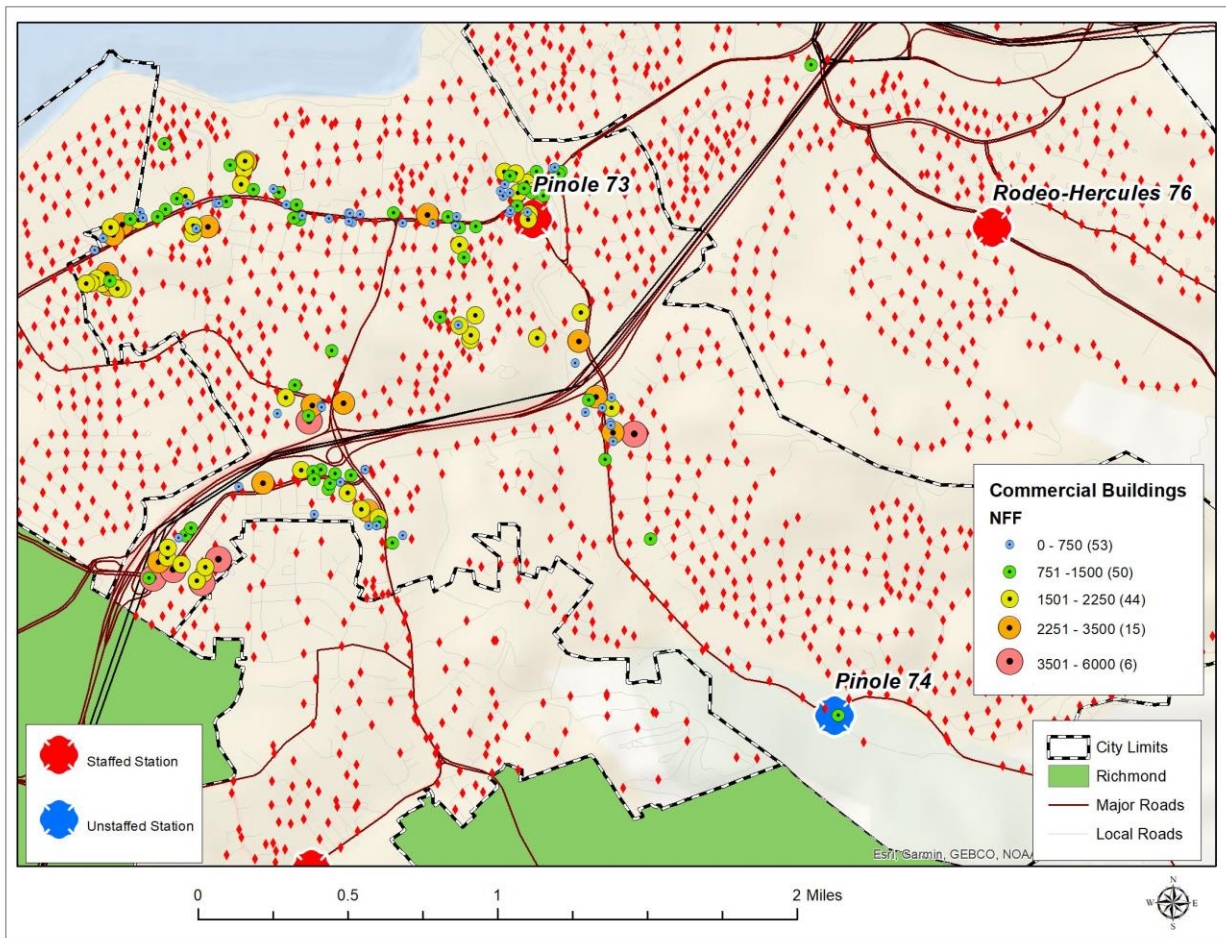
Other Critical Infrastructure

One concern to fire departments is the water and fire hydrant system. Providing enough storage, distribution, and access to this valuable firefighting resource is very important. The next figure illustrates the hydrant system in the study area. As expected, in the more populated urbanized areas, fire hydrants coverage is very good. Some rural areas of the city depend on water delivered by tenders, but generally good hydrant coverage exists throughout the service area. From a risk assessment standpoint, planning consideration must be given to situations when the water system could fail.

Figure 104: Fire Hydrant Distribution in the Study Area



The next figure shows the commercial building and hydrant locations in Pinole. Represented on the map is the Needed Fire Flow (NFF) for each of the commercial buildings. Fire flow is the amount of water that would need to be supplied and pumped from an apparatus to control a building fire. Pinole's fire engine has the ability to pump 1,500 gallons per minute. Many buildings in Pinole could require a much higher fire flow to control an established fire.

Figure 105: Fire Hydrant Distribution, Commercial Building with Needed Fire Flow (NFF)

Emergency communication centers and the associated transmitting and receiving equipment are essential facilities for emergency response. The Contra Costa Regional Fire/EMS Communications Center (CCR FCC) provides call receipt and dispatch service to Pinole Fire Department and many of the neighboring jurisdictions. This center provides for the answering of 911 calls, dispatching of fire and other emergency responders, and important support to the on-scene incident management function. This center is the secondary Public Safety Answering Point (PSAP). All 911 calls made from land lines in the city limits are automatically routed to the City of Pinole Police Department, which is the Public Safety Answering Point (PSAP). Calls from land lines in the unincorporated areas within the City's fire service area are automatically routed to the Contra Costa County Sheriff. Once one of these PSAP's dispatchers determines a call requires fire department response, the call is relayed to CCR FCC.

There are other communication facilities and equipment that are equally important to the community and government operations within the study area. These are the telephone company central offices and the transmission lines of local telephone service providers. Internet service providers, along with wireless cellular communication providers, provide essential communication capabilities for the community as well as emergency personnel through their facilities and equipment. Failures in any of these systems can influence emergency services.

Energy

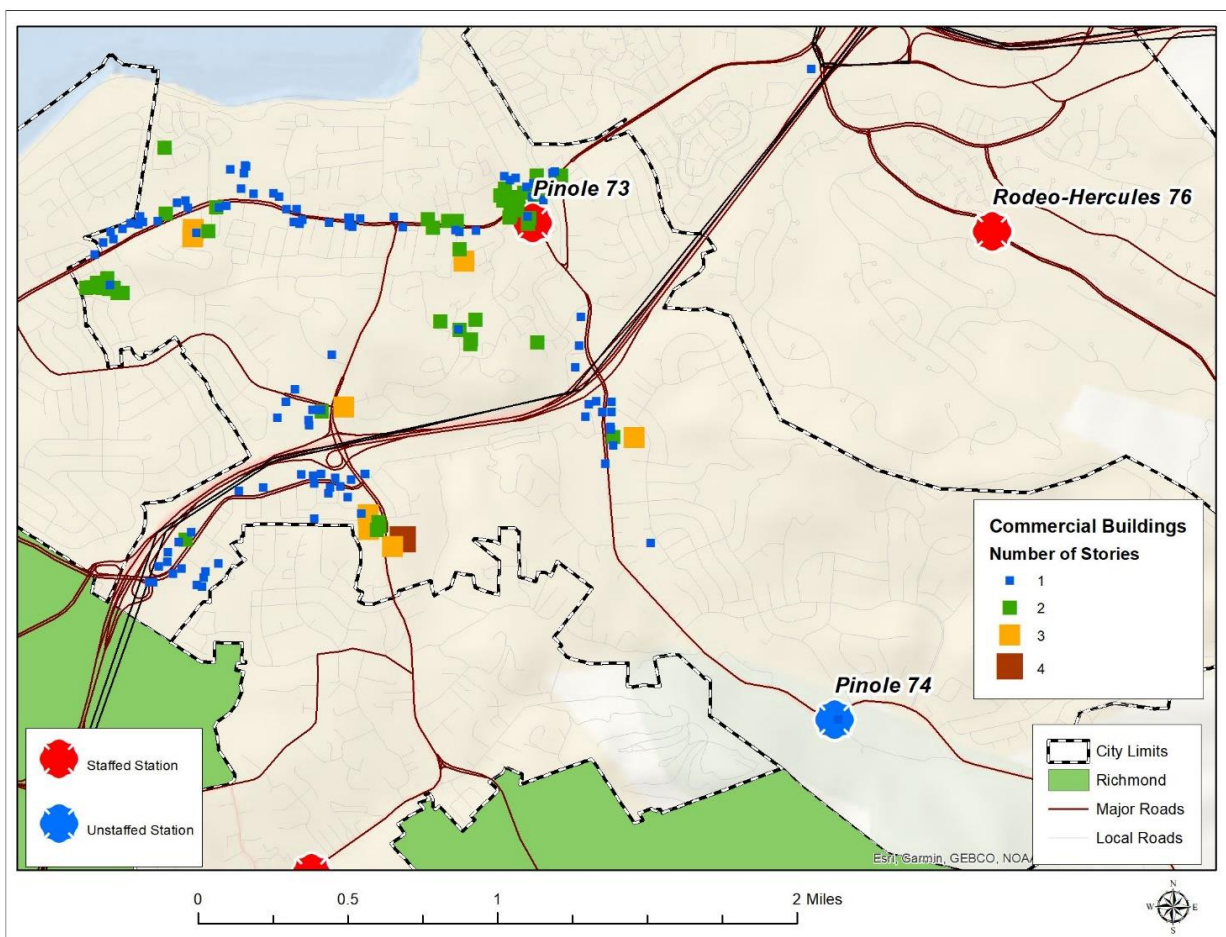
The loss of electrical power is also a risk to the community. Community services, from communications to traffic signals to normal operation of supermarkets, require the use of energy. Whether it is electricity generation and transmission systems, fuel distribution and storage tanks, or natural gas pipelines and regulator stations, the community is dependent upon energy sources. The loss of energy is a planning consideration for response and readiness.

Structural Risks

Certain buildings, contents, functions, and size present a greater firefighting challenge and require special equipment, operations, and training.

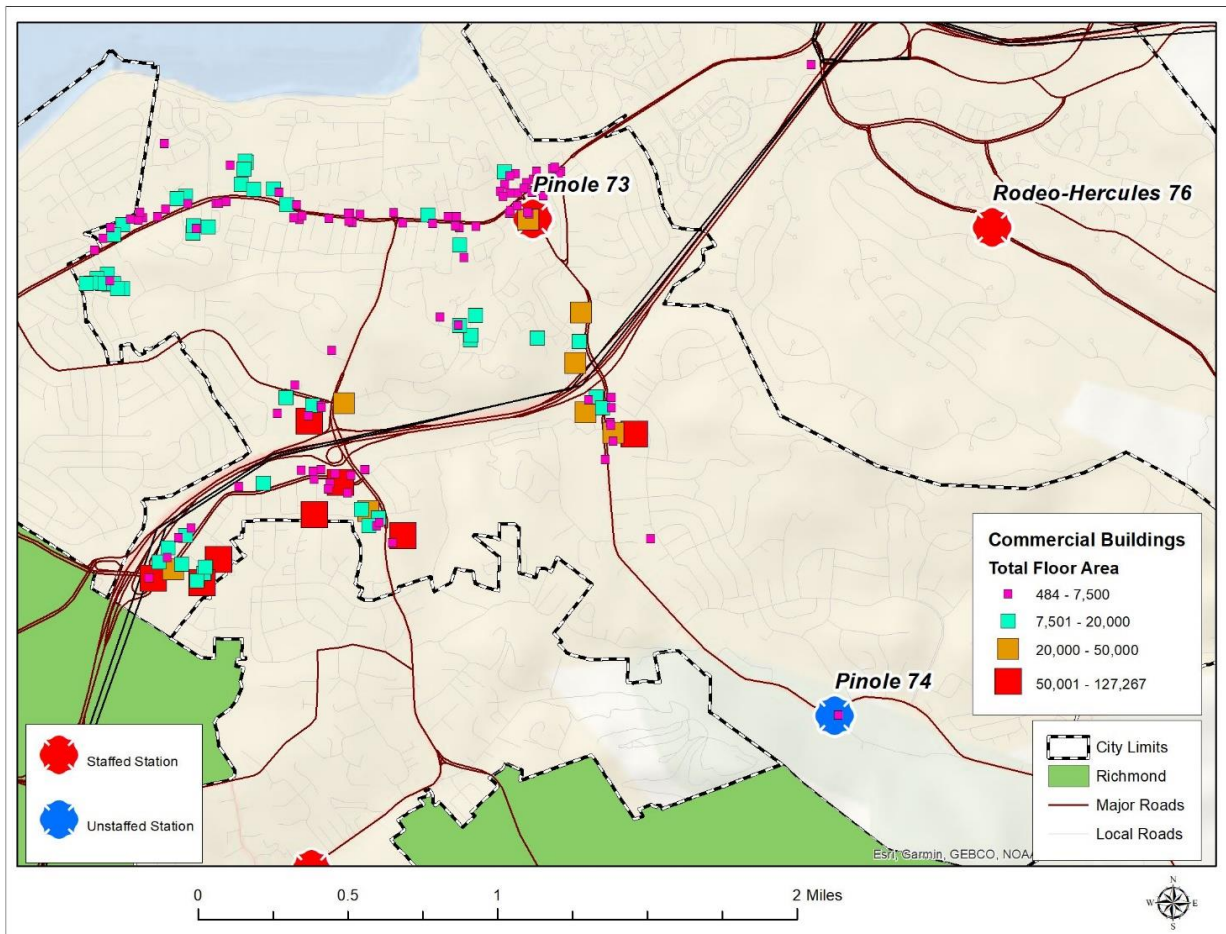
The Insurance Services Office calls for a ladder truck within 2.5 miles of developed areas containing buildings three or more stories in height. Accessing the upper floors and roofs of buildings this tall, typically requires ladder truck capability as ground ladders may not provide access. The next figure documents current commercial facilities and the number of stories each building possesses.

Figure 106: Commercial Buildings, One to Four Stories in Height



Large buildings such as warehouses, malls, and large “box” stores require greater volumes of water for firefighting and require more firefighters to advance hose lines long distances into the building. The following figure demonstrates building locations and their relative total floor space in relationship to Pinole’s Station 73.

Figure 107: Commercial Buildings, Total Floor Area



Terrorism

Pinole is, as is anywhere, a potential target for terrorism. Most of the previous categorized risks in the community are targets for such activity. These include schools, commercial buildings, public infrastructure, and public assembly areas that are located within the study area. In addition, the outdoor public gathering events during the year can also be targets. All fire rescue departments need to be vigilant in their training and preparedness in the event one or more coordinated acts of terror occur in the region, Pinole is no different. Despite the small likelihood of a terrorist attack, training to ensure coordination and unified command with law enforcement partners is critical.

