

# COMMUNITY RISK ASSESSMENT

## Standards of Cover & Deployment Analysis

April 2024

City of  
**Alameda**  
**Fire Department**  
Alameda, California

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***Our sincere appreciation is extended to each of you...***

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***...and each of the firefighters, apparatus operators, officers, division chiefs, and support staff who daily serve the citizens and visitors of the City of Alameda and the surrounding communities they serve.***



## Executive Summary

AP Triton was contracted by the City of Alameda, California, to produce this Community Risk Assessment and Standard of Cover report for the Alameda City Fire Department (AFD). This is a specialized foundational report detailing the extent of risks and deployment the AFD employs to meet the severity and volume of historical incidents. This study intends to give detailed information to AFD so that it can make sound operational decisions. It is designed using the Center of Public Safety Excellence's (CPSE) *Community Risk Assessment: Standards of Cover (6<sup>th</sup> Ed.)* template.

The project was launched on September 29, 2022. Using data compiled from AFD and other sources, the report was completed over several months in cooperation with the AFD and City of Alameda staff. This report is a point-in-time study with incident data from January 2019 through December 2022. In addition, it contains other administrative information provided through June 30, 2023. It is expected that in the intervening time, there will be changes that were not captured in this report.

The report is delivered in four sections. Section 1 is the community risk assessment. Section 2 reviews the standard of cover and deployment. Section 3 includes all findings and recommendations, while section 4 is the appendixes, which contains additional detail, explanatory information, and the details of community and stakeholder surveys. What follows is a summary of each section, its intent, and key elements of the report.

### The Community Risk Assessment

This section provides an overview of the community and a technical review of the community demographics, risk classifications, land use, assets protected, community threats, and critical infrastructure. Classification of risk is one of the more complex processes. Risks are grouped using the CPSE methodology, including responses to fire, medical, technical rescue, and hazardous materials. These are then categorized by the severity of the risk, as detailed in Appendix A. They are scored by probability, consequence, and impact. These scores are then calculated to allow the fire department to visualize the magnitude of each risk category and classification.

Generally, the AFD faces hazards similar to most other agencies of the same size, response requirements, and demographics. However, a few items associated with risk were significant and highlighted. The highlighted general observations are in Section 3 under findings and observations and are included here. There were no observations related to recommendations.

### General Observations

- 32% of the housing was built before 1939.
- There is a high risk of earthquakes in the City of Alameda.
- The risks associated with a tsunami likely to be experienced in the City of Alameda are considered low.
- There is a difference between the Federal Emergency Management Agency and the U.S. Geological Survey for the expected tsunami inundation.
- The island of Alameda faces elevated challenges to mutual aid access from other fire agencies and threats posed by the under and overwater road network.
- Fire loss in Alameda compares favorably to the national fire loss rates.
- The Insurance Services Office rates the AFD as a class 1 fire department, its best rating.

### The Standard of Cover & Deployment Analysis

The standard of cover and deployment analysis section is dedicated to the technical evaluation of how the AFD is deployed and how it has performed. This section provides an overview of the fire department, evaluates the staffing resources deployment, reviews the financial assets available, evaluates the facilities and equipment, and analyzes historical performance. In addition, the section reviews what the AFD identified as its needed response to specific risk categories and classifications based on the critical task analysis and alarm assignments. In conjunction with the community risk section, the AFD can use this information to identify gaps in performance and potential improvements to service delivery as described in the compliance methodology subsection.

Most of the findings and recommendations come from this section. This is primarily due to the size and complexity of the Standard of Cover analysis and the data's availability. The following findings are from the general observations and the information that leads to the recommendations.

### General Observations

- AFD has a daily minimum staff on the island (stations 1-3) of 24 personnel. This is sufficient to mitigate a moderate risk fire with 7 personnel in reserve if the island is isolated from the mainland.
- The Bay Farm Island area has a limited minimum staff of 5 firefighters. However, Bay Farm Island can access mutual aid regardless of bridge and tunnel access.

- AFD lacks a well-defined public education program but does provide some training on an as-identified basis.
- Other post-employment benefits costs represent a significant cost to the City of Alameda. They could challenge the financial security of the city and the fire department.
- Stations 1 and 4 are adequate in size and shape to serve the department. However, at 55 and 33 years old, respectively, a modernization of the layout and systems would improve the effectiveness of the building and allow it to meet current safety recommendations.
- Limited structural seismic systems were noted for stations 1 and 4.
- Incident hotspots are centered around fire stations 1, 2, and 3.
- 68% of incidents occur between 8:00 AM and 8:00 PM.
- While the AFD system is busy, none of the engines or trucks reach the cautionary 10% unit-hour-utilization (UHU) level.
- None of AFD's ambulances exceed 13% UHU.
- AFD has a 32% chance of more than one incident co-occurring.
- Call processing time is 1 minute 18 seconds or faster 90 percent of the time.
- The turnout time is 2 minutes 10 seconds or faster 90 percent of the time.
- The first due travel time is 5 minutes 1 second or faster 90 percent of the time.
- The total response time for AFD is 6 minutes and 44 seconds or faster 90 percent of the time.
- It is difficult for AFD to assemble more than 10 firefighters in Alameda Point in under 8 minutes.
- AFD meets the Alameda County Emergency Medical Services response time performances for all 4 priority classes.
- The AFD Care Team is well-received by the public. It appears to have successfully met the system's goals during its first year of operation.
- The population is expected to continue to grow, and new developments in Alameda Point will contribute significantly to that growth. The population may exceed 90 thousand by 2040.

#### **Findings Associated with Recommendations**

- AFD does not have a list of all commercial occupancies in the city.
- AFD has no defined schedule for inspecting all commercial occupancies or businesses.

- The records management system is inadequate for a fire prevention bureau to track occupancies, inspections, and permits.
- The records management system's fire loss data may be inaccurate, with a potential overstatement of fire loss for specific fire incidents in 2022.
- The Fire Prevention Bureau needs to develop a uniform procedure for conducting plan reviews to ensure consistency between inspectors.
- The hydrant network in Alameda Point is out of the city network and may need updating and renovation.
- Opportunities may exist to improve EMS transport fee revenue.
- While there is a capital maintenance program and apparatus replacement policy, the City of Alameda does not appear to have a comprehensive capital improvement or replacement plan.
- There does not appear to be specialized equipment or capital replacement funds.
- Station 2 struggles to meet the needs of AFD. Overcrowding, old infrastructure, and inadequate apparatus access are among the priority concerns that should be addressed.
- The parking at Station 3 is inadequate for sharing with the Emergency Operations Center (EOC). Parking spaces are already taken up during normal operations, and in the event of an EOC activation, emergency managers and support staff do not have a dedicated space to leave their vehicles.
- The training center building is inadequate for office or training space. It should undergo a business safety inspection by the fire marshal's office to ensure all required systems are operational and safe.
- Per City Policy 48, appendix A, Medic 2 and Medic 4 have reached the end of their operational life and should be moved to reserve status. In addition, reserve engines 502 and 504 and reserve truck 504 have also reached the end of their life and need to be replaced.
- Per City Policy 48, appendix A, Engines 1 and 4 are approaching the end of their front-line life.
- Service demand and system analysis for 2020 and 2021 may be driven by the COVID-19 pandemic and associated societal measures taken to prevent its spread. The research indicated a significant change in the utilization of emergency services. It is supposed that many people were reluctant to call for medical aid, leave their homes, or travel during the pandemic. As a result,

incident volumes for these years may not be what agencies might expect in less restrictive times. For this reason, further evaluation is warranted as non-pandemic data becomes available.

- The incident volume indicated a significant dip during 2020, with a rebound in 2021 to levels more like those of the pre-COVID years. However, the number of responses may change significantly as the community recovers.
- The Alameda Point area lacks coverage as indicated by the ISO 1.5 Mile Engine distance and 4-minute travel model.
- The AFD has established EMS response goals but has not adopted any performance expectations besides EMS performance expectations.

## **Recommendations**

AP Triton used industry best practices, AFD policies and goals, the National Fire Protection Association (NFPA), and the CPSE guidelines when analyzing performance and deployment and identifying potential opportunities for improvement. The findings and recommendations sub-section of the Conclusions and Recommendations to Policymakers detail each recommendation. Each recommendation in Section III includes a description, the outcomes expected if adopted, and an estimated cost where available. The recommendations are grouped into “Policy and Operational Changes” and “Capital and Long-term Projects.” Some recommendations are likely to have been addressed during the writing of this report. In addition, the City of Alameda or AFD may not choose to adopt specific recommendations. However, these recommendations appeared logical to the subject matter experts and can help AFD meet industry standards. A summary list of all recommendations follows.

### **Policy and Operational Recommendations**

- Conduct an In-depth study of the ambulance transport fee schedule and update it as needed.
- Identify all commercial properties and target hazards.
- Mandate training and policy for fire loss calculations.
- Formally adopt emergency response goals.
- Review Incident Data Annually.
- Develop a schedule to inspect all commercial occupancies.
- Transition to a fire-based record management system for the fire prevention bureau.
- Create and fund a comprehensive improvement and replacement plan for the facility, apparatus, and equipment.

### Capital and Long-term Projects

- Follow city policy regarding new and reserve apparatus.
- Remove the current training center and add a station/training center building on the Station 5 site.
- Continue to improve and update the water system on the former naval station (Alameda Point).
- Refurbish, remodel, or replace station 2.
- Improve parking at the EOC.

### Stakeholder and Community Surveys

Appendices B and C are the documented details of both the stakeholder and community surveys. The stakeholder survey was conducted in March 2023 with the fire station and apparatus equipment review. These interviews were conducted to uncover any areas of the study that may have been missed during the information-gathering and analysis phase of the project. During these interviews, some areas of stakeholder concern were uncovered. However, as this was a qualitative data-gathering effort, any comment or concern only focused on the research and any additional questions to the agency. For AFD, no issues were substantiated or quantifiable with information gathered during research, additional data requests, or further questioning. However, Appendix B shows the responses in an unedited format for general AFD consumption. Because most stakeholder participants were associated in one way or another with AFD, each participant was assured that any comment they made would be anonymous. Therefore, the list of comments in Appendix B was sterilized in a way that ensured anonymity.

AFD opted for an additional general public survey. This survey is designed to give AFD some feedback on general public opinion. These surveys are intended to provide feedback to the agency but do not influence the technical aspect of this report. The grouped and analyzed survey results with unedited comments are included in Appendix C. Because the general public cannot know the complexities of providing service, the impact prevention has on response, or the relationship between medical response and fire response readiness, this information is gathered to ensure AFD maintains strategic and operational goals that align with public priorities. The following is a summary of the majority of positive and negative feedback received in the survey.

- The survey's most important service delivery priority was fire suppression; the least important was community events.

- The survey's most important first responder quality was a highly trained workforce. At the same time, the least was involvement in the local community.
- Similarly, the most critical planned improvement to the public was the technical competency of the workforce. The least important was expanding the types of services offered.
- Over 76% of the respondents were very satisfied with the services provided, while only 1% were dissatisfied.
- The number one expectation of the public for response time was four to five minutes, while three percent or less expected more than eight minutes. That expectation was changed 51% of the time, depending on the location of the incident. 47% did not think location should have an impact on response time.
- Over 75% of the respondents asked that information regarding emergency preparedness be communicated through social media, while only 10% listed the newspaper.
- Expectations and concerns were listed as a freeform text input. They cannot be quantified, but all responses are listed in Appendix C for feedback to the AFD.

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## **Section I:**

# **COMMUNITY RISK ASSESSMENT**

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## Overview of the City of Alameda

The City of Alameda is in Alameda County, part of the San Francisco Bay Area of Northern California. The city was a peninsula connected to Oakland until a canal was dredged in 1902, which separated it from the mainland. The waterfront became an industrial area, and Victorian homes and resorts were built to meet the demand of the many tourists visiting the area. In the early 1900s, it became the home of Neptune Beach, a major entertainment park and destination for many tourists. The Alameda Works Shipyard was a major industrial complex for shipbuilding and repairs, and it closed after World War II. In 1940, the Alameda Naval Air Station was opened, causing the population to swell to 89,000. It was announced in 1993 that the Naval Air Station would close, resulting in a loss of 16,000 jobs. The base closing on April 30, 1997, has allowed the city to reimagine the facilities.

The estimated 2022 population was 77,784, and the median household income was \$113,339. The education levels are high, and 59.4% of the population has a bachelor's degree or higher. Alameda is a Charter City with a council-manager form of government, and the city council is elected at large.

## All-Hazards Community Risk Assessment

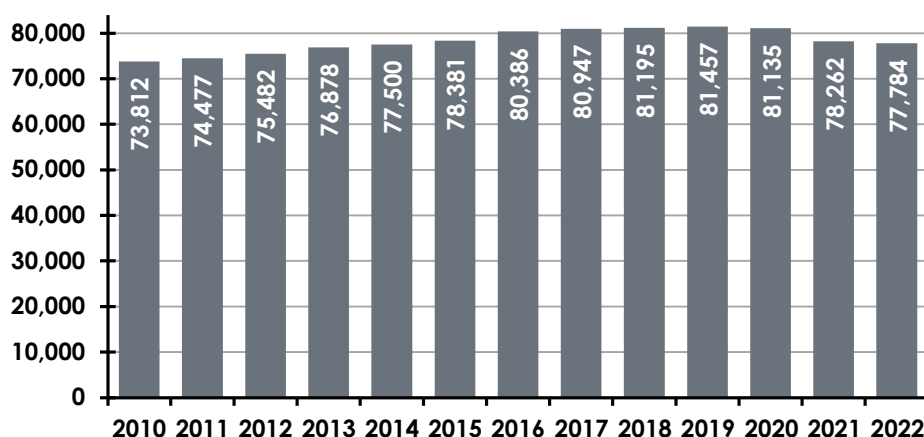
### Population & Demographics

Population and demographics can influence the type of services provided in a community. In addition, social conditions such as poverty, the locations of high-risk areas, and housing types can impact the service delivery provided by the City of Alameda Fire Department (AFD).

#### Population

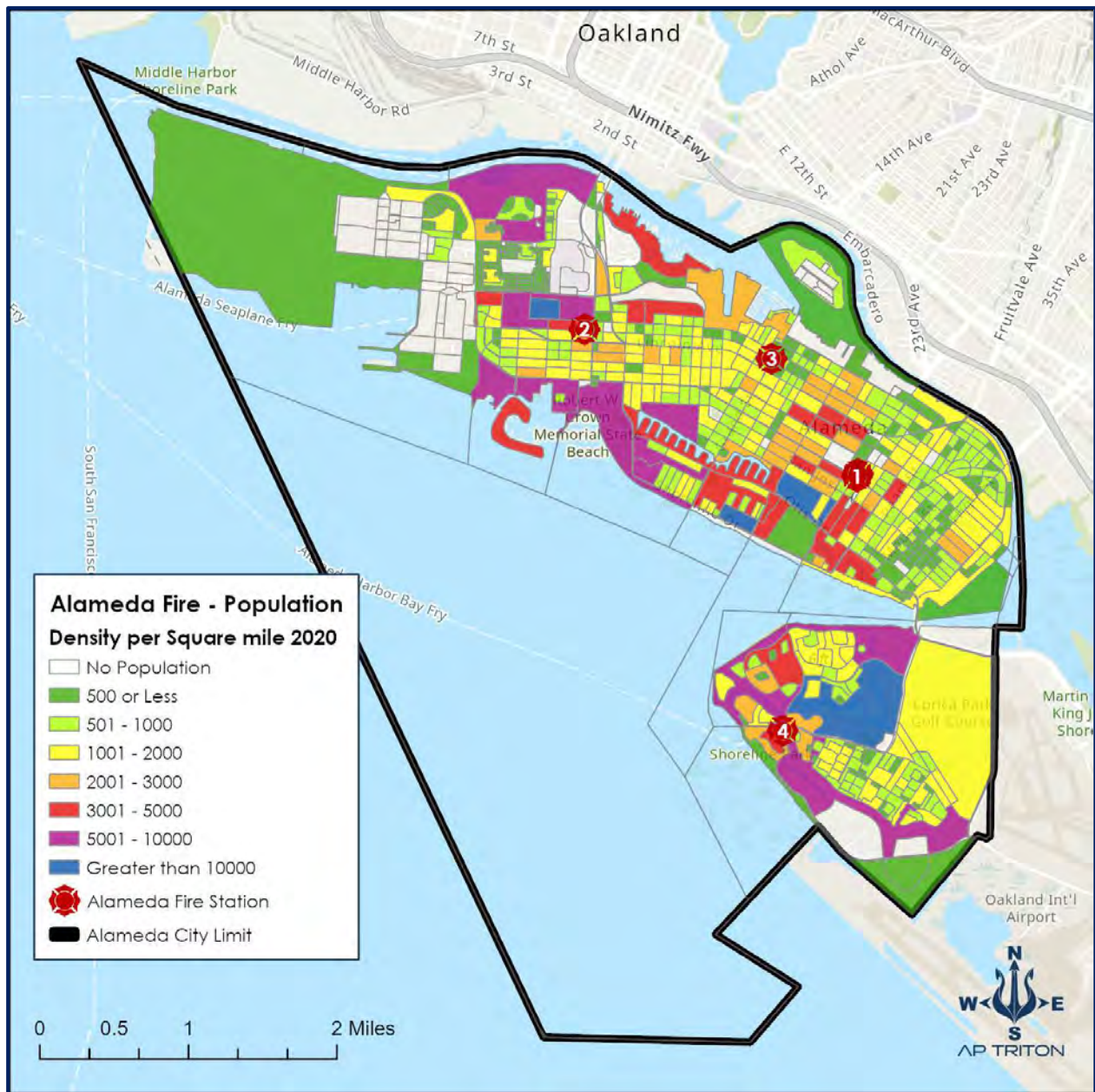
The city's population can directly affect the service delivered by AFD. Data from the California Department of Finance lists a population of 73,812 in 2010, increasing to 77,784 in 2022. The following figure shows the population estimates from 2011 to 2022.<sup>1</sup>

Figure 1: Population Estimates (2011–2022)

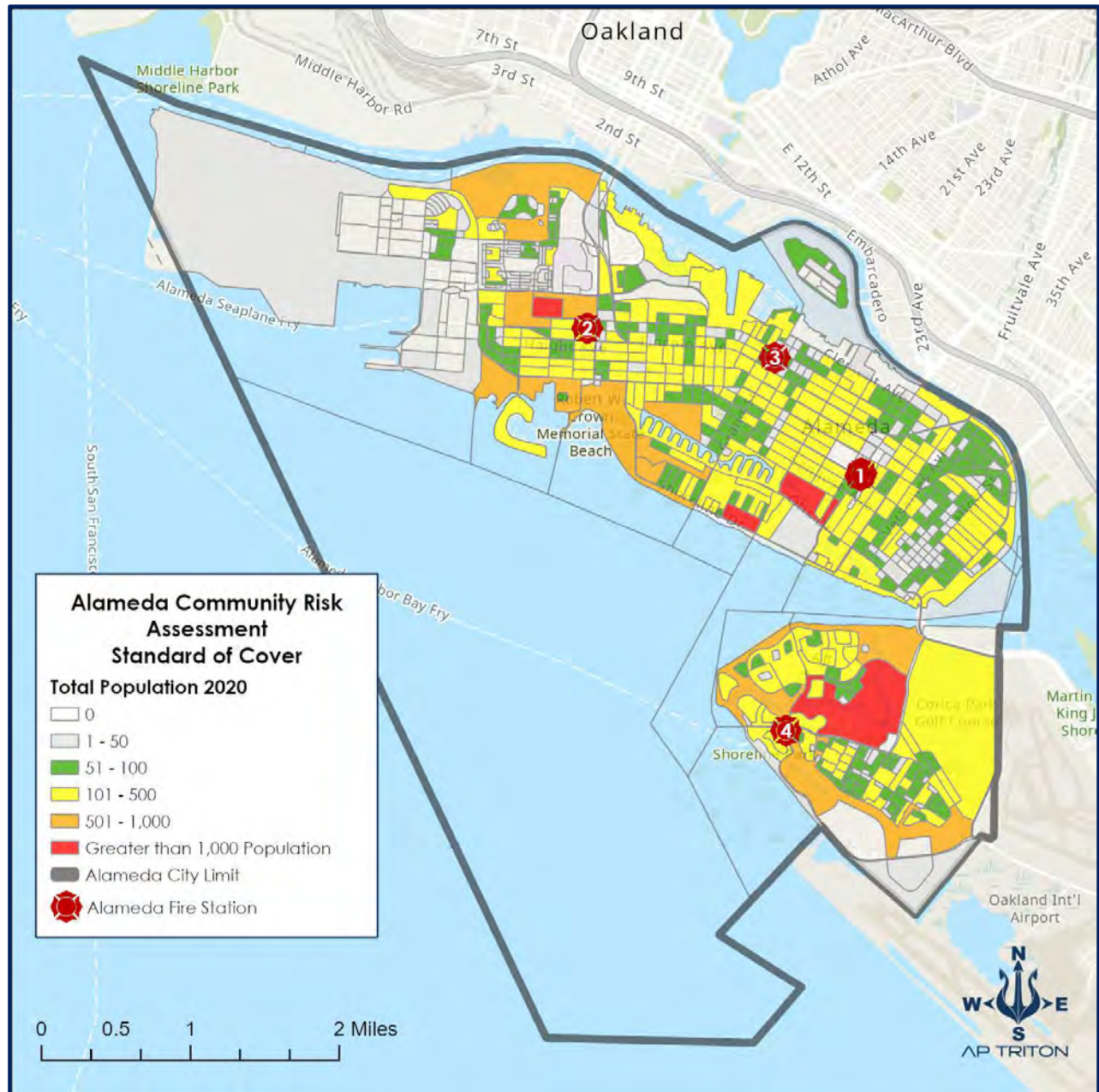


#### Population Density

The population is expected to grow even though it has decreased since 2019. Growth in Alameda will increase as new multifamily construction continues along the Oakland Estuary and at Alameda Point. The Alameda Housing Element states a need for 5,353 additional housing units by 2031.<sup>2</sup> These new housing units will increase the population in Alameda, specifically on the island's west end. The following figure identifies the areas by density, with the highest being the closest to the water.

**Figure 2: Population Density per Square Mile**

While the previous figure displays population concentrations relative to the size of the census block, it is sometimes easier to understand population distributions by examining the total population counted in the decennial census by census block, which is the lowest organizational area the census recognizes. The following figure shows the estimated population in each block based on the 2020 census.

**Figure 3: Total Population Counted by Census Block, 2020.****At-Risk Populations**

Different residents are at a higher risk of fires and other unintentional injuries, affecting department service delivery. The AFD response area is considered urban but has other suburban areas, ranging from single-family homes and multifamily apartments.



The National Fire Protection Association (NFPA) has identified groups with an increased risk of injury or death from a fire, as follows.<sup>3</sup>

- Children under five years of age
- Older adults over 65 years of age
- People with disabilities
- Language barrier
- People in low-income communities

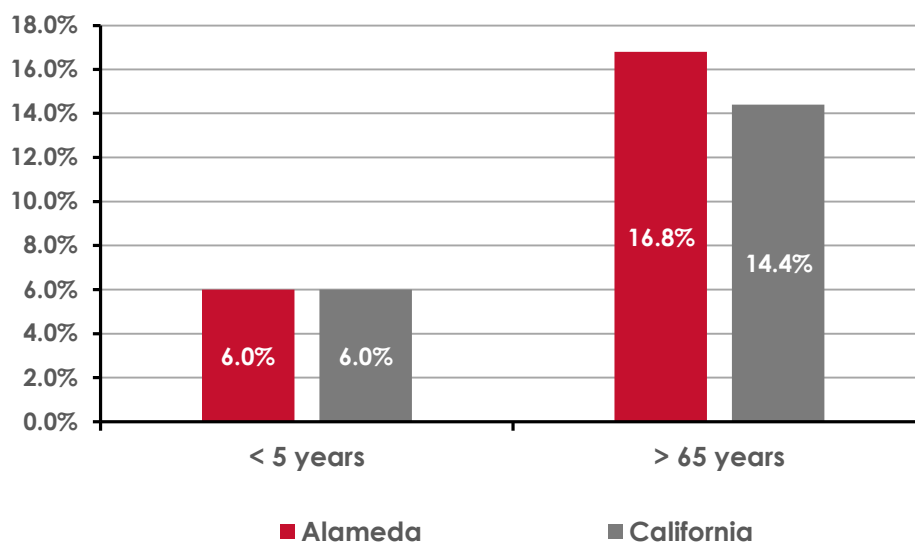
Data from the 2021 *U.S. Census American Community Survey Data* 5-year estimates<sup>4</sup> identified several groups in these categories that are more likely to need emergency services, specifically Emergency Medical Services (EMS), than other populations.<sup>5</sup>

### **Age**

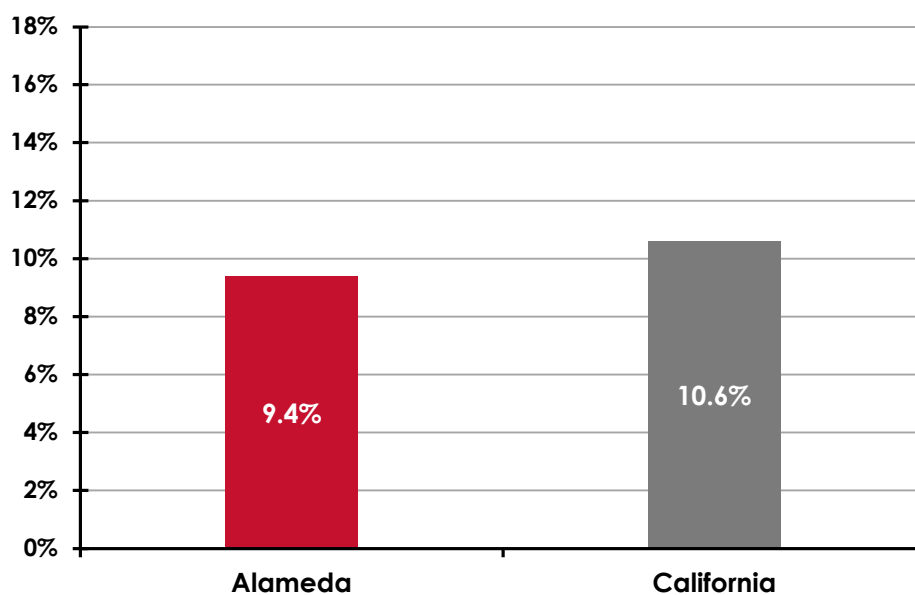
A person's age in a high-risk population directly relates to an increase in unintentional injuries and death or injury from a fire. For example, older adults are 2.6 times more likely to die in a fire than the general United States population. These age risks increase service demand, specifically for older adults needing additional medical care.<sup>6</sup>

Children under five are at more risk during an emergency because they are unable to care for themselves and need additional assistance. Recent trend data (2018) from the U.S. Fire Administration indicates that this age group's relative risk of dying in a fire has dropped 30% in the last 10 years and is credited to increased fire prevention and education. The percentage of children in Alameda under five is 6%, the same as in California.

The population of those over 65 is 16.8% in Alameda, higher than the state at 14.4%. The median age is 40.6 in Alameda compared to the state at 37.6. The following figure shows the percentage of children less than five years of age and those 65 years and older.

**Figure 4: Age Risk****Disabilities**

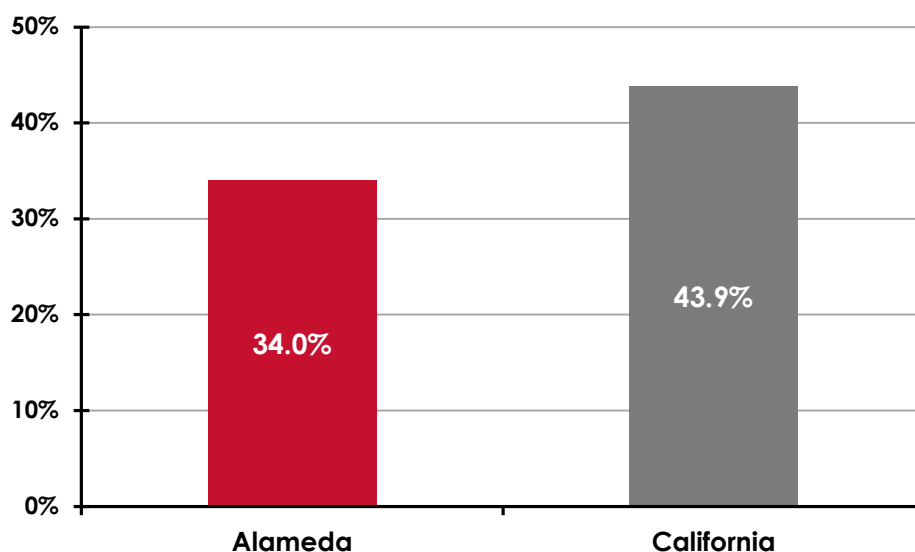
The residential population with disabilities is 9.4% in Alameda compared to the state at 10.6%. This population group may be unable to self-evacuate from a building during an emergency or need additional medical services because of their disability. This may create other demands for medical services, specifically as they age. The following figure depicts the percentage of households with a disability.

**Figure 5: Percentage of Households with a Disability<sup>7</sup>**

### Language Barriers

AFD may encounter someone whose primary language is not English and who will need additional help communicating. The number of people over five speaking a language other than English is approximately 34%, lower than the state at 43.9%. This population may not understand smoke alarm technology designed to provide early warning during a fire, increasing the risk of injuries or death in their home.

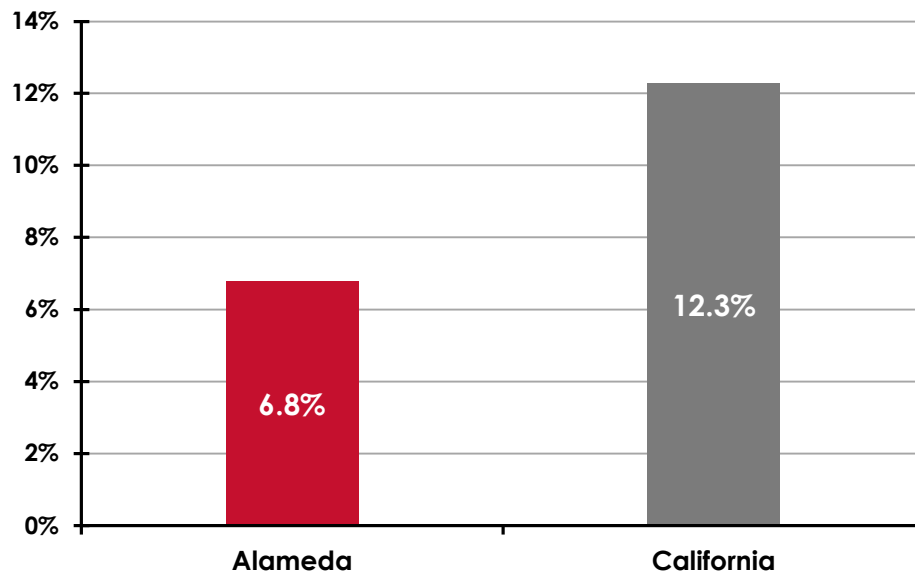
**Figure 6: Language Barriers<sup>8</sup>**



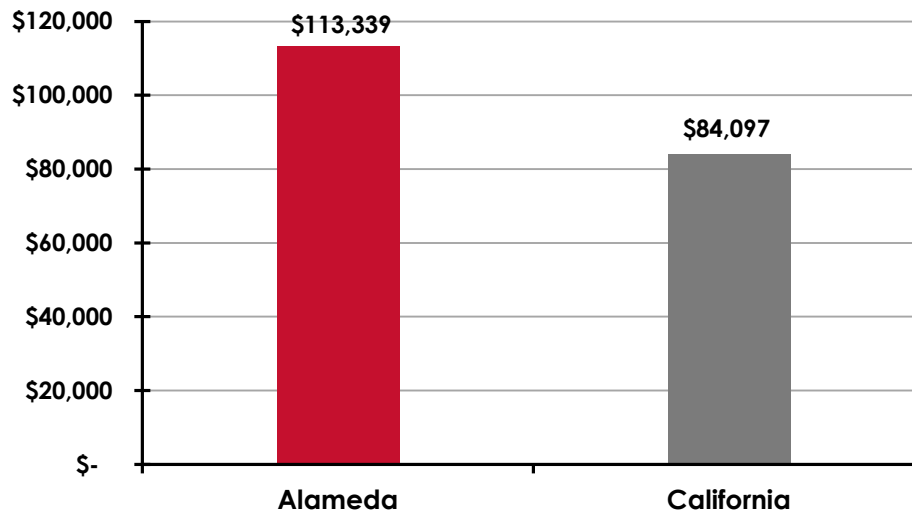
### Poverty & Income

Some populations may have lower incomes, increasing the risks of fires and medical illnesses. People living below the poverty level are considered at higher risk when combined with other factors such as education levels, disabilities, or unable to work. In addition, lower incomes can lead to higher mental health impacts in the community. A report from the *World Economic Forum* states that depression and anxiety are nearly three times as likely in people with low incomes.<sup>9</sup>

Only 6.8% of the population in Alameda is impoverished, less than the state at 12.3%. The following figure provides the percentage of people in poverty compared to the State of California.

**Figure 7: Percentage of the Population in Poverty<sup>10</sup>**

The median household income is \$113,339, higher than the state's \$84,097. The following figure compares the city and state median household income.

**Figure 8: Median Household Income<sup>11</sup>**

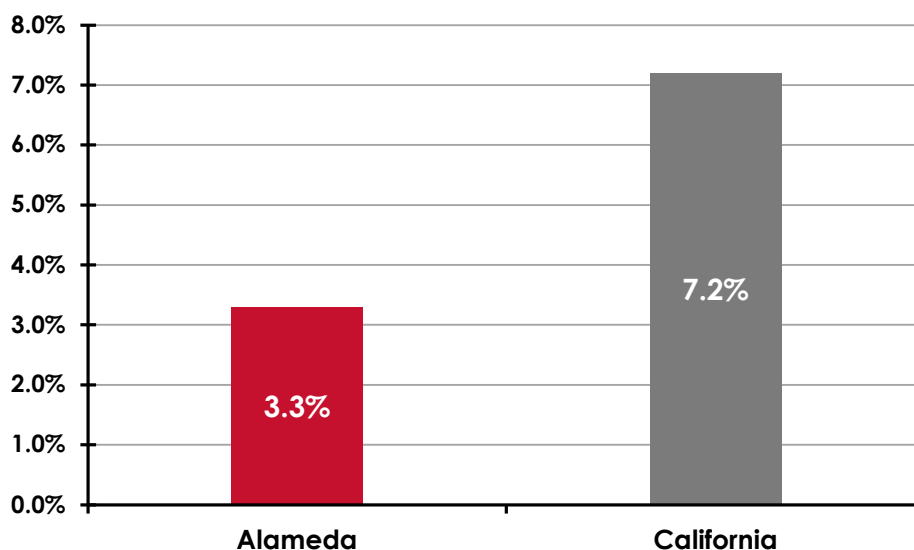


## Additional Demographics

### Persons without Health Insurance

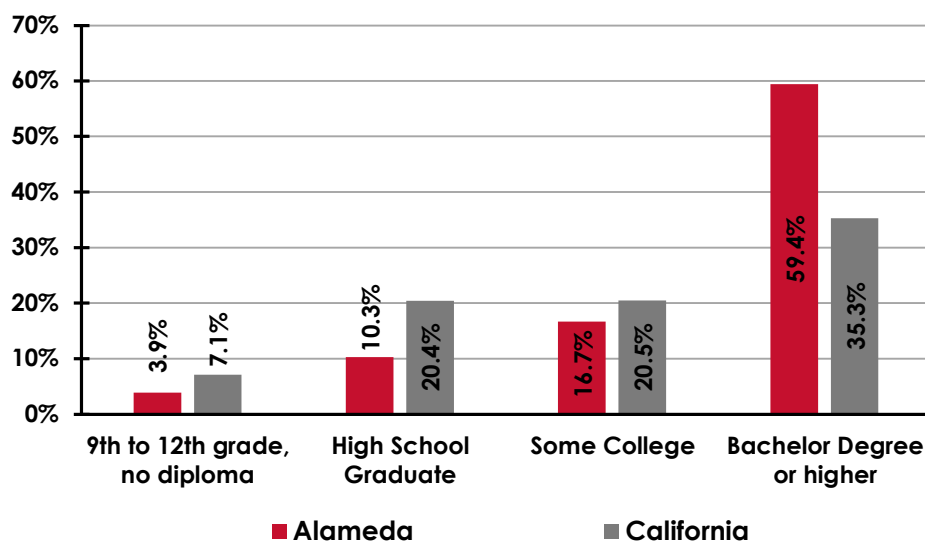
Populations without adequate health care can challenge service delivery and increase the rate of medical incidents. In addition, not having health insurance may affect lower-income people at a higher rate since they cannot pay for medical visits. An estimated 3.3% of Alameda's population is without health insurance, compared to 7.2% in the state. The following figure provides the percentage of people with no health insurance.

**Figure 9: People without Health Insurance<sup>12</sup>**



### Education Levels

Educational attainment is not considered one of the at-risk populations. Still, it is recognized as another risk group when developing fire and life safety education programs. In Alameda, 3.9% of the population does not have a high school diploma, compared to 7.1% in the state. This group of people with lower education levels may fall into other categories, such as lower incomes and no health insurance. In comparison, 10.3% of those 25 years and older achieved a minimum of a high school diploma, compared to 20.4% in the state. Additionally, approximately 59.4% of the population have a bachelor's degree or higher in Alameda, compared to the state, which has 35.3%. The following figure provides information on the education levels in Alameda as compared to the State of California.

**Figure 10: Education Levels for People Over 25<sup>13</sup>**

### Race & Ethnicity

Race is considered a person's identification with a social group, such as White, Black, African American, or Asian. At the same time, ethnicity identifies someone based on nationality, religion, language, or culture. The following figure shows how race and ethnicity are represented in Alameda compared to the state.<sup>14</sup>

**Figure 11: Race & Ethnicity**

Race & Ethnicity	Alameda	California
White alone	45.2%	71.9%
Black or African American alone	6.1%	6.5%
American Indian & Alaskan alone	0.5%	1.6%
Asian alone	31.3%	15.5%
Native Hawaiian & Other Pacific Islander alone	0.5%	0.5%
Two or more races	10.5%	4.0%
Hispanic or Latino (of any race)	12.4%	39.4%
White alone, not Hispanic or Latino*	42.1%	36.5%

\*White alone, not Hispanic or Latino, are individuals who responded "No, not Spanish/Hispanic/Latino" and who reported "White" as their only entry in the race question. Data was sourced from the U.S. Census.

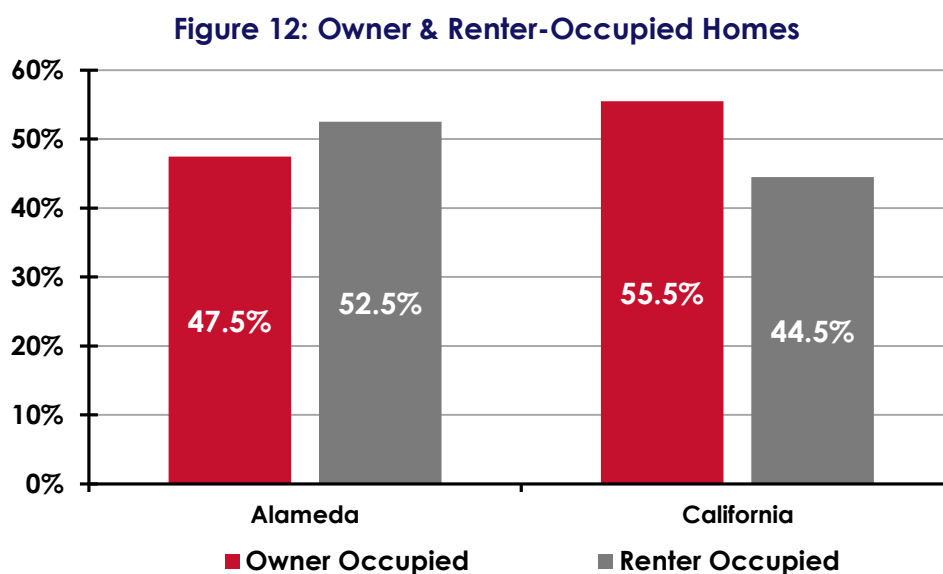
## Housing Characteristics

Housing types can vary in a community and provide insight into ownership, the age of the home, and the number of units in the building. Alameda has approximately 34,452 housing units, while 1,952 are vacant.<sup>15</sup> Vacant structures can pose a risk for the fire department and community if the building is not secured to prevent entry. If the building is not maintained, the structural integrity can degrade and present problems during a fire or natural disaster. Vandalism may create additional problems for fire departments and law enforcement.

While vacant structures pose a higher risk to firefighters, it is uncommon for fires in these buildings to pose a hazard to anyone but the firefighters. However, data from the NFPA states that from 2015 to 2019, 75% of the fire deaths occurred in homes, and 57% were male.

## Housing Ownership

Homeownership in Alameda is 41.3%, compared to 55.3% in the state. The following figure shows the percentage of owner-occupied and renter-occupied housing.

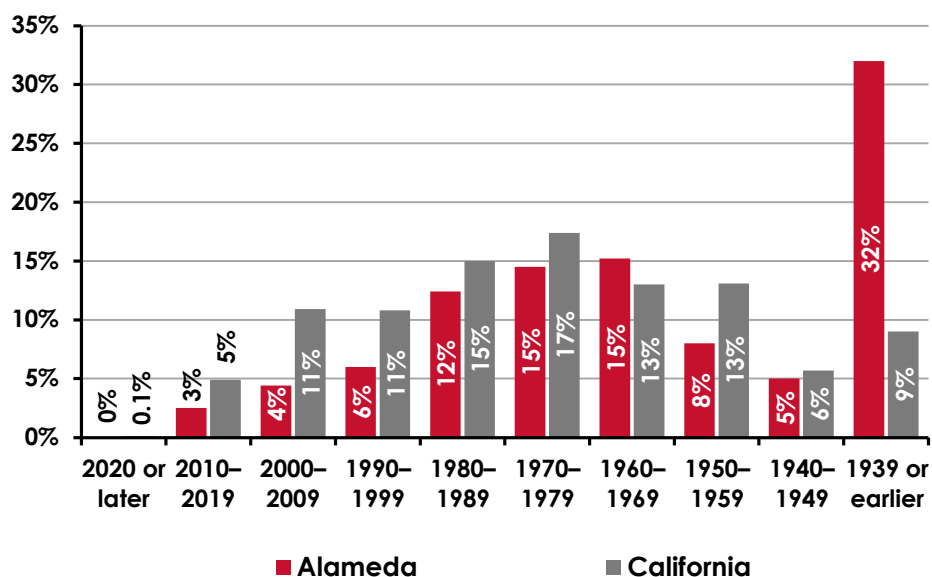


## Age of Housing

As buildings age, the cost of maintaining the structure increases over time. Homes built before smoke alarm installation requirements create a higher risk if alarms are not present. Homes built before 1980 make up 75% of the housing in Alameda, which is before most building code requirements for smoke alarm installations.<sup>16</sup> Working smoke alarms have reduced fire death and provided an early warning during the event of a fire.

New codes now require smoke alarms in each bedroom, hall, and floor of new residential properties. The following figure provides the age of housing by decade.<sup>17</sup>

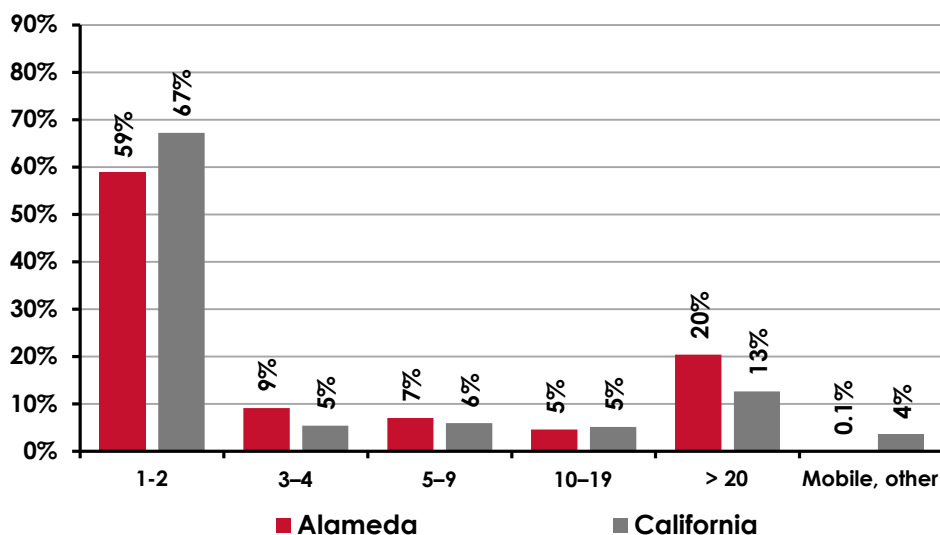
**Figure 13: Age of Housing Unit by Decade**



### Housing Units

The number of people living in one- or two-family dwellings is 59%, compared to the state at 67%.<sup>18</sup> This high percentage is reflective of home ownership. The following figure lists the percentage of buildings by housing units.

**Figure 14: Housing Unit per Building**

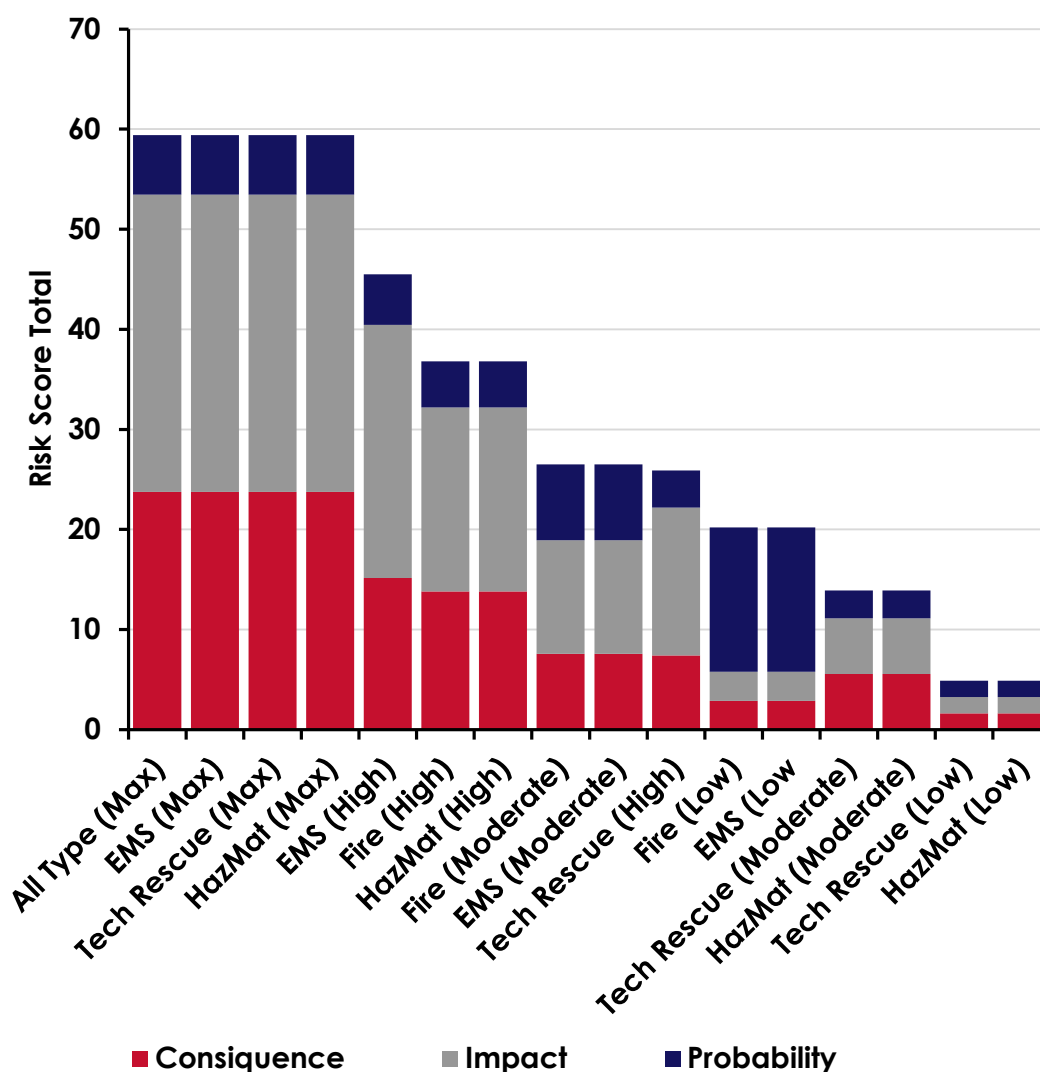


## Risk Classification

The CPSE encourages agencies to classify risks considering hazard type and event threat. The hazard type is grouped by specific programs the AFD offers to mitigate and respond to threats. The programs identified by AFD include fire, medical, technical rescue, and hazardous materials response. Other programs, such as wildland firefighting and airport crash fire rescue operations, are not systems the AFD provides.

Once the programs and the associated threats are understood, the CPSE instructs agencies to define the severity of each. Each group is listed by intensity level, including low, moderate, high, and maximum. Based on feedback from the AFD, these levels are defined in Appendix A.

The final step in classification is to build a grouping by each threat and severity based on its influence on operations and community health. The CPSE recommends using a three-axis methodology. This methodology is based on each group's probability of occurrence, the consequence to the community if it does occur, and the impact on the agency. An agency can create a relationship and focus on the severity of the separate risk classifications by assigning a score to each segment. In addition, the CPSE has defined a process utilizing a modification of finding the area of a triangle to give a relative magnitude of the risk class. The following figure shows a simple relative risk classification graphic for AFD with the core components for reference.

**Figure 15: Relative AFD Risk Classification**

Using this information, AFD can picture the order of magnitude by each classification. Most maximum risks carried the same score for consequence and probability. For larger agencies, a maximum risk may have less impact on overall operations. However, like agencies of a similar size and based on AFD's available resources, the impact was similar and will likely require outside assistance. Because of this, all maximum risks had the same overall score and were grouped together.

The CPSE recommends showing each classification on its own three-axis graphic so the agency can see precisely how each grouping may drive the response or focus on prevention. What follows is the complete methodology used to classify and present the different risks the AFD community faces.

## Risk Assessment Methodology

Developing a risk score to determine risks in a community is necessary to provide an organization with a method for creating incident response protocols. The Three-Axis Heron mode, recommended by the CPSE, establishes a score by reviewing probability, consequence, and impact factors and assigning scores between 2 and 10 in each category.<sup>19</sup> A description of the incident types for each risk is found in Appendix A.

Use of the Three-Axis Heron Formula includes the following equation.

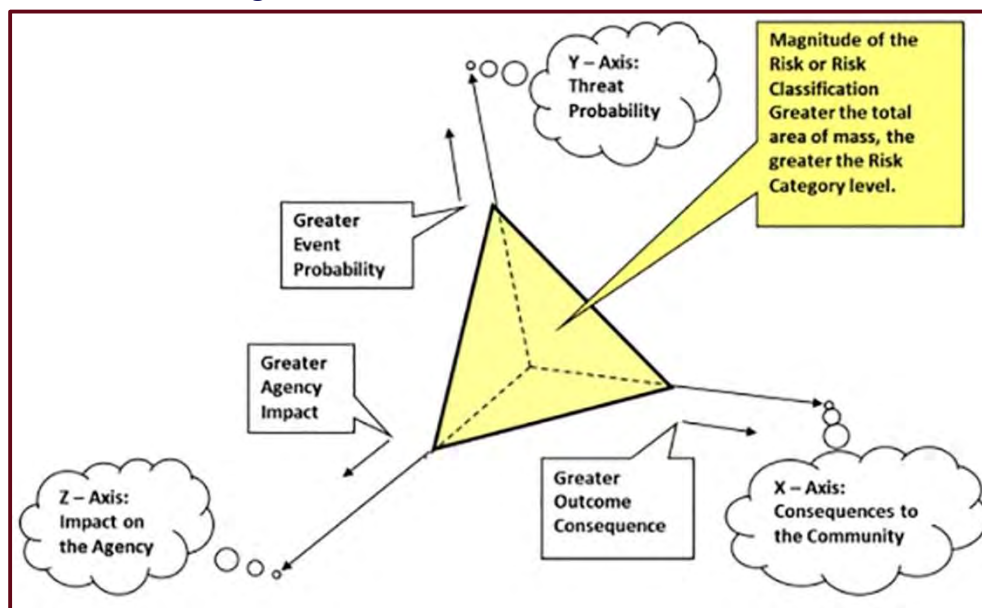
$$\text{Risk} = \sqrt{\frac{(P * C)^2 + (C * I)^2 + (I * P)^2}{2}}$$

The risk is graphically illustrated through a three-axis model as follows:

- **P** = Probability (Y-Axis)
- **C** = Consequences (X-Axis)
- **I** = Impact (Z-Axis)

The following figure summarizes the three-axis risk classification process and how a score is developed.

**Figure 16: Three-Axis Risk Classification**



When developing the score, each of the three scoring components is based on AFD incident data. An example of a low-risk fire response scoring is based on the probability of

that type of incident occurring. Most low-risk incident types are frequent (occurring multiple times a day), but the consequences to the community and impact on the city are low. The probability of a low-risk incident in the city is 10 (high), while the consequence and impact are 2 (low). These numbers are placed into the above formula to create a score of 20.2. The score will increase dramatically for maximum risk. However, the probability is low (2) because the consequence to the community is an 8, and the impact on AFD is the highest at 10, which gives a score of 59.4.

These scores are designed to provide information to AFD to determine the level of service required for the community. The probability of an incident may affect response times if multiple events occur simultaneously. Even if the risk is low, it will place an apparatus out of service for the response. The higher the score, the greater the risk in the community. Although the highest risk score available is 122.5, the probability of this type of event occurring is low. The following information provides additional information on probability, consequence, and impact.

### Probability

Probability is the likelihood of an incident occurring in the community over time. It can range from a rare event to one that occurs often. This axis reflects the probability of a particular type of incident occurring (contributing to the risk level). Many factors are considered, including the time of day, location, hazard present, season of the year, building construction and maintenance, demographic characteristics, and more. The following figure defines probability categories.

**Figure 17: Probability or Likelihood of Occurrence**

Score	Category	Probability or Likelihood
2	Minor	Unlikely: < 0.02% of total call volume. Expected to occur very rarely.
4	Low	Possible: 0.02%–0.07% of total call volume. Expected to occur rarely.
6	Moderate	Probable: 0.07%–0.3% of total call volume. Expected to occur monthly.
8	High	Likely: 0.3%–2% of total call volume. Expected to occur multiple times per week.
10	Extreme	Frequent: > 2% of total call volume. Expected to occur one or more times per day.



## Consequence

The consequence of an incident can vary from minor casualties to severe impacts that may destroy historical or major facilities in the community and create a large loss of employment or life. The following figure defines consequence categories.

**Figure 18: Consequence to the Community**

Score	Category	Consequence to the Community
2	Minor	1–2 people affected (injuries/deaths). < \$10,000 loss.
4	Low	< 5 people affected (injuries/deaths). < \$500,000 loss.
6	Moderate	5–50 people affected (injuries/deaths). \$500,000–\$1,000,000 loss.
8	High	51–100 affected (injuries/deaths). \$1,000,000–\$5,000,000 loss.
10	Extreme	>100 people affected (injuries/deaths). > \$5,000,000 loss.

## Impact

The third factor in determining the risk is the fire department's impact and the critical tasking needed to control or mitigate an incident. This includes the number of emergency responders and apparatus available internally or from external agencies. It measures the department's ability to respond to a given risk or incident while still providing service to the remaining parts of the city. The following figure defines impact categories.

**Figure 19: Impact on Operational Forces**

Score	Category	Impact on Operational Forces
2	Minor	≥ 90% Remaining Apparatus/Crews
4	Low	≥ 75% Remaining Apparatus/Crews
6	Moderate	≥ 50% Remaining Apparatus/Crews
8	High	≥ 25% Remaining Apparatus/Crews
10	Extreme	< 25% Remaining Apparatus/Crews

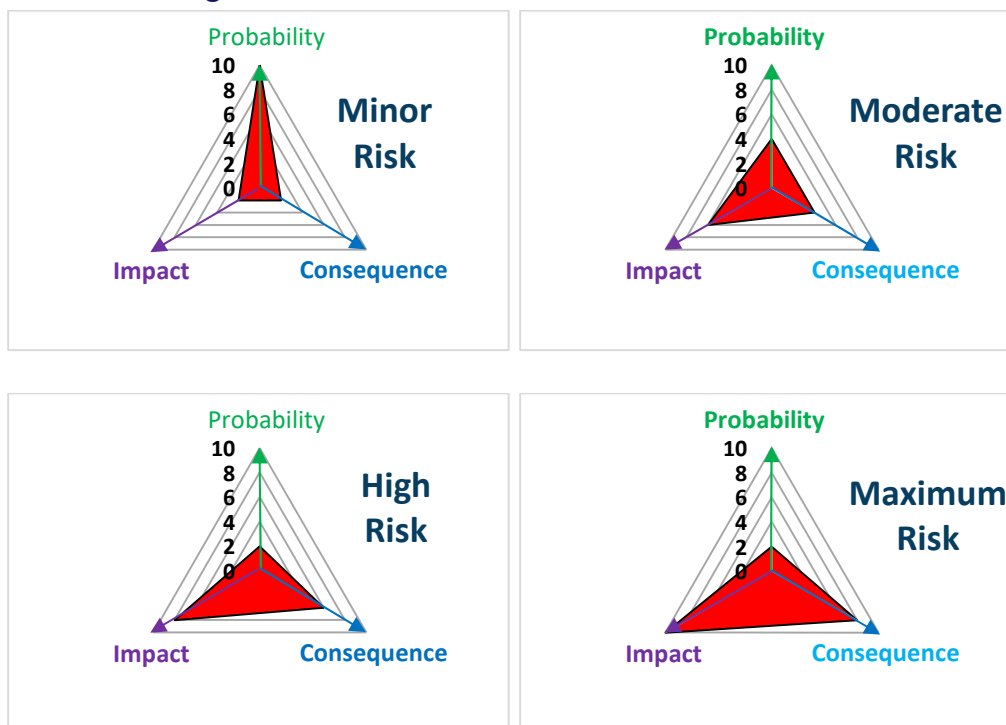
## Fire Response

AFD is the primary provider for mitigating fire-related incidents. These range from low-risk incidents, such as a vehicle fire, to a maximum-risk incident involving a school fire. Fire risks for a vehicle fire are considered low compared to a maximum risk for a school that houses students. This scoring is applied to four different categories of fire incidents in AFD's response area to provide staffing needs to meet critical tasks on the fire ground. The following figures provide the fire response risk assessment scores and three-axis risk classifications.

**Figure 20: Fire Response Risk Assessment**

Description	Low			Moderate			High			Maximum		
Risk Score	P	C	I	P	C	I	P	C	I	P	C	I
	10	2	2	4	4	6	2	6	8	2	8	10
Score Assigned	20.2			26.5			36.8			59.4		

**Figure 21: Fire Three-Axis Risk Classifications**



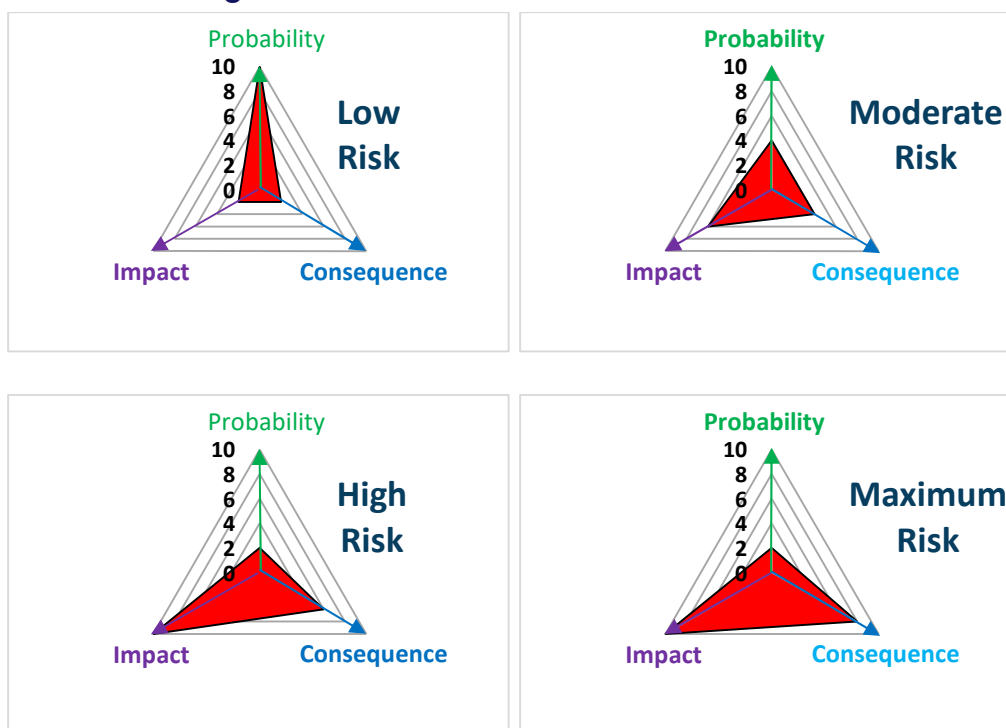
## Emergency Medical Services Response

AFD provides basic and advanced life support emergency medical care transport services in the city. Low-risk incidents range from a medical assist to a maximum-risk incident for a multi-victim event. The following figures provide the risk score and classifications assigned to each type of EMS risk in AFD. The following figures provide the EMS response risk assessment scoring and the three-axis risk classifications.

**Figure 22: EMS Response Risk Assessment**

Description	Low			Moderate			High			Maximum		
Risk Score	P	C	I	P	C	I	P	C	I	P	C	I
	10	2	2	4	4	6	2	6	10	2	8	10
Score Assigned	20.2			26.5			45.5			59.4		

**Figure 23: EMS Three-Axis Risk Classifications**



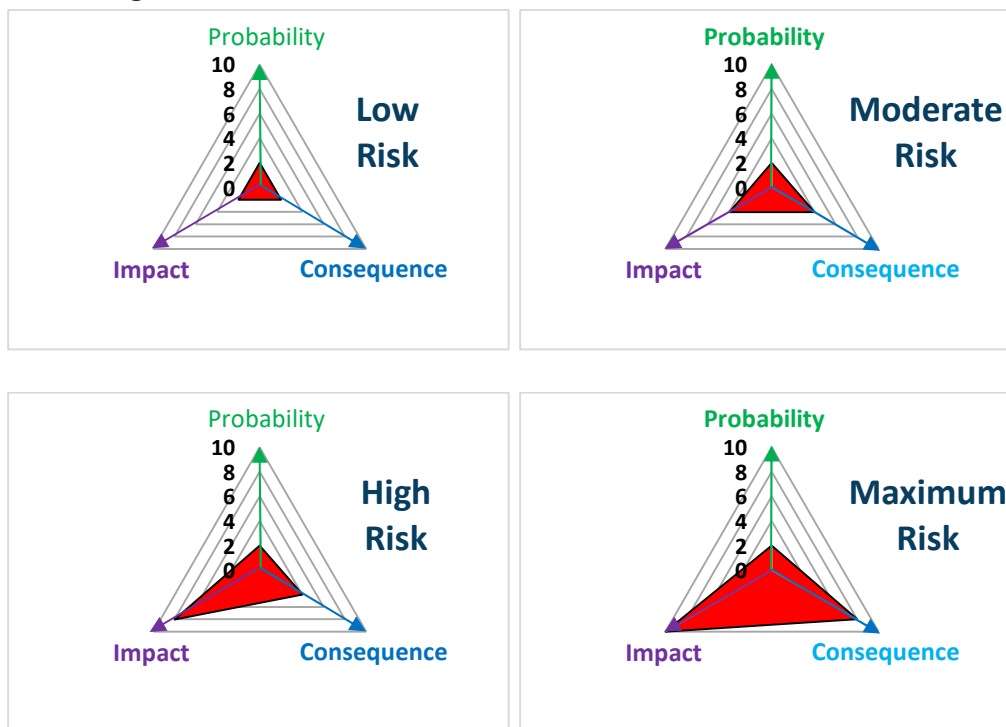
## Technical Rescue Response

Rescue services can vary from a low-risk incident, such as accessing a locked vehicle with a child inside, to a confined space incident (maximum risk) that potentially requires many personnel to mitigate the incident. The following figures provide the risk score and classifications assigned to each type of technical rescue risk in AFD's response area. The following figures provide the technical rescue response risk assessment scoring and the three-axis risk classifications.

**Figure 24: Technical Rescue Response Risk Assessment**

Description	Low			Moderate			High			Maximum		
	<b>P</b>	<b>C</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>I</b>
Risk Score	2	2	2	2	4	4	2	4	8	2	8	10
Score Assigned	4.9			13.9			25.9			59.4		

**Figure 25: Technical Rescue Three-Axis Risk Classifications**



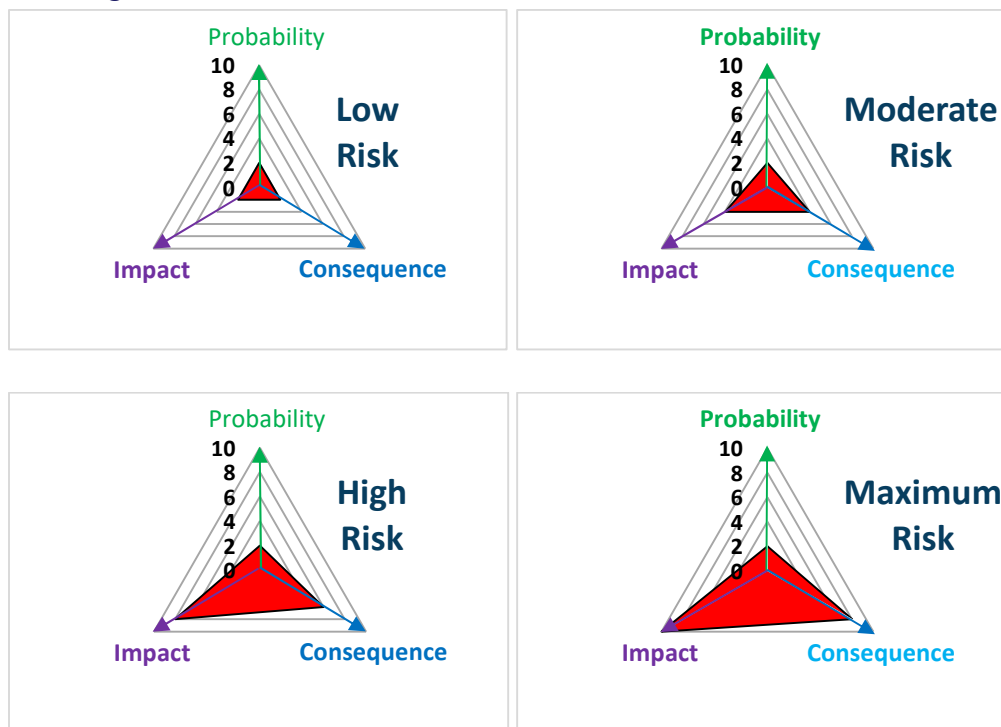
### Hazardous Materials Response

Hazardous materials responses can vary from low-risk odor investigations to the maximum risk for a fuel tanker fire in higher populated areas. Most of these incidents can be managed by AFD, but higher risks may need assistance from outside resources. The following figures provide the risk score and classifications assigned to each type of hazardous materials risk. The following figures provide the scoring of hazardous materials response risk assessment and three-axis risk classifications.

**Figure 26: Hazardous Materials Response Risk Assessment**

Description	Low			Moderate			High			Maximum		
	<b>P</b>	<b>C</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>I</b>
Risk Score	2	2	2	2	4	4	2	6	8	2	8	10
Score Assigned	4.9			13.9			36.8			59.4		

**Figure 27: Hazardous Materials Three-Axis Risk Classifications**



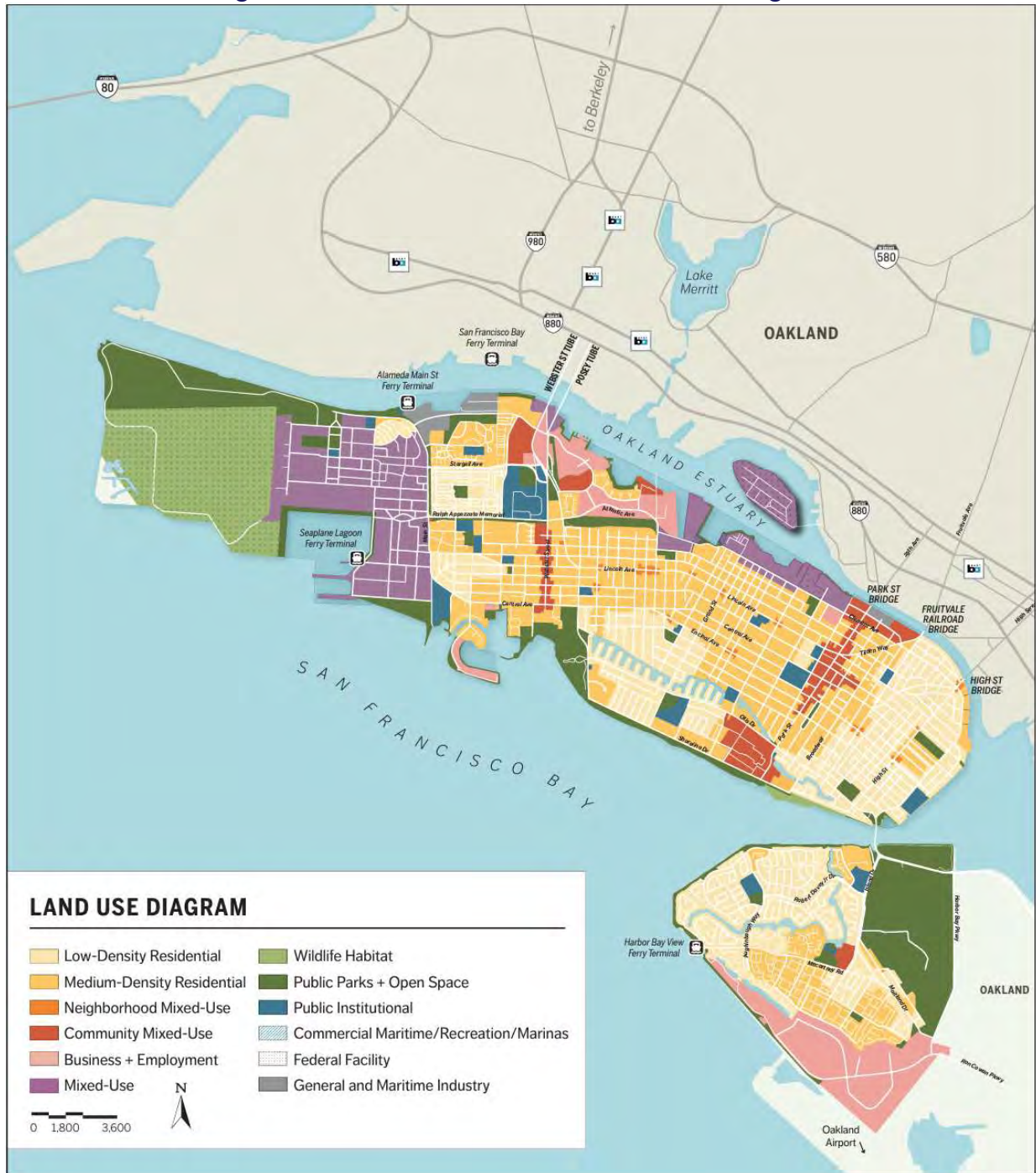
## Land Use

The concept of land use regulation is to provide attractive social and environmental outcomes to assist in the efficient management of development. Land use for a community is designed to assign a classification for properties within a geographical area generally under governmental control. Zoning areas may vary from one portion of the service area with a mixture of low-, moderate-, and high-risk properties.

- **Low Risk:** Areas zoned for agricultural purposes, open spaces, low-density residential, and other low-intensity use.
- **Moderate Risk:** Areas zoned for medium-density single-family properties, small commercial and office use, low-intensity retail sales, and similarly sized business activities.
- **High Risk:** High-intensity business districts, mixed-use areas, high-density residential, industrial, storage facilities, and large mercantile centers.

Development in Alameda has changed since the 1900s, and a large portion became an island in 1902 when the Tidal Canal was completed. During World War II, the Alameda Naval Air Station opened, the city's shipyards were in production 24 hours per day, and the population increased to 89,000. In 1973, voters approved an initiative to prohibit all multifamily housing. The federal government transferred the Alameda Naval Air Station, which had been closed since 1997, to the city of Alameda. The agreement was formally adopted by the City Council on May 21, 2013.<sup>20</sup>

Population growth is expected in the City of Alameda, and per California State Law<sup>21</sup>, the city publishes a general plan. The City Council adopted the published Alameda General Plan 2040 on November 30, 2021. City staff indicated this document is intended to be a living document, and the published version shows it was amended as of June 7, 2022.<sup>22</sup> The plan shows that most of the growth in the City of Alameda will occur at the former Naval Air Station known as Alameda Point. This growth will likely have the effect of increasing demand for service by the AFD. The City of Alameda provided the following map from its general plan: a land use diagram.

**Figure 28: Alameda 2040 General Plan Use Diagram**



## Physical Assets Protected

Commercial occupancies or properties are considered target hazards in every community because of the special or unique risks to emergency responders and the occupants during an incident or event. Each of these occupancies should have up-to-date pre-incident surveys completed annually. The surveys allow responders to become familiar with the building, property, and special hazards. AFD is reviewing the current process for pre-incident planning that allows personnel to access the information in the field. The Fire Marshal is now requesting copies of site plans for new construction that can be used when a new system is identified and implemented.

### Hazardous Materials

Events that occur without warning or that are unknown and suddenly appear are considered technological hazards, such as industrial accidents or hazardous chemical releases. Each community should create contingency plans for the specific risks in its jurisdiction. These plans may include permitting, periodic fire and life safety inspections with inspectors specifically trained in hazardous materials storage and use, and pre-incident planning. These activities are designed to reduce risks and provide on-site visits for fire department personnel.

Suppose a building or facility that stores or produces hazardous materials has been identified. In that case, specialized personal protective clothing and equipment may be required to control or mitigate the event. Locations with hazardous materials on-site for any time during the year exceeding the limits established by the Environmental Protection Agency are required to file Tier II reports.

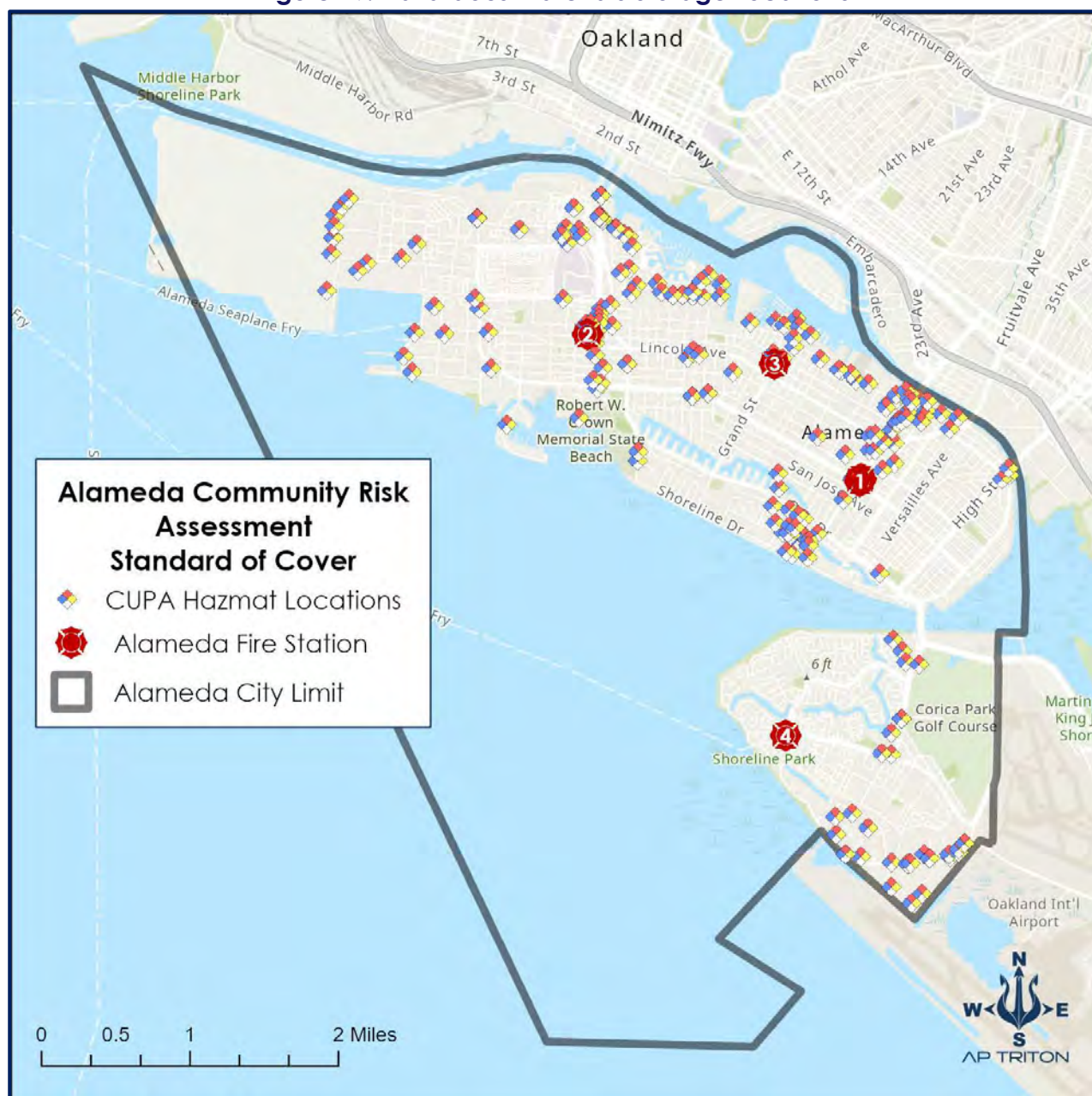
These reports are provided to local jurisdictions, local emergency planning committees, and the State's Emergency Response Commission, as required by the Emergency Planning and Community Right-to-Know Act of 1986, also known as SARA Title III. These thresholds require submission:

- Ten thousand pounds for hazardous chemicals,
- The lesser of 500 pounds or the threshold planning quantity for extremely hazardous chemicals and,
- California requires additional reporting quantities through a five-tier system that authorizes the treatment and storage of hazardous waste.



AFD provides hazardous materials response at the operations level only. It has two personnel who are certified as HazMat Incident Commanders. For incidents requiring a higher level of response, the Alameda County Fire Department has a Type I California Office of Emergency Services hazardous materials team, which can assist through a memorandum of understanding.

The Alameda County team trains annually with the Alameda Fire Department. AFD provided a list of California EPA sites tracked in the city. The following figure provides the locations of hazardous materials storage in Alameda listed by the Certified Unified Program Agency (CUPA).

**Figure 29: Hazardous Materials Storage Locations**

### Structural Risks

The risks created by residential or commercial occupancies increase based on the type and use of a building. The AFD Fire Prevention Bureau (FPB) is responsible for the inspections of commercial and residential properties, specifically, inspections required by the state, which include educational, institutional, residential (e.g., R1—hotels, R2—apartments, and R3—daycare), and high-rise. The fire prevention bureau meets this schedule with assistance from the operations division, which inspects apartment complexes.

California has no requirements to inspect all occupancies. However, a comprehensive inspection program and a schedule based on the risk of the building should be developed. The following figure provides an example of the International Building Code (IBC) occupancy groups and the associated risk for each type.

**Figure 30: Occupancy Classifications**

Risk	IBC Group	Examples
<b>High</b>	A-1, A-2	Nightclubs, restaurants, theater, airport/cruise ship terminals
	A-3, A-4, A-5	Arenas, museums, religious
	H-1, H-2, H-3, H-4, H-5	Hazardous materials sites (Tier II)
	B	All government & public buildings, other office buildings over two stories
	E	Schools, daycare centers
	I-1, I-2, I-3, I-4	Hospitals, assisted living centers, correctional
	M	Strip malls, closed-air shopping malls, big box stores
	R-1, R-3	Hotels, motels, dormitories, apartments, board & care facilities
	Special Risk	Railroads, interstate highways, airports
	(Target hazard)	Any building with life safety risk beyond the reach of preconnected hose lines > 200 feet
<b>Moderate</b>	B	Outpatient clinics, general business, offices <3 stories
	F-1	Fabrication or manufacturing of combustible materials
	M	Mercantile, free-standing
	I-2, R-4	Foster group homes, assisted living homes
	S-1	Storage of combustible materials, car repair facilities, hangars
<b>Low</b>	F-2	Fabrication or manufacturing of non-combustibles
	R-1, R-2	1- and 2-family dwellings, foster homes
	S-2	Storage of combustible materials
	U	Barns, silos, and other unclassified buildings

NFPA 1730: *Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations* provides a minimum inspection frequency, as shown in the following figure.

**Figure 31: NFPA Minimum Inspection Frequency**

Occupancy Risk Classification	Frequency
High	Annually
Moderate	Biennially
Low	Triennially
Critical Infrastructure	Per AHJ*

\*Authority Having Jurisdiction

When commercial buildings are not inspected regularly, the occupancy type could have changed without going through a change-of-use process. As a result, it may be operating in violation of the fire and building codes.

AFD currently uses Accela, the software system used by the building inspection department, to track inspections during the permitting and construction phases and annual life safety inspections of existing occupancy.

FPB personnel are transferred from the operations division. They may not have experience as a fire inspector before moving to the FPB. When assigned to FPB, they must commit to serving five years, and timelines are designed to make the employee proficient. It takes several years to acquire the necessary certifications and experience to become a plan review specialist or inspector.