Demographics

Current Population Information

The next figure is a summary of service area and population according the United States Census Bureau.

Figure 108: Study Area Size and Population Estimates

Fire Department/District	2017 Population Estimate	Area in Sq. Miles	Population Density
Pinole City	19,364	5.32	3,455/sq. mi.

An NFPA report has identified the groups that face a higher risk of being injured or killed in a fire as:²⁵

- Children under 5 years of age;
- Older adults over 65 years of age;
- People with disabilities;
- Those with a language barrier; and
- People in low-income communities.

The following figures were created to provide an overview of the demographics related to these identified groups. Select demographics are provided in the following figure to the extent that the data was available.

Figure 109: Select Population Demographics

	Persons under 5 years	Persons under 18 years	Persons 65 years and over	Persons with Disabilities Under the Age of 65	Language other than English Spoken at Home
Pinole ²⁶	3.7%	17.1%	18.8%	9.1%	36.3%

Based on the preceding figure, 18.8 percent of the population is over 65 years of age, and an additional 3.7 percent of the population is under five years of age. This places a total of approximately 22.5 percent of the populations within the age groups that are at highest risk in residential fire incidents and account for some of the highest use of emergency medical services.²⁷ Senior citizens can have difficulty escaping from fire due to physical limitations. Seniors also tend to use emergency medical services more frequently than younger persons. As the population ages, this will create an increase in service demand for emergency medical services. In addition, just over 36 percent of the population may have language barriers that make communication with first responders during an emergency difficult.²⁸

²⁵ National Fire Protection Association, 2007; Urban Fire Safety Project, Emmitsburg, MD; retrieved from <http://www.nfpa.org/public-education/by-topic/people-at-risk/urban-fire-safety/reports-and-presentations>

²⁶ Information retrieved from the United States Census Bureau

²⁷ This is very close to the national average of 21.7 percent

²⁸ The national average is 21.8 percent

As noted, the very young also represent a vulnerable population, both regarding their ability to escape a structure fire as well as their susceptibility to serious medical ailments such as asthma, traumatic events, choking, or injury from vehicular accidents.

The demographics displayed in Figure 110 are factors which indicate that a population is more likely to use fire department services than other populations. Individuals in poverty or with no health insurance are more likely to use local EMS resources compared to individuals with health insurance and a personal physician. A high percentage of owner-occupied homes may indicate a more stable community and residents willing to invest in their community and community services; Pinole with an owner-occupied housing rate of 70 percent is approximately 7 percent higher than the national average.

Figure 110: Other Demographic Comparisons

Subject	Pinole
Persons without health insurance, under age 65 years	4.7%
Owner Occupied Housing Rate, 2012–2016	70.2%
Median household income (in 2017 dollars), 2012–2017	\$84,255
Residents at the poverty level	5.4%

Population Density

Most communities contain areas with different population densities and property risk allowing the community's policy makers to specify different response performance objectives by geographic area. The classifications that are identified by the National Fire Protection Association (NFPA) in Standard 1720 and the percentage of the city in the classification is provided in the following figure.²⁹

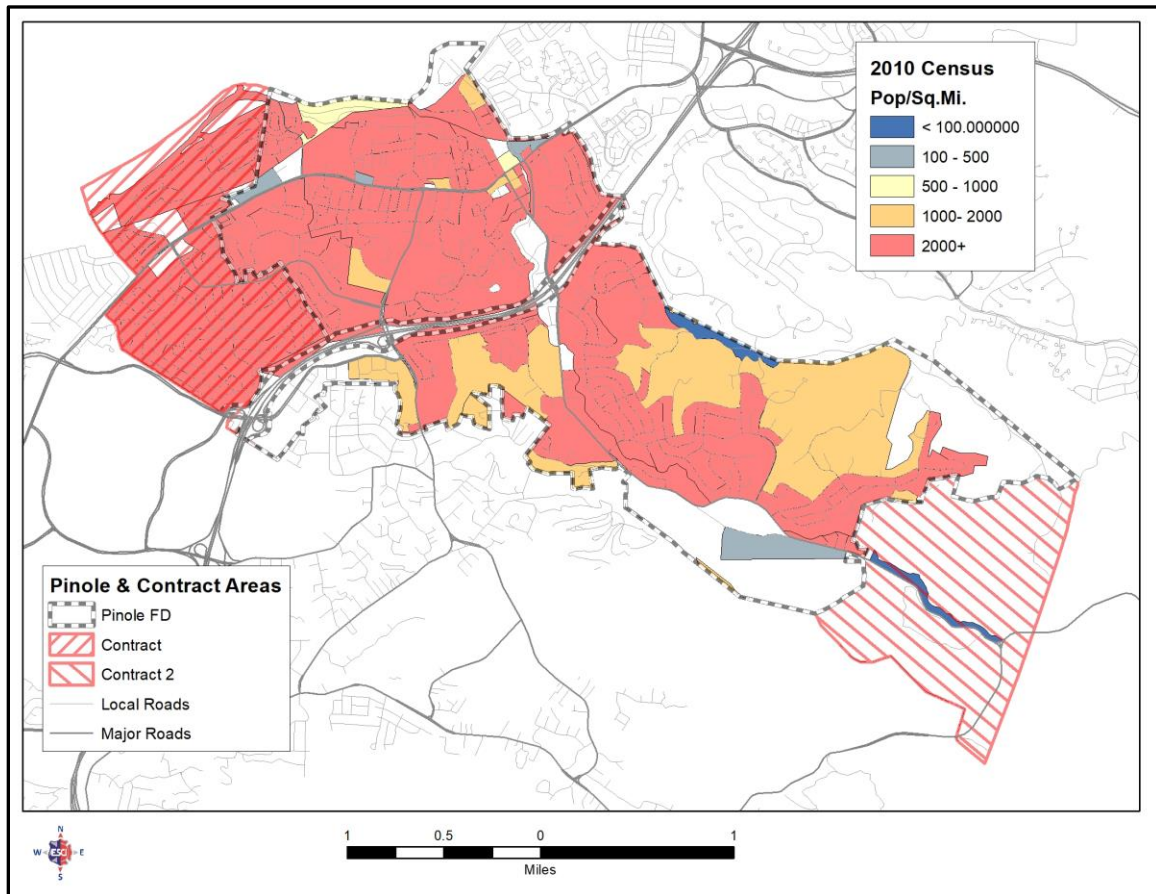
Figure 111: Population Classifications

Classification	Criteria
Urban	> 1,000 people/square mile
Suburban	500–1,000 people/square mile
Rural	< 500 people/square mile
Remote Area	Travel Distance ≥ 8 miles

²⁹ 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 Edition.

The next figure illustrates population density.

Figure 112: Study Area Population Density



Population Growth Projections

The population in Pinole has grown slowly over the last decades. The population in 1980 was 14,253—in 2019, the population has been estimated to have grown to 19,364.³⁰ This is an overall increase of .077 percent per year. Pinole, in 2010 (during the last national census) had a population was 18,390. The 2019 estimated total is 19,364—an increase of just over 5 percent.

With population growth there comes increases in service demand. More people mean not only more incidents generated it also means a need for expanded geographical coverage. Resource additions will need to be planned to provide service delivery and performance at acceptable levels if higher density growth occurs within the service area.

Expansion and growth will not only effect delivery of fire rescue service but also other fire department functions, such as code enforcement and community risk reduction. The department must maintain awareness and be involved in monitoring the relationship between population and demand.

³⁰ Retrieved from <https://www.census.gov/quickfacts/pinolecitycalifornia> and <https://datausa.io/profile/geo/pinole-ca>.

Section II:

PUBLIC WORKSHOP & STAKEHOLDER INPUT

PUBLIC INPUT

During the development of the community expectations portion of the Regional Fire Service Delivery Study Scope of Work, the City made it very clear they desired a number of opportunities for public input. The final scope of work included a Community Fire Study Workshop, several days of stakeholder interviews, and no less than two presentations to the City Council that would be conducted with opportunities for public input. This section of the study reflects the results of the Community Fire Study Workshop and the stakeholder interviews.

On May 29, 2019, at 6 p.m., ESCI facilitated the Community Fire Study Workshop which was attended by approximately 45 people. The format for the workshop was an interactive presentation utilizing Swift Polling on-line platform. This program allowed for a series of questions and input opportunities that could be instantly responded to by the audience with the results displayed in real time. Responses were collected via text message, internet polling website, or paper polling form as displayed in applicable figures that follow as "SMS," "Web," or "Paper Vote." All polls and inputs were captured and are as follows.

In order for ESCI to gauge the community's awareness of, access to, and experience with the services provided by the Pinole Fire Department, four questions were presented:

- What services, emergency, and other, are provided by the Pinole Fire Department?
- How many firefighters are on duty daily in Pinole to provide services?
- Have you received any services, emergency, or other, from the Pinole Fire Department?
- If you received services, how satisfied were you with the service?

Responses to the question regarding services provided by the department are summarized in Figure 113. The participants understood the department's primary mission and the services that are or should be available to fulfill that mission.

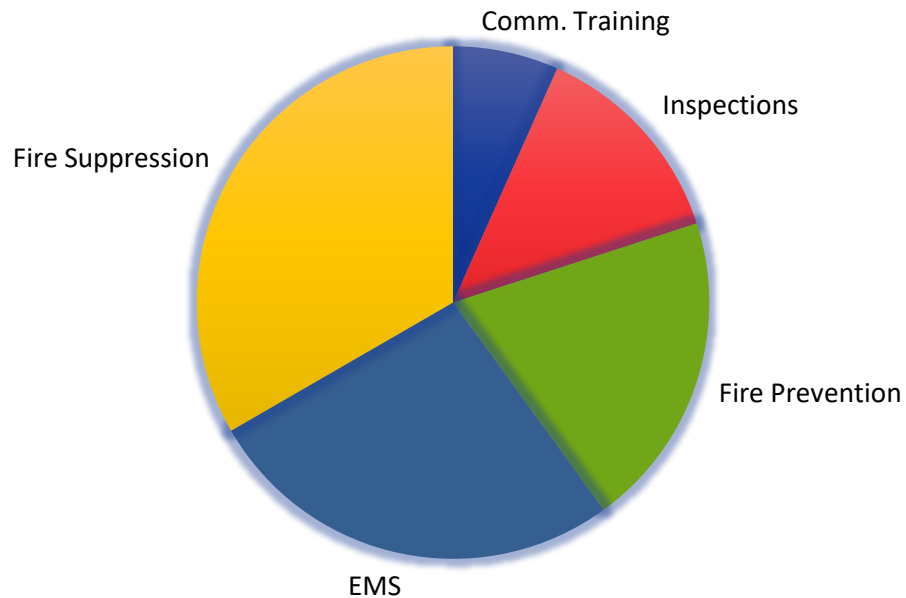
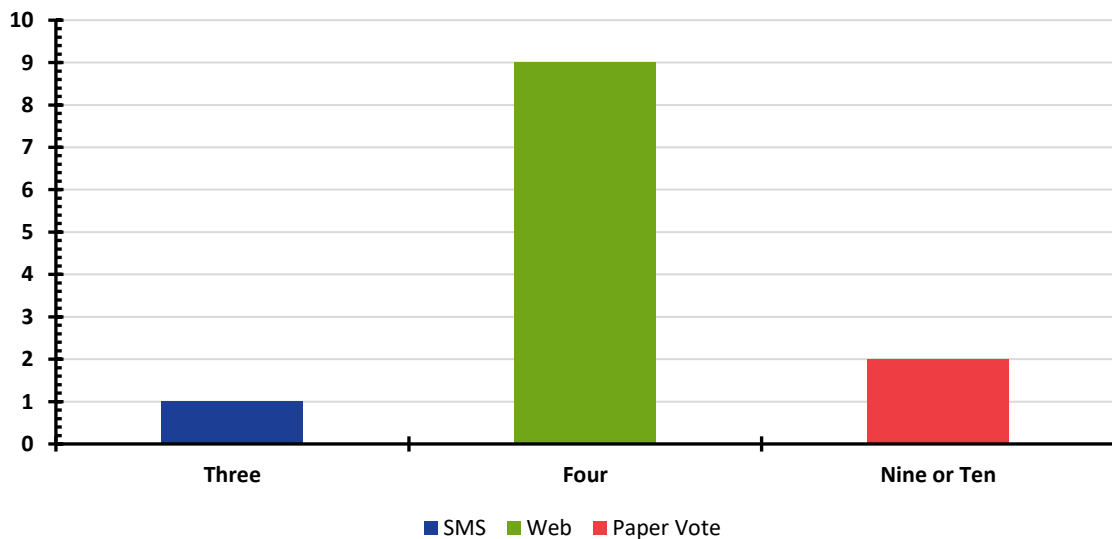
Figure 113: Services Provided by the Pinole Fire Department

Figure 114 indicates that the participants were aware of the department's on-duty force. In addition to daily staffing, the department enjoys effective automatic and mutual aid agreements with surrounding jurisdictions. However, increasing service demands across the spectrum of partnering agencies often leaves Pinole resources stretched thinly.

Figure 114: Number of Firefighters on Duty Daily in Pinole

In the following two figures (Figure 115 and Figure 116), several participants reported having received services from the department, emergency, or other. Of those residents who received services, the majority indicated that they were satisfied with the outcome of those services. This is a very good sign given the minimal resources the department is able to provide at this point in time and is demonstrative of the department's commitment to its service mission.

Figure 115: Have You Received Any Services from PFD?

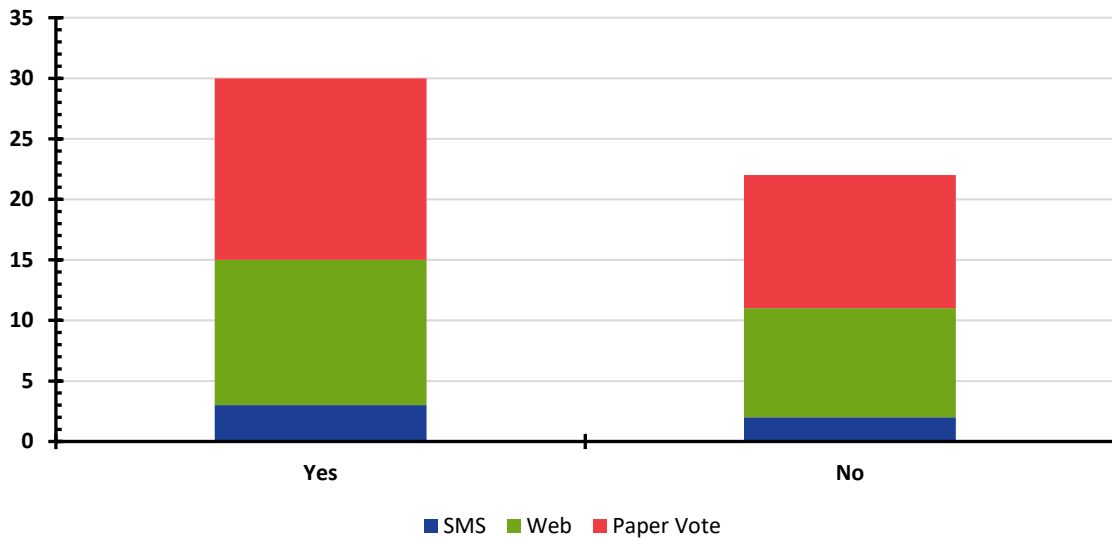
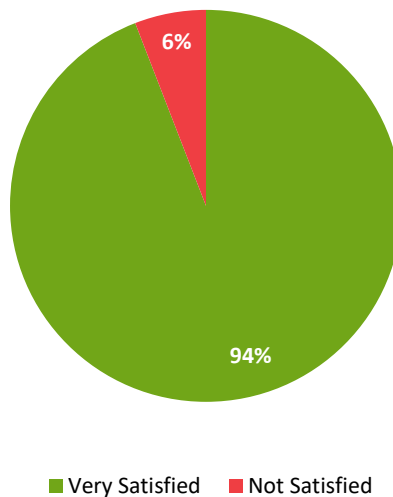


Figure 116: How Satisfied Were You with the Service?



The next set of four questions were designed for ESCI to gain a sense of the community's awareness of the adequacy of the fire protection system in Pinole to meet service demands:

- Is the existing system adequate?
- If not, what is lacking?
- Is the current staffing of the PFD adequate or not?
- How long should it take for resources to arrive from the time that you call?

As displayed in Figure 117, a majority of respondents believe that the existing service delivery system in Pinole is inadequate. Responses to what is lacking regarding the system are summarized in Figure 118

Figure 117: Response to, "Is the Existing System Adequate?"

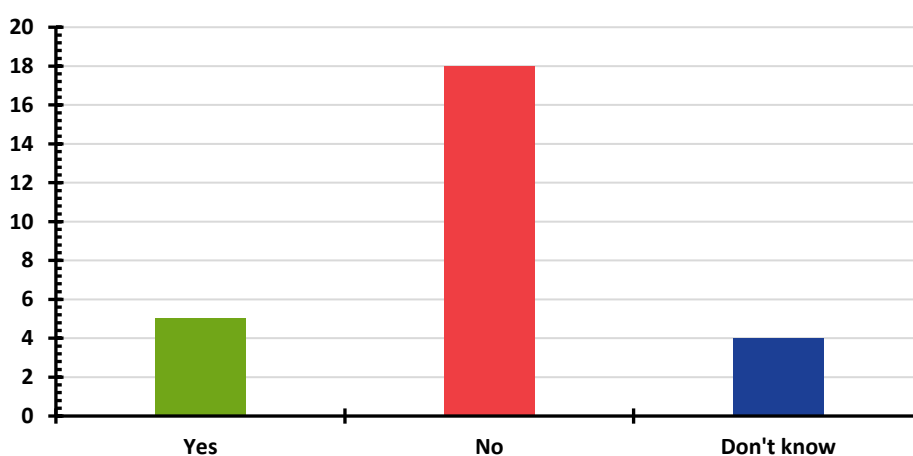
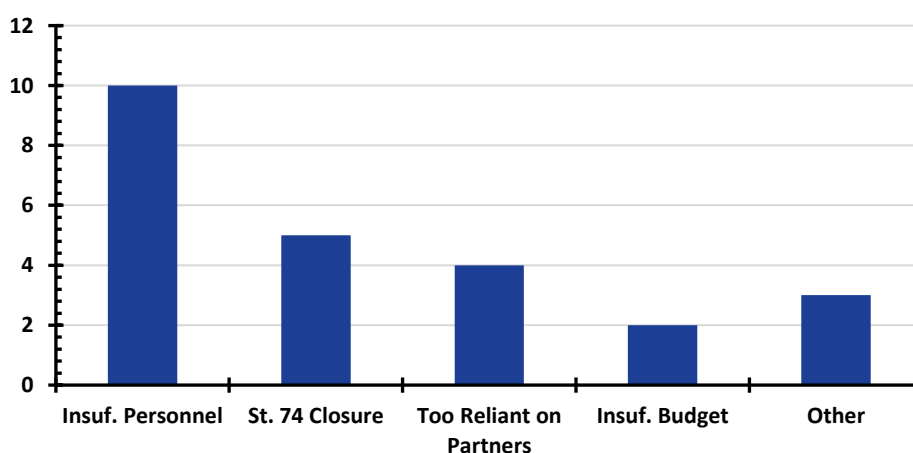


Figure 118: Response to, "What is the Current System Lacking?"



Insufficient personnel and resources were expressed as being the biggest challenges in the current system. Although responses under the category “Other” did not fall under the other four categories, they are important to note here: response time objectives not being met and a lack of preparedness for infrastructure development were noteworthy concerns of some participants.

Responses to current Department staffing in Figure 119 are synonymous with the responses to whether or not the overall existing system is adequate. The respondents believe that their fire department is not adequately staffed at present. This further correlates to the responses in Figure 120 regarding response time expectations. The respondents had a realistic view of how long it should take for resources to arrive when they call, given current staffing of the PFD and automatic/mutual aid agreements.

Figure 119: Response to, “Is Current PFD Staffing Adequate?”

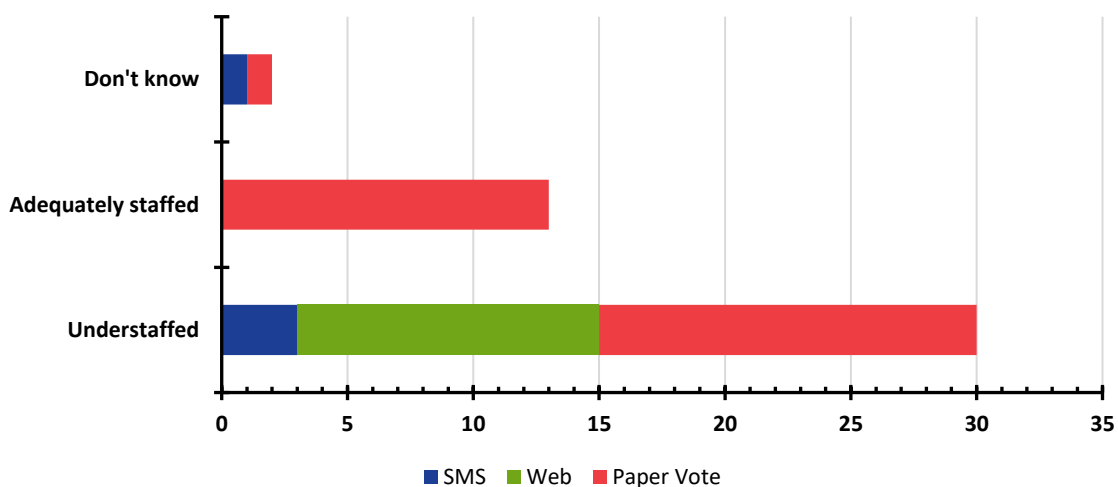
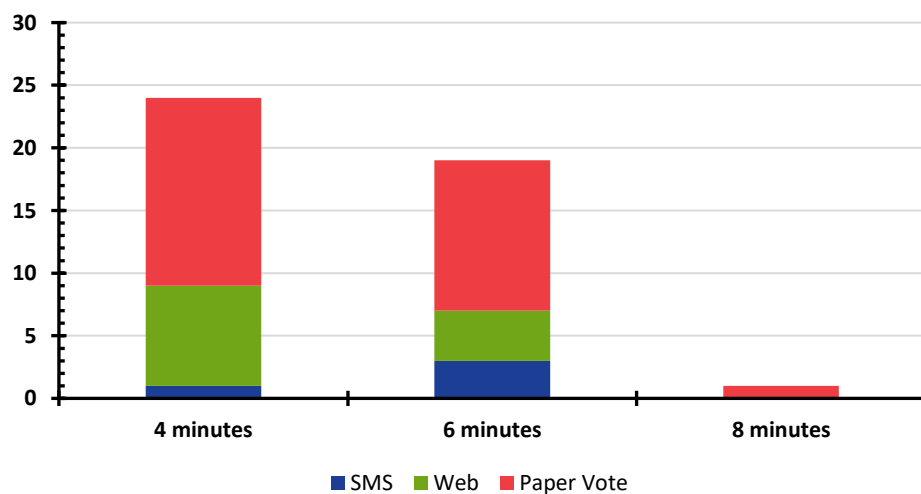


Figure 120: Response to, “How Long Should It Take a Fire Engine to Arrive?”



The final six questions presented were designed to determine the community's awareness and understanding of prospective partnering options, the desirability of those options, and positive or negative impacts that may arise with each option:

- How important is it that the City of Pinole have its own fire department?
- Would there be advantages in contracting with Contra Costa County FPD for fire-based services?
- Would there be advantages in the Rodeo-Hercules FPD annexing the city area to provide fire-based services?
- What advantages would there be in partnering with either agency for services?
- What disadvantages would there be in partnering with either agency for services?
- Would you support a parcel tax measure if the revenue it generated improved services and financial stability either as a sole agency or in a partnering option?

Figure 121: Response to, "How Important is it to the City of Pinole To Have Its Own Fire Department?"

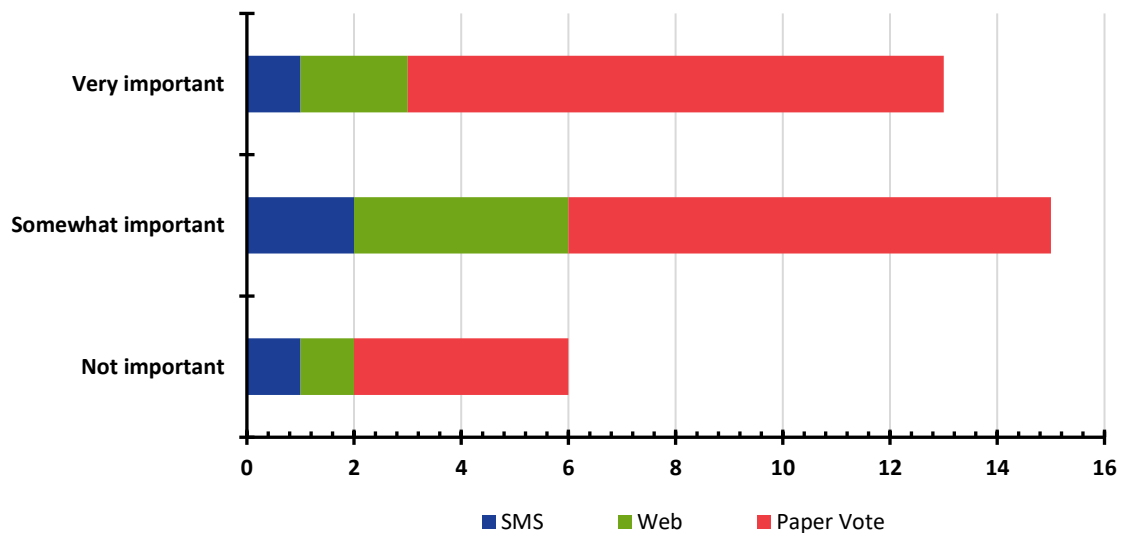


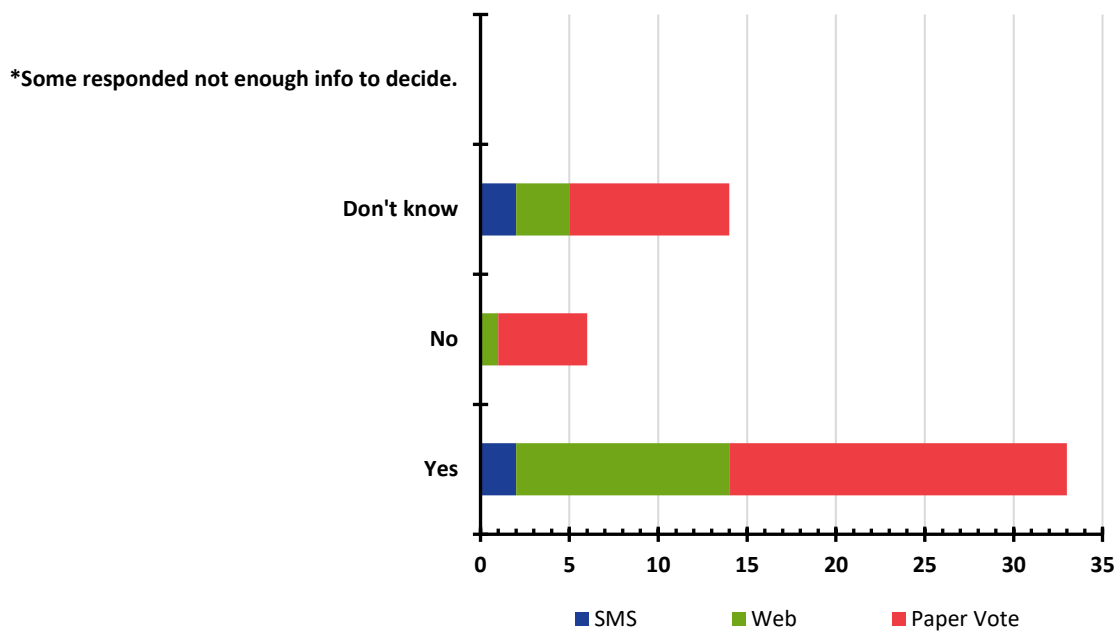
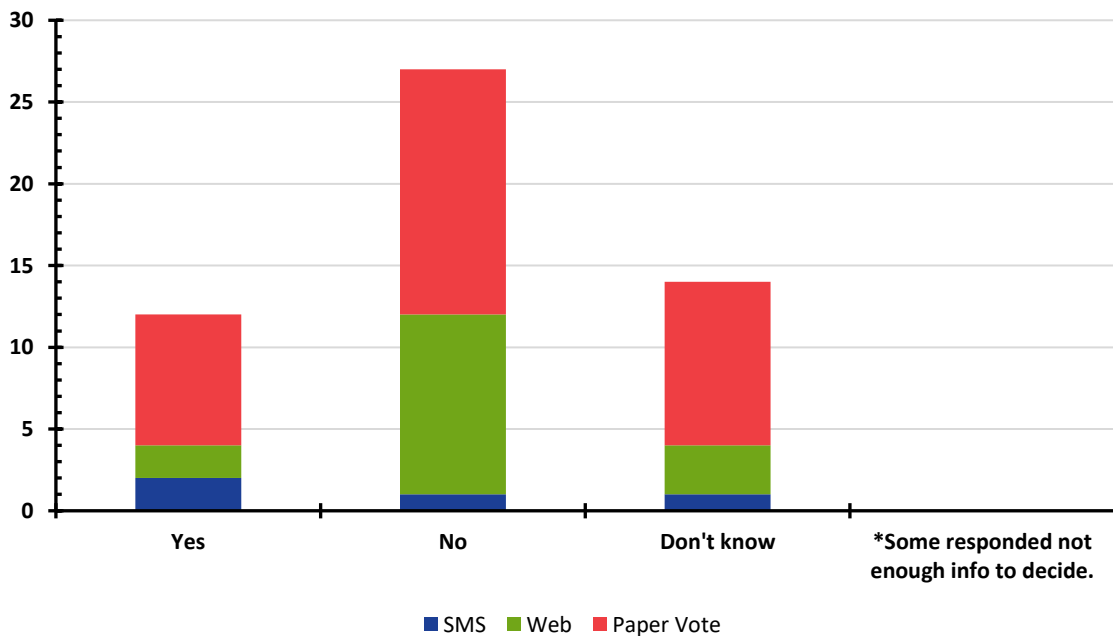
Figure 122: Response to, “Are There Advantages with Contracting With CCCFD?”**Figure 123: Response to, “Are There Advantages in Rodeo-Hercules Annexing the Pinole Area into the RH Fire Protection District?”**

Figure 124: Response to, “What Advantages Would There Be in Partnering with Either Agency for Services?”