### **Educational & Childcare Facilities**

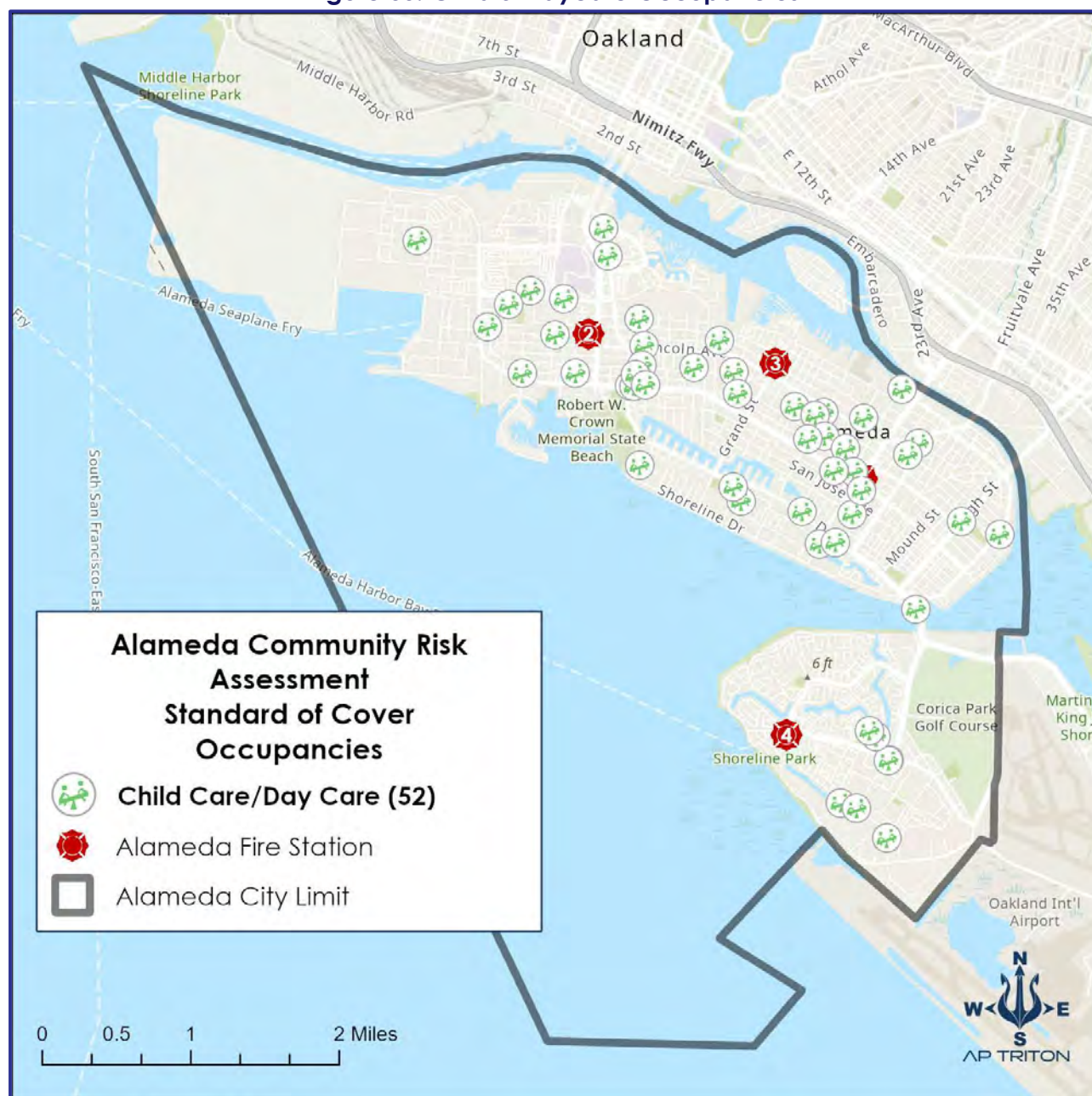
Public and private schools and childcare facilities increase risks in any community and require substantial assistance during a significant event such as a mass casualty incident or fire response. In Alameda, numerous schools and childcare facilities require inspections and pre-incident plans to ensure the property is safe and that emergency responders are familiar with the location and site-specific hazards.

The following figures provide the location of schools and childcare occupancies in Alameda.

**Figure 32: Educational Occupancies**



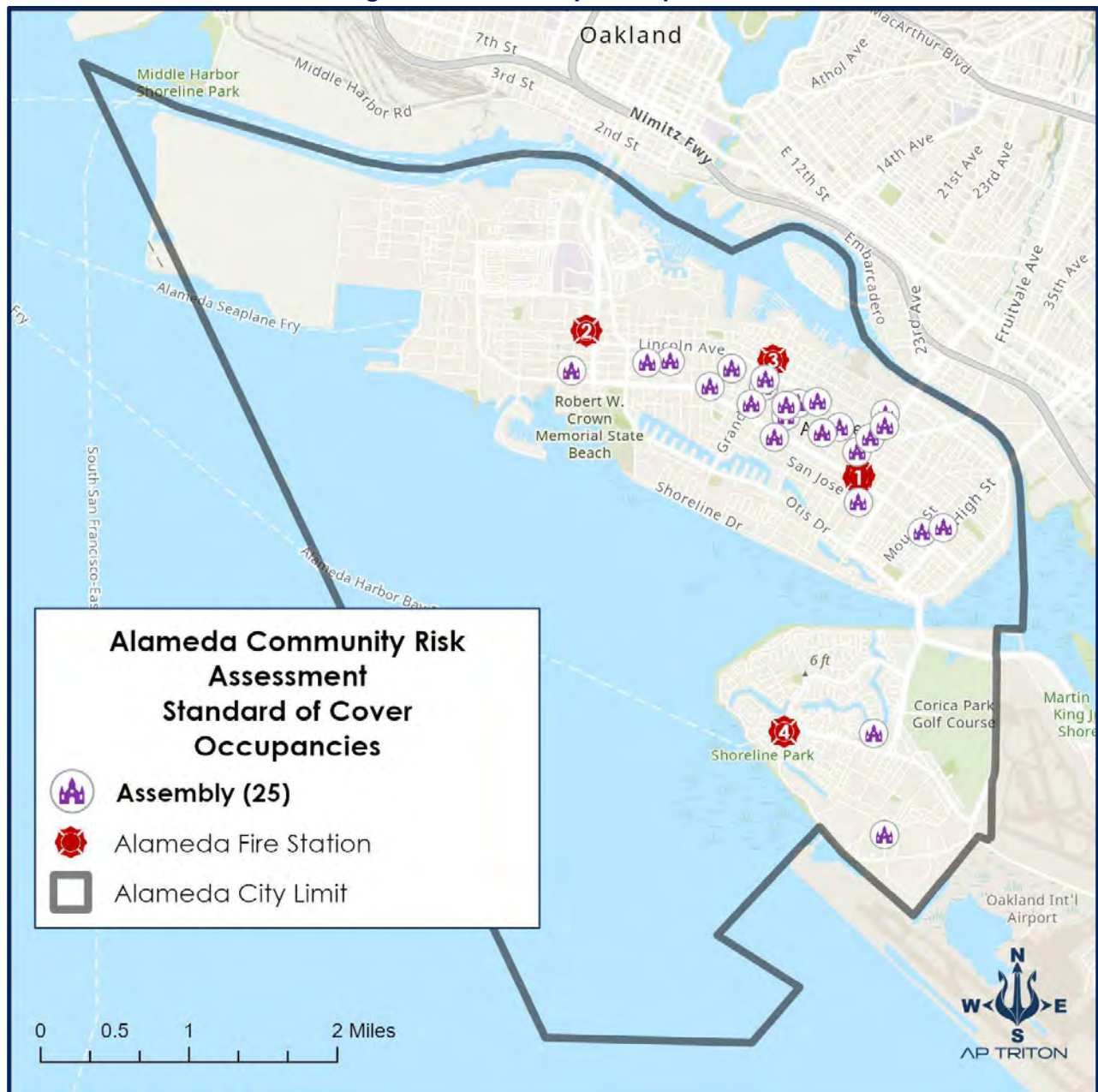


**Figure 33: Child & Daycare Occupancies****Assembly**

Gathering large groups of people in a single location or building increases risks. An assembly occupancy includes using a building or structure, or a portion thereof, for gathering persons for purposes such as civic, social, or religious functions, recreation, food, or drink consumption.<sup>23</sup> Outdoor special events such as street fairs or mass gatherings may require a public safety plan following the California Fire Code.

This plan should include emergency vehicle access and egress, fire protection, EMS, public assembly areas, directing of vehicular traffic and attendees, vendor and food concessions, need for law enforcement, fire or EMS personnel, and weather monitoring. The following figure provides the location of assembly occupancies in the AFD response area.

**Figure 34: Assembly Occupancies**

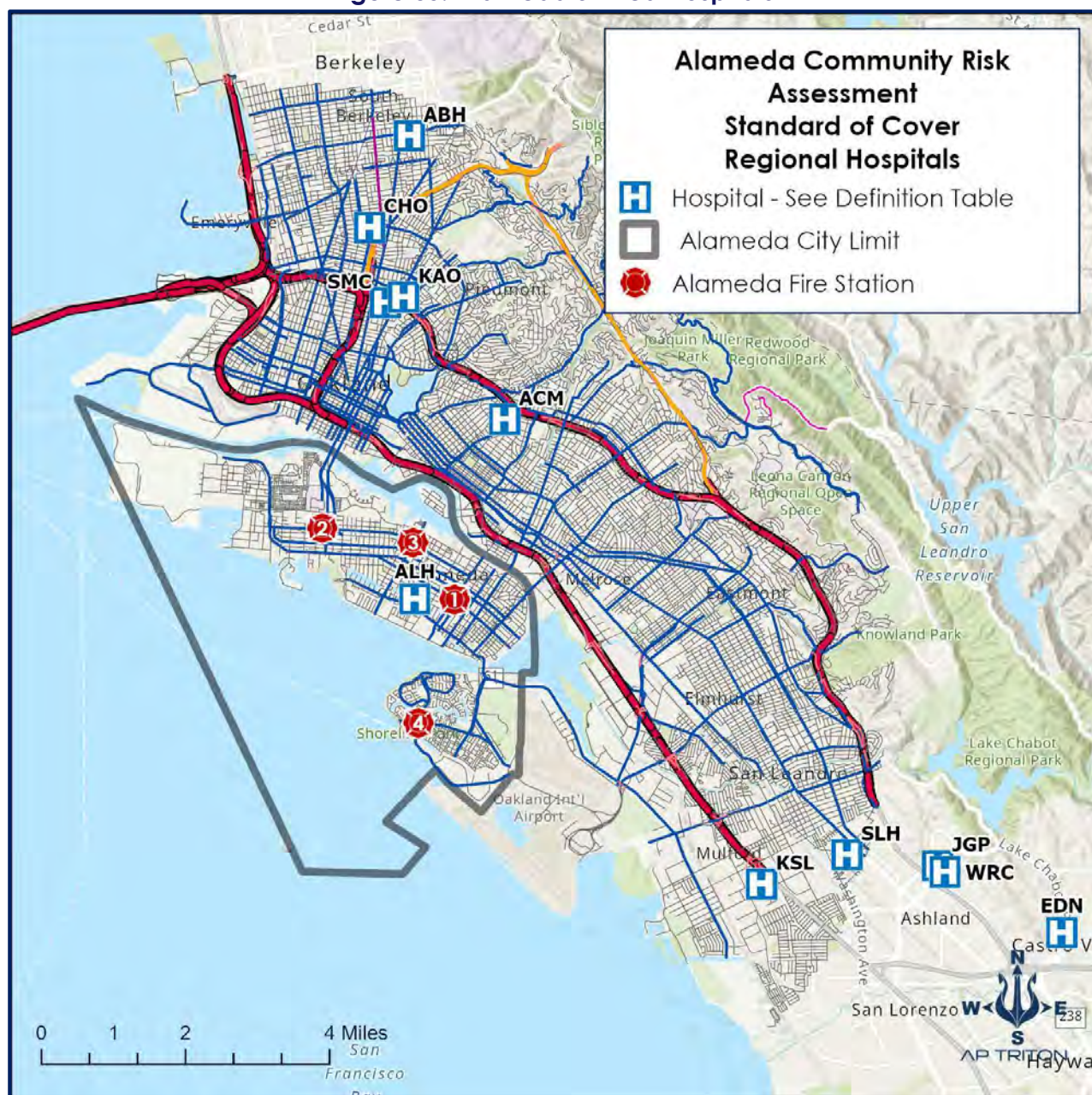




## Medical Facilities

These types of buildings are where occupants may be unable to leave without assistance from the staff. These locations may contain medical gases, creating additional risks for emergency responders during a fire. Therefore, completing up-to-date pre-incident plans is necessary. The following figure provides the locations of hospitals in the area.

**Figure 35: Alameda & Area Hospitals**





**Figure 36: Hospital Abbreviation List**

Acronym	Hospital
ABH	Alta Bates Medical Center
ACM	Alameda County Med Ctr-Highland
ALH	Alameda Hospital
CHO	Children's Hosp & Research Center
EDN	Eden Medical Center
JGP	John George Hospital
KAO	Kaiser Permanente-Oakland
KSL	Kaiser Permanente-San Leandro
SJH	San Jose Regional Center
SMC	Summit Medical Center
WRC	Willow Rock Center

### Skilled Nursing & Assisted Living Facilities

As people age, additional care may require them to seek a facility to meet their needs. Depending on their mobility or cognitive conditions, they may need more assistance evacuating the building. Onsite staff should have plans for removing the occupants or patients during an emergency. These locations require additional fire protection systems to protect the occupants.

Special locking arrangements for areas where patients with dementia or Alzheimer's are living are allowed to prevent them from leaving the facility per the California Fire Code. The following figure provides the location of skilled nursing and assisted living facilities in the AFD response area.

**Figure 37: Skilled Nursing & Assisted Living Facilities**

**Multifamily Occupancies**

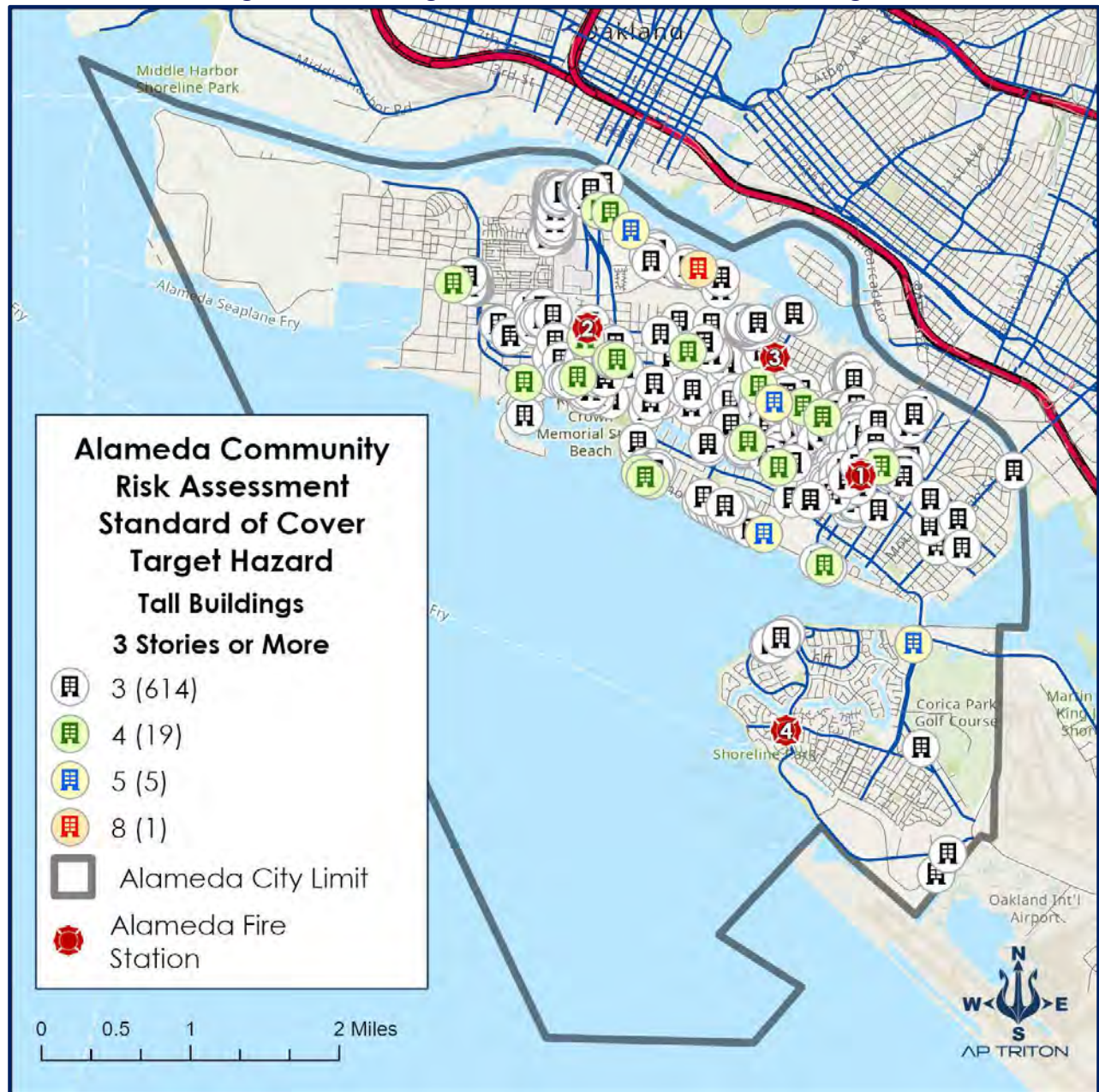
Although multifamily housing has fewer fires caused by electrical or heating malfunctions, the risk of cooking fires is twice the rate of other building fires.<sup>24</sup> Updated building and fire codes now require these buildings to have a residential fire sprinkler system installed and interconnected smoke alarms in all bedrooms, hallways, and floors for new construction and any redevelopment where city ordinances require these fire protection features. These fire protection systems are designed to provide enough time for the occupants to evacuate the building.

**Buildings Three or More Stories in Height**

Structures three or more stories in height require a response of an aerial apparatus with elevated master stream capabilities. The Insurance Services Office (ISO) reviews the coverage area for a ladder truck with this equipment for all buildings within 2.5 miles of a fire station. A ladder truck may be necessary to access these higher buildings' upper floors or roofs since most ground ladders cannot reach these heights.

The following figures display the location of buildings three stories or more in height.

**Figure 38: Buildings Greater Than Three Stories in Height**

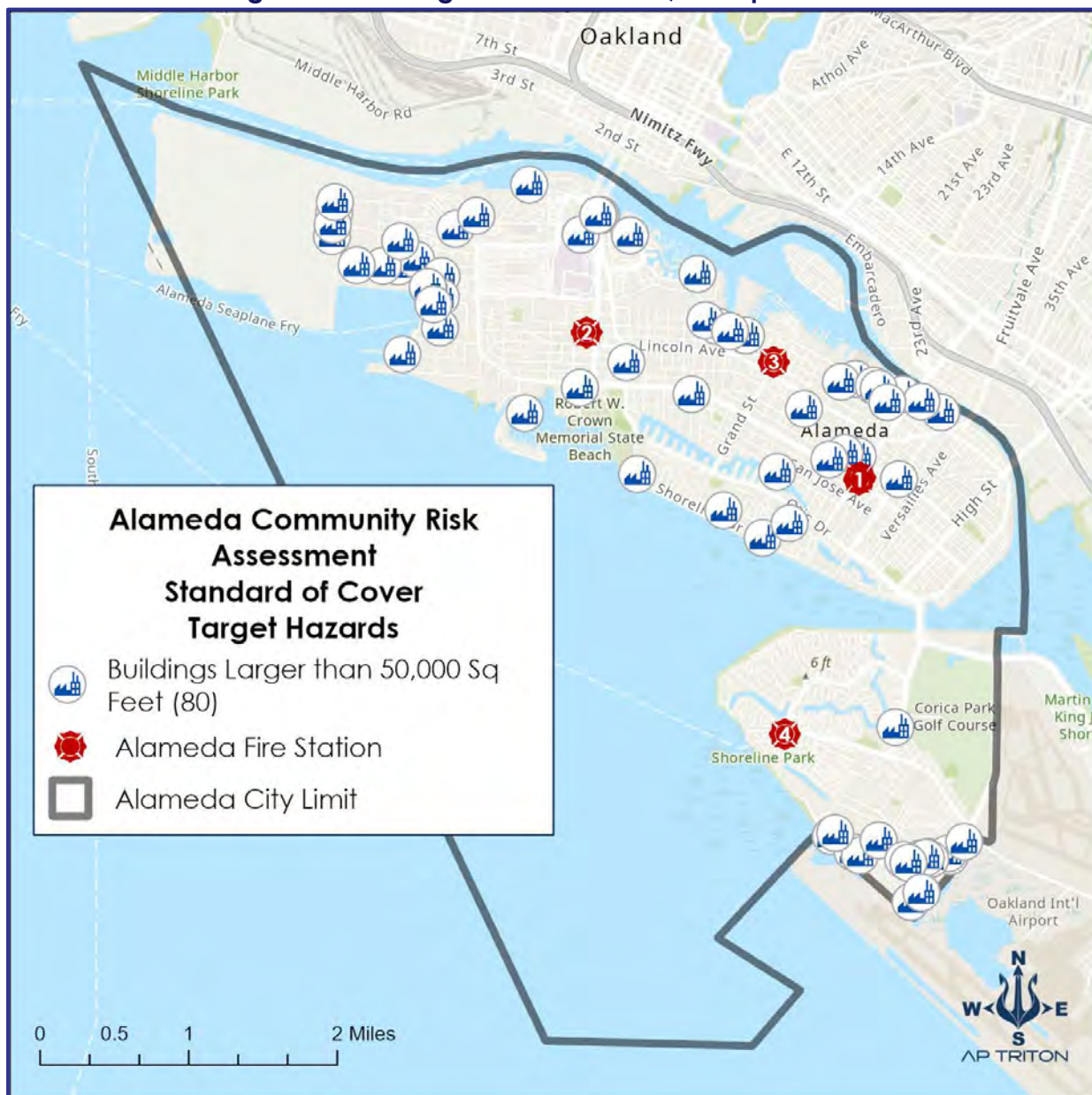




### Large Square Footage Buildings

Large buildings, such as warehouses, strip malls, and large “box” stores, require greater volumes of water for firefighting and more firefighters to advance hose lines long distances into the building. The fire flow may be greater for larger buildings due to their construction type, distance to exposures, and lack of built-in fire protection systems. The following figure is based on data from ISO and AFD showing the locations for buildings 50,000 square feet and larger.

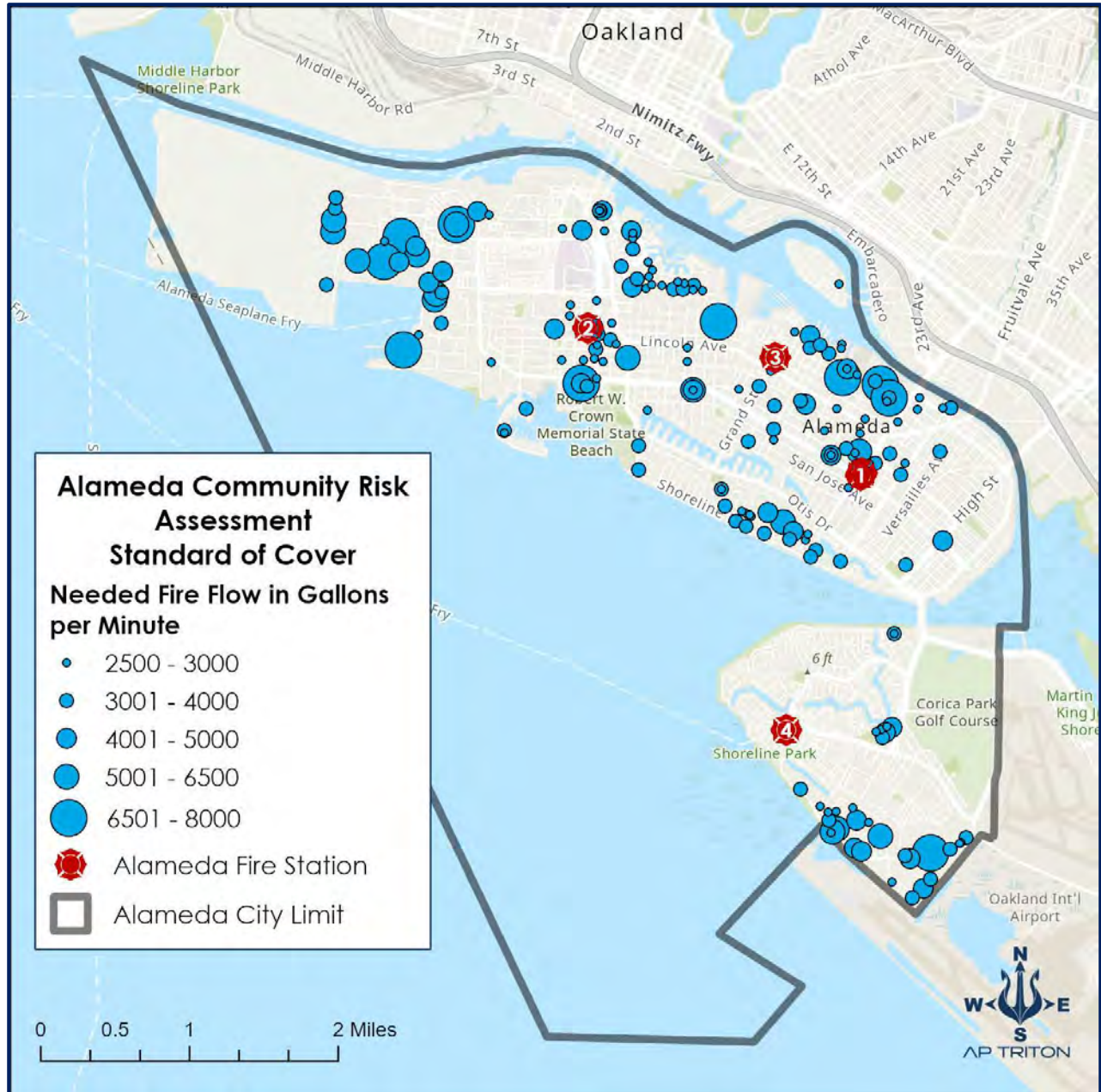
**Figure 39: Buildings Greater than 50,000 Square Feet**



### Large Fire Flow Occupancies

Other buildings may require a higher amount of water to extinguish a fire. These occupancies can present a problem if the needed water is less than what is available from the water supply from hydrants or other water sources. The following figure shows the occupancies with a needed fire flow greater than 2,500 gallons per minute.

**Figure 40: Needed Fire Flows Greater than 2,500 Gallons per Minute**



## Visualizations of Threat Data & Information

### Environmental Hazards

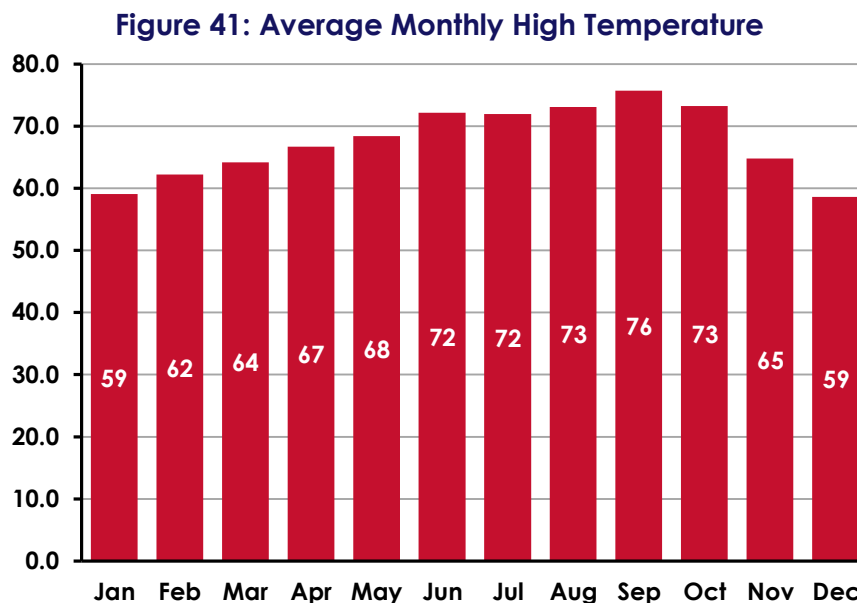
All communities are continually threatened by physical hazards daily. Hazards can range from wildfires, earthquakes, tsunamis, flooding from heavy rains, or droughts. Mitigation plans provide public and emergency responders with information to understand the risks and prepare for an event.

### Weather Conditions

The climate can affect AFD year-round and may impact emergency response. Whether it is a severe storm or other weather event, AFD must respond when requested.

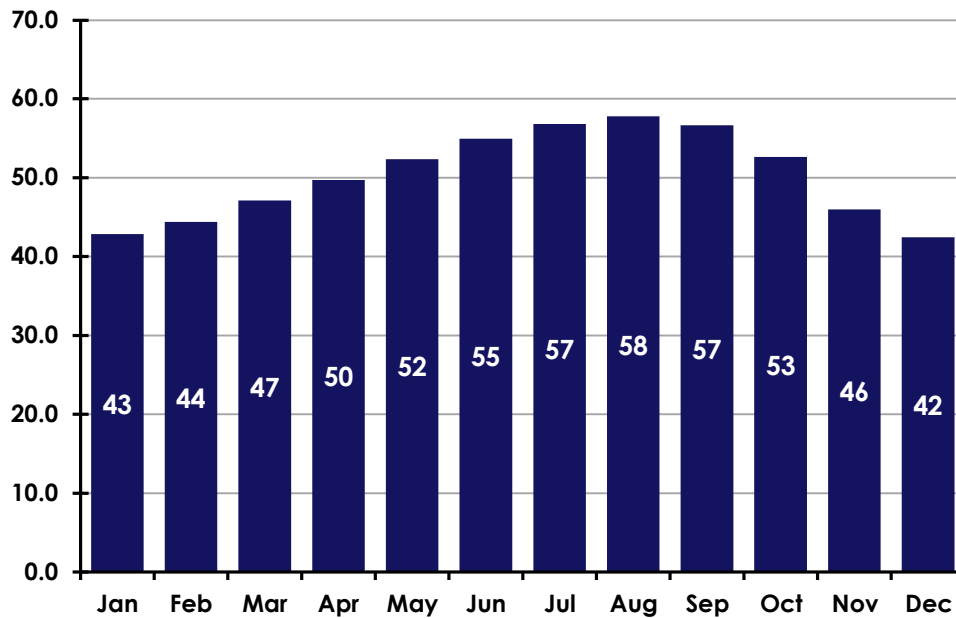
### Temperature

The weather conditions in an area can impact the fire department and the entire community during the year.<sup>25</sup> When temperatures are high, they affect firefighters during extended incident operations and require rehabilitation to prevent heat exhaustion. The average high temperatures range from a low of 59°F during December and January to a high of 76°F in September. The following figure provides the average monthly high temperature.



The average monthly low temperature occurs in December at 42°F, and the warmest is during August at 58°F. The following figure shows the average monthly low temperatures.

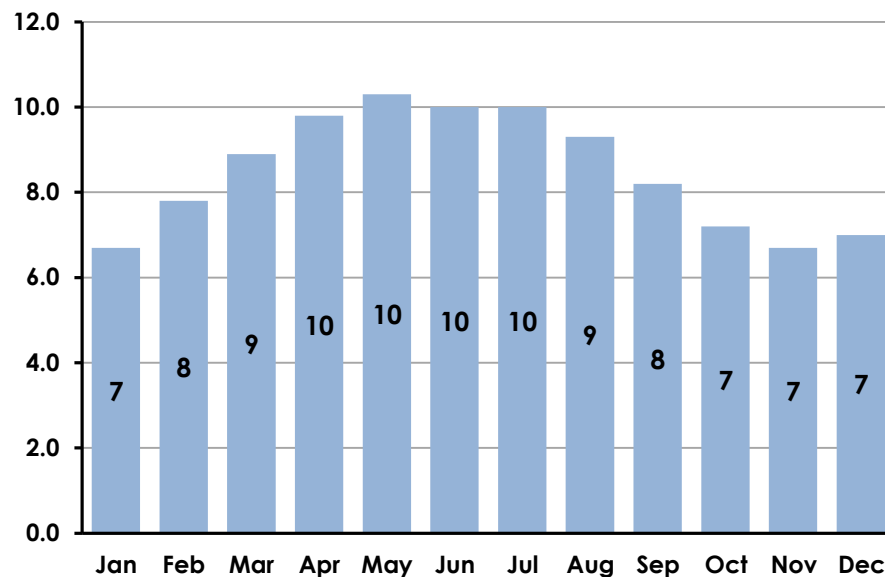
**Figure 42: Average Monthly Low Temperature**



### Winds

Wind speed and direction influence how AFD manages events such as structure fires or hazardous materials incidents. The highest average winds occur between April and July each year.<sup>26</sup> The following figure shows the average monthly wind speeds.

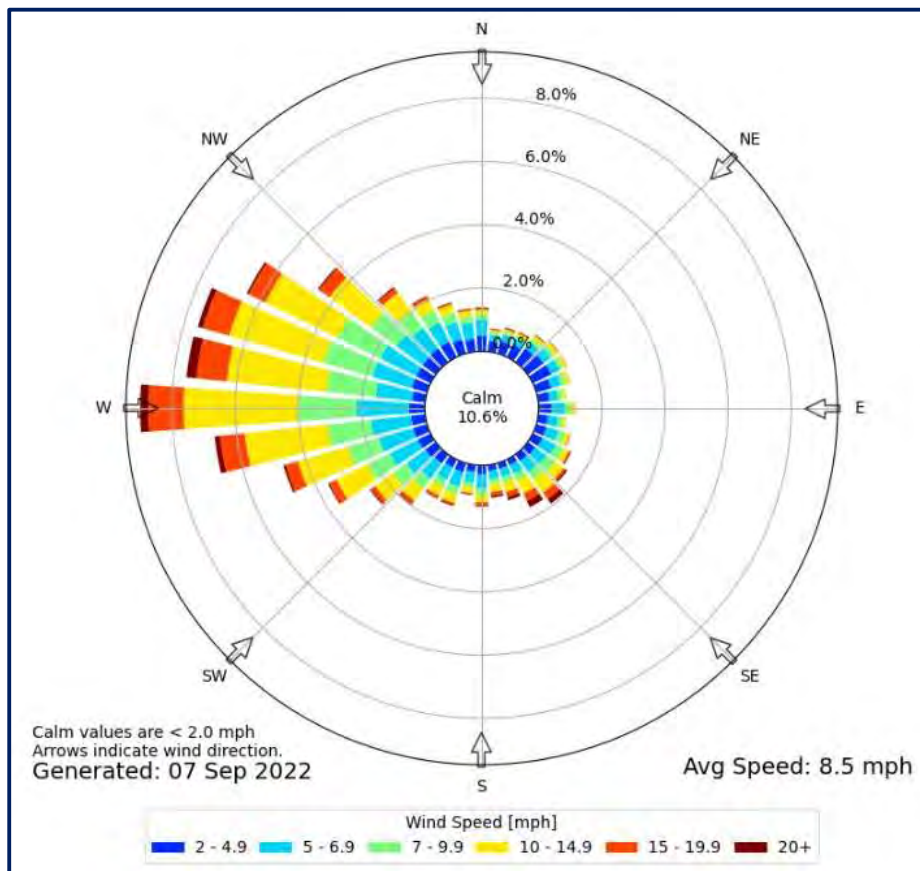
**Figure 43: Average Monthly Wind Speed**





The prevalent winds are from the west and west-northwest, as shown in the following figure from the wind rose from the NWS Oakland International Airport reporting station.

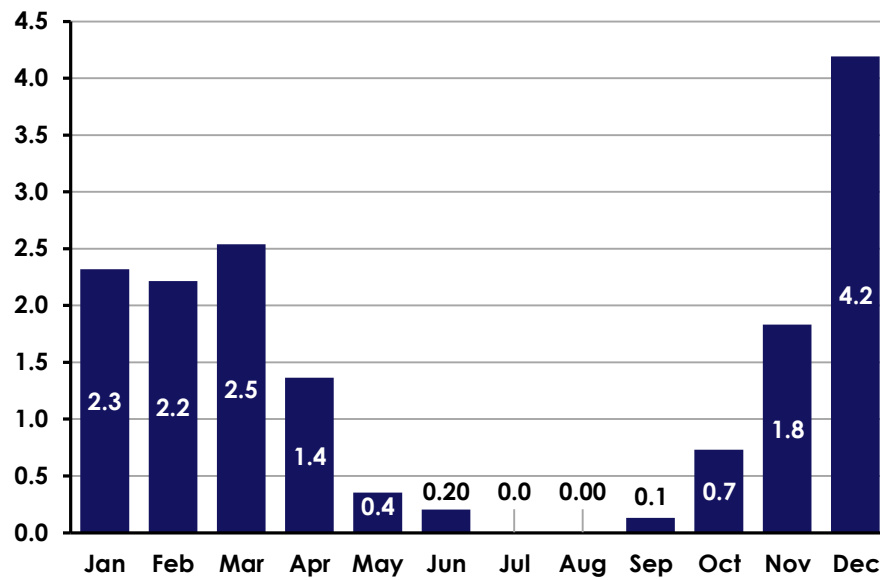
**Figure 44: Wind Rose**



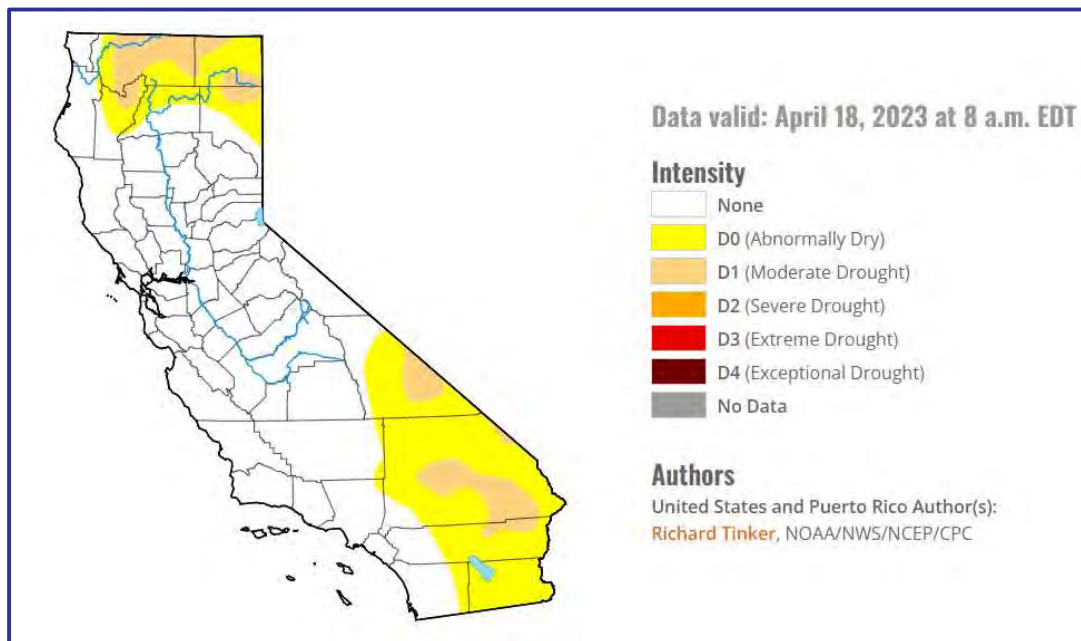
### Precipitation

The lack of precipitation for an extended period creates problems in a community. Drought increases the hazards of vegetative fires as the moisture content decreases, generating higher combustible fuels. Insufficient rainfall affects the ability to maintain landscaping.

During the "atmospheric rivers" that affected the west coast of the United States in December 2022 and January 2023, almost 20 inches of rain fell in the Alameda area, causing localized flooding, which impacted the city and emergency responders. Annually, the months with the highest precipitation occur between December and March, as shown in the following figure.

**Figure 45: Average Monthly Precipitation**

The following figure shows that there are no drought conditions in Alameda.

**Figure 46: Drought Conditions April 2023**

**Physical Hazards**

A physical hazard is generally described as a natural disaster or weather event that affects the community. The event may last a few hours or extend for a lengthy period, such as a heatwave or drought. The National Weather Service issues advisories, watches, and warnings for these hazards when conditions exist or are in the immediate forecast.

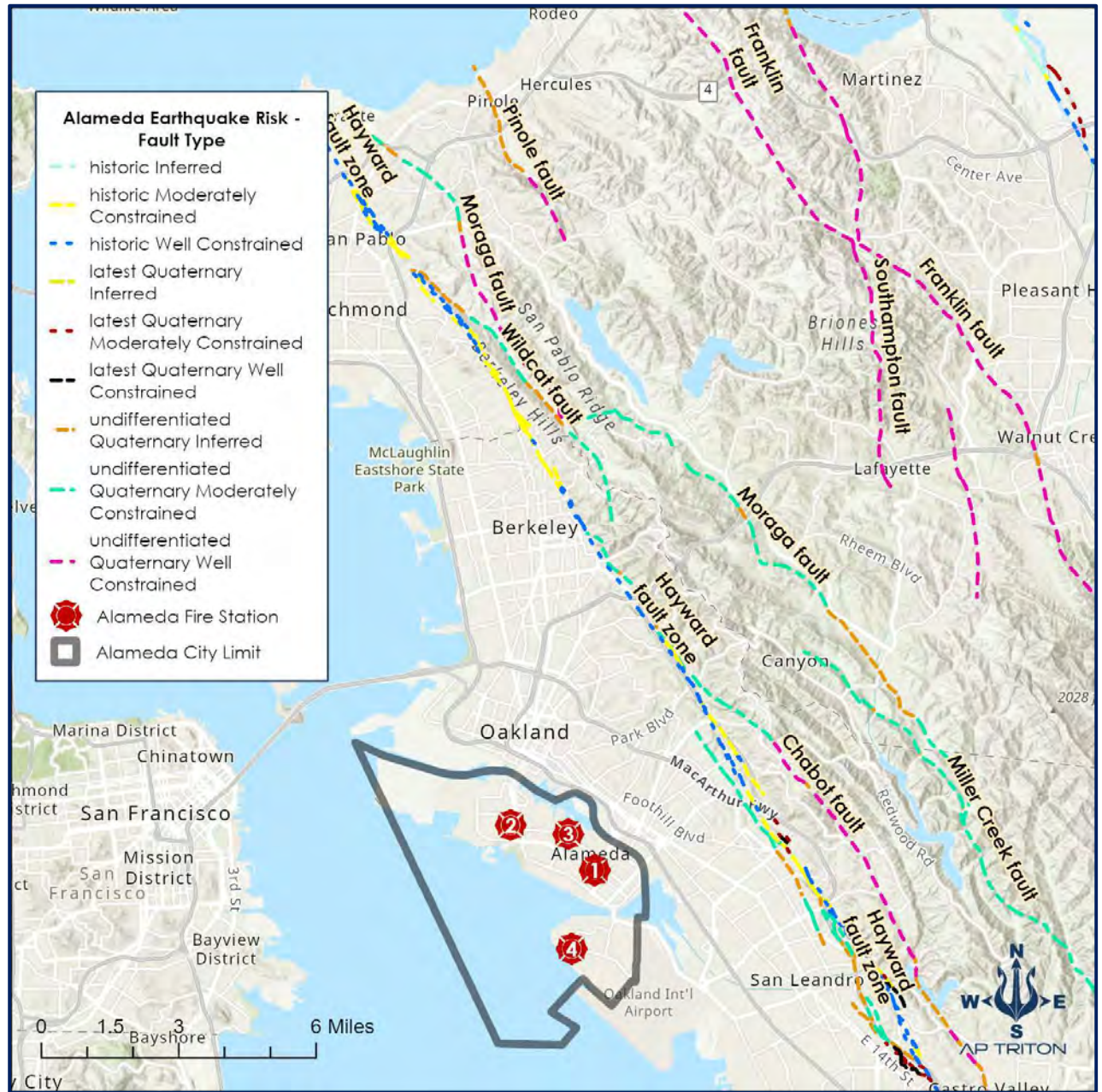
**Earthquakes**

According to the United States Geological Survey, the likelihood of an earthquake occurring between 2014 and 2043 in the Bay Area is 72%. The risk of an earthquake in Alameda is high because of its proximity to the Hayward Fault, located east of the city. The City of Alameda 2022 Climate Adaptation and Hazard Mitigation Plan (HMP) states that the risk is likely, and the consequence would be catastrophic.

*The HMP says that a M6.8 quake on the Hayward fault or a M7.2 quake on the San Andreas fault will likely cause at least a “strong” or Modified Mercalli intensity scale (MMI) 7 shaking in Alameda. Combining all probable scenarios on nearby faults, Alameda has a 10 percent chance of experiencing “Very Strong” to “Violent” (MMI 8 to MMI 9) shaking in the next 50 years.<sup>27</sup>*

The following figure provides the location of earthquake faults near Alameda.

**Figure 47: Earthquake Faults<sup>28</sup>**



The area has a history of earthquakes dating back to 1315, based on geologic data from the Hayward Fault. In the last 165 years, the Bay area has experienced 20 earthquakes considered strong and one major. These include the 1868 Hayward Fault and the 1906 San Andreas. A major rupture along the Hayward Fault would cause strong shaking, liquefaction, landslides, and fires throughout the region.

Infrastructure, including government buildings, utilities, highways, and bridges, would be affected after a significant earthquake. Alameda has developed an unreinforced masonry program to seismically retrofit buildings with more than five housing units. The program has retrofitted 159 buildings, but more remain with over 900 units. All the bridges to the island have been retrofitted to meet a "no collapse" standard, defined to survive an earthquake, but will need significant repairs or replacement.<sup>29</sup>

The HMP mentions the former Alameda Air Station buildings that would likely suffer damage because they were built before current earthquake construction standards. All new and retrofitted buildings at Alameda Point must meet all new building codes and standards.

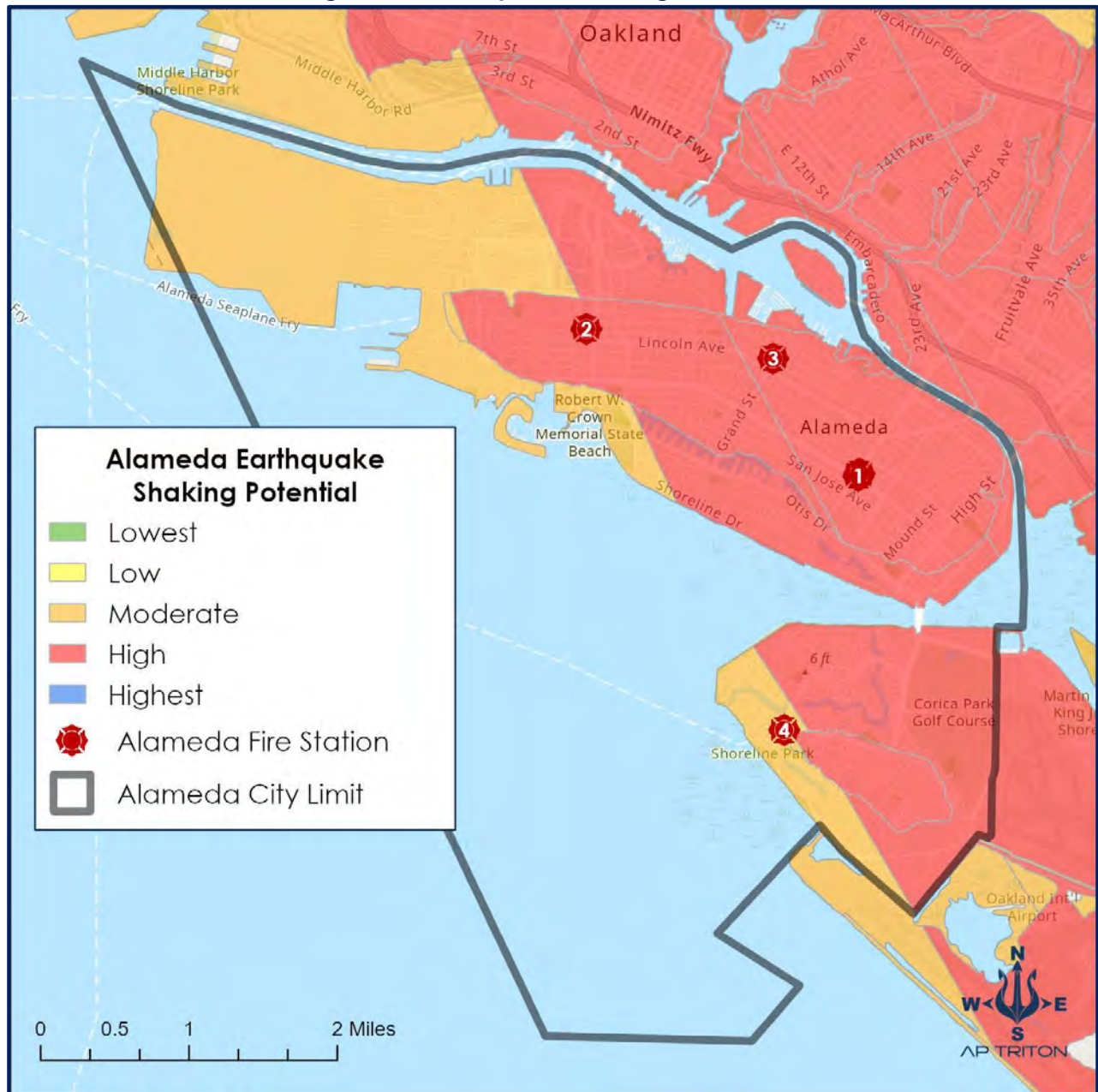
The many miles of infrastructure, such as natural gas, water, sewer, and stormwater systems, are at risk of damage during an earthquake from liquefaction. Significant shaking is expected to cause a loss of service for each of these utilities.

An earthquake may cause fires, technical rescue, hazardous materials, EMS incidents throughout Alameda, and strain services provided by AFD. Because the entire region will be affected, there will be response delays from outside assistance and off-duty personnel. Bridges to the island may be impassable, and other means of access to the island will be necessary.



The following figure shows the earthquake-shaking potential in Alameda.

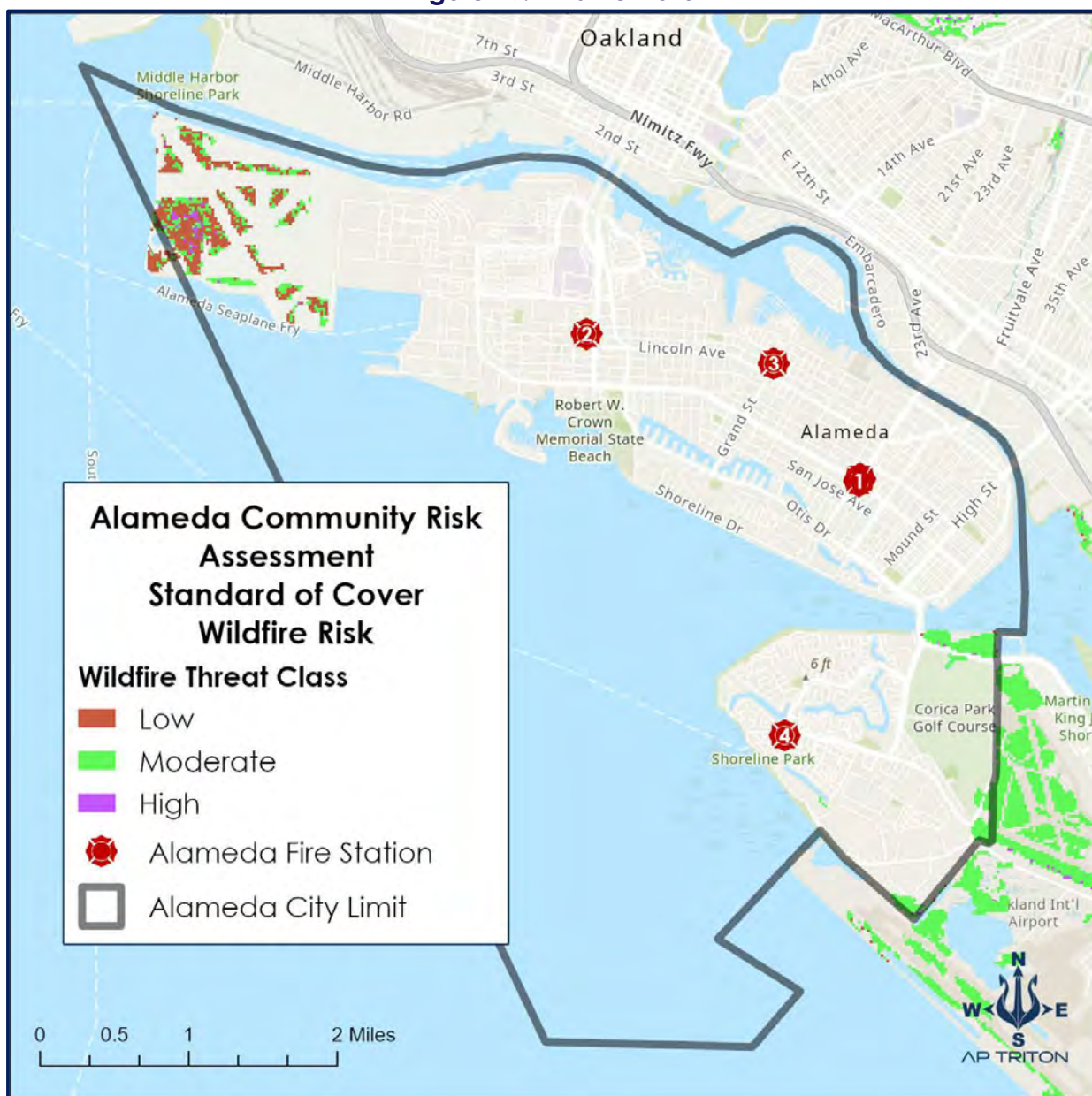
**Figure 48: Earthquake Shaking Potential<sup>30</sup>**



## Wildland Fires

The effects of wildland fire on Alameda are low. Still, smoke from fires can impact the area and increase respiratory incidents for vulnerable populations. The only wildfire and grassfire locations are in undeveloped areas at the old Alameda Naval Air Station and the solid waste disposal site along Dolittle Drive. Other small grassfires can occur throughout the city in landscape islands along roadways, homes, and businesses. The following figure shows the locations of wildfire risks in Alameda.

**Figure 49: Wildfire Risks**



## Flooding

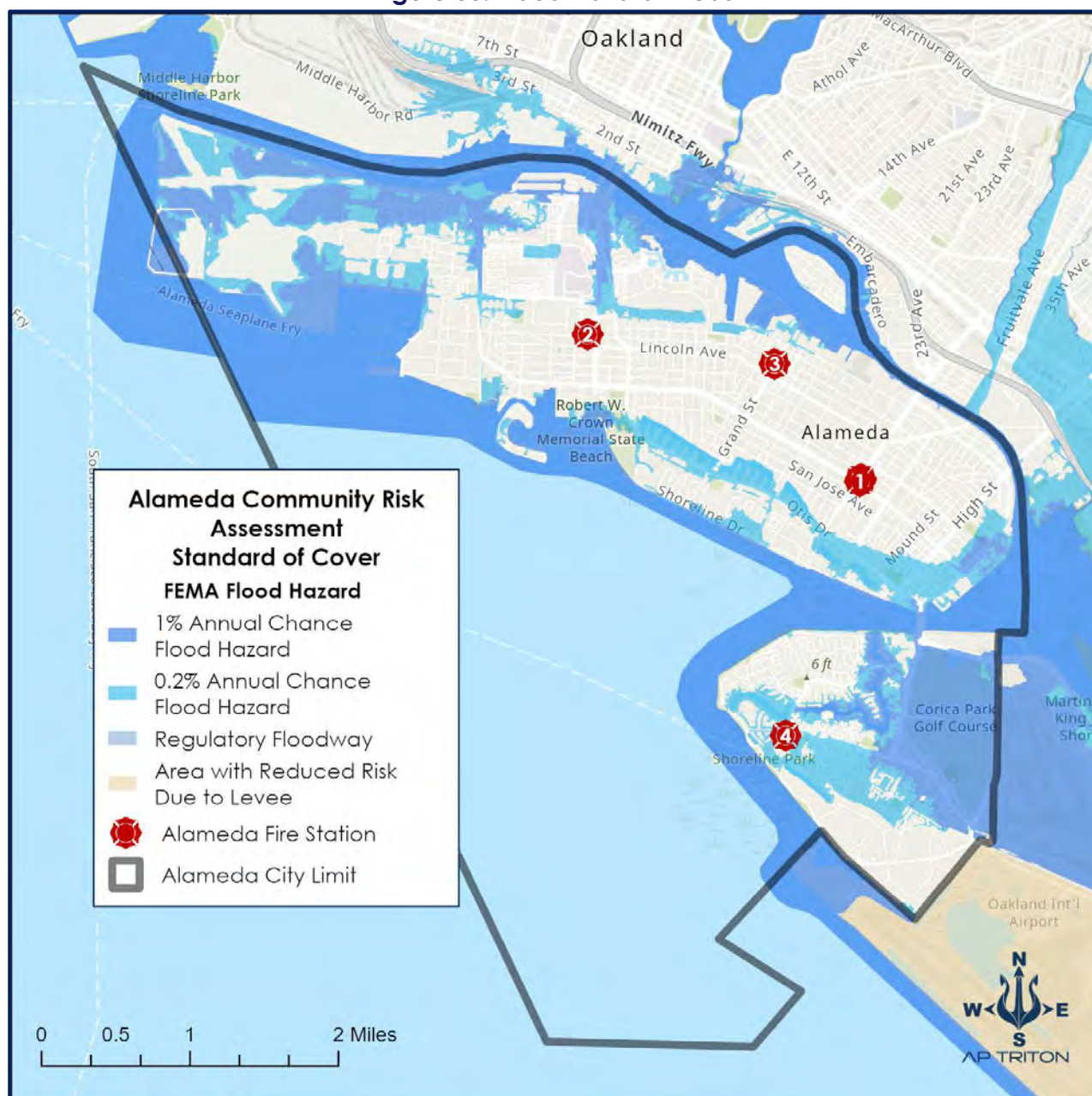
Flooding can occur because of varying factors impacting emergency services' response. The terrain, impervious surfaces, rainfall amounts, a breached dam or levee, or insufficient infrastructure to contain runoff can increase the chance of a flood event. Climate change and its potential impact will affect flooding in the future based on how quickly the sea rises.

Portions of Alameda fall within the Federal Emergency Management Agency-classified flood zones.

- "VE" designation is in the 100-year floodplain. It includes storm waves measured from base flood elevations (BFE) created from a detailed hydraulic analysis.
- "AE" designation is considered "Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods". It is further defined as a 26% chance of a flood occurring in 30 years.
- "A" designation is a flood zone within the 100-year floodplain, but a detailed hydraulic analysis has not been performed.
- "X" designation is a moderate risk area within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by a levee. No BFEs or base flood depths are shown within these zones.

Zone "VE" is located along the island's western end and in areas facing the bay. According to FEMA's website, "AE," regulatory floodway areas are located along Main Street, Webster Street, West Red Line Avenue, portions of Fernside Boulevard and Eastshore Drive, and Corica Park Golf Course. Zone "X" includes the southeast coastal area of the island and the area south of Mecartney Road. The former Alameda Naval Air Station is in Zones "VE," "AE," and "X." The following figure shows the location of FEMA flood zones.



**Figure 50: Flood Hazard Areas**

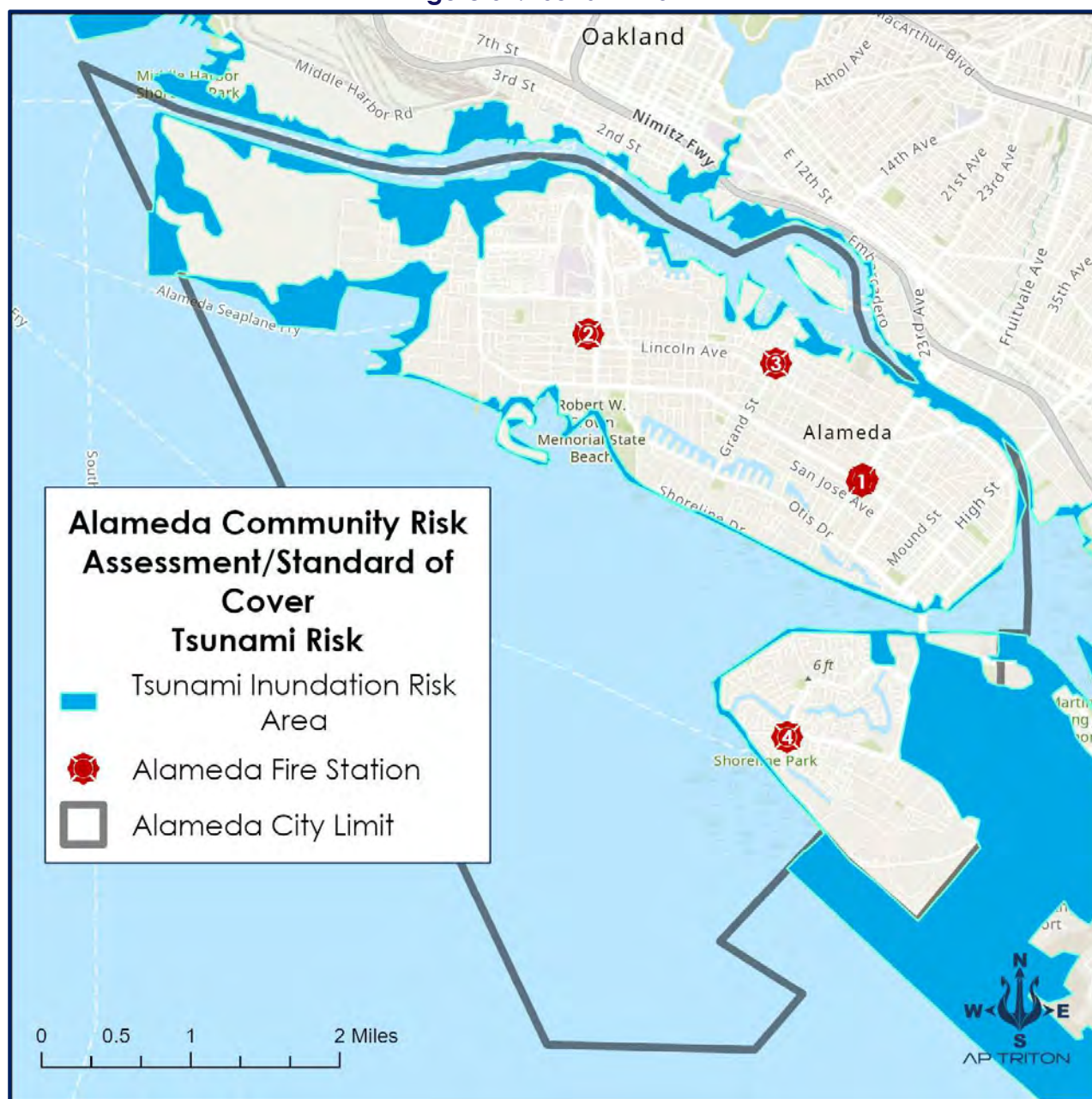
### Tsunami

A tsunami occurring along the shoreline of Alameda is considered a rare event. Still, it can increase risks to marinas, beaches, and low-lying areas where regular flooding occurs. Since 1946, 30 tsunamis have been recorded in San Francisco Bay; approximately half were recorded in Alameda, and most were less than three inches. The hazard mitigation plan (HMP) states the likelihood of a tsunami is possible, and the consequence is moderate to catastrophic if the waves come from an optimal direction through the bay.

The HMP provides four evacuation scenarios if a tsunami occurs.

- Phase 1—Beaches, harbor/docks, and boats.
- Phase 2—Areas where king tides occur.
- Phase 3—Areas where inundation would occur from an Alaskan-Aleutian subduction zone.
- Phase 4—Maximum and would occur from an Alaskan-Aleutian subduction zone.

If a tsunami warning is issued, the population can go to the higher sections of town and away from the coastline. The following figure shows the locations of likely tsunami inundation based on information from the Federal Emergency Management Agency (FEMA).

**Figure 51: Tsunami Risk<sup>31</sup>****Tsunami Evacuation Zone Study**

A more recent study by Jeff Peters at the US Geological Survey, titled "Intra-community implications of implementing multiple tsunami-evacuation zones in Alameda, California," was published in the journal Natural Hazards. This study came to conclusions that were different from those of the default FEMA model shown above. From the study summary:<sup>32</sup>



"Evacuation modeling summarized in the new study indicates that the tens of thousands of individuals living in tsunami evacuation zones are likely to have sufficient time to evacuate any one of the zones before tsunami waves reach Alameda shores. Therefore, the benefit of using smaller evacuation zones for certain tsunamis instead of the maximum zone is intended to help reduce community disruptions in Alameda, without compromising the safety of its residents and visitors.

The new study estimates the number of residents and employees who would not need to evacuate zones smaller than the current maximum zone. This also demonstrates benefits in reducing potential impacts to the quality of life by not requiring evacuations at certain banks, government offices, libraries, and markets during smaller tsunami events. The multi-zone approach may also reduce the need to evacuate people who may need assistance, such as those located at K-12 schools, child day-care centers, medical offices, and adult residential care centers.

Finally, the study showed that adequate refuge exists at the center of Alameda Island and on Bay Farm Island during evacuations of zones smaller than the maximum zone. For an evacuation to the current maximum zone, people on Bay Farm Island will likely need to evacuate to nearby Oakland, which highlights opportunities for cross-jurisdictional coordination and planning."

**Figure 52: Jeff Peters USGS Study Graphic<sup>33</sup>**



## Critical Infrastructure

Critical infrastructure and key resources (CIKR) explain what is crucial for a community's functioning in a modern economy. Critical infrastructure is defined as a sector “whose assets, systems, and networks, whether physical or virtual, are considered so vital to the United States that their incapacitation or destruction would have a debilitating effect on security, national economic security, national public health or safety, or any combination thereof.” There are sixteen defined Critical Infrastructure Sectors (CIS):<sup>34</sup>

- Chemical Sector
- Commercial Facilities Sector
- Communications Sector
- Critical Manufacturing Sector
- Dams Sector
- Defense Industrial Base Sector
- Emergency Services Sector
- Financial Services Sector
- Food and Agriculture Sector
- Government Facilities Sector
- Healthcare and Public Health Sector
- Information Technology Sector
- Nuclear Reactors, Materials, & Waste Sector
- Transportation Systems Sector
- Water and Wastewater Systems Sector
- Energy Sector

All these sectors may not be in the AFD service area; each community must determine critical infrastructure locations and develop pre-incident plans for responding personnel.

Other buildings to consider as target hazards could include occupancies with a potential for a significant loss of life, such as places of public assembly, schools, childcare centers, medical and residential care facilities, and multifamily dwellings. Other considerations include buildings with substantial value to the community—economic loss, replacement cost, or historical significance—that, if damaged or destroyed, would have a significant negative impact.

### Highways & Roads

Emergency personnel need a transportation network to respond efficiently to an incident. A delayed response can occur without a system of interconnected roads and streets. Interconnectivity provides multiple access points to a location if another approach is unavailable. Many of the streets in Alameda are on a grid system, interspersed with cul-de-sacs with only one access point. Traffic congestion can affect emergency response and the ability of emergency responders to arrive at an incident quickly and safely.

Traffic on the island's western end will continue to increase because of the growth at Alameda Point since the closest access to the mainland is through the Posey tube. Alameda does have traffic signal preemption technology at approximately 25% of the 89 intersections in the city. Currently, AFD emergency response apparatuses are not equipped to utilize this technology. Preemption assists responding units in navigating intersections safely if the signal is red by turning it green when they are approaching. This reduces the chance of an accident when an emergency vehicle enters an intersection and can assist with expediting the response.

The following figure provides the average annual daily traffic counts in Alameda.

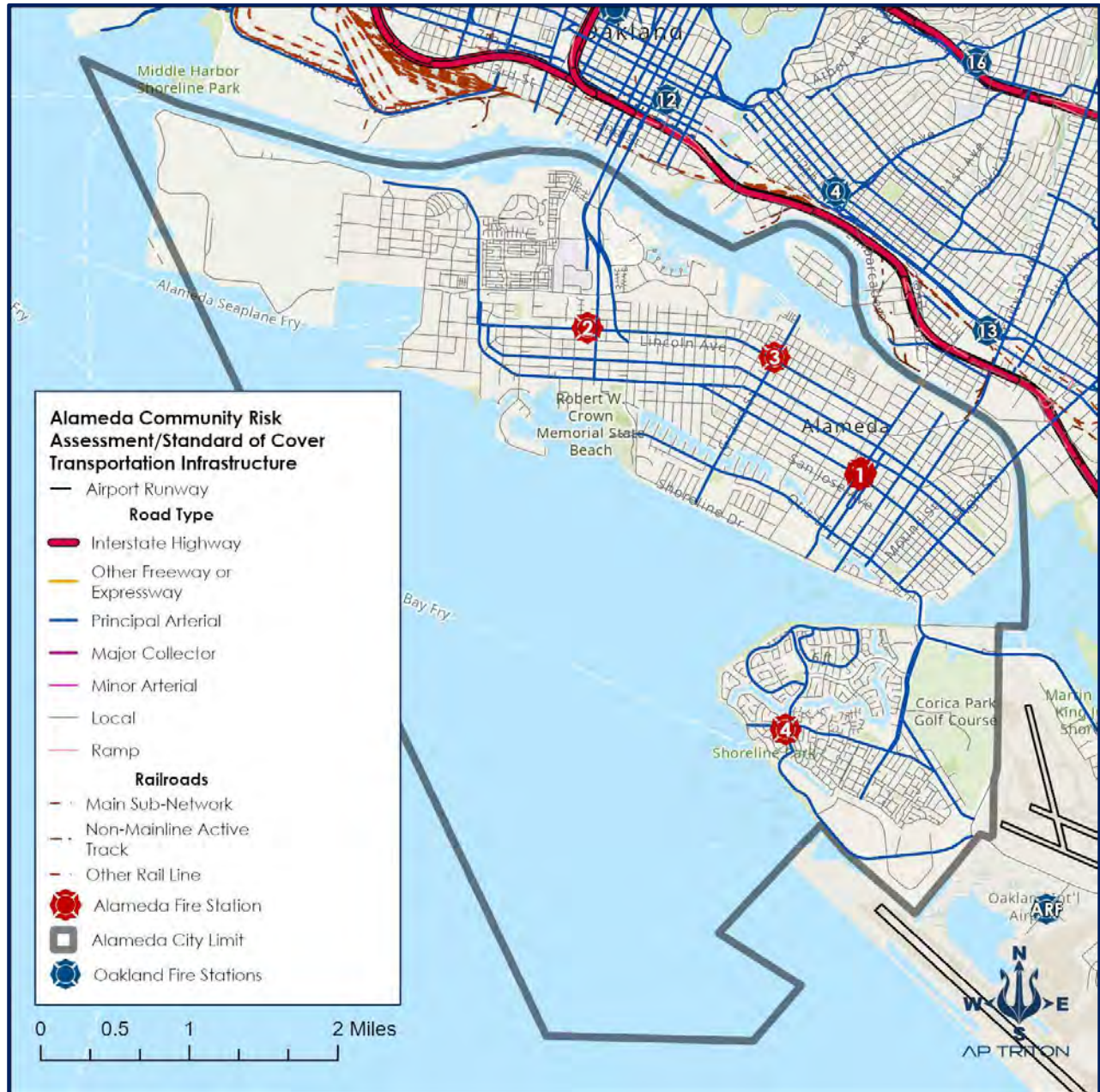
**Figure 53: Average Annual Daily Traffic Counts**

Location	Average Annual Daily Traffic—Vehicles
San Leandro/Bay Farm Island Bridge	40,000
Island Dr at CA Hwy 61	21,000
Broadway and Encinal Avenue	9,500
Central Ave and Sherman Street	8,000



The following figure shows the road and bridge transportation network in Alameda.

**Figure 54: Transportation Network**



## Bridges

The island is accessible by four vehicle bridges and two tunnels under the Oakland/Alameda Estuary. The four bridges provide access from the mainland, and their conditions range from fair to good. Without these access points, the island would not be accessible to vehicles and trucks. The HMP states all the bridges have been retrofitted to meet “No Collapse” standards. Still, none have been upgraded to meet “Lifeline” standards. On February 19<sup>th</sup>, 2023, it also occurred that two of the three roadway access bridges were stuck open due to a power outage.

While this is an uncommon event, it apparently happens and could happen in the future.<sup>35</sup> Two other bridges, the bridge to the US Coast Guard Island and the Ballena Bridge, provide access to specific areas. The following figure shows the primary bridges from the island and their condition rating.

**Figure 55: Bridge Condition Ratings<sup>36,37</sup>**

Description	Park Street	Miller-Sweeney/ Fruitvale	High Street	San Leandro/Bay Farm Island
Year Built	1934	1974	1939	1953
Deck Condition	Satisfactory	Satisfactory	Fair	Fair
Superstructure Condition	Good	Good	Good	Fair
Substructure Condition	Good	Good	Fair	Fair
Seismic Performance	No Collapse	No Collapse	No Collapse	No Collapse
Lifeline Standard	No	No	No	No



**Figure 56: Bridges & Tube Locations**

### Electricity

Electrical services for Alameda come from the Pacific Gas & Electric (PGE) transmission system. Electrical power is provided by Alameda Municipal Power (AMP), which is the oldest west of the Mississippi and began service in 1887.<sup>38</sup>

It has 86 pole miles of overhead distribution lines, 181 circuit miles underground, 6.8 pole miles overhead, and 1.9 circuit miles of underground transmission lines, serving more than 34,800 customers. Two 115-kilovolt electrical transmission lines provide power to Alameda Island for redundant service.

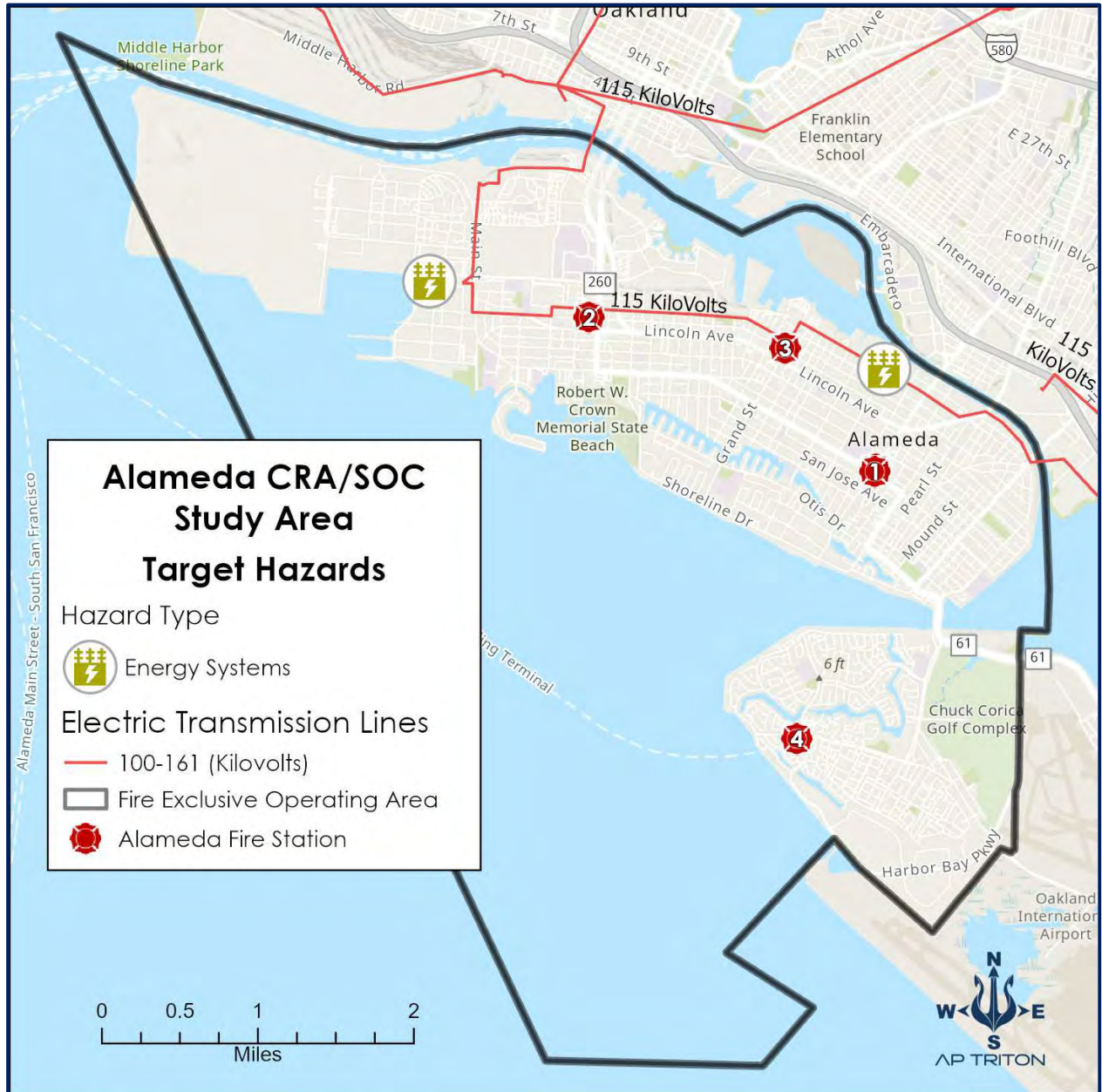
There are two electrical substations servicing the AMP area. An electrical substation steps down the voltage in the distribution system for residential and commercial users. Emergency responders must exercise extreme caution if an incident occurs at one of these locations.

Entry by AFD personnel to a sub-station should not happen until representatives of Alameda Municipal Power (AMP) arrive on the scene and give clearance. During times of stress on the statewide transmission system, Alameda, like other power utility providers in California, may experience power disruptions during high-use periods.

A recent fire at a PGE substation in Oakland left most of the city without electrical service. Such occurrences can be used to understand how continuity of operations can function during a major disaster, such as an earthquake.

The following figure shows the locations of high-voltage electrical transmission lines in Alameda and the surrounding area.

**Figure 57: Electrical Transmission Lines**



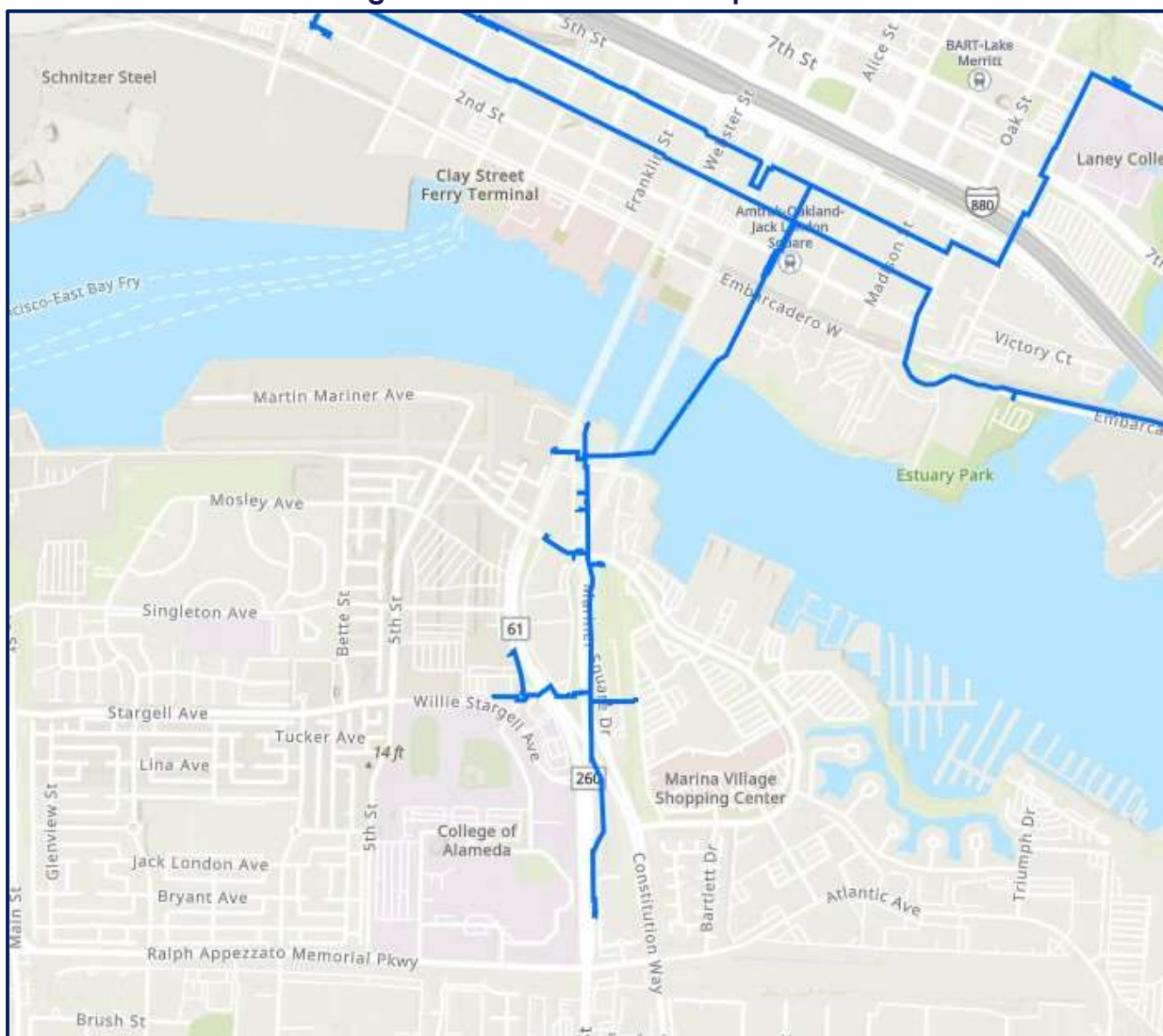


## Natural Gas

PGE provides natural gas in Alameda through transmission and high-pressure distribution lines that supply service lines for commercial and residential use. PGE's natural gas transmission pipeline crosses the inner harbor from Oakland to the area near Mariner Square Dr. It travels south, following Webster St., and terminates north of Atlantic Ave. Natural gas incidents are often caused by contractors who cut or damage lines during construction excavation.

The following figure from PGE shows only the location of the natural gas transmission pipeline. It does not show distribution to other places in the city that are not considered transmission lines.<sup>39</sup>

**Figure 58: PGE Natural Gas Pipelines**



## Water

Controlling a fire becomes challenging without an adequate water supply and distribution system consisting of water storage, mains, and a fire hydrant system. A system of well-distributed hydrants and appropriately sized water mains is necessary to provide the required water for fire ground use.