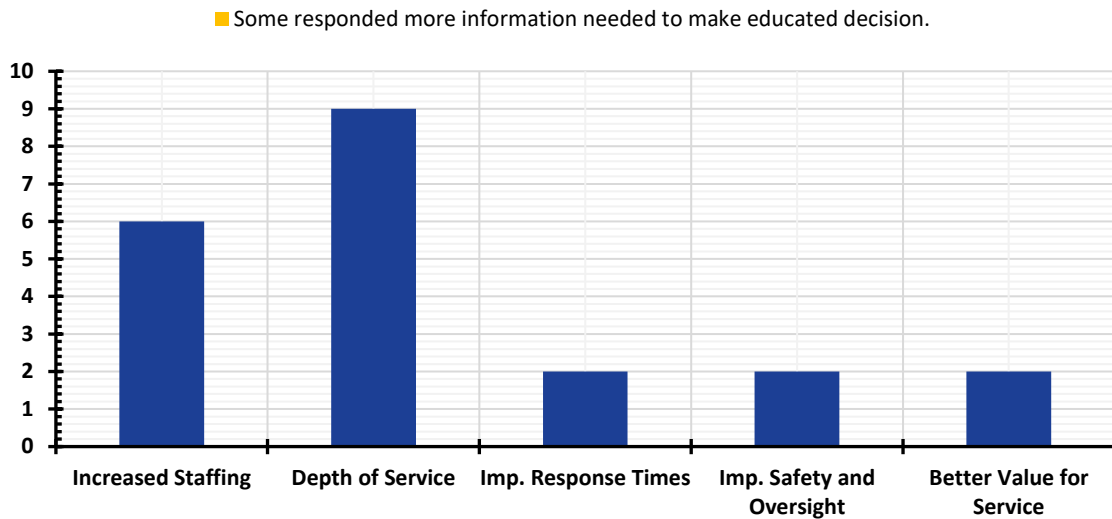
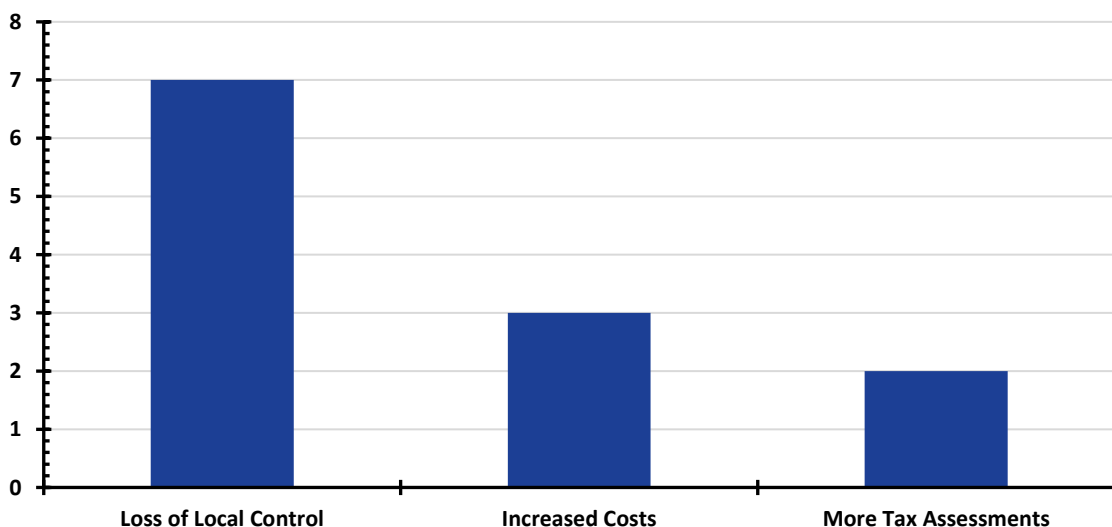
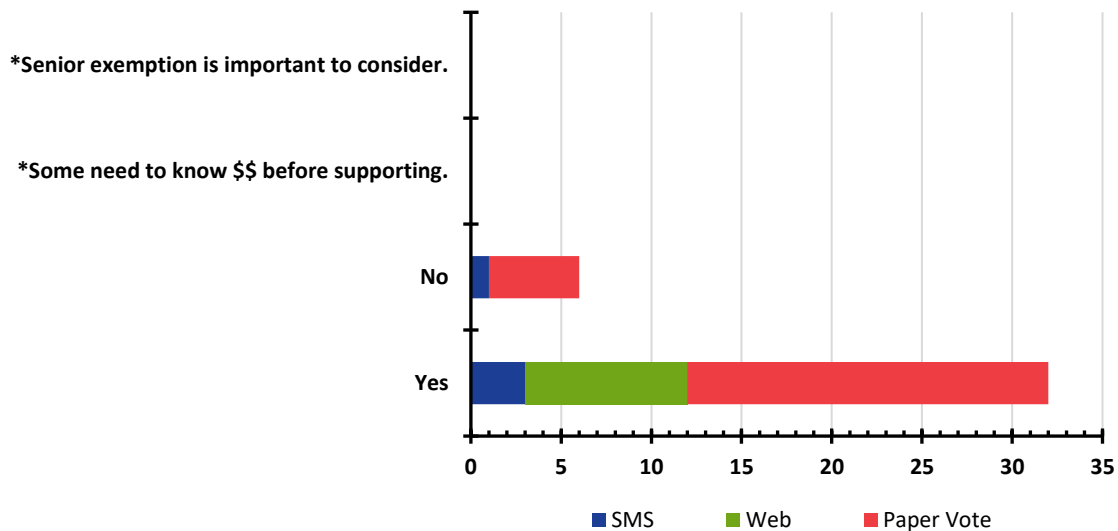


Figure 125: Response to, “What Disadvantages Would There be in Partnering with Either Agency for Services?”



The participants recognized that there are advantages to partnering with one of the surrounding agencies because of the increased staffing and resource depth it would bring. However, several residents expressed that it is important for Pinole to have its own fire department irrespective of whether a partnering option is pursued. Several residents clearly articulated that it is very important that Station 74 be re-opened and staffed full-time. Also expressed was a need for more information regarding partnering options so that the community can make the best-informed decision for service delivery going forward. Increased costs and loss of local control are primary concerns with agency partnering.

Figure 126: Response to, “Would You Support a Parcel Tax Measure if the Revenue it Generated Improved Services and Financial Stability Either as a Sole Agency or in a Partnering Option?”



Support for a parcel tax measure exists among the participants as indicated in Figure 126. However, consideration of a senior citizen exemption and some idea of a dollar amount per resident are important factors for residents in their deciding whether to support a tax measure.

The second phase of soliciting opinions and expectations about the Pinole Fire Department and the services it delivers were gathered by direct interviews of stakeholders. Eighteen stakeholders were scheduled for interviews that were completed over a two-day period. Of the 18 interviewees, these stakeholders represented the City Council, City Administration, Community Members, Business Community, PFD Labor, Administrative Staff Members, Chief Officers, and surrounding Fire Chiefs.

It is important to note that the information solicited and provided during this process was provided in the form of “individual inputs,” some of which are perceptions as reported by stakeholders. All information was accepted at face value without an in-depth investigation of its origination or reliability. The project team reviewed the information for consistency and frequency of comment to identify specific patterns and/or trends. The stakeholder responses are summarized next.

Elected Officials, Business Community, & Citizens

Are you aware of why we are here and the purpose of this project?

- The majority of those interviewed were aware of why ESCI’s representatives were present.
- Several of those interviewed stated that issues such as the closure of Station 74 and the on-going discussion of merging/consolidating/contracting, etc., with a neighboring fire department or district has been going on for several years.
- Others interviewed indicated that the purpose is to find out where the needs are and where to go from there.
- For those individuals who were not aware of the “why” and “purpose” an update was provided.

In your opinion, what are the advantages/positives/strengths of the existing emergency service delivery system?

- The City Fire Department is providing a service and doing it well.
- Benefits were different between the bargaining groups; now, they are the same which has created harmony amongst the employees.
- The fire department has been serving the City for a long time; and people like the idea of having their own full-service fire department; one station staffed with three firefighters.
- Quick and efficient response by the fire department; impressed with the fire department.
- Responding firefighters are competent, and we have local control.
- Motivated, committed, responsive, well trained, and organized.

What are the disadvantages/negatives/weaknesses of the existing system?

- Understaffed due to disabilities, budgeting for equipment, and excessive repairs.
- Relationship between the fire department and the City could be improved.
- Closure of Station 74, due to the City having zero reserve(s) when the recession occurred in December of 2007. Financial recovery for the City has been slow resulting in not having enough funding to reopen Station 74.
- Adversarial situation due to personnel now paying for a portion of the employer's contribution to the Public Employees Retirement System.
- Strained relationship between elected officials and the fire department.
- Assuming there are services that are not currently provided.
- Pinole Fire Department is understaffed, lacks resources, equipment, and money.
- There are potential disadvantages when reflecting on the wildland fires in California last year and the close proximity of homes, schools, etc., to hills and undeveloped land within the City.
- Strong leadership, need to increase training, develop succession planning, implement performance evaluations.

Does the existing system provide the residents and community with acceptable protection?

- No, due to traffic congestion during commute hours.
- There is a perception that there is a negative impact on surrounding agencies due to Pinole Fire Department having only one fire station.
- Three firefighters is not very many; need to bring in other firefighters from neighboring agencies.
- Yes, the existing system provides acceptable protection.
- No, if the Engine has a mechanical issue; response time is negatively affected and is not an adequate response due to having to depend on our neighboring fire agencies.
- Not sure and want to have resources to respond appropriately to any requests for fire services.

How important do you think it is for the City to have its own fire department?

- The fire department is providing services now.
- Recognizes that there are efficiencies with everyone under the same roof.
- Very important.
- There appears to be a struggle now due to the need for additional resources.
- It is not that important; Stations 73 and 74 are in Pinole; who controls it does not really matter.
- If having our own fire department enables the fire department enhanced ability to respond to emergencies, then it is very important.

Do you believe there would be advantages to the City and level of service if the City were to contract with Contra Costa County FPD or have Rodeo-Hercules annex the area for the provision of fire-based services?

- Yes. Preference is partnering with Rodeo-Hercules Fire Protection District rather than Contra Costa County Fire Protection District.
- Yes, with the assumption that there are services that are not currently provided.
- There definitely would be an advantage.
- Yes, there would be additional training and resources as well as access to services Pinole does not have but the other agencies do.
- Would want this to go to the voters.
- It could be detrimental if the department could not provide—at a minimum—the current level of service.

Do you believe the community would support a parcel tax if the additional funding would improve operations and enhance the financial stability of the department either as a standalone or to fund one of the options mentioned?

- It depends on the dynamics; fixed income recipients are less likely to support an increase in taxes.
- There are competing priorities due to existing conditions of our roadways; should they be addressed at the same time?
- If they understood what improvements were and what the costs are to them; then yes.
- Folks who have wanted the improvements for a while will support it.
- Yes however; the funds must be allocated specifically for fire service(s).
- The interviewee believes the community will support a parcel tax.
- Possibly; cannot say yes or no. Some communities will support it and other will not.

In the event the City were to contract with Contra Costa County FPD or have Rodeo-Hercules annex the area for the provision of fire-based services, what is the one issue that—if not addressed properly—would be a deal breaker.

- Financial/cost.
- Identify how services that are provided now will improve and identify the cost.
- Must be able to prove that response times will improve.
- If there is presence in the City.
- Amount of safety personnel provided to the area.
- Taking the time, obtaining appropriate information, making sure that all the agencies coming together are on the same page.

Who do you think would be opposed to the change?

- No—not an organized group.
- There are citizens out there that take pride in having their own fire department.
- Those who do not understand the advantages.
- None; hold on to Pinole's identity.
- People who cannot afford it.
- Those who live in Pinole and only are familiar with Station 73.
- Possibly those who believe they will be stimulating the economy; not supporting the fire department.
- Those who opposed the construction of Station 74.
- Those who oppose spending funds from the City's General Fund.
- Employees affected by combining agencies into one.

Is there anything you would like to add that we have not discussed?

- Hoping for a viable solution that is within the City's financial means.
- What does it take to provide services? A cross section of input is what is anticipated as a result of the current "report."
- Possibly the "study" will put this issue to bed so they can move forward.
- The Pinole Fire Department has always been "spot on."
- 10 years ago, it was appropriate to close Station 74; it should go to a ballot question.
- Residents in this town want more fire coverage; this report is offering the benchmark. What happens when the benchmark is met?
- It is important to come up with a viable solution that the City can afford. If community supports staffing #74—let's do it with a parcel tax. We have options.

Chief Officers, Labor Leaders, & Firefighters Representatives***What are some areas in which you think the department could make improvements?***

- Infrastructure
- Improve labor relations with the City Council
- Administrative support
- Succession Planning
- Leadership stability; in the past 9 years, Pinole Fire Department has had 13 Fire Chiefs
- Battalion Chief training
- Consistent training for all safety personnel
- Open Station 74
- Policies are lacking in various yet needed areas
- Lack of a formal hiring process; at this point in time, there has been no consistency.

What do you see as the top critical issues faced by the City fire department today?

- Lack of supervision on A and C shifts
- Staffing
- Policies; there are none
- Adequate Administration—a good service model
- Morale
- Communication

What opportunities, in your view, are available to improve the service and capabilities?

- Collaboration with others
- On-line training
- Policy Development
- Contra Costa Fire Protection District
- Opportunities prevail with a reorganization

What challenges do you see to the change?

- The will of the Fire Chiefs and Elected Officials
- Going to the Union first before going to the Fire Chief
- Finances
- Public perception(s)
- Collectively reviewing the existing Budget in detail
- Local control

What drawbacks do you see to the City contracting with Contra Costa County FPD or have Rodeo-Hercules annex the area for the provision of fire-based services?

- Price of contracting with Contra Costa Fire Protection District
- Cultural differences between the three entities
- Concerned that Rodeo-Hercules Fire financial status and would not add any depth to existing services currently provided
- Health insurance and retirement benefits differ between agencies

What are the critical issues that you believe will need to be addressed prior to moving forward?

- Feasibility
- Viability
- Identify improvements
- How functioning as one will benefit the safety of personnel
- Retirement (PERS vs County Retirement)
- The type of method that will bring us together, i.e., consolidation/annexation/merger/administrative 5-year agreement

Who or what groups do you believe would oppose the change?

- Some City Council members
- Public opposition

Is there anything that you would like to add that we have not discussed?

- Battalion 7 service model should have a temporary fix; there are multiple safety issues.
- Bringing these three agencies together.
- Trying to train together.
- Salary differences
- Open to hearing the options; Pinole Fire has a stressed response number, no training, etc.

Surrounding Area Fire Chiefs***What are some areas in which you think the department (Pinole) could make improvements?***

- Pinole Fire is a “taker” due to having one fire station and the need to depend on neighboring agencies.
- Open and staff Station 74.
- Increase staffing levels.
- If Pinole cannot stand alone, opportunities exist operationally when working as the same agency.
- The Battalion 7 agreement is being redesigned; however, it is not as good as being one agency.

What opportunities, in your view, are available to improve the service and capabilities within the region?

- Increase the staffing levels and validate why the levels should be increased; i.e., one or two more firefighters per shift.
- Opportunities exist operationally when working as the same agency.

What in your opinion are the top critical issues you believe Pinole Fire is facing over the next 5 years?

- Aging fleet.
- A station in the wrong location based on the population density at the waterfront.
- The constant struggle with funding.
- Expansion of services.
- Having the capability to sustain what they have developed into the future; Pinole Fire has not been able to re-gain staffing levels prior to the Recession.

What are the critical issues that you believe will need to be addressed in the Battalion 7 area in the next 5 years?

- Personnel safety
- Capacity
- Common communications
- Ensuring that each cooperating partner lives up to what they have agreed to

How would you propose to address the coverage challenges in the area around the closed Station 74?

- It is important to review existing numbers, i.e., requests for services/assistance from surrounding agencies, etc.—if the numbers aren't working today how will they work in the future?
- There exists a concern that if Rodeo-Hercules annexes the Pinole Fire Department's response area, how will Rodeo-Hercules Fire be able to maintain an acceptable level of service and staff Station(s) 73 and 74?

In your opinion does the area in and around Pinole need a staffed truck company to compliment the required effective response force?

- If there is an effective training plan, the will of the Firefighters to train, etc., then staff the truck.
- Most likely would not staff it as the Truck Company response responsibilities are contained within the Battalion 7 Agreement.
- Currently, Rodeo-Hercules' Truck Company is the only Truck Company in the area and; is currently first-out for Rodeo-Hercules Fire.

What other information would you like to add?

- This is the third request for a proposal from the City of Pinole.
- Pinole needs to do something; the current situation is not sustainable.
- The City of Pinole has placed "Fire" in the background.

Section III:

OPTIONS FOR SHARED SERVICES

SHARED SERVICES OPTIONS

The following discussion identifies and explains multiple approaches that may be accessed in the State of California for sharing services or partnering in the delivery of services with neighboring agencies.

It is ESCI's understanding based on data review, on-site interviews, and stakeholder input, that since 1971, discussions, studies and proposals, to annex, merge, and/or contract for services between one or more neighboring agencies, have taken place. To date, none of these options have had the administrative, operational, political, or community support necessary to pursue any of the options. While other fire service delivery models are reviewed in this report, an overview of available delivery systems are included to ensure a basic understanding of available partnering strategies.

To adequately discuss the partnering continuum, the terminology and statutory provisions that are available to decision makers must be understood. The following partner strategies, while not necessarily described by statute, differentiate between various approaches to partnering:

Status Quo

This option continues the current status of PFD without change. PFD continues to do business as they are today. There is no change to governance, staffing, or deployment of resources beyond the level of that is already in place. The current collaborative practices, through the existing cooperative service arrangements and agreements, would remain in effect.

Advanced Auto Aid Systems

When two or more agencies participate in a full boundary drop approach to dispatching the closest resource first regardless of jurisdiction. This process can be greatly enhanced with the utilization of automatic vehicle location technology.

This approach is already in place between PFD, RHFPD, and CCFPD and is memorialized via the "Battalion 7 Agreement."

Functional Consolidation

When two or more agencies enter a collaborative relationship, typically through a contract for service, no permanent organizational commitment is made, and all decision-making power remains with each individual organization. Interagency collaboration can take many forms and may include shared administrative and support functions, combined operational practices, participation of fire agencies in activities such as local fire management bodies (such as fire defense boards), mutual aid agreements, and interagency disaster planning exercises. It can also provide for complete service delivery as an integrated/consolidated fire agency from one local agency to another.

One form of functional consolidation is through Contract for Service or Intergovernmental Agreement (IGA), described in greater detail as follows.

Contract for Service—Intergovernmental Agreement (IGA)³¹

In the State of California, authorization for an intergovernmental agreement (contract for service) for the provision of fire services between agencies as provided for by California Statute and Government Code (CGC) Section 55613-55614, and the California Public Contracting Code (CPCC) Section 20811 are commonly referred to as a "Contract for Service."

The California Government Code and Public Contracting Code is written with the intent of being liberally construed relating to contracting for public safety services by cities and fire districts, and states, in part, that:

CPCC 20811. When a district board determines that it is in the public interest, a district may contract with any other public agency for fire protection services, rescue services, emergency medical services, hazardous material emergency response services, ambulance services, and any other emergency services for the protection of lives and property.

This permissive statute allows for a local agency, which includes cities and districts to enter into a written agreement with any other unit or units of a local agency for the performance of any or all fire services and activities that a party to the agreement, its officers or agencies, have authority to perform. The agreement may provide for the performance of a function or activity:

- (1) By a consolidated and fully integrated department;
- (2) By jointly providing for administrative officers and services;
- (3) By means of facilities or equipment jointly constructed, owned, leased, or operated;
- (4) By services and/or functions provided by one of the parties for any other party;

Collaborative approaches under the CGC can include shared or contracted programmatic services, often referred to as *functional unification* or *functional consolidation*. Approaches may include shared administrative service, training programs, fire prevention outreach, or numerous other functional collaborative strategies. This approach can also include a fully integrated/consolidated fire district with services contracted to another local agency.

California law, regulations, and policy directives declares intergovernmental cooperation as a matter of statewide concern and grants special districts broad power to contract with other governmental entities for any function or activity the agencies have authority to perform.

An example of an IGA is the May 29th Fire Services Contract proposal from Contra Costa Fire Protection District to the City of Pinole (Appendix A).

Operational Consolidation

Operational consolidation occurs when two or more separate departments join operationally or administratively to form one organization. The entities remain largely separate; however, they deliver service as if they were one agency.

³¹ California Government Code and California Public Contracting Code, Sections 55513–55614, 55631, 55632, 20811.

Joint Powers Authority

(CGC Section 6500, et seq.)

Joint powers are exercised when the public officials of two or more agencies agree to create another legal entity or establish a joint approach to work on a common problem, fund a project, or act as a representative body for a specific activity.

Before 2016, LAFCOs did not have authority over contracts between government agencies such as Joint Powers Agreements/Agencies (JPA). However, changes in the law require cities and districts to apply to LAFCO for approval of a JPA in certain circumstances.

Many of the changes in the laws governing LAFCO are in response to confusion among citizens regarding who and how their local government services are provided. Also, constituents are requesting increased transparency in government. LAFCOs are expected to provide resources to sort out government service providers, as well as assist in the coordination and long-range planning of those services. LAFCO's role has expanded from oversight of boundary changes to conducting studies that analyze the efficient and economical provision of local government services.

Legal Unification

The concept of legal unification means combining two or more existing organizations into a single, unified, agency. Doing so includes all aspects of the organization's policies, administration, governance, financing, functions, and operations. Legal integration of fire services in California can be achieved in a number of ways, the most common forms for fire districts are: district formation, consolidation, reorganization, annexation, or formation of a Joint Powers Agency. District formation, consolidation, reorganization, and annexation are changes of organization which require approval by LAFCO. In some cases, the formation or expansion of a JPA also requires LAFCO approval.

Section IV: OPTIONS FOR DELIVERY OF FIRE-BASED SERVICES

OPTIONS

Per the Regional Fire Service Delivery Study Scope of Work, ESCI was to research possible options for providing fire protection to the community. The alternatives available to accomplish providing these services were limited due to the lack of availability of agencies with capacity and capability in general proximity to Pinole.

Option A: Rodeo-Hercules Fire Protection District

During preliminary discussions with the City of Pinole and the Chief of the Rodeo-Hercules Fire Protection District (RHFPD), ESCI was led to believe that the District was interested in offering a proposal to provide fire protection services under contract to territory within the City of Pinole or annex the area within the City limits into the District so it would receive services comparable to other territory within the District.

Several weeks into developing the baseline analysis of options, the RHFPD Fire Chief transmitted a note via email that RHFPD would not be interested in submitting proposals until such time as the study is completed. Prior to receiving the communication from RHFPD, ESCI had initiated a preliminary analysis of the District's organizational structure and financial condition based on information available via the internet.

RHFPD is similar in operational make up to PFD with the exception being RHFPD operates two staffed stations versus PFD's one. RHFPD, like PFD, has minimal administrative staff to carry out critical administrative tasks. In the event RHFPD were to submit any proposal to provide service, the proposal should include a provision for opening PFD Station 74 as well as staffing key administrative functions.

Should RHFPD express an interest in annexing the area within the Pinole City Limits, the following will need to be considered:

- Expand the boundaries of the Rodeo-Hercules FPD to include territory within the City of Pinole by submitting an annexation proposal to LAFCO.
- Transfer (or lease) City-owned fire service facilities and equipment (i.e., stations, rolling stock, hoses, ladders, etc.) to the Rodeo-Hercules FPD.
- Have the RHFPD hire City of Pinole employees who provide fire protection and wish to become employees of the RHFPD and devise a process to determine relative employee seniority.
- Determine how to fund the additional service responsibilities incurred by the RHFPD such as reallocate a percentage of the City's property tax allocation to RHFPD effective the year the annexation becomes effective. This percentage amount would be negotiated and approved by the City, the District, and the Board of Supervisors and consider extending an existing Special Tax already imposed by Rodeo-Hercules FPD within its current boundaries to the parcels being annexed. It is assumed this would be a condition of LAFCO's approval of the annexation.

- As a result of these changes, (1) the territory within the City would be within the boundaries and service area of the RHFPD, (2) the City would receive a smaller portion of the 1 percent property tax levied within its boundaries but would have fewer municipal expenses since it would no longer provide fire protection services, and (3) property owners within the City would begin paying the special tax which is already being paid by property owners within the Rodeo-Hercules FPD.
- Any proposal from RHFPD should include a plan to staff Pinole Station 74 and provide the administrative functions currently missing within PFD.

Option B: Contra Costa County Fire Protection District

The City of Pinole requested a proposal from Contra Costa County Fire Protection District (CCFPD) to provide services within the Pinole City Limits.

The proposal received from CCFPD is analyzed below. It must be noted that as stated in the document from CCFPD, this is a proposal, not an offer to provide service and any and all terms of the proposal would require negotiation.

CCFPD provides fire and emergency medical services to nearly a million people across its 304-square-mile District area, and through mutual aid, in and around the 19 cities and unincorporated communities of Contra Costa County, California. With few exceptions, county emergency ambulance transport services are provided by CCFPD through its unique sub-contractor Alliance model. In 2018, the District responded to nearly 75,000 fire and EMS emergencies and dispatched some 95,000 ambulances, providing expert medical care on more than 74,000 ambulance transports. The District, with 26 fire stations and more than 400 employees, appears to be well funded, well equipped, and is capable of expanding services to include the City of Pinole.

The terms of the proposal include staffing each station with a crew of three personnel on a 24-hour per day, seven days per week basis, and one Battalion Chief-level position on a 56-hour per shift basis with an annual 5 percent escalation for all labor costs. The proposal includes providing components of administration currently understaffed by PFD, such as training, EMS program oversight, duty chief coverage, IT support, and others. The proposal does not include Fire Prevention/Fire Investigation Services or code enforcement that is not cost neutral. The proposal also does not include annual charges for dispatch services. Should Pinole elect to purchase or retain its own equipment, the District would provide maintenance services on those vehicles at an hourly rate of \$100 per hour. The proposal does not include a cost for mobile or hand-held radio equipment. Should Pinole elect to allow the CCFPD to purchase fire trucks for use in the City, the proposal contains a provision for the City to contribute funds to the District's apparatus replacement fund, based on a 10-year replacement cycle for the apparatus.

The City of Pinole may negotiate a contract with CCFPD that would not include acquiring fire apparatus through the service contract, however it would still be necessary for the City to acquire apparatus to provide the services contemplated under the contract. Operating costs proposed under the contract are indicated in the following figure. Capital costs included in the proposal from CCFPD are separately indicated below the operating costs. The City is in the process of acquiring a new Type I engine. The engine, while capable of comparably performing all the required tasks, does not meet the current specifications of CCFPD.