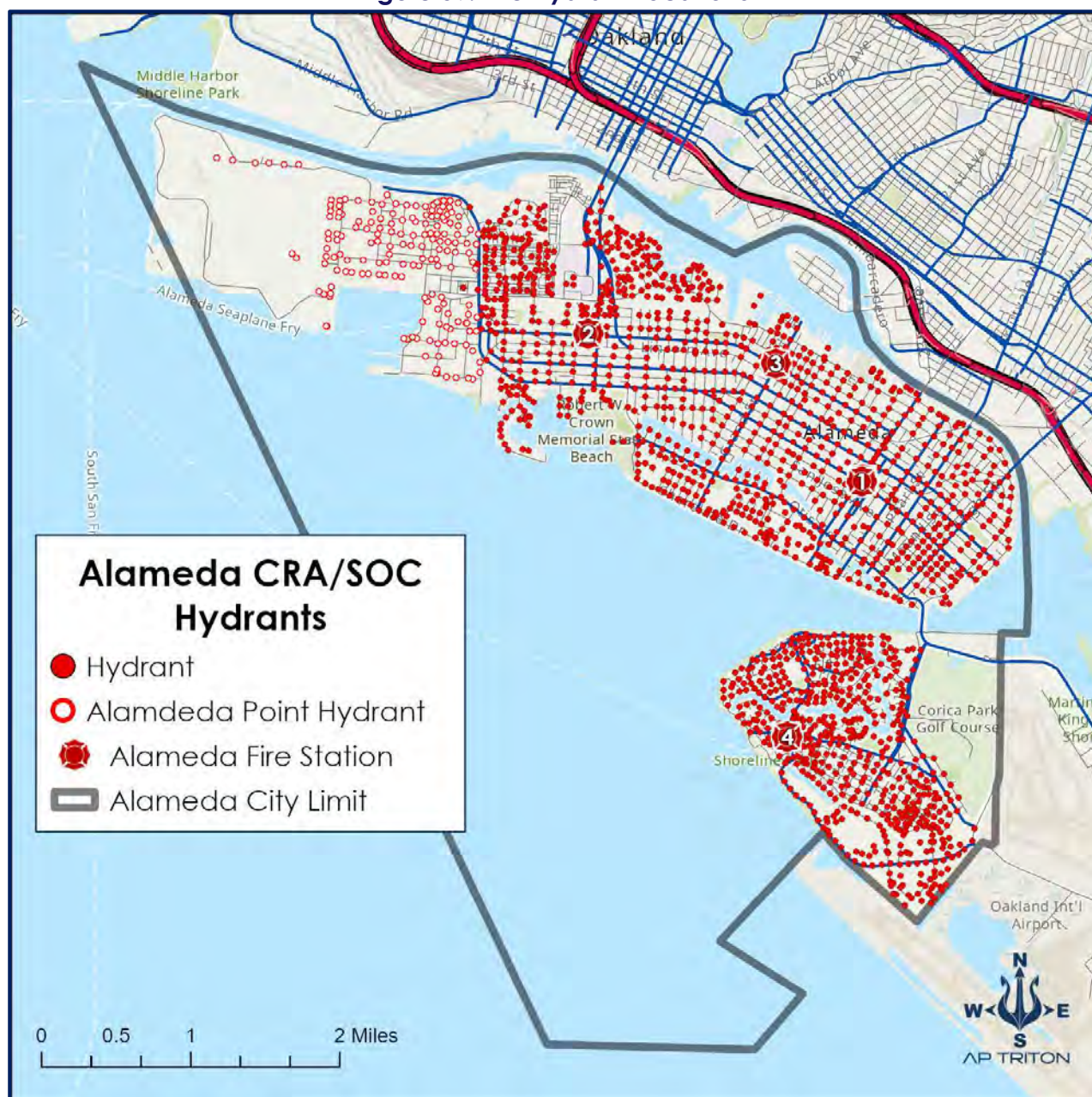
Water for drinking and firefighting for the City of Alameda is provided by the East Bay Municipal Utility District (EBMUD). The EBMUD delivers water to 1.3 million customers in Alameda and Contra Costa counties. Water for EBMUD comes from the Mokelumne River watershed, which originates in the Sierra Nevada and operates six water treatment plants producing 375 million gallons of water daily. EBMUD owns and maintains its water lines in the City of Alameda.

Four pipelines provide water for Alameda at three locations between Oakland, Alameda Island, and North Bay Farm Island. A failure of one of the pipelines could reduce the water pressure for its customers and impact firefighting capabilities. New pipelines are proposed to replace the existing crossings and upgrade the older infrastructure.<sup>40</sup>

The Alameda Point water system serves the former Alameda Naval Air Station site, which receives its water from a connection with EBMUD. The city is responsible for this water system under an agreement with the United States Department of the Navy. The future development of Alameda Point will upgrade the system, which will be operated and maintained by EBMUD.<sup>41</sup>

AFD has identified 164 fire hydrants that require replacement due to age and the potential for inadequate fire flow due to age and style of the hydrant. The following figure shows the locations of Alameda's fire hydrants.



**Figure 59: Fire Hydrant Locations**

### Communication

When an incident occurs, essential facilities require a communication center to communicate with emergency responders properly. Other communications are critical to the community, such as cellular phones, Voice over Internet Protocol (VoIP) telephone systems, or transmission lines from the local telephone company. These systems allow the public to notify emergency services of an incident.

Internet services are essential for the public, commercial establishments, and emergency services to conduct daily business. Whether the internet services are through cellular access or an internet service provider, the failure of these communication systems can significantly impact emergency services and the public.

AFD is notified of an incident through the Alameda County Regional Emergency Communications Center (ACRECC) located at the Lawrence Livermore National Laboratory, and the Alameda County Fire Department provides staffing. The center operates four 12-hour shifts with an overall staffing of 4 supervisors and 32 dispatchers and call-takers. The National Academy of Emergency Dispatchers accredits ACRECC, and they dispatch more than 236,000 EMS and 87,000 fire incidents annually.

### **Government Buildings**

Governmental buildings are typically located close to their customers to manage proper public services. The buildings are considered a part of the critical infrastructure needed to operate services provided by local, state, or Federal government. Locations of governmental facilities are shown in the following figure.

**Figure 60: Government Buildings**

While not explicitly identified on the map as a government building, the Coast Guard Island is a federal facility. The 20 more extensive facilities and the smaller buildings are all considered federal government buildings.



## Comparison of Fire Risk in Other Communities

### Fire Loss

In 2021, fire departments responded to more than 1.35 million incidents in the United States that caused 3,655 civilian fire fatalities and over 15,200 civilian fire injuries. The property damage was estimated at more than \$15.9 billion. The NFPA reported that 64% of the fire deaths occurred in one- or two-family dwellings. The report stated that \$648 million of property fire losses were from wildland-urban interface incidents.<sup>42</sup>

Fire loss can vary yearly based on the number of fires occurring or the amount of property and contents exposed during an incident. The fire loss per capita, based on data from AFD, ranged from \$10.54 to \$14.39 between 2019 and 2021 but increased considerably in 2022 because of several fires with significant losses or possibly incorrect data entered in the incident reports. Based on the most current NFPA statistics, the below figure compares the property and contents loss for 2019–2022.

**Figure 61: Property Loss per Capita 2019–2022**

Year	AFD Property Loss per Capita	U.S. Property Loss per Capita <sup>43</sup>
2019	\$10.54	\$45.58
2020	\$14.39	\$67.06
2021	\$10.65	\$48.22
2022	\$73.13	N/A*

\*Data for the U.S. property loss has not been released for 2022.

The number of fires per 1,000 population in Alameda is lower than the national average, as shown in the following figure.

**Figure 62: Fire per 1,000 Population**

Year	AFD Fires per 1,000 Population	U.S. Fires per 1,000 Population <sup>44</sup>
2019	2.2	4.0
2020	2.7	4.3
2021	3.0	4.1
2022	2.6	N/A*

\*Data for the number of fires in the U.S. has not been released for 2022.

### Intentionally Set Fires

Intentionally set fires, or in many cases considered arson, is defined as “any willful or malicious burning or attempt to burn, with or without intent to defraud, a dwelling house, public building, motor vehicle or aircraft, personal property of another.”<sup>45</sup> AFD investigates all intentionally set fires and will request assistance from the police department if necessary. The figure below lists the number of intentionally set fires between 2019 and 2022.

**Figure 63: Intentionally Set Fires (2019–2022)**

Year	Quantity
2019	5
2020	9
2021	7
2022	6

### Insurance Services Office

The Insurance Services Office, Inc. (ISO®) is an independent organization that collects and analyzes data from fire departments in communities throughout the United States to determine rates for fire insurance. According to its report, the ISO's Public Protection Classification Program, or PPC, “is a proven and reliable predictor of future fire losses.” Commercial property insurance rates are expected to be lower in areas with better (lower) ISO PPC Class ratings.



The ISO Fire Suppression Rating Schedule (FSRS) measures four primary elements of a community's fire protection system: *Emergency Communications* (max 10 points), *Fire Department* (max 50 points), *Water Supply* (max 40 points), and *Community Risk Reduction* (max 5.5 points) for a maximum possible total of 105.5 points. ISO then assigns a grade using a scale of 1 to 10. Class 1 represents the highest degree of fire protection, and Class 10 designates a fire suppression program that does not meet ISO's minimum criteria.

A review of the most recent evaluation by ISO, effective July 1, 2021, assigned 90.40 credits and provided the city with a classification of 1/1Y. The first rating number applies to any property within five road miles of a fire station and a fire hydrant within 1,000 feet or an alternate water source. The second number is for any property within five miles of a fire station, which is more than 1,000 feet from a fire hydrant.

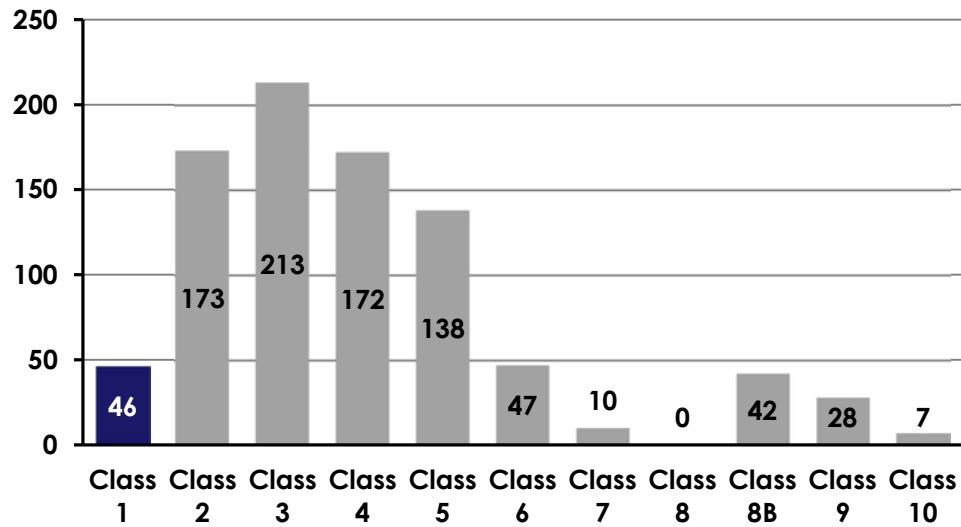
Opportunities for improvement include the following. Telecommunication received 2.87 credits out of 4 available. The reduction came from 11.80 credits out of 20 for Alarm Receipt (needs to meet NFPA 1221) and zero credits for Emergency Dispatch Protocols. Of seven available credits, 2.40 were earned for fire hydrant inspection and flow testing. The below figure shows the ISO credits earned and available for the City of Alameda.

**Figure 64: ISO Earned & Available Credits for the City of Alameda**

ISO Feature	Earned Credit	Available Credit
Emergency Communications	8.87	10
Fire Department	45.95	50
Water Supply	32.60	40
Divergence	-2.08	0
Community Risk Reduction	5.06	5.5
<b>Totals:</b>	<b>90.40</b>	<b>105.5</b>

The following figure shows all the fire departments in California and the number of ratings for each classification. 46 departments have a Class 1 rating in the state.

**Figure 65: ISO Classifications in California**



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## **Section II: STANDARDS OF COVER & DEPLOYMENT ANALYSIS**

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## Overview of the Alameda Fire Department

The Alameda Fire Department (AFD) started in 1876 as an unaffiliated volunteer fire company. However, in 1880, the city officially recognized the volunteers. By 1881, the AFD had three hose companies and one hook and ladder in four stations.<sup>46</sup>

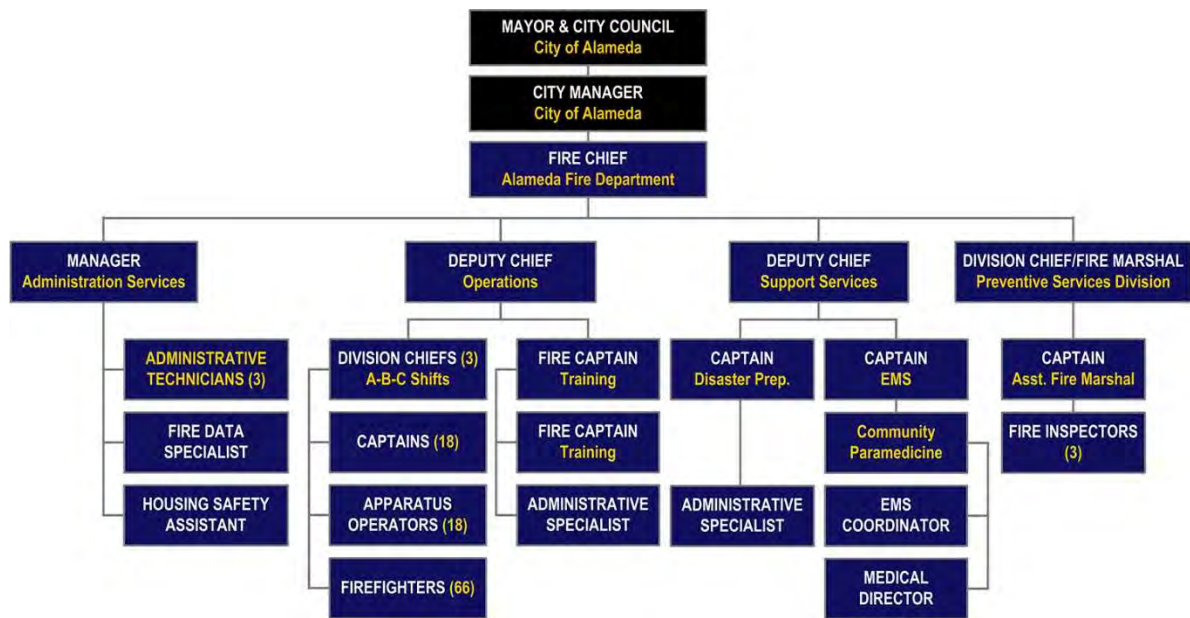
Today, the AFD has grown into a full-service fire department serving over 78,000 citizens on 10.5 square miles of land. It also provides fire-rescue services to over 12 square miles of water surrounding the island. The department operates out of four active fire stations, with one additional deactivated station being used as the department's training facility.

### Governance & Organizational Structure

The City of Alameda, California, is governed by an elected City Council and administered by the City Manager. Governance of the city is defined in the *Charter of the City of Alameda*, adopted in April 1937, with the latest amendment in November 2022.<sup>47</sup> The charter defines lines of governance and authority within the city system.

The five-member City Council comprises the Mayor, Vice Mayor, and three council members. The City Council hires the City Manager to manage the business of the city and the different departments, including the fire department.

AFD is organized into a typical administrative structure for a city fire department. The Fire Chief reports directly to the City Manager. In contrast, the Deputy Chief of Operations, the Deputy Chief of Support Services, the Division Chief Fire Marshal, and the Administrative Services Manager report to the Fire Chief. The following figure illustrates the Alameda Fire Department's organizational structure as of early 2023.

**Figure 66: AFD Organizational Chart (FY 22/23)**

AFD also receives support from other city services when needed. For example, city departments such as finance, human resources, and information technology assist with AFD administrative functionality.

### Service Area

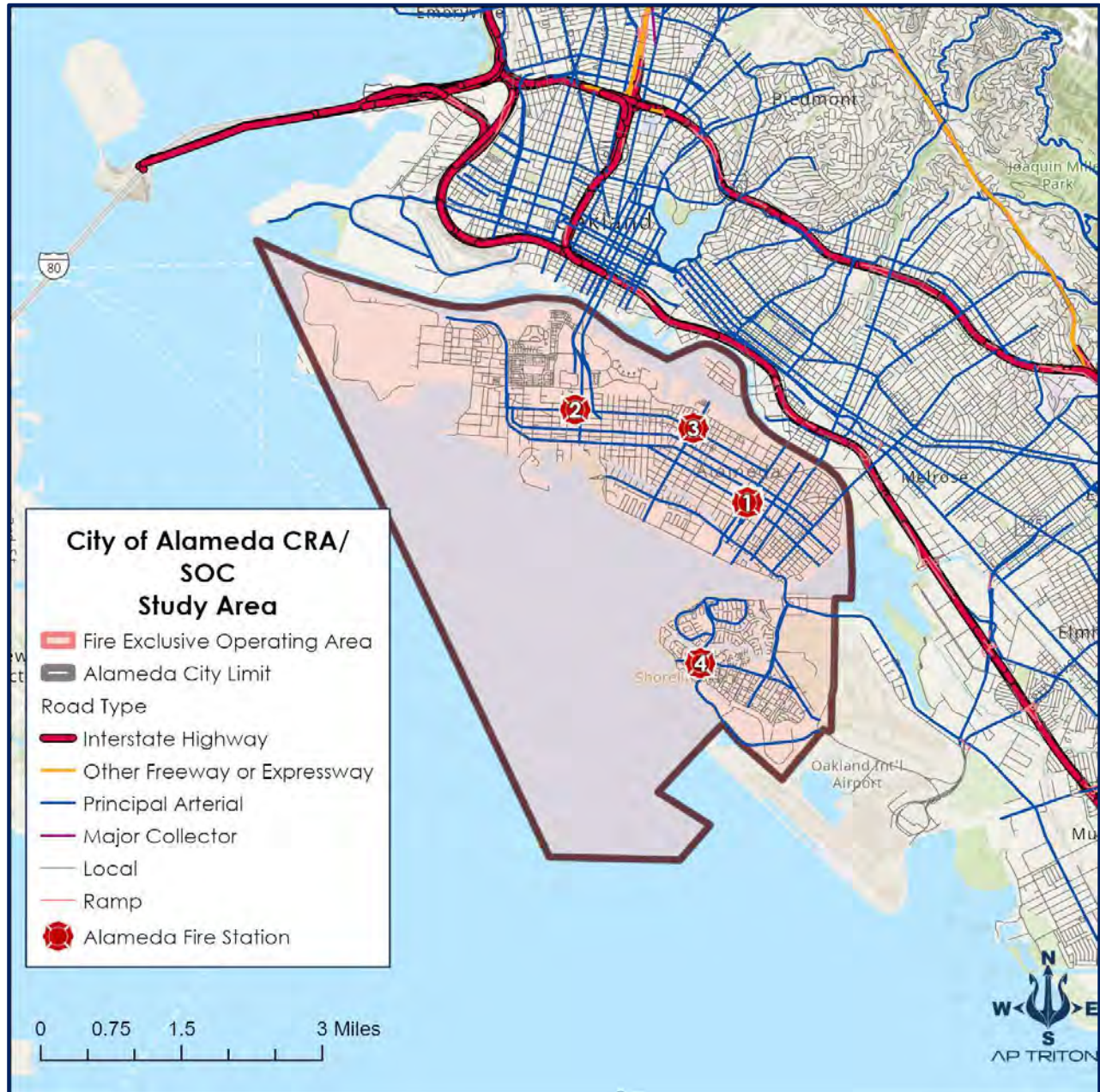
The City of Alameda sits in the San Francisco Bay, east of San Francisco, CA. It consists of one large island, two smaller islands, and a portion of the mainland called Bay Farm Island, west of Oakland International Airport. City boundaries include some bay areas, other waterways, and estuaries surrounding the city.

AFD is a city service responsible for response and prevention within the city limits. One small part to the northwest is not within the city limits and falls within the city limits of San Francisco. Still, AFD addresses the needs of the area as a matter of practicality.



The following figure shows AFD's service area within this study.

**Figure 67: AFD Study Area**



## Services Provided

AFD provides fire protection, emergency medical response at the Advanced Life Support (ALS) level, technical rescue, and other emergency services to its response area. This is accomplished with a career staff on four engines, two trucks, four ambulances, one CARE unit (mental health crisis response team), an on-duty Division Chief, and other non-shift personnel. The following figure summarizes the types of services AFD provides and the resources available to deliver those services.

**Figure 68: Services Provided**

Service	Resources & Capabilities	Minimum Shift Staffing
Emergency Medical Services	Advanced Life Support is provided from 4 Engines, 4 Ambulances, 2 Trucks, and 1 Care unit.	11 Paramedics & 17 EMTs
Fire Suppression	Structure fire suppression from 4 Type 1 engines, 2 water tenders (cross-staffed), 2 trucks, 1 division chief, 4 ambulances, and 1 Care unit. Marine firefighting is also provided from land resources and fireboats (cross-staffed).	28 Firefighters & 1 Division Chief
Hazardous Materials Response	Basic first responder operations only utilize defensive measures. Automatic aid is received from the Alameda County Fire Department HazMat team.	28 Firefighters & 1 Division Chief
Technical Rescue – Confined Space, High Angle, Trench, and Collapse	Trucks are equipped with rescue equipment, including vehicle extrication & ropes. Other equipment is located at the training center and available as needed. Trench rescue is provided at the awareness level only.	Some staff have additional training & certifications but no organizational staffing model.
Technical Rescue – Water Rescue	Surface water equipment is available on most apparatus and fireboats. In addition, specialized equipment and trained personnel are available for dive operations.	All firefighters have surface water rescue skills. 2 minimum on duty for dive operations

Providing the department services requires both human and physical resources. However, a complete description of the capital assets is found in a different section of this report. In addition, a review of the staff available for response and general tasks follows, and a study of resource distribution is included.

## Staffing & Personnel

Public safety is, at its heart, a service industry. An organization's ability to meet its obligations and mission requires active recruiting, managing, and maintaining sufficient staffing. Appropriate operational, administrative, managerial, and supervisory staffing levels and effective allocation of resources are imperative to agency success.

Fire service staff functions fall into two distinct groups: administrative and operational. Both groups must have appropriate resources to complete their tasks for an agency to operate effectively. Allocating organizational resources to balance the two can be difficult, but adequate staffing is crucial.

An organization also needs to have proper rules for effective personnel management. Well-defined, consistent, documented policies and practices help employees understand their responsibilities and benefits. It also helps them chart their road to success and professional advancement.

The number of positions and personnel deployment depends on the organization's needs, mission, and resources. Similarly, the organization's structure, size, and legal requirements drive the administrative and managerial policies and practices. This section overviews AFD's staffing structure.

### Administrative & Support Staffing

The administrative and support functions are diverse, and the list of tasks can be extensive. Organizational planning, coordination, asset management, program evaluation, and overall direction are typical administrative and support staff functions. Some agencies are departments within a larger organization and share some support functions with a municipality or other larger government agencies. Other fire agencies are local governments and must provide internal administrative and support functions. Since AFD is part of a city, it has some administrative support outside its listed employees.

18.5 full-time equivalent (FTE) employees provide support and administrative services. The Fire Chief is the most senior executive administrator of AFD and reports directly to the City Manager. The Deputy Chief of Operations, the Deputy Chief of Support Services, the Administrative Services Manager, and the Fire Marshal report directly to the Fire Chief

The span of control of 4 subordinates for the Fire Chief is within established best practices. Most administrative staff operate during the regular City of Alameda City Hall business hours, 8:00 AM until 6:00 PM, Monday through Thursday. Some authorized and funded positions are currently vacant. The following figure lists each full-time equivalent (FTE) position and the staffing count for the administrative functions of the fire department only.

**Figure 69: Administrative Staff Full-Time Equivalent Count**

Position	FTE Count
Fire Chief	1
Deputy Fire Chief	2
Fire Marshal	1
Assistant Fire Marshal	1
Fire Inspector	3
Housing Safety Assistant	1
Administrative Services Manager	1
Administrative Technician (II)	3
Fire Data Specialist	1
Disaster Preparedness Captain	1
Administrative Specialist	0.5
EMS Captain	1
Community Paramedicine	1
EMS Coordinator	1
<b>Total FTE:</b>	<b>18.5</b>

### Administrative Support

AFD operates with civilian administrative support positions and support from the City of Alameda. The department civilians assist in developing and managing the budget and other department assets, general office and clerical support, records management, scheduling, and finance.

Employee payroll, benefits, recruitment, and employee recordkeeping are overseen by the city human resources staff with assistance from the fire department staff. In addition, the City of Alameda provides other financial, technical, and legal functions with input from the fire department staff.

### Fire Prevention Division

AFD's Fire Prevention Division is responsible for preventing loss and injury through code enforcement, investigation, and education. A Fire Marshal, Assistant Fire Marshal, and 3 inspectors complete most state-mandated solar, special events, new construction, and other commercial inspections annually. Operations personnel assist fire prevention with the yearly R-2 occupancy inspections.

The industry generally recognizes prevention as one of the most effective ways to mitigate risk in the community. National publications such as the Institution of Fire Engineers – United States Branch (IFE – USA) *Vision 20/20 Community Risk Reduction* and the National Fire Protection Association's *NFPA 1300, Standard on Community Risk Assessment*, and *Community Risk Reduction Plan Development* place public education as essential for safer communities. AFD lacks a well-defined public education program but does provide training and management of the Community Emergency Response Team (CERT). Trained fire prevention and suppression staff provide fire cause determination. However, any arson investigations and prosecution are completed by the Alameda Police Department. Most occupancy updates and plan reviews are contracted to a third party.

### Support Services

Support services are separated into two groups. First, a Fire Captain in charge of disaster preparedness, planning, and managing the emergency operations center (EOC) reports to the Deputy Chief of Support Services. This Fire Captain receives support from a full-time Administrative Services Coordinator with specific skills needed to support an EOC.

An Emergency Medical Services Fire Captain also reports to the Deputy Chief of Support Services. This captain is supported by a civilian EMS coordinator and a management analyst and is the liaison between the contracted medical director and Alameda Family Services. This contracted agency supports the CARE Team.

### Operations Staffing

Operations personnel are assigned various duties consistent with fulfilling emergency response objectives. They are also responsible for additional collateral duties to support the response mission. The Deputy Chief of Operations is considered administrative staff but supervises three shifts of Division Chiefs. The following figure lists full-time equivalent position counts for the operations division.



**Figure 70: Emergency Operations Staff Full-Time Equivalent Count**

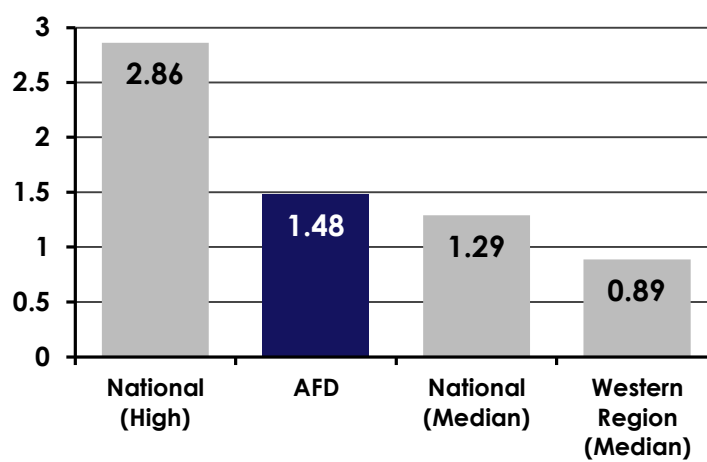
Position	FTE Count
Division Chief	3
Fire Captain	18
Training Captain	1
Apparatus Operator	18
Firefighters <sup>1</sup>	66
<b>Total FTE:</b>	<b>106</b>

<sup>1</sup>Operational Staff are certified as Paramedics and EMTs

### Staff Allocation

The National Fire Protection Association publishes statistics on the makeup and structure of fire departments throughout the United States. These comparative statistics can provide insight into how one agency compares to similar agencies. For example, for the staffing level per 1,000 in population, a career firefighter is defined as all full-time uniformed firefighters regardless of the assignment. For AFD, that number is 117 uniformed firefighters. The AFD has an operational staffing level of 1.48 firefighters per 1,000 population served.

This staffing level is lower than the high national number, slightly higher than the national median, and exceeds the western region.<sup>48</sup> However, leadership should use this type of comparison as a general reference to determine if levels are obviously outside of a reasonable range. These should not be used as a standard for setting policy. The following figure compares firefighters per 1,000 in the population protected.

**Figure 71: Firefighters Per 1,000 in Population Comparison**

**Firefighter Staff Distribution**

The operations staff is allocated evenly throughout the three shifts. The four active fire stations have 11 primary apparatuses and seven additional specialty units that can be cross-staffed. The four engines and two truck companies maintain minimum daily staffing levels of a captain, an apparatus operator, and a firefighter.

There is one Firefighter/Paramedic and one Firefighter/EMT staff member in each of the four ambulance units and one Care unit. Six additional firefighters are provided for each shift to fill vacancies and improve minimum staffing levels if no vacancies are present.

At least one Division Chief is on duty, operating a command car from Station 1. In addition, the Deputy Chiefs, the Fire Chief, and administrative captains are also fully qualified to respond for additional incident support if needed.

The following figure lists the primary and cross-staffed apparatus by the station. All primary apparatus and ambulances are staffed with a minimum of one Paramedic.

**Figure 72: Unit Staffing Model by Station**

Unit	Type	Minimum Daily Staffing
<b>Fire Station 1 (2401 Encinal Ave.)</b>		
Engine 1	Type 1 Engine	1 each: Captain, AO, FF
Truck 1	Ladder	1 each: Captain, AO, FF
Medic 1	Ambulance	2 Firefighters
Division 1	Command	1 Division Chief
Boat 1 & Tow Vehicle	Inflatable Boat	Cross Staffed
<b>Fire Station 2 (635 Pacific Ave.)</b>		
Engine 2	Type 1 Engine	1 each: Captain, AO, FF
Truck 2	Ladder	1 each: Captain, AO, FF
Medic 2	Ambulance	2 Firefighters
Fire Boat 1	Fire Boat	Cross Staffed (at marina)
Boat 2 & Tow Vehicle	Inflatable Boat	Cross Staffed
<b>Fire Station 3 (1625 Buena Vista Ave.)</b>		
Engine 3	Type 1 Engine	1 each: Captain, AO, FF
Medic 3	Ambulance	2 Firefighters
AC 03	Care Team	2 Firefighters
Rescue 3	Rescue (dive & technical)	Cross Staffed
<b>Fire Station 4 (2595 Mecartney Rd.)</b>		
Engine 4	Type 1 Engine	1 each: Captain, AO, FF
Medic 4	Ambulance	2 Firefighters
Tender 01	Water Tender	Cross Staffed

AO = Apparatus Operator; FF = Firefighter

Determining apparatus staffing levels is a challenging task. Leaders must decide what risks their crews are likely to face and what level of risk the community is willing to accept. Several noteworthy publications help agencies determine adequate staffing, including NFPA 1710. This NFPA standard recommends staffing and deployment of career organizations.

The National Institute of Standards and Technology field studies on fire-ground and EMS incidents may also provide direction. Occupational health standards typically consider crew entry into a hazardous environment unsafe without an equal number of equipped and capable personnel outside the hazard zone. No one person goes in alone. However, this rule may be suspended if an emergency rescue is required.

### **Staff Scheduling Methodology**

AFD staffs four stations 24 hours per day, every day of the year, with a minimum of one Division Chief, 6 Captains, 6 Apparatus Operators, and 16 Firefighters. Each apparatus is equipped and staffed to provide ALS medical care.

In addition, AFD has access to several surrounding agencies for additional incident staffing through mutual aid agreements with surrounding fire departments. AFD utilizes a three-shift schedule, A-Shift, B-Shift, and C-Shift, on a 48/96 shift schedule and a 24-day FLSA cycle. The work shifts begin at 8:00 AM and end at 8:00 AM two days later.

### **Mutual Aid Availability**

Mutual and automatic aid is provided to and acquired primarily by the City of Oakland Fire Department (OFD). EMS aid is given through the county's contract provider. OFD provides firefighting staff from 25 stations located in three Battalions. They can provide up to 24 engine companies, seven truck companies, one rescue company, two hazardous materials units, and other various apparatus.

However, OFD's internal policy is to limit mutual aid responses to a total of 5 units. Usually, this consists of a battalion chief, a truck, and 3 engines. The following figure lists the 10 closest fire stations to the City of Alameda.

**Figure 73: Ten Nearest Oakland Fire Department Mutual Aid Assets<sup>49</sup>**

Station	Engines	Aerials	Other Units
1	1	1	Rescue
2	1		Rescue Boat
3	1	1	Hazmat
4	1	1	
12	1		
13	1		
15	1	1	
18	1	1	
20	1	1	
27	1		Foam Unit



These resources are not the only stations close enough to support AFD. The following figure indicates the location of the surrounding area's mutual aid stations.

**Figure 74: Mutual Aid Fire Station Locations**



## Financial Review

### Local Economy

Alameda residents are an established community. The median owner-occupied house unit value is \$972,800. Per capita income in 2021 dollars reached \$61,380, and the median household income is estimated at \$113,339. The “business” of real and personal property transfers positively impacts revenue streams through increased property taxes, property transfer taxes, and sales taxes. However, recessionary conditions can negatively affect property transfer and sales taxes, which can cause operating budget shortfalls.

The Alameda community has many attractive attributes to the investment and hospitality sectors. In addition, Alameda is also appealing to the maritime industry due to the water and pleasant weather conditions. These attributes promote favorable opportunities to develop the maritime-related sector and support it with employment for those who desire to live near the San Francisco Bay area.

The Alameda local business economy has established itself in tourism, retail, biotechnology, life science, space technology, maritime, and manufacturing, as well as repurposing existing buildings to accommodate housing and local retail. In terms of economic impact, these areas are reflected in their local tax revenue receipts.

### Historical Financial Information—City of Alameda

The City of Alameda operates on a fiscal year cycle from July 1 to June 30, using the fund accounting method to record revenues and expenditures. This methodology recognizes all receipts as revenue and all expenditures as expenses. Government entities that are not for profit cannot recognize outgoing funds as expenses because the purpose of local government is not to profit; therefore, outflows must be categorized as expenditures.

Comprehensive financial policies are necessary to safeguard the resources of any business, but especially so for public entities since they rely on taxpayer funding. The city has developed a set of policies designed to protect its financial resources. Purchasing policies, including the credit cards issued to certain fire department officers, require approval levels at certain dollar levels, forms for various transactions, and reviews.

Triton reviewed published financial statements from the City of Alameda to review the previous years’ net revenues and expenditures. Those statements are summarized here so the AFD can quickly understand its position within the city budget system. The following figure shows the revenue streams by category.

**Figure 75: City of Alameda Historical General Fund Revenues**

Revenues	FY 17-18 Actual	FY 18-19 Actual	FY 19-20 Actual	FY 20-21 Actual	FY 21-22 Actual
Property taxes	38,726,740	42,037,930	45,733,244	49,310,946	51,486,500
Sales taxes	10,279,885	11,527,704	10,119,901	10,695,541	11,757,084
Utility user taxes	9,333,534	9,077,314	8,809,356	9,091,389	9,011,553
Other local taxes	8,140,640	10,131,804	14,538,786	16,314,309	18,402,540
Licenses & permits	2,380,610	2,253,419	2,574,325	2,253,884	2,387,072
Transfer tax	15,679,218	17,134,704	15,195,899	18,536,929	21,929,943
Revenues from other agencies	583,127	1,016,112	715,885	2,465,847	917,584
Charges for current services	9,787,559	3,840,788	5,549,602	4,396,888	7,838,029
Fines & forfeitures	886,188	778,060	700,314	670,398	320,669
Use of money & property	1,324,012	1,822,147	2,532,639	1,300,123	247,977
Other revenue	211,222	19,369	1,335	35,033	20,068
<b>Total Revenue:</b>	<b>97,332,735</b>	<b>99,639,351</b>	<b>106,471,286</b>	<b>115,071,287</b>	<b>124,319,019</b>

The City of Alameda funds operations and community services using these revenue streams. The recurring expenditures are comprised of Essential City Services and Debt Services. In fiscal year 21/22, the two leading departments were the Fire and Police Departments. Their combined budgets were nearly \$77 million, approximately 80% of the city's general fund budgeted expenditures. The following shows the expenditures by general category.

**Figure 76: City of Alameda Historical General Fund Expenditures**

<b>Expenditures</b>	<b>FY 17-18 Actual</b>	<b>FY 18-19 Actual</b>	<b>FY 19-20 Actual</b>	<b>FY 20-21 Actual</b>	<b>FY 21-22 Actual</b>
General Government	19,790,499	16,568,001	8,401,582	8,964,021	7,757,153
Police	38,139,431	33,904,701	34,219,570	34,272,471	37,243,422
Fire	36,203,540	34,541,826	35,017,614	36,459,313	39,276,941
Public Works	1,943,893	2,179,896	2,437,812	2,330,924	3,308,954
Community Development	2,660,447	3,044,836	3,749,130	3,608,347	733,855
Recreation & Parks					10,382,106
Debt service:					
Principal	201,385	208,790	215,054	221,506	228,151
Interest	—	14,564	11,064	9,765	8,427
<b>Total Recurring Expenses:</b>	<b>98,939,195</b>	<b>90,462,614</b>	<b>84,051,826</b>	<b>85,866,347</b>	<b>98,939,009</b>
Capital outlay	2,541,094	391,455	253,304	111,213	120,969
<b>Total Non-recurring Expenses:</b>	<b>2,541,094</b>	<b>391,455</b>	<b>253,304</b>	<b>111,213</b>	<b>120,969</b>
<b>Total Expenditures</b>	<b>101,480,289</b>	<b>90,854,069</b>	<b>84,305,130</b>	<b>85,977,560</b>	<b>99,059,978</b>
<b>Excess (Deficit):*</b>	<b>(4,147,554)</b>	<b>83,813,453</b>	<b>22,166,156</b>	<b>29,093,727</b>	<b>25,259,041</b>

\* Revenues over expenditures.

There was a decrease in expenditures from fiscal year 17/18 to 19/20. The fiscal year 21/22 expenses have almost returned to the fiscal year 17/18. Annually, the range of high and low has been 15% to -10% in cost increases.

The next section of the city's financial statements demonstrates the fluctuation in the ending fund balance. The primary factor to consider is ending balances of revenues over expenditure. Any excess will increase the fund balance, while any deficit will decrease the fund balance. The following figure shows a \$90M ending fund balance at the end of the end of the '21-'22 fiscal year.

**Figure 77: City of Alameda Historical General Fund Balance**

Other Financing Sources (Uses)	FY 17–18 Actual	FY 18–19 Actual	FY 19–20 Actual	FY 20–21 Actual	FY 21–22 Actual
Transfer in	4,219,000	4,668,414	4,493,136	7,304,979	4,939,465
Transfer (out)	(9,257,842)	(13,452,291)	(13,224,136)	(17,969,075)	(13,245,824)
<b>Total Other Sources:</b>	<b>(5,038,842)</b>	<b>(8,783,877)</b>	<b>(8,731,000)</b>	<b>(10,664,096)</b>	<b>(8,306,359)</b>
<b>Net Change in Balance:</b>	<b>(9,186,396)</b>	<b>1,405</b>	<b>13,435,156</b>	<b>18,429,631</b>	<b>16,952,682</b>
Beginning Fund Balance	50,395,799	41,209,403	41,210,808	54,645,964	73,075,595
<b>Ending Fund Balance:</b>	<b>41,209,403</b>	<b>41,210,808</b>	<b>54,645,964</b>	<b>73,075,595</b>	<b>90,028,277</b>

### AFD Historical Financial Information

The Alameda City Fire Department provides an “All Hazard” service response. In addition, each division in the department holds specific revenue and cost features unique to its function in the organization.

The summary of their actual budget focused primarily on the operations that the City of Alamedas general funds support. Therefore, any operation supported by outside funding was not reviewed as these expenditures did not affect the general fund budget.

The expenditure summary provided for analysis divided the Emergency Services & EMS group (operations) into a select group. This group represents the 24-hour daily fire and EMS responders. This type of grouping is helpful when analyzing transport revenues against associated costs. However, this summary combines EMS and fire operations into a single category. The following figure summarizes the fire department's general fund expenditure.



**Figure 78: AFD General Fund Expenditure Summary**

5-year Summary AFD	FY 17-18 Actual	FY 18-19 Actual	FY 19-20 Actual	FY 20-21 Actual	FY 21-22 Actual
<b>Salary &amp; Employee Benefits: Emergency Services &amp; EMS</b>					
Salaries and Wages	12,291,309	12,196,580	11,768,068	12,200,712	13,175,867
Overtime	1,128,204	2,497,921	2,446,041	2,300,479	2,397,737
Subtotal	13,419,513	14,694,501	14,214,109	14,501,191	15,573,604
<b>Salary &amp; Employee Benefits: Remaining Divisions</b>					
Salaries, Wages & OT	1,812,777	2,121,048	2,636,747	2,715,478	2,881,178
Subtotal	15,232,290	16,815,549	16,850,856	17,216,669	18,454,782
Pension and OPEB	8,216,767	8,675,190	9,293,831	10,231,643	10,708,974
Benefits	2,432,344	2,334,007	2,201,697	2,285,963	2,585,738
<b>Total Salary and Benefits:</b>	<b>25,881,401</b>	<b>27,824,746</b>	<b>28,346,384</b>	<b>29,734,275</b>	<b>31,749,494</b>
<b>Non-Salary Expenditures</b>					
Cost Allocation	2,517,926	3,327,001	3,976,503	3,906,870	5,191,876
Operating Expenditures	2,670,587	3,390,085	2,807,566	2,927,841	2,309,699
Transfer out	—	1,226,671	801,819	216,244	183,026
Debt Service	201,385	223,354	226,119	231,271	236,578
Capital Outlay	2,115,284	389,895	95,678	—	146,835
<b>Total GF Impact:</b>	<b>33,386,583</b>	<b>36,381,752</b>	<b>36,254,069</b>	<b>37,016,501</b>	<b>39,817,508</b>

There are three AFD areas worth reviewing. The Operations Division's salary and benefits account for nearly 70% of all salary and benefit costs. They are the most significant expenditure of the fire department budget. Within the industry, the Operations Division salary and benefit budget typically dominates the cost of operating a fully staffed fire department. Therefore, AFD's expenditures in this category are within industry norms.

The annual overtime budget is also worth reviewing as it is a significant expenditure, accounting for an average of 6% to 7% of the spending. This percentage is not unusual as 24-hour operations personnel are compensated approximately 5.6% of their wages as usual overtime under the Fair Labor Standards Act (FLSA). This is true of the 48/96 schedule maintained by AFD. Because of the FLSA, firefighters earn overtime even if they do not work hours outside their scheduled shift. The additional overtime pay typically indicates firefighters covering shifts in the event of an absence. This budget item becomes an analytic tool when the additional overtime trends are watched. For example, if overtime increases at an abnormal rate, this could indicate understaffing or a high level of illness or injury. This difference has trended downward for AFD, from 1.3% in fiscal year 18/19 to 0.4% in fiscal year 21/22.

The Other Post Employment Benefits (OPEB) is the third highlighted expenditure. This expenditure has a significant impact on the fire department budget. It is the second largest single line-item expenditure in personnel costs and the entire fire department budget. It has grown at a steady 7% rate increase over the last five years.

The AFD has other budget categories not captured in the above expenditure figure but are still related to fire department operations. These expenditures are driven by the emergency operations center and account for those expenses shared by other department budgets and grant funding. Combining the general fund outlay above with the other costs relayed below creates the total expenditures annually incurred by the fire department.

**Figure 79: Other Fund Expenditure Summary**

5-year summary	FY 17-18 Actual	FY 18-19 Actual	FY 19-20 Actual	FY 20-21 Actual	FY 21-22 Actual
Salaries, Wagers & Overtime	941,721	262,721	663,464	948,837	748,913
Pension and OPEB	504,638	239,937	422,913	398,349	521,154
Benefits	87,642	73,083	128,322	257,063	187,610
<b>Total Salary &amp; Benefits:</b>	<b>1,534,001</b>	<b>575,741</b>	<b>1,214,699</b>	<b>1,604,249</b>	<b>1,457,677</b>
Operating Expenditures	494,728	143,058	146,383	187,971	1,427,639
Transfer out	—	328,014	—	—	—
Cost Allocation	63,940	21,282	68,807	36,446	19,874
Debt Service	(11,869)	6,367	—	—	—
<b>Total Other Expenditures:</b>	<b>2,080,800</b>	<b>1,074,462</b>	<b>1,429,889</b>	<b>1,828,666</b>	<b>2,905,190</b>
<b>Total Actual Expenditures:</b>	<b>\$35,467,383</b>	<b>\$37,456,214</b>	<b>\$37,683,958</b>	<b>\$38,845,167</b>	<b>\$42,722,698</b>

### Financial Review of AFD EMS Transport Operations

The EMS Transport Service within the City of Alameda is a fire department program that bills for fees per patient transport. Triton has unbundled and reviewed several monetary aspects of providing this service. The billing and collection services are contracted by the third-party company Wittman Enterprises.

This company implements the billing and collection policies on behalf of AFD. They also prepare and provide all the financial documents associated with the billing and collections transactions. The Fire Chief is provided these documents each month for administrative review. The breakdown of the review is as follows.

**Figure 80: Ambulance Gross Billings & Collections**

Revenue	2017-18 Actual	2018-19 Actual	2019-20 Actual	2020-21 Actual	2021-22 Actual
No. Billable Transports	1,290	4,366	3,851	4,256	4,363
Ambulance Gross Billing	2,972,080	11,746,762	10,976,548	12,222,322	13,380,788
Ambulance Net Charges	1,157,145	4,288,790	4,096,893	4,436,915	4,514,947
<b>Cash Payments Received:</b>	<b>\$975,242</b>	<b>\$3,436,013</b>	<b>\$3,291,937</b>	<b>3,616,194</b>	<b>3,758,210</b>
% of Gross Collected	33%	29%	30%	30%	28%
% of Net Collected	84%	80%	80%	82%	83%
<b>Average Per Transport</b>	<b>\$756</b>	<b>\$787</b>	<b>\$855</b>	<b>\$850</b>	<b>\$861</b>

Because 2018 data only included part of the year, annual change rates were measured using the 2019 to 2022 data set years. Similarly, 2020 had the COVID-19 pandemic, which may have affected any trend analysis. Change rates in each row do not necessarily change at the same percentage. For example, billable transport costs have risen approximately 3% annually. However, the gross billing, or the total charged to all patients, rose by nearly an average of 7% annually. The actual Net Charges or fees charged minus adjustments had an annual increase of approximately 2.61%. In comparison, net charges rose by a modest 3%. While it would be reasonable to assume cash payments would follow the net charges, the actual cash payments received rose almost 5% annually.

The EMS valuation and payer mix is a general breakdown of the payors of a given transport system and how much they pay. Medicare patients received the most transports. The following figure shows the typical types of payors, each with unique payment structures.

**Figure 81: Transport Revenue Valuation & Payor Mix (2022)**

Payor	# of Trips	% of Trips	Gross Charges	Payments	Average Payment per Trip
Medicare	2,421	55%	\$7,060,012	\$1,167,127	\$482
Medicaid	1,032	24%	3,173,445	308,796	299
Insurance	707	16%	2,452,922	1,803,418	2,550
Bill Patient	203	5%	685,111	464,580	2,288
<b>Totals:</b>	<b>4,363</b>	<b>100%</b>	<b>\$13,371,490</b>	<b>\$3,743,921</b>	<b>\$858</b>

The estimated service cost must be determined if the EMS fee structure can promote a cost-neutral model. The EMS service's base, or sunk cost, can be calculated by measuring the cost of all in-service ambulances using a ratio of all in-service apparatus. Triton calculated this estimated cost as a ratio between the number of firefighters assigned to the ambulances and the daily minimum staffing. The minimum staffing of AFD is 29 personnel per shift, which includes the Division Chief. Eight of the 29 personnel on duty are assigned to the ambulance, which equates to roughly 28% of the minimum staffing. The 28% rate was then used to calculate how much the EMS Transport Division impacted the Fire Department's annual GF expenditure. These costs included all fire department salaries and non-salary expenditures.

After the estimated service cost can be found, a base cost per transport can be established by dividing the sunk cost by the number of transports. In the case of AFD, the rough estimate of the cost per transport is approximately \$2,117. The average receipts per transport was \$861, leaving a deficit of \$1,315. The following figure shows these cost factors.

**Figure 82: Cost Factors**

Cost Factors	Expenditure Formula
Sunk Costs (28% of personnel, OH)	\$9,496,762
Number of Transports	4,363
Cost per Transport (Breakeven)	\$2,177
Average Receipts per Transport	<u>\$861</u>
<b>Cost vs. Revenue Excess (Deficit):</b>	<b>(\$1,315)</b>

Assuming the goal for the City of Alameda and the AFD is to create a tax-neutral service, they must address this deficit. One method is to increase fees. However, fee increases will require changing the Alameda County Emergency Medical Services Agency (ACEMSA) contract. While it is outside the scope of this report to provide a legal opinion, a cursory document review indicates changing the contract is possible. According to the research, the City of Alameda retains rights specified in the Health and Safety Code section 1797.201<sup>50</sup> and can adopt its own rates. The contract with ACEMSA is due for renewal in June 2024.<sup>51</sup> Another method would be to increase efforts to collect outstanding transport fees.

## Capital Facilities & Apparatus

Apparatus and other vehicles, trained personnel, firefighting and emergency medical equipment, and fire stations are the essential capital resources for a fire department to carry out its mission. No matter how competent or numerous the firefighters are, if appropriate capital equipment is unavailable for operations personnel, it would be impossible for the Alameda Fire Department to perform its responsibilities effectively.

The essential capital assets for emergency operations are facilities, apparatus, other emergency response vehicles, and equipment. This report section assesses AFD fire stations and frontline medic units and apparatus.

### Fire Stations & Facilities

Fire stations play an integral role in delivering emergency services for several reasons. A station's location will dictate response times to emergencies to a large degree. A poorly located station can mean confining a fire to a single room compared to losing the structure or survival from sudden cardiac arrest. Fire stations must also be designed to house equipment and apparatus adequately and meet the organization's and its personnel's needs.

Fire station activities should be closely examined to ensure that the structure is adequate in size and function. Examples of these functions can include the following:

- Kitchen facilities, appliances, and storage.
- Residential living space and sleeping quarters for on-duty personnel (all genders).
- Bathrooms and showers (all genders).
- Training, classroom, and library areas.
- Firefighter fitness area.
- The housing and cleaning of apparatus and equipment, including decontamination and disposal of biohazards.
- Administrative and management offices, computer stations, and office facilities.
- Public meeting space.



In gathering information from AFD, Triton asked the department to rate the condition of its fire stations. The following condition criteria are based on subject matter expert experience. They are intended as a general reference for the AFD's comparative analysis. The results will be seen in the subsequent figures.

**Figure 83: Criteria Utilized to Determine Fire Station Condition**

<b>Excellent</b>	Like new condition. No visible structural defects. The facility is clean and well-maintained. The Interior layout is conducive to function with no unnecessary impediments to the apparatus bays or offices. No significant defect history. Building design and construction match the building's purposes. Age is typically less than 10 years.
<b>Good</b>	The exterior has a good appearance with minor or no defects. Clean lines, good workflow design, and only minor wear on the building interior. The roof and apparatus apron are in good working order, absent any significant full-thickness cracks, crumbling of the apron surface, or visible roof patches or leaks. Building design and construction match the building's purposes. Age is typically less than 20 years.
<b>Fair</b>	The building appears structurally sound with a weathered appearance and minor to moderate non-structural defects. The 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 the building's purposes well. Shows increasing age-related maintenance but with no critical defects. Age is typically 30 years or more.
<b>Poor</b>	The building appears cosmetically weathered and worn with potential structural defects, although not imminently dangerous or unsafe. Large, multiple full-thickness cracks and concrete crumbling on the apron may exist. The roof has evidence of leaking and multiple repairs. The interior is poorly maintained or shows signs of advanced deterioration with moderate to significant non-structural defects. Problematic age-related maintenance and major defects are evident. It may not be well-suited to its intended purpose. Age is typically greater than 40 years.


## AFD Fire Stations

The following figures outline the basic features of each AFD fire station.


**Figure 84: AFD Station 1**

<b>Station Number:</b>	1	<b>Physical Location:</b>	2401 Encinal Ave., Alameda			
		<b>General Description:</b> Station 1 is 55 years old and adjoins the fire department administration offices. The building has limited additional space and needs some repairs. Parking is limited, and a cell tower easement takes away some of the functionality of the back pad and storage areas. In addition, the building does not meet modern firefighting requirements.				
<b>Structure</b>						
Date of Construction	1968	Seismic Protection		Limited Retrofit		
Auxiliary Power	Yes	General Condition		Good		
Apparatus Bays	Number Drive-Through	4	Number Back-in	0		
Total Square Footage	12,742	ADA Compliant		No		
<b>Facilities Available</b>						
Sleeping Quarters	Bedrooms	10	Beds	10	Dorm Beds	1 – Office
Max Staffing Capability	11	Exercise/Workout Facilities			Yes	
Kitchen Facilities	Yes	Individual Lockers Assigned			Yes	
Bathroom/Shower Facilities	Yes	Training/Meeting Rooms			No	
Washer/Dryer/Extractor	WD Only	SCBA Compressor / Transfill			Yes	
<b>Safety &amp; Security</b>						
Station Sprinklered	No	Smoke Detection			Yes	
Decon & Biological Disposal	No	Security System			No	
Apparatus Exhaust System	Partial	Carbon Monoxide Detection			No	
<b>Assigned Apparatus/Vehicles</b>						
<b>Apparatus</b>	<b>Minimum Staffing*</b>	<b>Apparatus/Vehicle</b>		<b>Minimum Staffing*</b>		
Battalion 1	1	Medic 1		2		
Truck 1	3	Boat/Tow Vehicle		CS		
Engine 1	3	Reserve Units (3)		Engine, Medic, & BC		
<b>Total Daily Staffing:</b>	9	CS = cross staffed unit.				

**Figure 85: AFD Station 2**

Station Number:	2	Physical Location:	635 Pacific Ave., Alameda			
		<b>General Description:</b> At 102 years old, Station 2 is at the end of its serviceable life. However, its antiquated design does meet most modern fire station requirements. The rear apparatus bays are not arranged in a way conducive to rapid deployment. The smallest station in the inventory is overcrowded with 3 apparatus and 8 assigned crewmembers.				
<b>Structure</b>						
Date of Construction	1921	Seismic Protection		No		
Auxiliary Power	Yes	General Condition		Fair		
Apparatus Bays	Number Drive-Through	0	Number Back-in	3		
Total Square Footage	5,575	ADA Compliant		No		
<b>Facilities Available</b>						
Sleeping Quarters	Bedrooms	8	Beds	8	Dorm Beds	1
Maximum Staffing Capability	9	Exercise/Workout Facilities			Yes	
Kitchen Facilities	Yes	Individual Lockers Assigned			Yes	
Bathroom/Shower Facilities	Yes	Training/Meeting Rooms			Yes	
Washer/Dryer/Extractor	WD Only	SCBA Compressor / Transfill			No	
<b>Safety &amp; Security</b>						
Station Sprinklered	No	Smoke Detection			Yes	
Decon & Biological Disposal	No	Security System			No	
Apparatus Exhaust System	Yes	Carbon Monoxide Detection			No	
<b>Assigned Apparatus/Vehicles</b>						
Apparatus	Minimum Staffing*	Apparatus/Vehicle		Minimum Staffing*		
Engine 2	3	Truck 2		3		
Medic 2	2	Boat/Tow Vehicle		CS		
Fire Boat 1	At Marina, CS					
Total Daily Staffing:	8	CS = cross staffed unit				

**Figure 86: AFD Station 3**


Station Number:	3	Physical Location:	1625 Buena Vista Ave., Alameda				
		<b>General Description:</b> Station 3 is only 5 years old and in excellent condition. This newer fire station meets modern fire service requirements. However, off-street parking is minimal and would better serve a station staff of 6 or fewer. The building shares the lot with the emergency operations center, which is also new.					
<b>Structure</b>							
Date of Construction	2017	Seismic Protection		Yes			
Auxiliary Power	Yes	General Condition		Excellent			
Apparatus Bays	Number Drive-Through	2	Number Back-in	0			
Total Square Footage	11,838	ADA Compliant		No			
<b>Facilities Available</b>							
Sleeping Quarters	Bedrooms	6	Beds	6	Dorm Beds	1 – Office	
Maximum Staffing Capability	7	Exercise/Workout Facilities			Yes		
Kitchen Facilities	Yes	Individual Lockers Assigned			Yes		
Bathroom/Shower Facilities	Yes	Training/Meeting Rooms			Yes		
Washer/Dryer/Extractor	WD Only	SCBA Compressor / Transfill			No		
<b>Safety &amp; Security</b>							
Station Sprinklered	Yes	Smoke Detection			Yes		
Decon & Biological Disposal	No	Security System			No		
Apparatus Exhaust System	Yes	Carbon Monoxide Detection			No		
<b>Assigned Apparatus/Vehicles</b>							
Apparatus	Minimum Staffing*		Apparatus/Vehicle		Minimum Staffing*		
Engine 3	3		Medic 3		2		
AC03	2		Rescue 3		Cross Staffed		
Total Daily Staffing:	7		CS = cross staffed unit				

**Figure 87: AFD Station 4**

Station Number:	4	Physical Location:	2595 Mecartney Rd., Alameda			
		<b>General Description:</b> Station 4 is 32 years old and is an adequate size and layout. However, it does not meet most modern fire station requirements. For example, it does not have a decontamination area, and the gear is stored within the bay.				
<b>Structure</b>						
Date of Construction	1991	Seismic Protection		As-Built		
Auxiliary Power	Yes	General Condition		Good		
Apparatus Bays	Number Drive-Through	2	Number Back-in	1		
Total Square Footage	11,234	ADA Compliant		Yes		
<b>Facilities Available</b>						
Sleeping Quarters	Bedrooms	2	Beds	2	Dorm Beds 8	
Maximum Staffing Capability	10	Exercise/Workout Facilities		Yes		
Kitchen Facilities	Yes	Individual Lockers Assigned		Yes		
Bathroom/Shower Facilities	Yes	Training/Meeting Rooms		Yes		
Washer/Dryer/Extractor	Yes	SCBA Compressor/Transfill		Yes		
<b>Safety &amp; Security</b>						
Station Sprinklered	Yes	Smoke Detection		Yes		
Decon & Biological Disposal	Yes	Security System		No		
Apparatus Exhaust System	Yes	Carbon Monoxide Detection		No		
<b>Assigned Apparatus/Vehicles</b>						
Apparatus	Minimum Staffing*	Apparatus/Vehicle		Minimum Staffing*		
Engine 4	3	Water Tender 01		CS		
Medic 4	2	Reserve		Truck & Medic		
Total Daily Staffing:	5	CS = cross staffed unit				



**Figure 88: AFD Station 5 (Training)**

<b>Station Number:</b>	5 (Training)	<b>Physical Location:</b>	950 W. Ranger Rd., Alameda			
		<b>General Description:</b>				
		<p>This 1936 building was designed and used by the military throughout World War II until the base closed. After closure, the building, which included vehicle maintenance and a fire station, was turned over to the city. It was an active fire station between 1997 and 2008. This building is in disrepair and does not meet modern firefighting needs.</p>				
<b>Structure</b>						
Date of Construction	1936	Seismic Protection	No			
Auxiliary Power	Yes	General Condition	Poor			
Apparatus Bays	Number Drive-Through	2	Number Back-in	1		
Total Square Footage	37,610	ADA Compliant	No			
<b>Facilities Available</b>						
Sleeping Quarters	Bedrooms	0	Beds	0	Dorm Beds	0
Maximum Staffing Capability	0	Exercise/Workout Facilities			Yes	
Kitchen Facilities	No	Individual Lockers Assigned			Yes	
Bathroom/Shower Facilities	Yes	Training/Meeting Rooms			Yes	
Washer/Dryer/Extractor	Yes	SCBA Compressor / Transfill			Yes	
<b>Safety &amp; Security</b>						
Station Sprinklered	No	Smoke Detection			No	
Decon & Biological Disposal	No	Security System			No	
Apparatus Exhaust System	Yes	Carbon Monoxide Detection			No	
<b>Assigned Apparatus/Vehicles</b>						
<b>Apparatus</b>	<b>Minimum Staffing*</b>	<b>Apparatus/Vehicle</b>	<b>Minimum Staffing*</b>			
Reserve Engine	N/A	Water Tender 02	CS			
OES Engine 409	CS					
<b>Total Daily Staffing:</b>	0	CS = cross staffed unit				

## Fire Stations Summary

The department considered three AFD stations in “good” or “excellent” condition, with one station listed as “fair.” The training center was rated as poor. The following figure summarizes AFD's fire stations and their features.

**Figure 89: Summary of the Alameda City Fire Stations**

Station	Square Footage	Apparatus Bays	Staffing Capacity	General Condition	Station Age
Station 1	12,742	4	12	Good	55 years
Station 2	5,575	3	9	Fair	102 years
Station 3	11,838	2	7	Excellent	6 Years
Station 4	11,234	3	10	Good	32 Years
Station 5	37,610 <sup>1</sup>	3 <sup>1</sup>	0	Poor	87 Years
<b>Totals:</b>	<b>41,389</b>	<b>12</b>	<b>38</b>		

<sup>1</sup> It is not included in the usable total due to condition and current operational use.

The fire stations were also evaluated utilizing a checklist based on the NFPA 1500: Standard on Fire Department Occupational Safety, Health, and Wellness Program. A walkthrough inspection of each facility was completed on March 13, 2023.

Modern firefighting buildings are designed to maintain health and safety standards found in NFPA 1500. In addition, due to today's fire service demands, stations are typically designed with training, gender separation, cancer prevention, and access to technological solutions. Generally, older fire stations do not meet the requirements of modern firefighting.

As the firefighting environment has changed, the technology, equipment, and safety systems have also changed to meet new demands. Finally, modern apparatuses are larger and heavier than those used 40 years ago. Older buildings do not typically have the space or engineering systems to meet that new environment. Modern living also requires much more access to electrical outlets than was expected in older buildings. Older buildings like Fire Station 2 are no exception.

Older buildings do not meet the requirements due to the need to decontaminate personnel and equipment after many responses in the current firefighting context. Every crew member should have access to facilities to decontaminate immediately after a fire event, and showers should allow for gender separation. In addition, there needs to be enough partitioned space to allow for gear and equipment to be thoroughly washed and designed to control contamination in the station's living and working spaces. Most fire department facilities in the city fall behind in this need.

While all structures require routine maintenance, fire stations require even more due to the continuous occupancy by many adults. Multiple departures and returns of heavy apparatus also affect these structures. While there is an active maintenance program, there was evidence of maintenance deferral throughout most stations. This deferred maintenance will accumulate and become more urgent as time passes.

Deferred maintenance applies to smaller items such as missing smoke detectors, broken fixtures, broken fences, and other minor maintenance. In addition, deferred maintenance may apply to more capital-intensive projects, such as those in the city's capital outlay plan. However, if identified capital repair and replacement schedules are extended, they will only grow in intensity and severity until they are addressed.

The stations were generally clean and uncluttered. The crews Triton encountered during the station tours demonstrated ownership of their facilities. Each station was provided with auxiliary power reported to be periodically inspected. In addition, all stations were supplied with an exhaust removal system that appeared to be mostly in operation, but its use was inconsistent.

A few stations had leftover biological waste from COVID-19 pandemic operations in trash cans on the premises. This may be an oversight created by the severity of the pandemic. However, this lack of biohazard containment and removal casts doubt on the effectiveness of the current biohazard policy and process.

### **Station 1**

Station 1 was built in 1968 and is serviceable but may be approaching the end of its useful life as a fire station without significant updates. The lack of a separate equipment decontamination area and gear storage not separated from the bay do not meet current health and safety standards.

The number of personnel showers is inadequate for mass personnel decontamination, and they are in the living space, requiring contaminated personnel to walk through living areas. Smoke detectors are in place sporadically, but most do not work or lack batteries, and there are none in the bunkrooms. There are no carbon monoxide detectors. The exhaust removal systems are not used consistently, and the medic unit has no attachment. It was represented that the Alameda Public Works Department is responsible for testing and maintaining generators per the manufacturer's requirements and tracking them in its asset management software. However, the weekly checklist, monthly exercise logs, and periodic maintenance checks for generators and cascade systems are not in or around the equipment as stated in the NFPA standards. Therefore, it is unknown if they are being maintained to the applicable standards, such as NFPA 110, NFPA 1500, and OSHA rule 29 CFR 1910.134. General maintenance and cleanliness are good.

### **Station 2**

Station 2 is a historic building built 102 years ago in 1921. The station does not meet modern standards for a fire station. This station is operating at maximum capacity for staffing and apparatus, accelerating wear and tear on the building. Equipment exiting the rear door must navigate a narrow passage to enter the street. The front back-in bays are tight, and there is evidence of apparatus strikes near the garage door, indicating inadequate spacing for safe operation. Personal protection equipment and the washer and dryer are in the bay, allowing for exhaust contamination.

In addition, there is no seamless ability to decontaminate a person, equipment, or clothing, nor is there direct access to a shower. Each vehicle has an exhaust removal system, but none was utilized during the visit. This station does not have a sprinkler or an alarm system. General maintenance and cleanliness are adequate.

### **Station 3**

Station 3 was built in 2017 and is in excellent condition. The building meets most modern fire service requirements. Seven people are assigned to the station, but only six bedrooms exist. The seventh person sleeps in the office. There is limited off-street parking, and the gate security system near the emergency operations center is easily defeated. Parking becomes problematic during EOC activations due to limited additional parking. Vehicle exhaust is available for most of the apparatus. However, the exhaust for the rescue is not operating as it is mounted on the wrong side of the vehicle. When the publicly accessible emergency phone was tested, it did not work. General maintenance and cleanliness are good.

The emergency operations center is a modern building with sufficient space for most operations. The building is ADA-compliant. However, the administrative support staff member does not have adequate office space. The workstation is under the open stairwell to the second floor, and dirt and debris fall between the steps when people use the stairs.

#### **Station 4**

Station 4 was built in 1991 and is serviceable, but it will end its useful life as a fire station if it is not updated. The lack of a separate equipment decontamination area and gear storage not separated from the bay do not meet current health and safety standards. The number of personnel showers is inadequate for mass personnel decontamination, and they are in the living space, requiring contaminated personnel to walk through living areas. Maintenance checks for generators and cascade systems are not located with the equipment. Therefore, it is unknown if they are being maintained to the applicable standards, such as NFPA 1500 and OSHA rule 29 CFR 1910.134.

Multiple extension cords are located on the floor near the reserve apparatus, and the closures to the bay area are not automatically closing, leaving the station and utility areas open to bay exhaust and contamination. Exits do not have panic hardware, allowing easy egress in an emergency. The privacy fence in the rear courtyard is in disrepair and appears to be falling over. General cleanliness is good, and the station seems serviceable.

#### **Station 5 (Training)**

Station 5 was built before World War II by the military and acted as a military fire station and maintenance facility until the base was decommissioned. It does not appear that the building has been remodeled since its construction. As a result, the building does not meet the needs of the modern fire service. The building is in a severe state of disrepair. Bays are open to the elements, and storage areas had standing water during the inspection. The building does not have heat, and much of the infrastructure is inadequate.

There was a report of sewer issues, and many of the facilities in the restrooms are inoperative. The kitchen is out of service, and a broken window is covered with cardboard. Many open junction boxes expose wires, and many electrical systems are inoperative or unsafe. The paint is falling off the ceiling and walls in the storage bays. Due to the facility's age, it was unclear if the paint was water, oil, or lead-based and possibly hazardous. Generally, the building is inadequate for a training center or fire station. It needs a complete update, remodel, or replacement to address critical maintenance issues.



## **Facility Replacement**

The city maintains a facility capital improvement plan (CIP) based on previously identified deficiencies. However, it was unclear if this capital needs plan was a comprehensive capital improvement plan or was based solely on the detailed facility condition assessment (FCA) reports completed between 2014 and 2016. An FCA was not provided for station 3 or the EOC, and no funds were identified for these buildings in the provided CIP.

This may indicate these newer buildings are not actively managed for expected building maintenance costs. Frequent and thorough facility inspections will be required for the provided capital improvement plan to be an ongoing effective tool. As with the FCAs provided, ongoing assessments should identify potential or growing facility problems, document system changes, and evaluate its effectiveness within its current mission. In addition, the city does not appear to have a comprehensive long-range facility replacement or fire service-specific update plan.

A comprehensive capital improvement plan would list all systems and services within a building, estimate their useful life, and preemptively budget and address expected issues. This comprehensive list would include systems currently operating well and those that may need replacement and attempt to project the repair and replacement of these items.

Identifying and budgeting funds for updating and repairing systems such as heating and air conditioning (HVAC), generators, roofs, driveways, parking areas, security gates, painting, carpet replacement, and small appliances can keep costs down and buildings in service longer. Determining which systems will need significant rework in a similar time frame may help the agency determine whether updating or replacement is a more appropriate course of action.

## **AFD Capital Apparatus & Equipment**

Emergency services rely on their ability to get needed personnel and equipment to the scene of an incident. Fire apparatus, ambulances, command units, and other response vehicles must be sufficiently serviceable to get personnel and equipment reliably and safely to the scene. The vehicles should be properly equipped and capable of performing any specialty tasks they were designed for.

In addition, the equipment must be appropriate, serviceable, and reliable enough to function when needed.

As part of this study, AP Triton requested a complete inventory of its fleet and equipment from AFD. For each vehicle listed, AFD was asked to rate its condition using a prescribed process. The following figure lists the criteria against which AFD was asked to rate the condition of its vehicles.

**Figure 90: Vehicle Condition Criteria**

Evaluation Components		Points Assignment Criteria	
<b>Age:</b>		One point for every year of chronological age, based on in-service date.	
<b>Miles/Hours:</b>		One point for every 10,000 miles or 1,000 hours	
<b>Service:</b>		1, 3, or 5 points are assigned based on service type (e.g., a pumper would be given a 5 since it is classified as severe duty service).	
<b>Condition:</b>		This category considers body condition, rust, interior condition, accident history, anticipated repairs, etc. The better the condition, the lower the assignment of points.	
<b>Reliability:</b>		Points are assigned as 1, 3, or 5, depending on the frequency a vehicle is in for repair (e.g., a 5 would be assigned to a vehicle in the shop two or more times per month on average, while a 1 would be assigned to a vehicle in the shop on average of once every three months or less.	
Point Ranges	Condition Rating	Condition Description	
Under 18 points	Condition I	Excellent	
18–22 points	Condition II	Good	
23–27 points	Condition III	Fair (consider replacement)	
28 points or higher	Condition IV	Poor (immediate replacement)	

As requested, AFD completed an evaluation of its apparatus and vehicles. The following figure is a detailed list of the frontline fire suppression apparatus and their condition.

**Figure 91: AFD Frontline Fire Apparatus**

Apparatus	Type	Manufacture	Year	Condition	Features
Engine 1	Engine	Quantum Pierce	2013	Fair	1,500 GPM/500 Gal.
Engine 2	Engine	Quantum Pierce	2015	Good	1,500 GPM/500 Gal
Engine 3	Engine	Quantum Pierce	2018	Excellent	1,500 GPM/500 Gal
Engine 4	Engine	Quantum Pierce	2012	Fair	1,500 GPM/500 Gal
Truck 1	Truck	Quantum Pierce	2012	Good	100-Foot, Tractor/Trailer
Truck 2	Truck	Quantum Pierce	2013	Good	100-Foot, Tractor/Trailer
Tender 1	Tender	Pierce T440	2017	Excellent	1500 GPM/3000 GAL
Tender 2	Tender	Pierce T440	2017	Excellent	1500 GPM/3000 GAL
Rescue 3	Rescue	Arrow XT Pierce	2012	Good	SCBA Fill / Light Tower

Most of the AFD apparatus is either fair or good, with the newer Engine 3 and water tenders in excellent condition. Those listed as fair should be considered for replacement.

In addition to the frontline firefighting apparatus, AFD maintains three reserve engines and a reserve truck to supplement response if a frontline apparatus is out of service. The following figure is the detailed list of reserve apparatus provided by AFD.

**Figure 92: AFD Reserve Fire Apparatus**

Apparatus	Type	Manufacture	Year	Condition	Features
Engine 501	Engine	Quantum Pierce	2007	Poor	1500 GPM/500 GAL
Engine 502	Engine	Quantum Pierce	2003	Poor	1500 GPM/500 GAL
Engine 504	Engine	Quantum Pierce	2003	Poor	1500 GPM/500 GAL
Truck 504	Truck	Arrow Pierce	1995	Poor	105-Foot, Tractor/Trailer

All reserve apparatuses are listed as being in poor condition. While reserves are not permanently assigned as a frontline apparatus, they could be used as a replacement engine for extended periods or to increase staffing if surge capacity is needed. A replacement truck has been on order since May 6, 2022, but the delivery date has been

extended to fall 2024. Moving Truck 1 to reserve status on arrival of the new truck will help extend the reserve truck usability.

However, keeping apparatus in poor condition, even in reserve status, is not recommended by the NFPA 1901: *Standard for Automotive Fire Apparatus*. NFPA 1901 also cautions that apparatus built after 2009 does not meet current safety standards and should likewise be replaced or updated.

As a medical transport agency, AFD maintains a fleet of ambulances. Because ambulances have a much higher use rate, their life expectancy and failure rate are much higher. Therefore, AFD maintains a more extensive fleet of reserve ambulances rated in good condition. When the two ambulances ordered in 2022 and 2023 arrive, they will help mitigate the poor conditions of the reserve ambulances. The following chart lists frontline and reserve ambulances and Alameda Cares and their condition.

**Figure 93: AFD Ambulance Fleet**

Ambulance	Manufacture	Year	Condition	Location
Medic 1	Ford F550	2019	Excellent	Station 1
Medic 2	Ford E450	2016	Fair	Station 2
Medic 3	Ford F550	2019	Excellent	Station 3
Medic 4	Ford E450	2016	Good	Station 4
Medic 501	Ford E450	2014	Fair	Station 1
Medic 502	Ford E450	2006	Poor	Station 5
Medic 504	Ford E450	2013	Good	Station 4
AC 03	Ford Interceptor	2013	Good	Station 3
AC 503	Ford Interceptor	2013	Good	Station 3

The rest of AFD's fleet is in place to support the response and prevention mission or used by command and chief officers. The following figure lists AFD's vehicles and conditions.

**Figure 94: AFD Command & Support Vehicles**

Assignment	Type	Make/Model	Year	Condition	Location
Battalion 1	SUV	Chevrolet Suburban	2019	Excellent	Station 1
Battalion 501	SUV	Ford Expedition	2010	Fair	Station 1
Chief 1	SUV	Chevrolet Tahoe	2019	Excellent	Take Home
Chief 2	SUV	Ford Interceptor	2020	Excellent	Take Home
Chief 3	SUV	Ford Interceptor	2020	Excellent	Take Home
Chief 4	SUV	Ford Interceptor	2017	Excellent	Take Home
Chief 5	SUV	Ford Interceptor	2020	Excellent	Take Home
Chief 6	SUV	Ford Interceptor	2020	Excellent	Take Home
Chief 7	SUV	Ford Interceptor	2020	Excellent	Take Home
Training 1	Pickup	Ford F250	2015	Good	Take Home
Training 2	Pickup	Ford F150	2020	Excellent	Take Home
EMS 1	SUV	Ford Interceptor	2014	Good	Take Home
Staff 1 (DP Captain)	Pickup	Ford F150	2014	Good	Take Home
Inspector 1	SUV	Ford Interceptor	2017	Excellent	Take Home
Inspector 2	SUV	Ford Interceptor	2017	Excellent	Take Home
Inspector 3	SUV	Ford Interceptor	2017	Excellent	Take Home
Inspector 4	SUV	Ford Interceptor	2014	Poor	Take Home

### Apparatus Maintenance & Replacement Planning

Any mechanical system will eventually need service, repair, and replacement. Fire and medical apparatus are no exception. Due to the nature of the apparatus usage and the critical role they play in the community, maintenance is more urgent, expensive, and requires special skills. Due to the high cost of the specialty apparatus and the expected useful life, it is essential to create a plan and funding mechanism to ensure uninterrupted emergency services.

### Maintenance

Fire apparatus live a difficult life. Unlike commercial trucks, a fire apparatus is started, used briefly, returned to a station, and shut down. Ambulances are similarly used in short sprints and often more frequently than other fire apparatus. This requires special attention to preventive and ongoing maintenance.



Maintaining fire department vehicles and apparatus requires specific skills and training by specialized mechanics. Fire apparatus is a specialty type of heavy vehicle. They typically have large engines, heavy suspensions, and specialty equipment such as power take-off and water pumps.

Ambulances have special medical equipment and are larger and heavier than standard pickups or small trucks. Even utility and command vehicles require specialized attention due to the added electronics.

AFD utilizes two approaches for maintenance. First, the city provides maintenance shops with trained mechanics for fire apparatus repairs. The city mechanics hold a California State Fire Training Emergency Vehicle Technician certification. The second approach is to send the vehicles out to specialty shops. In addition, AFD conducts regular preventative maintenance and tests and maintains these records for all apparatus and vehicles.

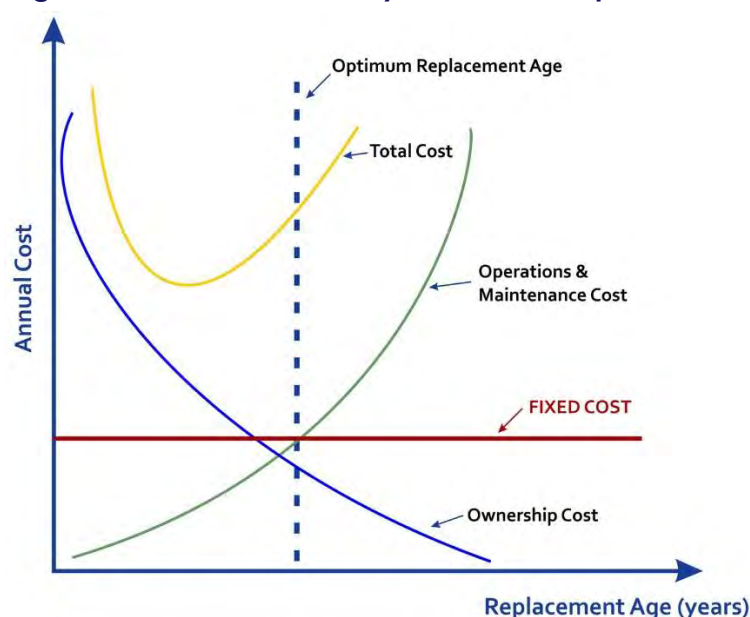
### **Replacement Plan & Schedule**

Apparatus and vehicles have three distinct phases of expiration types. One is when the apparatus or vehicle meets the end of its serviceability. For quality-built apparatus, this is typically the most extended lifecycle. NFPA 1901 recommends that vehicles in good working order over 15 years old be placed into reserve status and no longer be used as frontline apparatus.<sup>52</sup>

Another expiration point is when an apparatus exceeds its technical life. This is when the technology built into the apparatus no longer meets the operational or safety needs of the organization. NFPA 1901 recommends replacing apparatus once they exceed 25 years old to meet the technology requirement.<sup>53</sup> The final lifecycle is the economic lifecycle.

The vehicle cost is not limited to the capital funds required to purchase the apparatus. Ongoing costs include employee training, maintenance, parts, and supplies. When these costs are tracked, it becomes apparent that the economic value lifecycle of an apparatus may not coincide with the service or technological cycles.

A well-managed fleet program's challenge is continuously evaluating vehicles and apparatus and planning to replace them before they become less economically viable than new. Some fleet management software and other programs can assist with this process. The following figure graphically represents the Economic Theory of Vehicle Replacement.<sup>54</sup>

**Figure 95: Economic Theory of Vehicle Replacement**

The City of Alameda Public Works Department, which is responsible for fleet replacement, has an administrative policy addressing fleet replacement. In this policy, number 48, appendix A, defines when fire apparatus is to be replaced. However, some reserve fleet apparatus is outside the stated years in service. Engine 502, Engine 504, and Truck 504 are outside the stated years of service, including reserve status.

In addition, Medic 2 and Medic 4 are at the end of their life, according to the document, as is the reserve ambulance fleet. With apparatus vendors delivering new vehicles at an extended date, many apparatuses and reserves will be well outside the stated policy before replacements can be obtained.

## Historical Service Delivery & Performance

This section will give AFD a general understanding of relevant response information. It is developed to assist the department with identifying its recent performance and creating a baseline performance expectation. AFD, city, community, politicians, and other leaders can then use this information to understand how their decisions, policies, and outside pressures affect performance.

### Research Information

The information within this section was developed from various sources provided by AFD. Detailed information was provided between January 1, 2019, and December 31, 2022, from the Records Management System (RMS). In addition, the Alameda County Regional Communications Center (ACRECC) provided comprehensive total incident volumes from the Computer Aided Dispatch System (CAD) between January 1, 2019, and December 31, 2022, to identify long-term trends. CAD data was used to evaluate performance, and RMS data was used to determine fire loss, property use, and outcome data, such as the final coding of an incident.

### Statistics Discussion

This analysis is designed to quantify and analyze available information. Mathematical and technological methodologies must be used judiciously to evaluate something as complex as an emergency incident response. However, the agency should use it as a starting place as it seeks to improve performance.

### Statistical Tools

Various statistical analytical tools were employed to create this section. The fundamental tools were categorization, percentile, and regression analysis. This helps paint a picture of historical performance, with some inferences that may help leaders identify positive and negative performance trends.