Figure 127: Contra Costa Fire Protection District Proposal for Fire Protection Services

Contra Costa Fire Protection District Proposal	Projected				
	Year 1	Year 2	Year 3	Year 4	Year 5
Staffing Costs, Including Benefits, Escalates at 5% per Year					
Station 73	3,274,629	3,438,360	3,610,278	3,790,792	3,980,332
Station 74	3,274,629	3,438,360	3,610,278	3,790,792	3,980,332
Shift Battalion Chief	467,880	491,274	515,838	541,630	568,711
Staffing Sub-Total	7,017,138	7,367,995	7,736,395	8,123,214	8,529,375
Administrative Overhead (10%)	701,714	736,799	773,639	812,321	852,938
Total Operating Costs Per the Proposal	7,718,852	8,104,794	8,510,034	8,935,535	9,382,313
Optional Capital Replacement Costs and Staff Vehicle Rental					
Battalion Chief Vehicle	8,700	8,700	8,700	8,700	8,700
Type I Engine—Station 73	94,985	94,985	94,985	94,985	94,985
Type I Engine—Station 74	94,985	94,985	94,985	94,985	94,985
Type III Engine—Station 73	42,150	42,150	42,150	42,150	42,150
Type III Engine—Station 74	42,150	42,150	42,150	42,150	42,150
Capital Replacement Reserve	310,000	310,000	310,000	310,000	310,000
Type I Engine Loose Equipment—73	45,000	-	-	-	-
Type I Engine Loose Equipment—74	45,000	-	-	-	-
Type III Engine Loose Equipment—73	25,000	-	-	-	-
Type III Engine Loose Equipment—74	25,000	-	-	-	-
Battalion Chief Loose Equipment	25,000	-	-	-	-
Equipment Replacement Reserve	22,500	22,500	22,500	22,500	22,500
Totals	\$8,499,322	\$8,720,264	\$9,125,504	\$9,551,006	\$9,997,783

The following figure shows the impact to the City of Pinole projected budgets through the fifth year. This proposal uses the total operating costs from the CCFPD proposal from Figure 127 as the starting point. These costs would include a minimum of three crew members per shift staffing at both stations, the cost of a Battalion Chief's position, and administrative costs of 10 percent of the total salary and benefits costs. The proposal has an automatic five percent annual escalator included for anticipated cost increases. All current costs associated with the fire department are removed and the contract fire prevention officer costs added back to determine the impact to the City's General Fund Budget for the five years. These calculations freeze the City's General Fund and Measure S contributions at current levels. To re-open Station 74, an apparatus will be required and, to ensure funds are available to purchase replacement apparatus, an apparatus replacement fund is indicated as being created. While the City would no longer pay for current, normal costs for pension the City's unfunded actuarial liabilities would not be extinguished and payments would be required to pay off that liability. The costs associated with accepting the Contra Costa FPD proposal assume that the City of Pinole will, rather than purchase apparatus through the proposal, purchase its own apparatus and create a fleet replacement fund to provide cash to replace the vehicles at the end its useful life. Accordingly, some amount should be considered for annual maintenance costs related to the apparatus. **The additional funding required for this alternative is in addition to the funds required under the five-year operating costs of the PFD.**

Figure 128: Impact on Future City of Pinole Operating Budgets of Accepting the Contra Costa FPD Proposal

Costs	Year				
	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
Contra Costa Proposed Operating Costs	7,718,852	8,104,794	8,510,034	8,935,536	9,382,313
Add Fire Prevention Costs	160,000	160,000	160,000	160,000	160,000
Deduct GF Funding Cap	(3,395,335)	(3,395,335)	(3,395,335)	(3,395,335)	(3,395,335)
Projected Funding from Measure S Initiatives	(1,103,888)	(1,103,888)	(1,103,888)	(1,103,888)	(1,103,888)
UAL Pension Liability payment	386,129	441,171	506,390	559,659	591,073
Net Increase to Operating Budget	3,765,758	4,206,742	4,677,201	5,155,972	5,634,163
Additional Type I Engine lease	102,948	102,948	102,948	102,948	102,948
Replacement Fund	231,454	231,454	231,454	231,454	231,454
Revised Net Funding from the Parcel Tax	4,100,160	4,541,144	5,011,603	5,490,374	5,968,565
Commercial Tracts	207	207	207	207	207
Parcel Tax Per Tract	947.21	1,049.09	1,157.77	1,268.38	1,378.85
Costs Allocated	196,073	217,161	239,659	262,554	285,421
Multi-Family Tracts	766	766	766	766	766
Parcel Tax Per Tract	789.34	874.24	964.81	1,056.98	1,149.04
Costs Allocated	604,636	669,667	739,044	809,646	880,163
Single Family Tracts	5,225	5,225	5,225	5,225	5,225
Parcel Tax Per Tract	631.47	699.39	771.85	845.58	919.23
Costs Allocated	3,299,451	3,654,317	4,032,901	4,418,174	4,802,980
Total Costs Allocated	4,100,160	4,541,144	5,011,603	5,490,374	5,968,565
All Tracts w/o Regard to Classification	6,198	6,198	6,198	6,198	6,198
Parcel Tax Per Tract	661.53	732.68	808.58	885.83	962.98
Escalation—Annual		10.76%	10.36%	9.55%	8.71%

The decrease in the annual escalation results from the reduction in the percentage growth rate of the funding for the UAL pension costs.

Option C: Expansion of Pinole Fire Department System

A third alternative to be considered is the restoration of the service model using the currently closed Station 74 and staffing of key administrative positions. This alternative maintains a minimum staffing of three personnel for each of the three shifts at this station. It is contemplated that the officers and engineers for Station 74 will be promoted from the current employees at Station 73 and all new hires will be at the firefighter level and placed under the PEPRAs pension system. Salaries for each of the three positions are projected using Step B from the City of Pinole Salary Ranking schedule dated May 31, 2019. Since May 31, 2019, employees have received a 3 percent cost of living adjustment. Overtime costs are projected to be approximately \$100,000 per year higher than those projected at Station 73 or approximately \$400,000 per year, or \$133,333 per shift. Pension and benefit costs are projected by interpolating costs from the FY 19/20 Budget. Medicare costs are calculated at 1.045 percent of gross salaries. Education and certification pay are calculated at \$50 per month per position. Salary costs are escalated at the previously established 3 percent annually. Benefits other than pension costs increase at a 5 percent annual rate. Pension costs are estimated to remain at 13.1 percent per the CalPERS August 2018 PEPRAs Safety Fire Plan Annual Valuation report as June 30, 2017, for the new employees.

There will be other miscellaneous but minimal station operating expenses resulting from the occupancy of the station on a full-time basis. There will be additional supplies including the annual employee clothing allowances and start-up costs for turnout gear for new employees.

Additionally, capital expenditures may include the acquisition of a new Type I engine to be used by the expanded crews at Station 74.

The following figure indicates the costs associated with adding Station 74 back into the deployment model.

Figure 129: Projected Costs to Re-Open Station 74, Years 1–5

Station 74 Staffing Costs	Projected				
	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
Station 74 Staffing Costs					
Captain	95,539	98,405	101,357	104,398	107,530
Engineer	86,337	88,927	91,595	94,343	97,173
Firefighter/Paramedic	82,724	85,206	87,762	90,395	93,107
Overtime Costs	133,333	133,333	133,333	133,333	133,333
Per Shift	397,933	405,871	414,047	422,469	431,143
Number of Shifts	3	3	3	3	3
<i>Compensation</i>	<i>1,193,800</i>	<i>1,217,614</i>	<i>1,242,140</i>	<i>1,267,407</i>	<i>1,293,429</i>
Pension Costs	157,009	160,141	163,366	166,689	170,112
Estimated Health Insurance	248,462	260,885	273,929	287,625	302,007
Life And AD&D Insurance	3,445	3,617	3,798	3,988	4,187
Medicare	17,310	17,655	18,011	18,377	18,755
Estimated Education/Certification Pay	5,400	5,400	5,400	5,400	5,400
<i>Benefits</i>	<i>431,625</i>	<i>447,698</i>	<i>464,504</i>	<i>482,080</i>	<i>500,460</i>
Compensation and Benefits—Station 74	1,625,425	1,665,312	1,706,643	1,749,487	1,793,889
Clothing Allowance	9,000	7,200	7,200	7,200	7,200
Turnout Gear	31,500	—	—	—	—
<i>Total Supplies</i>	<i>40,500</i>	<i>7,200</i>	<i>7,200</i>	<i>7,200</i>	<i>7,200</i>
Total Operating Costs	1,665,925	1,672,512	1,713,843	1,756,687	1,801,089
Type I Engine Lease	102,948	102,948	102,948	102,948	102,948
Apparatus Replacement Fund	231,454	231,454	231,454	231,454	231,454
Total Capital Expenditures	334,402	334,402	334,402	334,402	334,402
Total Costs	\$2,000,327	\$2,006,914	\$2,048,245	\$2,091,089	\$2,135,491

Based on ESCI's review of critical administrative functions, PFD will need additional full-time staffing to manage programs and other administrative tasks. ESCI is recommending the creation of three 40-hour per week positions to assist in managing the organization. The first position would be an Administrative Battalion Chief, responsible for the EMS program, training program oversight, policies and procedures, and provide an additional chief officer for supervision. The second position would be a Training Captain responsible for the training program with oversight from the Administrative Battalion Chief. A third recommended position would be a Fire Prevention Officer responsible for all fire prevention duties including those carried out by the current contract inspector. The following figure provides an estimated cost for each position and in total.

Figure 130: Projected Costs of Additional Administrative Positions, FY 19/20–FY 23/24

Projected Administrative Position Costs	Projected				
	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
<i>Battalion Chief—Administration</i>	152,894	157,481	162,205	167,072	172,084
Pension Costs	20,029	20,630	21,249	21,886	22,543
Estimated Health Insurance	26,292	27,607	28,987	30,437	31,958
Life and AD&D Insurance	420	441	463	486	511
Medicare	2,217	2,328	2,444	2,566	2,695
Estimated Education/Certification Pay	600	630	662	695	729
<i>Benefits</i>	49,558	51,636	53,805	56,070	58,436
Salary & Benefits—Admin BC	202,452	209,117	216,010	223,142	230,520
<i>Captain—Training</i>	88,339	90,989	93,719	96,530	99,426
Pension Costs	11,572	11,920	12,277	12,645	13,025
Estimated Health Insurance	26,292	27,607	28,987	30,437	31,958
Life and AD&D Insurance	243	255	268	281	295
Medicare	1,281	1,345	1,412	1,483	1,557
Estimated Education/Certification Pay	600	630	662	695	729
<i>Benefits</i>	39,988	41,757	43,606	45,541	47,564
Salary & Benefits—Training Capt.	128,327	132,746	137,325	142,071	146,990
<i>Fire Prevention Officer (Building Inspector pay)</i>	67,601	69,629	71,718	73,870	76,086
Pension Costs	8,856	9,121	9,395	9,677	9,967
Estimated Health Insurance	26,292	27,607	28,987	30,437	31,958
Life and AD&D Insurance	186	195	205	215	226
Medicare	980	1,029	1,081	1,135	1,191
Estimated Education/Certification Pay	600	630	662	695	729
<i>Benefits</i>	36,914	38,582	40,330	42,159	44,071
Salary & Benefits—Prevention Capt.	104,515	108,211	112,048	116,029	120,157
Total Administrative Personnel Costs	\$435,295	\$450,074	\$465,382	\$481,240	\$497,669

The following figure combines the current projections, projected costs associated with re-opening Station 74, and the costs to increase administrative positions for the fire department. This alternative includes setting a fixed amount to be funded from the City's General Fund Budget that is limited to the funding amount in the adopted FY 19/20 budget. The Measure S initiatives from both 2014 and 2006 are frozen in a similar manner. The funds to provide for these costs are proposed to be derived from the implementation of a parcel tax.

**Figure 131: Projected Fire Department Costs Including Station 74 and Administrative Staffing,
FY 20/21–FY 24/25**

Projected Fire Department Operating Costs	Projected				
	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
Current Fire Dept Operating Projections (Figure 27)	5,272,626	5,829,220	6,434,978	7,095,984	7,854,198
Less Contract Fire Prevention Costs	(160,000)	(160,000)	(160,000)	(160,000)	(160,000)
Station 74 Operating Costs (Figure 129)	1,665,925	1,672,512	1,713,843	1,756,687	1,801,089
Administrative Positions (Figure 130)	435,295	450,074	465,382	481,240	497,669
Total Costs	7,213,846	7,791,806	8,454,203	9,173,911	9,992,956
Measure S Initiatives (Figure 27)					
Measure S 2006	794,698	794,698	794,698	794,698	794,698
Measure S 2014	309,189	309,189	309,189	309,189	309,189
Total Other Revenues	1,103,887	1,103,887	1,103,887	1,103,887	1,103,887
Revised Funding From GF	6,109,959	6,687,919	7,350,316	8,070,024	8,889,069
General Fund Maximum Amount	(3,395,335)	(3,395,335)	(3,395,335)	(3,395,335)	(3,395,335)
Type I Engine	102,948	102,948	102,948	102,948	102,948
Apparatus Replacement Fund	231,454	231,454	231,454	231,454	231,454
Balance to Fund from Proposed Parcel Tax	3,049,026	3,626,986	4,289,383	5,009,091	5,828,136
Commercial Parcels	207	207	207	207	207
Per Parcel	704.38	837.90	990.92	1,157.19	1,346.40
Total Allocation	145,807	173,445	205,121	239,538	278,706
Multi-Family Parcels	766	766	766	766	766
Per Parcel	586.98	698.25	825.77	964.33	1,122.00
Total Allocation	449,629	534,859	632,540	738,673	859,455
Single-Family Parcels	5,225	5,225	5,225	5,225	5,225
Per Parcel	469.59	558.60	660.62	771.46	897.60
Total Allocation	2,453,590	2,918,682	3,451,721	4,030,879	4,689,975
Total Costs Allocated	3,049,026	3,626,986	4,289,383	5,009,091	5,828,136
All Tracts w/o Regard to Classification	6,198	6,198	6,198	6,198	6,198
Parcel Tax Per Tract	491.94	585.19	692.06	808.18	940.33
Percentage Increase in Parcel Tax, Annual		19.62%	18.80%	17.20%	16.70%

Option D: Staffing of Station 74 Service Area Utilizing Two-Person Unit

A fourth alternative to be considered is implementation of a service model using the currently closed Station 74 and utilizing a quick response/attack unit staffed with two qualified personnel. Salaries for the two positions are projected using Step B from the City of Pinole Salary Ranking schedule dated May 31, 2019. Pension costs are calculated at the PEPRA rate of 13.1 percent and benefit costs are projected by interpolating costs from the FY 19/20 Budget. Medicare costs are calculated at 1.045 percent of gross salaries. Education and certification pay are calculated at \$50 per month per position. Salary costs are escalated at the previously established 3 percent annually. Benefits other than pension costs increase at a 5 percent annual rate. Pension costs are estimated to remain at 13.1 percent per the CalPERS August 2018 PEPRA Safety Fire Plan Annual Valuation report as June 30, 2017, for the new employees. This alternative, while not recommended, restores minimum staffing of two personnel for each of the three shifts at this station.