### 90<sup>th</sup> Percentile

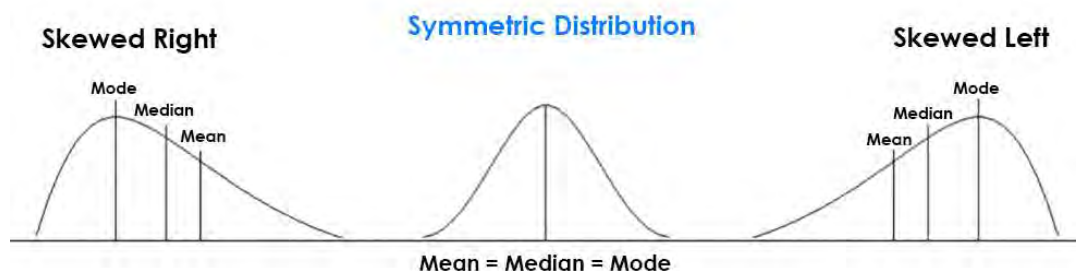
The time performance measures for this report are done using the 90<sup>th</sup> percentile measure. While discussing the mathematics behind this measure is outside this report's scope, it is helpful to understand why it is utilized.

The most common reason for using this measure is that the industry has adopted it. If a fire agency wishes to judge its performance against standards or other agencies, it must use the 90<sup>th</sup> percentile.

For example, the NFPA utilizes the 90<sup>th</sup> percentile measure in most of its standards. In addition, the Commission on Fire Accreditation International (CFAI) requires reporting performance measures at the 90<sup>th</sup> percentile.

The statistical reason for using the measure is that it captures performance more fully and will identify trends in performance more quickly. The time performance data used in this study, like most emergency response time data, has a skew, making other statistical measures less sensitive and representative. The following figure is a general example of data skew.

**Figure 96: Data Skew (NFPA)**



In a symmetric distribution, the mean (average), median (middle of the data), and mode (the most frequent) are all equal. When the distribution skews, these three measures of the middle shift. Using the average, or mean, in skewed data left would underrepresent the bulk of the performance. At the same time, the opposite is true when skewed right. In AFD's case, most time-performance data is skewed right, so using the average would over-represent the performance. This right skew is a common phenomenon in emergency response data analytics.

### **Data Discussion**

Detailed data was provided from AFD's primary incident reporting software (RMS) and the computer-aided dispatch (CAD) system. These different database tables were used for differing purposes, as described previously. Triton used proven data engineering techniques to analyze the data sets.

### **Data Engineering Findings**

There were 68,889 individual unit responses provided in the CAD data set. There were 29,702 unique incidents in the CAD data that were analyzed. The RMS system was not evaluated for individual unit responses as it only contained unique incident data.

Occasionally, RMS incidents were classified by an AFD-specific NFIRS code that may or may not have corresponded to the initial call class dispatched. In AFD's case, the correlation between the initial call type and the on-scene discovery is very high for fire and EMS incidents. Incidents classified as "other" typically do not readily correlate between dispatch and on-scene findings.

The discovered correlation between how a call was initially designated in CAD data compared to how the final disposition was recorded in RMS data is shown in the following.

**Figure 97: Dispatch versus Final Disposition Class Matching\***

Class	EMS	Fire	Other	Grand Total
Matched	48,020	2,979	7,951	<b>58,950</b>
Unmatched	1,148	146	8,655	<b>9,949</b>
Grand Total	49,168	3,125	16,606	<b>68,899</b>
Percent Match (CAD to RMS)	97.7%	95.3%	47.9%	<b>85.6%</b>

\*All unit records

Data was provided separately, and the source was used to evaluate the impact on system demand of the CARE team. The CARE team pilot program was conducted between December 16, 2021, and December 31, 2022, and became permanent and fully funded in January 2023.

### **Data Error Handling**

Data collection within the various data sets has the potential for significant errors. Although there can be many reasons for incorrect information, these errors are typically a combination of human input, system, and collection errors. Various methods exist to manage these errors, including statistical exclusion, real-time exclusion, formula manipulation, and logic testing.

Outlier data was filtered out using a statistical method called the Interquartile Range (IQR), which evaluated the bottom and top 25% of the data and considered the frequency distribution of all values. This method ignores most data errors and does not substantially impact the performance calculations.



## Service Demand

The first dimension of the analysis is the overall system call load. Because this analysis is a simple count of incident responses by AFD, all its CAD records will be counted. Unlike the time-based performance, detailed data from the previously discussed systems will be used.

## Volume Analysis

A simple volume analysis can indicate how often the department is called upon to respond to an incident. The first look is at the overall call counts grouped by primary categories in the National Fire Incident Reporting System (NFIRS). Establishing the incident jurisdiction required a match between the geocoded information and the provided geographic boundaries.

The following figure is the total number of responses recorded by the agency for the entire data set and the percentage of the categorized responses.

**Figure 98: RMS Total Incident Count (2019–2022)**

Incident (NIFRS Group)	Count	% Total Responses
<b>AFD Responses</b>		
Fire (100)	822	2.77%
Overpressure (200)	19	0.06%
Rescue/Medical (300)	20,322	68.42%
Hazardous Condition (400)	519	1.75%
Service (500)	2,232	7.52%
Good Intent (600)	3,575	12.04%
False Alarm (700)	2,186	7.36%
Disaster (800)	3	0.01%
Special (900)	22	2.77%
<b>Total Alameda FD Responses:</b>	<b>29,700</b>	<b>100%</b>
<b>Mutual Aid Responses</b>		
Automatic Aid Given	61	0.21%
Automatic Aid Received	71	0.24%
Mutual Aid Given	158	0.53%
Mutual Aid Received	205	0.69%
None	29,197	98.31%
Other Aid Given	8	0.03%

This call-type distribution is consistent with industry averages. It is common for agencies with more resources to provide more mutual aid than they receive. A statistically significant amount flagged as Mutual/Auto aid is presented in the data as (None). 29,197 incidents were recorded without Mutual or Automatic Aid. (98.3%).

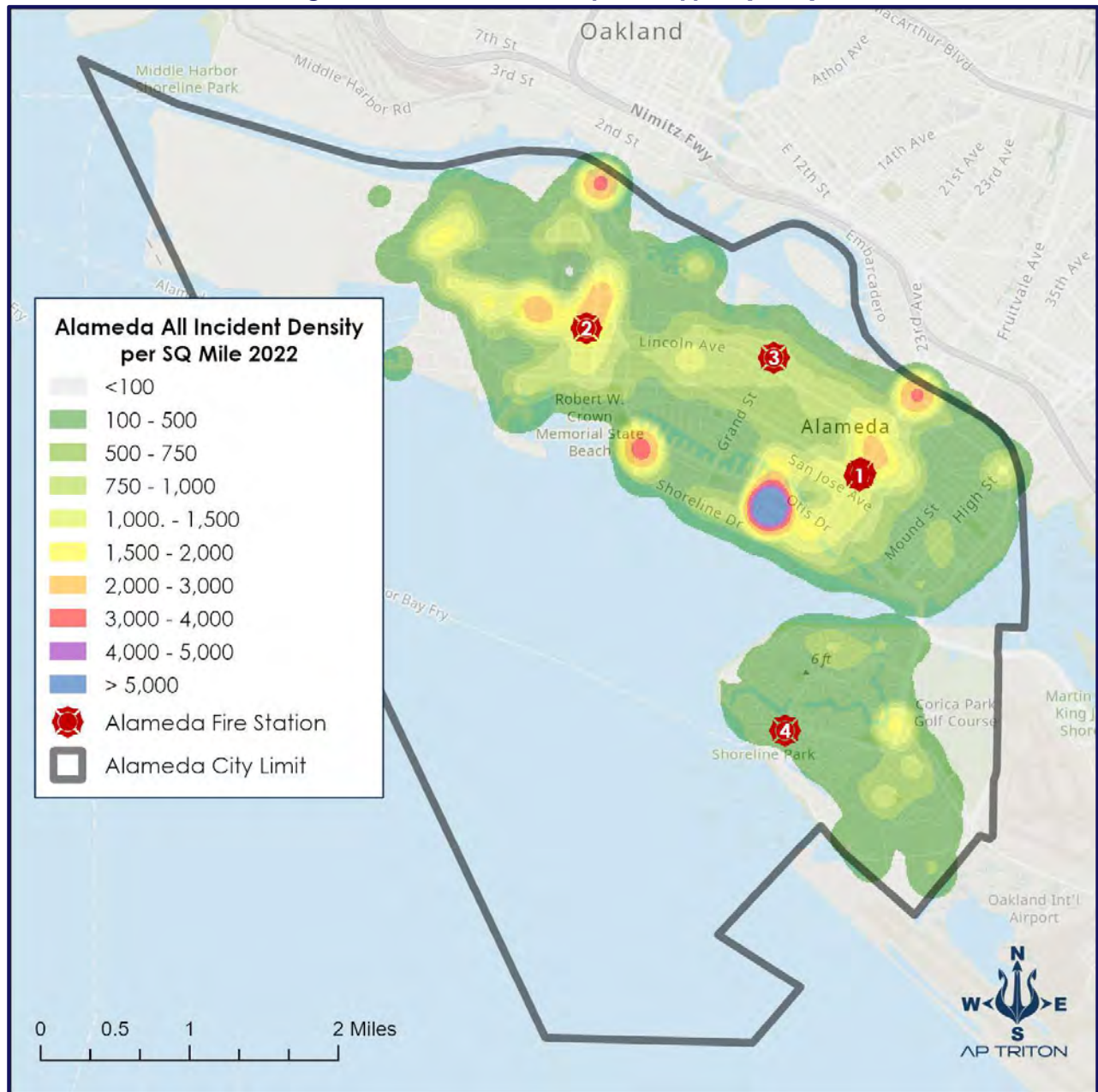
This is a significant positive reflection of the number of resources that Alameda Fire can provide to protect its citizens without reliance on Oakland Fire more than 2.6% of the time.

### **Geographic Analysis**

A call density analysis is helpful when reviewing the best location for apparatus placement. It is also useful when evaluating where the prevention programs may have the most impact.

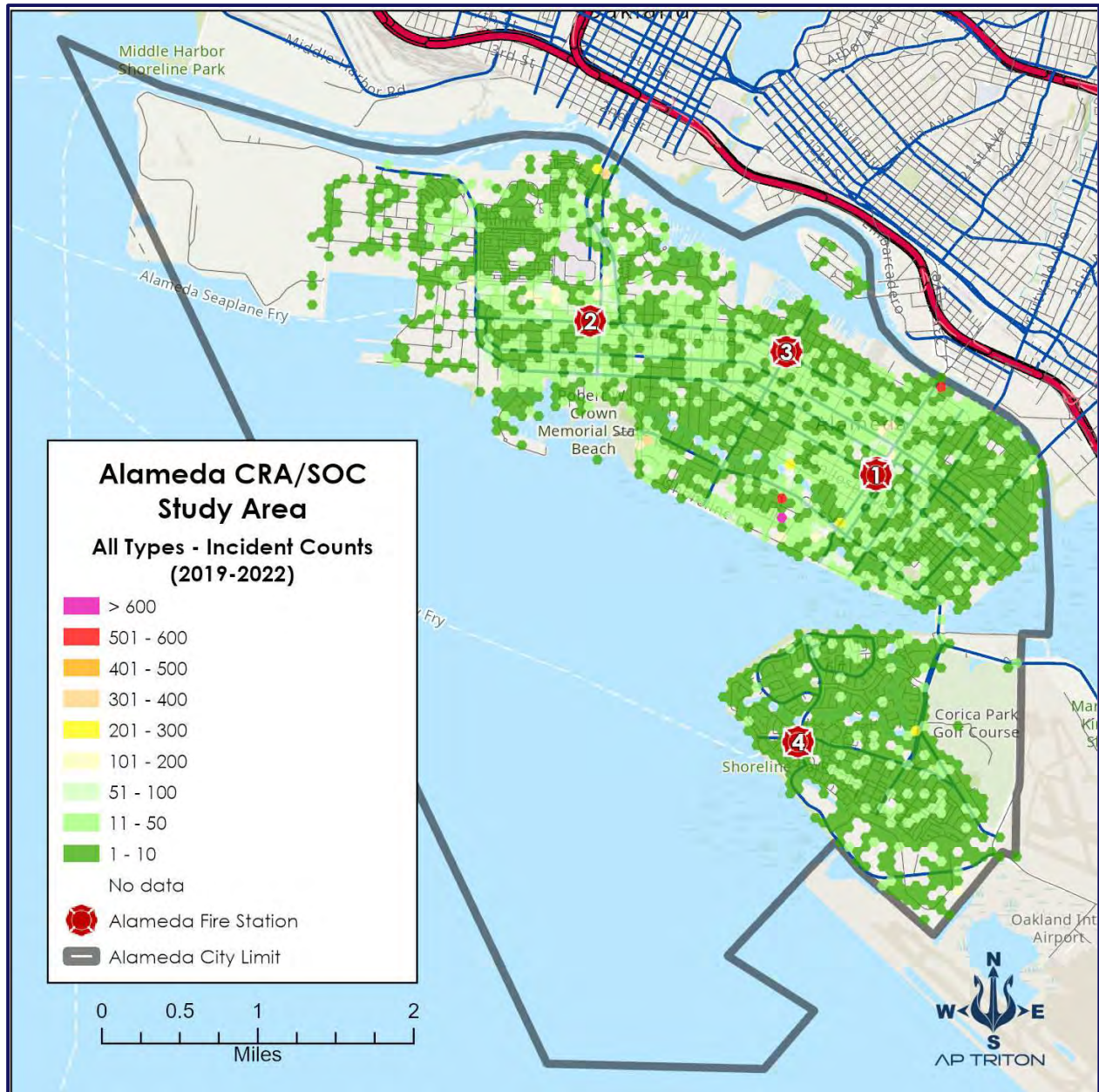
The following figure geographically represents the incident density for the study period.

**Figure 99: Incident Density—All Types (2022)**



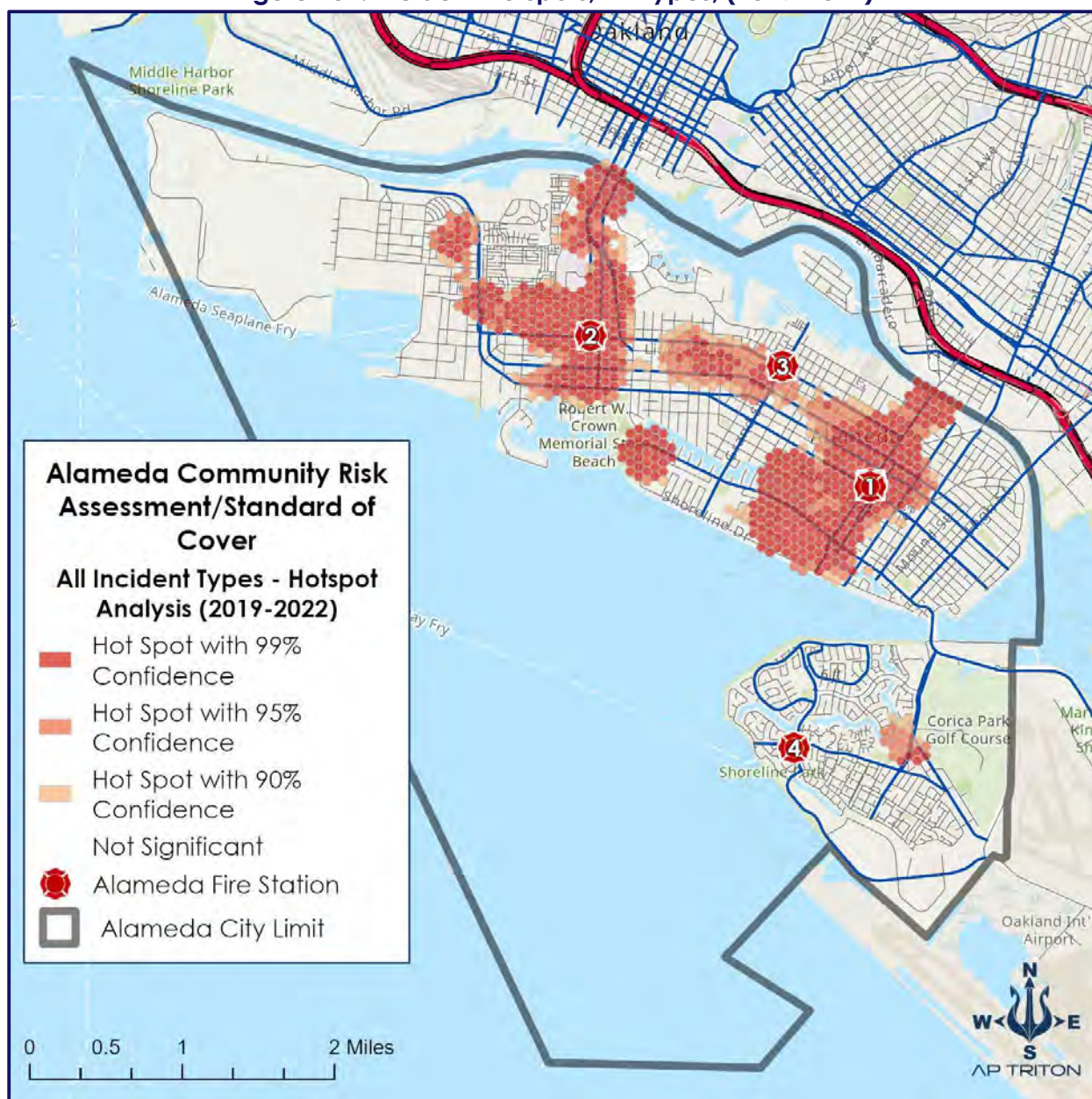
Because of the size and changing demographic and geographic conditions throughout the response area, it is unsurprising to see the primary density within populated corridors. The Station 1 area, immediately southwest of this station, shows the most significant concentration, much of which can be attributed to the concentration of the downtown population and other high-density locations.

It is helpful to compare densities with actual incident counts. The following figure reveals the number of incidents contained within equal 100-meter hexagonal grids. This figure also summarizes all 5 years of incident data for all incidents.

**Figure 100: 100-Meter Hex Grid of All Incident Types (2019-2022)**

The analysis could be even more revealing when grouping these values into hotspots or areas with more incident concentrations relative to other grid elements. The following figure shows patterns that suggest a correlation between incident occurrence and population centers.



**Figure 101: Incident Hotspots, All Types, (2019–2022)**

Agencies will typically respond to some locations much more frequently than others. This is true for AFD. For example, Community service facilities account for many single-location responses. Responses are most often recorded at fire stations or intersections. The following figure shows the incident data's top 20 locations by address.



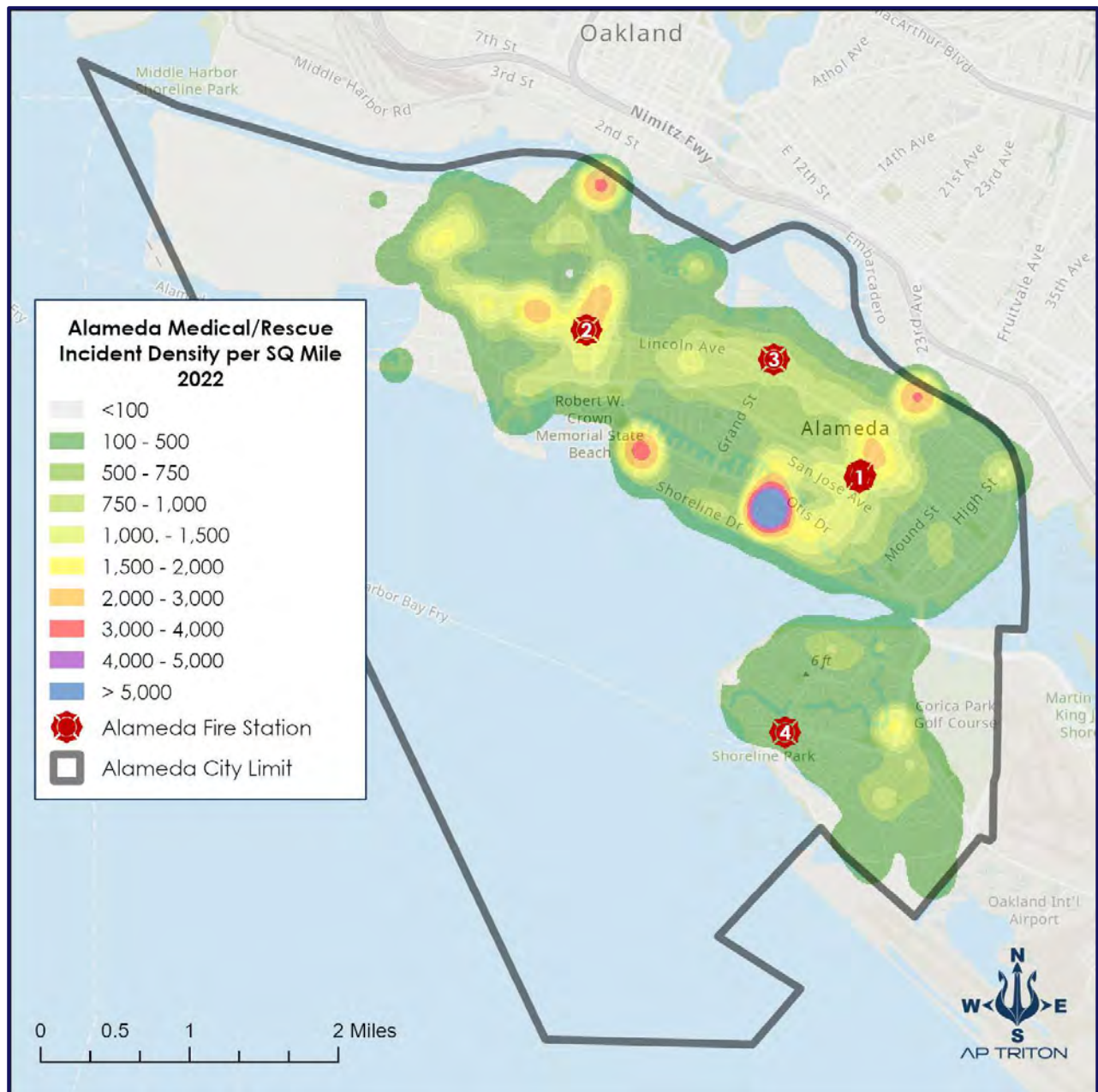
**Figure 102: Frequent Service Demand Locations (2019–2022)**

Rank	Address	Occupancy Type	Count
1	430 WILLOW ST	Rehab	681
2	516 WILLOW ST	Rehab	635
3	2070 CLINTON AV	Hospital	633
4	508 WESTLINE DR	Rehab/Senior	619
5	2401 BLANDING AV	Rehab	553
6	1555 OAK ST	Police	492
7	2400 MARINER SQUARE DR	Senior Living	436
8	2226 WEBSTER ST	Senior Living	389
9	2227 WEBSTER ST	Senior Living	316
10	2227 S SHORE CTR	Commercial	250
11	801 ISLAND DR	Senior Living	227
12	751 AIR CARGO WY	Fire Station	226
13	2417 CENTRAL AV	Clinic	214
14	2431 MARINER SQUARE DR	Senior Living	214
15	2600 5TH ST	Commercial	202
16	2700 5TH ST	Clinic	196
17	1260 S LOOP RD	Hotel	191
18	210 CENTRAL AV	High School	190
19	523 BUENA VISTA AV	Multi Family	170
20	2200 CENTRAL AV	School	170

It is not surprising to see the volume of calls in the types of facilities and occupancies listed in the preceding figure. This is especially true since they are typically high-demand EMS facilities. In addition, evaluating the EMS call density further shows the service demand created by these occupancies.

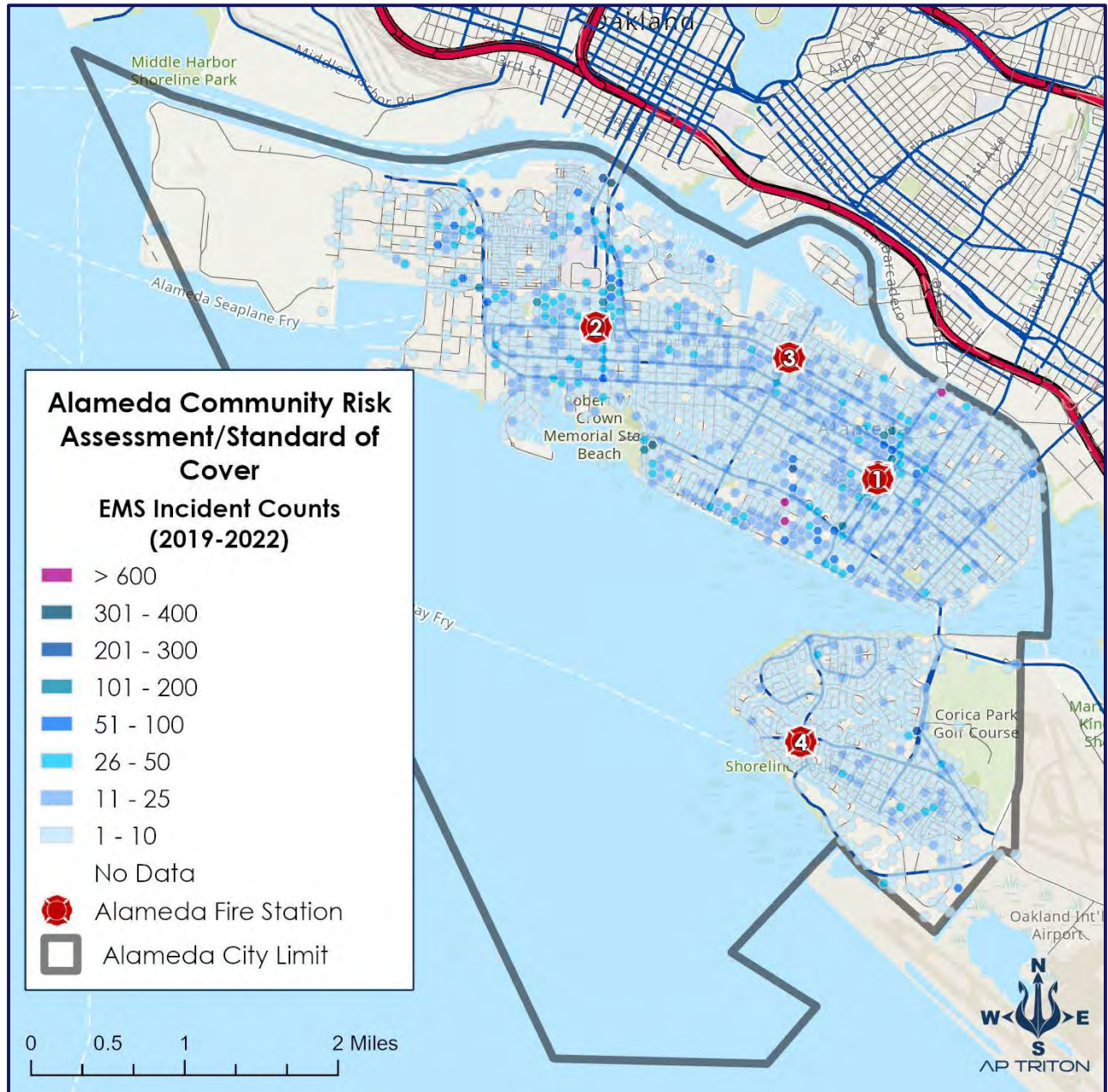
The following figure is an incident density map for all EMS incidents. However, it is not unusual that five of the top 20 frequent response locations are rehabilitation and senior living facilities. The following figure shows a close correlation between the overall incident and EMS density.

**Figure 103: EMS Incident Density (2022)**



Discerning patterns can be slightly easier by showing the actual incident counts for EMS call types. The following figure shows the 100-meter grid summary of EMS incidents from 2019 to 2022.

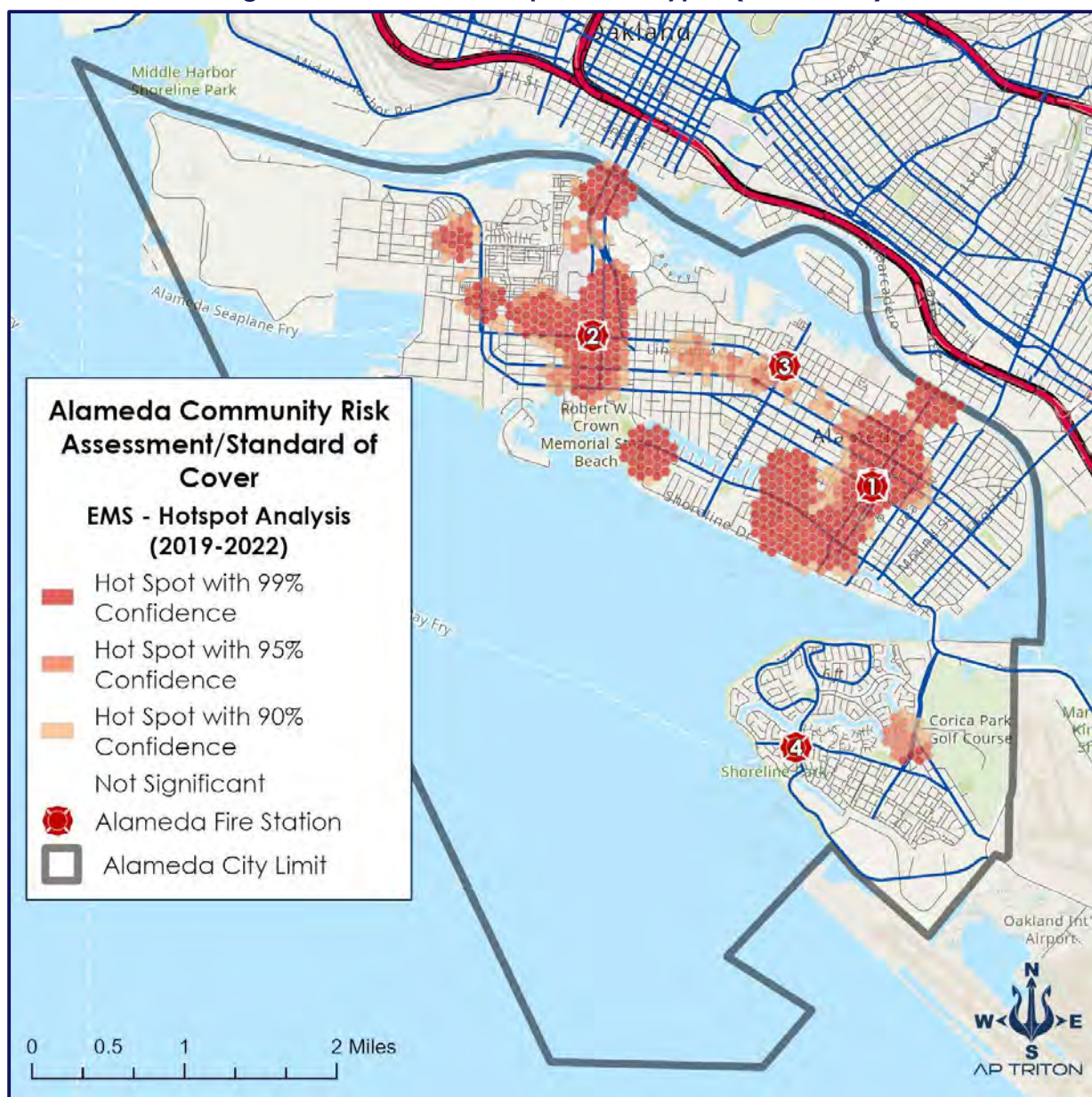
**Figure 104: 100-Meter Hex Grid of EMS Incident Types (2019–2022)**





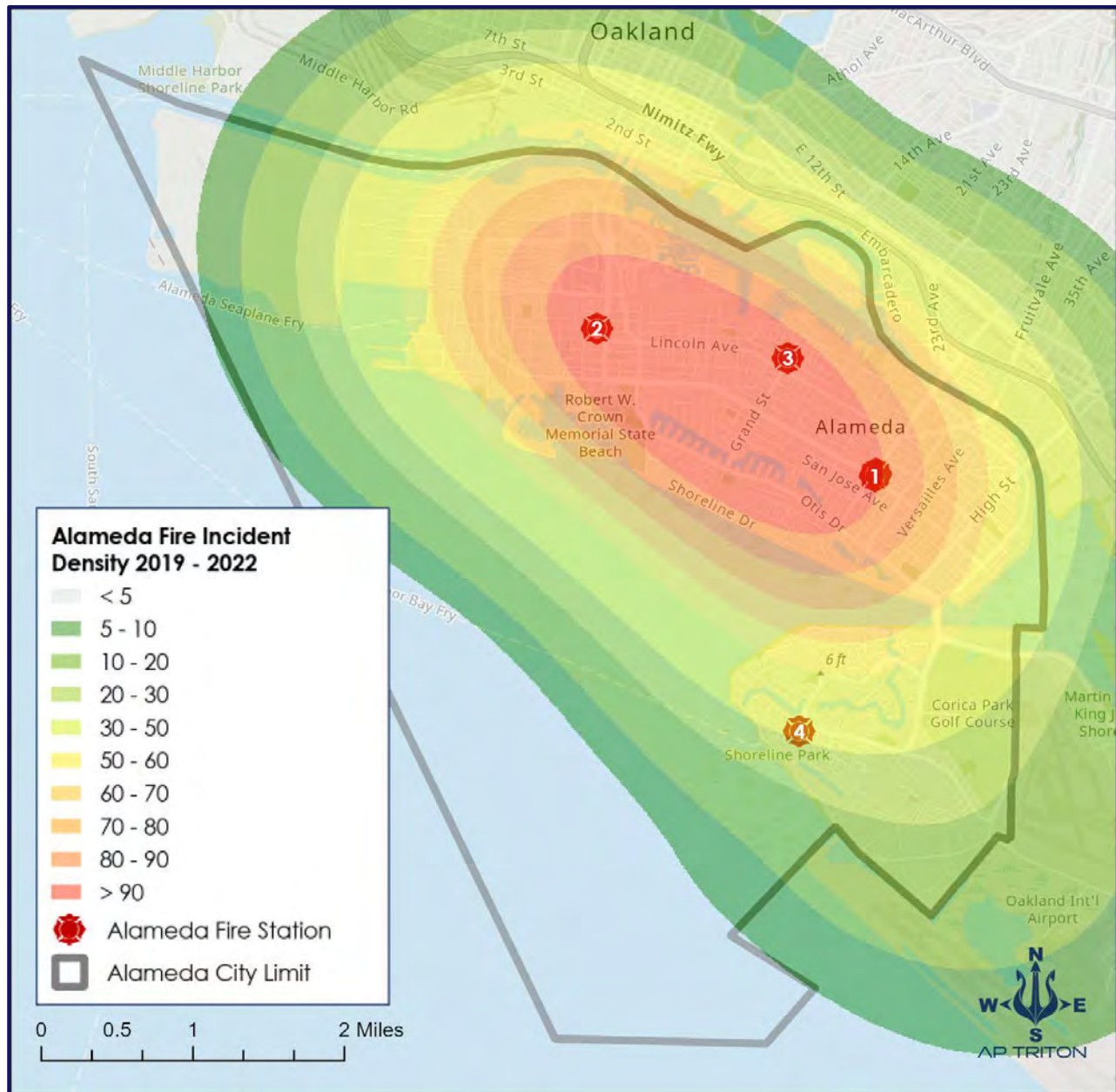
Comparing how these EMS incidents cluster together revealing hotspots can provide important information about where to concentrate EMS response resources. The pattern closely follows the previous All-call type hotspots figure since most incidents were classified as EMS.

**Figure 105: Incident Hotspots, EMS Types (2019–2022)**



While this may give a general idea of where to focus medical prevention efforts, it does not address the more hazardous incident types the Fire Department responds to. The following figure is the incident density for fire incidents within the study period. It may require a different deployment model and resource commitment to prevent and mitigate structure fires.

**Figure 106: Fire Incident Density (2019–2022)**

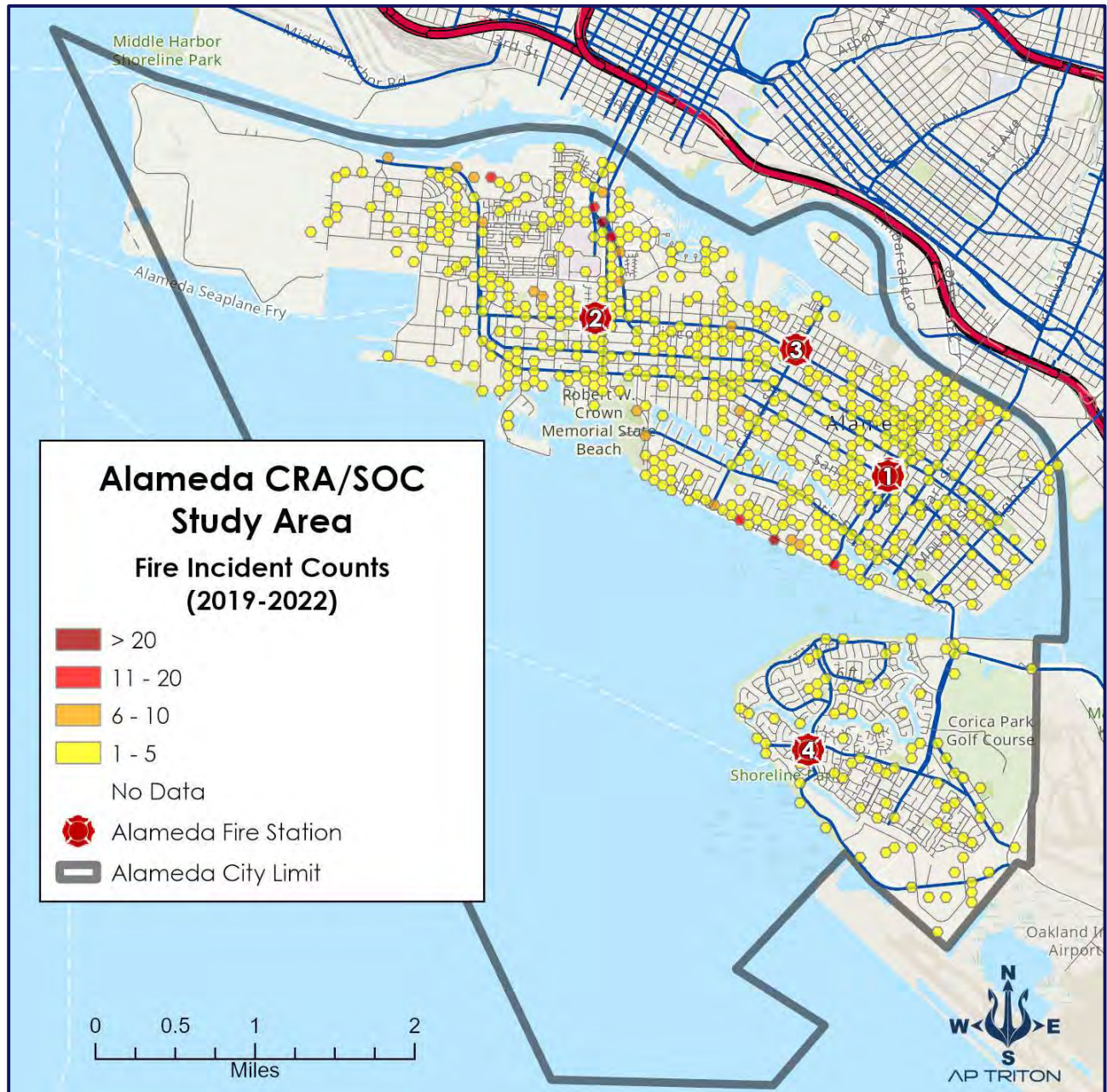




The fire problem is citywide. However, the higher density logically centers around the more densely populated areas in the island's center.

Examining the actual counts of Fire-type incidents in a summary grid can reveal even more granular information on where to expect resource needs. Much activity occurs along the shore and the primary transportation corridor north into Oakland.

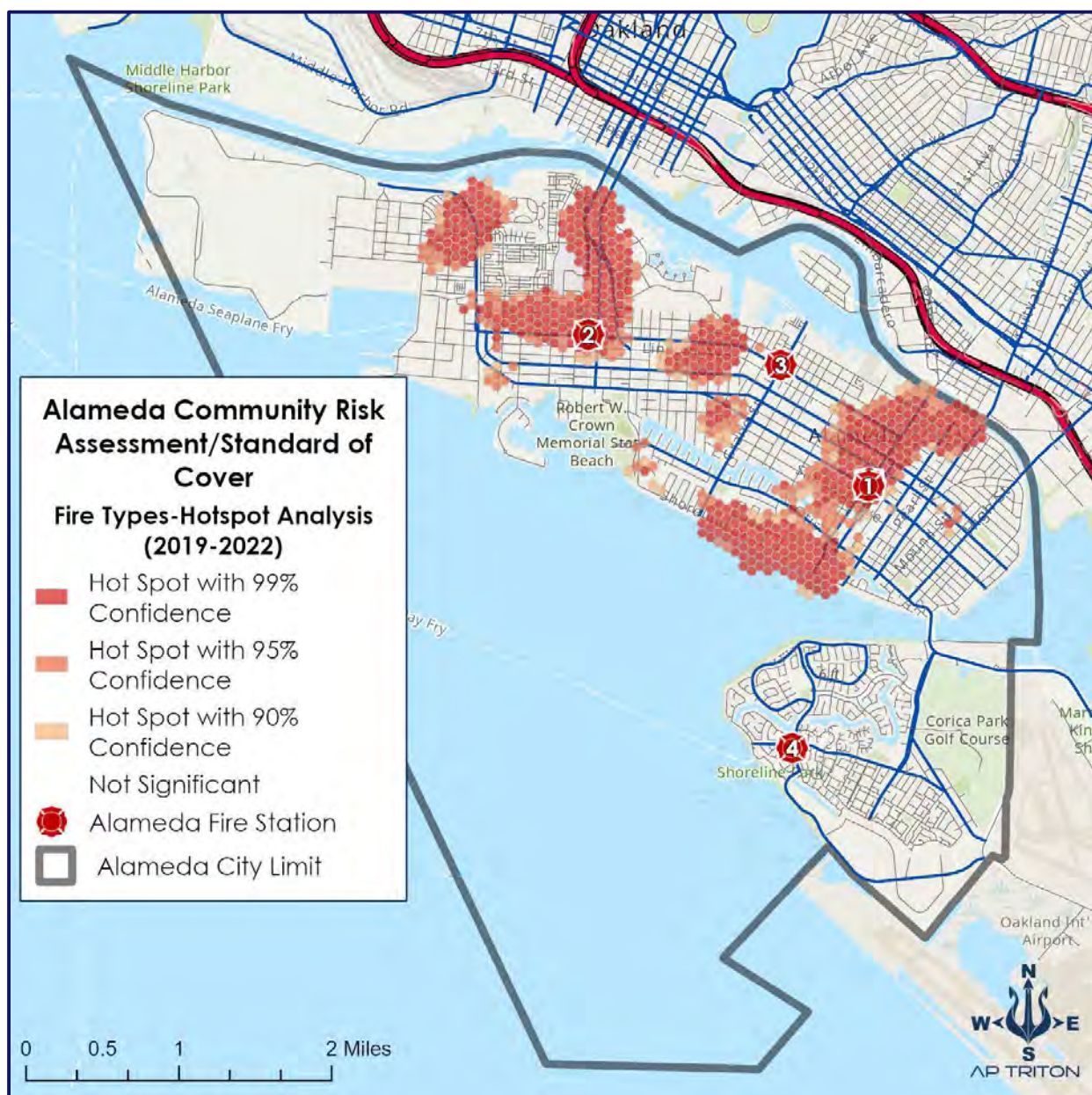
**Figure 107: 100-Meter Hex Grid of All Incident Types (2019–2022)**





As a comparison, the hotspot analysis shows that the shoreline and transportation corridor to the north of Station 2 are hotspots. Interestingly, the north of station 1 is also a significant hotspot. There are no considerable fire hotspots in the Station 4 area. The following figure shows the hotspots for the fire incidents.

**Figure 108: Incident Hotspots—Fire-Related Calls (2019–2022)**

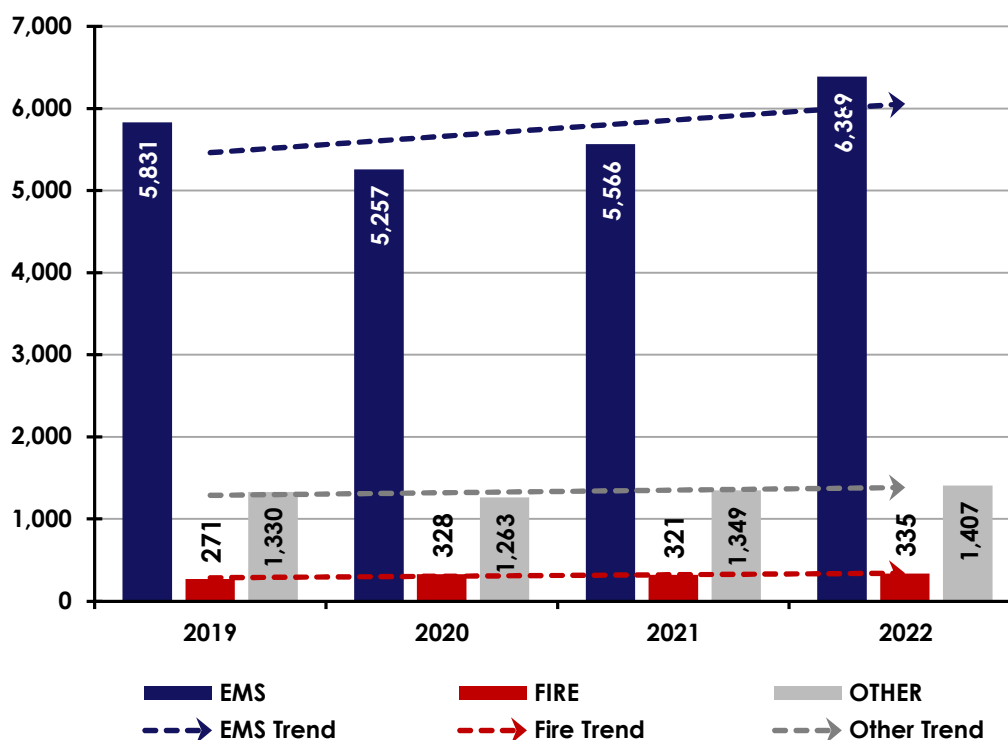


## Temporal Analysis

The temporal analysis evaluates incidents across different date and time segments. For AFD, there was a significant decline in EMS incidents in 2020. Much of the volume change can be attributed to the lockdown and responses during the COVID-19 pandemic. It is difficult to fully understand the effect of the pandemic on call volume over three years.

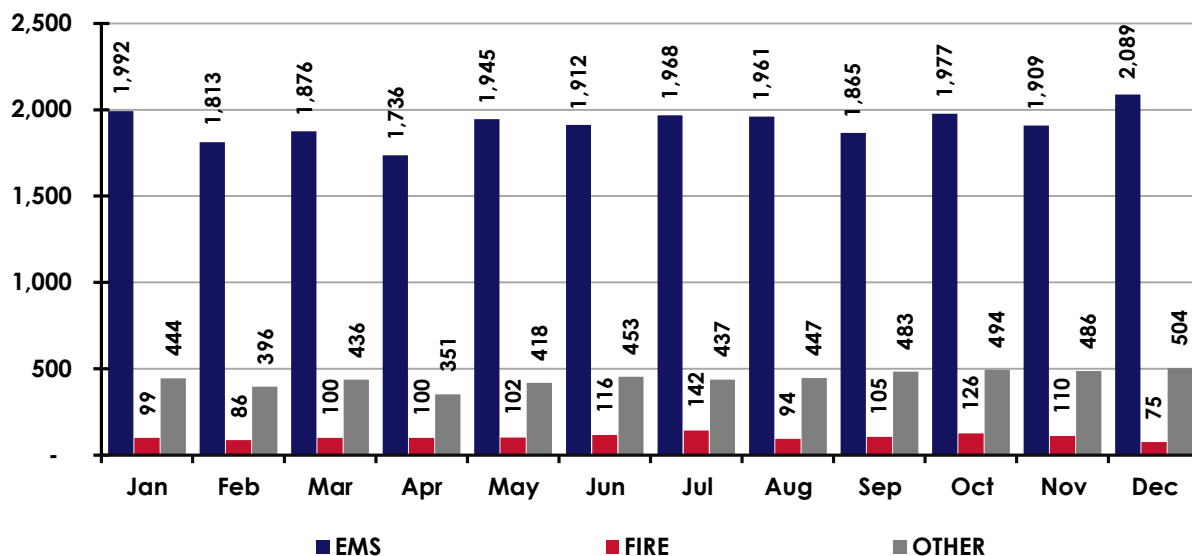
However, the incident volume appears to rebound from 2020, and 2022 surpassed the pre-pandemic levels. The following figure shows the incident volume over the years with the completed data between 2019–2021, separated into Fire, EMS, and Other incidents.

**Figure 109: Incident Volume by Type & Year (2019–2022)**



Analyzing the incident volume by month, weekday, and hour is valuable when attempting to schedule events or add staffing. Additionally, months may reveal seasonality for the service needs. At the same time, days and hours may indicate the population movement and activities throughout the time intervals. The following figure analyzes incident classes by month for 2019 through 2022.

**Figure 110: Incidents by Month & Class (2019–2022)**

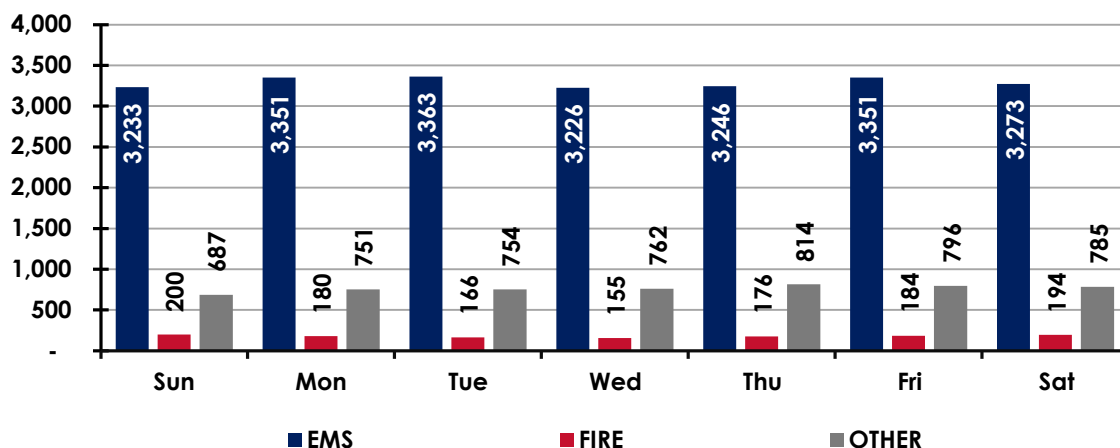


There appears to be a slight variation each month, as well as seasonality in the winter months. However, the variations are 18% from the lowest month (April) to the highest month (December), which could be more than expected.

The fall and winter months increase in incident volumes, with December being the most significant variation. This is most pronounced with EMS incident types, but Fire incidents unexpectedly decrease in the colder months.

Another temporal dimension for evaluation is the volume of incidents that happen by the day of the week. The following figure is the percentage of incidents that occur by the weekday and includes all the detailed incident data, including 2022.

**Figure 111: Incident Percent by Weekday (2019–2022)**



As with the monthly evaluation, there is no significant variation by weekday. There was less than 0.5% overall variation. However, Friday was slightly heavier, and Sunday was the least active.

It can be helpful to combine the month and day dimensions to identify potentially significant combinations of the month and weekday. The goal is to uncover seasonality across the weekdays, which is not captured by analyzing the month and day alone. However, like the monthly evaluation, only complete years of data can be explored. Therefore, the following figure shows the density of call volume by month and weekday from 2019 through 2022.



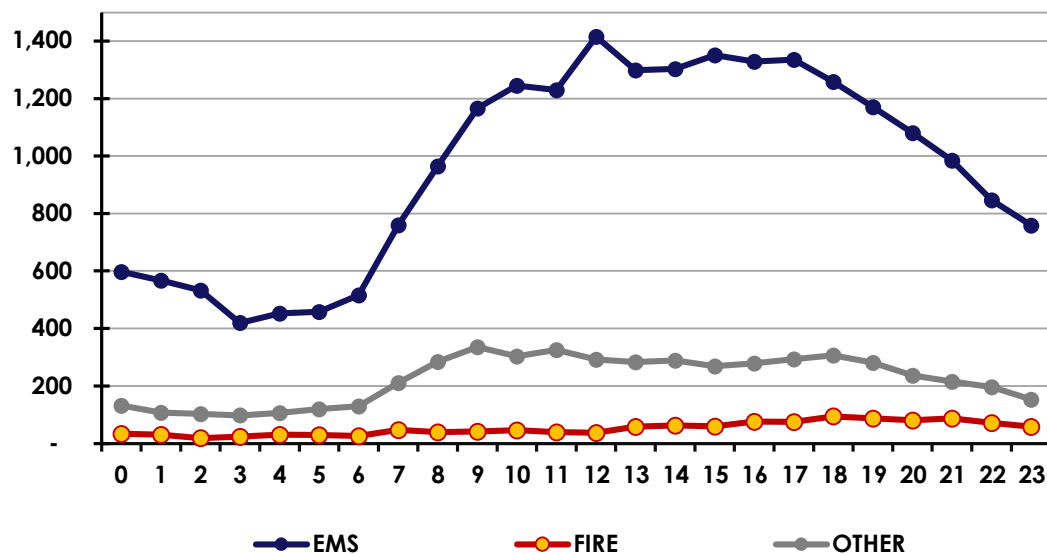
**Figure 112: Month & Day Incident Density (2019–2022)**

MONTH/DAY	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Grand Total
Jan	360	377	328	367	343	386	384	2,545
Feb	318	311	337	318	321	369	325	2,299
Mar	362	342	365	319	342	366	318	2,414
Apr	241	337	323	309	339	338	304	2,191
May	370	356	328	331	368	334	382	2,469
Jun	328	371	424	369	331	321	339	2,483
Jul	358	343	358	359	352	384	395	2,549
Aug	362	415	351	317	348	336	375	2,504
Sep	392	348	348	348	339	349	330	2,454
Oct	356	356	341	347	385	393	421	2,599
Nov	333	376	417	384	337	346	326	2,519
Dec	344	355	375	386	440	415	361	2,676
Grand Total	4,124	4,287	4,295	4,154	4,245	4,337	4,260	29,702

There is an interesting spike in incidents on Thursday and Friday during the winter months and a consistent spike during October. However, it should be noted that the difference between the maximum and minimum call counts is only 199 incidents over four years. Therefore, this chart may appear to overinflate the importance of the variation. Still, there is some value to knowing the more active days and months.

Another analytic dimension of service demand is to evaluate call volume throughout the hours of the day. For example, fire and EMS incidents are distributed unequally throughout most systems throughout the day. The daytime is typically more active than the evening, night, and early morning.

The driving force behind this phenomenon is likely that people are awake and moving. The following figure indicates that AFD closely follows this daytime pattern, with approximately 68.9% of incidents occurring between 8 AM and 8 PM.

**Figure 113: Incident Percentage by Hour of the Day (2019–2022)**

To fully appreciate how the time of day affects the volume, it is essential to understand the combination of the hour of the day and the day of the week. By evaluating that density, some hot spot times can be identified. In AFD's case, the evaluation shows a consistent and statistically significant pattern of daytime calls regardless of the day of the week. There is a slight increase in volume on Tuesday and Wednesday from the early afternoon into the early evening.

The volume swing is much more telling than the month and year analysis, with the incident difference of 217 incidents from the maximum to the minimum call volumes. The following figure indicates incident density by the hour and day of the week for all incidents between January 1, 2019, and December 31, 2022.

**Figure 114: Incident Density by Hour and Day (2019–2022)**

Hour/Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Grand Total
0	124	112	105	84	100	91	148	764
1	111	124	85	95	85	95	110	705
2	112	94	79	81	87	87	115	655
3	80	75	75	66	66	94	86	542
4	86	78	104	85	74	85	80	592
5	98	90	96	80	69	79	95	607
6	97	92	102	106	82	92	102	673
7	145	154	163	137	153	145	121	1,018
8	147	187	203	173	216	196	167	1,289
9	204	238	218	214	250	235	189	1,548
10	205	251	233	243	219	236	209	1,596
11	205	225	232	257	242	238	201	1,600
12	217	283	281	251	243	245	233	1,753
13	234	227	248	242	235	242	216	1,644
14	224	235	236	263	233	240	225	1,656
15	244	236	263	236	220	233	251	1,683
16	222	253	217	215	267	271	243	1,688
17	219	237	260	242	258	255	235	1,706
18	248	240	239	236	232	235	233	1,663
19	248	219	203	208	205	222	234	1,539
20	194	185	201	192	192	207	228	1,399
21	177	155	171	170	214	203	200	1,290
22	140	168	146	158	169	164	176	1,121
23	143	129	135	120	134	147	163	971
Grand Total	4,124	4,287	4,295	4,154	4,245	4,337	4,260	29,702

### Resource Distribution

Several key performance metrics can identify the effectiveness of resource distribution. A broad allocation of resources allows for a more rapid first response to any given area. This is typically referred to as distribution. However, the first unit is only a portion of the deployment question.

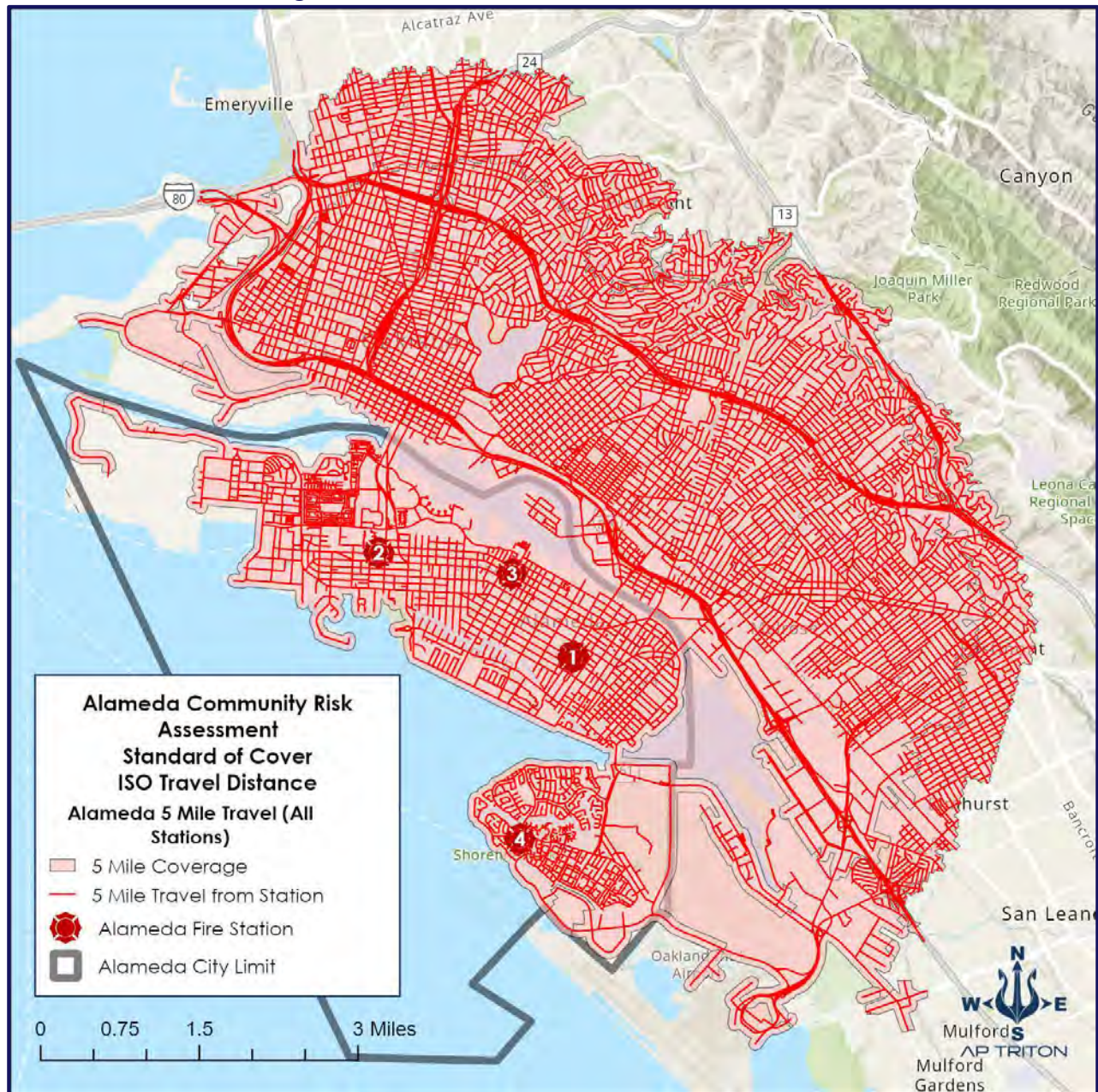
It is critical to have enough units to respond to incidents' volume, type, and severity. Concentration is the concept of having enough units on the scene to deal with an emergency promptly. Knowing where units are related to volume is also essential to equalize the unit responses.

### **Geographic Distribution Analysis**

Units and stations should be distributed to allow the best chance of reaching an incident in its earliest stages. There are two primary sources for performance standards that address this geographic distribution. The Insurance Services Office (ISO) defines distance, while the NFPA utilizes time as a criterion. Understanding the overall picture and the services with a staffed unit in the station is advantageous. The ISO uses 5 miles from a fire station as its standard for adequate response coverage.

The following figure shows the 5-mile travel distance from all the fire stations.

### Figure 115: 5-Mile Travel Distance—All Stations



No impedances were included in the network data set, such as one-way streets, tight curves, or U-turn restrictions. As the preceding figure indicates, the City of Alameda and the parts of the Oakland communities are accessible within 5 miles of a station.



For full credit in an ISO Fire Suppression Rating Schedule (FSRS), any building within the jurisdiction should be within 1.5 miles of an engine company and 2.5 miles of a truck company.<sup>55</sup> AFD has engines at all fire stations and trucks at two stations. The following figure shows the 1.5-mile travel distance from each station with an engine company.

**Figure 116: 1.5-Mile Engine Travel Distance.**





The ISO judges specialized equipment, such as a truck company, separately from an engine company. While engine companies are typically found at most fire stations, truck companies are only located at specific locations. ISO requires these truck companies to be within 2.5 miles of any building. AFD keeps a truck company at Station 1 and Station 2. The following figure shows the 2.5-mile travel distance from the two truck company stations.

### Figure 117: 2.5-Mile Truck Travel Distance



With only two truck companies in the AFD system, almost all areas are within the 2.5-mile coverage area. This would indicate that AFD does not need to rely on timely mutual aid from surrounding agencies to provide specialized companies. In addition, compared to the risk section of the buildings greater than three stories, it is apparent that ladder trucks adequately cover these structures.

### Unit Workload Analysis

Unit workload should be balanced to maintain readiness, resiliency, and service availability. While it is prevalent for one unit to be busier than others, no crew should carry a load that is too heavy to interfere with their effectiveness.

### Incidents by Unit

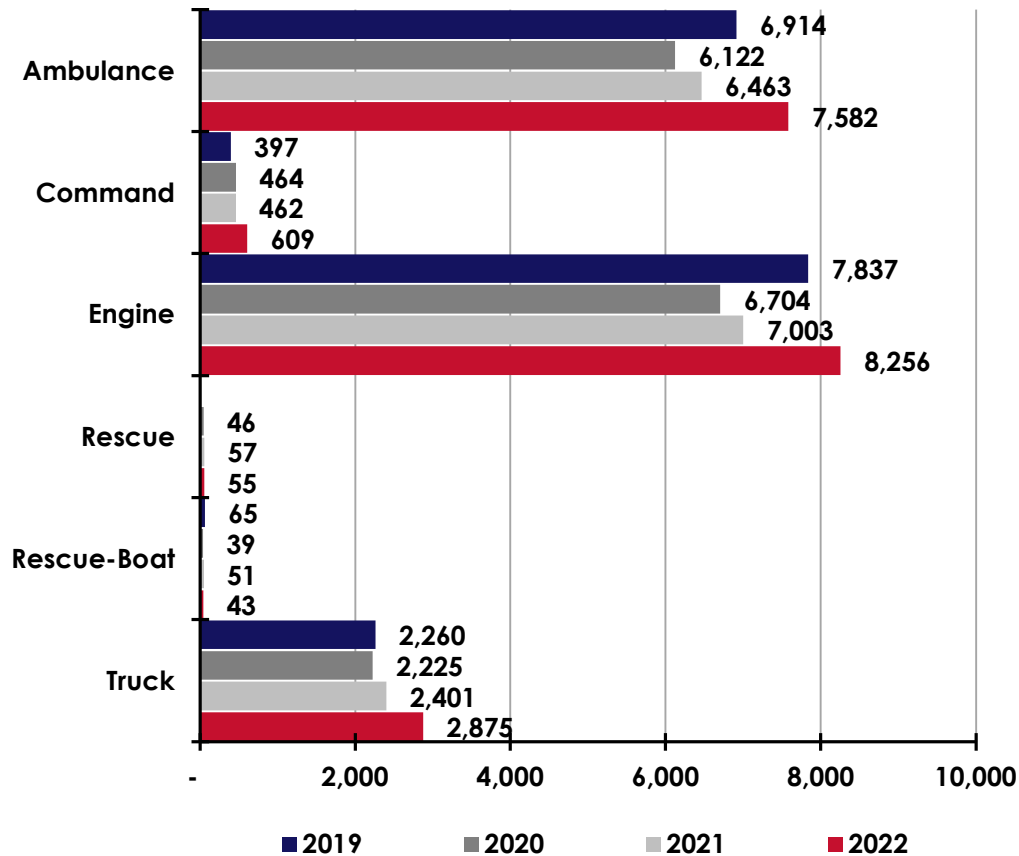
The incident records show 30 unique units responding to all incidents, including single resources and staff vehicles. However, approximately 90% of all unit responses were completed by the front-line engines, trucks, ambulances, and division chiefs. Because of the pandemic and societal lockdown in 2020, it was not possible to identify specific growth or usage trends. The following figures show the incident volume for each primary response apparatus type within the AFD system for 2019 through 2022.

**Figure 118: Top 99% Unit Workload (2019–2022)**

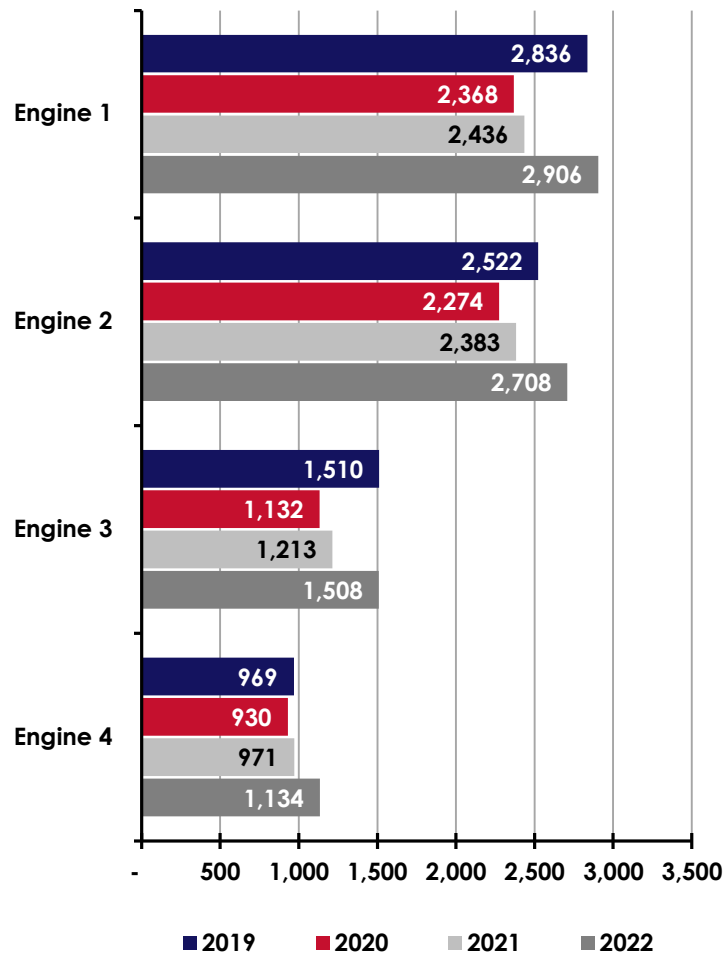
UNIT	2019	2020	2021	2022	Total	Percent
B01	397	440	448	516	<b>1,801</b>	<b>2.60%</b>
E01	2,836	2,368	2,436	2,906	<b>10,546</b>	<b>15.30%</b>
E02	2,522	2,274	2,383	2,708	<b>9,887</b>	<b>14.30%</b>
E03	1,510	1,132	1,213	1,508	<b>5,363</b>	<b>7.80%</b>
E04	969	930	971	1,134	<b>4,004</b>	<b>5.80%</b>
M01	2,939	2,375	1,648	2,829	<b>9,791</b>	<b>14.20%</b>
M02	2,715	2,445	2,231	2,563	<b>9,954</b>	<b>14.40%</b>
M03	5	311	1,509	924	<b>2,749</b>	<b>4.00%</b>
M04	1,255	991	1,075	1,266	<b>4,587</b>	<b>6.60%</b>
T01	1,196	1,135	1,077	1,409	<b>4,817</b>	<b>7.00%</b>
T02	1,064	1,090	1,324	1,466	<b>4,944</b>	<b>7.20%</b>
<b>Totals:</b>	<b>17,408</b>	<b>15,491</b>	<b>16,315</b>	<b>19,229</b>	<b>68,443</b>	

The unit responses can be grouped into the primary unit type. The four apparatus types primarily utilized by AFD are ambulances, command, engines, and trucks. The rescue and fireboats are cross-staffed. The following figure shows the incident load by apparatus type.

**Figure 119: Response Volume by Apparatus Type (2019–2022)**



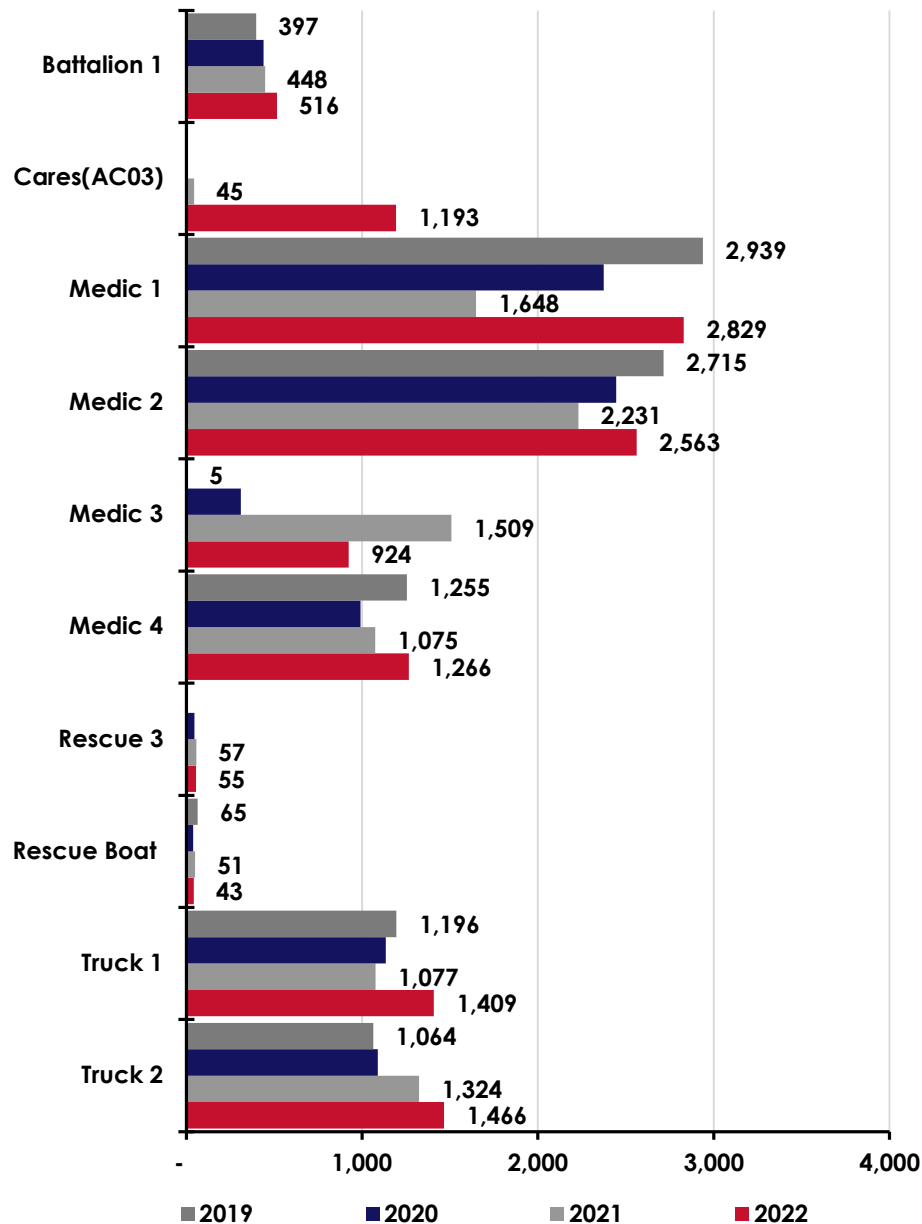
The incident volume falls primarily upon the engines and ambulances. The workload is unevenly distributed, and it appears to affect Engines 1 and 2 the most. The following figure shows each engine's call volume response throughout 2019–2022.

**Figure 120: Engine Response Volume (2019–2022)**



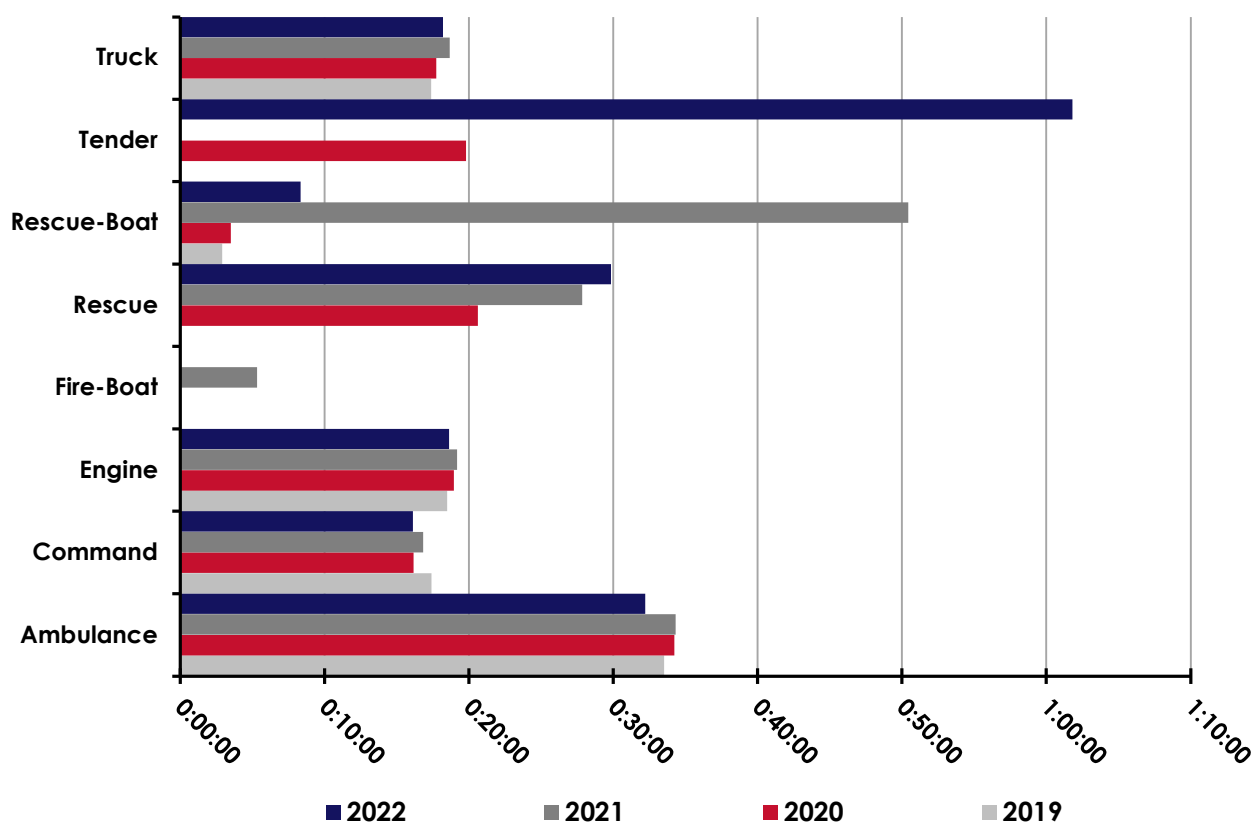
Other units also responded throughout the review period. All different types responded at a lower rate than the engines. The following figure shows the incident count other than engines throughout 2019–2022.

**Figure 121: Other than Engine Responses (2019–2022)**



Each incident requires a unit to remain on the scene to finalize mitigating the situation. This workload is typically consistent across all apparatus types. It can be used as a general guideline to predict how busy a response company is. Therefore, a general idea of how long a specific crew will stay on the incident can assist operational planning. The following figure demonstrates how much time units spend performing tasks from arrival at the scene to return to service by the unit type.

**Figure 122: Apparatus Time on Task (2019–2022)**



AFD has eight primary types of units that respond to emergencies. AFD's engines provide overall response capabilities for various incidents. Ladder trucks have different functions and specialty equipment. Still, if adequately equipped, they can operate as a general response unit in many of the same ways as an engine. The most notable exception for AFD trucks is their inability to supply water.

The rescue units provide general support for rescue and medical instances with limited but valuable firefighting functionality. Ambulances provide the medical response and transport while their firefighters can augment firefighting efforts. Specialty unit types, such as rescue boats and tenders, are included, revealing a variation of committed time by incident type. Finally, command officers are any chief officers within the AFD system.

The following figure shows the average minutes each apparatus type was committed to a given incident category for the entire study period.

**Figure 123: Average Committed Time per Incident Class by Apparatus Type (2019–2022)**

Apparatus Type	CAREs	EMS	Fire	Other	Average
Ambulance	23:31	32:10	17:49	09:45	<b>31:19</b>
Command	13:26	14:34	16:02	14:04	<b>14:53</b>
Engine	10:03	18:53	14:51	12:55	<b>17:38</b>
Fireboat		17:21	19:53		<b>17:56</b>
Rescue		14:35	27:33		<b>14:51</b>
Rescue-Boat		18:54	03:35	19:40	<b>18:40</b>
Staff		09:50	36:23		<b>16:55</b>
Tender			29:49		<b>29:49</b>
Truck	28:48	15:01	16:07	14:10	<b>14:47</b>
<b>Overall Average:</b>	<b>18:57</b>	<b>16:35</b>	<b>20:14</b>	<b>14:07</b>	<b>18:29</b>

As expected, the highest average time committed to an incident is logged by ambulances on EMS calls. This can be easily explained by the additional time required to transport and return to service at the destination. Other unit types do not experience these time intervals.

One final dimension of unit workload is how much time each unit is committed to incidents throughout the year. The unit hour utilization (UHU) calculation evaluates how much time a crew is committed to an incident throughout a specific time frame. The desire is for the primary unit at a station, typically an engine or quint company, to be under 10% UHU.

Maintaining 10% UHU should indicate that the area has 90% availability from unscheduled events. Stations with multiple engines and quint companies should aggregate to less than 10% UHU for all similar units.

AFD is a moderately busy system, and the unit workload is unevenly distributed based on the size of the population served by a station. Typically, the UHU is evaluated by agency-owned apparatus only.

### Alameda Fire Department Asset Unit Hour Utilization

The first and relatively straightforward analysis is to evaluate unit hour utilization by city assets. The following figure shows the UHU for each staffed apparatus.

**Figure 124: Staffed Apparatus Unit Hour Utilization (2019–2022)**

UNIT	Average (UHU)	2019	2020	2021	2022
B01	1.21%	1.05%	1.21%	1.17%	1.40%
E01	8.62%	9.48%	7.48%	7.99%	9.53%
E02	8.45%	8.38%	8.13%	8.42%	8.86%
E03	4.16%	4.50%	3.59%	3.72%	4.83%
E04	3.19%	3.06%	3.07%	3.15%	3.47%
M01	10.63%	12.00%	10.06%	7.71%	12.74%
M02	11.39%	11.86%	12.28%	9.83%	11.61%
M03	3.93%	N/A	1.52%	6.57%	3.70%
M04	4.13%	3.75%	3.82%	4.18%	4.76%
R03	0.14%	N/A	0.13%	0.14%	0.16%
T01	3.30%	3.02%	3.23%	3.09%	3.87%
T02	3.39%	2.56%	3.04%	3.89%	4.09%

The staffed equipment does not appear to be at risk of being overloaded with emergency responses. The highest average UHU is Medic 2, with 11.39% (11.61% in 2022) usage, closely followed by Medic 1 at 10.63%. (12.74% in 2022). This does not mean the rest of the day is idle.

Firefighters complete vehicle and equipment checks and maintenance, training, public education, inspections, and other corollary duties that take time. In addition, units staffed for 24 hours should be assumed to have 8 hours of rest. However, these additional time components can be managed to ensure coverage of a given area but are not typically captured in agency data.

### Concurrency Analysis

Incidents that happen simultaneously can impact an agency's ability to respond. While AFD maintains multiple units at each station, there may be times when all crews are engaged, thereby leaving the jurisdiction reliant on outside aid.

When evaluating incident concurrency, it is essential to consider multiple-day deployments. These are not generally counted in the evaluation because units on an incident lasting longer than 24 hours are typically backfilled. This may be accomplished with another crew or by making other arrangements to provide area coverage.

Analysis methodology included counting all incident numbers and determining the start (Dispatch) and end (Clear) times. If multiple records began or ended in the same hour, the counter was increased by 1. This produced the results in the tables below.

After removing the extended responses, the maximum number of current incidents for the study period was 9. The following figure shows the incidents happening simultaneously throughout the study period. Single incidents, which, by definition, are non-concurrent, are included for context only. In Alameda, a single incident occurs 68.8% of the time.

**Figure 125: Concurrent Incidents (2019–2022)**

No. Incidents in Progress	Count	Percent	Cumulative Percent
Single Incident (only)	20,241	68.18%	68.18%
Two Incidents	7,579	25.53%	93.70%
Three Incidents	1,607	5.41%	99.12%
Four Incidents	227	0.76%	99.88%
Five Incidents	32	0.11%	99.99%
Six or More Incidents	3	0.01%	100.00%

As is evident, it is common for AFD to be running simultaneous incidents within the jurisdiction. However, almost 69% of the incidents begin and end without another response required. Additionally, 99% of the time, three or fewer incidents operated simultaneously. It proves helpful to examine the change in incident concurrency over time.