Figure 132: Estimated Cost of Reopening and Staffing a Quick Response Pumper at Station 74

Station 74 Staffing Costs	Projected				
	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
Engineer	86,337	88,927	91,595	94,343	97,173
Firefighter/Paramedic	82,724	85,206	87,762	90,395	93,107
Overtime Costs	66,667	66,667	66,667	66,667	66,667
Per Shift	235,727	240,799	246,023	251,404	256,946
Number of Shifts	3	3	3	3	3
Compensation	707,182	722,398	738,070	754,212	770,838
Pension Costs	92,641	94,634	96,687	98,802	100,980
Estimated Health Insurance	165,641	173,923	182,619	191,750	201,338
Life and AD&D Insurance	2,041	2,143	2,250	2,362	2,480
Medicare	10,254	10,475	10,702	10,936	11,177
Estimated Education/Certification Pay	5,400	5,400	5,400	5,400	5,400
Benefits	275,977	286,575	297,658	309,250	321,375
Compensation and Benefits—Station 74	983,159	1,008,973	1,035,728	1,063,462	1,092,213
Station 74 Supplies					
Clothing Allowance	9,000	7,200	7,200	7,200	7,200
Turnout Gear	31,500	—	—	—	—
Total Supplies	40,500	7,200	7,200	7,200	7,200
Total Station 74 Costs	1,023,659	1,016,173	1,042,928	1,070,662	1,099,413
PFD Projected Operating Costs	5,272,626	5,829,220	6,434,978	7,095,984	7,854,198
Quick Attack Pumper Lease	24,048	24,048	24,048	24,048	24,048
Apparatus Replacement Fund, One Engine	115,727	115,727	115,727	115,727	115,727
Projected Costs	6,436,060	6,985,167	7,617,681	8,306,421	9,093,386
General Fund Maximum Contributions	(3,395,335)	(3,395,335)	(3,395,335)	(3,395,335)	(3,395,335)
Measure S Initiatives—Maximum	(1,103,888)	(1,103,888)	(1,103,888)	(1,103,888)	(1,103,888)
Amount to Fund from Parcel Tax	1,936,837	2,485,944	3,118,458	3,807,198	4,594,163

Station 74 Staffing Costs	Projected				
	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
Commercial Tracts	207	207	207	207	207
Parcel Tax Per Tract	447.44	574.30	720.42	879.53	1,061.33
Costs Allocated	92,621	118,880	149,127	182,063	219,696
Multi-Family Tracts	766	766	766	766	766
Parcel Tax Per Tract	372.87	478.58	600.35	732.94	884.45
Costs Allocated	285,619	366,594	459,868	561,434	677,485
Single Family Tracts	5,225	5,225	5,225	5,225	5,225
Parcel Tax Per Tract	298.30	382.87	480.28	586.35	707.56
Costs Allocated	1,558,598	2,000,471	2,509,463	3,063,701	3,696,982
Total Costs Allocated	1,936,837	2,485,944	3,118,458	3,807,198	4,594,163
All Tracts w/o Regard to Classification	6,198	6,198	6,198	6,198	6,198
Parcel Tax Per Tract	312.49	401.09	503.14	614.26	741.23
Escalation		28.35%	25.44%	22.09%	20.67%

Capital Costs to Implement the Expansion of Services

To accomplish the reopening of Station 74 as a firefighting unit with medical first response capabilities and to fill the administrative and prevention positions recommended above, it will be necessary to invest in capital resources. The following figure estimates the amounts necessary to acquire the vehicles identified in the preceding recommendations.

Figure 133: Costs of Capital Resources to Reopen Station 74 and Add Administrative and Prevention Staff

Description	Vehicle Cost	Equipment Cost	Total Cost
Quick attack	\$150,000	\$50,000	\$200,000
Or Type I Engine	\$850,000	\$50,000	\$900,000
Battalion Chief SUV	\$45,000	\$30,000	\$75,000
Training Captain Pickup	\$35,000	\$20,000	\$55,000
Fire Prevention Officer	\$35,000	\$5,000	\$40,000

In comparing the costs between a Type I engine with a crew of three and a Type VI quick attack pumper with a crew of two, several issues need to be considered in the decision. The first issue is the expectation of the community as to the effectiveness of the smaller crew of the Type VI in arriving on a structure fire and being expected to safely perform the tasks of the larger crew of the Type I engine. Placing a Type I engine in Station 74 would improve response times to the area served by the station and would increase firefighter safety as well as effectiveness throughout the system.

Personnel costs would increase approximately \$400,000 per year to add the third firefighter position per shift at Station 74.

Potential Revenue Source to Provide Funding for Restoration of Services from Station 74

Costs required to improve performance of the Pinole Fire Department by restoring fire and EMS response services from Station 74 are significant and include operations as well as capital costs. As the City of Pinole continues to experience fiscal issues associated with, among other demands, increased pension funding requirements, an additional source of revenue is necessary to provide funding for the increased costs associated with Station 74. Figure 129 indicates the projected first five-years of costs associated with PFD providing service from Station 74.

ESCI evaluated various service fee lists provided by the City of Pinole to determine if any were a suitable model for an allocation schedule that fairly distributes the costs among the types of parcels. ESCI determined that none of the provided fee allocation schedules were appropriate and elected to develop a model based on differences in assumed risk between the three categories; commercial, multi-family residential, and single-family residential. The methodology assumes that single-family residential would be the base risk upon which the other categories would be viewed and would assign it a 1.0 risk factor. Multi-family residential would be assigned a risk factor of 1.25 or 25 percent higher risk than that of a single-family residence, the thought being that the impact to multiple residents is greater due to the proximity of a neighboring residence (two layers of sheetrock versus a required separation between single-family homes). Commercial parcels are assigned a risk factor of 1.5 or 50 percent higher than single-family residential units due to, typically, larger floor space, more flammable contents and the risk extending beyond the typical life hazards found in residential structures to the potential economic impact of the loss of an employer and sales tax generator in the city. This methodology creates a higher parcel assessment for multi-family residential and commercial parcels than single-family residential parcels. The same methodology was utilized to evaluate the various alternatives to provide fire protection services.

The above calculation does not recognize any discounts for senior citizens. Proposed discounts may be calculated and totaled to determine the impact on the total assessment and, to offset that impact, a formula may be developed using the revenue generated by each \$0.01 to compensate for the discounts.

Section V:

CONCLUSIONS & RECOMMENDATIONS

KEY FINDINGS

This section of the report contains findings as well as recommendations that have been noted and or developed during the course of this study. The following lists ESCI's key findings:

- Due to the lack of sufficient command and administrative staff, the department struggles to maintain compliance with performance goals, industry standards, and workload.
- The department needs additional staffing to satisfactorily fulfill all fire prevention related functions.
- PFD does not have a designated individual committed to the training function for the department. The responsibility for conducting all needs assessments relative to training, as well as program design, coordination, and records keeping.
- The department does not have adequate training props, although funding has been included in the FY 19/20 budget to purchase some.
- The minimum staffing level for PFD does provide for the two-in/two-out structure firefighting per OSHA mandates.³²
- PFD is fully dependent on automatic and mutual aid for any call requiring more than one unit.
- In the event of concurrent incidents requiring more than the one staffed Pinole Engine, service to the residents of Pinole for the additional incidents must be provided by other agencies.
- In 2018, none of the reported fire incidents achieved the stated performance objective of 21 firefighters on-scene, nor did the travel time for all apparatus on-scene approach 8 minutes.
- Projected General Fund revenues are not sufficient to provide for Fire Department General Fund expenditures on an annual basis and will require a drawdown of General Fund reserve balances.
- Station 73's crew quarters need remodeling and updating which may include ADA accommodation.
- PFD apparatus specifications have not been standardized with Battalion 7 apparatus.
- Absent automatic and mutual aid from surrounding agencies, standalone PFD is not capable of handling an incident, such as a trash fire, car fire, or medical incident requiring more than one apparatus, much less a more complex incident.
- At 104 calls per 1,000 population, PFD has a higher median number of calls per 1,000 population than the region but slightly lower than the urban high range.
- Much of the developed residential area in the eastern part of the city is beyond 1.5 miles of Station 73.
- A portion of the developed residential area in the southeast portion of the city is beyond the 4-minute travel time footprint.
- Funding does not appear to be available to cash purchase the required Type I apparatus for Station 74, should that station be reopened.
- The contact proposal from Contra Costa Fire Protection District would result in increased services and depth of support, however, the proposed contract costs exceed the costs of providing those services if the City were to remain a standalone department, open Station 74, and add staff as recommended in Option C.

³² Section (g)(4) of OSHA's Respiratory Protection Standard, 29 CFR 1910.134.

Short-Term Recommendations

Recommendation A: The City should consider moving forward with the necessary steps to reopen Station 74, add staffing and administrative support, as funding becomes available.

Based on ESCI's review of all options and associated costs to implement, the recommendation is for the City to consider moving forward with Option C: Expansion of Pinole Fire Department System as discussed and portrayed in Figure 129, Figure 130, and Figure 131 and summarized below.

In order to create a safer environment for the firefighters and citizens and provide an appropriate administrative workforce, the restoration of the service model using the currently closed Station 74 and staffing of key administrative positions is of significant importance.

Moving forward with this option will restore service to the area around the currently closed Station 74, increase the safety of the firefighters by allowing for compliance with the OSHA two-in/two-out rule for structure fires, provide a second unit in the city to be available for concurrent incidents, and provide staffing of key administrative positions.

Consider a lease purchase of the new apparatus for Station 74 which will minimize the fluctuations in the amounts of the parcel tax assessments.

Recommendation B: Consider initiating the process of securing additional funding.

ESCI recommends that the City consider moving forward with the process of pursuing an additional funding source such as a parcel tax as shown in Figure 131 and restated below:

**Figure 134: Projected Fire Department Costs Including Station 74 and Administrative Staffing,
FY 20/21–FY 24/25**

Projected Fire Department Operating Costs	Projected				
	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
Current Fire Dept Operating Projections (Figure 27)	5,272,626	5,829,220	6,434,978	7,095,984	7,854,198
Less Contract Fire Prevention Costs	(160,000)	(160,000)	(160,000)	(160,000)	(160,000)
Station 74 Operating Costs (Figure 129)	1,665,925	1,672,512	1,713,843	1,756,687	1,801,089
Administrative Positions (Figure 130)	435,295	450,074	465,382	481,240	497,669
Total Costs	7,213,846	7,791,806	8,454,203	9,173,911	9,992,956
Measure S Initiatives (Figure 27)					
Measure S 2006	794,698	794,698	794,698	794,698	794,698
Measure S 2014	309,189	309,189	309,189	309,189	309,189
Total Other Revenues	1,103,887	1,103,887	1,103,887	1,103,887	1,103,887
Revised Funding From GF	6,109,959	6,687,919	7,350,316	8,070,024	8,889,069
General Fund Maximum Amount	(3,395,335)	(3,395,335)	(3,395,335)	(3,395,335)	(3,395,335)
Type I Engine	102,948	102,948	102,948	102,948	102,948
Apparatus Replacement Fund	231,454	231,454	231,454	231,454	231,454
Balance to Fund from Proposed Parcel Tax	3,049,026	3,626,986	4,289,383	5,009,091	5,828,136
Commercial Parcels	207	207	207	207	207
Per Parcel	704.38	837.90	990.92	1,157.19	1,346.40
Total Allocation	145,807	173,445	205,121	239,538	278,706
Multi-Family Parcels	766	766	766	766	766
Per Parcel	586.98	698.25	825.77	964.33	1,122.00
Total Allocation	449,629	534,859	632,540	738,673	859,455
Single-Family Parcels	5,225	5,225	5,225	5,225	5,225
Per Parcel	469.59	558.60	660.62	771.46	897.60
Total Allocation	2,453,590	2,918,682	3,451,721	4,030,879	4,689,975
Total Costs Allocated	3,049,026	3,626,986	4,289,383	5,009,091	5,828,136
All Tracts w/o Regard to Classification	6,198	6,198	6,198	6,198	6,198
Parcel Tax Per Tract	491.94	585.19	692.06	808.18	940.33
Percentage Increase in Parcel Tax, Annual		19.62%	18.80%	17.20%	16.70%

ESCI, in conjunction with the recommendation to adopt a parcel tax, recommends that the City consider the use of a lease/purchase facility to acquire the Type I engine required in Recommendation A.

Regardless of the option chosen, additional funding must be developed to fill the gap between existing funding for the current fire service deployment model and the proposed expanded deployment model. Available options for California jurisdictions include special sales tax assessments and parcel tax assessments. ESCI recommends that consideration be given that the selected alternative be restricted to funding only costs associated with funding the expanded deployment model.

Recommendation C: Standardize apparatus specifications.

Consideration should be given to standardization of apparatus specifications throughout Battalion 7. Standardization of specifications will enhance operational efficiency and could result in cost savings via group purchasing.

Recommendation D: Review all current fire department alarm assignments.

Consideration should be given to reviewing the department's alarm assignments and determine number of resources required for an effective response force based on risk.

Mid- to Long-Term Recommendations

Recommendation E: Initiate recruitment of additional staff.

As soon as funding is available ESCI recommends that the City recruit the positions identified in Option C: "Expansion of Pinole Fire Department System." This would include:

- 3 Captains
- 3 Fire Apparatus Operators
- 3 Firefighters
- 1 Administrative Battalion Chief
- 1 Training Captain
- 1 Fire Prevention Officer

Recommendation F: Remodel Station 73

Fire Station 73's crew quarters require remodeling to accommodate the relocation of the shared shift Battalion Chief and additional administrative staff.

Recommendation G: Capital Equipment and Facilities Fund

Establish a capital equipment and facilities replacement fund. A portion of the proposed parcel tax could be used to fund this recommendation.

IMPLEMENTATION PLAN

To be developed following client review.

Section VI: APPENDICES

APPENDIX A: PROPOSAL FROM CONTRA COSTA FPD



CONTRA COSTA COUNTY FIRE PROTECTION DISTRICT

May 29, 2019

Michelle Fitzer, City Manager
City of Pinole
2131 Pear Street
Pinole, CA 94564

Dear City Manager Fitzer,

Please see the attached proposal to provide fire, emergency medical, rescue, administration, and fire prevention services to the City of Pinole. This proposal is a best effort at identifying the Fire District's costs for such services prior to any meaningful discussions with your consultant or representative from the city. As such the figures are estimates and subject to change based on further discussions or additional information that would be relevant to our ability to provide certain services to the city.

I look forward to meeting with ESCI this week for a more detailed discussion.

Please let me know if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Lewis T. Broschard III", is written over a light blue horizontal line.

Lewis T. Broschard III
Fire Chief

CC: File

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CONTRA COSTA COUNTY FIRE PROTECTION DISTRICT

Fire Services Contract Proposal for the City of Pinole (5-30-19)

Fire/EMS/Rescue Services

The District will provide staffing of three (3) full-time positions at Fire Station 73 and Fire Station 74. At least one position at each station on each shift will be a paramedic. All other positions will be an EMT. Each station will be staffed by one (1) Fire Captain, one (1) Engineer, and one (1) Firefighter or Firefighter-Paramedic. The District reserves the right to use qualified acting positions when necessary.

ANNUAL COSTS

Fire Station 73 (crew of three)	\$3,274,629
Fire Station 74 (crew of three)	\$3,274,629
One (1) 56-hour Battalion Chief	\$ 467,880
Subtotal	\$7,017,138
Administrative Overhead (10%)	\$ 701,713
Total	\$7,718,851*

These rates include all components of administration, annual/ongoing training, EMS certifications, medical direction, administration, duty chief coverage, access to specialized/technical services and resources, ePCR program administration, personal protective equipment replacement for all personnel, IT support, and PIO coverage.

These rates do not include CCRFCC annual charges for dispatch and communications center support.

*These rates shall be increased at 5% per year to account for labor cost increases and other benefit cost escalation factors.

Fire Prevention/Fire Investigation Services

Traditional code enforcement and new construction plan review and inspections are generally cost neutral. Additional data and information is needed from the City in order to provide a specific cost estimate and quote for these services. Weed abatement and exterior hazard control services, specifically, would not be cost neutral and detailed discussion is needed to understand the needs of the city for this program. Additional data and discussion is needed to understand the needs of the city for fire investigation services and what, if any, additional costs would be to provide these services.

Apparatus Maintenance

Apparatus maintenance for all non-District owned apparatus will be provided at the hourly shop rate plus parts/equipment. The current shop rate is \$100/hour.

Apparatus

The information provided below assumes the following: (1) all prices are based on 2018 costs, (2) annual price inflation of 3%, (3) apparatus is purchased new at time of contract commencement, (4) all

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fire engines are replaced at 10 year intervals consistent with CCCFPD standards, (5) CCCFPD provides spare engines as needed.

Pierce Velocity Type I Engine x2 (CCCFPD Spec)	\$800,000 (including tax)
Type III Engine x2 (Cal Fire Spec)	\$355,000 (including tax)
Battalion Chief Vehicle	\$725 (monthly lease)
Annual replacement allocation	\$310,000

Equipment for Fire Apparatus

Generally, equipment is purchased new with each fire apparatus purchase and replaced throughout its lifetime as needed. The information below represents estimates for total cost of outfitting each apparatus with our standardized inventory.

Type I Engine Loose Equipment (x2)	\$45,000
Type III Engine Loose Equipment (x2)	\$25,000
Battalion Chief Vehicle Upfitting (x1)	\$25,000
Annual replacement allocation	\$22,500

Mobile and Portable Radios

Additional data is needed to understand current radio inventory and future replacement needs. Current costs of EBRCS compliant portable radios is approximately \$8,000 each and mobile radios can be as much as \$10,000 each. Expected service life is approximately 10 years. Replacement costs for these items is not currently included in our proposal.

TOTAL ANNUAL COSTS

Fire Station Staffing	\$ 6,549,258
Battalion Chief	\$ 467,880
Administrative Overhead	\$ 701,713
Apparatus Replacement Allocation	\$ 310,000
Equipment Replacement Allocation	\$ 22,500
Fire Prevention/Investigation Services	\$ TBD
Radio/Communication Equipment	\$ TBD
Total	\$ 8,051,351

This proposal is not binding or final. The District reserves the right to modify or amend this proposal based on additional information received, revised cost estimates, or any other materially significant information that has not been accounted for or was otherwise omitted in creating this initial proposal.

APPENDIX B: TABLE OF FIGURES

Figure 1: Pinole Fire Department Service Area	3
Figure 2: Pinole Fire Department Organizational Chart (2019)	4
Figure 3: Service Area & Apparatus Resources	5
Figure 4: PFD Administrative and Support Staffing	7
Figure 5: Fire Prevention Program Components	8
Figure 6: New Construction Inspections & Involvement.....	9
Figure 7: Six Steps of CRR Planning	10
Figure 8: Life Safety & Public Education Services	11
Figure 9: Training Facilities & Resources Findings	15
Figure 10: Training Records Maintenance.....	16
Figure 11: General Training Competencies	16
Figure 12: Training Methodologies & Operations	17
Figure 13: PFD Emergency Response Staffing	20
Figure 14: Station Units & Staffing Levels	20
Figure 15: Property Tax Value & Property Tax Revenues for City of Pinole (FY 13/14–FY 17/18 Actual)	24
Figure 16: Taxable Value & Property Tax Revenue (FY 13/14–FY 17/18).....	24
Figure 17: Pinole Historical Collections of Property Taxes Related to Redevelopment Properties (FY 13/14–FY 17/18 Actual).....	25
Figure 18: Sales Tax Collections Including Measure S (2006 & 2014 Initiatives) FY 13/14–FY 17/18	25
Figure 19: Recurring & Non-Recurring Revenues for Pinole (FY 13/14–FY 17/18 Actual)	26
Figure 20: Pinole Actual General Fund & Measure S Recurring & Non-Recurring Expenditures (FY 13/14–FY 17/18)	27
Figure 21: Analysis of Fund Balance of the General Fund (FY 13/14–FY 17/18)	28
Figure 22: PFD Recurring & Non-Recurring Expenditures (FY 13/14–FY 17/18)	29
Figure 23: Other Sources of Funding for the Pinole Fire Department (FY 13/14–FY 17/18).....	29
Figure 24: Pinole Recurring vs. Non-recurring General Fund and Measure S Initiatives Revenues (Amended Budget FY 18/19–FY 24/25).....	31
Figure 25: City of Pinole Projected Recurring vs. Non-Recurring General Fund and Measure S Initiatives Expenditures (Amended Budget FY 18/19–FY 24/25)	32
Figure 26: Projected General Fund Balance for Pinole (Amended FY 18/19 Budget–FY 24/25)	33
Figure 27: PFD Projected Status Quo Expenditures & Funding Sources (Amended Budget FY 18/19–FY 24/25)	34
Figure 28: Fire Station Condition Definitions.....	36
Figure 29: Pinole Fire Department Station 73 & Administrative Headquarters	37
Figure 30: Pinole Fire Department Station 74	38
Figure 31: PFD Station 73 Apparatus & Vehicle Inventory	40
Figure 32: Critical Tasking	42
Figure 33: Alarm Assignments	49
Figure 34: Service Demand by Year & Type (2009–2017)	55
Figure 35: Service Demand by Type (2018)	56

Figure 36: Incidents per 1,000 Population, 2018.....	57
Figure 37: Fire Incidents per 1,000 Population, 2018	58
Figure 38: Fire Loss per Capita, 2018	59
Figure 39: Comparison Chart, Fire Loss per Capita	59
Figure 40: Service Demand by Month (2018)	60
Figure 41: Service Demand by Weekday, 2018	60
Figure 42: Service Demand by Hour, 2018	61
Figure 43: Service-Demand Density	62
Figure 44: All Fire Types, 2018.....	63
Figure 45: Structure Fires, Commercial & Residential, 2018.....	64
Figure 46: Structure Fires by Hour of Day, 2018.....	64
Figure 47: Emergency Medical Incidents, 2018	65
Figure 48: Emergency Medical Incidents per Square Mile, 2018.....	66
Figure 49: EMS Responses by Hour of Day, 2018.....	66
Figure 50: PFD Response Unit Workload, 2018.....	67
Figure 51: PFD Incident Locations by Apparatus, 2018	68
Figure 52: Average Time Committed to an Incident by Unit (2018).....	68
Figure 53: Unit Hour Utilization	69
Figure 54: PFD Service Area	70
Figure 55: Population per Square Mile, 2012.....	71
Figure 56: Pinole Fire Station 73, 5-Mile ISO Coverage	73
Figure 57: Fire Station 73, 1.5-Mile ISO Coverage.....	74
Figure 58: Fire Station Distribution, 2.5-Mile Ladder Company ISO Criteria	75
Figure 59: Detail of Station 76, 2.5 mi. ISO coverage for Pinole Three- & Four-Story Buildings	76
Figure 60: Station 73 Four-Minute Travel Time (Entire Response District)	77
Figure 61: Station 73 & 74 Four-Minute Travel Time	78
Figure 62: Effective Response Force.....	79
Figure 63: Effective Response Force without BC7	Error! Bookmark not defined.
Figure 64: Structure Fire Aid to PFD, 2018.....	80
Figure 65: Incident Concurrency, 2018 (By Time of Day).....	81
Figure 66: Incident Concurrency, 2018 (By Number of Concurrent Incidents)	81
Figure 67: PFD Overall Incidents by Hour, 2018	82
Figure 68: Summary of NFPA Performance Standards	84
Figure 69: CCRFCC Dispatch Time Performance	85
Figure 70: Turnout Time Performance	85
Figure 71: Travel Time Performance, First Arriving Unit.....	86
Figure 72: Travel Time Performance by Region	87
Figure 73: Response Time Performance, First Arriving Unit	88
Figure 74: PFD Number of Calls in Excess of Four Minute Travel Time by the Incident Hour	88
Figure 75: Received to Arrival Time, First Arriving Unit	89

Figure 76: CCC Dispatch Priority Codes	89
Figure 77: Dispatched Aid for PFD	90
Figure 78: Adjacent Fire Agency Assistance, <i>PFD available</i>	91
Figure 79: Adjacent Fire Agency Engine Assistance, <i>PFD not available</i>	91
Figure 80: Incident Types; <i>PFD not available</i>	92
Figure 81: List of Common Emergency Medical Dispatch (EMD) Codes Used by Most Dispatch Agencies in the United States.....	92
Figure 82: Response Forecast, 2018–2038.....	93
Figure 83: Risk Identification and Analysis Process ¹	94
Figure 84: Translation of Zoning to Relative Risk Categories.....	95
Figure 85: Pinole Zoning Percentages	95
Figure 86: Pinole & Contract Area’s Current Zoning	96
Figure 87: Summary of Federal Disaster Declarations in Pinole by Type, 1965–2017.....	97
Figure 88: Sources of Flooding in Contra Costa County	98
Figure 89: Watersheds in the Study Area	99
Figure 90: Flood Zones in the Study Area	100
Figure 91: Flood Hazard Areas.....	101
Figure 92: Tornado Intensity, Enhanced Fujita Scale	101
Figure 93: Other Weather-Related Hazards in Contra Costa County.....	103
Figure 94: Earthquake Fault Lines In and Around Pinole.....	104
Figure 95: Effects of Earthquakes.....	105
Figure 96: Study Area Historical Wildfire Occurrences and Impacts, 2009–2018.....	106
Figure 97: Historical Wildfires In and Near Pinole through 2018.....	107
Figure 98: Degree of Wildfire Threat	108
Figure 99: Study Area Current Estimates as Related to the Urban Interface, 2015	109
Figure 100: Galbreath Road Neighborhood	109
Figure 101: Major Transportation Infrastructure in the Study Area	111
Figure 102: Hazard Descriptions Faced by the Pinole Fire Department	112
Figure 103: Colleges and Schools in the Study Area.....	113
Figure 104: Assisted Living Facilities	114
Figure 105: Fire Hydrant Distribution in the Study Area.....	115
Figure 106: Fire Hydrant Distribution, Commercial Building with Needed Fire Flow (NFF).....	116
Figure 107: Commercial Buildings, One to Four Stories in Height	117
Figure 108: Commercial Buildings, Total Floor Area	118
Figure 109: Study Area Size and Population Estimates.....	119
Figure 110: Select Population Demographics	119
Figure 111: Other Demographic Comparisons	120
Figure 112: Population Classifications	120
Figure 113: Study Area Population Density.....	121
Figure 114: Services Provided by the Pinole Fire Department.....	124

Figure 115: Number of Firefighters on Duty Daily in Pinole	124
Figure 116: Have You Received Any Services from PFD?	125
Figure 117: How Satisfied Were You with the Service?	125
Figure 118: Response to, "Is the Existing System Adequate?"	126
Figure 119: Response to, "What is the Current System Lacking?"	126
Figure 120: Response to, "Is Current PFD Staffing Adequate?"	127
Figure 121: Response to, "How Long Should It Take a Fire Engine to Arrive?"	127
Figure 122: Response to, "How Important is it to the City of Pinole To Have Its Own Fire Department?"	128
Figure 123: Response to, "Are There Advantages with Contracting With CCCFD?"	129
Figure 124: Response to, "Are There Advantages in Rodeo-Hercules Annexing the Pinole Area into the RH Fire Protection District?"	129
Figure 125: Response to, "What Advantages Would There Be in Partnering with Either Agency for Services?"	130
Figure 126: Response to, "What Disadvantages Would There be in Partnering with Either Agency for Services?"	130
Figure 127: Response to, "Would You Support a Parcel Tax Measure if the Revenue it Generated Improved Services and Financial Stability Either as a Sole Agency or in a Partnering Option?"	131
Figure 128: Contra Costa Fire Protection District Proposal for Fire Protection Services	145
Figure 129: Impact on Future City of Pinole Operating Budgets of Accepting the Contra Costa FPD Proposal	147
Figure 130: Projected Costs to Re-Open Station 74, Years 1–5	149
Figure 131: Projected Costs of Additional Administrative Positions, FY 19/20–FY 23/24	150
Figure 132: Projected Fire Department Costs Including Station 74 and Administrative Staffing, FY 20/21–FY 24/25 ..	151
Figure 133: Estimated Cost of Reopening and Staffing a Quick Response Pumper at Station 74	152
Figure 134: Costs of Capital Resources to Reopen Station 74 and Add Administrative and Prevention Staff	153