The following figure details how many incidents co-occur during the study period over each year.

**Figure 126: Concurrent Incidents (2019–2022)**

Incidents	2019	2020	2021	2022
Single Incident	69.36%	72.85%	66.79%	66.08%
Two Incidents	25.00%	25.59%	26.43%	26.52%
Three Incidents	5.01%	1.39%	5.79%	6.25%
Four Incidents	0.50%	0.15%	0.88%	1.05%
Five Incidents	0.12%	0.03%	0.10%	0.09%
Six or More Incidents	0.01%	0.00%	0.01%	0.01%

Another factor in unit workload is the number of units assigned to a specific incident. The majority (67%) of AFD incidents have only one, two, or three responding engines, rescues, or trucks assigned. Analysis of unit concurrency is not a statement of how many units were on the same incident, but conversely, how many units were engaged in any way on incidents, be it the same or unique responses.

The following figures show the percentage of incidents where the specified number of response units were assigned simultaneously in the same hour.

**Figure 127: Number of Apparatus Committed Per Hour (2019–2022)**

Unit(s)	Count	Percent	Cumulative %
1	14,874	21.60%	21.60%
2	19,187	27.87%	49.47%
3	12,300	17.87%	67.34%
4	8,662	12.58%	79.92%
5	5,013	7.28%	87.20%
6	3,250	4.72%	91.92%
7	2,012	2.92%	94.84%
8	1,238	1.80%	96.64%
9	752	1.09%	97.73%
10	475	0.69%	98.42%
11	312	0.45%	98.88%
12	185	0.27%	99.14%
13	130	0.19%	99.33%
14	115	0.17%	99.50%
15	344	0.23%	100.00%

Filtering incidents by call class and using only "EMS" incidents modifies the analysis slightly. The data supports AFD's supposition that two units are always on EMS incidents, showing that 73% of unit response activity is related to EMS incidents.

**Figure 128: Number of Apparatus on EMS Incidents During the Same Hour (2019–2022)**

Unit(s) on EMS incidents	Count	Percent	Cumulative %
Single Unit Only	45,458	54.51%	54.51%
Two units	15,097	18.10%	72.61%
Three units	8,968	10.75%	83.37%
Four units	6,109	7.33%	90.69%
Five units	3,205	3.84%	94.54%
Six units	1,896	2.27%	96.81%
Seven units	976	1.17%	97.98%
Eight units	577	0.69%	98.67%
Nine units	315	0.38%	99.05%
Ten units	204	0.24%	99.29%
Eleven units	141	0.17%	99.46%
Twelve units	100	0.12%	99.58%
Thirteen units	76	0.09%	99.67%
Fourteen units	62	0.07%	99.75%
Fifteen units	210	0.25%	100.00%

**Station & Unit Reliability**

Examination of the station's reliability involves the study of incidents that were responded to by station units in the immediate area of the station. When an apparatus from the nearest station arrives on the scene first, it is said to be a reliable response.

Even though many departments utilize geographic positioning technologies and in-vehicle computers to facilitate the CAD system's selection of the closest unit, the measure of the percentage of how many times a unit from a station handled the incident in its designated area is valuable to determine if enough resources are deployed in the response zone.

The following figure shows the percentage of responses dealt with by units from the station responsible for the zone.

**Figure 129: Station Zone Reliability (2019 - 2022)**

Reliability	2019	2020	2021	2022
Station 1	91.0%	90.9%	83.4%	89.1%
Station 2	92.3%	91.8%	90.0%	90.5%
Station 3	51.5%	47.5%	52.8%	55.3%
Station 4	90.2%	84.5%	79.0%	87.1%

Station 2 is the most reliable, with nine out of ten incident requests in Station 2's area, likely to receive a Station 2 unit as the first to arrive on the incident. This reliability is confirmed a high percentage of the time in most other station areas.

At Station 3, however, the likelihood of receiving a unit from that area's station is much lower; roughly half the time, a unit farther away will have to respond there. Levels of reliability were most significant in 2019 but decreased very slightly from 2021 to 2022.

### Performance Review

When evaluating a system, having a set of objectives or standards against which to judge performance is helpful. While national and state standards may be recommended, in California, it is up to the authority having jurisdiction to adopt specific standards.

In this case, AFD has not generally adopted performance requirements but has a contractual obligation for transport outlined by the Local Emergency Medical Services Agency (LEMSA) started in July 2019. The city has agreed to two contracts, one for transport and one for first response. The provisions of these contracts are listed here for reference:

**Figure 130: AFD/LEMSA Contracted Personnel & Response Time Requirements**

MPDS Category	First ALS Response <sup>56</sup>	Transport <sup>57</sup>
Priority 1	08:30	10:00
Priority 2	08:30	10:00
Priority 3	08:30	10:00
Priority 4	N/A	18:00
5150 Non-Medical	N/A	40:00

For other incident types, NFPA standards will be utilized as a reference where appropriate. This will include 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* and NFPA 1225: *Standard for Emergency Services Communications* where applicable.

Evaluating overall performance requires an understanding of the lifecycle of an incident. While it starts with a normal state and should end with a new normal state, there are many measurable time segments in between. Some elements, such as call processing and turnout time, can be improved by tactical management techniques such as training and policy. However, other time segment performances, such as travel time, are typically managed by a strategic methodology such as station location.



The following figure identifies each time segment in the incident lifecycle, an example of a key performance indicator (KPI), and the applicable NFPA standard.

**Figure 131: Incident KPI Segments**

Segment	Key Performance Metric		Standard	Comments
Normal State	Community demographics		N/A	This base state needs to be defined. Prevention mainly affects this.
Incident Initiation	Incident Counts			
Incident Detection				
Notification Action	PSAP Answer		NFPA 1225	15 sec. 90% or 20 sec. 90%
PSAP Notification				
PSAP Interrogation	PSAP Transfer & Agency Answer		NFPA 1225	30 sec. 90%
Agency Notification				
Agency Interrogation	Call Processing <sup>1</sup>	Total Response Time	NFPA 1225	60 sec. 90%
FD Notified				
FD Unit Dispatched	>Turn Out Time		NFPA 1710	60 - 80 sec. 90%
FD Unit Reaction	>Travel Time			240 sec. 90%
FD 1 <sup>st</sup> unit Arrives.	>Response Time			300 sec. 90%
FD ERF Dispatched	Effective Response Force (ERF) Travel & Total Time <sup>3</sup>		NFPA 1710	
FD ERF Arrives				480 sec. 90%
FD Units Clear Incident	From arrival to clear constitutes time on task. From Dispatch to Clear, total time translates into unit utilization.		N/A	Used to evaluate unit workload and availability.
Normal State	The outcome of the incident response is the gold standard for service delivery analytics. However, this advanced study is outside the scope of this report and requires unconventional research and analytic methods.			

<sup>1</sup>Certain incident types are exempt from the new NFPA 1225 time standard.

The incident data provided did not allow for analysis of all time segments in the above list. However, enough information was provided to evaluate call processing, turnout, travel, total response, time on task, transport, hospital wait, and committed elapsed times. In addition, AFD has not adopted general performance standards except those listed in the EMS contract. Therefore, NFPA standards will be used as a performance benchmark reference.

The time segment performance standards are evaluated as a percentile. This will allow AFD to compare its performance against other agencies and the standard with a similar statistical technique.

### **Call Processing Analysis**

There are several time measures of a dispatch center. The metrics identified in NFPA 1225 and NFPA 1710 are ring time and call processing. Ring time measures when the phone in dispatch begins to ring until someone answers. NFPA 1225 requires the ring time to be less than 15 seconds 90% of the time and less than 20 seconds 95% of the time. Call processing indicates the time it takes from when a person answers the call for help until the first unit is notified when there is an incident. Unfortunately, ring time is typically captured in a separate system and was unavailable for this report. However, sufficient data were available to evaluate call processing.

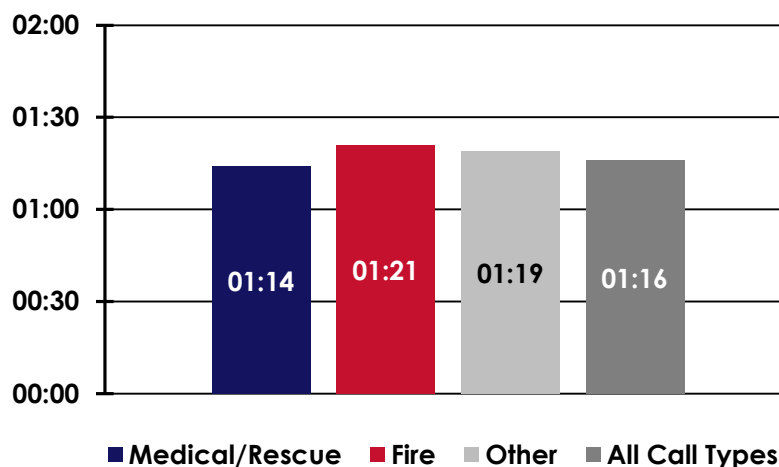
Call processing should start when the phone is answered until the first, preferably correct, unit has been notified that an incident is in progress. For example, the right team is closest and exactly equipped to handle the incident. However, there is typically a short period, usually seconds, from when the phone is answered, and the incident is started in the computer-aided dispatch system. For this analysis, it is assumed that this short period, while not captured, is inconsequential. The NFPA 1225 standard indicates that a high-priority incident should be processed within 60 seconds, 90% of the time.

NFPA 1225 exempts certain incident types, including those requiring emergency medical questioning, hazardous materials, and technical rescue incidents. Other exceptions exist for persons needing translation, calls from devices used by hard-of-hearing individuals, text messages, and calls requiring location determination. NFPA 1221, superseded by NFPA 1225, set the time performance for these exemptions at 90 seconds, 90%, and 120 seconds, 99% of the time.

The data provided was evaluated for integrity and reliability. Errors or missing times were evident in 24% of the CAD data records. However, even with the missing data, 81,786 unique incidents were available for evaluation. This left most of the incident data available and sufficient for evaluation.

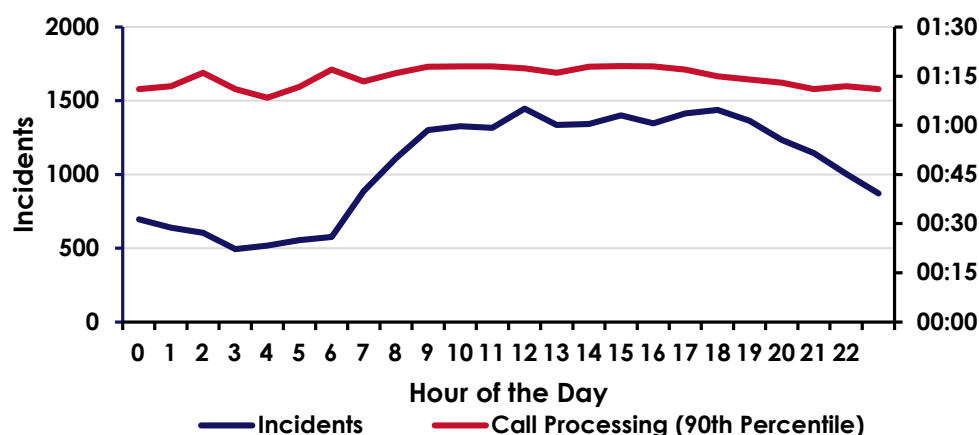
Overall, the Emergency Communications Division (ECD) processed calls at approximately 1 minute, 18 seconds, 90 percent of the time, or faster. EMS incidents are processed in 1 minute, 17 seconds, 90% of the time, or quicker. The following chart shows the call processing time at the 90<sup>th</sup> percentile based on the incident class grouping for 2019–2022. 25,465 records had valid elapsed call processing data (85.1%) for the first arriving units.

**Figure 132: Call Processing by Incident Type (2019–2022)**



Another dimension of the call processing time is how incident workload affects dispatch center performance. Again, ECD manages the workload, and the call processing time varies by up to a minute by the hour. A slightly higher processing time is evident in the early morning hours, and the processing decreases as call volume increases.

This indicates fewer incidents in the morning, leaving the data more susceptible to excessive time. The following figure shows the call processing times of all incident classes by the hour of the day, with the call load added as a reference.

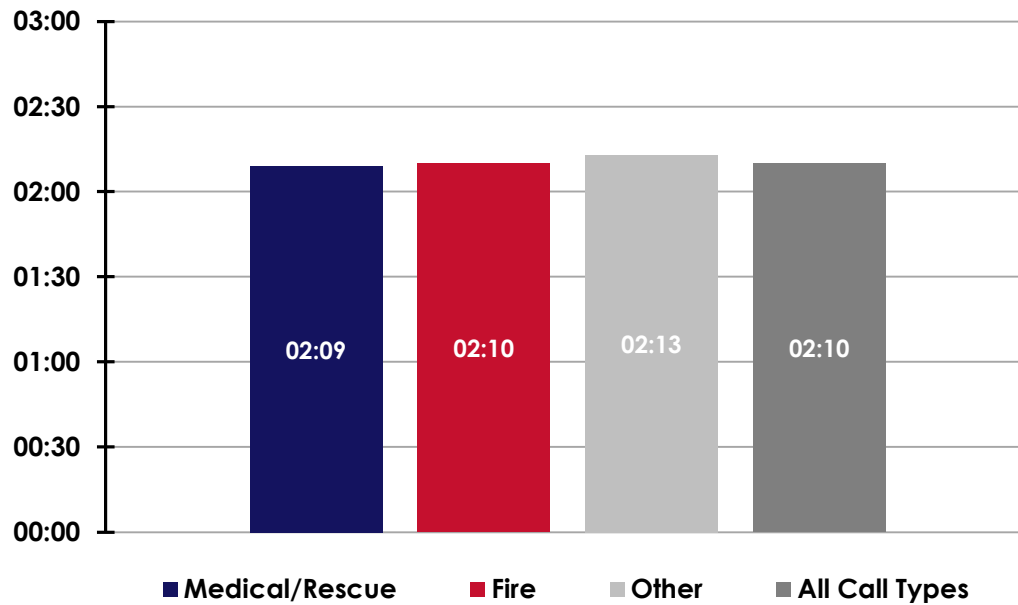
**Figure 133: Call Processing by Hour with Workload (2019–2022)**

### Turnout Time Analysis

Turnout time is the difference between when the unit is notified of an incident and when they start to respond. NFPA 1710 indicates the performance measure for this time segment is 60 seconds for medical incidents and 80 seconds for fire incidents. NFPA 1720 publishes a similar standard of 90 seconds for special operations and 60 seconds for EMS. For this analysis, the incidents will be grouped by All Incidents, EMS, Fire, and All Others.

The data was analyzed for statistical reliability, and several steps had to be taken to ensure appropriate data points were analyzed. The data set does not represent records with missing dispatched or en route time values. These records were eliminated, as were those identified for exclusion by the statistical outlier policy.

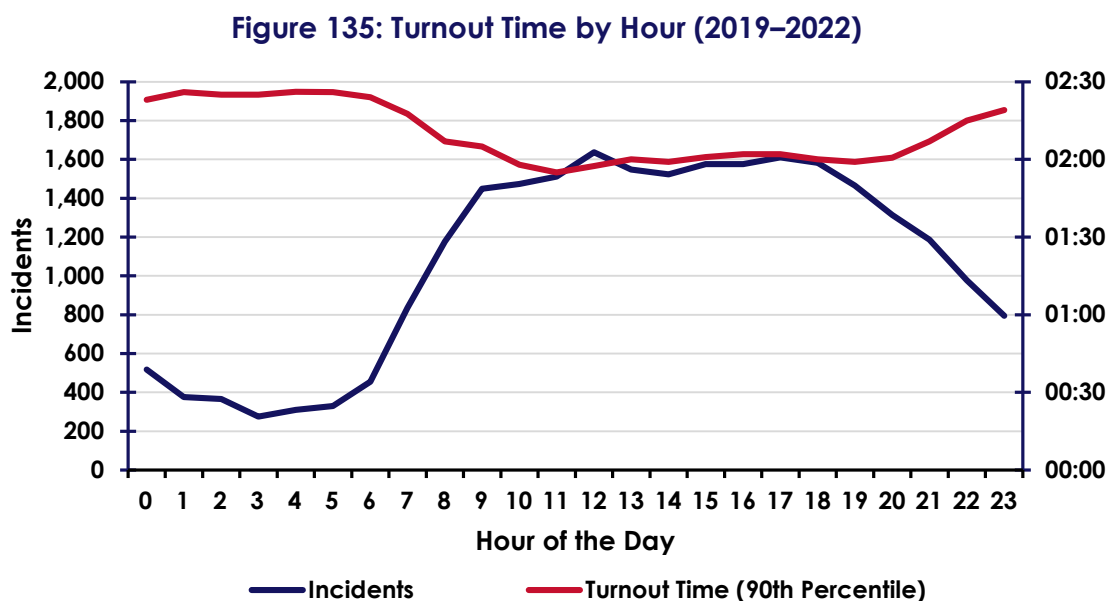
Overall, the AFD-staffed apparatus has a turnout time of 2 minutes and 10 seconds at the 90<sup>th</sup> percentile. The following chart shows the turnout times by status and EMS versus other incident categories. 26,024 valid first-arriving vehicle turnout time responses were evaluated (37.7%).

**Figure 134: Turnout Time by Incident Class (2019–2022)**

One final dimension of the turnout time analysis is the changes in the percentile by the hour of the day. Since AFD staffs their units 24 hours a day, it is expected that crews can try to sleep at night. However, sleeping personnel can impact how fast they can get to the apparatus and begin to respond. Turnout times vary by almost 40 seconds from the nighttime and daytime periods.



The following figure shows the turnout percentile by the hour of the day, with the workload by general incident type added for reference.



It is interesting to note the inverse pattern of turnout times and workload, a common phenomenon in agencies with lower call volume at night. This can be explained as a combination of crews resting and fewer incidents to analyze. A limited data set, such as those found in the slower hours, is typically much more susceptible to higher times and more obvious data swings.

### Travel Time Analysis

NFPA 1710 lists travel time requirements for apparatus. The first NFPA 1710 defined travel time is the first unit on scene, either an engine or a truck, that can provide a water supply. The unit should arrive with a travel time of 4 minutes or less 90 percent of the time. The second-due engine should travel in 6 minutes, and the first alarm should arrive within 8 minutes for a moderate-risk structure fire.<sup>58</sup> Since AFD has not adopted a travel time performance standard, these will be used instead.

Travel time is the difference between the apparatus checking en route and arriving. For modeling purposes, standard practice is to use a 35 MPH speed when calculating the response times for fire apparatus. There are several reasons for this:

- Fire response units start at 0 speed and then increase to response speed.

- Apparatus responding with lights and sirens are not constrained by traffic direction, traffic control signals, or one-way streets, so exceeding the speed limit within department policy is expected.
- Heavy apparatus units slow down on turns, stop signs, and traffic control signals. This loss of travel speed needs to be regained when safely returning to response speed.
- It was determined that a 35mph speed is generally a valid generic analysis parameter for most organizations when taking the speed-up and slow-down averages from alert to arrival on the scene.

While these guides work well for most agencies when producing a response model, the travel times were calculated at a more conservative 25mph at the request of AFD. This was adopted because the City of Alameda stated that the city has a 25 mph speed limit. In addition, street layout and traffic patterns make faster travel difficult for fire apparatus. Incorporating traffic patterns and other periodic delays into a model can be advantageous. For these models, adding traffic was impossible as the data was unavailable.

The following figure shows the 4-minute travel time from AFD's fire stations.

**Figure 136: 4-Minute Travel Model**

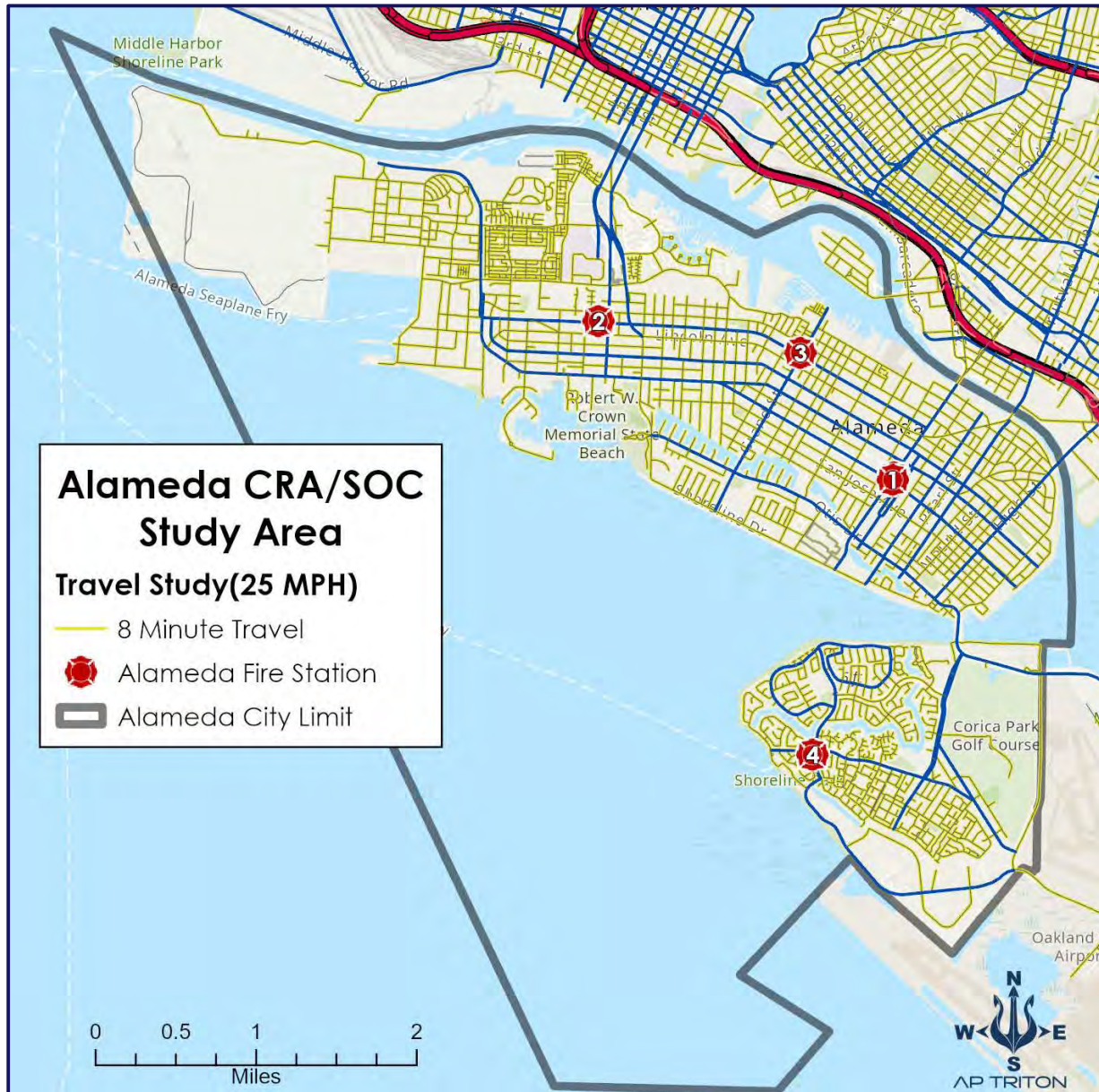


The distribution and staffing levels for AFD support rapid responses within populated areas. However, with the speed restricted to 25 MPH, the travel time to the west portion of the island is limited.



In addition to 4-minute coverage of the entire city, several outlying communities can be served or aided within 8 minutes, including communities within Oakland. The following figure represents the theoretical 8-minute travel time from each station.

**Figure 137: 8-Minute Travel Model**



The model utilizes improved roads for analysis. The analysis shows a blank area where roads do not exist, such as near the retired Navy runways. The 8-minute area in the city's far western end is explained by the lack of roads for apparatus to access this area directly. Responders would need an alternative method of travel to serve this area.

Theoretic models are beneficial when evaluating what can happen. However, considering the actual performance may give a better understanding of what the agency can provide.

### First Due Apparatus

An evaluation of the data required several filters and rules to be applied. From the data, there were first-unit arrival times in the data. The filters used excluded non-emergent priorities, leaving approximately 99.7% of all incidents suitable for evaluation. However, several travel time calculations returned zero. Typically, only those units responding with lights and sirens are included; fortunately, the data had a priority type field, and all incidents tagged as a priority in the RMS were evaluated.

**Figure 138: Priority Types Evaluated**

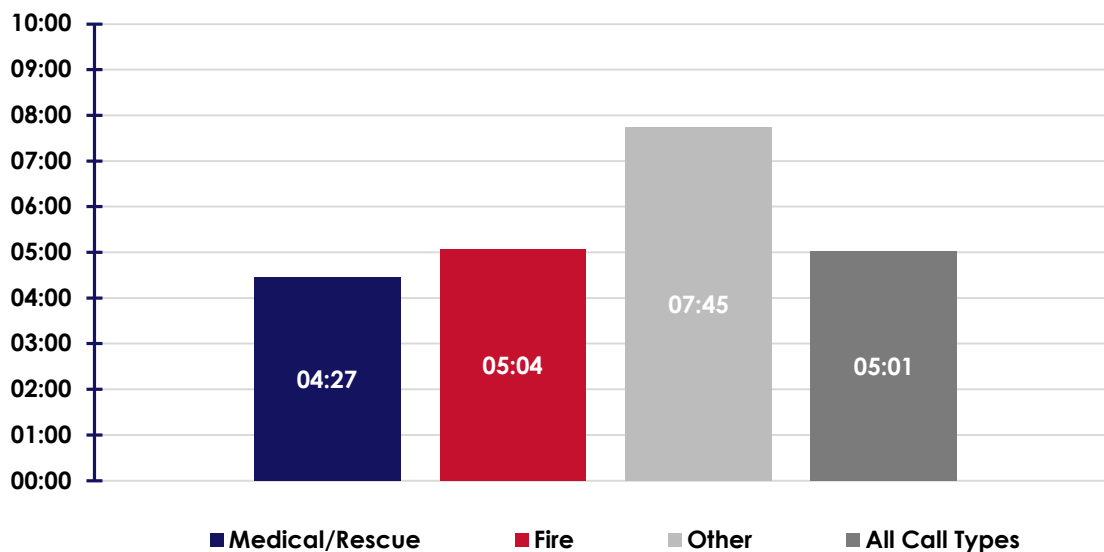
Priority	CARES	EMS	Fire	Other	Grand Totals
1	53	5,402	1,255	5,346	<b>12,056</b>
2		8,391		1	<b>8,392</b>
3		1,860			<b>1,860</b>
4		7,381			<b>7,381</b>
5		5			<b>5</b>
6		3			<b>3</b>
7				2	<b>2</b>
9		1			<b>1</b>
<b>Totals:</b>	<b>53</b>	<b>23,043</b>	<b>1,255</b>	<b>5,349</b>	<b>29,700</b>

While all incidents are evaluated for call processing and turn-out time, only those incidents within the service area are included from travel time forward. The overall first-due travel time performance for AFD is 5 minutes, 1 second. The number of evaluated first-unit-to-arrive responses with present valid travel times was 28,186 (40%).



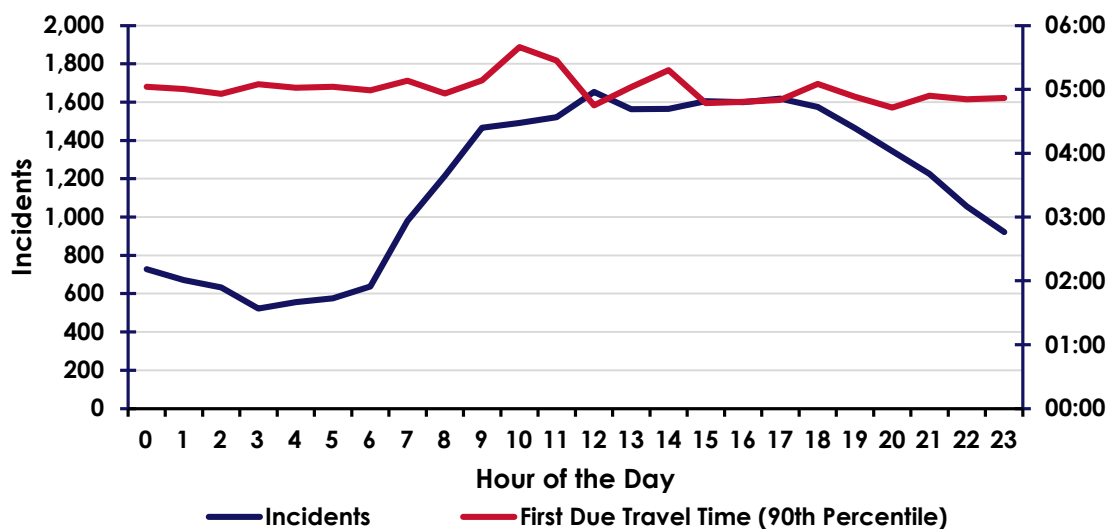
The following figure shows the first due travel time by response incident classes.

**Figure 139: First Arriving Unit Travel Time**



Time of day can have an enormous impact on travel times. For example, crew readiness, traffic patterns, and incident volume can impact travel times. Nevertheless, AFD's travel times throughout the day remain relatively consistent. The following figure shows the first due travel times by the hour, grouped response demographics, and the workload shown for reference.

**Figure 140: Travel Time by Hour of the Day (2019–2022)**



**Traffic Impacts**

Travel time can and usually needs to be improved by traffic flow. These impedances can serve to lengthen travel time significantly. Although AFD could not provide historical traffic flow data, there are methods to predict what will happen during certain times of the week. Triton conducted a Live Traffic analysis during representative time slices to determine how traffic flow could impact AFD's travel time performance.

**World Traffic Service:**

While it was impossible to include traffic in the model, every effort was made to understand how traffic may affect travel time. The analysis included using the ESRI World Traffic service, which captures real-time traffic information every 5 minutes and combines it with historically known values.

ESRI's historical, live, and predictive traffic feeds come directly from HERE ([www.HERE.com](http://www.HERE.com)). HERE collects billions of GPS and cell phone probe records per month and, where available, uses sensor and toll-tag data to augment the probe data collected. An advanced algorithm compiles the data and computes accurate speeds. Historical traffic is based on the average observed speeds over the past three years. The live and predictive traffic data is updated every five minutes through traffic feeds.

**First Time slice:**

Traffic was evaluated early on weekday mornings. During this time, most roads in and around Alameda were predicted to be 'free-flowing.'

The following figures display traffic speeds as a percentage of free-flow speeds, frequently the speed limit or how fast cars travel when unencumbered by other vehicles. The streets are color-coded as follows:

- Green (fast): 85–100% of free-flow speeds
- Yellow (moderate): 65–85%
- Orange (slow); 45–65%
- Red (stop and go): 0–45%

Weekday Morning commute traffic was evaluated on two widely spaced Monday mornings around 7–8 AM. This seemed unusual as anecdotal reports indicated traffic pattern flows were heavier at this time. Nonetheless, the WTS showed this level of activity on two Mondays.

**Figure 141: Weekday Morning Traffic Patterns (7:00 AM)**



The next potential for higher vehicle volume is around lunch when people leave work and drive to a lunch spot. The prediction does not show a significant impact within Alameda. Traffic on the freeway to the north in Oakland is beginning to slow.

**Figure 142 Weekday Traffic Flows—Lunch Hour (Noon)**



The most alarming change starts in the afternoon, at the start of the homeward-bound commute, when significant delays appear within the city. While Station 4 is not cut off, there is heightened activity on the arterial streets. This could delay delivering an effective response force to Station 4's area. Bridges and tunnels are severely impacted, effectively rendering Alameda an island to mutual/automatic aid from Oakland.

**Figure 143: Weekday Traffic Flows—Late Afternoon (5 PM)**





Heightened traffic volume is still detectable as late as 10 PM. While the bridge/tunnel problem has eased, it is not absent.

**Figure 144: Weekday Traffic Flows—Evening (10 PM)**



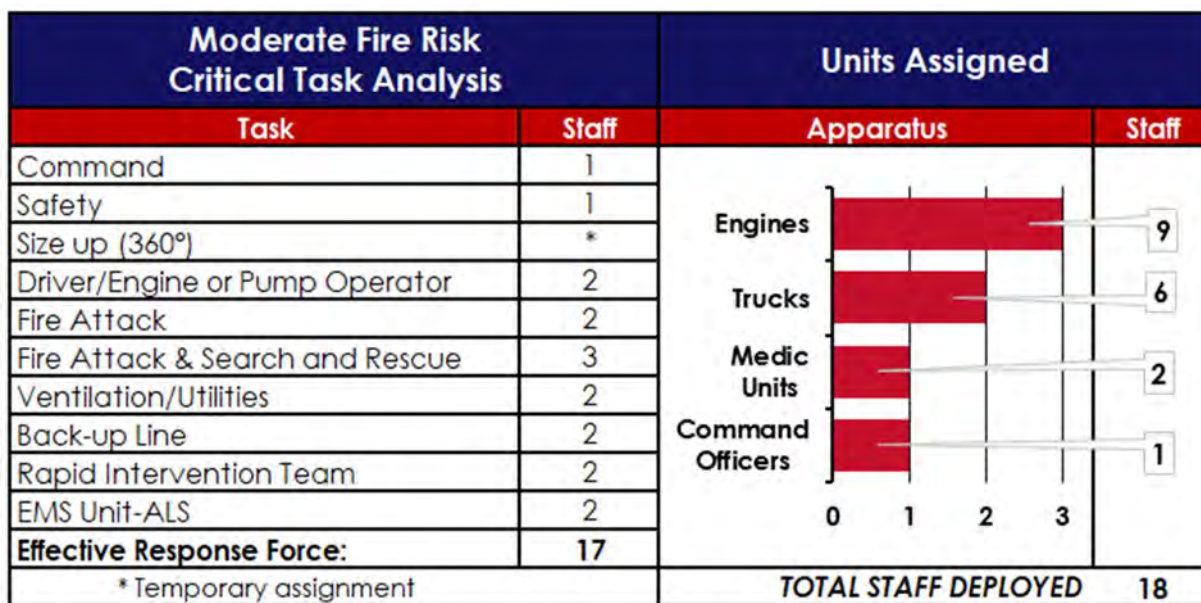
### Effective Response Force

The second dimension of the travel time analysis is how well the effective response force (ERF) needed for a type of incident can be assembled. ERFs change with the complexity and resources required of any incident. They can range from one unit to multiple units with specialty equipment. Two commonly evaluated ERFs are EMS incidents and a moderate risk structure fire. Not enough incidents met these criteria to statistically analyze time performance for either incident type with any reliability.

It is possible to evaluate the time it takes for a certain number of units to arrive on the scene. AFD can assemble 20 personnel in over 85% of the city for most incidents. However, travel time for personnel in the extreme west and southeast portions of the city can vary significantly, indicating that less than 20 staff can arrive in 8 minutes.

AFD has determined that the personnel required to complete critical tasks for a Moderate Risk incident type is 17. With AFD's defined apparatus response plan for meeting this need, 18 personnel can be delivered. Although the arrival time of the ERF may not meet NFPA 1710 performance requirements, AFD can provide an effective response force to meet this need in 100% of the city.

**Figure 145: Alameda Personnel Requirements for Critical Tasks<sup>+</sup>**



+ These incidents are a first-alarm response needed to manage a moderate fire risk incident.

These incidents include smoke in a building, small outside building fires, commercial vehicle fires, a single-family residence, a lightning strike to a building, an automatic fire alarm at a high-risk occupancy, or a hazardous materials pipeline fire. The table below identifies the required critical tasking to mitigate the incident, the ERF, and the assigned resources for this incident type. The figure below describes AFD's experience with different structure fire responses based on the dispatch-to-arrival measure.

**Figure 146: AFD Effective Response Force (2019–2022)**

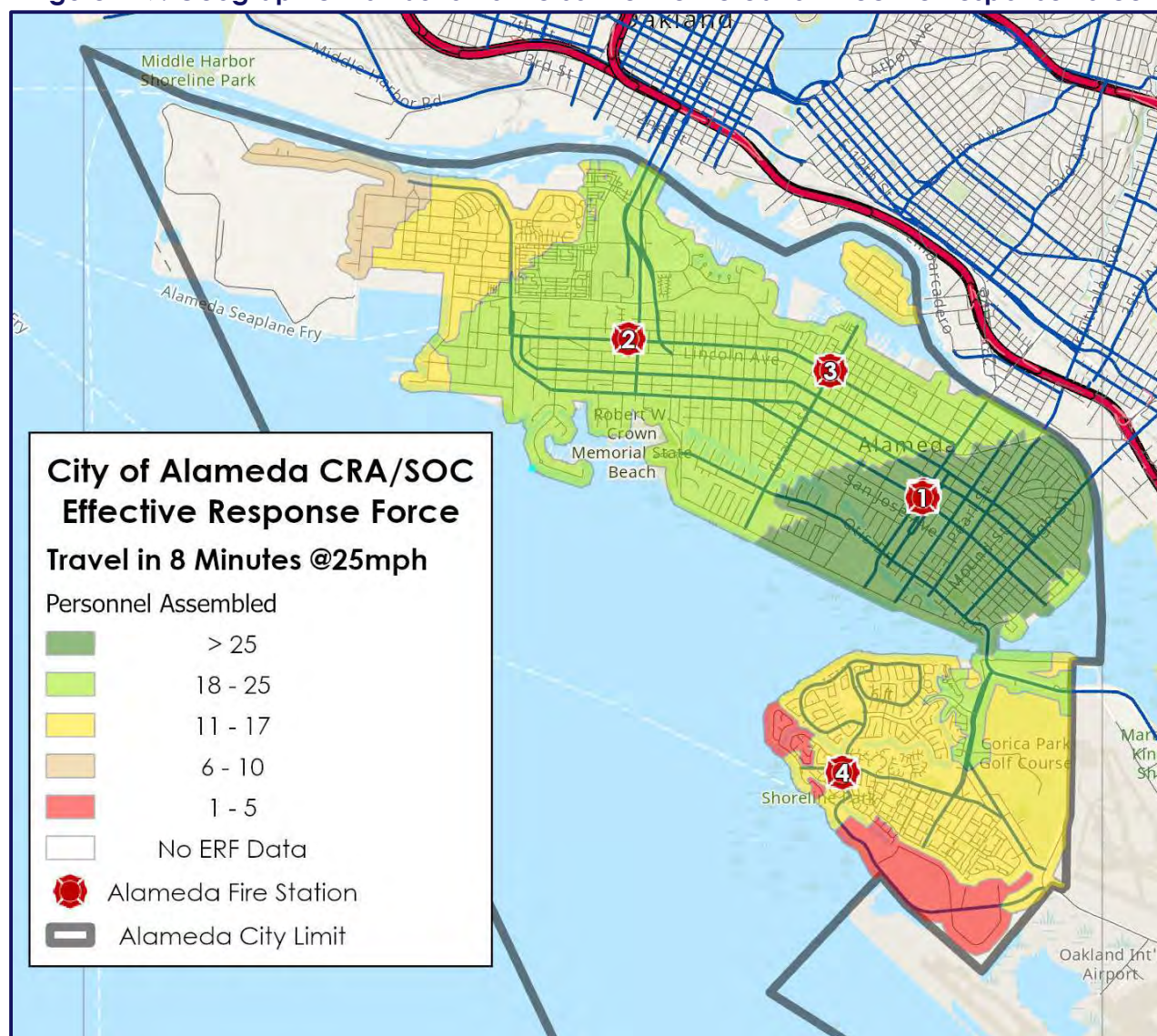
<b>Alameda SF (All Types)</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Totals</b>
Structure response apartment	32	36	32	44	<b>144</b>
Structure response residential	38	47	33	42	<b>160</b>
Structure response - commercial	30	26	27	33	<b>116</b>
Working structure fire	5	16	14	14	<b>49</b>
<b>Grand Totals:</b>	<b>105</b>	<b>125</b>	<b>106</b>	<b>133</b>	<b>469</b>
No. of Structure Fires with ERF	12	28	19	30	<b>89</b>
Time to assemble for Residential Response (Moderate Risk)	12:39	14:23	12:57	14:25	<b>14:25</b>

The Moderate Risk structure fire study results in the preceding table indicate that AFD has difficulty assembling an ERF within the performance standard in NFPA 1710. The NFPA 1710 standard recommends the assembly of an initial full alarm for low/medium hazard incidents be 8 minutes. As you can see in the preceding table, actual performance exceeds this target. It should be noted that this 8-minute first alarm assembly goal is challenging for any fire department to meet, considering staffing, geography, traffic patterns, etc.

All units, including apparatus delivered by outside agencies, were evaluated to fulfill the needed three engines, two ladders, 1 command chief officer, and the required assembly pattern.

Relying on these auto/mutual aid resources (mostly ladder truck units) resulted in some incidents that resulted in longer response times. In 2021, there were a few incidents with long assembly times, which slightly skewed the results. However, with so few responses getting a full ERF to evaluate, it was necessary to include all response times.



**Figure 147: Geographic Distribution of Personnel Delivered for Effective Response Force**

Many of the incidents designated as "Moderate Risks" may have been mitigated before the entire complement of apparatus reached the scene of the service request. Multiple incidents involving the cancellation of one of the engines or ladders caused this incident to fall out of the evaluation because the apparatus pattern was not fulfilled.

This is not necessarily an adverse finding because the conservation of unneeded resources provides for the further utilization of this apparatus on other service requests when required.

There are only small portions of Alameda—in the old Navy base area to the west and the small area south of Station 4—where delivering an ERF within 8 minutes is challenging.

The figure below identifies the two regions with lesser ERF personnel delivery potential. Triton says potential because this analysis assumes all units are in their station and fully available to respond to at the time of the service request.

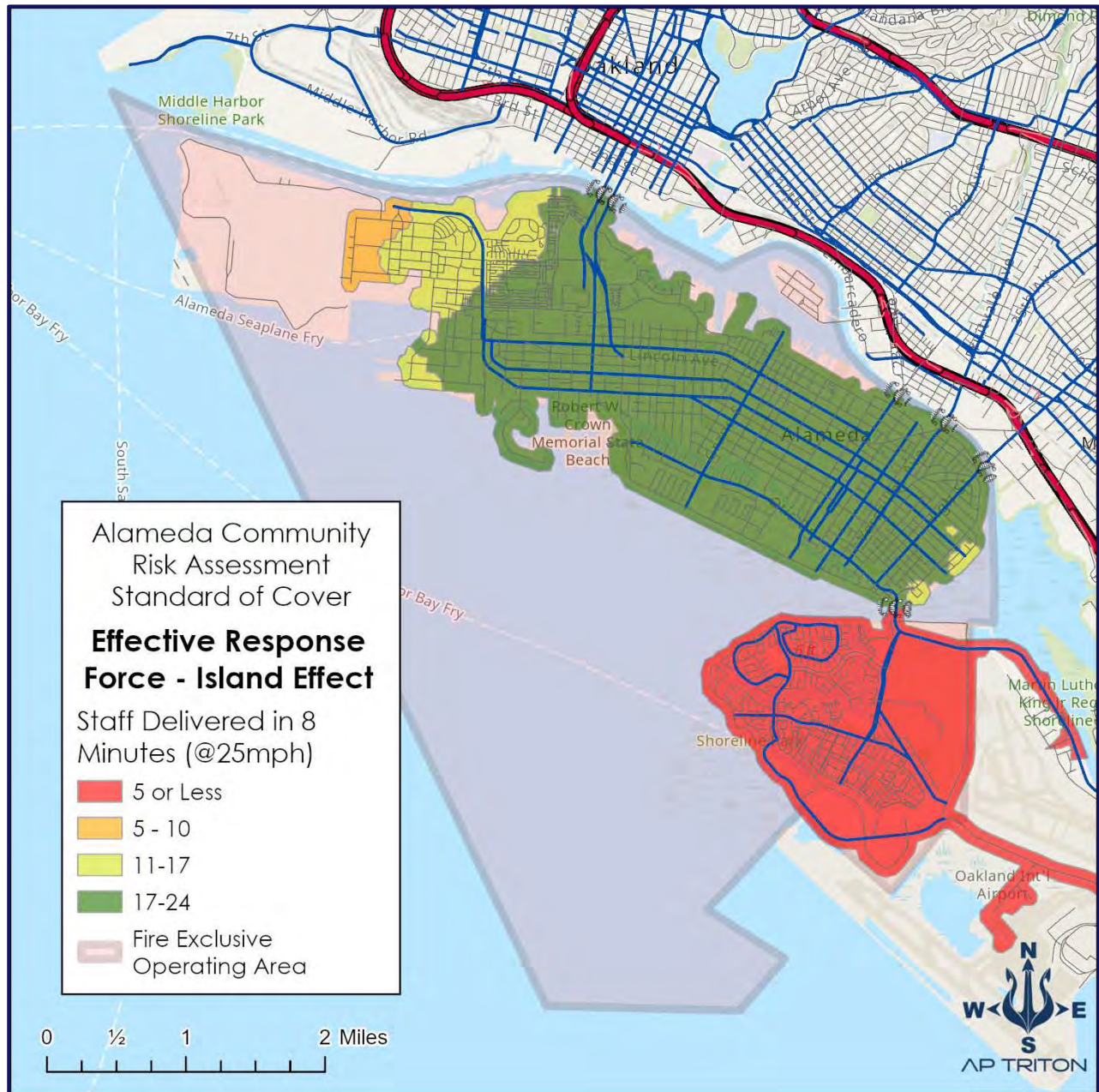
It is helpful to analyze the effect of the ERF on parts of the city that are islands. The region to the south and west of the tunnels and bridges could be considered an island when traffic flows or other impedances interrupt the required apparatus's delivery.

It is apparent that without the contribution of Station 4, the number of staff required for an effective response force is possible on the island. Station 4 would have to rely on mutual aid if the rest of Alameda was excluded from the mainland.



The following figure shows the ERF timing and assumes no units can make it over past the water from Oakland.

**Figure 148: Effective Response Force if Alameda Island Cut Off**



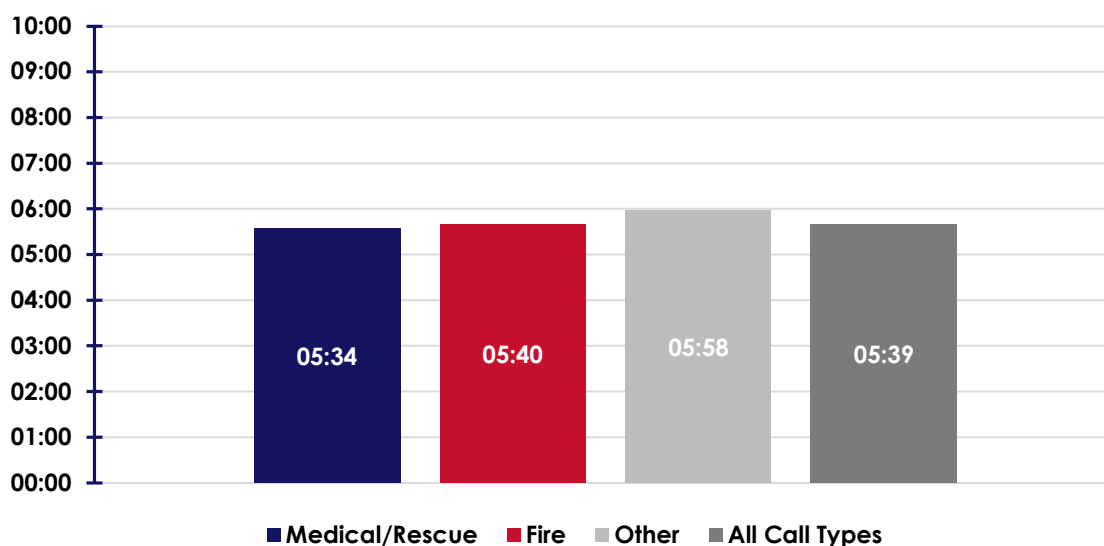
Though AFD has not identified a history of interruptions to travel from Station 4 or Oakland, there is a possibility that access to the island could be problematic.

### Response Time Analysis

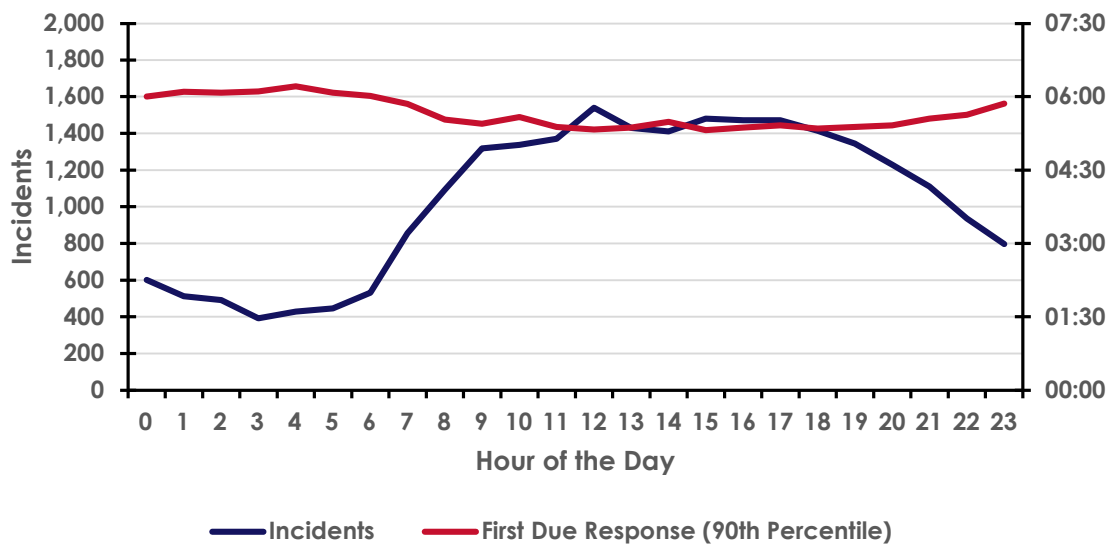
The time that a unit is notified of an incident until they arrive at the scene of the service request is referred to as response time. This is a valuable measure of crew performance concerning reaction time (turnout) and travel time, both controllable by AFD.

Impacts on response time could include investment in technology to improve alerting, positioning of apparatus compared to living spaces, staging of protective clothing, and choosing the best route to the scene based on conditions. AFD can generally put resources on the location of a jurisdictional incident in 5 minutes, 391 seconds, 90% of the time from the unit alert.

**Figure 149: Response Time Performance by Class (2019–2022)**



It is helpful to evaluate response times by hour of the day to determine if there are patterns that could be addressed by technological changes, staffing patterns, route selection, etc. The following figure shows that the response time lengthens between midnight and 6 AM.

**Figure 150: Response Time Performance by Hour of the Day**

### Local Emergency Medical Services Authority Transport Contract

AFD has contracted with Alameda County Emergency Medical Services Agency to transport sick and injured patients within the city's limits. If all AFD transport units are committed, the County of Alameda's contracted ambulance provider, Faulk, will respond.

The contract defines response time as: "The Time elapsed from the time a call is received by Contractor from The Dispatch Center until Arrival at the Incident Location by the Ambulance." NFPA defines this Elapsed period as "Response Time." Total Response Time includes the dispatch center's call processing time.

**Figure 151: AFD/LEMSA ALS & BLS Transport Contract Performance Requirements**

MPDS Category	Transport
Priority 1	10:00
Priority 2	10:00
Priority 3	10:00
Priority 4	18:00
5150 Psychiatric	40:00

The following figures list how many incidents resulting in transport were categorized by each priority.

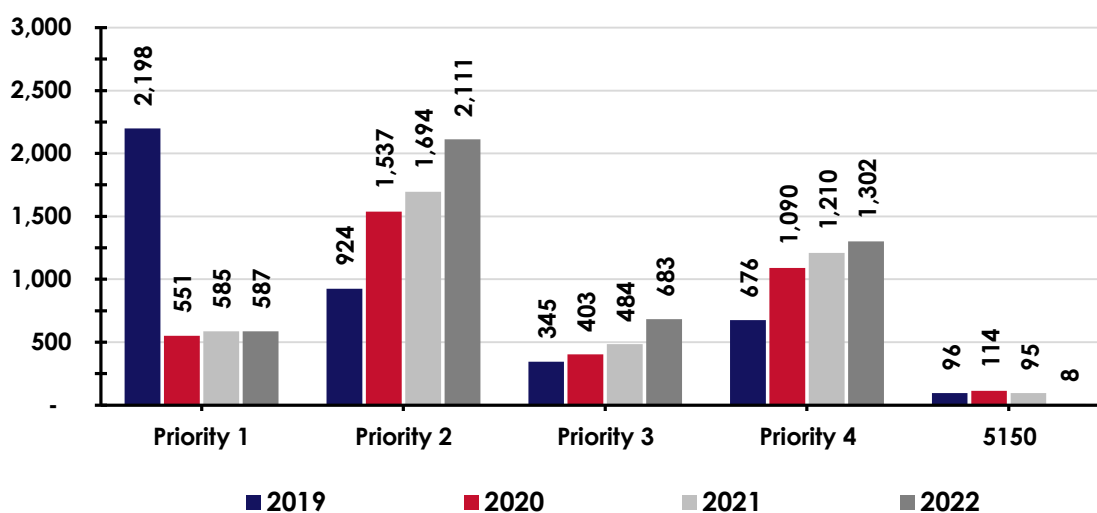
**Figure 152: Count of Transports by Dispatched Priority (2019–2020)**

PRIORITY	2019	2020	2021	2022
Priority 1	2,198	551	585	587
Priority 2	924	1,537	1,694	2,111
Priority 3	345	403	484	683
Priority 4	676	1,090	1,210	1,302
5150	96	114	95	8

A significant drop-off in Priority 1 incidents occurred in 2020 – 2022. This becomes much more apparent when looking at a chart of the data. The impact of the CARE team in 2020 shows a reduction in 5150 (Psychiatric Hold) incident types. However, this does not entirely explain the significant change in the number of priority 1 responses.

While the reason for this is not fully understood, it appears that some of the priority 1 incidents were reclassified as other priorities. The following figure shows the total number of EMS incidents dispatched by priority.

**Figure 153: AFD Transport Dispatch Priority (2019–2022)**



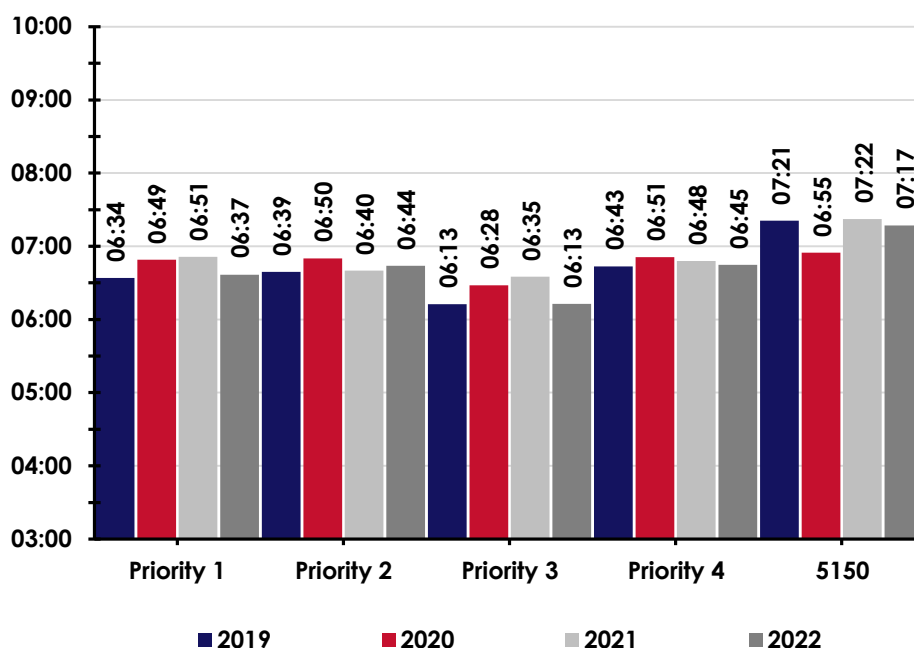
Response time performance measured from unit assignment until arrival at the scene is illustrated in the following figures.

**Figure 154: LEMSA First Unit Response Time Performance (2019–2022)**

Priority	2019	2020	2021	2022
Priority 1	06:34	06:49	06:51	06:37
Priority 2	06:39	06:50	06:40	06:44
Priority 3	06:13	06:28	06:35	06:13
Priority 4	06:43	06:51	06:48	06:45
5150	07:21	06:55	07:22	07:17

The following figure demonstrates that AFD appears to meet the established standards.

**Figure 155: AFD LEMSA Response Time Performance (2019–2022)**



### Total Response Time Analysis

The data was evaluated for this segment and found to be more usable and complete than the travel time segments. This is due primarily to the more accurate time stamps of dispatch notified and the first unit on scene. The analysis utilized CAD data, including invalid or missing on-scene times. However, the total time data was acceptable for 73.5% of the AFD responses, and only the recommended response priority call types were included.

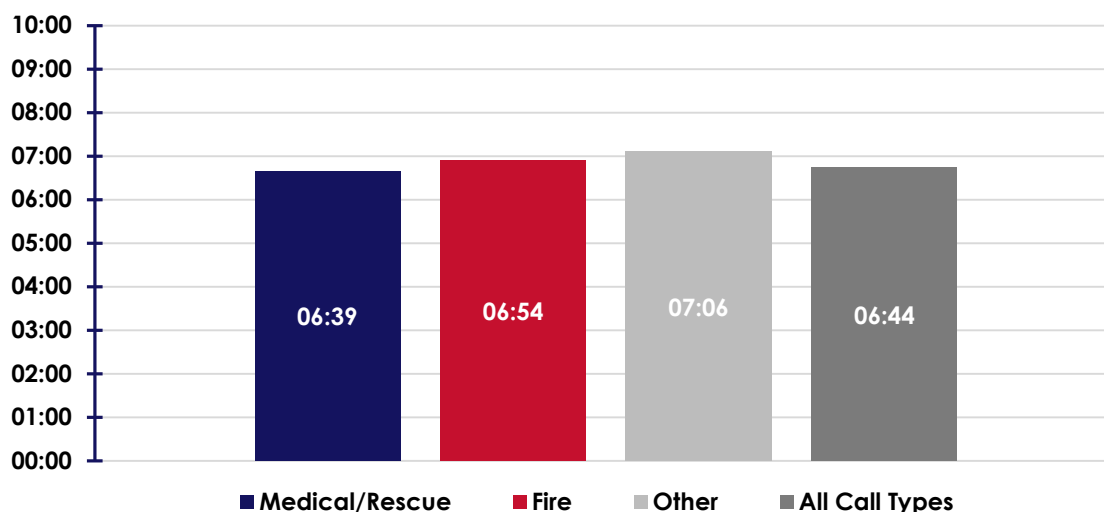


The actual response mode was not collected within the CAD data. Therefore, the data did not include all emergent and non-emergency unit responses, including downgrades to non-emergency answers. The incomplete CAD data was augmented by the RMS data, and the priority flag was considered the determining factor of the level of response.

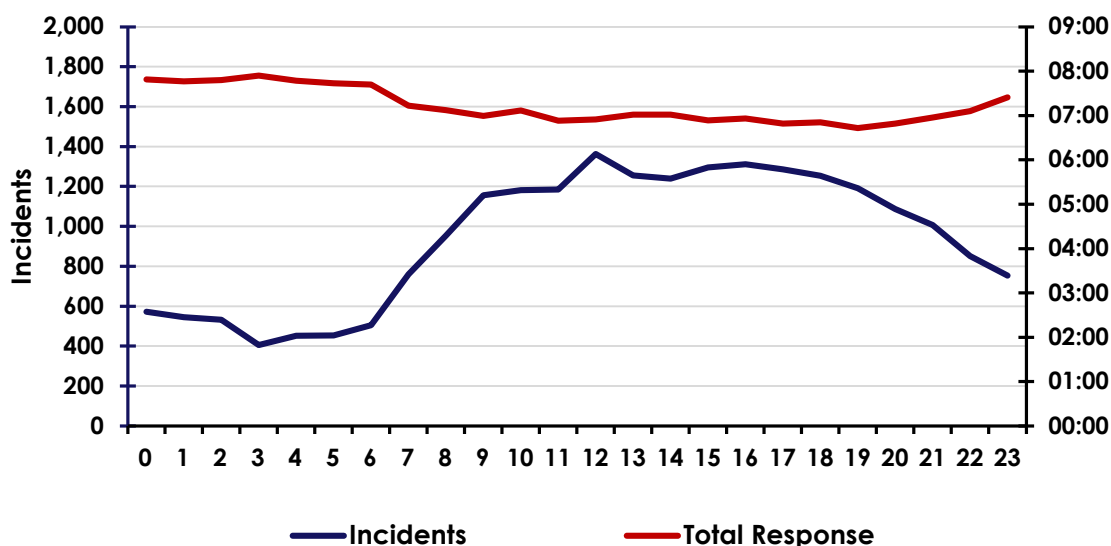
Each time segment is analyzed to understand where performance can be measured and improved. However, the primary performance measurement for the customer is the total response time. Total response time is calculated from when the phone is answered until the first unit arrives. This is what a person in need sees as AFD's performance.

In AFD's case, the overall first-due total response time for the urban/suburban areas is 6 minutes, 44 seconds, 90% of the time or less. The following figure shows incident classes and their first-due total response times.

**Figure 156: Total Response Time by Incident Type**



It may seem that the 90<sup>th</sup> percentile call processing plus the 90<sup>th</sup> percentile turn out and travel times would equal the 90<sup>th</sup> percentile total time. However, this is not usually the case. Each time segment is analyzed independently, including the total response time. The total response time does not add the segments' percentiles due to the variability of the time segments within each incident.

**Figure 157: Total Response Time by Hour**

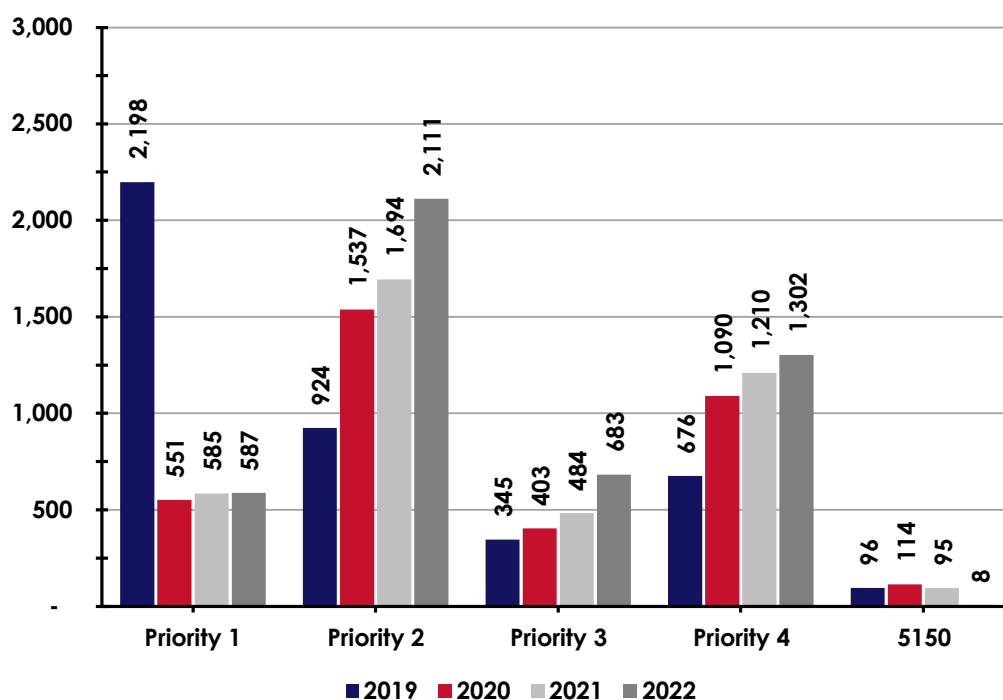
The final analysis looked at the total response time by hour. Most incident volume settings follow the same pattern. However, the change in total response time was not remarkable by that time of day. While there is a slight improvement from late morning to early evening, it is insignificant. The following figure shows the total response time by hour. The incident volume percentage is included for reference.

### LEMSA Total Response Time Comparison

AFD is not responsible for how long it takes to classify an incident through algorithmic questioning sequences. However, comparing the time the patient perceives from requesting service to receiving service (called the Customer Service Interval) is essential in Total Response Time. The following figures show the total response times and transports evaluated.

**Figure 158: AFD LEMS Total Response Time Counts (2019–2022)**

Priority	2019	2020	2021	2022
Priority 1	2,165	551	578	574
Priority 2	914	1,524	1,707	2,076
Priority 3	350	409	480	684
Priority 4	683	1,072	1,212	1,297
5150	75	109	101	4

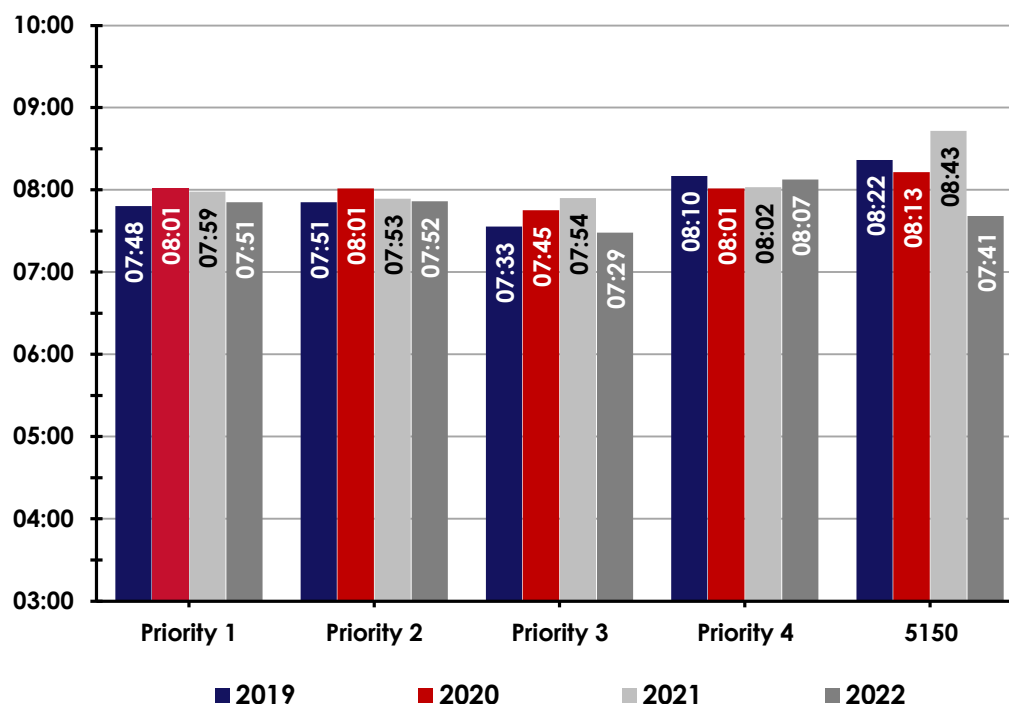
**Figure 159: AFD LEMSA Total Response Transport Count (2019–2022)**

The LEMSA contract requires a 10:00 Response Time for the transporting unit and 8:30 for the first responder. AFD meets or exceeds this requirement with total response time for all priority service requests.

**Figure 160: AFD LEMSA Total Transport Response Time Performance (2019–2022)**

Priority	2019	2020	2021	2022
Priority 1	07:48	08:01	07:59	07:51
Priority 2	07:51	08:01	07:53	07:52
Priority 3	07:33	07:45	07:54	07:29
Priority 4	08:10	08:01	08:02	08:07
5150	08:22	08:13	08:43	07:41

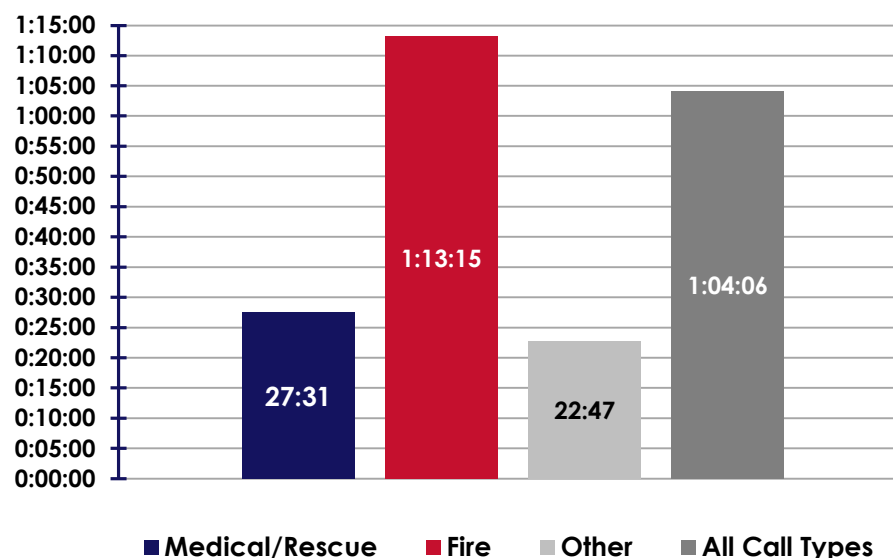
The following figure displays AFD's LEMSA transport total response time for comparison purposes only. AFD exceeds the 10:00/40:00 standards by a wide margin.

**Figure 161: AFD's LEMSA Transport Total Response Time Performance (2019–2022)**

### Time on Task

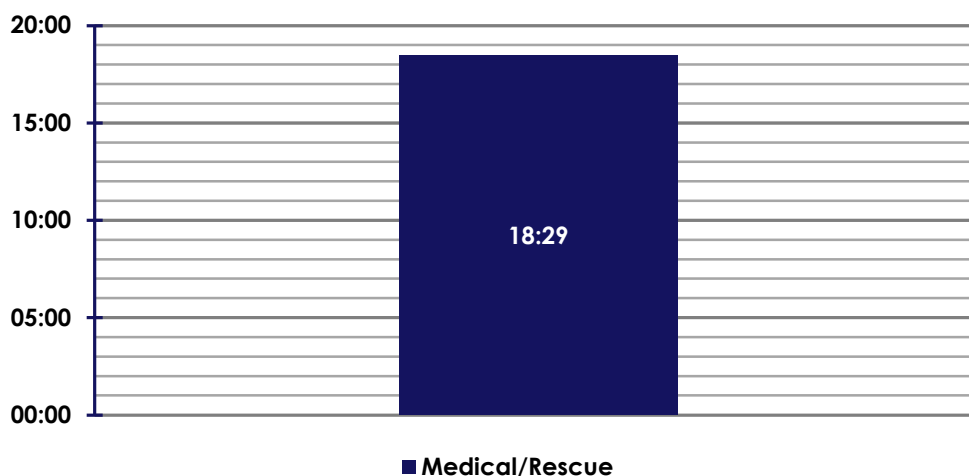
The time-on-task interval is helpful to determine if resources are being used effectively. Longer times on task could represent more difficulty mitigating the incident, waiting for third-party transport providers, or even turning a scene over to law enforcement.

Time on task for EMS-type incidents is calculated from when the unit arrives on the scene until it departs with a patient. If there is no transport, the time on task is calculated from arrival until the unit returns to service. The chart below shows how much time AFD units spend on scenes by incident class.

**Figure 162: Time on Task Performance (2019–2022)**

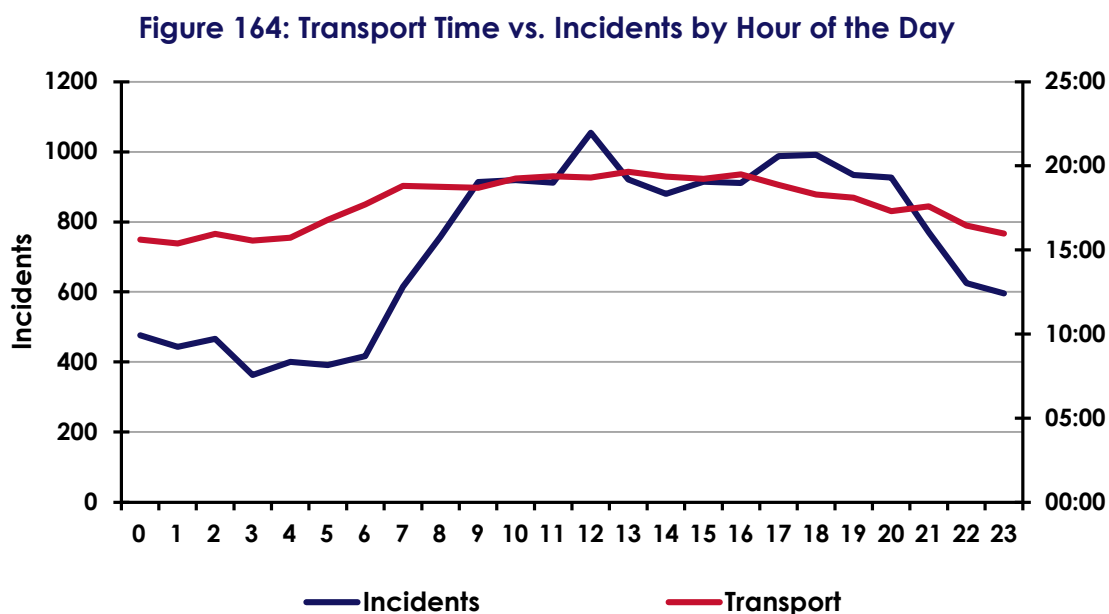
### Transport Time

EMS units occasionally load and transport patients to tertiary care facilities. This transport time seems high, suggesting that patients are only sometimes transported to the closest hospital. There was not a high percentage of interfacility transports discovered, so most transports represent from a scene of an incident to a hospital. Factors such as acuity, patient choice, and saturation can impact the destination selected for patients. AFD EMS units transport 40% of the time when arriving on the scene.

**Figure 163: AFD Transport Performance (2019–2022)**



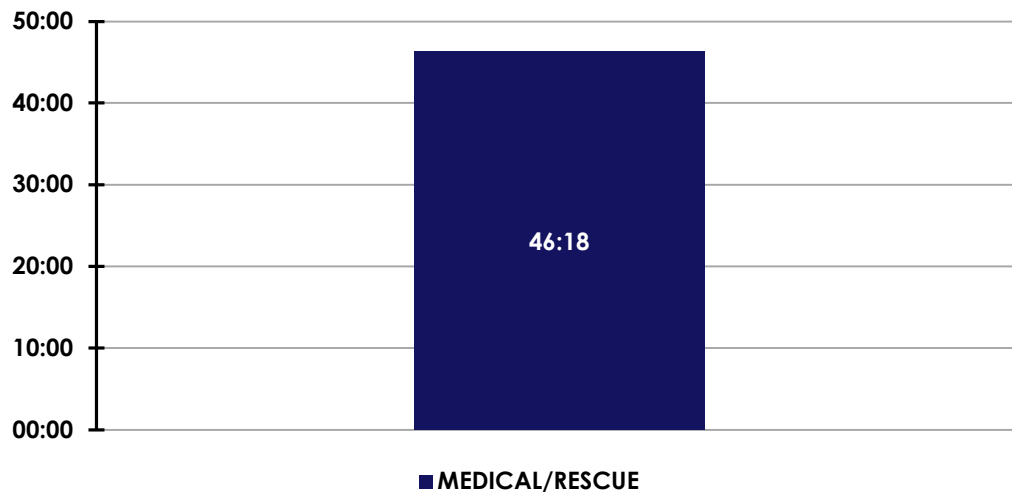
Reviewing transport times by hour of the day reveals that the pattern detected mirrors the traffic flows in the evening discussed previously.



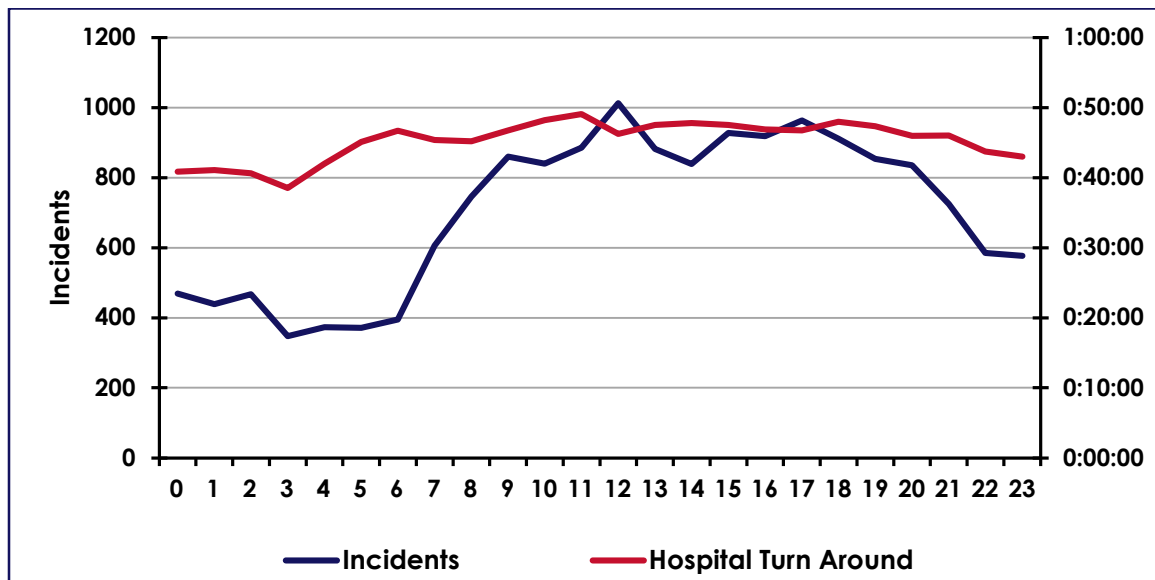
### Hospital Turnaround (“Wall”) Time

The elapsed time from the transporting ambulance to its destination and the unit's return to full service is called Turnaround Time, or Wall Time. Once a facility becomes saturated with patients, the ambulance either must wait an excessive amount of time for the patient to be accepted by the receiving facility or re-route to a less saturated facility during transport.

Extended wall times are indicative of a stressed healthcare system. EMS crews performing patient delivery, unit cleaning, and reporting tasks at the hospital can lengthen the time before a unit is available for another response. In AFD's case, the turnaround time is not excessive, which could reflect procedures that take the typical pre-arrival tasks into account.

**Figure 165: AFD Hospital Turnaround Performance (2019–2022)**

The time spent at the hospital mirrors the number of incidents experienced. This could be indicative of facility saturation during busier times.

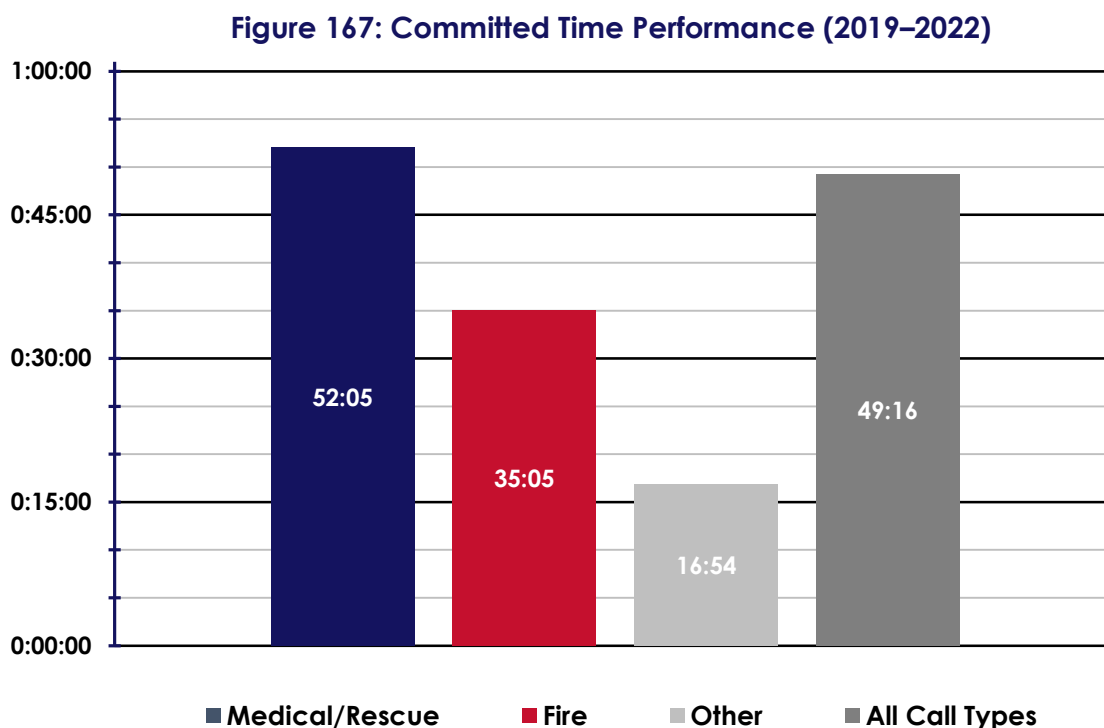
**Figure 166: Hospital Turnaround Time vs. Incidents by Hour of the Day**

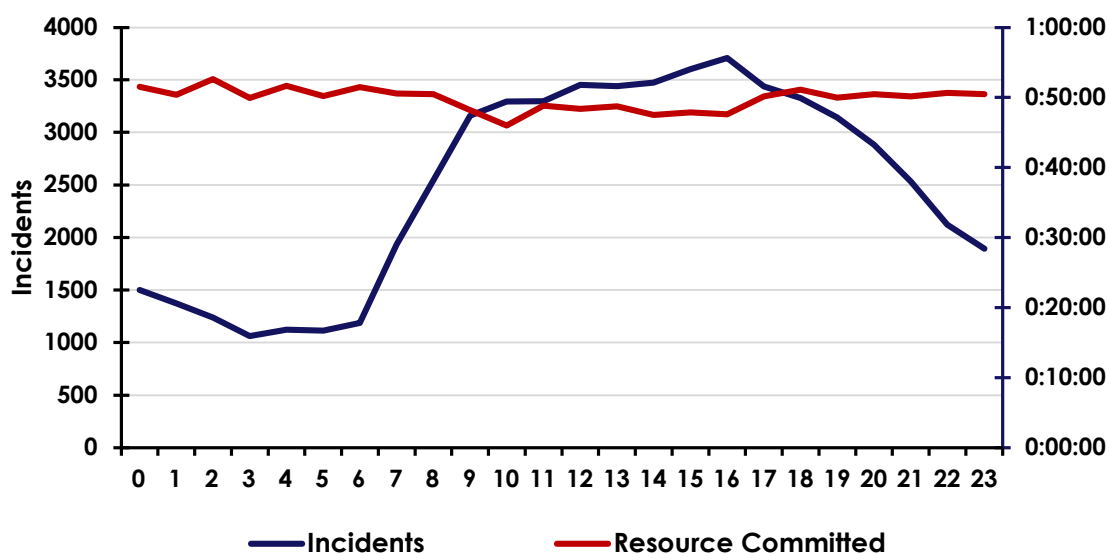
### Committed Time

The final time interval studied is when a resource is committed to an incident. This time starts when the unit is alerted of the service request (dispatch time) until the apparatus can accept another service request (unit clear time). The chart below shows the difference in committed time by call class.

Overall, resources are allocated for 30 minutes, 13 seconds, 90% of the time. Due to the comparative number of critical tasks required, it makes sense that fire incidents take longer to address than EMS incidents. Other call classes include a broad range of incident types and may involve more effort to mitigate. Other classes include incident types such as hazardous materials situations, which are often time-consuming.

The next figures show committed time performance by types of calls and hour of the day.



**Figure 168: Time Committed to an Incident by Hour of the Day**

Committed times are longer in the early morning, with a notable spike between 3 and 4 AM. Resource allocation (committed time) shows less variability during the day and early evening hours.

### CARE Team Discussion

In late 2021, AFD implemented a program with the following objectives:

- Provide alternatives for the Alameda Police Department (APD)
- Allow APD to increase officer availability for other calls for service.
- Foster positive outcomes for community members in need of mental health services (triage–assess–navigate)
- Reduce the need for emergency services to stabilize mental health or address addiction recovery/stabilization.
- Reduce the use of AFD ambulances for 5150 calls.
- Reduce impacts on local hospitals and psychiatric facilities by reducing transportation of clients to these facilities.
- Provide services to community members who have historically not had access to benefits and who can assist with assistance systems navigation.

Triton was provided with a limited data set, with only the incidents identified as ACO3 by AFD. ACO3 is the CAD unit designator for the CARE team. Compared to the CAD data, the provided ACO3 data revealed how some of the abovementioned objectives are being met.

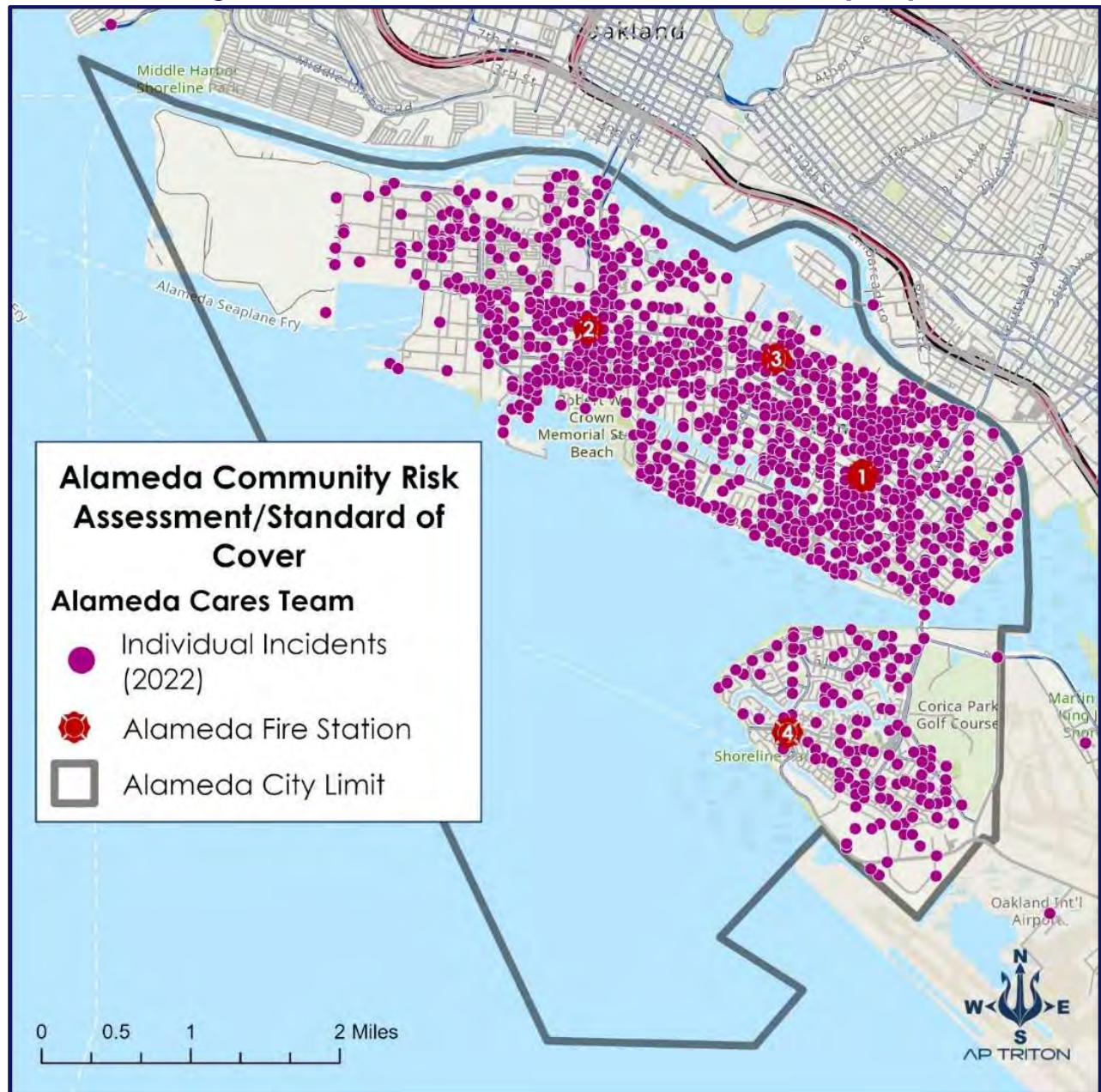
The data provided did not allow analysis of all the listed objectives. For example, without police response data or hospital outcome data, the program's effectiveness on these agencies is unclear. However, the data did provide enough information to evaluate the need for emergency services in mental health and the reduction of ambulance usage for mental health incidents. The following is an examination of these two goals.



**Reduce the need for emergency services to stabilize mental health or address addiction recovery/stabilization.**

There is an inherent difficulty in proving the effectiveness of a program based on prevention and reduction of potential needs. However, a brief examination of where CARE Team activity occurs sheds light on which stations would have been impacted by these service requests. The following figure shows the location of CARE incidents in 2022.

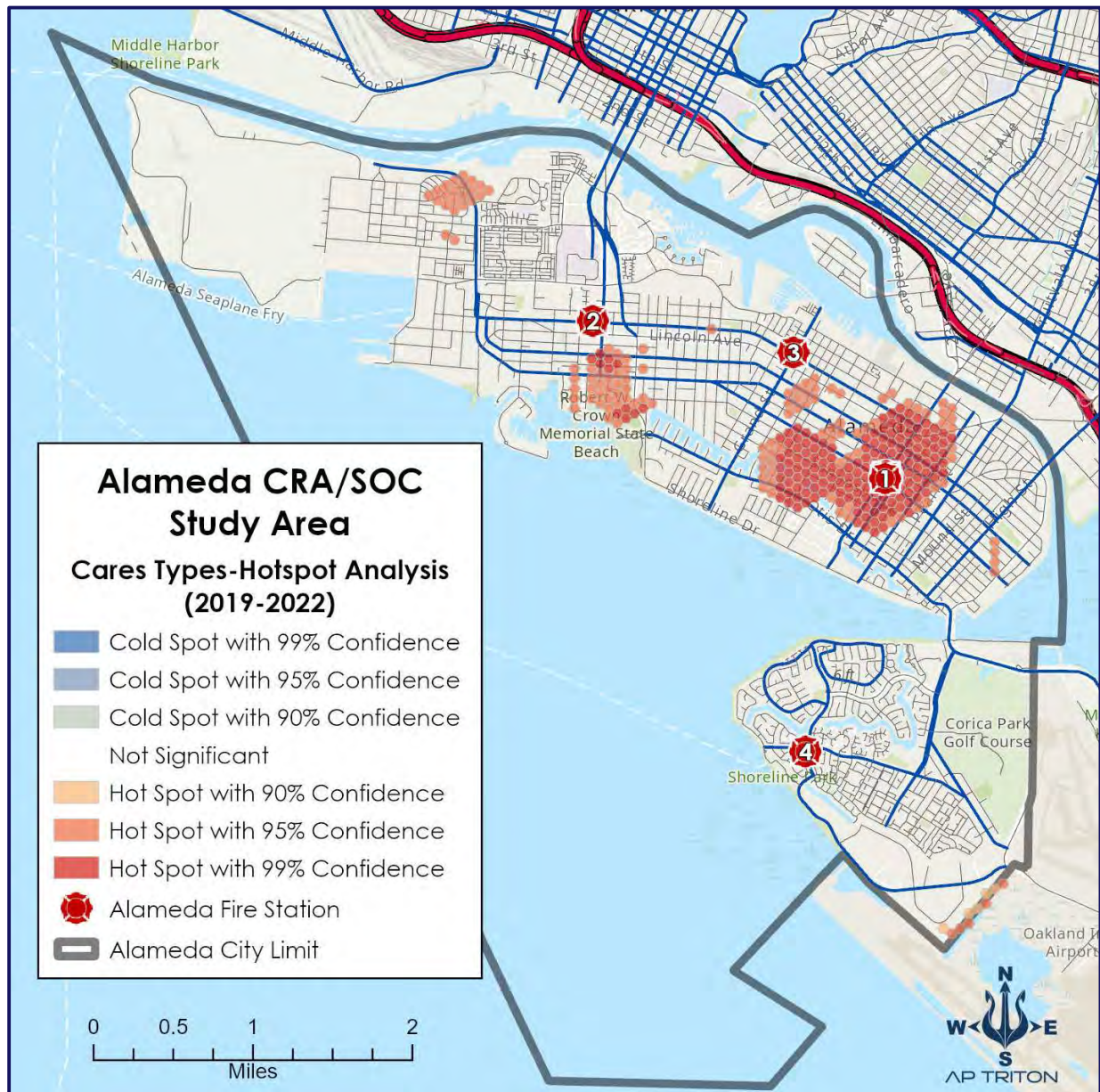
**Figure 169: Alameda CARE Team Individual Incidents (2022)**





While not as helpful as a density study, the preceding figure displays the uniformity of the incidents throughout the city. When analyzing the incident hot spots for the AC03-type calls, there are two discernable hot spots. The area around Station 1, and to a lesser degree, the area south of Station 2. Another hotspot is north of the training facility. The following figure shows the greatest concentration of CARE incident types and the potential hot spots associated with that concentration.

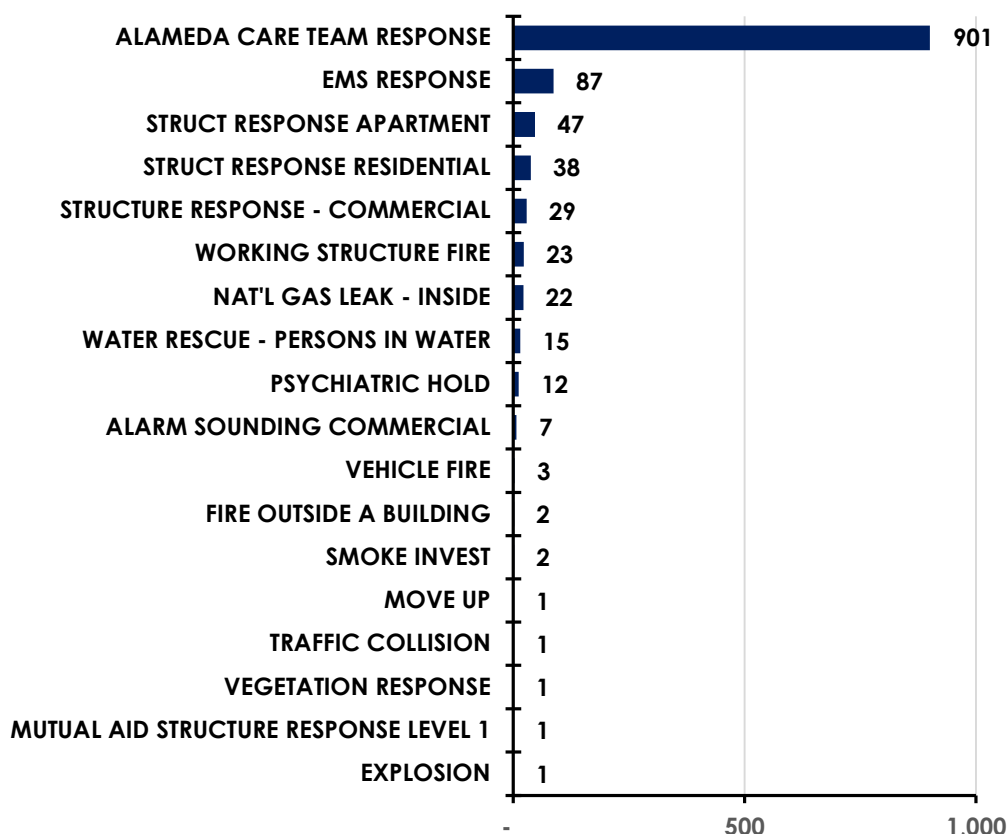
**Figure 170: Alameda CARE Team Incident Density (2022)**



The primary mission of the AC03 unit is to provide specialized mental health services. However, the CARE Team unit responds to many different incident types. Reasons for this can vary. Emergency response does not always allow for the nature of the incident to be known at the time of dispatch. In addition, the CARE team comprises firefighters who will respond and act on other incident types within their scope of training and equipment as situations demand. From December 2021 through December 2022, the AC03 unit responded 1,238 times, 1,193 times in 2022.

The following figure shows the incidents the unit responded to in 2022 by call type.

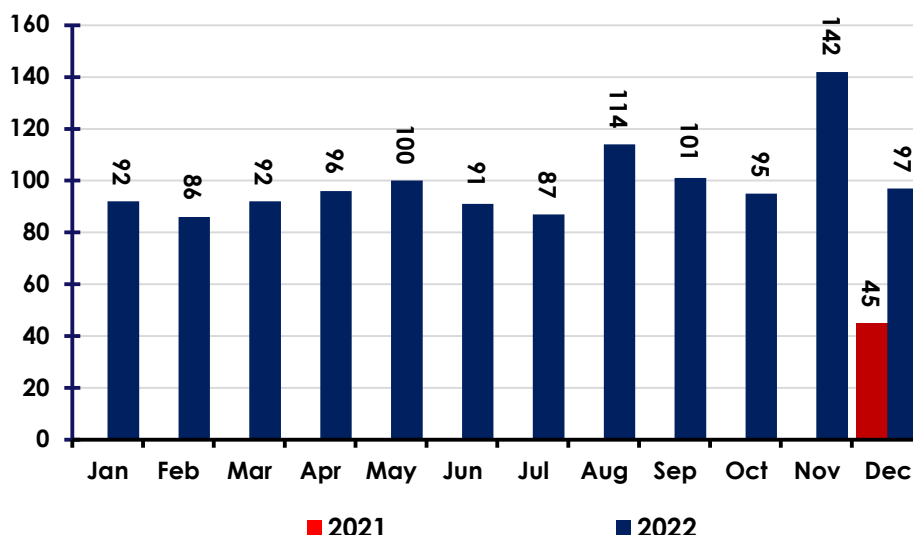
**Figure 171: Alameda CARE Team Unit Responses (2022)**



The CARE Team primarily responds to the types of incidents for which the program was designed. Still, it also goes to other incident types. It is difficult to determine the program's effectiveness based on 13 months of data. However, the CARE Team is fulfilling some of the necessary response requirements.

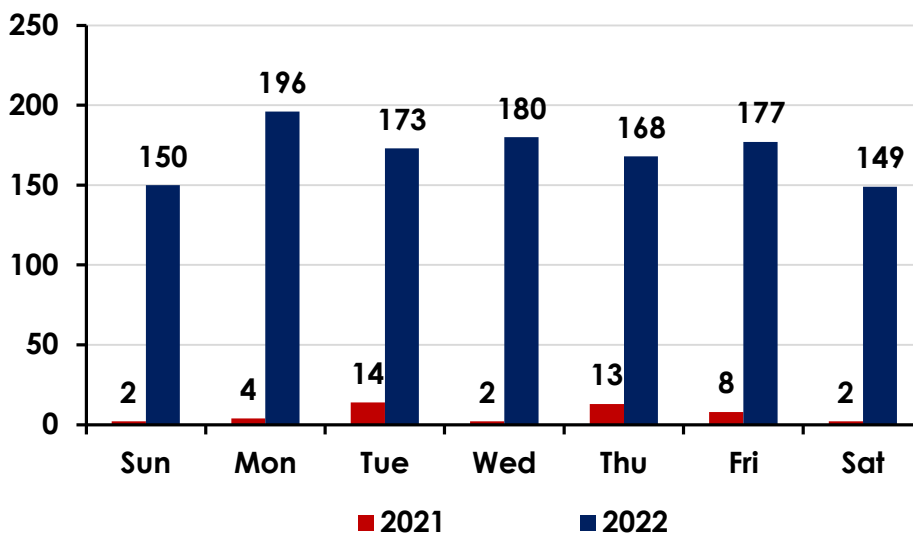
There were 13 months of data to examine. However, it appears that the first month, December 2021, was the slowest month in the data. The following figure shows that the CARE Team program took full effect in 2022, with the most significant incident volume in November 2022.

**Figure 172: Alameda CARE Team Monthly Incident Counts (2021–2022)**

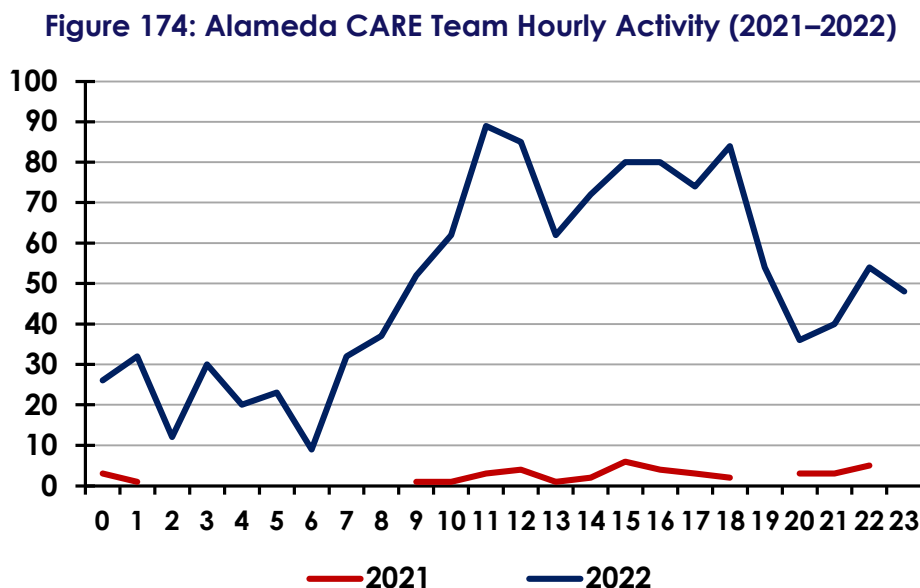


During the week, there is an appreciable increase during the workweek (Mon – Fri). This is slightly counterintuitive, as one might expect weekend activity to be more significant.

**Figure 173: Alameda CARE Team Weekday Incident Counts (2021–2022)**



The hourly activity seems to mirror the weekly results of patterning after workday periods. The peak is at 6 PM when many are either commuting home or preparing to have a meal. The following figure shows the CARE team count of incidents by hour.



**Reduce the use of AFD ambulances for 5150 calls.**

Although this program has been in effect for a short period, some interesting trends and many successes are reported in the City Council presentation. However, there is too little data to declare victory in meeting this objective. Still, the CARE Team is making an impact.



The following figure shows AFD's response activity broken out by zone. The zone was provided by AFD and appeared to be equivalent to a station's first due area.

**Figure 175: Alameda Response Activity by District & Unit (2019–2022)**

<b>Zone/Unit</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Totals</b>
<b>ALA01</b>	<b>2,648</b>	<b>2,180</b>	<b>2,362</b>	<b>3,286</b>	<b>10,476</b>
AC03*			12	483	<b>495</b>
M01	1,842	1,453	1,164	1,903	<b>6,362</b>
M02	453	344	305	283	<b>1,385</b>
M03	4	140	621	309	<b>1,074</b>
M04	349	243	260	308	<b>1,160</b>
<b>ALA02</b>	<b>2,145</b>	<b>1,877</b>	<b>1,996</b>	<b>2,672</b>	<b>8,690</b>
AC03			11	329	<b>340</b>
M01	432	295	145	344	<b>1,216</b>
M02	1,496	1,414	1,378	1,623	<b>5,911</b>
M03		33	348	203	<b>584</b>
M04	217	135	114	173	<b>639</b>
<b>ALA03</b>	<b>1,017</b>	<b>1,006</b>	<b>940</b>	<b>1,309</b>	<b>4,272</b>
AC03			16	171	<b>187</b>
M01	465	485	235	424	<b>1,609</b>
M02	447	401	202	279	<b>1,329</b>
M03	1	52	431	351	<b>835</b>
M04	104	68	56	84	<b>312</b>
<b>ALA04</b>	<b>655</b>	<b>729</b>	<b>755</b>	<b>898</b>	<b>3,037</b>
AC03			2	95	<b>97</b>
M01	75	96	70	85	<b>326</b>
M02	37	33	36	33	<b>139</b>
M03		79	44	20	<b>143</b>
M04	543	521	603	665	<b>2,332</b>
<b>ALA05</b>	<b>267</b>	<b>324</b>	<b>441</b>	<b>560</b>	<b>1,592</b>
AC03			4	103	<b>107</b>
M01	43	46	34	59	<b>182</b>
M02	200	251	308	327	<b>1,086</b>
M03		3	57	41	<b>101</b>
M04	24	24	38	30	<b>116</b>
<b>TOTALS:</b>	<b>6,732</b>	<b>6,116</b>	<b>6,494</b>	<b>8,725</b>	<b>28,067</b>

When only Psychiatric Hold responses are filtered, the impact of AC03 on the AFD Medic units in 2022 becomes immediately apparent. It is too early to definitively find that this program's objective is met. However, the statistical significance of the reduction in ambulance use in these types of responses makes a strong case that this objective is worthy of further study.

**Figure 176: Alameda Psychiatric—5150 Responses by District (2019–2022)**

Zone/Unit	2019	2020	2021	2022	Totals
<b>ALA01</b>	<b>71</b>	<b>91</b>	<b>75</b>	<b>12</b>	<b>249</b>
M01	55	70	44	8	<b>177</b>
M02	14	13	5	2	<b>34</b>
M03		3	20	2	<b>25</b>
M04	2	5	6		<b>13</b>
<b>ALA02</b>	<b>54</b>	<b>56</b>	<b>51</b>	<b>4</b>	<b>165</b>
M01	9	15	2	1	<b>27</b>
M02	43	37	35	2	<b>117</b>
M03			12	1	<b>13</b>
M04	2	4	2		<b>8</b>
<b>ALA03</b>	<b>23</b>	<b>19</b>	<b>39</b>		<b>81</b>
M01	12	10	6		<b>28</b>
M02	11	9	10		<b>30</b>
M03			22		<b>22</b>
M04			1		<b>1</b>
<b>ALA04</b>	<b>5</b>	<b>20</b>	<b>21</b>		<b>46</b>
M01	2	1	5		<b>8</b>
M02			1		<b>1</b>
M03		2	1		<b>3</b>
M04	3	17	14		<b>34</b>
<b>ALA05</b>	<b>2</b>	<b>10</b>	<b>23</b>	<b>4</b>	<b>39</b>
M01		1		1	<b>2</b>
M02	2	9	15	2	<b>28</b>
M03			5	1	<b>6</b>
M04			3		<b>3</b>
<b>Totals:</b>	<b>155</b>	<b>196</b>	<b>209</b>	<b>20</b>	<b>580</b>

In 2023, the Alameda City Council was briefed on this program. Notable findings reported by AFD and Alameda Family Services (AFS) were:

- CARE 621 documented client field engagements
- 192 AFS on-call consultations initiated.
- 355 clients were provided case management by AFS (total referrals 499)
- Two AFD members completed the PRO-ACT de-escalation train-the-trainer course-initiated department-wide training module.
- ALL AFD Paramedics have received CARE Team training.
- The CARE Team was staffed on all shifts with members who volunteered.
- The revised CARE Team Policy is in the review process.
- MediView data platform online.
- CARE Team Pilot 12-month report to City Council on 2/21/2023.

This program is beneficial and should be continued or expanded as the budget allows. AFD could become an example for other agencies to emulate.

### **Population Growth & Service Demand Projections**

According to the United States Census Bureau, the year 2030 will mark a turning point in the United States.

*"Beginning that year, all baby boomers will be older than 65. This will expand the size of the older population so that one in every five Americans is projected to be retirement age (*

Figure 177). Later that decade, by 2034, we project that older adults will outnumber children for the first time in U.S. history. The year 2030 marks another demographic first for the United States. Beginning that year, because of population aging, immigration is projected to overtake natural increase (the excess of births over deaths) as the Country's primary driver of population growth. As the population ages, the number of deaths is projected to rise substantially, slowing the Country's natural development."<sup>59</sup>

**Figure 177: Population Data Source Comparison**

<b>Year</b>	<b>American Community Survey</b>	<b>California Finance Department</b>	<b>Data Source % Difference</b>
2010	73,812	74,812	0.0%
2011	74,770	74,477	-0.4%
2012	74,023	75,482	1.9%
2013	74,818	76,878	2.7%
2014	75,763	77,500	2.2%
2015	76,733	78,381	2.1%
2016	77,409	80,386	3.7%
2017	78,246	80,947	3.3%
2018	78,462	81,195	3.4%
2019	78,522	81,457	3.6%
<b>2020</b>	<b>79,827</b>	<b>81,135</b>	<b>1.6%</b>
<b>2021</b>	<b>76,362</b>	<b>78,262</b>	<b>2.4%</b>
2022	78,320	77,784	-0.7%

Historically, as people in a community have aged, they have placed a higher demand on medical services. Therefore, as the population in the United States grows older, the need for emergency services and the demand for alternative methods of treating people will likely rise.

### **Alameda Population Growth**

When developing a population forecast, finding reliable and authoritative information is essential. This section will rely on the United States Census Bureau, the State of California, and information from the City of Alameda. The California Department of Finance (CDF) estimates the current population at 77,784, with a population density of 7,491 persons per square mile. This population level makes Alameda the 116th largest city in California.

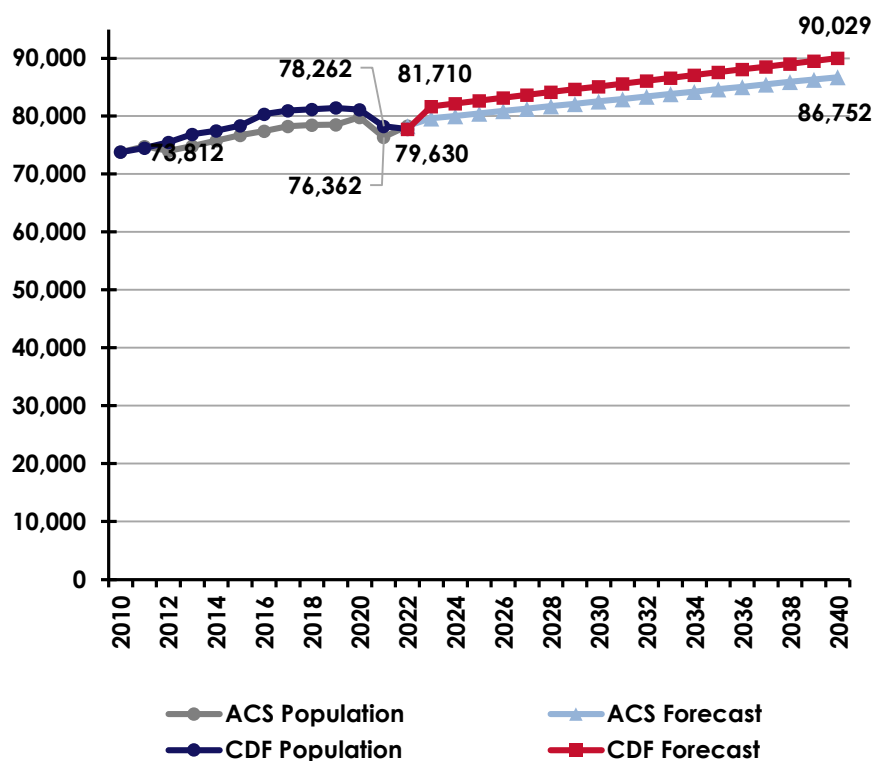
The Census Bureau conducts a physical count every 10 years, known as the decennial census. In Alameda, the 2020 U.S. decennial census listed the population as 78,280. Each intervening year requires the Census Bureau to estimate population changes using the American Community Survey (ACS), which is less accurate than the decennial census.



In addition, CDF must collect housing unit change data from every city and county in California and produce its own population estimates each year. This data forms the basis for the housing estimates used by CDF to create annual population estimates for cities and counties. Unfortunately, CDF showed the 2020 population as 81,135, which does not agree with the U.S. decennial census. There are also differences between the ACS and annual estimates by CDF. ACS estimated the population to be 76,362 in 2021. CDF lists the 2021 population as higher, at 78,262.

Despite these population estimate differences, the future population can be projected using a linear progression based on this annual data. Alameda's population declined during the pandemic (-3.5%). CDF population estimates for 2022 show an increase to 77,784, representing a much smaller year-to-year decline (-0.6%). The 2020 Decennial Census shows that the yearly growth rate is 3.1% in 2022. This rate translates to a 3,972-person growth in population over the 2010–2022 period.

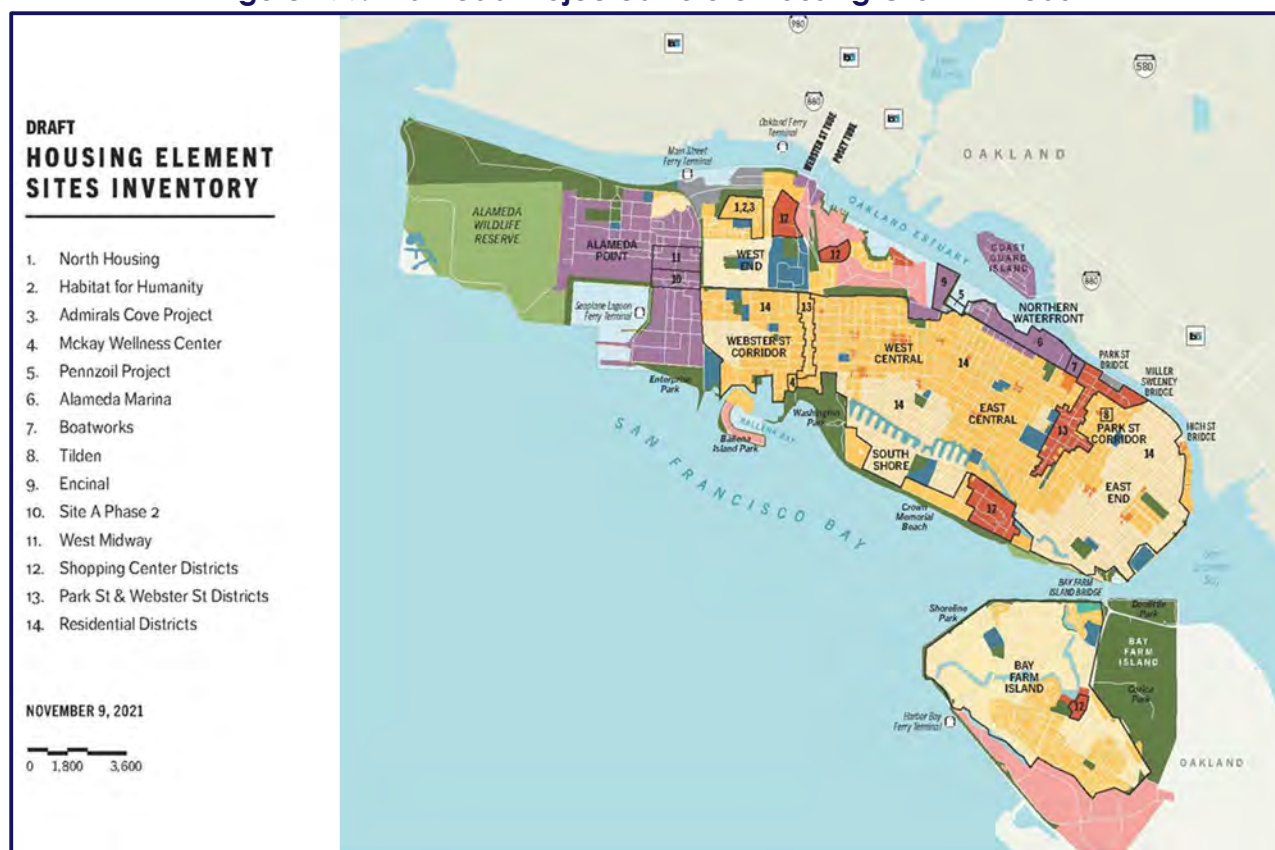
This growth rate has been steady over the previous 12 years, and the most significant increase in population over the last couple of decades came in 2010, with a population growth of 4,468 people or 5.8%. The significant anomaly detected is the population drop of -2,873 from 2020–2021 (per CDF). The ACS shows more of a decline (-3,465); however, these are all estimates based on limited surveying of the actual population. The following figure shows the projected population growth in Alameda through 2040.

**Figure 178: Population Forecasted Increases Until 2040 (Comparative Sources)**

### Alameda Residential Growth Projections

Significant development is planned for the decommissioned naval base and other areas of Alameda. The city planning department provided projections for residential unit expansion within the city over the next eight years. It anticipates a total of 5,353 new housing units being constructed. These areas and the percentage impact of each are listed here, and the growth map provided by the city follows:<sup>60</sup>

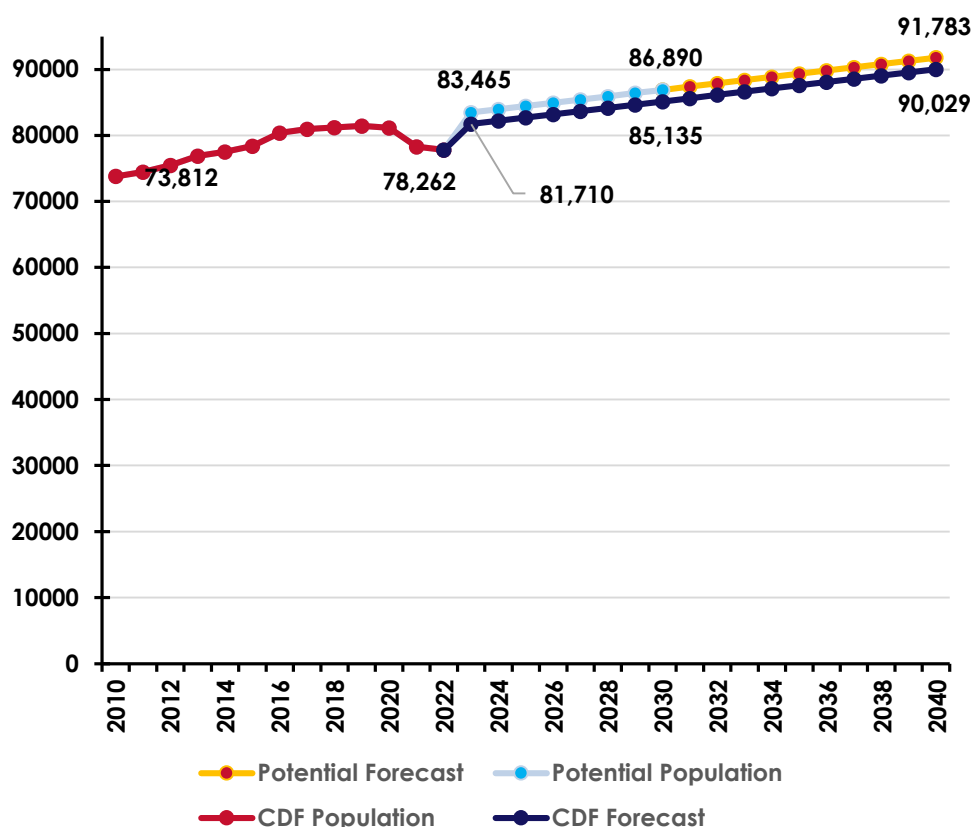
- Alameda Point: 24%
- Other Vacant Federal Land: 15% (North Housing, Habitat, Carmel, McKay)
- Northern Waterfront: 24% (Encinal, Boatworks, Alameda Marina, vacant sites.)
- Shopping Centers: 19%
- Park and Webster: 8%

**Figure 179: Alameda Projected Future Housing Growth Areas\***

\* Map Reproduced from Figure E-1, City of Alameda 2023 – 2031 Housing Element, November 15, 2022

The impacts of this new development can be viewed as an increase in the CDF population estimates to produce an anticipated population level with these additional housing units. Using 5,353 as the basis and dividing by eight would add 669 housing units annually. Using the US Census estimate of 2.53 persons per household, we would anticipate an additional 1,693 persons annually on top of the forecast for the years 2023–2030.

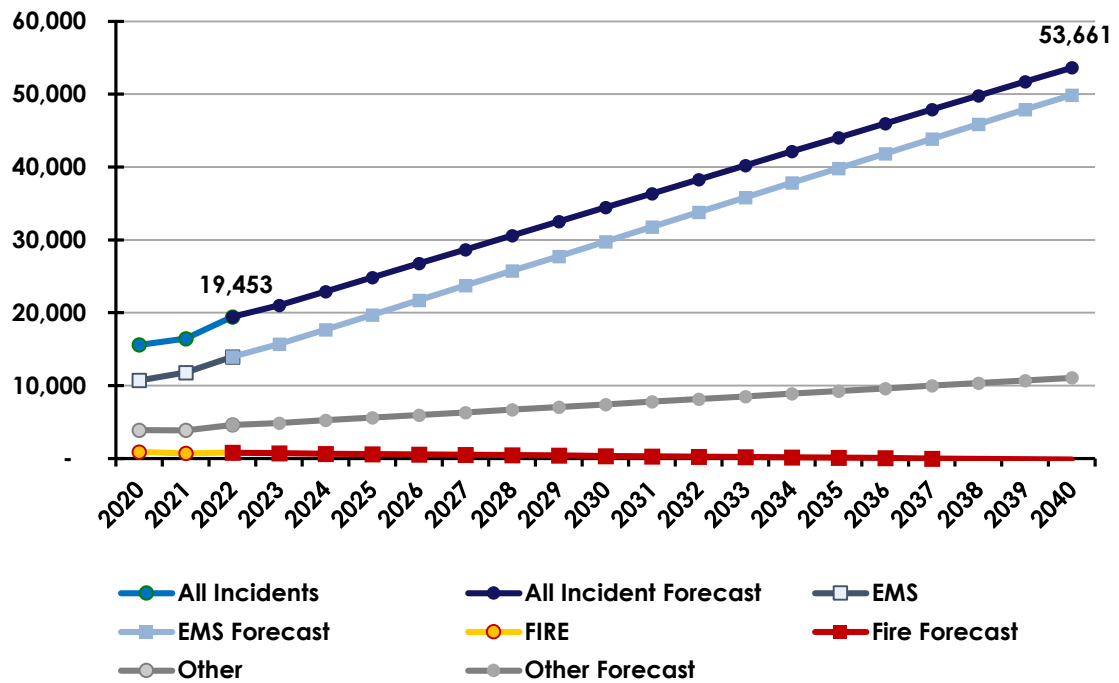
The following chart compares straight-line CDF population growth forecasts with the potential of 1,693 additional people for eight years per year. The difference is not as significant in 2040 because of the impact of population decreases in other years and areas. The following figure shows the population projections with the CDF numbers adjusted for this new development.

**Figure 180: Alameda Population Projections with New Housing Units**

### Alameda Projected Service Demand

Future requests for service can be affected by many things. Typically, population aging and population growth will increase service demand. Throughout the country, additional aspects drastically affect call volumes, including the unhoused and the rise in fentanyl-related overdoses. Regardless of the exact numbers, the fire department has seen an increase in homeless-related calls, including fires, overdoses, and psychiatric emergencies. As these calls increase in the next few years, all emergency services must adapt to a new service model to continue serving the community at the highest level.

Future requests for service are projections based on information gathered from demographic calculations and estimated growth rates. The following figure shows the total projected service illustrating, by call class, anticipated call volumes through 2040. The potential exists for Alameda to have over fifty thousand incidents by 2040. The figure also highlights the effects of the COVID-19 pandemic in 2020. There is a slight reduction in service demand during this period.

**Figure 181: Incident Volume Forecast by Class (2018–2040)**

The Fire call-type shows a steady decrease until 2040. This is likely due to the impact on the linear projection of the drop in incidents in 2020–2021 for these types.



## Critical Task Analysis

Critical tasks must be accomplished during an emergency to bring an incident to a successful conclusion. For example, functions that must be performed at a fire can be broken down 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 the search, rescue, and evacuation of victims. The fire flow component involves delivering sufficient water to extinguish the fire and create an environment within the building that allows entry by firefighters.

The number and types of tasks needing simultaneous action will dictate the minimum number of firefighters required to combat various fires. Without adequate personnel to perform concurrent action, the commanding officer must prioritize the tasks and complete some in chronological order rather than concurrently. These tasks include the following:

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

Critical task analyses also apply to non-fire-type emergencies, including medical, technical rescue, and hazardous materials. Numerous simultaneous tasks must be completed to control an emergency effectively. Therefore, AFD's ability to quickly muster the needed numbers of trained personnel to make a difference is critical to successful incident outcomes.

Throughout this document, risk levels for each response type have been identified. Generally, they are broken into low, moderate, high, and maximum risks. These apply across the six department programs of fire response, EMS, technical rescue, hazardous materials response, and Wildland/WUI firefighting efforts. Appendix B of this report shows the program's breakdown of each risk classification.

AFD completed a critical tasking overview as part of this study. Each hazard type was identified, and the expected number of personnel was determined based on critical tasking and operational procedures. The following figure summarizes the personnel required by incident type and risk category.

**Figure 182: Staffing Recommendation Base on Risk**

Incident Type	Maximum Risk	High Risk	Moderate Risk	Low Risk
Fire	34	24	17	3
Emergency Medical	24	12	6	2
Technical Rescue	29	21	6	4
Hazardous Materials	30	21	6	3

Establishing resource levels needed for various emergencies is a local decision. Factors influencing local decisions for incident staffing include the type of equipment operated, training levels of responders, operating procedures, geography, traffic, and the nature of buildings and other risks protected.

### Critical Tasking

AFD has developed the following Critical Task Analysis using risk matrices for various incident types. Critical tasks are those activities that must be conducted promptly by firefighters early in emergency incidents. This intervention is essential to control the situation, stop loss, and perform the necessary tasks required for a medical emergency.

AFD is responsible for ensuring those responding companies can perform all described tasks promptly, efficiently, and safely. The following figures are AFD's minimum number of personnel needed by incident type and risk severity by function.

**Figure 183: Fire Response Critical Tasking**

Function	Maximum Risk	High Risk	Moderate Risk	Low Risk
Command/Support	2	2	1	1
Safety	1	1	1	*
Size up (360°)	*	*	*	*
Driver/Engine or Pump Operator	2	2	2	1
Water Supply	2	2		
Standpipe/Sprinkler Control	2	2		
Fire Attack	6	2	2	1
Search & Rescue	3	3	3	
Ventilation/Utilities	2	2	2	
Backup Line	2	2	2	
Rapid Intervention Team	8	4	2	
EMS Unit - ALS	4	2	2	
<b>Total Effective Response Force:</b>	<b>34</b>	<b>24</b>	<b>17</b>	<b>3</b>

\* Temporary Assignment

**Figure 184: Emergency Medical Services Critical Tasking**

Function	Maximum Risk	High Risk	Moderate Risk	Low Risk
Command	2	1	1	*
Safety	1	1	*	*
Documentation			*	*
Family/Bystander Liaison			*	*
Operations	2			
Triage Group	1	2		
Basic Life Support Treatment	5	5	1	1
Advanced Life Support Treatment	5	2	1	1
Extrication/Hazard Mitigation			3	
Evacuation Group	4			
Transport Group	2	1		
Staging	2			
<b>Total Effective Response Force:</b>	<b>24</b>	<b>12</b>	<b>6</b>	<b>2</b>

\* Temporary Assignment

**Figure 185: Technical Rescue Critical Tasking**

Function	Maximum Risk	High Risk	Moderate Risk	Low Risk
Command/Support	2	2	1	1
Safety	1	1	*	*
Size Up (360°)	*	*	*	
Extrication/Hazard Mitigation			3	2
Operations	1	1		
Entry team leader and teams	9	6		
Rescue Support Group	12	8		
Basic Life Support Treatment	2	2	1	1
Advanced Life Support Treatment	1	1	1	
Staging	1			
<b>Total Effective Response Force:</b>	<b>29</b>	<b>21</b>	<b>6</b>	<b>4</b>

\* Temporary Assignment

**Figure 186: Hazmat Critical Tasking**

Function	Maximum Risk	High Risk	Moderate Risk	Low Risk
Command/Support	2	2	1	1
Safety	1	1	*	*
Size Up (360°)	*	*	*	*
Pump Operation/Decon			2	
Hazmat Group Supervisor			1	
Hazard Mitigation			2	2
Operations	1	1		
Entry Team Officer and Team	5	3		
Backup Entry Team	4	2		
Hazmat Support Group	8	6		
Decon Group	4	4		
Medical Group	4	2		
Staging	1			
<b>Total Effective Response Force:</b>	<b>30</b>	<b>21</b>	<b>6</b>	<b>3</b>

\* Temporary Assignment

## Alarm Assignments

The intent of the critical tasking exercise is twofold. The first is to apply the needed personnel to the community's risks and determine if the resources are available to address the risks. Next, a dispatch model must be built that most likely fulfills the tasking requirements for the various levels of risk. However, it is incumbent on the agency and dispatch center to attempt to fill the needed staffing with the initial dispatch. The following lists indicate what the agency reports as their dispatch complement of units and personnel versus their identified staffing requirements for risk levels.

**Figure 187: Fire Alarm Assignments by Risk**

Dispatched Apparatus	AFD Units	AFD Staff	Aid Units	Aid Staff	Staffing
<b>Low Risk (ERF staffing = 3)</b>					
Engine	1	3			3
<b>Totals: Over/(Under) ERF</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Moderate Risk (ERF staffing = 17)</b>					
Engine	3	9			9
Truck	2	6			6
Division Chief	1	1			1
EMS	1	2			2
<b>Totals: Over/(Under) ERF</b>	<b>7</b>	<b>18</b>			<b>+1</b>
<b>High Risk (ERF staffing = 24)</b>					
Engine	4	12			12
Truck	2	6			6
Division Chief	1	1			1
EMS	5	10			10
<b>Totals: Over/(Under) ERF</b>	<b>12</b>	<b>29</b>			<b>+5</b>
<b>Maximum Risk (ERF staffing = 37)</b>					
Engine	4	12	3	12	12
Truck	2	6	1	5	11
Division Chief	1	1	1	1	2
EMS	5	10			
<b>Totals: Over/(Under) ERF</b>	<b>12</b>	<b>29</b>	<b>5</b>	<b>18</b>	<b>+13</b>



**Figure 188: Emergency Medical Assignments by Risk**

Dispatched Apparatus	AFD Units	AFD Staff	Aid Units	Aid Staff	Staffing
<b>Low Risk (ERF staffing = 2)</b>					
EMS Unit	1	2			2
<b>Totals: Over/(Under) ERF</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Moderate Risk (ERF staffing = 9)</b>					
EMS Units	2	4			4
Fire Units	2	6			6
<b>Totals: Over/(Under) ERF</b>	<b>4</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>+1</b>
<b>High Risk (ERF staffing = 12)</b>					
EMS Units	4	8	1	2	10
Fire Units	3	9			9
<b>Totals: Over/(Under) ERF</b>	<b>7</b>	<b>17</b>	<b>1</b>	<b>2</b>	<b>+7</b>
<b>Maximum Risk (ERF staffing = 24)</b>					
EMS Units	4	8	2	4	12
Fire Units	4	12			12
<b>Totals: Over/(Under) ERF</b>	<b>8</b>	<b>20</b>	<b>2</b>	<b>4</b>	<b>0</b>

**Figure 189: Technical Rescue Assignments by Risk**

Dispatched Apparatus	AFD Units	AFD Staff	Aid Units	Aid Staff	Staffing
<b>Low Risk (ERF staffing = 4)</b>					
Fire Units	1	3			3
EMS Units	1	2			2
<b>Totals: Over/(Under) ERF</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>+1</b>
<b>Moderate Risk (ERF staffing = 6)</b>					
Fire Units	2	6			6
EMS Units	1	1			1
<b>Totals: Over/(Under) ERF</b>	<b>3</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>+1</b>
<b>High Risk (ERF staffing = 21)</b>					
Fire Units	3	9	1	4	13
EMS Units	2	4			4
Rescue Units	1	3	1	5	8
<b>Totals: Over/(Under) ERF</b>	<b>6</b>	<b>16</b>	<b>2</b>	<b>9</b>	<b>+4</b>
<b>Maximum Risk (ERF staffing = 29)</b>					
Fire Units	4	12	2	8	20
EMS Units	3	6			6
Rescue Units	1	2	1	5	7
<b>Totals: Over/(Under) ERF</b>	<b>8</b>	<b>20</b>	<b>3</b>	<b>13</b>	<b>+4</b>

**Figure 190: Hazardous Materials Assignments by Risk**

Dispatched Apparatus	AFD Units	AFD Staff	Aid Units	Aid Staff	Staffing
<b>Low Risk (ERF staffing = 3)</b>					
Fire Units	1	3			3
<b>Totals: Over/(Under) ERF</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Moderate Risk (ERF staffing = 6)</b>					
Fire Units	2	6			
EMS Units	1	2			
<b>Totals: Over/(Under) ERF</b>	<b>3</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>+2</b>
<b>High Risk (ERF staffing = 21)</b>					
Fire Units	5	13	1	4	17
EMS Units	2	4			4
<b>Totals: Over/(Under) ERF</b>	<b>7</b>	<b>17</b>	<b>1</b>	<b>4</b>	<b>0</b>
<b>Maximum Risk (ERF staffing = 30)</b>					
Fire Units	6	16	2	8	24
EMS Units	5	10			10
Rescue Units	1	3	1	4	7
<b>Totals: Over/(Under) ERF</b>	<b>12</b>	<b>29</b>	<b>3</b>	<b>12</b>	<b>+11</b>

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## **Section III: Conclusions & Recommendations to Policymakers**

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## Findings & Observations

The findings section is broken into two parts. The general observations summarize what the team felt was important information but did not necessarily require action or prompt the team to develop a recommendation. The findings associated with recommendations are those findings that prompted the team to build a recommendation that was within the scope of this study.

### General Observations:

- 32% of the housing was built before 1939.
- Fire loss in Alameda compares favorably to the national fire loss rates.
- The AFD is rated by the Insurance Services Office as a class 1 fire department, their best rating.
- AFD has a daily minimum staff on the island (stations 1-3) of 24 personnel. This is sufficient to mitigate a moderate risk fire with 7 personnel in reserve if the island is isolated from the mainland.
- The Bay Farm Island area has a limited minimum staff of 5 firefighters. However, Bay Farm Island can access mutual aid regardless of bridge and tunnel access.
- Incident hotspots are centered around fire stations 1, 2, and 3.
- 68% of incidents occur between 8:00 AM and 8:00 PM.
- While the AFD system is busy, none of the engines or trucks reach the cautionary 10% unit-hour-utilization (UHU) level.
- None of AFD's ambulances exceed 13% UHU.
- AFD has a 32% chance of more than one incident co-occurring.
- Call processing time is 1 minute 18 seconds or faster 90 percent of the time.
- Turnout time is 2 minutes 10 seconds or faster 90 percent of the time.
- The first due travel time is 5 minutes 1 second or faster 90 percent of the time.
- The total response time for AFD is 6 minutes and 44 seconds or faster 90 percent of the time.
- It is difficult for AFD to assemble more than 10 people in Alameda Point in under 8 minutes.
- AFD meets the Alameda County Emergency Medical Services response time performances for all 4 priority classes.



- The AFD Care Team is well-received by the public. It appears to have successfully met the system's goals during its first year of operation.
- The population is expected to continue to grow, and new developments in Alameda Point will contribute significantly to that growth. The population may exceed 90 thousand by 2040.
- There is a high risk of earthquakes in the City of Alameda.
- The risks associated with a tsunami likely to be experienced in the City of Alameda are considered low.
- There is a difference between the Federal Emergency Management Agency and the U.S. Geological Survey for the expected tsunami inundation.
- The island of Alameda faces elevated challenges to mutual aid access from other fire agencies and threats posed by the under and overwater roadway network.
- Stations 1 and 4 are adequate in size and shape to serve the department. However, at 55 and 33 years old, respectively, a modernization of the layout and systems would improve the effectiveness of the building and allow it to meet current safety recommendations.
- Limited structural seismic systems were noted for stations 1 and 4.
- Other post-employment benefits costs represent a significant cost to the City of Alameda. They could challenge the financial security of the city and the fire department.
- AFD lacks a well-defined public education program but does provide some training on an as-identified basis.

**Findings Associated with Recommendations:**

- AFD does not have a list of all commercial occupancies in the city.
- AFD has no defined schedule for inspecting all commercial occupancies or businesses.
- The records management system is inadequate for a fire prevention bureau to track occupancies, inspections, and permits.
- The records management system's fire loss data may be inaccurate, with a potential overstatement of fire loss for specific fire incidents in 2022.
- The Fire Prevention Bureau needs to develop a uniform procedure for conducting plan reviews to ensure consistency between inspectors.

- The hydrant network in Alameda Point is out of the city network and may need updating and renovation.
- Service demand and system analysis for 2020 and 2021 may be driven by the COVID-19 pandemic and associated societal measures taken to prevent its spread. The research indicated a significant change in the utilization of emergency services. It is supposed that many people were reluctant to call for medical aid, leave their homes, or travel during the pandemic. As a result, incident volumes for these years may not be what agencies might expect in less restrictive times. For this reason, further evaluation is warranted as non-pandemic data becomes available.
- The incident volume indicated a significant dip during 2020, with a rebound in 2021 to levels more like those of the pre-COVID years. However, the number of responses may change significantly as the community recovers.
- The AFD has established EMS response goals but has not adopted any performance expectations besides EMS performance expectations.
- Station 2 struggles to meet the needs of AFD. Overcrowding, old infrastructure, and inadequate apparatus access are among the priority concerns that should be addressed.
- The parking at Station 3 is inadequate for sharing with the Emergency Operations Center (EOC). Parking spaces are already taken up during normal operations, and in the event of an EOC activation, emergency managers and support staff do not have a dedicated space to leave their vehicles.
- The training center building is inadequate for office or training space and should undergo a business safety inspection by the fire marshal's office to ensure all required systems are operational and safe.
- The Alameda Point area lacks coverage as indicated by the ISO 1.5 Mile Engine distance and 4-minute travel model.
- Opportunities may exist to improve EMS transport fee revenue.
- While there is a capital maintenance program and apparatus replacement policy, the City of Alameda does not appear to have a comprehensive capital improvement or replacement plan.
- There does not appear to be a specialized equipment or capital replacement fund.
- Per city policy 48, appendix A, Medic 2 and Medic 4 have reached the end of their operational life and should be moved to reserve status. In addition, reserve engines

502 and 504 and reserve truck 504 have also reached the end of their life and need to be replaced.

- Per city policy 48, appendix A, Engine 1 and Engine 4 are approaching the end of their front-line life.

## Recommendations to Policymakers

Recommendations are provided for policymakers as a general guide based on experience and industry best practices. These are guides only for leadership to review as potential areas of improvement for systems and services. The grouping utilized here is (A) policy and operational changes and (B) capital and long-term projects. The higher the priority AP Triton places on the recommendation, the lower the recommendation number.

Cost estimates are a general guide based on generic information for the western regions. Apparatus, equipment, and facilities pricing for the fire service have recently increased more rapidly than the inflation index. Prices are set based on system requirements that may be out of the fire department's control, and there is little manufacturing competition. This limits this report to generalized costing methods utilizing ranges, and it is intended to be illustrative and not an exact figure or a price bid. Agencies will need to investigate options available during purchase or plan consideration.

### (A) Policy and Operational Changes:

#### **RECOMMENDATION A-1: CONDUCT AN IN-DEPTH STUDY OF THE AMBULANCE TRANSPORT FEE SCHEDULE AND UPDATE AS NEEDED.**

**Description:** A cursory review of the AFD fee schedule for EMS transport suggests that there may be opportunities to enhance billing. The City of Alameda has signed a contract with the Alameda County EMS Agency, which precludes the city from charging user fees above those approved by the county's Board of Supervisors.<sup>61</sup> However, as a .201 city, it may be able to exercise its rights and be exempt from the county ambulance fee ceiling in subsequent contracts, creating a chance to recover additional costs. Studying expenses associated with transports against current billing practices may allow for recovering more of the costs of EMS transports.

**Outcomes:** Ensure appropriate billing for EMS transports in the AFD system.

**Estimated Financial Cost/Savings:** Costs will include staff time.

#### **RECOMMENDATION A-2: IDENTIFY ALL COMMERCIAL PROPERTIES AND TARGET HAZARDS**

**Description:** Identification of all commercial properties is necessary to determine if there are additional risks in the community. This process will also identify target hazards, locations with a high loss of life, or a negative impact on the community if a fire or other incident occurs.

**Outcomes:** Identifying these properties will assist the fire prevention bureau in implementing a schedule to inspect all commercial properties and locate unidentified target hazards in the city. Identifying these properties allows AFD to develop proper planning (strategy and tactics) for events such as a fire or active shooter.

**Estimated Financial Cost/Savings:** The costs are staff time to identify the commercial properties and target hazards.

#### **RECOMMENDATION A-3: MANDATE TRAINING AND POLICY FOR FIRE LOSS CALCULATIONS.**

**Description:** During the evaluation of this report, it became apparent that no consistent policy or training was being utilized for those completing incident reports to estimate property or contents value or determine property or contents loss during a fire. This skill requires training and a general guideline updated annually based on current cost estimations. This information is a part of the official record reported to the State of California and eventually to the federal government's National Incident Reporting System. This necessitates the information to be as accurate and appropriate as possible.

**Outcomes:** Consistent and defensible loss versus save valuation during a fire event.

**Estimated Financial Cost/Savings:** Costs will depend on the training and policy deployment process. However, it should be limited to staff time for research, development, and distribution of the information. It will also include staff time for overview and quality assurance.

#### **RECOMMENDATION A-4: FORMALLY ADOPT EMERGENCY RESPONSE GOALS.**

**Description:** Adopting key performance metrics helps department leadership understand how crews and systems perform. In addition, city leadership can use those same performance metrics to determine and advertise the level of service the community can expect and what it takes to maintain or improve the service. The adopted contract with the Alameda County EMS Agency defines the emergency medical system performance. However, other incident types should also be identified, including time performance, needed equipment, personnel, and capabilities.

**Outcomes:** Adopt key performance metrics using this CRA/SOC to establish standard performance levels.

**Estimated Financial Cost/Savings:** See this report's "Implementation Plan" section. Costs will vary depending on the approach adopted. At a minimum, staff time will be required. Additional costs may include training, increased staff levels, compensation, equipment, or fees paid to outside vendors.

**RECOMMENDATION A-5: REVIEW INCIDENT DATA ANNUALLY.**

**Description:** The potentially distorted data during the COVID-19 pandemic years, trends, and predicted demand may be flawed. It is essential to understand the full effect of the pandemic on service delivery, and that will only be possible with continued analysis. Evaluating demand, service types, and other information annually until the pandemic-specific effects are fully accounted for and understood is critical. Until that effect is fully understood, the analytics created using the pandemic-era data have the potential to be misleading.

**Outcomes:** Understanding the pandemic era's effect on and creating appropriate adjustments to service delivery and performance analytics.

**Estimated Financial Cost/Savings:** Costs will vary depending on the approach adopted. At a minimum, staff time will be required. Additional costs may include training, increased staff levels, compensation, equipment, or fees paid to outside vendors.

**RECOMMENDATION A-6: DEVELOP A SCHEDULE TO INSPECT ALL COMMERCIAL OCCUPANCIES**

**Description:** There is currently no defined schedule to inspect all commercial occupancies in Alameda other than what is required by the California Office of State Fire Marshal. Without a schedule, occupancies may have fire code violations that pose a risk to their occupants.

**Outcomes:** Establishing an inspection schedule based on risks will enhance the building's occupants' safety and response of AFD personnel, reducing community fire and life safety risks.

**Estimated Financial Cost/Savings:** The costs are staff time to identify, schedule, and inspect all commercial properties in Alameda.

**RECOMMENDATION A-7: TRANSITION TO A FIRE-BASED RECORD MANAGEMENT SYSTEM FOR THE FIRE PREVENTION BUREAU**

**Description:** The current records management system is an older software used by the building inspection department called Accela. The software is not designed for a fire department. It does not collect information that can be used for data analysis or pre-incident planning.

**Outcomes:** Utilizing new fire-centric software will allow the fire prevention bureau to integrate the information collected by the fire inspectors with pre-incident planning software. The new software can be used to develop reports on common violations and develop public education programs to reduce these risks.



**Estimated Financial Cost/Savings:** The costs are staff time to research other software options, which can determine the costs to implement a new inspection tracking program. Additional costs may be incurred by purchasing stand-alone software or modules within the fire-based records management system currently utilized.

**RECOMMENDATION A-8: CREATE AND FUND A FACILITY, APPARATUS, AND EQUIPMENT COMPREHENSIVE IMPROVEMENT AND REPLACEMENT PLAN.**

**Description:** A fundamental truth of operating a fire service is the elevated costs of gear and systems. Fire service equipment and facilities are specialized and much more costly to maintain and replace than typical buildings and systems. The city has some base documents and plans that are a step in the right direction. Policy 48 helps define when vehicles and apparatus need to be replaced. The capital improvement plan (CIP) documents the systems in each building that need repair or replacement. However, the CIP does not appear to assess whether the current building meets the organization's needs. This assessment needs to be considered when valuing repair over replacement cost. In addition, it was unclear whether other expensive capital expenditures were being planned.

Long-term capital replacement plans should include specialty equipment like self-contained breathing apparatus (SCBA), radios, personal protective gear, and medical equipment such as heart monitors and gurneys. It is estimated that AFD requires approximately 40 SCBAs with at least one extra bottle each, which currently costs an average of \$7,000. This means a one-time replacement cost of roughly \$280,000 to change and update this equipment, which NFPA 1851 requires to be replaced every 10 years.<sup>62</sup>

A communications system with a base radio for each station and apparatus and a portable for each firefighter position could mean an investment of hundreds of thousands of dollars when a system needs to be upgraded or changed. Stryker stretchers are currently priced between \$5,000 and \$15,000<sup>63</sup>, while Zoll X Series monitors cost between \$13,000 and \$19,800.<sup>64</sup>

Each system and specialty item can be planned for, and an estimated annual cost can be determined. Creating a comprehensive capital replacement and repair plan for all of these systems can assist leadership in understanding what needs to be invested in maintaining a fire department in a ready state. Annualizing and saving money by creating a capital fund that captures expected expenditures can reduce fluctuation.

**Outcomes:** Creating and funding a plan that identifies and annualizes system costs to ensure replacement and repair are not deferred or are not an unexpected burden to the city general fund budget.

**Estimated Financial Cost/Savings:** Costs include staff time across multiple departments.

### **(B) Capital and Long-term Projects:**

#### **RECOMMENDATION B-1: FOLLOW CITY POLICY REGARDING NEW AND RESERVE APPARATUS.**

**Description:** Medic 2 and Medic 4 have reached the end of their front-line lifespan. All of the reserve ambulances have reached the end of their lifespan. Engine 1 and Engine 4 are approaching the end of their front-line life span. Reserve engines 502 and 504 have reached the end of their useful lifespan.

Due to the increased delivery time customers are witnessing for new fire apparatus, the city should order two new engines and two new ambulances as soon as practicable. The front-line equipment being replaced can replace the out-of-date reserve apparatus.

Consideration should also be given to ordering a replacement for truck 1 soon to prepare for its removal from the front line in 2027, as most cases of apparatus replacement lead times have reached several years.

**Outcomes:** Keep apparatus serviceable and reduce maintenance costs by replacing apparatus following city policy 48, appendix A.

**Estimated Financial Cost/Savings:** In 2023, a new ambulance cost was between \$120 and \$325 thousand without equipment<sup>65</sup>. Fire engine and truck prices have climbed drastically in the last several years. Depending on manufacture, customization, function, and options, they can range from hundreds of thousands of dollars to millions. An approved bidding process will have a more exact figure based on the department's and community's needs.

#### **RECOMMENDATION B-2: REMOVE THE CURRENT TRAINING CENTER AND ADD A STATION/TRAINING CENTER BUILDING ON THE STATION 5 SITE.**

**Description:** During the evaluation, it was identified that the Alameda Point area will see reduced service based on its physical location. In addition, the current training center is decrepit and mostly unacceptable under modern fire service facility needs. What appears to work well is the imaginative use of shipping containers to create a burn prop for the firefighters. As the training center requires investment and overhaul and an identifiable need for an operational presence in the area, it could make financial sense to do both projects concurrently at one location. This would include a new training facility with an attached or adjacent fire station.

**Outcomes:** Improve training opportunities for the fire department and reduce service delivery time for the Alameda Point area.

**Estimated Financial Cost/Savings:** Costs will depend on the facility's size, function, and complexity. It will also be contingent on the engineering or mitigation requirements encountered when demolishing or building on the former Navy base. Only a complete design and bidding process will define the actual costs.

However, it may be helpful to contextualize the wide range of potential costs by examining recent California fire buildings. For example, in 2021 the City of Fontana in San Bernardino County spent \$8.2 million on a new 13,247-square-foot fire station<sup>66</sup>. In comparison, Newport Beach in Orange County spent \$9.1 million on an 11,649-square-foot fire station just a year later.<sup>67</sup> Additional expenses for a training center may mirror the 2021 Fresno Fire Department's \$25 million budget for a new training center.<sup>68</sup> The City of Hayward in Alameda County initially estimated a combination fire station training center to cost \$57 million. However, that estimate was updated to \$76 million in 2019.<sup>69</sup>

### **RECOMMENDATION B-3: CONTINUE TO IMPROVE AND UPDATE THE WATER SYSTEM ON THE FORMER NAVAL STATION (ALAMEDA POINT).**

**Description:** The City of Alameda has previously identified the improvement in incorporating all water distribution within the retired naval base. This improvement needs to be continued to ensure appropriate fire flow for the new and existing development of Alameda Point.

**Outcomes:** Ensure appropriate fire flow in the Alameda Point development area during the transition to a new city urban center.

**Estimated Financial Cost/Savings:** Costs were previously identified by the water department. The recommendation is to follow the plan as identified.

### **RECOMMENDATION B-4: REFURBISH, REMODEL, OR REPLACE STATION 2.**

**Description:** As stated in the narrative, Station 2 is older and struggles to support the mission for these 3 apparatuses. Vehicle access is complex and requires excess maneuvering to park or leave. There is evidence of several apparatus strikes against the building, which is indicative of tight building access. It is crowded and lacks adequate decontamination and washing facilities. This building could be updated, but the square footage may not support the number of vehicles and personnel without a complete rebuild.

Three apparent solutions exist, although more could be found with concentrated research. One is to move some personnel to Station 5 upon completion and then remodel Station 2 with a smaller complement in mind and not improve the bay size. Another option is to increase the bay size and living space by removing some pad space and reducing firefighter parking. Another option might be to raise and replace the building with something that fits the current footprint or build a new station in a different location.

**Outcomes:** Improve the facility to support the current mission. Reduce complex apparatus maneuvers to park or leave the structure. Improve decontamination and washing facilities and decrease crowding.

**Estimated Financial Cost/Savings:** Costs vary based on the approach and facility requirements. Cost estimates for a complete remodel are expected to cost 20-25% of new construction.<sup>70</sup> The cost of a new station, either on the current footprint or a new location, will depend entirely on the size, complexity, engineering, and mitigation costs associated. See recommendation B-2 for station cost examples.

#### **RECOMMENDATION B-5: IMPROVE PARKING AT THE EOC.**

**Description:** Station 3 houses a fire station and an emergency command center. There does not appear to be enough parking designated for both functions within the station area footprint. It was observed that an EOC activation would quickly overwhelm the limited on-street and in-station parking. Since the station and EOC are located in a high-density residential area, solving the parking issue may require investment in property or developing a plan to bus EOC workers to the site from a commercial area closer to the harbor.

**Outcomes:** Ensure enough parking for an EOC activation that would not interfere with EOC or fire station operations.

**Estimated Financial Cost/Savings:** Costs may be as low as identifying and partnering with a commercial parking area near the harbor and staffing a van or bus to move EOC personnel to and from the parking area. Additional capital costs may be incurred if a parking area is purchased and designated. It would depend on size, location, and availability, requiring research. At the time of this report, three buildings within 4 blocs were available on Realtor.com and ranged from \$1 million to \$2.05 million. However, purchasing a current building would require the removal of the building and improving the property as a parking area.

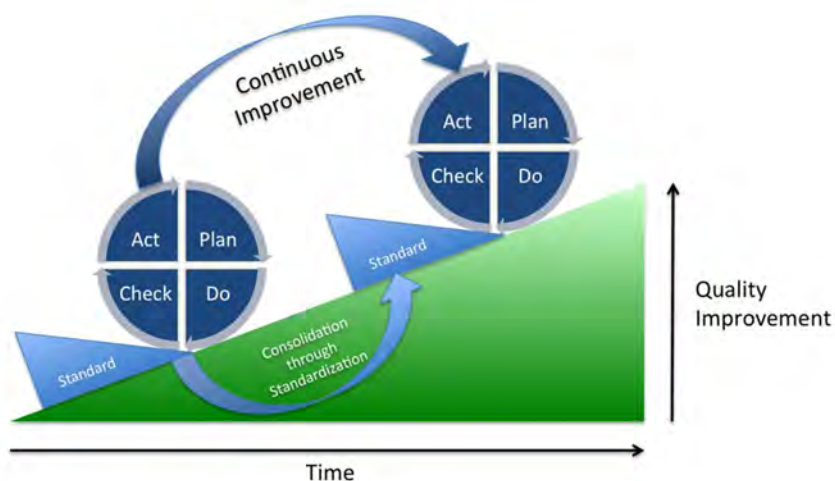
## Overview of Compliance Methodology

### Plan Overview

This Community Risk Assessment: Standards of Cover presents a detailed picture of AFD's performance. However, this is just a starting point for the agency to pursue improved performance. AFD will benefit from an ongoing data analysis system to maximize the information presented. The approach should demonstrate performance in a meaningful and actionable way to leadership. In addition, it should create performance transparency for elected officials and citizens.

Designing an analysis system is time-intensive, requiring capital and talent. Leaders need to understand and engage in data analytics. It will also require AFD to identify and assign someone with a penchant for data analytics, statistics, databases, and mathematics, regardless of the technology used. The plan, do, check, and act framework presents an analytic system's design and implementation concept. This is called the Deming cycle of continuous improvement and is pictured in the following figure.

Figure 191: Deming Cycle<sup>71</sup>



### Research & Codify

Creating a durable analytic system requires a definition and understanding of what the data should present, the impacts of the information, and what constitutes the data stream. Once the descriptions are understood, they must be adopted as policies and acceptable practices. The following areas are presented for AFD to consider as they plan for performance improvement.

If the AFD is interested in pursuing accreditation with the Commission on Fire Accreditation International (CFAI) at any time in the future, In that case, they may want to adopt specific terminology early in this planning process. The CFAI adopted two terminology choices: baseline and benchmark. The baseline can be equated to a standard and is generally interpreted as the minimum acceptable performance defined by the agency. Conversely, the benchmark is the performance level the agency wishes to be able to perform and a goal for its continuous improvement initiatives. This section will use the baseline and benchmark terminology.

### **Adopt Overall Performance Objectives**

The first step for AFD is to decide what key performance metrics they will monitor and manage. AP Triton was able to locate public performance reporting on the city webpage. Still, the focus was on the volume of incidents. However, the performance evaluation information in this document is a good starting point for understanding and defining which objectives the agency wishes to evaluate.

AFD and city leadership must agree on what performance metrics they will manage. Again, this document should provide some direction and the foundation for discussions. In addition, the time components being managed should correlate to an overall service objective or area. For example, the Alameda County EMS Agency (ACEMSA) publishes response time standards. These are excellent places to start for the city EMS calls.

These pre-determined requirements are a great place to start setting up a performance evaluation system. However, it will be up to the city and AFD to determine the most applicable standards for an area without specific state or local guidance. This helps set the standard for total time performance for all incident types. Once each standard is adopted, the department can evaluate each time segment to find potential tactical and strategic improvement areas.

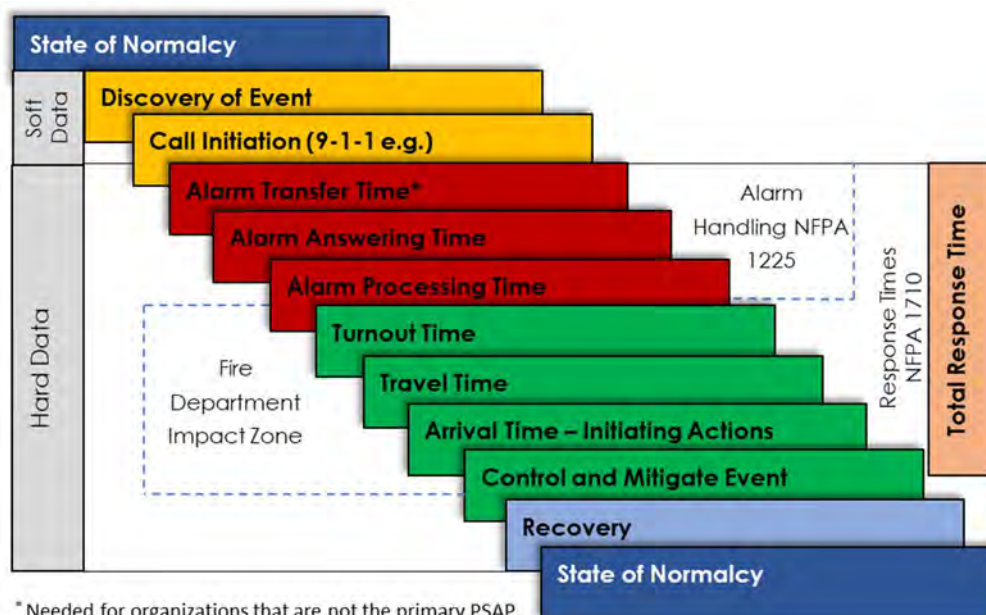
### **Establish Management Segments**

As discussed earlier in the performance section, an emergency incident has several identifiable segments. By adopting time objectives based on these segments, an agency can begin to understand how its actions affect an incident's total response time. While much of the analytics available for the fire service is based on time, this is not the only performance that can be measured.



Each segment can help identify areas where the performance objective may be other than time, such as quality or prevention. However, the most widely available and used metrics center around time. Once the time analysis is mastered, the agency should expand into the less traditional performance evaluation methods. The following figure identifies the emergency incident segment, potential metrics, and applicable NFPA standards.

**Figure 192: Incident Segments**



In any situation, the time segments for the first arriving unit will be the alarm handling, turnout, travel, and total response times. For AFD, a partnership approach will be required with the Alameda County Regional Emergency Communication Center (ACRECC). They are the first step in providing accurate and efficient service delivery.

AFD should work with them to ensure the answer and alarm processing times are within acceptable limits. In addition, since the ACRECC is a regional fire and EMS dispatch agency, the Alameda Police Department, as the PSAP, should also be included and evaluated. The total response performance should include their answer time and alarm transfer time.

Concurrently, while working with the communications partner, AFD and city officials should evaluate potential performance metrics within the fire department control. This will include the time segments of turnout, travel, and effective response force times. These segments should be grouped into programs with similar effective response forces or risks.

### **Performance Specifics**

The next step is defining what meets the analysis's performance requirements. For example, do chief officers get to stop the response clock, or is it an apparatus designed and equipped to address the incident specifics? Can an ambulance stop the clock on a structure fire, or is it an apparatus that can begin to address the fire hazard, like fire attack and water supply? There is no one answer to these questions, and leadership must define them to meet the community's performance expectations.

The apparatus variable may be defined by type or a description of capabilities. If an engine company's capabilities are well known, then stating a first-due apparatus as the engine company will suffice. However, the definition might be more descriptive if the engine companies differ. For example, a complete description might state, "the first arriving company, capable of providing a minimum of 3 firefighters, officers, or engineers, and equipped with an AED and EMT-B firefighters."

It will be up to the agency to clarify this component. However, CFAI expects to define clearly the capabilities of the first arriving and effective response forces. For AFD medical incidents, the leadership could adopt the first front line, engine, truck, or ambulance as the clock-stopping vehicle. This is what will be used in the example.

AFD may add or limit the number of qualifying statements for any incident type. However, the result is the same: a performance chart based on incident type, perhaps the severity, including goals, standards, differences, and references. For example, the following figure shows a potential performance statement based on the EMS example developed above.

**Figure 193: Performance Chart Example—Medical Incidents**

Key Metric	Baseline	Benchmark	Strategic Improvement	Reference
First-due engine, truck, or ambulance performance for EMS incidents in urban areas.				
Call Processing	1:14	1:00	Regional dispatch center	Meets NFPA 1225
Turn Out Time	2:09	1:00	Management initiatives	Meets NFPA 1710
Travel Time	4:28	4:00	Routing and training	Meets NFPA 1710
Total Time	7:45	6:00	Turn out time focus	Meets Ambulance Agreement
The ERF for a moderate-risk medical incident will include a minimum of 6 personnel and one ambulance for a priority 1 incident.				
ERF Total Time	7:51	10:00	Look for a challenging benchmark	Meets ACEMSA requirements.

The preceding figure is an example and does not necessarily meet or follow the overall performance review acceptable by AFD and the City of Alameda. However, it does illustrate the process. This process would be repeated for all the service areas AFD wishes to manage with data. For example, as in this risk assessment document, AFD could continue to group fire, medical, and other incidents. If AFD wishes to pursue accreditation, it should use the programs and risk classification levels in this risk section of this document.

One concept to remember is that total response times are not an aggregate of call processing, turnout, and travel times. This evaluation utilizes the 90<sup>th</sup> percentile, the baseline incident time segments do not stack vertically, and the total time is its own statistical analysis. In other words, adding call processing, turnout time, and travel time for all incidents does not necessarily equate to the 90<sup>th</sup> percentile total response time.

### Develop Evaluation Methodology

Now that the performance charts are defined for each incident segment and type, a methodology should be developed to analyze the performance. During this step, the agency should evaluate who can perform the analysis and what tools they need to complete their tasks. The reporting periods and management expectations from the reports should also be defined.

It is common for leaders to see a technical report, such as a statistical evaluation of performance, and receive it with little action. The entire reason for making these statistical evaluations is to help leaders decide what to change, add, or leave alone to provide the best service to the community. Unfortunately, technical reports that are not understood or report irrelevant information are typically useless. Reports are received, dutifully read, and filed into a corner or trashcan without connecting operations to the statistics.

Statistics is not a magic solution. Statistics were developed to reference complex issues and make them easier to comprehend. However, inaccurate or misleading evaluations can cause damage and other problems. For an excellent example of mathematical systems being inappropriately applied and corrupted by leaders, see the book "The Fires" by Joe Flood. Statistical measures need to be valid, representative, and consistently applied.

At its heart, statistics in emergency services should be designed to add an understanding of historical performance, reported in a way that is consistent and comparable to other similar agencies. However, to make this work for AFD, the leaders must discuss the statistical measures they will use. For example, they may use the mean or median measures for good reasons. However, the NFPA and CFAI have moved to a percentile for fire department performance analysis, typically the 90th percentile measure. Therefore, it is up to AFD what statistics they use. However, since AFD will likely evaluate itself against industry standards or other agencies, it should consider continuing with the 90<sup>th</sup> percentile measures presented in this document.

When building an evaluation methodology, the final concept is what data will be allowed into the analysis. There is significant debate within the fire service regarding what constitutes flawed data or an outlier. Again, the decision on what to include and potentially exclude is up to the AFD leadership. For credibility, these decisions should be well documented.

People typically create errors encountered in the records system. For example, information in a record may be added incorrectly or left blank. These errors apply to time fields, code application, narration, and incident specifics an analyst uses to slice the data. Since these errors are usually created when the incident record is built, incorporating a robust quality assurance and training program is the most accurate solution.

A quality assurance program looks at each incident for errors and unacceptable performance. Once the incident report is complete, it is placed in a quality check queue. Someone who has knowledge of the call but not necessarily of the incident will then pull up the report and evaluate it for accuracy. The following list is an example of a minimum quality assurance review.

- Well-written narratives that are legally defensible,
- All dispatched units added the correct information,
- Incident type matches the incident findings in the narrative or what the quality evaluator knows to be true about the incident,
- Incorrect date and time-stamped information is corrected through a verification process,
- Unexpected date and time-stamped information is captured and explained.

Once the records are accurate, there may still be some data that will skew the results because they were abnormalities. In this case, an agency may want to disregard these anomalies in its performance analytics. Suppose the agency defines what records they will disallow. In that case, those records identified as unexpected can be removed from the analysis. This outlier policy should be well documented and not designed to undermine the agency's credibility. A custom or trigger field can identify the disqualified incident record as an exception and not be included in the analytic.

Caution should be taken when removing any record that accurately shows performance. For example, it seems unlikely that any unit would be able to turn out in zero seconds, so often that zero data is removed. However, if a crew is contacted directly and initiates the response, the turnout time would be zero. Therefore, in this case, a zero response indicates the deployment of units for this incident was very effective. Another example is a long drive along a road under bad road conditions. While the time may be extensive, it is actual performance. Therefore, it should be evaluated for what it is: a problematic response. Considering and defining all the potential anomalies before any analytics are completed helps make the analysis more transparent and adds trust.

A secondary method to remove incorrect data is to look for statistical outliers. The methodology for these changes is based on the data shape and variability. For example, taking 1.5 multiples of the standard deviation may identify those statistical outliers for data points evenly distributed along a typical distribution curve.

On the other hand, data points with a strong left or right tendency have a different shape. For left or right tendency data, it may be more appropriate to evaluate those data points that are 1.5 multiples of the inner quartile range as a statistical outlier, as used in this document's analysis. Unfortunately, either statistical method can incorrectly remove accurate anomalous information. However, these methods have a good chance of finding and eliminating incorrect data.

Which approach is used becomes a compromise between absolute accuracy and time investment. AFD may wish to consult with the College of Alameda or other local colleges to find a student or a teacher in the math and statistics courses to help determine these approaches and methodologies.

### **Research & Adopt a Technology for Analysis**

One or a few employees typically accomplish the initial analysis and development of goals, identification of capabilities and standards, and general service understanding. These people evaluate the data in large sets, determining rules and answering other questions. This can be an enjoyable experience for the right temperament, leading to hours of discovery. However, the ongoing reporting and analysis can be dull and repetitive after this initial research. Therefore, it will be to the agency's advantage to start researching technological solutions early in the planning stage.

In the age of Microsoft Excel®, it is easy to believe the spreadsheet program is the ultimate tool for analysis. It is a powerful tool, but the agency should research and adopt other methods. Typically, this is homegrown analytics with standard business analytics software or records management analytical systems. Other options are to look for a third-party fire-service-specific service or to hire external consultants to complete the analysis. Consulting reports can be reliable and are often conducted by professionals. However, these lengthy reports do not always help agencies manage their ongoing operations.

AFD should investigate the other technological solutions available to them. Whatever system AFD chooses, it should have three primary attributes. First, the system should be easy to master. Next, any analytic system should provide consistent results from data sets directly attached to the source. Finally, the system should be highly customizable for the current service AFD and what it might provide.



One possibility is to utilize a third-party analytic vendor. This report will not name vendors for third-party analytics, as the field is highly competitive and changes consistently. Many vendors offer similar services but specialize in producing reports and analyses based on their expertise. Some of their products are truly exceptional and create complex calculations. The data they use is typically directly tied to the CAD data and may miss some of the subtleties of the NFIRS system. However, suppose AFD knows how to adopt performance objectives from CAD data. In that case, the agency may be able to write and manage its performance objectives appropriately.

One warning is that if these vendors go out of business or close their operations, the codes and mathematical assumptions go with them. In addition, what they produce is not customarily owned by the fire agency. Another typical concern is the high initial and ongoing costs of these systems.

Another possibility is to utilize off-the-shelf analytic systems to create a reporting environment that is automated, researchable, verifiable, and valuable to management. Many vendors provide analytical software solutions, each with pros and cons. The current Gartner Magic Quadrant<sup>72</sup> for business analytic software indicates that Microsoft's Power BI and Salesforce's Tableau are the continuing front runners in this field. However, many options exist depending on the agency's operating system environment, budget requirements, and other available systems. In addition, ArcGIS software, an industry leader in geospatial analysis, is generally open to fire departments within a city.

If the City of Alameda owns a license, they usually provide a seat license to all departments. This might be true with the county as well. One concern for the homegrown approach is the need for technologically skilled personnel to create, maintain, and present these reports.

One final option would be to utilize the analytics intrinsic or available within the agency records management system (RMS). AFD uses the Zoll Fire RMS system for basic incident reporting and ESO for patient care records. Both systems have intrinsic analytic applications, which can make analysis easier. However, they are not as flexible as a generic system in enabling customization of performance data.

**Adopt Policies, Procedures, and systems for Analytics (Standardize)**

Once all the above processes, definitions, and systems are evaluated and recommended, they must be officially adopted. This means capturing policies and procedures in writing. All analyses created will be considered under the written rules to ensure consistency during the analysis period. These documents can be changed as the improvement process continues. However, the change process needs to be defined as well. In addition, changes should only be made if they can be reconciled with the previous analytics.

**Implement the Plan**

Initial implementation of new plans can create dramatic organizational changes with minimal effort. This is typical because the changes are more of policy and procedure, not actual operations. However, as the continuous improvement cycle continues, implementing and evaluating change requires more effort and has a less pronounced impact. However, the most profound changes are usually encountered during these more difficult cycles.

Implementing the planned analysis systems requires communication and training throughout the organization. Most fire service organizations have a training system in place that can be tasked to meet this requirement. However, without adoption by those who create the reports and those who supervise and quality check the information, the system will not produce accurate results. Engaging these people early and communicating the expectations and outcomes will create the best results.

It is critical to communicate expectations to those affected. Not only what is required of them but also what efforts are likely to produce. Explain the methodologies to be used and create an open environment to help. People who do not understand the overall strategy of statistical analysis for improvement may not feel comfortable admitting this. In addition, those whose actions are being evaluated may feel insecure and attack the process. This emotional reaction should be anticipated, and steps should be taken to alleviate it, including an open feedback forum.

Personnel may also need ongoing education and training to complete accurate and representative reports. In addition, training on new business processes, systems, and technical infrastructure may be required. Efforts should be made to coach people through the changes and identify those currently needing training and those positions or individuals who may move into this process.

## **Perform the Analytics**

Now that the agency has defined the metrics and the collection system and adopted the analytic methodology, it should start to work on reporting. Several levels and types of reports should be accomplished. In addition, there are different audiences for every kind of report.

Some may go to the department leadership, some to all department personnel, and others to city leadership and council. The following list is just an example of the reports to be produced. It will be up to AFD and the city leadership to approve the content, distribution, and timing.

- Quality assurance information and exceptions,
- Overall time segments analysis by incident type and severity,
- Unit time segment reports by shift, station, and apparatus,
- First due and ERF Travel time by geographic area,
- Trend analysis by geographic location, unit, and overall.

The content and timing of the reports will be dictated by the intent of the information. For example, a daily report would be designed to identify data that may be incorrect and should be evaluated and potentially corrected. A monthly statement to crews and leadership may indicate unit performance with trends to improve crew activity. A quarterly report may identify progress towards improvement goals and initiatives. Finally, annual reports would inform the public and the city leadership about the department's overall performance, improvements, gaps in service delivery, and potential needs.

## **Improve Operations Based on the Analysis**

The agency should undergo this evaluation to understand service delivery and evaluate ways to enhance performance. The first step is identifying areas that could be improved, whether a geographic location or a specific unit at a particular station. Next, leaders and staff should evaluate what initiatives can be attempted and the expected outcome. Finally, after the proposal is implemented and a reasonable amount of time has passed, the analysis is reviewed against expectations. This comparative analysis allows management to see if the initiative has made the expected improvements.

These improvements may require a simple policy change. Conversely, the enhancements may be as financially prohibitive as new staffing or stations and take years to implement. Regardless of the improvement initiative, having solid analytical proof and definitive performance enhancement goals will improve AFD's overall positioning and service.

### **Continuous Improvement**

This process must be frequently repeated, keeping the process and analytics relevant. The intervals will be determined based on findings, initiatives, and systems. Initially, the method may need to be evaluated monthly or quarterly to ensure the information is pertinent and valid. However, after the initial build, the entire process must undergo formal evaluation at a less frequent but more defined interval. Utilizing some performance indicators defined in the Commission on Fire Accreditation International's (CFAI) 10<sup>th</sup> edition of their self-assessment manual may help create a formal review process.

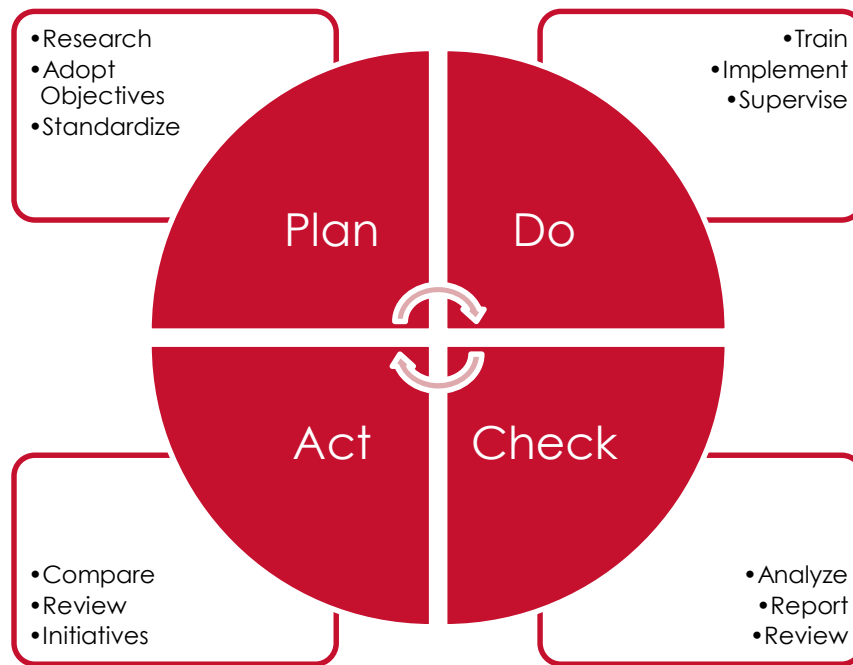
The following list shows a review process based on the CFAI documents.

- Annually, policies and procedures must be reviewed. Therefore, this is an excellent time to ensure the analytic policies and practices are current with the small changes made within the year.
- Strategic plans should be produced every 3 years. The strategic plan should incorporate performance improvement initiatives. At this time, the types and levels of analysis may need to be redefined and adjusted.
- This Community Risk Assessment: Standards of Cover must be reviewed and updated every 5 years. The build-up to publishing this document is an excellent opportunity to determine if the analytics still meet the agency's needs.

Because this process is heavy on policy and documentation, there is a built-in standardization step each time the cycle starts again. There is a reason the Deming cycle is usually pictured going up a ramp. Without constant effort, the process will fall backward, and the organization will return to the beginning. Standardization, including the implementation and training of organization members, acts as a wheelchock. It may not be able to stop backward motion. Still, attention to organization and standardization will help keep the ball rolling forward.

It does not matter what approach the organization takes to continually evaluate its operations and data. However, the critical concept is that they adopt a formal method that allows a deep understanding of improvement and guidance. The following figure is a review of the plan overview presented above.

**Figure 194: Methodology Overview**



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## **Section IV: APPENDICES**

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## Appendix A: Risk Classifications

The following are the risk classifications determined by incident type.

### Fire

#### Low Risk

These incidents are considered low-risk and minor in scope and intensity. It requires a single fire apparatus and crew to manage fires involving passenger vehicles, fences, trash or dumpsters, downed power lines, residential or commercial alarm investigations, or an odor investigation.

#### Moderate Risk

These incidents are the first alarm responses needed to manage a moderate fire risk incident. These incidents include smoke in a building, small outside building fires, commercial vehicle fires, a single-family residence, a lightning strike to a building, an automatic fire alarm at a high-risk occupancy, or a hazardous materials pipeline fire.

#### High Risk

These incidents are a second alarm response needed to manage a high fire-risk incident. These incidents include smoke in a high-life hazard property (school, skilled nursing, etc.), single-family residences with injured or trapped victims, multifamily residential buildings, or a moderate-sized commercial/industrial occupancy.

#### Maximum Risk

A third alarm response is needed to manage a maximum fire risk incident. These incidents include a hospital, assisted living facility, fire in an apartment building, high-rise building fire, a large commercial or industrial occupancy, hazardous materials railcar, or storage occupancy. Incident assignments will include additional command staff, recalling off-duty personnel, and mutual aid assistance for other critical tasking needs.

### EMS Risks

#### Low Risk

A single EMS unit can manage a low-risk EMS incident involving an assessment of a single patient with a critical injury or illness, non-life threatening medical call, lift assist, or standby.

#### Moderate Risk

A two-unit response is required to control or mitigate a moderate-risk EMS incident. It involves assessing and treating one or two patients with critical injuries or illnesses or a motor vehicle crash with 1-2 patients.

**High Risk**

A multiple-unit response is required to control or mitigate a high-risk EMS incident. It involves 3-8 patients with injuries ranging from minor to critical. Patient care will involve triage, BLS, ALS treatment, and a coordinated transport of patients.

**Maximum Risk**

A multiple-unit response is required to control or mitigate a maximum-risk EMS incident. It involves more than nine patients with injuries ranging from minor to critical. Patient care will involve triage, BLS, ALS treatment, and a coordinated transport of patients. If this is an active shooter incident, the response may require a casualty collection area unit to treat patients not in the hot zone.

**Technical Rescue****Low Risk**

A single fire unit can manage a low-risk technical rescue incident involving minor rescues, such as a child locked in a vehicle, elevator entrapment, or limited mechanical entrapment.

**Moderate Risk**

A two-unit response is required to control or mitigate a moderate technical rescue risk incident. Support is not usually required from a technical rescue team. This type of incident involves a motor vehicle crash that requires patient extrication, removal of a patient entangled in machinery or other equipment, or a person trapped by downed power lines.

**High Risk**

A multiple-unit response is required to control or mitigate a high-risk technical rescue incident. This type of incident may involve full-scale technical rescue operations ranging from structural collapse to swift water rescues. It may involve multiple motor vehicles that require extrication, commercial passenger carriers, or a vehicle impacting a building. Support is usually needed, requiring a technical rescue team. This incident may require multiple alarms.

**Maximum Risk**

A multiple-unit response is required to control or mitigate a maximum-risk technical rescue incident. Support is needed from a specialized technical rescue team, which may have multiple operation locations.

This type of incident will involve full-scale technical rescue operations such as victims endangered or trapped by structural collapse, swift water, or earth cave-ins. This incident will require multiple alarms and may expand beyond the identified critical tasking. Recall of off-duty personnel or assistance from auto or mutual aid may occur during a disaster or when additional alarms and command staff are needed.

## **Hazardous Materials**

### **Low Risk**

A single fire unit can manage a low-risk hazardous materials incident involving carbon monoxide alarms and other unknown hazmat investigations without symptomatic victims, less than 20 gallons of fuel, a natural gas meter incident, downed power lines, equipment, or electrical problems, or attempted burning. Automatic alarms that may originate from a hazardous material.

### **Moderate Risk**

A two-unit response is required to control or mitigate a moderate risk hazardous materials incident. Direct support is not usually required from a hazardous materials team. This type of incident involves a carbon monoxide alarm with symptomatic patients, a fuel spill of 20–55 gallons, or a gas or petroleum products pipeline break not threatening any exposures.

### **High Risk**

A multiple-unit response with a hazmat team is required to control or mitigate a high-risk hazardous materials incident. Support is needed for a Level 2 hazmat incident that involves establishing operational zones (hot/warm/cold) and assigning multiple support divisions and groups. This response includes a release with 3-8 victims, gas leaks in a structure, hazmat alarm releases with victims, flammable gas or liquid pipeline breaks with exposures, fuel spills greater than 55 gallons, fuel spills in underground drainage or sewer systems, transportation or industrial chemical releases, or radiological incidents. Additional assistance may be required to expand operations past the identified critical tasks.

### **Maximum Risk**

A multiple-unit response is required to control or mitigate a maximum-risk hazardous materials incident. Support is required from an on-duty hazmat team and their specialized equipment. This type of incident involves establishing operational zones (hot/warm/cold) and assigning multiple support divisions and groups. Examples include nine or more contaminated or exposed victims, a large storage tank failure, a hazmat railcar failure, or a weapon of mass destruction incident.

This incident will require multiple alarms and may expand beyond the identified critical tasking. Recall of off-duty personnel or assistance from auto or mutual aid may occur during a disaster or when additional alarms and command staff are needed.

### **Wildland Urban Interface**

#### **Low Risk**

A single fire unit can manage a low-risk wildland firefighting incident involving a fire minor in scope, structures not threatened, and Red Flag conditions do not exist. These include low-risk wildland or grass fires, an outside smoke investigation, illegal or controlled burns, or small vegetation fires.

#### **Moderate Risk**

Multiple units are needed to manage a moderate-risk wildland firefighting incident involving a significant fire in brush, a brush pile at a chipping site, grass, or cultivated vegetation. Red Flag conditions do not exist, and structures may or may not be threatened.

#### **High Risk**

Multiple units or alarms are needed to manage a high-risk wildland firefighting incident. The level is associated with Red Flag warnings with structures that may or may not be threatened. This fire involves a significant wildfire in brush, grasses, and cultivated vegetation. And woodland areas. Additional alarm assignment, command staff, recall of off-duty personnel, and mutual aid assistance may require the operations to extend beyond the identified critical tasks.

## Appendix B: Strategic Partners—Stakeholder Interviews

### INTRODUCTION TO THE STAKEHOLDER INTERVIEWS

Triton interviewed various internal and external stakeholders of the Alameda City Fire Department. These interviews aimed to better understand issues, concerns, and options regarding the emergency service delivery system, opportunities for shared services, and expectations from community members. These interviews were used to determine if any areas of the report needed to be expanded. In AFD's case, the information requested and provided coincided with the most credible statements and no additional investigation was indicated.

It is important to note that the information solicited and provided during this process was in the form of "people inputs" (stakeholders individually responding to our questions), some of which are perceptions 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 comments to identify specific patterns and/or trends. Multiple sources improved the credibility of the observations, and the information provided was significant enough to be included in this report.

Stakeholders were identified within the following groups: Elected Officials, Department Heads, Business Community Leaders, Citizens, Chief Officers, Labor Leaders, Volunteer Chief Officers, Firefighters, Rank and file, and Administrative Staff. The following answers to the questions are summarized. In addition, duplicate or similar answers are presented here, with the most frequent answers organized from top to bottom.

### ELECTED OFFICIALS, CITY MANAGEMENT, AND DEPARTMENT HEADS

#### *What strengths contribute to the success of the Fire Department? (What do they do well?)*

- They show strength with interdepartmental cooperation, understanding, communication, and support (top answer, tied). This is especially prevalent with functions with a designated and identified Alameda Fire Department contact.
- Hiring Fire Chief Luby has positively changed the fire department's interdepartmental, interdisciplinary, and governmental relationships. This improvement is due to his leadership, communications, cooperation, and willingness to support the entire City (top answer, tied).
- The organization's command staff, union leaders, and other line and staff personnel.
- The department's willingness to use and adopt technology is improving and is a definite strength.

- The department is responsive, involved, and adaptable.
- The personnel appears knowledgeable, positive, professional, respectful of different views, and understanding of policies.
- The training program adds to their success.
- The CARE team is a tremendous asset to the City and is appreciated.
- Staffing levels appear solid, and the vacancy rate is low.
- Other identified unique strengths include the intra-communications, specifically the daily shift meetings, the water rescue program, the CERT team and leadership, and the department's efforts to improve diversity.
- The chief's ability to communicate within city departments and his relationship with the city manager is a fire department asset. They appear to be flexible with changes within the City.

***What are some areas in which you think the department could make improvements?***

- Number one answers revolved around improving interdepartmental and interdisciplinary coordination. They need specific liaisons for the different departments and services. The department should work within the systems currently used by the rest of the city or improve the city-wide systems to help everyone succeed. The leadership should understand what operational changes do to other organizations and departments, including the CARE team rollout and changes in dispatch needs, and work to communicate better within the different departments and partners. They should be more open to supporting other departments as they work to complete their missions. The fire department could participate more in city-wide communications.
- The fire department lacks succession planning and administrative training, and there is a feeling that the junior officers are not being made ready to take on executive positions.
- The emergency management function within the City needs some attention. Items such as interdepartmental training, planning, and significant event operational readiness are in question.
- Community education fell off during the COVID pandemic, and it would be good to see that return to pre-pandemic levels. More proactive community education and participation would be appreciated.
- The fire department appears to need some direction and focus with clarity of roles and responsibilities.
- More transparency and community education of the fire department functions.
- The lack of personnel diversity was identified by several groups.



- The fire department could adopt modern technologies and evaluate their apparatus sizes and effectiveness.

***What opportunities, in your view, are available to improve the service and capabilities of the fire department?***

- There is a need for succession planning, transferring institutional knowledge, mentoring, and management training.
- Add an executive assistant to allow executives to focus on strategic leadership, planning, and direction.
- Continue to add to the success of the CARE team but add community awareness of what the team does and how it operates.
- Ensure paramedic and regional operations are defined and work well within other county agencies for consistency and capability improvement.
- Advocate for city policies that allow for rapid response, especially with roadway congestion and changes in road network usage.
- Focus on disaster planning and develop a resilient community for the large-scale events that are likely to occur. Ensure proper communication with the citizens and other departments regarding events like the drawbridge outage.
- Improve the usage and understanding of technology used in emergency response. Incorporate road conditions, whole geographic systems like building footprints, and pre-event planning.
- Improved training for the code enforcement staff.

***Please share your thoughts regarding staffing utilizing 12-hour shifts and peak-hour units.***

- No comment (top answer).
- It will easily fit in with current city operations.
- Explore the topic to maintain the most efficient agency possible.
- It was tried before without success and will not work for this community.

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

- Staffing levels and do they meet the needs of the City now and in the future (top answer). Comments included succession planning, operational staff size, the resiliency of the staffing levels, burnout, administrative staffing levels, and behavioral health impacts on responders.
- City growth, especially the Alameda Point area, and the size and services available to the unhoused.
- Financial constraints, strategic plans, and near-term budgetary issues.

- Capital equipment funding, replacement, and maintenance. This includes the fate and funding of Station 5.
- The probability of an upcoming large-scale event or disaster. This includes community preparedness, evacuations, plans, and operational readiness.
- Improved interdepartmental and response partner coordination, understanding, and uses of available services.
- Improving diversity in the workforce.

***If you could change one thing in the fire department, what would it be?***

- Get caught up on facilities and apparatus (top answer). This included improvements on Station 5/Training Center.
- Change the structure of the fire prevention and investigation division. Look into non-sworn individuals if it is difficult to staff.
- Adequate funding.
- A quality improvement person with the proper data science and data analytics background.
- Mental health stigmas in the emergency service system. Needs a more comprehensive approach and clear roles for both responders and patients.
- Engage partners early in planning and improve succession planning.
- More diversity, especially at the top.

***How would you describe the level of services provided by the fire department?***

- Excellent with a high level of service (top answer).
- No experience or understanding (second answer).
- Great from personal experience.
- Seems very good.
- No complaints.
- A positive influence in the community.
- The community loves the fire department and believes it keeps them safe.
- Anecdotal they are very creative and persistent in solving problems.
- Strong, cohesive, and caring about the community.
- Good morals, well-trained staff, with strong leadership.
- Professional, compassionate.

**BUSINESSES, COMMUNITY GROUPS, COMMUNITY MEMBERS, AND VOLUNTEER*****Can you please describe your expectations of the Fire Department?***

- Respond to emergencies effectively, professionally, and rapidly (top answer). Keep the community safe, reliable, and responsive, and maintain access to all people in need.
- The fire department must treat all its customers respectfully and be held to a higher standard.
- The department must be fully staffed with well-trained people to handle various situations.
- The fire department needs to maintain the citizens' trust, remain a good community partner, and the union should remain engaged, using its political influence for the public good.
- The fire department needs to be transparent and inform community organizations about its goals, objectives, and needs.
- They need to be ready and able to respond to significant events such as earthquakes and environmental threats. They must be able to manage these emergencies and use their resources like the citizens' emergency response teams.
- The fire department must be available for response and remain on the island.
- The fire department should keep engaging the community groups on the island. It could keep providing programs like the leadership training offered in the past.

***Which of these expectations are not being met to your satisfaction?***

- All expectations are being met (tied top answer).
- They appear to be stretched too thin without enough bandwidth and capacity. They cannot always meet the demand and use mutual aid too much (tied top answer).
- They have had some past struggles, but the new fire chief is improving the department, and his transition has been positive (tied top answer).
- Citizens are unsure if the City is well prepared for a disaster.
- They do their own thing, and citizens do not appreciate finding them watching TV during business hours.
- The fire department does not appear to use data analysis to make informed decisions.

***What do you think the Fire Department is doing particularly well?***

- There have been some previous problems with the community that seems to be improving (top answer). They seem to be improving transparency, trying to change the fire department's culture and perceptions, improving services, especially the CARE team, and having an improved connection with the new chief.
- The people are responsive and nice, engendering trust and a feeling of safety.
- They appear to have a high professional standard, and their commitment to clinical work is impressive.
- There is more of a connection with some of the community.
- It is not clear what they do or do well, but there has not been any feedback or observations that they are not doing their job.

***Are there services that you think the department should be providing that they are not providing now?***

- The fire department and City must be better prepared for a large-scale emergency (top answer). They need to advocate for safer evacuation routes and ensure the public is informed about when to shelter in place, how to evacuate, and the disaster response plans.
- Nothing comes to mind, nothing needs to improve, and generally pleased.
- Public communications concerning normal operations, needs, and plans.
- The EMS system needs to evolve to allow less reliance on emergency medicine and the resulting hospital wait times.
- Understanding houselessness problems and advocating for senior wellness.
- Better career recruitment and technical and educational partnerships with community groups could exist.
- There is great concern about the buildout, especially on the old Navy base, and how that will affect emergency response coverage.

***Are there services the department is providing that you think should be discontinued or done differently?***

- Nothing comes to mind, and nothing needs to be removed (top answer).
- Ensure the mental health system interactions are positive and possibly provide additional funding to the CARE team.
- Evaluate the need to respond with lights and sirens to everything and use them more judiciously.
- Not aware of current services, so I cannot answer adequately.

***When you dial 9-1-1 to report an emergency, how long should it take for help to arrive?***

- Five minutes, under five minutes, or five to ten minutes (top answers).
- Three minutes.
- Four to five minutes.
- Seven minutes.
- Within 10 to 15 minutes.
- No real opinion.
- No set expectations.
- Even when resources are delayed, there appear to be minimal complaints on low acuity calls.

***Do you believe that expectations should change depending on where in the community you are located?***

- It should be the same throughout the community (top answer).
- The Navy base and the new development may create problems.

***Do you believe the Fire Department's first arriving response units are staffed and equipped to take appropriate actions given the emergency?***

- Yes, the fire department generally has the appropriate equipment and has impressed those needing them (top answer).
- It is unclear if they have the appropriate equipment to respond to a disaster. Extrication from a collapsed structure is an example.
- Paramedic engines are more than adequate.
- Advanced life support capability on the scene is excellent, but the system is over-saturated with paramedics.

**CHIEF OFFICERS, LABOR LEADERS, ADMINISTRATION, RANK AND FILE.*****What strengths contribute to the success of the fire department? (What do you do well?)***

- Culture and dynamics (top answer). The department's size allows people to develop a wide range of skills. Everyone participates in the close knit community, and they try to take care of each other.
- The employees within the organization. Members are the most crucial asset, and AFD people love their jobs. A good group of people who contribute and have a can-do attitude.
- Good support from management, department, and city leaders, and the transition to the new managers has been beneficial and productive.

- The paramedic level of service provided. Members felt they give excellent emergency medical care.
- Day-to-day operations are a strength. Firefighters know the daily emergency operations well, with good coverage and quick response times.
- The employees are all willing to pitch in and create a stronger organization. Everyone has the opportunity to get involved with projects or programs, and they volunteer to do so frequently. This involvement leads to more pride and ownership and better buy-in for change.
- Staff felt the training was very good and frequent enough to be helpful.
- The fire department cares about the community and its employees. There is strong community involvement from compassionate people.
- The water rescue program has improved and is very effective now.
- The WUI team.
- The CARE team loves their work and has proven beneficial for the City.
- The department is well-funded.
- The department is self-sufficient, as it must be due to the geography of being on an island.
- The union is strong and engaged.
- Leaders recognize when outside assistance is required.

***What are some areas in which you think the department could make improvements?***

- The staffing model (top answer). The staffing levels do not allow for positional depth, resiliency, and surge capacity. The three-person truck company staffing levels are inadequate. Only one battalion chief per shift does not allow for depth, and cross-staffing the rescue unit is impractical. The current staffing levels make it challenging to get coverage for time off.
- The lack of succession planning and mentoring is a concern. This is especially worrying due to the limited time of service for the majority of the staff.
- The fleet is good but is facing maintenance challenges. Many front-line apparatus are out for maintenance more often, and the reserve fleet is getting low. This is partially due to the City outsourcing of vehicle maintenance to vendors.
- The fire department does not have enough administrative support personnel assigned to it.
- Without Station 5 being in service, many lower-income housing units have less coverage.



- The fire prevention bureau could be improved. Updating fire prevention services and enhancing inspections to inspect more facilities and improve the pre-incident planning efforts, especially with the target hazard facilities. The fire inspector training needs to be updated.
- Strategic planning and corporate goals are weak. The staff gets caught up in competing demands with multiple new programs not planned or rolled out with any process.
- The technical rescue capabilities and training are not sufficient for the probable demand.
- The department and City are lacking in disaster preparedness. There is little continuity within the City and no continued continuity plan.
- The firefighters working out of the stations feel as if the City places them on a lower priority and are treated like tenants without any ownership in the buildings.
- Having access to and funding for outside training opportunities would be helpful.
- The training center is in bad shape.
- There is little technology training or investment.
- The stations need some work, but there appears to be no funding mechanism or sources identified.
- The call volume is increasing, which may lead to delayed responses. This is especially true in the area around the training center (Station 5).
- The HazMat program is weak. There needs to be more training and equipment for this program.
- Historically the department has been led from the bottom up, which needs to change to a top-down leadership model.
- Recruiting, hiring, and training new members is behind. Diversity is also a weakness.
- The firefighters are not certified under the California State Fire Marshal's certification programs.

***What opportunities, in your view, are available to improve the service and capabilities of the fire department?***

- Improve the fire prevention bureau, risk reduction programs, and public education (top answer).
- Improved leadership and officer training for captains.
- Expanded training subjects such as community risk reduction, juvenile fire setters, CERT, and special programs such as technical rescue.
- Address the need for Station 5 and improve service to that area.
- Improved access to outside training.

- Improved support from the City includes information technology, facilities, and vehicle maintenance.
- Improve the multiple alarm or significant incident operational capacity and training.
- Improve communications both internally and externally.
- Train with other agencies.
- Streamline the training process and dedicate funding.
- Think and plan strategically.
- Develop and hold accountable a staff that provides continuity to the organization.
- Look for grants and other funding opportunities.
- Review, update, and improve the policies and procedures.

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

- Building and staffing station 5 on the old Navy base (tied - top answer).
- Additional training opportunities and diversity of internal training delivery (tied – top answer).
- Staffing levels on apparatus and in general to address volume, health, wellness, and reduce overtime.
- Recruitment and retention of new firefighters.
- Right size and find the right people for positions within the organization.
- The growing population and traffic issues.
- Disaster preparedness, including planning, resources, and training.
- Fire prevention and inspection programs and policies.
- It is a very young and inexperienced department.
- Bringing facilities up to current safety standards and providing for the sustainability of the facilities.
- Mental health throughout the community, including citizens, responders, staff, and their families.

***Please share your thoughts/ideas regarding alternative staffing and dynamic deployment to enhance staffing levels.***

- The department should focus on staffing apparatus, opening station 5, and providing enough administrative support first (top answer).
- It might work to staff up for critical events like storms. It worked during the flooding and may work again.
- It probably would not work because too many people live off-island to save money. There would be less incentive to work a shorter shift because it would require more commute time.

***If you could change one thing in the fire department, what would it be?***

- Open and staff Station 5 (top answer).
- Adding administrative staff.
- The department would become more proficient in specialties.
- Culture makes growth into a leadership position difficult.
- A solid labor contract.
- Changing the structure of the organization to increase officer positions.
- Improved incident discipline.

***On a scale of 1-10, how would you rate the level of emergency services provided by the fire department? Please provide a 1 sentence reason for that score.***

- 9 (top answer): High professional, dedicated fire and EMS services.
- 8: Need more diversity. There are good response times and services provided. The lack of Station 5 is a concern.
- 7: With more people, some administrative processes could be accomplished, and opening Station 5 will add service and flexibility.
- 10: Operationally, we are great.
- 3: There is not really a technical rescue service.

## Appendix C: Community Survey Overview

As a part of the Community Risk Assessment: Standards of Cover process, Alameda Fire Department (AFD) sought community input and opinions from its community. On April 11, 2023, AP Triton facilitated a virtual Community Meeting for AFD. During the meeting, the purposes of this study were described, and the community was introduced to the survey, which was designed to identify the following:

- **Service priorities.** Of the services provided by the fire department, which are more or less important to you?
- **Planning priorities.** Of the planning elements used by the fire department, which are more or less important to you?
- **Expectations.** What do you expect of your fire department? This would include such things as level of service, types of services, communication methods, first responder qualities, etc.
- **Positives.** What do you think the department does particularly well?
- **Concerns.** What concerns do you have about the department (the services it delivers, or the way in which it delivers them)?
- **Other thoughts.** What other ideas do you have to share with the department as they begin this project?

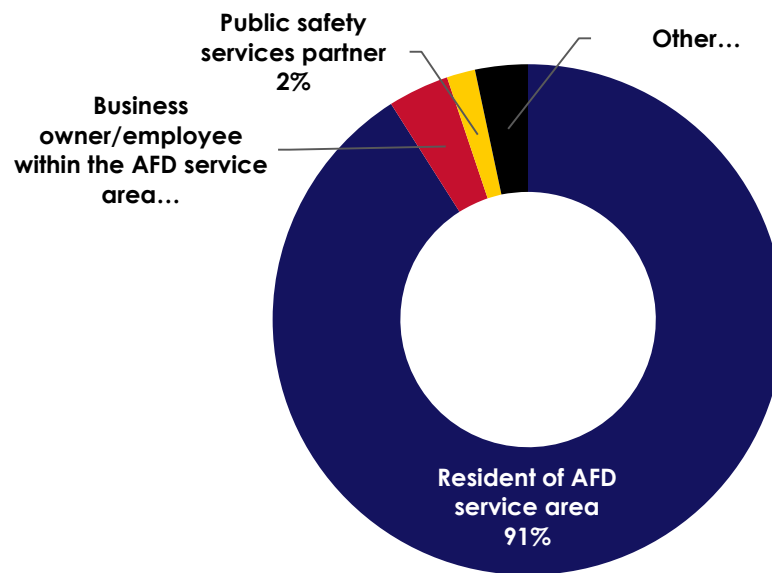
The survey was completely anonymous and confidential, with 779 responses. The following summarizes the results of the survey.

Please note, that the open-ended responses are minimally edited for spelling, grammar, and/or clarity only. Most responses appear in the form they were submitted. Personal information has been removed to maintain anonymity.

### Demographic Information

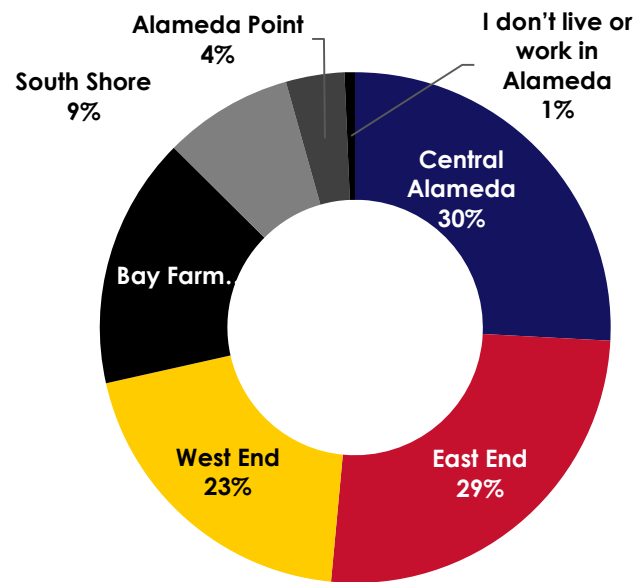
#### Residency of the Respondents

Respondents were asked to select which of the following best described their relationship with AFD: "Resident of AFD service area," "Business owner/employee within AFD service area," "Public safety services partner," or "Other (please specify)." Respondents could select multiple categories. The majority (91%) of respondents were residents of the service area, 4% were business owners or employees, and 5% of respondents selected public safety services partners and/or other relationships.

**Figure 195: Residency**

Other responses:

- ACEC member
- AFD
- Both resident and business owner (4)
- CERT Member (4)
- City Employee (5)
- Family member
- Fire department member
- Firefighter (4)
- Resident & CERT member
- RN at Alameda ER
- Visiting
- Work in an AUSD school & resident

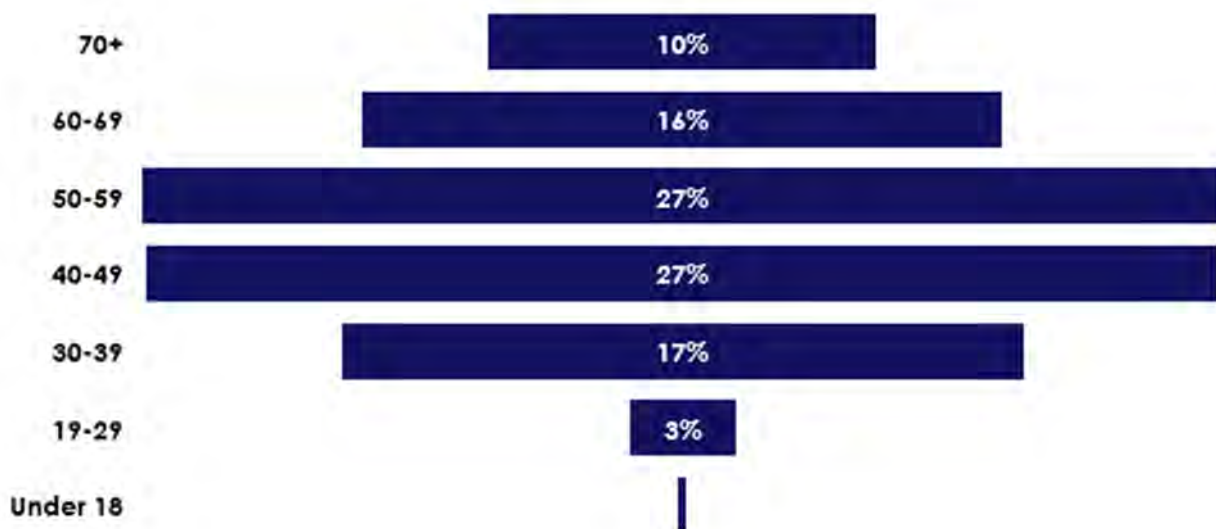
**Figure 196: Location of Residence or Workplace**



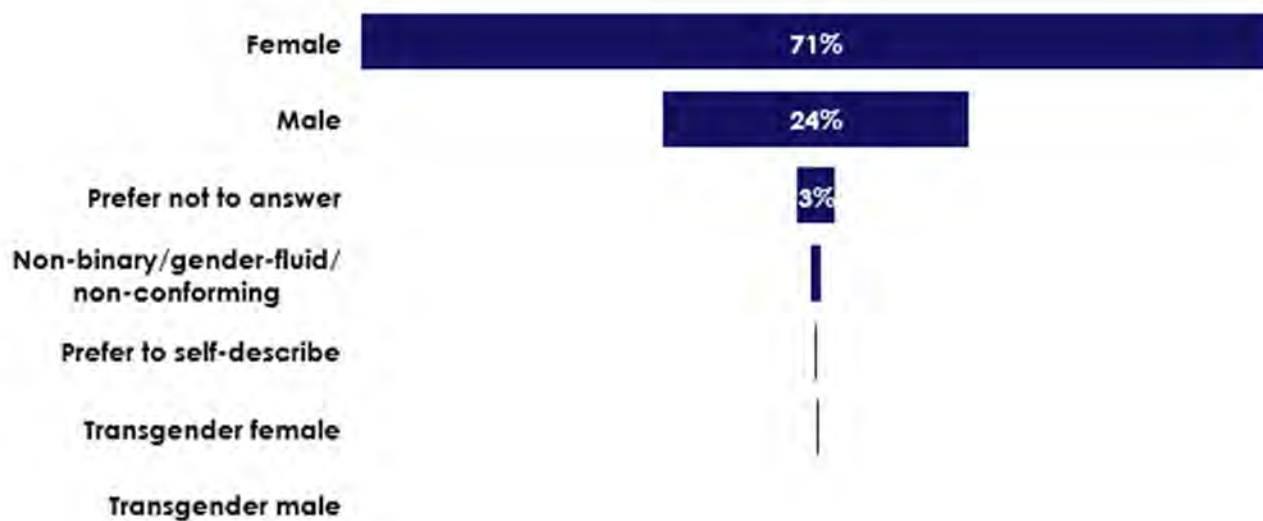
### Other Demographic Information

The following figures display age, gender, and racial or ethnic backgrounds of the survey's respondents.

**Figure 197: Age of Respondents**

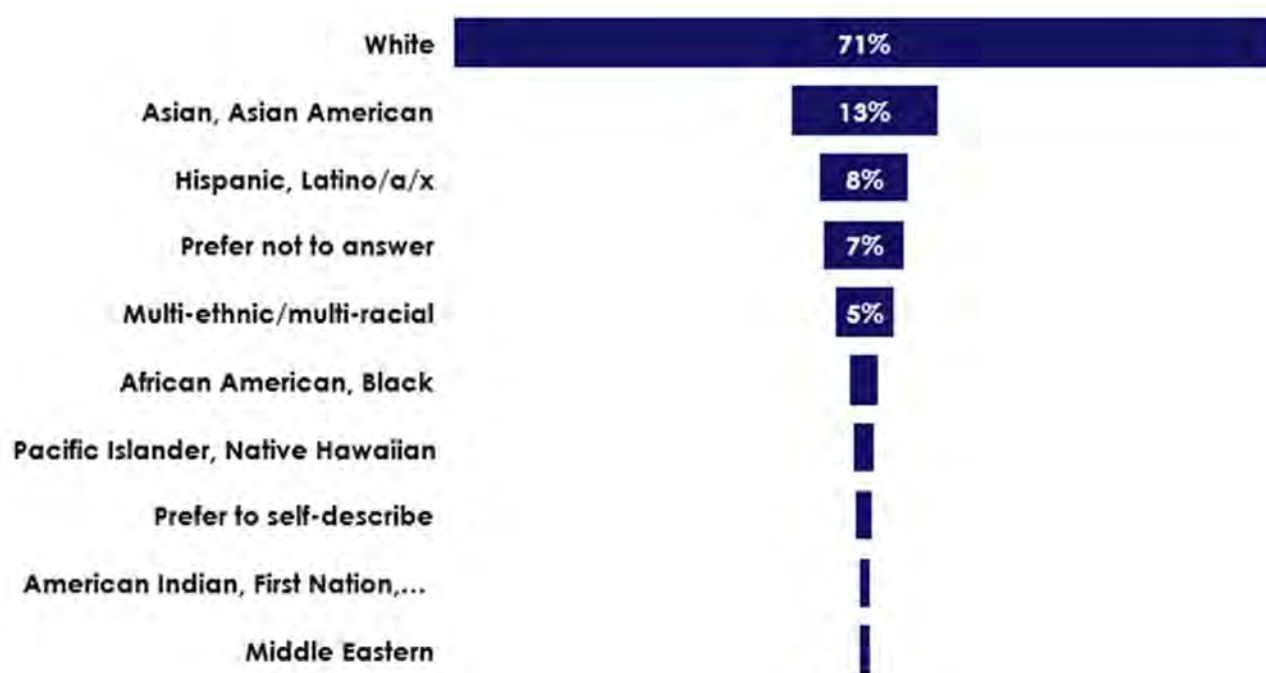


**Figure 198: Gender Identity of Respondents**



### Other Responses

- Stop asking this.
- This is a STUPID question.

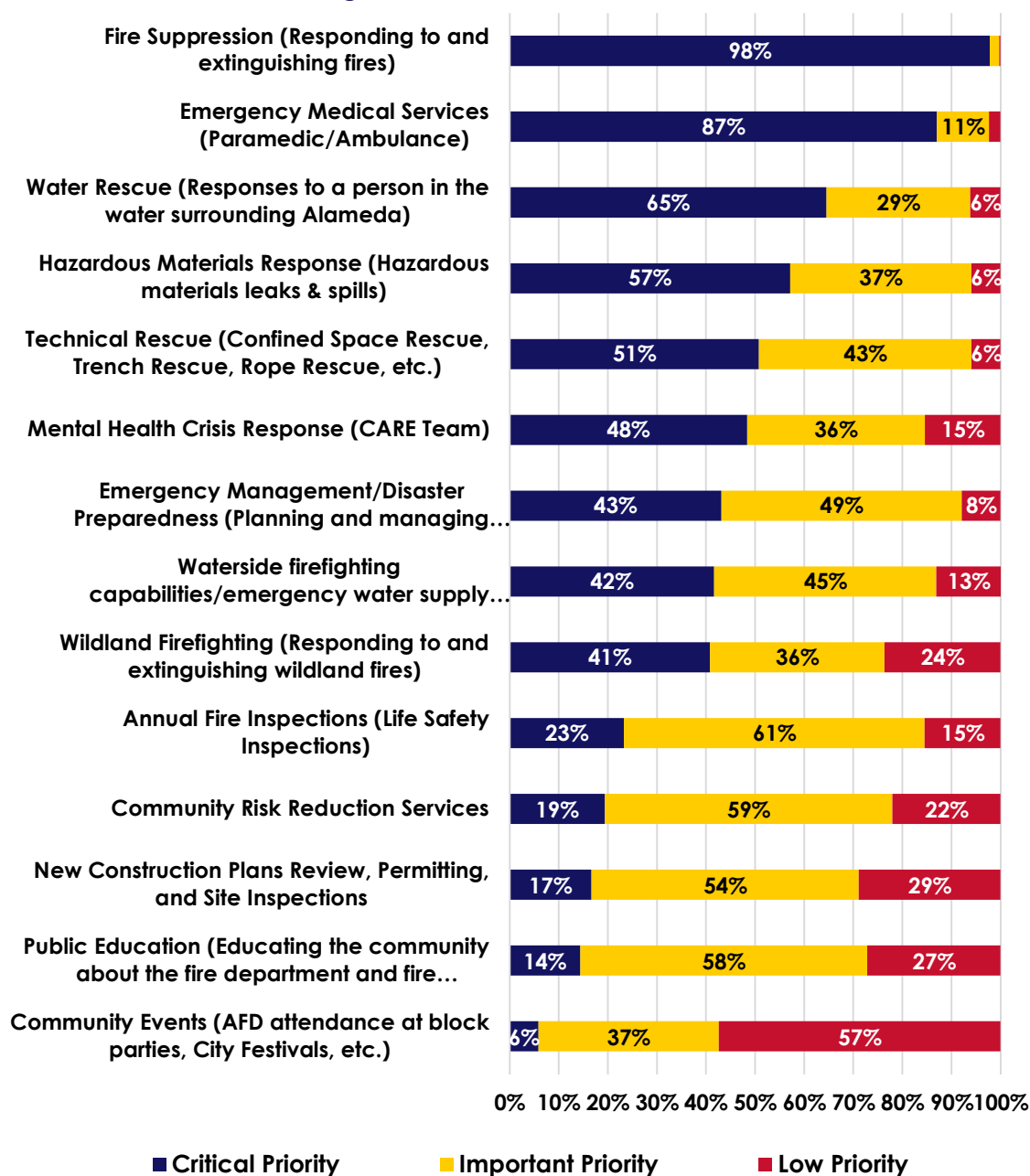
**Figure 199: Racial or Ethnic Background****Other Responses**

- Afghan
- All
- American
- American
- American (Another STUPID—and racist question).
- Caucasian
- Italian American
- Jewish
- Native American
- Stop asking this.
- Vietnamese
- White—Ashkenazi Jewish heritage

## Service Delivery Perspectives

Respondents were asked to rate the following services provided by the AFD using a scale of critical priority, important priority, or a low priority. If they would like to see a service added, they were asked to list it in the comment field.

**Figure 200: Service Prioritization**



Fire Suppression and Emergency Medical Services were overwhelmingly the most critical priorities. The lowest-ranked service priorities were Community Events and Public Education. These results are typical of most communities located throughout the United States.

Additional services listed included:

- AFD fund to reduce noise via better windows for persons that live on OTIS where you're constantly running with Sirens LOUD. Give us better windows please.
- Aid to seniors?
- Ambulance services are critical but its far from clear if APD is the most effective provider given that they roll a firetruck with the ambulance.
- Calendar fundraisers
- CARE Team
- CARE TEAM, CARE TEAM, CARE TEAM!!!
- Career development-can we get some firefighters to speak at career day at Encinal High School?
- Come to our schools
- Comment on the scale used: I wish you had used a 5 point scale, as not all of my "important priorities" would be ranked the same (some would be 4's and others 3's).
- Community classes like CPR
- CPR training
- Debt mitigation, frequent user prevention/interventions, racial equity in hiring and retention
- Develop Youth Disaster Relief Plan
- Emergency preparedness with volunteers coordinated into plan
- I know there are times when it is slow, and firefighters can't leave station, but I wish there was some service you all could perform during these slow times. The perception is that you don't work a lot, mostly "on-call", so if you performed a service at the station, it would improve the overall perception. I don't know if this will be asked later, but I would appreciate personal fire extinguisher testing and recommendations.
- I think mental and physical health services should be handled by a separate team, but since the fire department has the ambulance that's why they handle health emergencies?

- I would love to see the Care team expanded to include responding to suspected overdoses, domestic violence, family/victim support during emergency situations (like informing family of loved ones death or missing child, etc.)
- I'm assuming the CARE Team is separate from the AFD or I'd make it higher priority.
- It was a bit hard to select some of these as there is no alternative. In other words, I do not think it is a huge priority for the FD do mental health as long as someone is doing that (similar re certain water rescues and inspections). BUT there are no other agencies providing that service (like coast guard or county) so I felt I had to increase the priority.
- Jr Firefighters or a program for Youth to learn about the career
- Just a comment about anything I marked low priority: I would mark those services higher priority if no other agency, like coast guard or APD, had responsibility/capability for.
- Less sirens used in front of the hospital
- Mental health is a priority but doesn't need to be in fire department.
- More mental health services
- More visible training!!! I've lived here for 20 years and not once have I seen a crew practicing a hose lay it catching a hydrant of ladder g a building. Each crew should be doing maneuvers every day before lunch
- outreach and education at schools - I still remember when the Fire Dept came to my school 30 years ago!
- Please have the fire department provide emergency water supply. Eastbay mud said no water after a earthquake.
- Preventative public health, care for seniors, how to get a job with fire department, fix old equipment especially on base,
- Reopen the fire station on Alameda Point. We've gone too long without a fire engine.
- Reopening Station 5
- Re-opening Station 5.
- Rescuing cats from trees? ;-)
- Sarah Henry thanks for letting us know about the survey. Thank you for all you do.
- sign off EVERY new City Council project regarding evacuation

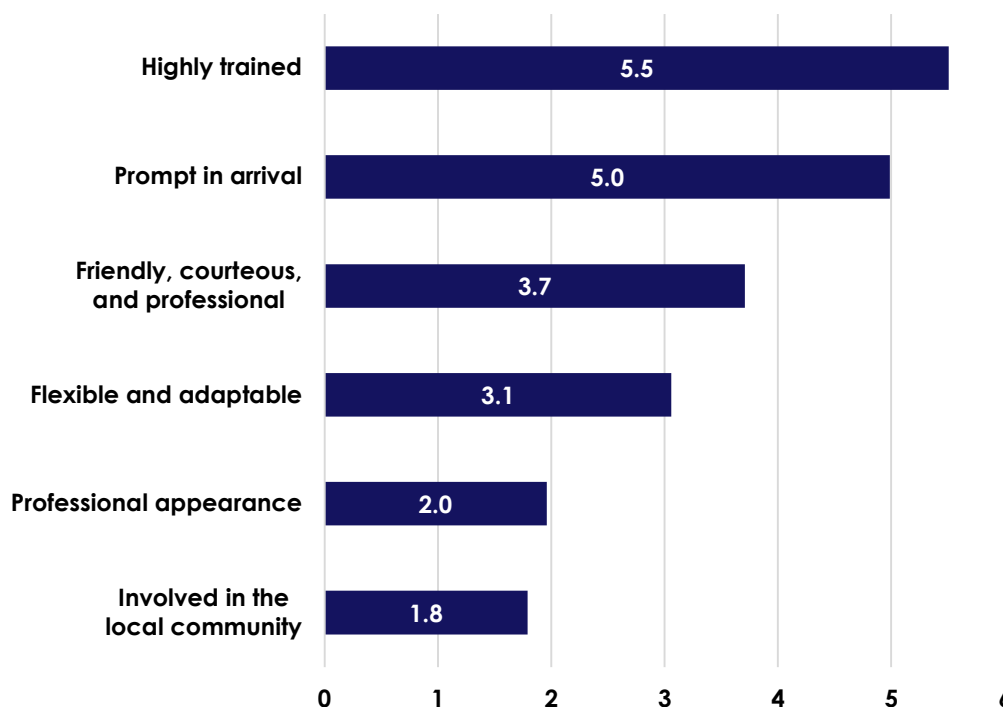
- The CARE team needs resources so their response is efficacious.
- The questions above are confusing because while many of the priorities are critical, it's not clear whether AFD is the only provider of these services in the city. For example, mental health service response is a critical service, but are you asking whether we think that AFD should be the city agency to handle that response or some other entity. Or with new construction plans review, are you asking if AFD should be the lead vs. Code Enforcement / Community Development etc.?
- This is great and I think they should continue doing this but it isn't a high priority.
- To do all of the above listed program's important
- UAS drone program in partnership with APD.
- Visits to schools to educate children in fire safety & evacuation procedures
- Volunteer. How can the public help with some of the unskilled support services
- water rescue was funny!
- What an amazing list of services. Congrats to our service workers!
- Why does AFD send a Fire Truck with the ambulance to every health call?
- Will Do When I Think Of One.
- work with CERT teams to ensure community is prepared for a major disaster, like the impending Hayward Fault earthquake
- Working with owners of multi-family properties to make sure that they have an evacuation plan in place for residents in case of fire. I live in a 8 story building and there has never been communication to residents about what to do in case of fire.
- Would love to see CARE Team expanded to offer ongoing critical health services (wound care, addiction treatments, community medicine training)



### First Responder Qualities

When asked to rank first responder qualities in the order of importance, respondents responded as follows:

**Figure 201: First Responder Qualities**



The Alameda community wants to see highly trained first responders primarily. This was followed by prompt arrivals, being friendly, courteous, and professional, flexibility and adaptability, and lastly involved in the local community.

Additional qualities were listed as follows:

- Bilingual speakers
- ?
- A friendly demeanor when doing investigation would yield more information and provide a more pleasant experience for the recipient of firefighter interactions. Capacity to connect with and soothe people who need care.
- Ability to communicate w/non-English speakers. not necessarily that they can speak other languages, but have the tools needed to communicate w/others who may not speak English or may be ASL users.

- Able to work with all types of people
- Accountability
- Actively anti-racist
- Anti-racist
- Aware of racial disparities among services
- Be better listeners, hand out stickers to kids, cards like baseball cards id firefighters- could be collectible and fundraisers
- Bilingual in Spanish and English
- Can't think of anything right now.
- Capable and competent (which is \*not\* necessarily the same as "highly trained")
- Committed to set of shared community values and trained on how to live those values through their work at AFD.
- Communication abilities on many levels.
- Compassion. I've received a great deal of compassion from Alameda first responders, but no one ever mentions it as a valued quality.
- Compassionate & Empathetic
- Compassionate. Specialized training.
- Competency
- Competent, knowledgeable
- Cultural Humility
- Cultural sensitivity, diversity friendly. Would love to make sure that they value diversity, are culturally sensitive (both ethnic and gender/ability diversity)
- CULTURALLY AND LINGUISTICALLY COMPETENT/CAPABLE
- Culturally competent and racial equality lens
- Culturally competent for our diverse city
- Culturally informed
- Culturally sensitive
- Diverse and open to diversity
- Diversity (3)
- Diversity with languages

- Empathetic (4)
- Empathetic and capable of delivering compassionate care to diverse populations
- Empathetic and treats people with respect and dignity. All should be trained in the principles of harm reduction and how to apply them when working with folks in the community.
- Ensuring they are accompanied by mental health providers
- Entire department (not just optional) trained on how to recognize and appropriately respond to autistic and various disabilities in an emergency.
- Everything
- Experienced
- For CARE team, knowledge of addressing people with mental illness, including referral knowledge for further care.
- Good at follow through. We had a house fire next door. They got it out without it spreading thank goodness. But now the house has been empty and abandoned for almost a year and I've only ever seen the city come by a few times after initial inspection. Would appreciate noticed re whether the shell of a house that is attracting vermin and has been rained into for months is tagged for possible demo by city or if owners are involved or what.
- Happy employee? Increase morale?
- Helpful and reassuring, kind and understanding
- Highly trained to safely deal with mentally ill and autistic populations
- I can't think of one
- I don't care what you look like. Be kind and do your job with respect & show dignity to those situations you might not want to for personal reasons.
- I have full respect for first responders. We all need to be more understanding about others different from us, and we must, as a society, try to be kinder. Thank you first responders.
- I wish firefighter qualities were present in Police. Good job Firefighters here in Alameda. No added comments.

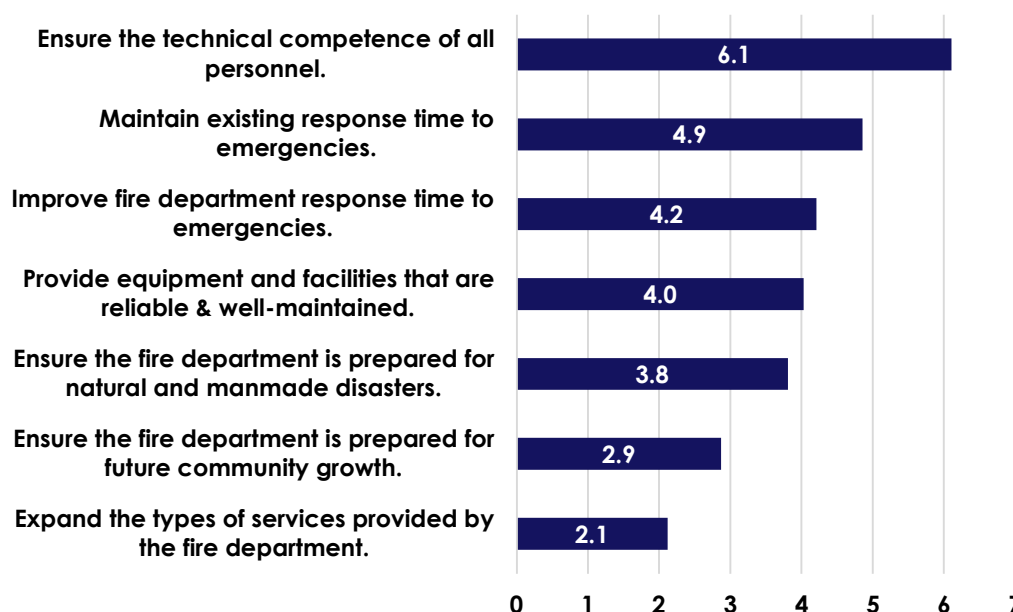
- I'd like to see them more involved with school aged kids and more available to talk with community members. I'd like to see them along the lines of coffee with cops and see each crew out every set telling the community what they're training on and doing. I'm a 911 provider and get it but most people don't
- Impeccable crochet
- Increased diversity
- Knowledgeable about the Alameda community and city services not necessarily related to fires
- Local flood rescue. Terrorist attacks.
- Mental health provider
- Mental health, professional
- more female representation
- My experience with first responders has been stellar!! Feel extremely confident that we are well taken care of, if ever needed!
- N/A (14)
- None (7)
- Not biased against marginalized people (poor, minorities, people who have mental health issues)
- Ongoing resident and business owner information and best practices.
- One leader to ask questions. When my mom had a stroke, all 6 AFD people were asking me questions all at one time. I had all the info, but could not field all the q's at the same time.
- physically in shape
- Prepared/ trained to respond to persons with mental health issues professionally with compassion
- Previous page didn't work on my Samsung Android
- Professional, Clear, Compassionate, Communication.
- Prompt response
- Quality added would be an increase in community engagement in reducing their risks to unwanted hazards inherit to our folks in our island city.
- Reflecting community demographics

- Resourcefulness
- Sensitive to issues of racial justice
- Sensitivity- avoid jumping to conclusions re patients
- Some Spanish and/Cantonese language skills to be able to communicate basic first responder commands.
- Strong communication, racial equity awareness
- Successful in addressing the issue.
- Thanks for all you do!
- The Alameda fire department is amazing. Don't change anything!
- To be "friendly, courteous, and professional" requires that the firefighters be culturally competent so that they can work appropriately with different communities, ages, genders, etc. It is so important that everyone receive training in culturally competence, it should be its one quality.
- Train on the streets. Train in the tower.
- Trained in mental health emergency response
- Trained in mental health response tactics
- Training for autism population
- Training in dealing with mental health-related situations as needed.
- Trauma informed, aware of needs of individuals with mental health issues, persons with disabilities, medically fragile including elderly.
- Trauma-informed and responsive
- Trauma-informed, and compassionate
- Well rested
- Y'all are amazing. Does wearing a kitten on your shoulder count as a quality?

### Planning Considerations

Respondents were then asked to compare each of the following elements to the others and rank the planning considerations in order of importance. The results are displayed in the following figure:

**Figure 202: Planning Considerations**

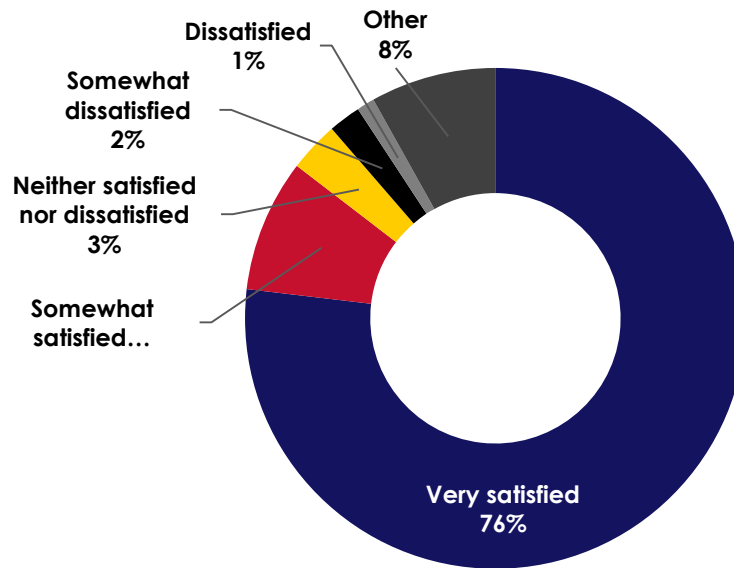


The technical competence of personnel received the highest importance. Maintaining response times, improving response times, reliable and well-maintained equipment and apparatus, and ensuring the department is prepared for natural disasters ran middle-of-the-pack. Ensuring the department is prepared for future community growth and expanding the services provided by the department were considered the least important.

### Satisfaction of Services

When asked, 49% of respondents had received services from AFD. Of those that had received services, overwhelmingly, respondents expressed great appreciation for the services their department provides. Nearly 84% of all respondents were either satisfied or very satisfied with AFD's services. Only 3% of respondents replied as somewhat dissatisfied or dissatisfied.



**Figure 203: Satisfaction of Services**

Additional comments about their experience included the following:

- A year or so a resident was stuck in an elevator. The response time seemed slow and property management wasn't available to help the firefighters access the elevator room. It would be reassuring if the fire dept could work with property management here so they have access to what they need in case of an emergency.
- AFD response was great when we had a person pass out in front of our building
- All who responded were compassionate and professional
- Annual inspection was efficient and informative
- Bay Farm crew of 5 saved my husband's life.
- bicycle registration used to be a priority
- Called to report a neighborhood fire. FD came within a few minutes - between 5-10 - but that seems like such a long time when a nearby house is on fire.
- Can't say, I wasn't all there at the time.
- Car accident -staff was courteous and kind. Arrived quickly acted professionally.
- CARE team had no resources to help the individual for whom I called
- CARE team response was excellent
- CERT

- Cost!
- Department was knowledgeable and kind, parametric was not aware of recent change to location name leading to some confusion.
- Difficult to reach anyone to answer questions for businesses. I.e.; occupancy questions, etc.
- Efficient, courteous, technically prepared
- EMS provided care and assistance to my late husband (a heart transplant recipient; diabetic) on several occasions over the past 20 years. Personnel aided in keeping him calm and able to answer questions clearly. On one occasion a member of the Team stayed with him in ER until I was able to arrive. I have nothing but praise for EMS.
- Excellent response time, thorough, courteous.
- Fast response time,
- fire inspector inspected my business for 1st time after being open +7 yrs. very nice and professional. I was surprised to get a bill. it would've been nice if he gave us a heads up on that coming. not complaining that have to pay. but no one likes surprises
- Firefighters were too handsome. Sorry, but the guys were easy on the eyes and I wished I had baked cookies so they could stay longer.
- Firemen came to my building and checked the fire extinguishers. They were friendly, educational, competent, and professional.
- Firemen were sensitive to the children who were present seeing their grandma unconscious and being given CPR.
- Great ride in ambulance with paramedic, unkind and rude other first responder imposing control upon arrival
- had a heart attack 4/20/23 couldn't ask for better care
- Had a medical emergency. The number of first responders and types of vehicles sent seemed excessive.
- had ambulance rides. very satisfied w/service. shocked at cost.
- I called 911 in the middle of the night, c 3am because my husband stopped breathing during sleep. The responders came quickly and were very efficient in providing CPR, etc.

- I called EMTs on my boyfriend 5 times. The 5th time they were able to take him to ER. He refused care the first 4 times
- I didn't think 2 firetrucks and 5 firefighters were necessary for dealing with a dog bite. I was in shock and the animal control person called them because I said I needed assistance. Then I was billed \$395. I feel like I was used for a practice session. I live across the street from the firehouse so it wasn't far and it was long.
- I live in a condo & fire department has always responded very quickly & been super helpful - thank you!!
- I put yes because they came to my house (wrong street suffix) and I was impressed with their focus and calm. It was reassuring to see the EMS at work.
- I was displaced out of my home due to a gas leak. The residents of the complex had to go door-to-door evacuating each other from the home rather than AFD. Once the situation was deemed "safe," we could not reenter our home, but were advised AFD would help with connecting residents with a person for temporary housing. 3 to 4 rigs responded, most of the personnel stood around and when we were looking to obtain help, everyone had dispersed. We never received a call from AFD or the red cross to coordinate temporary shelter. A police officer who remained on scene ultimately helped us.
- I was embarrassed to have to call for help - I got my butt stuck in a lawn chair that collapsed in my yard when I was home alone! - but the firefighters couldn't have been nicer
- Incredibly professional and helpful
- It actually wasn't me but my dad, his roof was flooding on 1/1/23, I had no idea the "fire" dept would help him pump his roof of standing water
- It was a gas leak - they didn't find it but we called PG&E afterwards and they found it
- It wasn't an EMERGENCY emergency lol they could have arrived without all the lights and sirens but still appreciated
- June 2010 I had a medical emergency and they saved my life
- Life Saving
- Living on east end the response came from Webster st... why not park st or bay farm?

- Medical and fire response. City should have broken glass clean up, from FD breaking out windows if fire doesn't do it.
- medical assist call, did not know how to get chair stretcher down the stairs.
- Medical emergency. Staff was timely, friendly and helpful.
- Mental health visit for family member. EMTs were kind and professional
- My 911 call was not responded to re: smoke and fire at building 114 last summer. AFD only responded after a second call was made 35 minutes later
- My dad had a health emergency and fire department responded promptly and were very kind and professional.
- My ex parents house caught on fire in 06. One of your Firemen had to use the Restroom while fighting the fire. Little did anyone know that my 6 foot Montior lizard 🦎 jumped out of the bath tub and ran up the Firemen leg while he was peeing. The Firemen composed himself and brought our very injured Lizard outside and proceeded to care for its badly burned back, and smoke Ventilation ☐. We are forever grateful. 🙏
- My husband fell and cut his head in the middle of the night and our local firehouse responded to our 911 call immediately. They were fast, highly competent and well trained, and really patient and knowledgeable about the situation. We're so grateful for their assistance!
- My neighbor is ill and our Fire Department has been good about helping to getting her off island in emergencies
- My personal experience with EMT to hospital was wonderful. The CARE team experience has been mixed. Response time is long. Not sure staff is trained well to support youth.
- N/A (6)
- None
- Of the 6 AFD who responded when my mom had a stroke, all 6 peppered me with questions all at the same time. Even though I had all the answers there was no way I could provide them without having a single POC.
- One of the guys was so rude to my 83-year-old neighbor who just fell. I had to tell him to be nice!
- Our local FD folks were fantastic when our elderly neighbor needed help - it was just sad to repeatedly see the hard limits of the care they could offer him.

- Our place caught fire 2 years ago. We live 3 blocks from the fire department, it took them over 30 minutes to respond and I watched my place burn down while waiting for them to arrive. When we left the place, the fire was small with little damage. Makes me wish I stayed and tried to put the fire out myself rather than watching it get bigger and burn waiting for them
- Out of all the emergency personnel I've encountered only one has been genuinely kind
- paramedic - very prompt, handled both the emergency and the emotions of those involved. A+
- Paramedic dismissed patient symptoms as anxiety which caused a significant delay in treatment at hospital.
- paramedics arrived quickly and were courteous, well-trained and professional
- Paramedics responded to my kid at school years ago, but did a great job
- Personnel was thoughtful and comforting; I did struggle with being charged for medical care. Isn't that supposed to be covered by my tax dollars?
- Prompt arrival, calm and helpful with a medical emergency. Answered questions clearly and compassionately
- Prompt, professional, caring
- quick response, and minimized damage on our neighbors home. Sprayed trees to stop fire from spreading to the neighborhood.
- Rescued my family and me in a stuck elevator the night of my wedding
- Responders were fast, thoughtful and courteous, as well as very kind and helpful. Could not have wished for a better experience.
- Response time and professionalism was excellent!
- Response time was fine. Most were friendly except one. No emergency small or large constitutes a person who doesn't want to be there.
- Serious house fire.
- Son had an injury, 911 was called. They arrived before I did and they were amazing! Thank you!
- Thanks for being so kind to my daughter when she was injured

- The AFD respondents were wrong about the nature of my medical issue and gave me inaccurate advice. They were condescending. The hand surgeon that I saw later said they would have been able to address the damage if I had seen them right away but the firefighters advised me that I was not actually in need of care.
- The Alameda Fire Department EMTs have saved my life twice now. I am beyond grateful.
- The fire department arrived in less than 5 minutes to help me get my baby out of my car when I locked my keys inside.
- The first respond was to destroy a \$5,000 door than to use a screwdriver to release the safety
- The people that showed were rude. My mother was very sick, was taken to the hospital, the fire department showed no compassion at all and were very rude.
- the promptness of our first responders is amazing!
- The staff that have showed up have been excellent. Navigating to the right response team (CARE vs. Police vs. Fire—and what kind of CARE response) needs improvement.
- The team is incredible. Super professional. Highly valued.
- There was a house fire next door overall response was great The site commander responsive. Some younger firefighters lacked sensitivity for elderly neighbors site commander respectfully intervened and was responsive
- They came when my tree fell.
- They inspected a potential gas leak and were so incredibly courteous and professional.
- They responded quickly and had the fire out so fast. at the time we had a very young child and an infant. What could have been catastrophic was managed with efficiency and concern.
- They responded to a medical emergency promptly with very professional and kind demeanor.
- They responded within minutes and were incredibly skilled and professional. They did an excellent job, I was very impressed!
- They tried but missed the fire in the walls. Left and had to come back
- They were quick and professional. (Helped me two times)

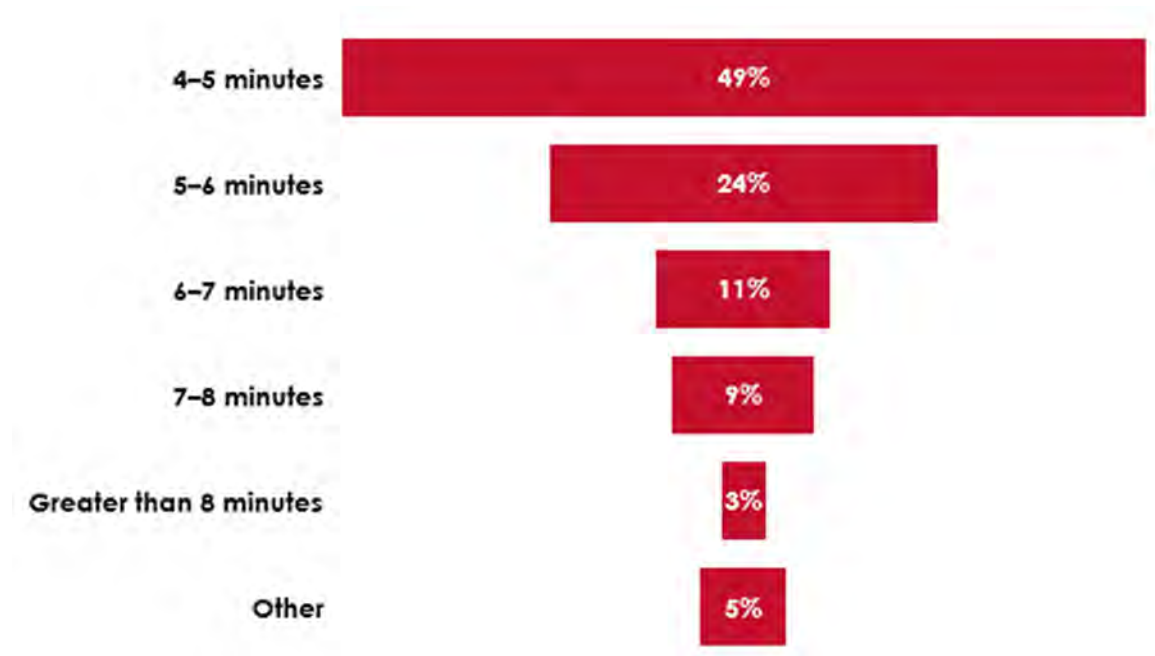


- They were very helpful in putting out a small stove fire while we were out
- Too many personnel and resources expended. Not needed and over used.
- Very kind & professional (2)
- Very professional (2)
- Very satisfied with response but not really happy with multiple vehicles coming with sirens on when I clearly specified it was NOT an emergency.
- Very timely, courteous, and friendly
- We called in the middle of the night because 5-year-old was struggling to breathe while sick. They came within minutes and worked so well with a scared 5-year-old.
- We had a car fire in front of our house 14 years ago. FD was on scene quickly and efficiently put the fire out.
- Wonderful and professional in both events!

### Response Time Opinions

Total response time is the amount of time a resident or business waits for resources to arrive at the scene of an emergency, beginning when they first call 911. When asked how long it should take for emergency resources to arrive after calling 911, taking into consideration call processing times, travel times, time of day, concurrent incidents, etc., 73% of the respondents believed resources should arrive in 6 minutes or less. This is a larger than typical portion of the population and may indicate a need to educate the community about fire department processes and service delivery.

Twenty percent expect services in 6–8 minutes, and only 8% of respondents believed resources should arrive in 8 minutes or longer or offered an “other” response. Several “other” responses indicated they expect response times in 2–3 minutes, also supporting the recommendations for additional communication and public education on fire department processes and services.

**Figure 204: Response Time Opinions****“Other” responses:**

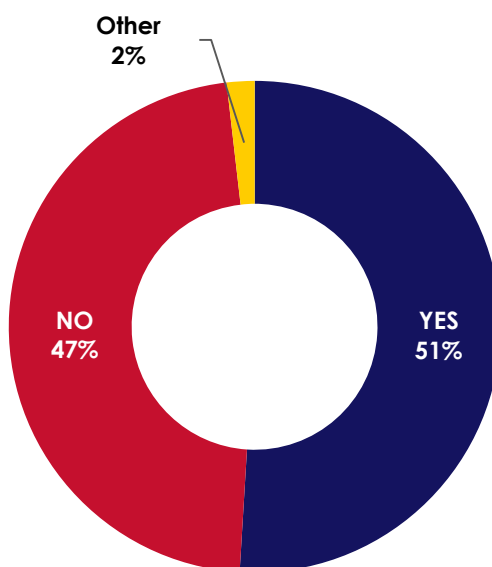
- 10 minutes
- 10 minutes
- 10 minutes is the average.
- 2-3 min
- 2-3 minutes
- 2-3 minutes.
- 3 minutes
- 3 minutes
- 5 minutes for fire greater than 8 for other incidents
- As Quickly As Possible when dispatched.
- As soon as possible
- asap
- ASAP - less than 4 minutes
- ASAP Alameda is not a large place. No more than 10 Mims. Sooner if possible.
- Depends on distance from start point. So it's difficult to answer

- Depends on the call. if it is a fire vs someone choking or having a heart attack, I would like to know that emergency resources can be available within 5 minutes for the most life-threatening situations where each minute can impact life outcomes. But that doesn't mean all calls need to be there in five minutes.
- Depends on the emergency
- Depends on the type of emergency
- Depends on the type of emergency 5-10 minutes
- Depends on what you're calling for
- Don't remember. It was more than 20 years ago. I think they came very quickly.
- i have no idea. i think data should be used to determine this answer. based on type of call, what does the data say response time should be to optimize outcomes. of course faster is better, but it comes at a cost. this is a data driven question not a subjective question
- I honestly don't know
- I honestly don't know what is reasonable to expect. Just ASAP
- I think the right answer depends on all those factors, as well as how far you are from the emergency resource team. In my emergency experience, every minute counts, and/but sometimes when people call 911 it is not as urgent of an emergency — so it all depends.
- I WANT it in less than 4 minutes. Everyone does. Not a meaningful question.
- I'm not able to gauge this. Obviously, the least amount of time possible, but I don't know all the complexities & challenges involved
- It depends
- It depends on the call
- Less than 5 min. TRAFFIC SHOULD NOT BE AN EXCUSE FOR LONGER ARRIVAL
- less than 5 minutes
- Less than 7 minutes
- Less that 10 minutes
- Live near station 1
- Maybe less because I live on Park St.
- My hope would be within 10minutes, but imagine how hard that could be!

- The ideal would be 4-5 minutes as we all know that every minute counts but reality doesn't always permit that luxury. 8 minutes maximum.
- triage: 4-5 min for immediate medical issues, 7-8 min for general emergencies
- Unsure
- Within 10 minutes
- Within 10 minutes?

When asked whether the response time expectations change depending on location, respondents replied as follows:

**Figure 205: Response Time Expectations**



**“Other” Responses:**

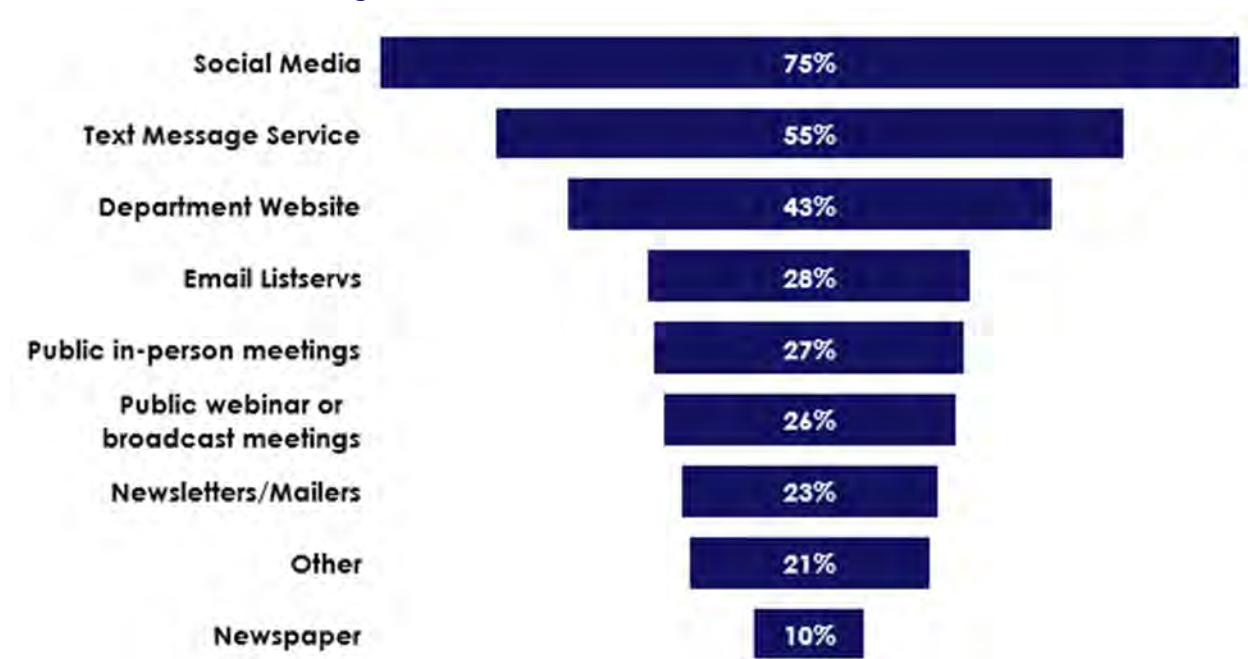
- ?
- Don't know
- I don't really know
- If in Alameda, I believe all stations are within that time frame
- It does, but it shouldn't.
- Kind of not, because I would expect more than one fire station could be in proximity.

- My particular neighborhood is impeded by St Joseph's traffic blockades in combination with "Slow streets" San Jose Ave. I have witnessed fire dept vehicles being slowed by those blockades.
- no sure only received services at one location
- not in the city of Alameda, but yes when in rural areas
- Not sure
- nothing on the island should be more than 6 mins away from any fire station
- There's a difference between expectation and understanding. I expect them to arrive promptly. I will understand if I'm in a more remote location and they can't.
- within the City of Alameda should be consistent
- Yes but my hope is that the AFD would respond as soon as possible to an emergency

## Communication Methods

When asked which methods the department should use to communicate information to the community regarding emergency preparedness, fire safety, and wildfire information, respondents replied as follows. Respondents were able to select more than one option.

**Figure 206: Preferred Communication Methods**



Social media sources—predominantly Facebook—and electronic communication methods—text, email, and website—are most preferred by Alameda's community.

Other preferred methods included:

- A TikTok account would help teach gen z more about the fire Dept and what to do in common emergencies
- Alameda Sun and other Alameda papers
- Alameda Facebook groups
- Alameda Peeps
- Alameda Post (5)
- Alameda post, Alameda peeps, Instagram
- Alameda Sun (11)



- Alameda Sun and Alameda Journal
- Alameda Sun Newspaper
- Alameda Sun, Alameda Journal (2)
- Alameda Sun, Journal, and Post
- All (2)
- all of the above social media plus Next Door
- All platforms.
- All social media
- Annual City of Alameda Alerts maybe?
- As Widely Promulgated as possible
- Calendars
- City Facebook group, Alameda Sun newspaper
- City website
- East Bay Times
- Eastbay Times and Alameda Post and Sun
- EB Times, Alameda Journal, Alameda Post
- Facebook (30)
- Facebook Alameda groups like peeps
- Facebook Alameda newspaper
- Facebook Next Door
- Facebook reminders
- Facebook Twitter YouTube TikTok
- Facebook, Alameda Journal
- Facebook, Alameda Post, Journal
- Facebook, Alameda Sun Newspaper
- Facebook, Instagram (16)
- Facebook, Instagram, TikTok (2)
- Facebook, Instagram, Twitter, YouTube (2)
- Facebook, Nextdoor

- Facebook, Peeps
- Facebook, Tik Tok, YouTube
- Facebook, Twitter (11)
- Facebook, Twitter, Bluesky
- Facebook, Twitter, Instagram (10)
- Facebook, Twitter, Instagram, maybe YouTube, Alameda Sun, Alameda Post, Blogging Bayport,
- Facebook, YouTube (3)
- Facebook, TikTok
- Facebook; Alameda Sun
- FB, IG, TikTok, YouTube
- I think Facebook is best for the largest reach
- I use Facebook. Best newspaper is the Alameda Sun (for those who don't do social media)
- IG, Alameda papers
- In person events at dept or on isle
- In person only for things that might require in person training such as CPR training
- In various languages.
- inserts in tax bill
- Instagram (5)
- Instagram, TikTok, YouTube
- Instagram, Twitter
- Local paper, Times and Sun
- Next Door, Facebook
- Nextdoor (2)
- Nextdoor, Facebook, Instagram
- Outreach to multi-family property management companies/owners
- PulsePoint
- School presentations, Facebook, email to residents
- Short quick videos

- Social media: Facebook, Instagram, Twitter (for now) | | . Local newspapers
- Social: Facebook, Twitter, Nextdoor
- Sun
- Tabling at block parties and schools
- TikTok
- Twitter: Alameda Journal
- Visit classroom's for public safety
- What is most cost effective and reaches key audiences.
- YouTube, Facebook, Instagram

## Expectations & Concerns

### Expectations

When asked to list the expectations the respondents have of their fire department, the majority of respondents expect prompt, professional, prepared, and well trained response from the fire department. They gave the following responses:

- I expect our local fire department to be highly trained, professional, prompt, friendly, and actively involved in the community.
- #1 - Get to the scene asap when called. #2 - Trained to handle any situation they are presented, and the skills to problem solve when things go sideways.
- 1) Protect us; 2) Educate us; 3) Don't get involved in politics
- 10,000
- 5 minutes. I'm 4 blocks from station 3
- 5-6 minutes
- Ability to quickly and effectively save a life with little to no collateral damage to the surrounding area/people, whether someone is in a burning building, is drowning, is trapped up high/in rubble, is experiencing a mental episode, etc.
- Accessible services for all. APD should be prepared to help every person regardless of disability, weight or size and understand the different techniques for handling different bodies
- Accurately dispatch the required resources to the call for service. Timely assessment of the emergency service and request appropriate resources to control the emergency incident.
- Address emergencies related to well being of persons/community when called, and for fires in particular.
- AFD already lives up to my expectations, they are solid!
- AFD has always been responsive to various types of situations over the years, and have done a great job protecting Alameda. I expect and hope to see them continue providing excellent service.
- Alameda is a small place so fast response is expected.
- Alameda residents should not be billed for ambulance rides.
- Always answer the phone; Immediately respond or pass onto other appropriate division (I.e. Police)

- An exit plan off of this island in case of an earthquake, and there's a major fire, and the bridges and tube is closed down
- Annual inspections and occupancy permits! I see buildings with the fire sprinkler systems turned off!
- Arrive as quickly as possible, provide quality help and assistance and be professional which include technically competent
- Arrive at a timely manner
- Arrive fast
- Arrive fast and respond
- Arrive in a timely manner. Respond with highly trained professionals. Save lives. Work with public agencies on education prevention and keeping things up to code.
- Arrive on time, de-escalate the situation
- Arrive promptly, Be nice
- Arrive promptly and initiate quality care for medical calls, and quick fire suppression
- arrive promptly to emergencies
- Arrive promptly/ quickly as it could be a matter of life and death. Be kind and nonjudgmental. Informative, Check in after if possible.
- Arrive quickly. Have phone staff be patient
- arrive quickly. Be trained. Save lives.
- Arrive to the scene quickly and execute the task with competency
- Arriving quickly after calling in an emergency
- As the granddaughter of a Washington D.C. fire chief, I expect our department to do well in emergencies!
- Asap
- Basically to respond quickly if I ever need them and do the same to the best of their abilities for all others in their service area.
- Bay Farm crew set the bar. They were HIGHLY skilled/trained in order to save a life AND pedal was to the metal. They crushed it on the time to get to my house. The lead - he calmed me down and made sure I knew my husband was in good hands. He was not wrong! So expectations are: trained and timing.
- Be able to prioritize calls, respond in a timely manner and without bias

- Be available to help at any time, be professional, be friendly to the community, help in state fires
- Be available when I need you in an emergency and know how to handle the emergency.
- Be available when needed, prompt, helping to prevent future issues (through trainings, maintenance, etc.)
- be courteous or compassionate even in emergencies especially to the family observing the emergency
- Be highly competent in all emergencies they respond to.
- Be in top of it, respond immediately, be nice kind and have compassion. I would like to add, THANK you to all of the firefighters
- Be professional, properly equipped, and trained.
- Be ready, be prepared,
- Be there when called. Efficiently provide services.
- Being as prompt as possible
- Being well trained
- Calm, competent, courteous, capable
- capability, promptness
- Capable and adept at fire response, emergency medical response
- Caring, responsible, intelligent, and professional emergency responders
- Come when called in a timely manner
- Community oriented and supportive of all members of community, including those experiencing homelessness and those with addiction issues.
- Competent service
- Competent, professional, friendly
- Comprehensive, thorough training. As fast as possible response time.
- Courteous courageous competent
- Courteous, competent, and happy employees
- Critical response to fire or medical situations. To continue to always be sexy.
- District 5 needs to reduce the response times



- Do a good job
- do a good job fast, ready for any emergency, professional.
- Do their jobs
- Do your job well. With integrity and dignity and respect for those that you are helping. Expand mental health survives in non emergency/ de-escalation situations .
- Does not bankrupt its citizens ... i.e. be considerate regarding salary and benefits, operational budget
- Efficiency in doing the job and to the taxpayer.
- Efficient and up to date on the latest technology
- Emergency response is #1; I care about the success of the CARE team
- Emergency response to fires, EMT/health emergencies and hazmat
- Emergency response, professionalism, skill
- EMT services
- Engagement in CARE team for non-police mental health response
- Everything mentioned above.
- Experienced and know how to do their job. Mental Health is a new issue but should know how to engage with the unhoused and people with mental illness.
- Fast and friendly. Take control. Role model for our community children.
- Fast arrival and emergency response
- Fast professional response. Dedication and compassion. I believe AFD has these traits.
- Fast response time
- Fast response times (industry standard compliant) with a fully staffed fire department.
- Fast response times in all areas of the city. Adequate amount of people showing up on fire engines and fire trucks. Prepared to handle all emergencies.
- FAST response to emergency calls
- Fast response, highly trained
- Fast response. Calm, well trained personnel who communicate effectively. Visibility in the community among school kids, street fairs, etc.
- Fast, professional, effective.

- Fast. Urgent
- Fight fires prioritizing human safety followed by property safety
- Fight fires, ensure safety, hazmat, EMT response, being properly staffed, paying all staff well enough to live in the community, fire prevention, respond promptly to public records requests in accordance with the law
- Fire abatement, medical response
- Fire and emergency services quickly and effectively
- Fire and medical issues, any hazardous situation. Community assistance not requiring the police.
- Fire at neighbors home
- Fire prevention fire response paramedic response mental health response public health response emergency works kind knowledgeable
- Fire safety for all people on this island, Fire prevention, disaster assistance
- Fire stations located across the island so that response times are consistent for all
- Fire, medical, hazardous waste, gas, mental health crisis, rescue
- First Response for fires, emergencies as well as mental health checks
- For this small town FD arrive on scene within 5 min from call, ready and capable to fight any fire and rescue a person in fire, or trapped in house/car/etc. Also provide adequate medical until EMT/ambulance arrive on scene. Assist in evacuation in disaster, earthquake, gas pipeline leaks, etc. Each station Be ready to provide ALL emergency services for their designated area around station in a major earthquake
- Get there, take care of business
- Getting move involved in the Community. Hosting EMS nights at High schools. Going into homes and helping Baby proof the new couples home. Geriatric ppl that live at home help by Fall proofing, and labeling Medicines with how much to take, what day to take , so our older Alameda residents don't accidentally take to much and Overdose. Hosting CPR classes for Youth on Sports teams, youth who baby sit. In our community. Layman CPR is the First link in Emergency Care... I used to be an EMT now I work as A Emergency Room Tech at Kaiser Oakland.
- Go Cert
- Go unbiasedly respond quickly and professionally to fires
- Help in an emergency. Stay calm and level headed.

- Help us in time of need: fire, accident and health emergency!
- Helpful
- Highly trained
- Highly trained individuals with the equipment they need
- Highly trained, experienced firefighters. Top quality equipment.
- highly trained, fast response, helpful and compassionate
- Highly trained, highly prepared, provide community preparedness instruction
- Highly trained. When on scene, take appropriate life-saving and knowledgeable action. I was APPALLED that person drowned off Alameda Beach (a few years ago) although lifeboat was nearby.
- House or car on fire, we need you. Person having medical issue, just send ambulance (and not both)
- I am on west end and concerned about risk of tsunami after seeing impact of flooding after recent storms.
- I appreciate their service and support of the community in all ways.
- I don't expect my fire department to be involved in local elections and/or having city council members push their agenda for them.
- I expect a well-trained department that limits damage to room and contents.
- I expect from all public safety personnel that they treat everyone they encounter with respect no matter their income, mental or living status. I am so pleased to see the CARES team in Alameda
- I expect the firefighters to stay neutral on politics. Please stop delivering political flyers.
- I expect them to arrive promptly, quickly assess the situation, and remedy the situation in as prompt and nondestructive manner as possible
- I expect them to be trained, encouraged and empowered to save lives within the City of Alameda limits. I expect them to chose the job because it's their calling, not just because of the pay/benefits package. I expect they will attempt their best effort for everyone involved in each given situation.
- I expect them to come as soon as possible to active fire calls. Waiting 30 minutes for the department to arrive when I live about 3 blocks from the fire department in Bay Farm I felt was right. I watched my place burn down while waiting for them

- I expect them to have compassion for our unhoused neighbors, mental health, and not be racist while doing it
- I expect them to respond quickly to a scene and have the training to assess the scene and develop a plan of action. I expect the fire department to be able to appropriately respond to medical emergencies since they are the most common. I expect them to appropriately and quickly to respond to mental health requests. Fires are the most dangerous but least prevalent call they receive.
- I expect them to respond to notification of a fire in the city as well as emergency calls. If there is a fire nearby or huge wildfire that needs manpower I would expect them to help with that as long as some people would remain to cover Alameda fires and emergencies.
- I feel like the fire fighters Union has outsized influence on Alameda politics. It makes me think there's some budget bloating going on. Why such a need to protect? Not like that in other cities.
- I have tremendous respect for our firefighters and fire departments. More citizens should show them respect, as part of the community. Thanks to all those brave people who give their all to protect us.
- I hope that the CARE Team continues to grow and that responders continue to receive training on supporting people who may not be experiencing acute mental health distress but may need help in other ways, such as individuals who are experiencing homelessness. I hope that responders can continue to learn how to direct people toward local services in a compassionate and helpful way.
- I hope they can arrive ASAP if there is an emergency. We live right down the street, so they tend to respond very quickly to calls on our street.
- I know it takes time to find the emergency, assess, triage, and act. I'm all for realistic time expectations so my FD can focus on saving lives.
- I live so close and expect them in minutes
- I think they should be able to get anywhere on island in 5 minutes
- I want them to be able to respond to emergencies with utmost urgency, which non-emergencies need to be addressed potentially through other agencies or subsets of AFD.

- I would like AFD to be a department that provides a caring, thorough response to the community in times of crisis and need. I expect AFD to be well-trained on all aspects of their jobs. I also expect that AFD be future-facing; as the community's needs change and our lived environment changes, I would hope AFD can flex and adapt to that.
- I'm sure they are already awesome and that's all I've heard. I would hope they are always analyzing and implementing ways to improve outcomes.
- If 911 call comes in to AFD. And thru triage ,it is top priority, we should be able to get help in 4 to 5 minutes. The island is not that big.
- If i am not able to give an exact location, then I would not expect the FD to arrive within 5 mins.
- Immediate , appropriate response.
- It's an Island with island problems so sometimes it takes longer to get there from here.
- I've never had to use the FD services but. I hope they would help put out a fire very quickly since I'm just down Buena Vista.
- Keep my community safe through prompt and efficient fire and emergency medical services.
- Keep up great work
- Keep up the good work
- Keep us safe.
- Kind, compassionate, professional, human
- Knowledge based experts in medical crisis triage, fast response to calls
- Knowledgeable, non-judgmental, focused on safety and basic medical needs, prevention and solution oriented. Assist homeless populations as part of fire prevention.
- Knowledgeable, responsive, inclusive & adaptable.
- Less than 10 minutes without traffic less than 15 during traffic
- Life saving where possible. Rapid response. Dependability.
- Listed previously
- Maintain equipment. Train well and revisit training techniques to update and adapt to new technologies or circumstances (e.g. flooding, wildfires)

- Make sure no one is in a burning structure; put out fires quickly
- Medical emergency response, fire response
- More ambulance services and less fire trucks.
- Most importantly, avoid city-wide fires like we had before 1920.
- N/A (5)
- Need to add a station to handle the growth at Alameda Point
- Nobody can predict how fast the fire department can get to your home or emergency. Especially where you live, especially in spread out towns and neighborhoods. One thing I do expect is every single person who arrives to rescue and aid the emergency, that they know what to do in a time of crisis.
- Non-armed emergency response
- None (3)
- not to try to get everything they demand
- Not waste taxpayer money.
- On time. Experienced. Friendly. Professional.
- Please add mental healthcare services.
- Please inspect and ensure that all facilities with large gatherings, such as schools and after school care facilities, have safe egress during emergencies and fire safety plans in place. Thank you!
- Prepared
- Prepared as much as possible for every day emergencies as well as natural disasters
- prepared to respond to fire (especially house fire) within minutes, other emergencies as appropriate
- Prepared, professional, expedient, thorough, always backed-up by police department.
- Prevent and put out fires. Respond to people experiencing critical health issues, both on land and in water. Anticipate and respond to natural disasters. Have a fully functioning CARE team especially to address people experiencing mental and addition issues.
- Prevent fires from spreading
- Previously answered in survey



- Professional (2)
- Professional and respectful
- Professional compassionate service
- Professional, Courteous, Competent
- Professional, accountable, competent responders with competent, compassionate, accountable leadership
- Professional, and skilled at the job. Jacks of all trades
- Professional, Clear Communication, Compassionate, Trained Well
- Professional, well trained firefighters that can adapt to rapidly changing situations.
- Professional, well trained, healthy mentally and physically and capable of doing their job.
- Professionalism, Quick response times, Highly trained personnel
- Prompt
- Prompt and competent
- Prompt and competent response to fire and medical emergencies
- Prompt and efficient
- Prompt and prepared for emergencies
- Prompt and professional response
- Prompt and professional service.
- Prompt and well-trained response to fire and health emergencies
- Prompt arrival and courteous. All neighborhoods should have the same level of service.
- Prompt arrival and response within 5 minutes. Care for community. Emergency medical response
- Prompt arrival and well trained and courteous
- Prompt arrival, highly trained EMT and in fire suppression, compassionate
- Prompt arrival, quick to act
- Prompt arrival, well trained, courteous
- Prompt arrival. Knowledgeable service. Courteous behavior. Zero corruption.
- Prompt attention

- Prompt response and highly qualified
- Prompt response and quality services, even if this costs more. Absolutely essential
- Prompt response time to emergencies (i.e. house on fire, people in danger). Well-trained, have the resources they need to provide excellent responses. Respectful to residents, and sensitive to residents' needs. Really appreciate having the mental health first responder team.
- Prompt response time, don't be a condescending dick in a time of stress you're not the God you think you are. Have compassion, skill, and a good attitude
- Prompt response to all calls.
- Prompt response with qualified personnel
- Prompt response, highly efficient and effective, well trained, excellent communication/team coordination, compassion, full vaccinations
- Prompt responses
- Prompt, competent, supportive
- Prompt, excellent skills & knowledge, kind and professional
- Prompt, flexible, reliable, courteous
- Prompt, helpful, resources to solve whatever surprise, appreciated
- Prompt, knowledgeable
- Prompt, knowledgeable, professional, fire fighting and medical services
- Prompt, prepared
- Prompt, prepared, professional.
- Prompt, prepared, well trained
- Prompt, professional response (3)
- Prompt, professional service and staff that are well supported by their leadership, the local government and residents.
- Prompt, professional, team work, and organized.
- Promptly put out fires, provide emergency services
- Promptly respond to an emergency prepared to assist.
- Promptness, excellent training and equipment. Appropriate follow-up. Training and abatement information from APD to public.
- Properly trained, timely arrival and professional

- Protect community lives, and property, in that order, while keeping themselves safe.
- Public safety
- Put out fires & spills, rescue people, prevent fires
- Put out fires in timely manner
- Put out fires quickly while staying safe & saving all people & animals. Educating children on fire safety. Creating disaster survival/relief kits/classes to make kits.
- Put out fires. EMT. care team mental health.
- Put out fires, help in confined space entrapments, ensure buildings are up to code, fire prevention, respond to disasters
- Put out fires, prevent fires, rescue kittens from trees
- Put out fires, render aid to medical emergencies, transport to hospital, water rescue
- Put out fires. Emergency EMT services
- Put out fires. Keep community fire safe
- Put out household fires asap
- Putting out fires, saving people and protecting people and property
- Qualified, informed and efficient
- Quality skills, professionalism, compassion
- Quick "first responder" response. Highly trained and competent.
- Quick & Ready, we'll trained & professional, kind empathic
- Quick and competent response to fires and structural disasters
- Quick and efficient care
- Quick response (5)
- Quick response and well prepared and trained for emergencies
- Quick response time, Staff knowledgeable of all emergencies, Equipment kept updated
- Quick response time with high technical competence.
- Quick response time, ensuring all people and animals are safe and that the fires get extinguished before harm or extreme damage occurs.
- Quick response times, competence and professionalism

- Quick response to medical emergencies. On going Training for fires. Training for high rise fires.
- Quick response, well trained, helpful
- Quick response. Well trained.
- quick responses to urgent medical emergencies and active fires, rescue for situations where the Coast Guard is not involved, fire safety & building inspections
- Quick, well trained, professional
- Rapid and appropriate response provided in a cost effective manner (this requires continue review)
- Rapid response and trained, comforting personnel
- Ready for public and personal emergencies
- Ready to respond and professional
- Reasonable response time
- Recently observed the best fire rescue response in the country
- Reliable and responsive
- Remain non-privatized entity in all facets
- Render aid in an emergency
- Rescue humans (and hopefully house pets), provide medical care before transport, extinguish fire
- Respond as quickly as humanly possible. Like it's your life or death.
- Respond immediately to fires and life threatening emergencies in Alameda in Alameda
- Respond in a timely manner to fires and medical emergencies
- Respond promptly when called.
- Respond quickly and effectively to emergencies
- Respond quickly be well trained, have good manners and treat all with respect. Wave to kids when they go by unless they are on a call
- Respond quickly to emergencies
- Respond quickly to emergency calls for fire and medical emergency/EMT service
- Respond to calls for fire and medical emergency, provide inspections for built environment to prevent fires and unsafe crowding.

- Respond to emergencies in a timely fashion
- Respond to emergencies in a timely manner, be trained in emergency response, rescue, first aid, and fighting fires.
- respond to emergencies quickly and able to manage said emergencies. I assume that the employees are provided with the tools they need to do their job.
- Respond to emergencies and be knowledgeable on how to address each situation
- Respond to fire, and natural disasters, but not to medical emergencies.
- Respond to fires and emergencies in a timely and responsible manner
- Respond to fires and emergencies. Also, the CARES program response.
- Respond to fires and natural disasters.
- Responding to fires, inspecting locations, training and preparedness, responding to city emergencies such as mental health and injuries, community outreach
- Response time
- Response time expectations vary with emergency level
- Response times are hard for me to answer, since Alameda is a small island, and I live a block away from the Encinal station.
- Response tube and effectiveness
- Responsiveness.
- Safety, information about natural disasters and how to be safe. Such as electricity outages.
- Safety, responsiveness, courtesy.
- Save me from a fire.
- Save the day. You are heroes
- Screw PR Campaigns. Just be a good FD.
- Sense of urgency, Timely arrival, Intuitive, ability to assess. Well trained, competent, safety minded personnel.
- Show up and do their job in a professional courteous way.
- Show up as fast as possible when needed. Be professional & highly trained. Be culturally sensitive when necessary, I suppose.
- Show up ASAP to fire and medical emergencies 24x7. Arrive highly trained, professional, and ready to help. Save lives and property, in that order.

- Show up ASAP when called to do the job called on to do.
- Show up if services are needed in a timely matter
- Show up in fire or medical emergency
- Show up quickly and put out fires before too much damage occurred.
- Skilled, fast, respectful, helpful
- Station 5 needs to be reopened as it is creating longer response times from station 2.
- Stay awesome!
- Successful mitigation and elimination of hazardous situation for the general public in a reasonably swift manner.
- Support safety of the community
- Take initiative to assist people. Be well trained and well- led with ethical leadership
- Be ethical and responsive. Be skilled and knowledgeable. Assist the city in readiness for disaster and earthquakes, etc.
- Talk to the city to change Park St the way it was so AFD doesn't go by Broadway blasting sirens multiple times a day, sometimes to the same location 3-4 times in a day. Pandemic is pretty much over. Restaurants don't need outside dining, so please get Park St back to what it was so AFD can use the St too for emergencies.
- Technically and culturally competent, compassionate, pro-active/prevention education
- That calls are responded to in a timely manner. That only vehicles/emergency responders respond that make sense for the call (i.e. fire engine should not show up if someone faints)
- That they arrive quickly and get the job done
- That they be highly trained and competent, have the tools to do their jobs well, and respond quickly. It's a bonus how helpful and friendly our local firefighters are!
- That they come quickly and know what they are doing
- That they come quickly when 911 is called and they are well trained
- That they continue to do the great job they do
- That they immediately response in an emergency, seconds can cost lives



- That they respond ASAP to an emergency, that they have good triage ability, that they are highly trained and competent, that they are culturally sensitive and have skills in de-escalation, that they arrive with someone who is medically trained when necessary, that they have a strong fire prevention focus
- That they will know what they are doing, respond promptly, and act professionally.
- That they will respond quickly and with skill to manage emergencies. That they will be prepared for a natural or manmade disaster. That the CARE team will be utilized and expanded as a service.
- The faster they can
- There appear to be many fire houses across the island; all areas should have a short wait time.
- They are just a couple blocks away, so a quick response time would be possible
- They are only one mile away.
- They can do their job in a timely professional way. They don't have to worry about too much work (i.e. short staffed) or not enough funding to do their jobs.
- They have come with their sirens blaring to a peaceful in-home death. Specifically asked them not to turn the sirens on
- They should help residents and businesses with fire prevention and suppression
- They should respond quickly to emergency calls and as soon as possible and as courteously as possible to all calls
- Time is everything whether a fire or medical emergency
- Timely and well trained
- Timely response to true emergencies
- Timely response, expeditious and focused work.
- Timely response, willingness and ability to help
- Timely, District 5 has longer response times. Professional. Strong and in shape. Good at their job.
- Timely. Efficient. Reliable.
- To answer the call as promptly and professionally as possible when I call in an emergency
- To arrive ASAP because when an emergency every second counts

- To arrive quickly and be prepared with the appropriate personnel and equipment.
- To arrive quickly and be professional and expedient in assessing the issue
- To arrive quickly with competent personnel who can take charge and save lives
- To arrive very quickly and to address the issue in a professional and expert manner
- To be able to help those in need as quickly as possible
- To be professional and responsive
- To be ready to help in fires, EMS, and accidents.
- To be very familiar with the area and structures in the area that they are responsible for and to respond as quickly as possible.
- To be well funded, well staffed and well trained
- To do their job as firefighters to the very best of their abilities. To treat all cases as priorities and all people as equals. #1 Continue having the CARE Team!!!
- To do what fire fighters do - fight fires. It is great that they also provide emergency response as well but adding more services, coming to block parties, etc. are nice to have but not necessary.
- To extinguish fires and assist with natural and human-made disasters. Our city does not need our firefighters to join on every ambulance call. It is a waste of money.
- To have access to all information regarding the building complex (we/I live in a large condo complex) so access can be made at the closest entry point to where the person lives. Our complex has numbered entry signs by the sidewalks outside the complex to assist with this. To know whether or not the elevators can hold a ""gurney"" or if a chair lift is needed. On one occasion our office chair was used to transport my husband to the ambulance.
- To have them respond in a timely manner as they have so far
- To have well trained personnel, state of art equipment, to provide exceptional customer service, and to protect the citizens.
- To help everyone.
- To honorably serve the community, protect the community, and stand up for what is right, especially if they see a wrong (looking at you APD).
- To provide a good service, be well trained, have enough stations to cover city completely, to have new/ proper equipment needed to perform there jobs.

- To Provide Assistance In Maintaining The Survival Of One Nation Under God To The Best The Fire Department's ability.
- To provide for the safety of Alamedans including fire protection, medical emergency Ms trauma support, and mental health emergency response.
- To put out fires and arrive quickly for emergencies
- To respond in a prompt manner to fire or medical emergencies. To respond with lights and sirens to emergency calls, NOT to every call they are dispatched to including non-emergency calls. Responding with lights and sirens to everything gives off the impression an active emergency is unfolding and is triggering for those sensitive to the noise when it is not necessary. Prompt response to in-progress events. With the CARES team, they should be help accountable for the outcome of the services provided.
- To respond promptly and be knowledgeable and helpful
- To respond promptly to life or death emergencies that are fire related
- To respond to an emergency.
- To respond to calls in a timely, professional manner and to execute their services efficiently..
- To respond to emergency in a timely manner and treat all victims with the same treatment and respect
- To respond to emergent situation's with skills, knowledge and empathy
- To save lives and help people
- To serve the community
- To server all the people on the island.
- Trained competent personnel that can also make people feel more at ease during stressful situations. IE: A decent sense of humor is also appreciated.
- Trained personnel, arrive in timely fashion. Sufficient personnel and equipment to service our community
- Trained personnel, courteous. Careful driving.
- Trained personnel, prompt arrival, equipped with the necessary and appropriate equipment
- Trained responsive personnel

- Trained well, especially in supporting neurodivergent folks to whom they are providing service
- trained, professional, fit, friendly, knowledgeable, courteous
- Training. Expediency. Care.
- Training, top of the line equipment,
- Treat every part of the city with the same level of importance & care
- Typically response times should be between 4-6 mins as I understand it. And we are an urban community where a fire could easily spread to other houses, etc. so that makes sense. I know some departments have reduced staffing of FFs on the trucks and that is not smart at all.
- Upon arrival, gather equipment quickly and enter for assessments of medical emergencies
- We live off central, so fire department on park/ central should be able to get here fast
- Well equipped for the job...
- Well staffed and knowledgeable
- Well trained and equipped.
- Well trained new equipment quick response time
- Well trained, compassionate, exemplary
- Well trained, knowledgeable, professional, culturally sensitive, capable of working well with individuals with mental health issues, quick response times, able to provide in-route medical aide (intubation, pain control, nitro, splinting, etc)
- Well trained, ongoing training including mental health considerations, train for water rescues rather than just watching people drown, more community education on home safety.
- Well trained, personable
- Well trained, top notch equipment & under 5 minute on scene time.
- Well trained.
- Well trained. Quick responses and ability to mitigate emergencies promptly. Friendly and integral part of the community.

- Well-trained fire personnel who treat each person with respect. Also, put a watch at a fire site to ensure it does not rekindle. (Previous problem which I hope has been addressed.) PS I am SO Proud that we have the CARE mental health service
- We're pretty close to the fire dept. building on Grand. If I was further away, I would expect slightly longer times.
- When they get here they know what to do. Second, that they are really nice about doing it.
- Work as a team, make good decisions, put patient care first

### Unmet Expectations

Most respondents noted that they had no unmet expectations, and voiced sentiments of general praise. Open-ended responses follow:

- 2 times met with unprofessional judgmental first responders. 1. Assumed I was under influence, when I was having a stroke. 2 other incident, never assessed me, did NOT Listen upon arrival
- 911 operator was rude. I had to call on a land line that was attached to a wall. She wanted me stay on the phone but also wanted me to tend to a person that was in another room. I'm sure I was hysterical, but she was impatient and did not seem understanding.
- Added languages spoken to effectively communicate with growing diverse community
- Adequate mental healthcare services.
- AFD to evaluate
- Alameda FD is meeting or exceeding my expectations
- All expectations are being met.
- All expectations I feel are met.
- All good in my limited experience
- All I can do is hope the fire department can do the best they are trained to do.
- all met
- All my expectations are met.
- Am currently satisfied with the department

- As a taxpayer-funded entity, I am appalled at the cost and ever increasing bloat of "services."
- Budget conscious.
- Building occupancy
- Calendars
- Cannot answer as haven't had any dealing with the FD
- Cares team needs to be 24-7 if not already
- Cost effective. Why do senior staff make \$200,000+? Why is City spending out of control?
- Cost effectiveness. I have read about areas that use motorcycle equipped paramedics as the first responder to a medical 911 call that can get to the incident as fast as possible and then direct or redirect the ambulance that follows, instead of sending a fire truck. These paramedics have normal day jobs and keep their bike/equipment with them, then when a call goes out who responds first takes the call (so this requires good IT coordination of the emergency services).
- Coverage of the west end from station 2.
- Do not know enough to comment on this
- Don't know
- Don't know or have data
- Don't see really any way to interact with the providers. It works be good to have 911 providers reach out to kids and young people so they know in a crisis when you come with all your gear and it's scary, that you're the same folks who they know from the park, from the picnic, from the pumpkin patch. Actually interact at the pumpkin patch not just all stand around ignoring the chaos. Talk to the residents
- Everything was right
- Faster response times
- Fire protection in the Alameda Point area
- Fire, the fire chief and get a fire chief, that will provide preparedness with emergency water supply. A simple project this is a island that needs salt water pumps.
- Hard to say because I haven't had to use their services and don't know a lot about how they are performing in the community



- Have firefighters contribute more to their retirement
- Have heard others complain about long arrival time. Concerned about lack of water rescue services. Concerned about lack of mental health and autism sensitivity and training.
- Helping neighborhoods prepare for a disaster. Follow up to the CERT training. More diversity in department.
- Hope they improve on it
- I don't call you unless I need you. Just do what you need to and do it well.
- I don't know
- I don't know if each station is prepared to assist all of Alameda in a major earthquake
- I have never needed FD services and don't know anyone personally who has so would hope they're meeting community expectations but have no direct knowledge of any specific praises/concerns/complaints.
- I have no complaints. I've been really impressed with the Alameda Fire Department
- I have not had any personal interactions with the fire department yet.
- I only think some seasonal newsletter and TikTok frivolity would help highlight the services and necessity of the dept-more than fire svcs
- I recently saw a total loss fire 2 blocks away from a new station in Grand
- I think expectations are being met
- I think the AFD does a great job!
- I think the city should open another fire station to help provide better coverage for the city
- I think they have enough on their plate
- I think you all are doing well except the one guy that was ride to my neighbor but everyone is entitled to a bad day so maybe he was having one of those days
- I would want to ensure timely arrival to active fires.
- I'm good with the fire department
- I'm not aware of unmet expectations
- Idk
- Idk. Never had to call the fd.

- In the more than 25 years I have lived in Alameda, I can't say I have any expectations of the department not being met..
- Information about what happens after they come to a call, what should the customer do or who to contact
- It appears that ambulance and fire truck are sent for all calls. Not quite sure of the rationale for it, but people in my circle seem to think it's to boost "why we need them" more than we really do.
- It is still confusing to me how the "Care Team" is integrated into the system and if they are a separate system that can be contacted independently.
- It would seem that a new fire station should be built with all the new construction on the old base land.
- Keep of the good work and thank you!!!
- Know more about children and incidents relating to it. Choking, poison control, general children accidents
- More CERT training would be nice so the community is better prepared for the next earthquake, etc.
- More fire/safety inspections and info sessions. Also more emergency preparedness sessions (though it doesn't have to be through the fire department, could be another city department)
- My experience has all been totally positive
- My kids would love to see the fair house open more so they can peer at the engines and vehicles from afar. A very small request but really brightens their days and helps promote firefighting and EMS as a potential career.
- N/A (48)
- Nah I think you're doing great.
- Need a personal life extinguisher day to invite people to. I inherited 2 of these things 22 years ago and don't know if they will work or is right kind. I would feel uncomfortable coming to station and bothering someone. Would like a special day, maybe at Southshore Mall for easy parking. No place to park near Park St station.
- No
- No seems good at the moment, but honestly I don't know if dept is under resourced and I would like to.

- None (43)
- None at this time.
- None known
- None so far
- None that I am aware of (8)
- None that I am aware of. I appreciate the great job that you do in keeping us safe.
- None that I can tell.
- None that I experienced
- none to my knowledge or experience with APD.
- None!
- None! Our Alameda Fire department is very responsive; keep up the great work.
- None, we have always had positive community interactions with our FD
- None. A plus service!
- Not currently
- Not enough mental health training
- Not enough stations needs to be a station on Alameda point with the development going on out there
- Not sure
- not sure. have never used them.
- Not that I am aware of.
- outreach to the average citizen
- Personnel on there fire trucks is below standard
- Police coming out in tandem on more calls than I expect. Get police out of care team response. Outside bill pay company not transparent or friendly.
- Police dispatch unclear of role of care team.
- Poor response times and lack of coverage for District 5
- Possibly budget expectations. Firefighters are very expensive and have very high total compensation packages per year. Alameda has a bunch of firefighters that are compensated at something like a quarter of a million dollars a year each.

- Providing services for people that are in life-threatening emergencies on the waterfront as well as needed.
- Response times on the base
- Responses are too delayed to Alameda Point. We deserve the same service as the Gold Coast.
- Salaries are too high, firehouse at Grand St. was supposed to be an Emergency Operations Center ... NOT a replacement of older facility hoodwinking us citizens!
- See above. Some of this could also be the 911 dispatcher not relaying information given to them (i.e., numbered entry signs).
- See above. I find it shocking that fire department officials actually canvas door to door for the elections.
- Seems like the union may dictate too much of the funding
- Slow response
- So far I haven't had the need. But for the responses I've seen from the AFD they are meeting expectations.
- So far my personal interactions have been good.
- So far, I feel the AFD is doing a great job of protecting our community. Response times are excellent, issues are taken seriously, and everything is resolved in a rapid and professional manner.
- Station 5 has been closed for almost 15 years. Citizens in that part of the community are being impacted daily with longer response times due to that closure. The fire department strives to provide the best service to everyone in the community and this station closure is keeping them from doing just that.
- Stop unnecessarily sending two expensive response vehicles and teams for individual health emergencies. This is done by departments solely to justify budgets. Only one vehicle is necessary.
- Support services for the firefighters.
- Surpassing expectations
- The community needs to make this known and find the gaps (Funding, Training, etc.)
- The fire department should turn the unused tower in bayfarm to housing. Could be for teacher, police and firefighters etc.

- The ongoing issues with the Fire union and the fact we are still paying off their lawsuit is terrible. Hopefully all legal issues have been rectified and this will be the last lawsuit of this nature
- The only issue I have ever encountered is when the fire department had to work with the coast guard. I was very disappointed in the coast guard's response but the fire department was amazing!
- The only thing that comes to mind is AFD taking full ownership of the CARE Team and creating a firm boundary that it's a non-police response program. That means no co-response, police are removed from responses and do not have contact with clients utilizing CARE Team services.
- The staff that have showed up have been excellent. Navigating to the right response team (CARE vs. Police vs. Fire—and what kind of CARE response) needs improvement.
- The west end of town. Has lots of growth and no fire station.
- Then How Can We The Citizens Who depend on the assistance the Fire Department call the employees within the Fire Department heroes, sheroes, & "First Responders"?
- Then the Chief of department should be accountable and asked to deliver under an improvement plan overseen by the City management.
- There have been incidents of misuse of public funds in the past. I hope this has stopped.
- There is a need to better communicate how Alameda is prepared for disasters.
- There should be a system to make sure they meet their expectations.
- They seem nice, haven't worked with them on anything.
- They're doing a great job!
- This has not occurred for at least the last few months (as far as I can tell). I live near a fire station, and this did make me upset or not proud of AFD. The firemen would play very loud rap or hip hop with profanity while washing their vehicles. I haven't heard it lately, but I'm also not around as much when they are washing vehicles. Just wish they'd pick music without profanity. There are lots of young kids nearby.
- This shouldn't be an options
- To my knowledge all expectations are being met.
- Too much involvement in local politics.

- Unknown (2)
- unknown, don't have enough experience with the dept
- Unsure (2)
- We are all in trouble. As population increases here (and that's great for many reasons) the more difficult it will be to get on and off the island in the event of a disaster. AFD and APD will have to lead efforts, I'd like them to know what they're doing.
- We must have a fully staffed station at Alameda Point.
- We recently took a tour of the fire station on park street - I feel like they deserve upgraded facilities! And distance from that big cell phone tower... 😞
- West End coverage is lacking, unfortunately this is a vulnerable lower income community.
- when at an emergency, and it has concluded, they leave without any follow up to the business owner about possible improvements or lessons learned or to say thank you for being as prepared as they were
- Why are we wasting money sending out a fire truck for EVERY call
- Why not
- Would like to see Community Event where Fire Department and Police work together to raise funds to create a Youth Disaster Relief Group!
- Would love to have more firefighters live in Alameda.
- Yearly apartment inspections
- You are great



**Positive Feedback**

Respondents offered the following words of praise for the AFD:

- Customer service. They are generous with their time coming to school to educate children.
- :)
- A lot. Main issue is how the CARE team is accessed and deployed. The staff who respond are excellent.
- Advocating for themselves (appropriately so!), and serving the community properly. Always room for improvement though.
- Alameda seems to have a low incidence of fire issues which is probably a good reflection on the fire department
- All the things
- Always responding even if they don't have enough people
- Am happy generally with fire department performance
- Amazing staff, they are always kind and amazing to my kids when out and about
- Appreciate the willingness to engage in CARE team
- Arriving promptly
- As far as I can tell, everything (2)
- As far as I can tell, pretty much what they are supposed to!
- As far as I can tell, they are doing an excellent job in Alameda. I also appreciate that many of them have offered their services to other communities in need, particularly during the past several years of severe wild fires.
- Asking for this feedback is great! Honestly, other than when responding to an emergency) apparent by lights and sirens) I don't see or hear much regarding AFD. I'd like to know more. I am involved I. Our local business was community and a resident, I would like to know more
- Based on my experience, everything
- Being considerate of how loud your sirens are
- Being there and wanting to improve
- Being visible and friendly. My 2-year-old loves firefighters and fire trucks!
- CARE team (4)

- CARE Team addition is great
- CARE Team for sure!
- CARE team, Excellent leadership, dedicated department staff
- Caring for the people of Alameda
- CERT relations and training.
- Community-based, friendly professional staff
- Community engagement
- Community engagement and response
- Community focus, working as cohesive team.
- Community minded, strong relationships, aid other communities as needed. Care team. Paramedicine
- Community outreach and responding to recent local fires
- Community outreach with the children, friendly, helpful when present. Professional.
- Consistent, ready, responsive, and care about people and our community.
- Do not know enough to comment on this
- Don't know (3)
- Don't know because I don't have any experience with the AFD
- Dropping of pt at Kaiser Oakland ER
- EMS
- Everyone has been very friendly, even if it's just waving from the engine. They also seem to have a quick response time (there have been some recent incidents that neighbors have had).
- Everything as far as I can see
- Everything for what I know
- Everything as far as I can tell
- Everything they need to be doing.
- Everything! (9)
- EVERYTHING! Your all heroes!!!
- Everything, as far as I know
- Everything, they are excellent

- Everything. Good job
- Excellent response and skill.
- Excellent staff
- Excellent. Hard working professionals. Approachable and nice
- Fast response
- Fast Response time, thoughtful intervention
- Fast response. I live near the senior apartments at the corner of Park St and Otis. Their frequent medical response is amazing.
- Fast, efficient responses to calls
- Fast, organized, pleasant, professional, kind
- Fast. Friendly.
- Fighting fires
- Fighting fires, protecting our homes and lives, and being very professional.
- Financing elections
- Fires seem rare so that must be working. Emergency medical is also working, just at a higher cost.
- Follow up and out reach
- Friendly
- Friendly and professional
- Friendly service
- Friendly workers, seems accessible
- Friendly, calm when called.
- Good reputation
- Good response. Diverse training - able to deal with a variety of situations.
- Great at waving to kids
- great interaction with the elderly during multiple calls to the same location for medical emergencies
- Great paramedic er ambulance ride
- Hard to say because I haven't had to use their services and don't know a lot about how they are performing in the community

- Have not had any experience with them but the community seems supportive overall. Cares team seems the most important to the public
- Helping all they can with what they have to work with
- High level of service including the care team and dive team.
- Highly professional
- I always hear the siren going. My dog likes to howl when she hears it. 10/10.
- I am so impressed by the CARES team and how they have stepped up to handle such tough issues
- I appreciate that the Care Team is part of the FD.
- I appreciated seeing the chief at the south shore menorah lighting event during Hanukkah
- I assume all is going well as I have no reason to believe otherwise
- I believe the department is maintaining a quality service to the community, especially the growing disenfranchised citizens: Homeless or unhoused.
- I believe their response time to fires and health emergencies is good.
- I check PulsePoint if I see fire trucks in the neighborhood, and it seems like calls are answered promptly and structure fires are put out before they have a chance to grow.
- I don't know, I haven't had any experience using their service (fortunately!)
- I don't know
- I don't really know. I hear the sirens so hope they are getting to people in time. Alameda Sun prints individual events. Would help if have had weekly or monthly summaries listing avg response time, types of calls, etc.
- I don't track them so I don't know. They helped an old man next door a couple times. Very qualified and professional.
- I feel like they are in general fine. I don't know enough of the day to day handling to know what they are doing well.
- I have neighbor with a heart problem. The fire department has saved his life
- I have had limited interactions but they all have been positive
- I have not had any need to call the FD
- I have not had any personal interactions with the fire department yet.

- I have not studied this
- I have noticed times when the siren is not being used, such as middle of the night. I appreciate that. I haven't had interaction since my moms stroke. I was glad for the team's care of my mom and their quick transport to Alameda Hospital.
- I have only had positive experiences. They arrive quickly, are friendly, and competent.
- I haven't had much exposure overall but I'm proud we're trying the CARE team
- I haven't interacted with them
- I like they added the CARE team. I hope it is staffed by mental health professionals not just first responders who had a course in mental health
- I live across from the Marina Village Inn, so I frequently see fire trucks and EMTs at that location. Seems like everyone is doing a good job.
- I love our AFD! They're doing great!
- I never hear much about the fire drpt. Alameda PD is on social media so feel more knowledgeable about what is going on in that dept
- I really appreciate them
- I see them out and about on the job in Alameda.
- I think AFD has great personnel who are kind and welcoming. I really appreciate the creativity of some of the staff in further developing CARE Team and ensuring its success.
- I think AFD is doing a good job. Particularly with the addition of the CARES team.
- I think our fire department is constantly striving to meet the needs of our community. I feel very confident in their training in regards to fire response as well as medical response.
- I think response time is stellar, I think people who've had to ask for their help/services are very pleased with their interactions
- I think so
- I think they are doing a great job responding to calls and incidents. I seem to hear sirens quite a bit—so to me, it 'sounds' like they get a lot of calls.
- I think they are doing the best they can with this modern insane world. Thank you!
- I trust my fire department and personnel.
- I witnessed the CARE TEAM respond to a situation & was very impressed!

- I've only used the EMT services years ago and they were very helpful transporting my parents to the hospital and getting them off the floor when they fell.
- Insurance service office #1 rating
- Interactions with the community
- It appears that they're staffed to respond to the current call volume, but an increased population on the island will require more staffing and equipment
- It is meeting all expectations
- it maintains a high standard of getting the job no matter what it is they come to the rescue and give it their all.
- It's hard to tell without direct experience because I'm not aware of any grading
- I've lived in Alameda for over 20 years and I've always seen & heard good things being done by AFD. The only time the Fire Department was a disappointment, was on Memorial Day 2011 when they let someone drown due to crazy 'lack of training' baloney. I hope the whole of Alameda City government learned from that horrific lesson.
- I've only had limited interactions, but, all fire personnel I've met have been smart & courteous & kind.
- Just about everything.
- Just being there
- Keeping Alameda safe
- Keeping fires small
- Keeping our community safe
- Keeping our Community safe.
- Knowing how to saves lives, knowing that time is of the essence and knowing how to professionally interact. Ask Bay Farm crew for a tutorial if you need one (I'm being serious).
- Life safety protection
- Life. And All of It. They're doing it all well.
- Look professional whenever I see them in public.
- Looking forward to grow with changing community needs, responding to calls,
- Looking towards the future to hire more personnel and build a firehouse in District 5



- Looking pretty with their fancy mustaches. Btw BA's don't fit well on facial hair.
- Lot better than neighboring cities
- Love seeing you all at community fairs and events (NNO, art and wine fair and pancake breakfast, pumpkin patch)
- Love the new fire chief he's transforming the department
- Making kids feel special when they see the fire truck out while the FFs are grocery shopping or grabbing a bite to eat. By letting them take pictures of truck and have a little hat. It seems silly but it's not. It means next time if they see a FF in uniform they may not be scared and will cooperate in an emergency.
- Medical emergencies
- Medical emergency response
- Medical transport was great. Response to fire alarm 🚒 is good.
- meeting expectations
- Mental Health crisis response team is doing crucial, innovative, life-saving work through its interventions. Thank you!!
- Mental health mitigation
- My house is standing 🏠
- My only awareness of them is seeing the trucks on our streets. They always seem to be very cautious.
- N/A (5)
- Nice people
- No experience with FD services but I have observed them driving well and also looking good in their uniforms. Also this survey.
- No interactions, but they are nice and wave at kids when they drive by.
- Not really paying attention
- Not sure... but, the city has NOT burned to the ground. Must be doing something right. :)
- Of the 2 times I called about someone having a mental health crisis in the middle of the street, 1 of the times AFD responded. The other time the Police Dept Came onsite. Fire dept was significantly more skilled at not escalating the situation (focusing on the health and getting appropriate health and community service to the person).

- On their game in response to damage and emergencies during winter storms. So grateful!
- only used them once, they responded immediately (carbon monoxide monitor was going off, they were at the house within minutes with monitors to check
- our only interaction was positive
- Overall the AFD response to emergencies has been good. The issue is with non-emergencies or other lesser priorities. Community outreach would be helpful to make the value of these additional services more clear.
- Paramedics arrive very quickly.
- Paramedics. Care team.
- Politeness in the community.
- Performing duties in a timely manner
- Probably everything. Not like I know anyone personally or how they are interacting with others.
- Professional, friendly and competent first responders who care about the residents and have a quick response time.
- Professional, prompt
- Professional, thorough, competent
- Professionalism, training
- Prompt and professional (2)
- Prompt from what I understand
- Prompt, professional, caring, knowledgeable
- Prompt, professional, trained
- Protecting and serving the people of Alameda and others. I have witnessed their work and I appreciate how they treated the mentally ill.
- Protecting our community, responding to emergencies
- Providing emergency services and Driving their trucks around town
- Providing fire/EMS services

- Providing great customer service and working diligently to protect the community. The fire department trains 24/7 to be more prepared for whatever emergency occurs. The members of the fire department care tremendously about the service they provide and are proud to serve this community.
- Putting out fires (3)
- QUICK RESPONSE
- Quick response
- Quick response and great service
- Quick response time, assessing and handling emergencies well. Personnel are always friendly and willing to communicate regarding issues.
- Quick response times.
- Quick response, friendly, competent, well trained
- Quick response, kind personnel, professional, helpful
- Rapid response times, excellent fire fighting, excellent on-scene and in-route medical interventions, good cultural and mental health sensitivity
- Remaining non-political and concentrating on fire dept tasks at hand
- research and outreach!
- Respond, quality service provided
- Respondent times, keeping updated on emergencies happening in Alameda on social media, and also making sure the person who is in the crisis feels safe and secure with the fire department
- Responding
- Responding appropriately to calls in a timely manner.
- Responding in a timely manner!
- Responding quickly and ready for any emergency
- Responding quickly, mitigating crisis, care team service is excellent,
- Responding to community calls.
- Responding to community emergencies
- Responding to community needs. I live on Pacific Ave near 3rd and I hear the trucks all the time so I know they are responding. Hopefully they are not all false alarms.
- Responding to emergencies while being kind and respectful.

- Responding to emergencies.
- Responding to ER so far
- Responding to fires and medical emergencies. I'm certain that they do many other things exceedingly well that I don't even know about because they do them well.
- Responding to medical calls
- Responding to medical emergencies
- Responding well. Communicating well.
- Responding, caring. Feels like they are home town people - even though many of them can't afford to live here
- Responds in a timely manner to majority of calls, are professional and compassionate to situation
- Response
- Response and providing a high level of care and work
- Response time (4)
- Response time and community involvement
- Response time has been great and they are very kind and helpful
- Response time, professional.
- Response time, training, skills overall a great fire department
- Response time, well trained
- Response time. friendly, capable staff
- Response times are good, I track pulse point. We need another fire department on the west end. More trucks and staff. Maybe even bay farm too. We need at least one more fire House
- Response times. High skill levels.
- Response to emergencies
- Responsive, professional and helpful.
- Responsive, reliable, friendly and approachable
- Responsive. I like the PulsePoint app!!!!
- Safe driving in emergency
- Saving my life

- See above. I'm not really sure, but I probably would have heard if they were doing anything egregious.
- See them in the community
- Seems like they're responding to lots of calls.
- Seems to be everything.
- Seems to be responding well
- Service to the community
- Shiny trucks
- shopping at Safeway with big fire truck
- Show up when needed.
- Showing the kindness when you don't feel so hot, I have had a few that just seemed to be having a bad day but I just figure we all do
- Smart, friendly, trustworthy. They are great.
- Spending money and getting involved with politics. AFD seems to control the city.
- Spending taxpayers money and draining much needed resources
- Super friendly and kind with kids as we walk by, quick response when called, community engagement
- Swiftly responding & handling emergencies
- Taking care of Alameda and its residents
- the CARE team is the best thing they have going. some of the firefighters come across as arrogant when you see them on the street. are they better than anyone else? i doubt it
- The hard work and effort being put in by the employees staffing the rigs. Need more teamwork from management
- The new service to provide health attention before the police are involved when it is not a call for a crime in progress.
- The overall delivery of service needs continuous evaluation for improvement.
- the response time is amazing
- The response to the condo complex I live in has been great.
- Their Duty To The Best Of Their Ability.
- Their job!

- their job? no current experience, but they're not in the news for scandals!
- There was a fire across my fence in my neighbors back yard a few years ago. It was terrifying, but the response was quick, efficient, and even though they came through my yard, the fence between my yard and the fire was not destroyed - just a few boards to replace. I was super thankful for their quick, professional response and care they took in the situation!
- They are arriving quickly to calls and answering questions we may have
- They are doing a great job. I appreciate them immensely
- They are doing the best they can with what they have.
- They are doing well and keeping the fire contained one home or building.
- They are highly motivated and very professional
- They are professional, courteous and put their lives on the line.
- They are professional, courteous, and give a high level of service
- They are prompt and professional demeanor. I live one block away from a station, so I hear and see the trucks passing by on a daily basis. Traffic needs to be better educated to move to let them through.
- They are responding quickly.
- They are responsive and kind and keep us safe.
- They are timely, professional, and friendly. They generally don't use their sirens unless they have to, and that is much appreciated by their neighbors.
- They are very friendly and easy to talk to and have treated me like a real person.
- They did a good job of putting out my neighbor's fire and their new response team is getting acknowledged for their success.
- They do a great job of taking care of Our Island.
- They have given Alameda great service.
- They respond quickly and are professional.
- They seem to be doing a great job
- They seem to be efficient and well trained
- They seem to respond promptly when needed
- They wave at kids and look good for the moms 😊
- They're so friendly! And arrived so quickly when we needed them.



- They're kind and responsive
- Timeliness friendliness adaptability qualified
- Timely and effective for and medical rescue, plentiful tee shirts
- Timely response.
- Timely responses. Compassionate care team.
- Timely, accurate responses with well trained, professionalism.
- to the best of my knowledge
- Traditional fire services. There should be a separate city service for medical e
- Training, Professional, courtesy
- Unknown, don't have enough experience with the dept
- Unknown. We've only lived in Alameda since August 2021 and have never interacted/needed the fire department.
- Using tax payer resources
- Very courteous, love the community engagement
- Very efficient
- Very professional and super friendly.
- Very professional, friendly and effective.
- very responsive, professional, available. 100% great
- Very responsive, professional, competent
- Visibility and response time
- Visibility in the community. I haven't had to call them yet, so we just have seen them at community events like the pumpkin patch
- Visible in community, active with children, polite and engaging. Responsive to calls, and have handled emergencies well.
- Wait time is fair.
- Water program
- Waterborne fire protection and rescue. Reliable vehicular response times.
- Waving hi

- When I lived at St Francis on Otis the FD was called often. Some issues more serious than others. Their prompt and competent service was always on point. So kind, compassionate and caring.
- When they came to our emergency, they were wonderful! Couldn't have been more professional, helpful, and pleasant!
- Yes (3)
- Youth outreach and community engagement

### Concerns About the Fire Department

Concerns about the AFD centered around increased future service demand and trying to do too much with the available resources. Open-ended responses follow:

- Billing concerns. Triple check bills sent. I was billed for services when someone else called in fear and when I refused going to hospital to get checked out more, because I could not afford to, because I am homeless. Biggest concern is how many involved have not read the cities Homeless 5 Year Plan.
- A closed fire station on Alameda point.
- Ability to cope with increased housing and population in Alameda
- Ability to respond quickly to calls due to excessive traffic from more people living here and taking away the few 4 lane streets Alameda has. There's nowhere for the cars to move over to let firetrucks go by on our major streets if city continues to redesign those streets for bikes
- Accountability, we have seen occurrences nationally where paramedics and fire personnel are not acting in accordance of their job responsibilities. How do we know this is not happening here?
- Adequate staffing and training to respond to calls.
- Adequate staffing needed for the West End/Alameda Point
- AFD seems to send a LOT of equipment out for every call, but I'm not qualified to say if it's all needed or not.
- AFF can't hold the city hostage. Need to downplay the power-tripping.
- Alameda growing may need more coverage

- Alameda is full of old people that want company. i'm interested in how many calls they respond to are actually for fires or related emergencies rather than an injury that can be mediated with an ambulance or social worker. i am concerned that fire departments may cost a lot more than other, more appropriate approaches to dealing with mental health concerns. However, in this atmosphere, most mental health concerns should NOT be dealt with cops- too much issue at this point. so if the fire department is the best we got, that works for me. i just think if i got into a mental health crisis i would not want a bunch of firefighters with their conspicuous truck parked in front of my house.
- Alameda is growing up very faster and the city is building a lot of housing and that maybe impact the time of response
- Are they fully staffed, and if not, how can we support them getting there?
- Are they getting adequate training and resources to manage mental health crises
- Are they prevention-focused? Do I call 911 or someone else if I need AFD's services?
- Arriving in a timely manner to an emergency, especially a fire when time is of the essence
- As a group, it seems that firefighters are more interested in their paychecks than keeping the community safe. They are quick to make phone calls to raise funds for every possible reason and they have appeared too often at city council or other public meetings regarding their contracts. The police department doesn't do this with the exception of infrequent phone calls soliciting money.
- As mentioned above, our city funds are being spent on firefighters who ride along any time an ambulance is needed. This is unnecessary and likely adds greatly to the costs the city incurs by the firefighters.
- As the city grows and traffic increases, will AFD response times drop to unacceptable levels? The recent power outage reinforced our reliance on the bridges. How will this affect mutual aid from OFD and ACFD?
- Becoming privatized would be awful
- Bed side manner
- Being able to remain fiscally viable.
- Better educate the public on services and response times
- Can they handle an increased call volume (due to population increase) with their current staffing and deployment model?

- CARE team training supporting such a wide range of needs - mental health at the schools, unhoused, Intoxicated or high adults and the mentally ill need different responses
- Compensation. I think the fire department is under paid compared to other Bay Area fire departments. Which could lead to retention issues.
- Concerned about AFD getting into a PR campaign. Your performance is not contingent on PR. Be a good FD, not a PR machine.
- Concerned it will not have sufficient funding to support growing community and/or respond to earthquake
- Cost containment and continue improvement through new technologies. Note APD's use of Truleo.
- Costs to staff up and to retain personnel as populations continue to swell.
- COVID may have put a damper on compassionate communication
- Currently, I do know. Hope that continues.
- Diversity that matches the island's population. Need to support recruits from low income families while they train since many have to provide enough income to support their families.
- Do not understand why an engine has to attend medical emergencies. Seems wasteful
- Doing too much thus its budget is larger than necessary. I want a leaner repurposed fire department
- Don't like their overly political involvement in city politics. Grand Jury Report
- Don't get allow mission creep. Let other agencies handle mental health or other crisis situations.
- Don't know
- EMS and Fire coverage in the most vulnerable area at the old base
- Everybody loves AFD, but.... Don't take advantage of our generosity.
- Everywhere
- Excessive pension demands.
- Facilities
- Fire department is getting spread too thin, the mental health unit is really taxing on the staff

- General concern about use if public funds
- Happy we have a fire department! :)
- Have enough stations and firefighters
- honestly I think fire alarms and lights are seizure triggering but I am a late diagnosed Aspergers so it's my responsibility to turn away and cover my ears (I'm car free too so not sheltered in a vehicle unless the bus)
- Hoping they stay staffed and healthy.
- I am always concerned that they are sufficiently staffed.
- I am concerned about fees for the community. In my mind, the department is funded by public money and that should cover all costs so that they're not passed on to community members; some of whom may not be in a place to shoulder the costs for services. Also, in regards to fees/costs, ensuring that where punitive fees exist, they are phased out. Let's encourage safety through support and education rather than punishment.
- I am concerned about the expanding population & housing in Alameda, can AFD meet the requirements of this expansion which will no doubt mean additional emergency situations.
- I am concerned about them being appreciated and also are they paid enough?
- I am concerned about white supremacy, misogyny, homophobia, transphobia, and anti-vax philosophies permeating public service jobs and jeopardizing the safety and well-being of all community members.
- I am concerned that the city allowed the building of building that are seven stories tall that the fire department then needed to purchase a new truck to protect. I think we should make sure zoning, permits and public works are communicating with the fire department about such issues.
- I am concerned that they may be a racist organization. Most of the fire department personnel that I see are white men. Given that the Alameda police are perceived to be racist this is something the fire department should work to avoid or mitigate
- I believe there are a lot of non-emergency calls the fire department does that should be left to medical personnel.
- I believe they're too strong of a lobby with the county council and elections on the island.
- I do not have any concerns regarding our fire department.

- I don't feel the fire department gets a strong backing from city officials
- I don't have any at this time.
- I feel the 1 mpg ladder trucks being used for non essential calls and grocery shopping is a waste of resources
- I have concerns about them getting paid to grocery shop.
- I have heard that Shoreline can be difficult to access for emergency services with 2 lane configuration, depending on the traffic. Hoping the fire department feels like all areas in Alameda are accessible to their services.
- I have no concerns
- I have not had any personal interactions with the fire department yet.
- I have one big concern, and that is the danger to pedestrians and especially bicyclists when the fire truck Park on grand in between Eagle and Clement. This happens several days a week for hours at a time, and they take up the whole bike lane and the sidewalks are already difficult there so it's very dangerous. It also makes it even more difficult for people who are using Eagle Avenue as a shortcut to see the traffic on grand as they're trying to turn right or left there must be some other place with those firetrucks could be parked.
- I hope as the city expands housing they expand the need for the AFD and consider response time.
- I hope that the firefighters are able to take the time to be well-rested between their calls whenever possible.
- I hope the department is big enough for the increasing housing capacity in the city
- I hope they respect the transgender and non-binary community of all ages
- I hope they're not alt-right sexist racist asshats, our police dept has some work on that aspect for sure
- I mean everyone knows about the situation where first responders supposedly watched a man drown. That circumstance was more nuanced than we've heard surely. But still, it is not a good look. And the thing is we don't have a direct line to the coast guard or other service that could help in emergencies. And Fire has a much better reputation than the cops. So all the emergencies besides a crime fall to Fire.



- I think we the growth of Alameda, opening another station would be beneficial. I think they should be compensated like the surrounding fire departments and make sure they have great benefits that will continue to protect them and their families. Additionally, I think they need new apparatus throughout the whole city
- I wish ambulance transport was free despite what insurance you have.
- I wish they could afford to live in town. My dad was a firefighter from 1946-1971. In those days, all staff were required to live on the island or Bay Farm. Now, I don't believe they can afford to.
- I would hope they are also getting implicit bias/racism training so that they can assist all residents of Alameda without prejudice.
- I would like to see more diversity in the department.
- I'd like to ensure ongoing training about technical demands of the job as well as protecting and interacting with the community during emergencies in respectful and effective ways
- I'm concerned that fire trucks will not be able to navigate the proposed changes to Grand Street.
- I've experienced fire dept 1st responders in other cities dehumanizing folks with marginalized identities or chronic health problems (including addiction). This is in other cities, so I hope Alameda doesn't do this.
- I'd like to know more about them - could be on me for not seeking them out, but some awareness raising efforts would be great as a place to start. Honestly, I don't think about them unless I need them and that may be selling them short.
- If someone calls in an issue that does not include a fire danger, why does an actual fire truck need to accompany the ambulance?
- If they are funded enough to always be staffed fully.
- I'm a senior, living alone, how will they get into my unit if I call 911 for a heart attack?
- Increased diversity and greater inclusion of women, particularly in the "Care Team" would be beneficial.
- Incredible cost and huge percent of our city budget. Influence over local govt.
- Infrastructure, equipment, need of more personnel, more stations open,
- Insane housing growth and uneducated residents
- Is AFD up to date with the latest equipment and training?

- It is concerning that corrupt politicians are working closely with AFD to secure them high pensions in exchange for political favors.
- It seems like your name betrays all the things you're tasked to do. AFD.. you do way more than just fire. I've seen you tend to heart attacks, hit and runs, the flooding in the new year. Maybe a name update?
- It's hard to say, my interaction with the fire department has been nearly nil in my 22 years in Alameda. I was sad to see the loss of the businesses on park by Lincoln a few years back but not sure the fire department could have done anything better
- It's a small department. I worry about funding.
- I've never had an need to call the FD, but some friends who have had thought they were rude. I can't speak to that, though, so I'm hoping they are too small a sample.
- Just the firemen playing loud music with profanity while they wash their vehicles. I rather like them playing loud music while washing. I just don't like explicit content blaring around young kids in the neighborhood.
- Just want to be sure racial bias and sensitivity to all residence is a focus
- Lack of diversity
- Lack of representation on the base to lower income residents
- Lack of visibility
- Leave the politics alone and focus on being the best fire department possible. The city can deal with city business fire department should solely deal with them selves. Stay in your lane bro!
- Less union influence
- Local fire station phone number didn't respond. A call to the station rather than 911 could help.
- Lots of growth in population but no expansion of the department.
- Maintaining a fast response as the island's population continues to grow. (I'm pro-growth -- just want to make sure the FD has enough facilities as new neighborhoods spring up.)
- Maintaining the care team a much needed resource
- Manning
- Meeting the needs of the residents of Alameda with increased population due to housing growth mandates.

- Missing a fire station in on the old navy base.
- More Care team response to mental health checks
- More community involvement
- More face time with the community
- More people on engines and trucks like Oakland. It seems like they have more people on emergencies.
- My concern is for the future economic downturn that may occur in the near future. I would hate to see cuts to public safety like we did in 2008/2009. As they adversity effected the community when a station was closed.
- My elderly mother's car was hit on the BF bridge and a witness called 911. She was not in need of service and refused service from AFD but they sent her a bill. Does that sound fair?
- My main concern is that they provide a emergency plan off this island in case of a major fire, with lots of smoke, and no exits
- My only concern is that Alameda is growing so quickly that the City services won't grow appropriately, and that first responders may not be prepared to deal with a major disaster situation.
- My primary concern at this time, is that with the numbers of new housing being built our current resources could be stretched to thinly at times. I feel we need another fully staffed fire house.
- N/A (25)
- Need station 5 open
- Need to add station in district 5 as population and service needs increase
- Need to pay fir their own retirement and not depend on tax payers
- No
- No concerns (5)
- No concerns at this time. The fire department is doing great and I hope more funding and resources come their way to make them even greater.
- No concerns.
- No current fire station at Alameda Point.
- No immediate concerns.

- No real concerns. But I would like more non-emergency interaction, such as fire extinguisher inspection.
- None (46)
- None - I think they do a great job.
- None :)
- None at all.
- none at this time (3)
- None currently (2)
- none have only heard good feedback
- None so far!
- None that I'm aware of
- None your amazing
- None. But I thank you for distributing this survey the Citizens.
- None. Please keep giving them money and don't change anything.
- None. Thank you for your service.
- Not at this time.
- Not getting paid enough
- Not sure of the current firefighters but in the recent past the lack of diversity has been concerning

- OK, here's something. Before Alameda, I lived in Oakland--just two blocks from a major hospital & a freeway. But, I've never heard as many sirens at all hours as I've heard in Alameda! Is having the sirens blaring for EVERY call really necessary? I used to work in a nursing home, where about 75% of residents had a DNR. So ambulances, when called, would not often speed through the streets with siren blaring. Probably the same ratio in Alameda, so why have multiple fire vehicles, sirens blaring, go to nursing homes? I'm not trying to be harsh here, but some calls really don't merit an all-hands-on deck, noisy response. For instance, my neighbor who a few years ago returned home to hear her CM monitor was malfunctioning. To be on the safe side, she opened all windows, back door & front, stepped outside & called the nonemergency number (and told them she was already outside, not an emergency). Three firetrucks showed up, sirens blaring, including a huge hook-and-ladder! Just seems like a lot of resources wasted on these type of calls, plus the noise pollution. So, that's my two cents. Other than that--really appreciate the work you do!
- Only four fire stations may not be enough to support the population growth
- Only question is that some time back, a neighbor on NextDoor had a pet cat that went high up a tree and would not come down. Would the FD be willing to help? I realize that would depend on what else they had going on.
- Paramedics should be familiar with a variety of causes (invisible diseases) of heart racing, light-headedness, low blood pressure, and shortness of breath that is NOT anxiety. One example is POTS.
- Pay
- Pension funding causing excessive taxation.
- Please continue to put the community needs at the top
- police involvement in CARE team
- Political donations from the fire union concern me as a taxpayer.
- Political influence; unions donating and influencing candidates.
- Recruiting for new members. Are there enough people willing to serve.
- Response on base old equipment
- Response time on Base especially as base gets built out.
- Retaining good people to keep the city safe.

- Seeing them shopping for food in Safeway wearing turnouts. Those are full of carcinogens. Please don't have it near my food.
- Sending unnecessary vehicles for 9-1-1 calls
- Staffing (2)
- Station 5 being closed and staffing levels.
- Taking on too many non-emergency services regarding mental health and homelessness
- Thank you for allowing my input on these important issues.
- That the new service to provide health attention first will not be continued in the very successful way it is being provided. The Police should be a last resort when the call is not for a crime in progress.
- That they be well-rested, fairly compensated, and respected members of our community
- That they don't get enough support from the city or community, especially as need grows
- That they might have their funding cut or be expected to take on too much.
- That we don't have enough firemen for the growth of our city.
- That we won't be able to afford them in future city budgets.
- The ability to quickly respond on a "slow street/neighborhood green way". The ability to manage through our narrowing city streets. Sufficient staff and stations to meet the needs of increased housing.
- The CARES program, please include among dept priorities. It's important to have non-police mental health response.
- The department does not reflect the makeup of Alameda. Increase diversity.
- The diversity of departmental personnel should reflect the population of Alameda County
- The fire union- fire chief- city council relationship
- The park street station building is so dated 😞
- The possibility of a new station on Alameda point



- The sirens on the newer ambulances are ear-splittingly loud. These newer ambulances have sirens that are significantly louder than the former vehicles, and of the other fire apparatus. The sound level is so high as to be possibly damaging to human hearing. I wish something could be done about this extreme noise level.
- The sounding of their horn in their facility when they're checking it. Sometimes they've done it and joggers are nearby or people walking and it hurts the ears. So being more mindful of people around.
- The staff that have showed up have been excellent. Navigating to the right response team (CARE vs. Police vs. Fire—and what kind of CARE response) needs improvement.
- The study done about 10 years ago said we have too many stations, and that Alameda County would serve us better, but recommendations were not taken. Hopefully, the new study will have recommendations that all can agree to follow.
- The use of sirens seems out of control. They set them off no matter what; it is constant, even in the middle of the night when lights and minimal sirens could be used. Or when they are going very short distances or at slow speeds and there is no traffic. I've watched them turn on sirens to go back to the station. If they are going back, there is not an emergency and they don't need to create more noise.
- The water death awhile back - seems to have been corrected - but make sure that horseshit attitude never permeates your ranks again - it violates your mission. Also, your union is a little bit over involved in the community. While I back your union, and your mission, don't lose site of how many others in the community are economically suffering,... so don't over indulge in taking our money. Take what you need - anything more hurts those you are supposedly protecting.
- Their union is involved too deeply in Alameda politics. Positions are added not for the public good but to grow the bureaucracy and create more opportunities for supervisorial positions with greater pay.
- There was an incident last year where I was volunteering at the food bank and saw smoke from a structure down the street. Staff called the fire department but there was no response to the call. It took a second call to get a response. In all, the time period was about a half hour which was very concerning.
- They go to the rehab facilities on Willow several times a day. It's not clear why there are so many emergencies there

- they seem to take a large portion of the city's budget (police too) there isn't much equity for other city services that an outsider can see
- This survey makes me nervous that decisions will be made based on survey input from people with no knowledge of firefighting best practices and very limited engagement with firefighting services. I hope this survey will instead be used to drive community communication and engagement vs actual fire dept strategic decision making.
- Timely updates to major incidents (structure fires, major traffic accidents, or allied agency response such as water, gas and electrical outages, ruptures and emergencies).
- Too much "us vs them" in negotiations resulting in excessive entitlement. Would suggest interest based bargaining as an alternative.
- Too much political involvement.
- Too politically involved. Abuse of retirement funds
- Traffic on Park Street sometimes delays their passage during emergencies
- Underfunded/understaffed Hoping those people get paid well because they do a great job accommodating us
- Understaffed
- Union control over management decisions.
- Water rescues, arrival times
- We need another fire house on the west end or bay farm or both PLEASE
- Why do so many personnel have to show up to an emergency (ambulance) call? It seems there are too many resources being expended.
- Why does a full blown fire truck have to go out on EMS runs? Shouldn't it just be an ambulance? Seems like a terrible waste of resources. It's not like this in other cities.
- Why does AFD responding daily to so many calls from Willow St Rehab Facilities?
- Why is every call a code 3? More code 3 calls here than any other city I have lived
- Will the increased housing/new development add to response time? Is the APD prepared to serve a quickly growing population?
- Wish we as a community could do more to thank them
- With so much more traffic I'm concerned about fire department being able to get through

**Additional Comments**

- Alameda city needs to expand and open more fire departments to serve the citizens of Alameda.
- Anti-racism training
- As far as I know, you all are doing great.
- Calendars
- Congratulations on the success of the CARE Team! Every city needs one. However, everyone except the CARE Team, Alameda Family Services, Village of Love, Community & Development Dept. DO NOT DO THEIR JOBS. Everyone that gets involved after the CARE Team does their part when responding to a mental health crisis needs some MAJOR WORK, because AFS, VOL, & Comm. & Dev. Dept. DO NOT do their jobs and deceive the public.
- Current AFD staffing is too low to safely protect the citizens and property of Alameda. Thank you AFD for continuing to serve with distinction under the duress of being short staffed
- Does a call for ambulance service still dispatch fire engine and is that necessary? Are fire personnel responsible for water rescue? I appreciate the presence and visibility of the firefighters and/or equipment at various events, parades, fairs, openings, celebrations, groceries, and parking lots, not just emergencies. ♥ Keep up the good work and be safe.
- Facebook, Instagram
- Good job
- Having been here for a few years I have watched AFD respond to many different types of situations, some of which I was extremely grateful for, including their response to a fire at a neighbor's home. While it was a fast moving fire, with a lot of damage, it was contained w/o any damage to surrounding homes.
- I also use pulse point and sometimes listen in. Each time, I get the feeling our FD is on point. In addition, as the case was with the semifreddi's fire, our reliance on neighboring communities is reassuring.
- I am extremely grateful for all AFD has done for me personally. They have a special place in my heart ♥
- I am fine
- I appreciate all the fire fighters and the work they do to keep us safe!

- I appreciate our first responders. Keep citizens informed about your important work and successful responses. Acknowledge firefighters hard work
- I appreciate the ADF doing this survey. I hope it's something all city services do regularly, though this is the first time I've seen one from AFD. Hope you'll get lots of responses!
- I appreciate you all so much!!!
- I appreciate you!
- I grew up in NYC and Alameda sirens are louder. They seem excessively so. Could be toned down without sacrificing efficacy if sirens.
- I have noticed the ambulances when responding going too fast. I know on scene times are important, but 50+ mph is just too fast.
- I have read that the fire department is heavily involved in politics to get funded. I think that should change. They should be funded based on voter wishes, not who they support for City Mayor/council.
- I hope you win the bet :)
- I knock on neighbors' doors asking them about what was working and not working in the city. I got multiple stories of the fire department coming at critical times in people's lives.
- I like the current fire chief, his personality is warm and welcoming but at the same time you can tell he is very smart and has that in-charge aura around him. good job, chief.
- I think a well-trained fire department is the most important thing and I hope the department invests the time and resources to that
- I think having a Fire Station (Buena Vista) several blocks from my house is wonderful!
- I wish that AFD would speak up to city council regarding the redesign of our major streets, adding bike lanes like on shoreline doesn't even allow for cars to move over or for firetruck to go around. The ability to respond to an emergency quickly is far more important than bicyclists having a lane to ride in. How would it feel to tell a family that their loved one didn't make it because our FD was stuck in traffic trying to get there. Unacceptable!!!!
- I would be interested in helping, teach CPR to our Youth, who work with young children. I would also be interested in helping fall proof Geriatric residence here on the island, on my off days.

- I'm also considered about how our Island would handle a MCI . I think we should host a mock MCI, after a Earthquake. With road closures. I would love to know how too exit the Island with using A Stand up Paddle board ...
- I'd like to express my sincere gratitude for our fire department's presence and preparedness
- If anyone from the fire department reads this, thank you for your services!
- In regards to choosing which services are important, it was difficult to answer since I do not know if there are areas that are shared with other agencies. Or if the fire department is handling all of it.
- Increase diversity to combat the image of a good old boy network. The fire department was beloved but it's changing.
- It hard to appreciate the fire department until you need them. Thank you for your service and dedication to the Coty of Alameda
- It's a tough job and I think the criticism around pay is unfounded. The issue is all the over time and the obnoxious use of political pressure around the fire dept unions getting involved in our elections and city management. I realize it is what it is but I wish it wasn't that way.
- Just a note to say I was surprised with the first part of the survey asking it rank importance of services as critical/important/low. I was not aware AFD offered all those services but ranked them assuming they must based on the question format. Hopefully I understood the meaning correctly. If a ranked a service as critical that AFD doesn't offer, please ignore.
- Just know that my family and I are profoundly grateful to our local FD folks - you guys are loved and appreciated!
- Keep up the excellent work! Thanks for all you do! You've saved my family a few times. Much appreciated. (Also, please continue to avoid using sirens/lights as much as possible when coming out or going back into the stations. Your neighbors appreciate your efforts to minimize disturbance.)
- Keep up the good work!
- Keep up the great job and thank you for all you do. Stay safe
- Let's do this Alameda!
- Look to options where AFD can still be as effective, but at less cost. STOP sending a Fire Truck with every health call.

- Management group needs to understand the FF's are doing great work and start treating them like they matter. We need leaders that will improve work morale
- Maybe expand the CARES team? I realize that's a whole different argument than what this survey is really covering.
- More public exposure by Chief of Department or at least a very visible PIO at local emergency incidents.
- My kids loved the pancake breakfast when they were little
- N/A (13)
- Next to the police department and educators they are the backbone of their community and should be treated with respect and urgency regarding their needs.
- No (2)
- no additional comments
- No thank you
- None (7)
- Open Station 5 to serve the residents of district 5!
- Perhaps earthquake preparedness and structural review (i.e. the big one will come someday, lets be ready). What about sea level rise preparedness?
- Please post results of this survey on social media, along with other info about AFD performance. Also, FYI one question in this survey asked for details about what media sources we would prefer for AFD communication, but there was no comment box to add that.
- Professional and very friendly. Would be nice when kids walk by or they notice children to go above and beyond to engage with them and the community.
- Sad there's no volunteer medical, as where I grew up (NJ). More connection to CERT.
- Sending thanks to the AFD for their continuing and excellent support of our precious island home.
- Services like the safety apartment fire extinguisher inspections, etc. have gotten soooo expensive. The cost of the service is now way out of line for the service provided.



- Sometimes they keep the engine running for a long time at the fire station which creates a lot of noise in the neighborhood, but I understand that they need to do their job.
- Sta 3 as an assigned dive station is unnecessary due to the number of dive calls. Station 5 needs to return, one station covers two districts. Chief Kappler stated when closing station 5, " that's a low income area and they don't complain as much."
- Thank you (2)
- Thank you - I feel the department greatly supports our community, and is doing a fantastic job
- Thank you AFD
- Thank you AFD for all you do for the community
- Thank you for all of the excellent work.
- Thank you for all that you do!
- Thank you for all you do!
- Thank you for asking for community input
- Thank you for asking.
- Thank you for doing this.
- Thank you for everything you do, and I mean everything. Both of my interactions were medical care for other people and I couldn't be more impressed or happier with the experiences. Thank you for your service to our community.
- Thank you for giving me this opportunity
- Thank you for the great work you do everyday.
- Thank you for this survey
- Thank you for your service to our community! And thank you for asking for our feedback!
- Thank you for your service to our community.
- Thank you for your service, you are very much appreciated!
- Thank you for your services (2)
- Thank you for your service to the community of Alameda! We appreciate you!
- Thank you to all of those connected to the AFD for being there for us!
- Thank you to the CARE team, they are awesome

- Thank you to the fire fighters for serving our community.
- Thank you to the firefighters who keep our communities safe. I have only needed your services once and was impressed how they addressed the children present to ensure they were okay after seeing their grandmother being given CPR.
- Thank you! (6)
- Thanks again for saving my life
- Thanks again! Very grateful for you all!
- Thanks for all you do
- Thanks for all you do!!!
- Thanks for doing such a great job for our city - we appreciate you!
- Thanks for reaching out!
- Thanks for survey. I didn't know the fire department also has to cover water rescue and fire. I thought that was the coast guard?
- Thanks!
- Thanks. I'm proud of our dept and have no complaints. Except for the seemingly incompetent politicians who select the fire chief. The guy who was filling gas tanks of his private cars -- what a debacle! But overall for the dept -- good job.
- The AFD is essential to our community. The City and the County should provide the means to equip the department for success.
- The firefighters are very nice and they stay calm for us when we are not. I appreciate that.
- The hospital used to be a quiet zone, I wish the area around the hospital would become a quiet zone again
- They are doing a great job!!!!
- Those pages that didn't work on Samsung Android were disappointing
- Tracey McCormick thanks the Bay Farm Crew! Legit Bad-Asses. That's your A team.
- Very happy with our local responders!
- We live near the new fire station, and have seen the team in action many times. Great job!
- We love our fire department! Thank you for offering emergency prep for the community. One day I will go to it, in the meantime, every other service is fantastic!

- We recently moved from a house to a condo in Alameda. It would be nice to learn what fire/emergency preparedness we should do in the condo/apartment buildings along Shoreline.
- We should have low cost or free ambulance services with multiple providers.
- Yes, I would like to be contacted so that I could understand why the fire trucks park in the bike lane all the time.
- You need more calendars.
- You're Welcome. And again, thanks for asking.
- You're welcome

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## Appendix E: References

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<sup>28</sup> Source: US Geological Survey and ESRI Living Atlas of the World. This database is used to create the fault-source characterization in the National Seismic Hazard Model. Simplified representations of the geometry and the behavior of the fault, based on geologic interpretation, are used to calculate the potential for future ground shaking.

<sup>29</sup> Alameda Climate Adaption and Hazard Mitigation Plan, June 2022.

<sup>30</sup> The Quaternary Fault and Fold Database contains the results of thousands of scientific assessments of faults and associated folds in the United States that demonstrate geologic evidence for coseismic surface deformation in the Quaternary (the past 1,600,000 years). The Quaternary Fault and Fold Database includes information on the age of the most recent coseismic surface deformation, relative rates of activity, fault geometry, sense of movement, and citations of pertinent literature. Much of the information in the database is based on paleo seismology, which is the geologic study of prehistoric earthquakes. Paleo seismology combines well-established geologic practices such as trenching with archeological-style analysis to determine the time and magnitude of ancient earthquakes. These studies extend the historical earthquake record by hundreds of thousands of years and are indispensable in calculating future seismic hazard posed by the thousands of faults in the United States. The data are accessed through search pages or an interactive map service. The work of the USGS and its cooperators in developing this database is only one part of the ongoing USGS efforts to protect lives and property from future earthquakes throughout the United States.

<sup>31</sup> Source:FEMA and ESRI Living Atlas of the world

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<sup>33</sup> Map of the city of Alameda, California indicating tsunami evacuation zones. Light pink zones are the first to be evacuated for small events. Dark red areas would be evacuated



only for an expected large tsunami. Credit: USGS/Jeff Peters Geographer, Western Geographic Science Center.

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